NORFOLK STATE
UNIVERSITY

2018 MS4 Annual Report

NORFOLK STATE UNIVERSITY
ANNUAL MUNICIPAL SEPARATE STORM SEWER REPORT

Background information

1. *The name and permit number of the program submitting the annual report.*

   Norfolk State University, Permit # VAR 040097

2. *The annual report permit year.*

   Permit Year July 1, 2017 to June 30, 2018

3. *Modifications to any operator's department's roles and responsibilities.*

   The Facilities Management Department has replaced the positions of:

   - No replacements have been made.

4. *Number of new MS4 outfalls and associated acreage by HUC added during the permit year.*

   No new outfalls were added during the permit year. The existing outfalls and associated acreages by HUC are as follows:

Outfall Name	Acreage	HUC	Description
Outfall #1	±3.4 Acres	JL 54	Flows east into the City line under Ballentine Avenue
Pipes #2 to 8	±18.0 Acres	JL 54	Flow south into a perimeter ditch
Outfall #9	±104.8 Acres	JL 54	Is a large box culvert which flows to the south border
Outfall #10	±3.3 Acres	JL 54	Flows south to the City line under Brambleton Avenue
Outfall #11	±1.2 Acres	JL 54	Flows west to the City line under Park Avenue

An overlay map displaying these structures are in the attached appendix A.

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5. *Signed certification in accordance with 4 VAC 50-60-370.*

"I certify under penalty of law that this document 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 and imprisonment for knowing violations."

9/28/18
Date

Signature

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6. *The status of compliance with permit conditions, an assessment of the appropriateness of the identified best management practices including an assessment of the appropriateness of the identified BMPs in addressing discharges into waters that identified as impaired in the 2012 305(b)/303(d) Water Quality Assessment Integrated Report and progress towards achieving the identified measurable goals for each of the minimum control measures.*

   -See attached chart for additional information regarding this item.

7. *The results of information collected and analyzed, including monitoring data, if any, during the reporting period.*

   -See attached chart for additional information regarding this item.

8. *A summary of the stormwater activities the operator plans to undertake during the next reporting cycle.*

   - The University has retained a consultant to assist with updating a prior Stormwater Management Master Plan for the campus which includes specific directions for current and future stormwater best management practices. The proposed Stormwater Management Master Plan has been submitted to DEQ and comments are currently being addressed to conform to new state regulations and TMDL requirements. A resubmittal of the updated Campus Stormwater Master Plan will be submitted to DEQ for review by late 2018.

   -See attached chart for additional information regarding this item.

9. *Any changes in any identified best management practices or measurable goals for any of the minimum control measures including steps to be taken to address any deficiencies.*

   -See attached chart for additional information regarding this item.

Minimum Control Measure #1: Public Education and Outreach on Stormwater Impacts

This measure requires the University to educate the public about the potential impact of stormwater discharges from the University. The University will show the impact it has on surrounding bodies of water, emphasizing the precautions to be taken to reduce pollutants in stormwater runoff. The University considers the campus community as its public and a critical stakeholder in the University's Stormwater Management Plan. Staff receive work orders that directly address physical conditions that can be the source of stormwater pollutants. Multiple Best Management Practices (BMP)s are associated with this Minimum Control Measure. All BMPs defined under this measure were implemented during the first permitting year and continuously since that time.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
1A. High Priority Water Quality Issues: 1. - Bus Wash Facility - Prevent oils and grease from entering the storm sewer system. Design and construction of needed bus wash water inlet structure to be tied into the sanitary sewer system. 2. - Material Storage (Mulch, sand, dirt) - Prevent sediment and material being carried with storm runoff to storm sewer system. Design and construction of a material storage bays with E & S control measures. 3. - BMP and Outfall maintenance - Prevent vegetative matter from depositing and accumulating in Stormwater Management Facilitates or draining to storm sewer system. A presentation on the University's conservation initiatives, including stormwater pollution prevention will be presented to the grounds staff, students and other interested parties, to increase awareness of stormwater and pollution prevention measures and High Priority Water Quality Issues. This includes understanding of the differences between stormwater and sanitary sewer systems and will be presented annually.	Target Audience - 162 Housekeeping and grounds employees of which 76 Grounds Staff Member (50%) attended and received training. Additionally, newly added staff have received orientation training that includes stormwater pollution prevention. Approximately 400 students in residence halls and at student orientations received Stormwater pollution prevention brochures.	Training on the University's conservation initiatives, including stormwater pollution prevention was completed and held on 2/14/18 and 7/25/17, covering the 3 high priority water quality issues and additional stormwater pollution prevention information. In addition, NSU has retained the services of a private consultant to design measures to mitigate the 3 high priority water quality issues.	Show updated presentation to staff and students and other interested parties. An expanded program of training in 2019 will include police officers and students and additional faculty. NSU will target its staff members (162 +/-) for the next reporting year in hopes of increasing attendance 80% to 85%. Retain the services of a private consultant to aid in a presentation to staff to further educate them on the importunate of proper maintenance to protect the storm sewers.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
1B. The University's website is a source of information on the numerous programs. Among the topics under Facilities Management is information on pollution prevention and stormwater management. (Additional links to other local programs and the City of Norfolk initiatives aimed at improving water quality are to be incorporated.)	To provide the public with easy access to basic information on the various aspects of the University's concern for the natural environment. The program and annual report will be posted annually.	The 2017 MS4 Report is currently available on the University's Website - https://www.nsu.edu/getattachment/About/Administrative-Offices-Services/Facilities-Management/Departments/Environmental-Health,-Safety,-and-Risk-Management/2017-MS4-Annual-Report.pdf.aspx A copy of the 2017 MS4 Annual Report and Program Plan will be uploaded when completed. A technical staff member was utilized to upgrade the departments current site. A draft copy of both the department website as well as the additional Stormwater Management website was submitted as part of the 2013 Annual Report. The draft has not yet been approved due to administrative changes.	Continue to post Annual Report and Program. Stormwater Management Website is Pending review and approval 2019.
1C. Post stormwater pollution prevention information in the NSU Spartan E-Dailey Email.	One to Two page ad type inclusion to reach student body, staff, and faculty on a semi-annual basis.	NSU has a the Spartan E-Daily Web Email. The University Email covers a variety of topics, including sports, future events, guest speakers, and political topics of interest. In 2018, no stormwater pollution prevention topics were covered.	University staff plan to work with Spartan E-Daily staff to developing articles to include during the next permit year.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
1D. NSU's Director of Environmental Health, Safety and Risk Management Office and University Architect and Inspectors to take DEQ E&S Inspector Course and obtain certification. (Land disturbance construction sites)	NSU's Director of Environmental Health, Safety and Risk Management Office and University Architect to take the DEQ E&S and Stormwater Inspector Courses and corresponding examinations as per the Annual Standards and Specifications.	The University Architect has completed the DEQ Combined E&S and Stormwater Management Courses in the 2017-2018 reporting year. The University Architect is scheduled to take the Combined Stormwater Exam in October and Combined E&S Exam in late 2018.	University Architect to apply for and take corresponding exams and maintain any required certifications.
1E. Stormwater pollution prevention brochures are to promote interest in protecting the natural environment of the campus and related wetlands and rivers.	After approval by senior management, the brochures are to be printed in sufficient volume for the campus community. The brochures shall be available at strategic locations on campus.	The distribution of brochures has been done. A copy of the final version was submitted as part of the 2013 MS4 Report and has not changed since.	Continue to distribute to the students as outlined.
1F. Students have been invited to assist with attaching storm drain markers to stormwater inlets. This project will depend on weather conditions, and the students' academic schedules.	To encourage student/faculty/staff participation and recognition of the stormwater management system. This task will be performed until all inlets on campus have a marker.	100 markers were installed by a consultant in June 2011. The condition of the markers was verified. Approximately 7 new markers are required for structures that have been repaired and/or replaced and is scheduled to take place in late 2018.	Inspect all the markers and replace with new markers if damaged or missing.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
1G. Preparation of a SWPPP (Stormwater Pollution Prevention Plan) for the University's Maintenance Facility .	Norfolk State University has retained the services of a private consultant for the preparation of a SWPPP (Stormwater Pollution Prevention Plan) for the Maintenance Facility that identifies methods for the prevention of sediment and pollutants from entering the storm sewer system. The concern is controlling any sediment, debris and oils from potentially entering the storm sewer system. The SWPPP identifies methods for the prevention of sediment and pollutants from entering the storm sewer system.	Preparation of the SWPPP has been completed as of September 2015 and has been implemented.	Maintain SWPPP documents and update as required based on updates from DEQ.
1H. Design of new Bus Wash Facility for the University's Maintenance Facility.	Norfolk State University has retained the services of a private consultant for the design of a new Bus Wash Facility for the University's Maintenance Facility. The concern is controlling any oils and grease from potentially entering the storm sewer system.	This will be addressed with the installation of a new drop inlet that is tied to the sanitary system. As buses are washed the Inlet structure will be opened via a hatched cover, where wash water from the buses can be collected and sent through the sanitary sewer system. When washing is complete the hatch cover of the inlet is closed, so storm events can pass by the structure and drain to the storm system. Planning, design, and construction completed in late 2016. Review of functionality has taken place and needed corrective pavement modifications are currently underway that will allow the new hinged hatch covered drain inlet to be more efficient at capturing bus wash water.	Oversee modifications of the pavementt within the facility. Continue with Inspection and cleaning per the SWPPP.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year

Minimum Control Measure #2: Public Involvement/Participation

This measure requires the University to encourage the public to become involved in the protection of stormwater runoff and related sewer systems. As a State University and a campus open to the general public, NSU has provided program basics on its website, conferred with faculty, and made presentations to students. Multiple BMPs are associated with this Minimum Control Measure. All BMPs defined under this measure were implemented during the first permitting year and continuously since that time, unless specifically stated otherwise.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
2A. Students will be invited to participate in a tree planting program.	To encourage student/faculty/staff awareness and participation to provide soil stabilization, reduce heat island effect, sediment and pollution from getting in storm drains. This will occur annually.	The Tree Planting Program was not participated in during the 2017-2018 permit year.	Plan out a new area to implement the program and advertise on Spartan E-Daily to increase student group involvement.
2B. Prepare for Earth Day Activities.	Students will be encouraged to participate and attendance will be taken. This process will occur annually and was started in 2013.	The University did not have an Earthday activity for the reporting year.	Schedule events for Earth Day for the upcoming year.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
2C. The University's website is a source of information on the status of the MS4 Program and all annual reports. Make copies of reports available on website.	To annually provide public access to the permit via the University's website. Increase their knowledge of stormwater regulations and NSU's efforts to improve the local water quality.	The 2017 MS4 Report is currently available on the University's Website - https://www.nsu.edu/getattachment/About/Administrative-Offices-Services/Facilities-Management/Departments/Environmental-Health,-Safety,-and-Risk-Management/2017-MS4-Annual-Report.pdf.aspx A copy of the 2017 MS4 Annual Report and Program Plan will be uploaded when completed. A technical staff member was utilized to upgrade the departments current site. A draft copy of both the department website as well as the additional Stormwater Management website was submitted as part of the 2013 Annual Report. The draft has not yet been approved due to administrative changes.	Continue to post Annual Report and Program. Stormwater Management Website is Pending review and approval in 2019.
2D. Involvement/Participation of Public, Students and Staff: Conduct a presentation on stormwater pollution prevention to Facilities Management Staff and Students.	To increase Public, Student and Staff awareness of stormwater and pollution prevention measures. This includes understanding of the differences between stormwater and sanitary sewer systems and allowable discharges, and will be conducted annually to biannually.	Housekeeping and grounds employees, of which 76, (50%) attended, received training on 2/14/18 and 7/25/17. Additionally, approximately 400 students in residence halls and student orientations received Stormwater pollution prevention brochures.	Update presentations for staff and students and other interested parties. Continue training in next reporting year.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
Minimum Control Measure #3: Illicit Discharge Detection and Elimination			
This measure requires the University to detect and eliminate illicit discharges into the MS4. The University is aware of potential sources of illicit discharges and has made their elimination a high priority. The following discharges are exempt from discharge prohibitions established by this Minimum Control Measure: • Water line flushing or other potable water sources • Landscape irrigation or lawn watering • Diverted stream flows • Rising ground water • Ground water infiltration to storm drains • Uncontaminated pumped ground water • Foundation or footing drains (not including active groundwater dewatering systems) • Crawl space pumps • Air conditioning condensation • Springs • Natural riparian habitat or wetland flows • Swimming pools (if de-chlorinated - typically less than one PPM chlorine) • Fire fighting activities • Any other water source not containing Pollutants. Materials used by the equipment maintenance staff, vegetative nutrients, housekeeping cleaning solvents, chemicals used in academic and research laboratories have been identified as potential pollutants. Separate procedures have been established for each of these exposures. Multiple BMPs are associated with this Minimum Control Measure. All BMPs defined under this measure were implemented during the first permitting year and continued since that time, unless specifically stated otherwise.			
Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
3A. Equipment maintenance: As much as possible, motorized unlicensed equipment will be stored under a shed roof to help minimize the amount of stormwater runoff from the equipment. This equipment can develop lubricant and fuel stains which could produce sheen on waters entering stormwater drains. Accumulations of grass clippings, leaves, dirt and loose debris are to be removed from the equipment, and swept up to prevent their inadvertent entry into stormwater inlets.	To make equipment operators more accountable for the cleanliness of the equipment and reduce the possibility of petrochemical residue and debris entering the stormwater sewer system. Operators will adhere to policies outlined in this plan.	Active. Grounds personnel are trained in keeping debris out of stormwater drains. A roof was installed over equipment in maintenance yard to prevent any oils from equipment entering storm sewers during rain events. In addition, the various fluid product cabinets have been removed from the yard.	Continue plan as is but reinforce it with the development of more specific procedures to clarify employee responsibilities.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
3B. Motor vehicle refueling: The University has an underground gasoline storage tank for use in state vehicles. Refueling most of those vehicles is performed by the vehicle maintenance staff who have been instructed not to "top-off" the vehicle tank for fear of overflow and spilling onto the pavement. To help prevent incidents, the nozzle has been replaced with one that will close automatically; access to the hose is restricted by locking the nozzle in place, turning off the gasoline pump and restricting refueling to a few hours in the morning when the mechanic is available to oversee the procedure.	Prevent gasoline from entering the stormwater drains, staining the pavement and reducing the risk of fire. The University will ensure that no unauthorized use of the gasoline tank will occur.	Active	Continue plan as is.
3C. Vegetative nutrients: The University has contracted with a consultant to assist with a nutrient management program. The program includes soil tests, assessments of vegetation and specified application amounts.	To maintain healthy lawns and plantings while reducing spillage on pavements that can enter stormwater inlets and adversely affect marine life.	The nutrient plan has been updated and approved by DCR in August 2017. The plan will be active through 2019. It is implemented and kept with the program records.	Apply and maintain new nutrient management plan.
3D. Dumping: Develop procedures to detect and address non-stormwater discharges, including illegal dumping, will include the University Police patrolling the campus and the presence of facilities groundskeepers, tradesmen and shuttle bus drivers. These individuals are to report observations and incidents that could result in illicit discharges, or conditions that could result in non-stormwater contamination. In addition to these detection methods, the main outfall from campus has a large screen that prevents solids from entering connecting sewers. The University will coordinate with the city to assure this structure remains functional.	To prevent illegal dumping from entering the stormwater drains, which could impair water quality. Incidents of dumping will be documented and provided.	NSU grounds staff and Campus police patrol the campus regularly. No illicit discharges were reported. The draft policy for Illicit discharge is still being reviewed and considered by the University and is expected to be incorporated in 2019.	Continue monitoring. Initiate and maintain the formal policy, if the draft policy is approved. Amend policy if required and resubmit changes to DEQ for review and approval.
3E. Penalties: A policy proposal shall be drafted addressing the seriousness of illicit discharges on campus, and explaining the possible adverse impact of hazardous materials on the natural environment. The policy shall apply to all members of the campus community and visitors. Technical and legal reviews will be involved and may specify assessments of penalties by a faculty or student conduct board.	If approved, the policy would be made public through an extensive advertising campaign and a "grace" period clearly stated for all to become aware of the policy.	The draft policy is still being reviewed and considered by the University and is expected to be incorporated in 2019.	Initiate and maintain the formal policy, if the draft policy is approved. Amend policy if required and resubmit changes to DEQ for review and approval.
3F. Removal of grease and oil accumulations from parking lots will require the use of pressure-washing, deployment of petrochemical absorbents around the cleanup site and in front of any affected stormwater inlets.	To prevent illicit discharges from entering the University's stormwater system.	No incidents were reported in the 2017-2018 reporting year.	Continue to monitor parking lot areas.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
3G. In the event that an illicit discharge is identified, it will be reported to DEQ in the Annual Report.	To prevent illicit discharges from entering the University's stormwater system. Identified illicit discharges will be reported annually.	No incidents were reported in the 2017-2018 reporting year.	Continue plan as is.
3H. Dry weather Screening. Stormwater Outfall inspection: This section includes details on how to find an illicit discharge in the field and the appropriate laboratory strategies to identify particular pollutants. The Outfall Reconnaissance Inventory (ORI) is the most proven method for screening campus stormwater outfalls. The ORI consists of walking all of the campus outfalls to document where they are and their condition. The field team should be able to find where continuous and intermittent stream flows exist. They will take note of any outfalls with discharges of very high turbidity, strong odors, unnatural colors or an extreme case of pH on a field litmus test strip. When obvious discharges are found, the field crew will take note and start working upstream to find where the source is and eliminate it. While traversing the campus, field crews should be looking for other more common illicit discharges like oil spills, un-permitted car washing or other harmful liquid spills. If these are encountered the appropriate abatement agency should be notified. The following table provides a step by step process for conducting an ORI.	To identify potential illicit discharges that could impair water quality. All outfalls to be inspected and inspection checklist kept onsite. All campus outfalls will be initially inspected by the end of the third permit year and quarterly thereafter. Inspections will be documented.	The 11 Outfalls were inspected with no major incidents reported. It was recorded that regular maintenance of overgrown vegetation was needed to be cut back and removed. Inspection Reports have been completed and recorded in the program.	Continue plan as is.
3I. Students have been advised not to change any of the fluids used in their motor vehicles while on campus. These include motor oil, transmission fluid, anti-freeze, gasoline or diesel and windshield washer fluids.	To minimize the accumulations of drippings and stains in parking lots and campus streets that can become part of stormwater runoff. The campus will be reminded electronically each semester.	No incidents were reported in the 2017-2018 reporting year.	Continue plan as is.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
3J. A list of any written notifications of physical interconnection given to other MS4 holders.	To make adjoining MS4 entities aware that there is interconnecting storm systems.	City of Norfolk is the only interconnected MS4 entity. Written notification was sent out to the Environmental Programs Manger - June Whitehurst on September 28, 2015.	Issue new notification if changes in interconnected MS4 should occur.

Minimum Control Measure #4: Construction Site Stormwater Runoff Control

The University has adopted state mandated procedures to reduce pollutants in stormwater runoff from entering the stormwater inlets on campus during construction projects. The permit requires that permittees address the situation of another government entity being held responsible for the permittee satisfying some of the state permit requirements. Virginia Stormwater Management regulatory oversight has passed to the Department of Environmental Quality as of the issuance of the General Permit June 30, 2013. Public institutions of higher education will continue to have stormwater management plans reviewed by DEQ; however, DEQ will does not review Erosion and Sediment Control Plans. The two options for Erosion and Sediment Control review are: implementation of an internal Erosion and Sediment Control review process, or review by the locality. NSU has reviewed both options and will submit Erosion and Sediment Control Plans to the City of Norfolk for review.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
4A. Maintain compliance with Virginia Erosion and Sediment Control and Stormwater Laws for Construction projects: Included in affected projects with a general contractor, is a section dedicated to slope protection and erosion control.	To adhere to all laws for erosion, sediment control, and stormwater management. The University Architect will perform inspections to ensure compliance.	Requirements for complying with Virginia E&S are specified in contract including protection of slopes and erosion control. In addition, NSU has had Annual Standards and Specifications (AS&S) prepared, which describe the University's procedures for all land disturbance projects. The AS&S document has been submitted and approved by DEQ during the 2017 permitting year. The AS&S is currently being updated and will be submitted to DEQ in late 2018. The updated document will be included with next years annual report and is kept with the MS4 Program.	Continue plan as is.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
4B. The University holds the general contractor responsible for maintaining the job site to the satisfaction of the University and all applicable regulations.	To provide a safe working environment and eliminate damages to the environment. This will be included in the inspection and documented within the MS4 Program records.	The general contractor is held responsible for the entire project and applicable regulations via their contract with the University. No incidents observed or reported.	Continue plan as is.
4C. The contractor is required to schedule work in a manner that best provides slope protection and erosion controls by installing grass, ditches or other means to prevent runoff into stormwater drains.	To prevent erosion on the construction site. This will be included in the inspection and documented.	The general contractor has coordinated their tasks to minimize erosion and slope protection with the use silt fences and vehicle traffic control.	Continue plan as is.
4D. The contractor must clean out any drains that become contaminated with construction site runoff.	To eliminate future contamination of stormwater entering previously contaminated drains on an as-needed basis. Documentation of cleaning will be provided.	No drains were adversely affected during the 2017-2018 reporting year.	Continue plan as is.
4E. The contractor will be responsible for any damage to streams or other natural areas or wetlands by the addition of soil, rock, or topsoil, whether deposited by poor construction practice, sedimentation, or wind, and vegetation matter such as whole trees or any part thereof, or remnants from burning or other clearing processes, and waste construction materials such as concrete, broken pipe, equipment parts and any other additions which could be detrimental to said areas.	To protect the surrounding areas from damage due to poor construction practices. The University Architect will perform inspections to ensure compliance and will enforce penalties as needed.	The contractor has been held responsible for minimizing any impact on the local natural features. Waste construction materials were controlled. No incidents observed.	Continue plan as is.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
4F. Any damages will be assessed by the University based on site inspections. Currently the City of Norfolk's Environmental Division inspect projects with land disturbance every 5 business days and after rain events. The contractor will act as soon as possible to prevent further damage and correct existing damage at no cost to the University. Should the University choose to do so, a remediation contractor will correct the damage and their fees deducted from the contractor's payment.	To eliminate and repair damages to the surrounding areas. Inspections will take place every 5 business days and after rain events (to be compliant with MS4 Permit - TMDL requirements) and damages will be reviewed and assessed by the University as needed.	NSU's Director of Environmental Health, Safety and Risk Management Office has completed the E&S and Stormwater Inspector Courses. The University Architect has completed the DEQ E&S and Stormwater inspector, reviewer, and administrator training courses and is scheduled to take exams in October and December. As part of the Annual Standards and Inspections the University provide inspections for Campus projects. No remediation contractor was required in the permit year.	Continue plan as is. Update any certifications as required.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
4G. The contractor will anticipate site inspections by the erosion and sediment control reviewing authority (City Inspector and University Architect). Current projects requiring SWPPP and University Inspections of E & S Measures: Brown Hall Building and Site Improvements, Residential Facility, and Synthetic Turf Football Field.	During the 2017-2018 reporting year, the transition of inspections from the City of Norfolk's Environmental Division to the University Architect took place. Inspections were performed by the City of Norfolk's Environmental Division through September 2017, at which point the University Architect performed inspections and recorded the proper documentation.	In the 2017-2018 reporting year, the City of Norfolk's Environmental Division inspected the Brown Hall construction project a reported 10 times. The University Architect inspected the Residential Facility construction project a reported 4 times. The Synthetic Turf Football Field construction project only required limited inlet protection and protected construction access (in a highly visible location on the campus), which was maintained for the minimal duration of the project. No inspection reports were created for the synthetic turf field project; however, the project was closely overseen by the University Architect and project consultant, with no issues to report. Recorded inspection reports are included with this years annual report and will be kept in the program records.	Continue plan as is.
4H. The inspector for the erosion and sediment control reviewing authority will be allowed access to all areas of the construction site.	To ensure all areas of the site are properly monitored and examined. The inspector will document all considered locations.	The City Inspector and University Architect has had full access to all sectors of the construction site.	Continue plan as is.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
4I. All conditions or practices noted by the inspector, that could result in deteriorated slope protection or erosion control, will be immediately corrected.	To prevent damage to the construction site, the inspector will document damages and take immediate action.	The general contractor has been responsive to requests from the City Inspector and University Architect. Minor comments were noted and addressed within the required time frames. The University Architect is handling follow up inspections.	Continue plan as is.
4J. If the inspector for the erosion and sediment control reviewing authority submits a report to the University or contractor, all infractions or penalties will be addressed by the contractor at no expense to the University.	To make the contractor liable for all infractions and penalties caused by damages. The University will document all infractions and penalties.	No infractions or penalties were recorded.	Continue plan as is.
4K. At the agreed conclusion of a project, all temporary erosion control systems will be removed, and inspection of adjacent stormwater inlets and drains conducted. The contractor will remove all materials, sediment or vegetation that has entered due to activities related to the construction project when approved to remove measures by the inspector.	To ensure proper clean-up of site upon completion and removal of erosion control systems. Inspection documentation will be provided.	The new Brown Hall Building project started in 2015 and is expected to be completed late 2017, with final site work completed in late 2018. The new Residential Facility began construction in the spring of 2018 and is expected to have construction completed in late 2019. The Synthetic Turf Field project began construction in the summer of 2018 and was completed and fully stabilized within 2 months with no reported issues. All erosion control measures for active projects shall be installed and maintained until the site is stabilized and inspectors have signed off that measures can be removed, with the site paved, and a plantings/grass lawn installed as specified.	Continue plan as is.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
4L. For sites in excess of 2500 sf, the contractor will ensure compliance with all the requirements of VR 680-14-19 (VSMP).	Inspections will ensure the contractor follow requirements.	The general contractor has demonstrated compliance with the requirements of the contract. Regular inspection by the University Architect shall continue to maintain compliance.	Continue plan as is.
4M. The University reserves the right to require all architects, engineers and related consultants to obtain appropriate certifications as specified under the Erosion and Sediment Control law.	The University shall request to receive documentation of appropriate certifications.	Appropriate documentation and certifications have been provided as requested.	Continue plan as is.
4N. Contractor will provide the University with legible copies of all correspondence, reports, meeting minutes, etc. that involve stormwater issues.	The University will review all stormwater practice correspondence.	Site inspection reports submitted by inspectors have been reviewed and kept in file.	Continue plan as is.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
Minimum Control Measure #5: Post-Construction Stormwater Management in New Development and Re-Development			
The University will develop, implement and enforce procedures to address stormwater runoff from completed construction sites. Multiple BMPs are associated with this Minimum Control Measure. All BMPs defined under this measure will be continued to be implemented each permit year.			
Proposed BMP		Compliance Status	Plans for Next Permit Year
5A. Compliance with Virginia Erosion and Sediment Control and Stormwater Laws: • The location, size and routing of stormwater will be designed, approved and constructed in accordance with existing regulations. Tie-ins to existing structures will be permitted if engineering studies can prove that such configurations are within current capacities and do not inhibit severe stormwater flows. • The University will implement strategies that include structural and nonstructural best management practices appropriate for the campus and surrounding environments. In contracts with consultants, emphasis will be placed on replicating pre-construction runoff characteristics and site hydrology. Among the prominent concerns are the runoff from local city streets and the outfalls from the campus. • Any additional maintenance requirements of the new structure will be assigned to the respective tradesmen. If warranted, formal preventive maintenance procedures will be scheduled and modified as warranted by experience, efficiency and employee safety. • Work orders and inspections of stormwater structures will be documented and copies sent to the Office of Environmental Health. Discrepancies will be recorded and corrective measures identified, performed and documented. Timely completion of these functions will be a factor in the tradesmen's performance appraisals. • New construction activities will secure a VSMP permit.	To prevent pollution of stormwater and maintain healthy waterways. The inspector will ensure all new erosion and sediment control processes will be properly documented and approved.	These items are required within the construction contracts for all current and new construction on campus.	Continue plan as is.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
5B. Outside consultants have been scheduled to conduct inspections of campus stormwater basins. Inspections are documented and include clearing of soil/sand, removal of debris, checks for erosion, reporting of sheen in standing water, and the removal of leaves and floating debris. Periodic inspections will be added to the preventive maintenance list.	To verify basins are clean and capable of retaining and draining. This will be done quarterly and documentation will be provided.	These items are required within the construction contracts for all current and new construction on campus.	Continue plan as is.
5C. Develop a Stormwater Master Plan: For State owned property, stormwater regulations are determined and enforced at the State level by the Virginia Department of Environmental Quality (DEQ). The Master Plan was developed to ensure compliance with current regulations.	To supplement the Current Campus Master Plan by providing a guideline for development on campus, and updating it as projects are completed. A copy can be provided upon request.	The University has retained a consultant to assist with updating the existing campus storm water master plan for the campus which includes specific directions for current and future stormwater best management practices. The stormwater master plan was submitted to DEQ in the summer of 2018. Comments were received that will be addressed and the master plan will be resubmitted in late 2018.	The proposed Comprehensive Stormwater Master Plan for Norfolk State University shall be updated to conform with new regulations. A formal re-submittal of the updated Campus Comprehensive Stormwater Master Plan will be submitted to DEQ for review by late 2018. Update the master plan as projects come on line and include updates in the 2019 MS4 Annual report.
5D. Develop a Stormwater Management Facility Record to include: Treatment area, type of BMP, and Hydrologic Unit Code. Should also include inspection reports and checklist.	Create a plan that will be continuously updated with new construction projects and new SWMF. This plan will be updated and submitted with the annual report.	See Appendix A below for a list of current BMPs on campus. NSU has retained the services of a consultant to assist with the preparation of a SWMF Record documents and map. Inspection reports have been completed and kept with the program records.	Update SWMF Record for any changes to existing BMP facilities and incorporate new BMP facilities as they come on line. Adjust and perform inspections respectively.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
Minimum Control Measure #6: Pollution prevention/good housekeeping for municipal operations			
The University has been performing functions that contribute to the prevention of pollutants from entering stormwater inlets and adversely affecting the natural environment. Potential sources of stormwater pollution include oil/grease stains in parking lots, fuel spills, lawn & garden nutrients on pavement, exposed bulk storage piles and common floatable trash. It is recognized greater documentation, training and expansion in some areas will contribute to an increase in the efficiency of the overall program. Multiple BMPs are associated with this Minimum Control Measure. All BMPs defined under this measure will be implemented beginning in the first permit year.			
Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
6A. Development and Implementation of Dailey Operation Procedures	Eliminate sources of illicit materials polluting surface waters. Dailey Good House keeping procedures are included in the new Facilities Maintenance SWPPP.	Preparation of the SWPPP containing Good House Keeping Procedures completed in September 2015 is being implemented. A copy will be kept in the program records.	Continue plan, update SWPPP as required based on updates from DEQ.
6B. Development and Implementation of required SWPPPs	Norfolk State University has retained the services of a private consultant for the preparation of a SWPPP (Stormwater Pollution Prevention Plan) for the Maintenance Facility that identifies methods for the prevention of sediment and pollutants from entering the storm sewer system. The concern is controlling any sediment, debris and oils from potentially entering the storm sewer system. The SWPPP identifies methods for the prevention of sediment and pollutants from entering the storm sewer system.	Preparation of the SWPPP for Brown Hall has been completed as of September 2015 and has been implemented. Preparation of the SWPPP for the Synthetic Turf Football Field project has been completed as of June 2018 and has been implemented. The project SWPPP is included with this Annual Report. The project has been completed and stabilized. Preparation of the SWPPP for the Residential Facility has been completed as of June 2018 and has been implemented. The project SWPPP is included with this Annual Report.	Maintain SWPPP documents and update as required based on updates from DEQ.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
6C. Development and Implementation of turf and landscape Nutrient Management Plan. The University has chosen to select a consultant from a list, originally provided by the DCR. After soil conditions have been sampled and tested, specific fertilizer mixes will be administered by the University to maintain the lawns and flower beds. The application of fertilizers and herbicides will strictly follow the recommendations provided by the consultant, and will be fully documented. Those employees assigned to apply the fertilizers and herbicides will be certified to perform those tasks.	Maintain the minimum appropriate levels of fertilizers and to prevent excess from entering storm sewer system and causing downstream pollution. Nutrient Management is applicable for all locations containing turf and or planted areas within the University.	The nutrient plan 2017-2019 was updated and submitted in 2017 and is included in the Program Plan. NSU currently has 12.88 Acres of athletic field turf and decorative landscaped areas that 100% is accounted for in the nutrient management plan.	Continue to follow and maintain the Nutrient Management Plan.
6D. Required Employee Training	Increase staff awareness and procedures for stormwater and pollution prevention measures.	NSU's Director of Environmental Health, Safety and Risk Management Office has represented multiple training seminars for in-house training of Facilities Maintenance Staff with regard to Stormwater Pollution Prevention and Good Housekeeping. The Training Calendar of events and topics of discussion are filed in the Program Plan. Stormwater Pollution and BMP Maintenance training was held on 2/14/18, and 7/25/17. 83, Grounds Staff Members (50%) attended and received training. The Director and University Architect have completed the DEQ Combined Administrative, Erosion and Sediment Control and Stormwater Management Courses during the 2016/2017/2018 permit year. The University Architect is scheduled to take the Combined Stormwater examination in October 2018 and the Combined Erosion and Sediment Control Exam in late 2018.	Continue plan as is.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
6E. Tradesmen have been instructed to immediately cleanup releases of any materials they are using and report any quantity that may have entered the stormwater sewer system.	Increase awareness for stormwater runoff and eliminate sources of illicit materials polluting surface waters.	Requirements added to work profile.	Continue plan as is.
6F. Groundskeepers have been instructed to pick-up debris and floatables to prevent shredding by lawn mowers and entering the stormwater sewer system.	Reduce the amount of pollutants in the stormwater, and promote the free flowing of stormwater in the sewer lines.	Requirements added to work profile.	Continue plan as is.
6G. Absorbent materials are kept available, and a fully enclosed hazardous materials storage shed is used for the staging of hazardous wastes, including contaminated absorbents and personal protective equipment.	Tradesmen and faculty to store hazardous wastes isolated from the weather and unauthorized personnel. Documentation of the location of the storage shed will be provided.	Completed. Storage shed is in the southeast corner of lot #4.	No further plans.
6H. Creation of a Hazardous Substance Policy: The discharge of hazardous substances or oil into the stormwater sewers has been prevented through the creation of a hazardous materials policy. The policy includes the periodic removal of hazardous wastes from the academic chemistry, biology and medical laboratories, along with chemical wastes from the research facilities. Hazardous substances and wastes from facility maintenance operations are controlled by storing the materials in flammable storage cabinets, keeping a limited amount on campus, and using an approved hazardous waste hauler to over pack stale or contaminated cans, bottles, etc. Temporary storage on campus is within a specially manufactured hazardous material shed until transport to a recycler, incinerator or approved landfill can be arranged by the hazardous waste transporter. Reporting, response and disposal requirements have been explained to staff as part of the Hazard Communication Training required by OSHA Standard 29 CFR 1910.1200.	Prevent hazardous materials from entering the University's stormwater sewer system and other downstream waters. A copy of this policy will be submitted.	Proposed F.M. Policies 49.03.08-49.03.12. The proposed policy is in draft form and must be routed through the management ranks for approval. It is expected to be approved in 2019	Copies of approved policy will be forwarded once approved.
6I. Emergency generators, boilers, and hot water heaters have been converted to natural gas.	Prevent hazardous materials from entering the University's stormwater sewer system and other downstream waters.	Boilers and hot water heaters have been converted to natural gas. All emergency generators are powered by natural gas with the exception of one generator at the McDemmond Center which is powered by diesel fuel.	No further plans.

Proposed BMP	Measurable Goal and Effectiveness	Compliance Status	Plans for Next Permit Year
6J. A company with expertise in hazardous materials has been contracted to provide emergency response to incidents requiring additional resources and equipment. They have the added responsibility of over packing primary containers and arranging for transportation to approved disposal sites, recyclers or incinerators.	Assure a release is adequately contained and remediated, storm drains are protected, staff personnel do not become contaminated and disposal protocols are strictly followed.	Semi-annual hazardous material removal completed.	Continue plan as is. Documentation will be provided if necessary.
6K. All trash receptacles will be emptied and refilled with new trash bags when they become full, after the event ends and after the crowds leave. All stormwater inlets in the general area of the events will be checked and trash of all types removed from the inlet. An estimate of the amount of trash collected will be recorded and sites of the greatest accumulations noted.	Reduce the amount of pollutants in the stormwater.	Post event inspections to be scheduled with staff.	Continue plan as is.
6L. Exterior storage: Certain material storage practices include bulk piles of mulch, topsoil, sand and salt. It was recognized that heavy rains can cause the loose materials to flow into street gutters and eventually into stormwater inlets. Currently salt (for icing conditions) and urea fertilizer are received in bags and stored in a grounded storage container. If other lawn and garden supplies cannot be purchased in bags, then provisions will be considered to store such materials under an impervious cover.	Reduce the amount of pollutants in the stormwater. Norfolk State University has retained the services of a private consultant to design for a new series of storage bays for bulk material storage. The design will include adequate containment to prevent materials from spreading out side of the storage bay area.	Construction was completed in late 2016. Maintenance and inspection shall take place as required per the SWPPP for the Maintenance Facility.	Continue with Inspection and Cleaning per the SWPPP.
6M. Education of Staff: Conduct a presentation on stormwater pollution prevention to Facilities Management Staff and have staff complete pollution prevention training.	Increase staff awareness of stormwater and pollution prevention measures and proper BMP and Outfall maintenance. This includes understanding of the differences and appropriate maintenance between the various stormwater BMP types on campus.	Stormwater Pollution and BMP Maintenance training was held on 2/14/18, and 7/25/17. 76, Grounds Staff Member (50%) attended and received training.	Continue plan as is.
6N. Development of on-site BMP Maintenance and Inspection Procedures.	Increase staff awareness of stormwater and pollution prevention measures. This includes the preparation of on-site BMP Maintenance and Inspection Procedures.	On-site BMP Maintenance and Inspection Procedures have been created and implemented. Procedures are maintained within the program.	Continue plan as is. Update as necessary.

10. *Notice that the operator is relying on another government entity to satisfy some of the permit obligations.*

- The University receives technical and regulatory assistance from the Department of Environmental Quality. DEQ reviews individual capital improvement projects for compliance with Virginia Stormwater Management regulations. DEQ also assists in establishing requirements for the Stormwater Master Plan.

- The University reviews technical and regulatory assistance provided by The City of Norfolk Environmental Services Department for the review of Erosion and Sediment (E & S) Control Plans and E & S Control Site Inspections.

11. *The approval status of any programs pursuant to section II C of the General Permit (if applicable), or the progress towards achieving full approval of these programs.*

- Not applicable.

12. *Regulated land-disturbing activities data tracked under Section II B 4 c of the General Permit.*

Table 1: Current Campus Land Disturbing Activities

Approximate Location	Area (Acres)
New Classroom Building (Brown Hall)	10.79 +/-
New Residential Facility	5.63 +/-
Synthetic Turf Football Field	2.04 +/-
Total	18.46 +/-

13. *All known permanent stormwater management facility data tracked under Section II B 5 b (6) of the General Permit submitted in a database format to be prescribed by the department. Upon filing of this list, subsequent reports shall only include those new stormwater management facilities that have been brought online.*

- No new stormwater management facilities have been brought on line. See Table 2 below for a list of current facilities.

Table 2: Current Campus Stormwater Basins

Approximate Location	Description	HUC
Lot 10	Retention Basin	JL 54
Spartan Suites	Infiltration Trench	JL 54
Lot 17	Detention Basin	JL 54
Lot 7	Grassed Swale	JL 54
Lot 30	Detention Basin	JL 54
Wilder Performing Arts	Grassed Swale -West	JL 54

Wilder Performing Arts	Grassed Swale -East	JL 54
Hamm Fine Arts	Detention Basin	JL 54
Lots 2 and 3	Retention Basin	JL 54
Student Center	Bioretention	JL 54
Student Center	Underground Storage	JL 54

14. *A list of any new or terminated signed agreements between the operator and any applicable third parties where the operator has entered into an agreement in order to implement minimum control measures or portions of minimum control measures.*

- The University has a contract with Burns & McDonnell, who serve as a stormwater management consultant.

15. *Copies of any written comments received during a public comment period regarding the MS4 Program Plan or any modifications.*

- No written comments have been received.

NORFOLK STATE UNIVERSITY

APPENDIX A
ATTACHMENTS

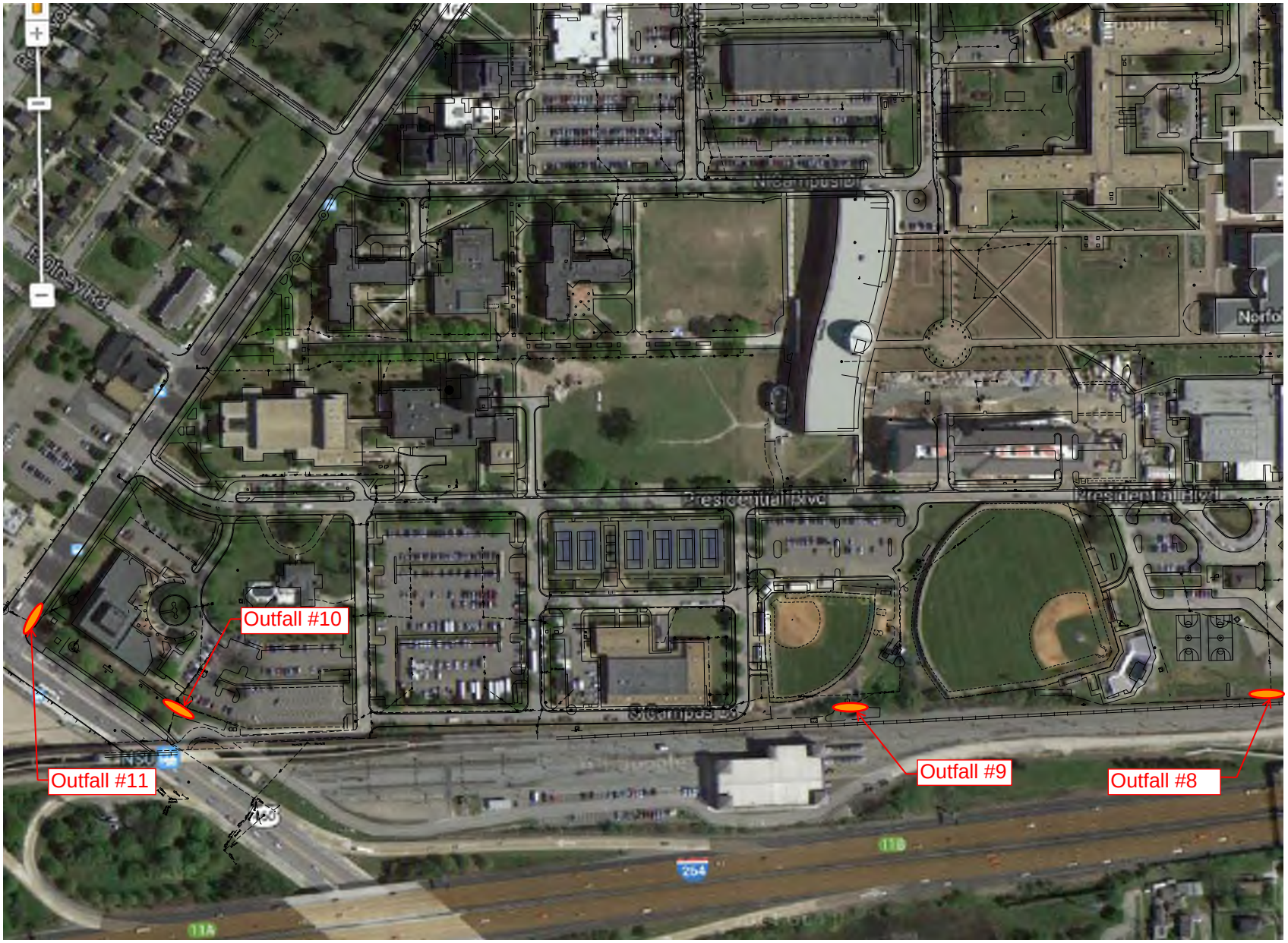
- Outfall Location Maps
- Stormwater Facility Management Database
- New Project SWPPP: Synthetic Turf Field and Residential Facility
- Land Disturbance Project Inspection Reports

Norfolk State University

Outfalls Locations

Exhibit 1

Not to Scale



Norfolk State University

Outfalls Locations

Exhibit 2

Not to Scale

Receiving Waters from all Outfalls: Eastern Branch Elizabeth River Lower.
HUC - JL54

Norfolk State University Stormwater Management Facility Database (Operator Owned)													
SWMF Unique Identifier	Type	Location (Latitude/ Longitude)	Date Implemented	Last Inspection	Quantity of Inspections Annually	Quantity of Enforcement Actions	Total Acres Treated	Pervious Acres	Impervious Acres	Receiving Waters	HUC	Receiving Waters Impaired	Applicable TMDL
Outfall 1 / Lot 10	Retention Basin	36.846428 / 76.253033	6/30/2005	9/23/2015	1		3.25	0.49	2.76	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River
Spartan Suites	Infiltration Trench	36.8501580/ 76.257531	6/30/2005	9/23/2015	1		1.71	0.34	1.37	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River
Lot 17	Detention Basin	36.850353 / 76.262378	6/30/2005	9/23/2015	1		1.08	0.22	0.86	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River
Lot 30	Detention Basin	36.850319/ 76.265239	6/30/2005	9/23/2015	1		1.54	0.64	0.9	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River
Hamm Fine Arts - North	Grassed Swale (2)	26.848036 / 76.268158	6/30/2005	9/23/2015	1		1.23	0.47	0.76	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River
Hamm Fine Arts - South	Detention Basin	26.847419 / 76.267342	6/30/2005	9/23/2015	1		0.84	0.2	0.64	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River
Lot 2 and 3	Retention Basin	36.846333 / 76.268153	6/30/2005	9/23/2015	1		0.59	0.12	0.47	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River
Student Success Center	Bio Retention	36.8486 / 76.262544	4/1/2010	9/23/2015	1		1.23	0.25	0.98	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River
Student Service Center	Underground Stormwater Detention	36.8486 / 76.26254	1/1/2014	9/23/2015	1		1.36	0.28	1.08	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River
Nursing Classroom	Grassed Swale	36.847831 / 76.264339	1/1/2014	9/23/2015	1		1.06	0.79	0.27	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River

DEPARTMENT OF ENVIRONMENTAL QUALITY
CONSTRUCTION ACTIVITY OPERATOR PERMIT FEE FORM

(Please Type or Print All Information)

Instructions: Applicants for a Construction Activity Individual Permit are required to pay permit application fees. Fees are also required for registration for coverage under a Construction Activity General Permit. Fees must be paid when applications for state permit issuance, reissuance, modification or transfer are submitted. Applications will be considered incomplete if the proper fee is not paid and will not be processed until the fee is received.

The fee schedule for state permits is included with this form. Fees for state permit issuance, reissuance, maintenance, modification and transfer are included. Once you have determined the fee for the type of application you are submitting, complete this form. The original copy of the form and your check or money order payable to **"Treasurer of Virginia"** should be mailed to:

Department of Environmental Quality
Receipts Control
P.O. Box 1104
Richmond, VA 23218

A copy of this form and a copy of your check or money order should accompany the permit application (or registration statement). You should retain a copy for your records.

Construction Activity Operator:

Name: R.A.D. Sports

Contact: James Doherty

Mailing Address: 171 VFW Drive

City: Rockland State: MA Zip: 02370 Phone: 781-871-4400 Ext.205

Email address (if available): jpd@radsports.com

Name and Location of the Construction Activity:

Name: **Norfolk State University, William Price Synthetic Turf Football Field**

City: **Norfolk** State: **VA** Zip: **23504**

County:

Type of State Permit: ☐ Construction Activity Individual Permit ☒ Construction Activity General Permit
(from Fee Schedule)

Type of Action: ☒ New Issuance ☐ Reissuance ☐ Maintenance
☐ Modification ☐ Transfer

Amount of Fee Submitted (from Fee Schedule): **$2,700.00**

Existing General Permit Registration Number (if applicable): **N/A**

FOR DEQ USE ONLY	
Date:	DC #:

CONSTRUCTION ACTIVITY PERMIT FEE SCHEDULE

A. Individual Permits. The fee for filing a state permit application for a Construction Activity Individual Permit issued by the Board is as follows: (NOTE: Individual permittees pay an annual permit maintenance fee instead of a reapplication fee. The permittee is billed separately by DEQ for the annual permit maintenance fee.)

TYPE OF STATE PERMIT	ISSUANCE
Individual Permit for Discharges from Construction Activities	$15,000

B. Registration Statements. The fee for filing a state permit application (registration statement) for coverage under a Construction Activity General Permit issued by the Board, including a state or federal agency that does not administer a project in accordance with approved annual standards and specifications, is as follows:

TYPE OF STATE PERMIT	ISSUANCE
General / Stormwater Management - Small Construction Activity/Land Clearing (Areas within common plans of development or sale with land-disturbance acreage less than one acre)	$290
General / Stormwater Management - Small Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than one acre and less than five acres)	$2,700
General / Stormwater Management - Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than five acres and less than 10 acres)	$3,400
General / Stormwater Management - Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 10 acres and less than 50 acres)	$4,500
General / Stormwater Management - Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 50 acres and less than 100 acres)	$6,100
General / Stormwater Management - Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 100 acres)	$9,600

The fee for filing a state permit application (registration statement) for coverage under a Construction Activity General Permit issued by the Board for a state or federal agency that administers a project in accordance with approved annual standards and specifications is as follows:

TYPE OF STATE PERMIT	ISSUANCE
Construction General / Stormwater Management – Phase I Land Clearing ("Large" Construction Activity – Sites or common plans of development or sale equal to or greater than 5 acres)	$750
Construction General / Stormwater Management – Phase II Land Clearing ("Small" Construction Activity – Sites or common plans of development or sale equal to or greater than 1 acre and less than 5 acres)	$450

R.A.D. SPORTS

171 VFW DRIVE
ROCKLAND, MA 02370

MOUNTAINONE BANK
NORTH ADAMS, MA 01247-3405

53-7161
2118

072869

	DATE	AMOUNT
PAY: **Treasurer of Virginia** *EXACTLY TWO THOUSAND SEVEN HUNDRED DOLLARS*	07/13/2018	*******$2,700.00

TO THE ORDER OF:
Treasurer of Virginia
Receipts Control
P.O. BOX 1104
Richmond VA 23218

⑈072869⑈ ⑆211871015⑆ 195014278⑹

R.A.D. SPORTS • ROCKLAND, MA 02370

072869

Check#: 72869 **Date: 07/13/2018** **Vendor#: 10605 Treasurer of Virginia**

Invoice#	*Job/Description*	*Balance*	*Retain*	*Discount*	*This Check*
071318	181001 William Price F	2,700.00			2,700.00

Registration Statement
General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10)

(Please Type or Print All Information)

1. **Construction Activity Operator:** *(General permit coverage will be issued to this operator. The Certification in Item #12 must be signed by the appropriate person associated with this operator.)*
   Name: R.A.D. Sports
   Contact: James Doherty
   Mailing Address: 171 VFW Drive
   City: Rockland State: MA Zip: 02370 Phone: 781-871-4400 Ext.205
   Email address (if available): jpd@radsports.com
   Indicate if DEQ may transmit general permit correspondence electronically: Yes [X] No [ ]
2. **Existing General Permit Registration Number (for renewals only):**
3. **Name and Location of the Construction Activity:**
   Name: Norfolk State University, William Price Synthetic Turf Football Field
   Address (if available): 700 Park Avenue
   City: Norfolk State: VA Zip: 23504
   County (if not located within a City):
   Latitude (decimal degrees): 36.8469725 Longitude (decimal degrees): -76.2598196
   Name and Location of all Off-site Support Activities to be covered under the general permit:
   Name:
   Address (if available):
   City: State: Zip:
   County (if not located within a City):
   Latitude (decimal degrees): Longitude (decimal degrees):
4. **Status of the Construction Activity (check only one):** Federal [ ] State [ ] Public [X] Private [ ]
5. **Nature of the Construction Activity (e.g., commercial, industrial, residential, agricultural, oil and gas, etc.):**
   Synthetic Turf Football Field
6. **Name of the Receiving Water(s) and Hydrologic Unit Code (HUC):**
   Name: Eastern Branch Elizabeth River Name:
   HUC: JA41 HUC:
7. **If the discharge is through a Municipal Separate Storm Sewer System (MS4), the name of the MS4 operator:**
   City of Norfolk
8. **Estimated Project Start and Completion Date:**
   Start Date (mm/dd/yyyy): 6/20/2018 Completion Date (mm/dd/yyyy): 8/31/2018
9. **Total Land Area of Development (to the nearest one-hundredth acre):** 2.05 acres
   Estimated Area to be Disturbed (to the nearest one-hundredth acre): 2.05 acres
10. **Is the area to be disturbed part of a larger common plan of development or sale?** Yes [ ] No [X]
11. **A stormwater pollution prevention plan (SWPPP) must be prepared in accordance with the requirements of the General VPDES Permit for Discharges of Stormwater from Construction Activities prior to submitting this Registration Statement. By signing this Registration Statement the operator is certifying that the SWPPP has been prepared.**
12. **Certification:** "I certify under penalty of law that I have read and understand this Registration Statement and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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 and imprisonment for knowing violations."
    Printed Name: James Doherty Title: Project Manager
    Signature: Date: 6/15/2018
    (Please sign in INK. This Certification must be signed by the appropriate person associated with the operator identified in Item #1.)

COMMONWEALTH OF VIRGINIA

State Water Control Board

629 East Main Street, Richmond, Virginia 23219

RESPONSIBLE LAND DISTURBER

James Patrick Doherty

CERTIFICATE NUMBER

RLD05491

EXPIRATION DATE

11/18/2019

DEQ

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Virginia Stormwater Management Program-
Stormwater Pollution Prevention Plan (SWPPP)

Norfolk State University New Residential Facility

Norfolk, Virginia

PREPARED FOR

Norfolk State University
700 Park Ave
Norfolk, VA 23504

PREPARED BY

4500 Main Street, Suite 400
Virginia Beach, VA 23462
757.490.0132

June 5, 2018

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Appendices

Appendix	Description
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D	Notice of Project Completion
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F	Record of Inspections
G	Record of Contractor Certification
H	Water Quality Protection
I	Details of Best Management Practices
J	ESC & SWM Approval Letters
K	Site Plans (11" x 17" reductions)
L	Amendment Log

1

Introduction

Plan Purpose

This Storm Water Pollution Prevention Plan (SWPPP) has been developed in accordance with the requirements of the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Construction Activities (Permit), as defined in General Permit No. VAR10 Effective Date: July 1, 2014 Expiration Date: June 30, 2019. The purpose of this SWPPP is to:

1. Identify potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the construction site, and,
2. To describe and ensure the implementation of practices that will be used to reduce pollutants in storm water discharges from the construction site and to assure compliance with the conditions of the Permit.

Implementation of the components of this SWPPP is required as a condition of the Permit (Appendix B). The Department of Environmental Quality (DEQ) has been granted authority to administer the VSMP program and is therefore the regulatory authority overseeing the implementation of this SWPPP.

Pursuant to VSMP Regulation, Section 56 (9 VAC 25-880-70), this SWPPP must meet the following requirements:

1. Minimize discharge of pollutants from equipment and vehicle washing, wheel wash water and other wash waters. Wash waters must be treated prior to discharge;
2. Minimize exposure of all materials on site to precipitation and stormwater;
3. Minimize discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures;
4. Best management practices (BMPs) to prohibit wastewater from washout of concrete mixers and equipment, unless managed by appropriate control;
5. BMPs to prohibit wastewater from washout and cleanout of equipment containing stucco, paint, form release oils, curing compounds, and other construction materials;

6. BMPs to prohibit discharges of fuels, oils or other pollutants used in vehicle/equipment operation/ maintenance;
7. BMPs to prohibit discharges of soaps or solvents used in vehicle/equipment washing;
8. Discharges from dewatering activities are prohibited unless managed by appropriate controls.

Background – Construction General Permit

In 1972, Congress passed the Federal Water Pollution Control Act (FWPCA), also known as the Clean Water Act (CWA), to restore and maintain the quality of the nation's waterways. The ultimate goal was to make sure those rivers and streams were fishable, swimmable, and drinkable. In 1987, the Water Quality Act (WQA) added provisions to the CWA that allowed the EPA to govern storm water discharges from construction sites. In 1990, the EPA promulgated rules establishing Phase I of the NPDES storm water program. Phase I addresses, among other discharges, discharges from large construction activities disturbing 5 acres or more of land. In 1998, the EPA published the final notice for General Permits for Storm Water Discharges from Construction Activities (63 Federal Register, February 14, 1998). The general permit includes provisions for development of a SWPPP to maximize the potential benefits of pollution prevention and erosion and sediment control measures at construction sites. Phase II of the NPDES storm water program covers small construction activities disturbing between 1 and 5 acres. Phase II became final on December 8, 1999 with small construction permit applications due by March 10, 2003. Specific compliance dates were to be set by the NPDES permitting authority in each State. The Virginia Department of Environmental Quality amended the General Virginia Pollution Discharge Elimination System (VPDES) Permit Regulations for Discharges of Storm Water from Construction Activities (9 VAC 25-180-10 et seq.) to conform with the EPA Phase II final rule and became effective December 4, 2002. The 2004 Virginia General Assembly passed House Bill 1177 transferring regulatory authority from the State Water Control Board to the Soil and Water Conservation Board and transferred oversight of the programs from the department of Environmental Quality to the Department of Conservation and Recreation. This transfer became effective January 29, 2005. Program oversight was transferred again from the Department of Conservation and Recreation to the Department of Environmental Quality effective July 1, 2013. The General Permit for Discharges of Stormwater from Construction Activities, in accordance with 9 VAC 25-880, is effective starting July 2014 and applies to all VSMP Permits for Discharge of Stormwater from Construction Activities issued after July 1, 2014.

The General Permit has a fixed term of 5 years from the effective date of July 1, 2014 and is required for all "Small Construction Activity" projects that will disturb 1 acre or greater and less than 5 acres of total land area, and for "Large Construction Activity" projects that disturb 5 acres or more of total land area. To obtain a Permit, operators

must submit a Registration Statement (Appendix C) prior to the commencement of construction activities (clearing, grading, or other activities that result in soil disturbance).

The Permit authorizes the discharge of storm water from construction activities until the Permit's expiration date on June 30, 2019. The Permit also authorizes certain non-storm water discharges, provided the conditions contained in the Permit (Part I D.2) are met.

To terminate coverage under the General Permit, a Notice of Termination (Appendix C) must be submitted to the DEQ within 30 days of one of the following conditions:

1. Necessary post-construction control measures included in the SWPPP for the site are in place and functioning effectively and final stabilization has been achieved on all portions of the site for which the operator is responsible;
2. Another operator has assumed control over all areas of the site that have not been finally stabilized and obtained coverage for the ongoing discharge;
3. Coverage under an alternative VPDES or State permit has been obtained; or
4. For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

Coverage under the Permit will be deemed terminated at midnight on the date the Notice of Termination is submitted.

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2

SWPPP Coordinator and Duties

SWPPP Coordinator

The construction site SWPPP coordinator for the facility is the undersigned contractor representative. The contractor will be responsible for maintenance of and compliance with the SWPPP. The SWPPP coordinator duties include the following:

- Implement the SWPPP;
- Oversee maintenance practices identified in the SWPPP;
- Implement and oversee employee training;
- Conduct or provide for inspection and monitoring activities;
- Identify other potential pollutant sources and make sure they are added to this SWPPP;
- Identify any deficiencies in this SWPPP and make sure they are corrected; and
- Ensure that any changes in construction plans are addressed in this SWPPP.
- Ensure that the SWPPP is available for review in accordance with the Plan Administration requirements in Chapter 3.
- Respond to regulatory agency requests for information about the construction site as it relates to the SWPPP and coverage under this permit.

Mr. John Johnson with SB Ballard Construction Company (phone number 757-440-5555), will be responsible for conducting inspections for quality control.

Contractor Agreement

_____	_____
Contractor Representative Name	Signature
_____	_____
Title	Date

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3

SWPPP Administration

General Information

Incorporation of Other Plans

The Norfolk State University (NSU) New Residential Facility project incorporates by reference other plans developed for this construction activity. The construction plans comply with current City requirements regarding erosion and sediment control and storm water management and comply with State regulatory requirements as presented in the *Virginia Erosion and Sediment Control Handbook, Third Edition and Virginia Stormwater Management Handbook, First Edition*. All plans incorporated by reference into this SWPPP are enforceable under the Permit.

Plan Availability

In accordance with Section II B of the Permit:

Copies of this SWPPP must be retained on site, or at another location easily accessible during normal business hours, from the date of commencement of construction activity to the date of final stabilization, along with copies of the registration statement, permit, and acknowledgement letter from the permit issuing authority.

Operators with day to day operational control over SWPPP implementation shall have a copy of the SWPPP available on site for use by all operators identified as having responsibilities to carry out provisions contained in this SWPPP. The SWPPP shall be made available to the DEQ, permit-issuing authority, and operator of the municipal separate storm sewer system (MS4) receiving discharges from the site for review at the time of an on-site inspection. If an on-site location is unavailable to store the SWPPP when no personnel are present, a sign must be posted near the main construction entrance indicating the SWPPP's location.

The Operator shall make the SWPPP and all updates available upon request to the DEQ, the permit-issuing authority, EPA, a state or local agency approving erosion and

sediment control plans, grading plans, and stormwater management plans, local government officials, or the operator of a MS4 receiving discharges from the site.

A sign must be posted near the main entrance of the construction site containing the following information:

- A copy of the permit coverage letter with the registration number for the construction activity;
- Internet address at which a copy of the SWPPP can be found or the location of the hard copy with a name and telephone number for arranging a viewing of the document.

Plan Updates

The Operator shall amend this SWPPP whenever there is a change in design, construction, operation, or maintenance of the construction site that has a significant effect on the potential for the discharge of pollutants to surface waters and that has not been addressed in the normal implementation of this SWPPP. The Operator must also update this SWPPP whenever it is found to be ineffective in meeting the requirements of the Permit.

If approval is required by the permit-issuing authority, revisions shall be made within 7 calendar days of approval. Implementation of these additional or modified control measures must be accomplished as described in Permit Section II D.3.b. Revisions to the SWPPP must be dated and signed in accordance with Permit Section III K.2, but are not required to be certified in accordance with Permit Section III K.4 The SWPPP must clearly identify the contractor(s) or subcontractor(s) that will implement and maintain each measure identified in the SWPPP. The SWPPP shall be revised to identify any new contractor that will implement a measure.

Contractor Responsibilities

The contractor shall be responsible for executing the conditions of the VSMP Permit as defined in Section III (Appendix B) of the Permit. Specifically, the contractor shall be responsible for maintaining a complete record of monitoring, field reports and investigations, notices of noncompliance, etc.

Specific Requirements

Site Description

The proposed development, the NSU New Residential Facility, is located at the northeast quadrant of the NSU campus in the city of Norfolk, Virginia. The building site is currently an existing gravel parking lot and formerly Norfolk City Hospital. The proposed project consists of two residence halls (North Hall and South Hall) each with 302 beds for a total of 604 beds and a central amenity area. The site is bound by Corprew Avenue to the north, campus parking lots and Majestic Avenue to the east, Spartan Suites Apartments to the south, and the NSU Police Building to the west.

The existing terrain of the site is relatively flat with slopes around 1-3%. Site elevations (Based on NAVD88(92)(City of Norfolk 2000), Vertical Datum) range from approximately 12.4 feet at the south end of the site to 15.7 feet in the center of the site.

The project will disturb approximately 5.6 acres. A site location map is included as Appendix A. Plans showing the proposed scope of work are included in Appendix K. The site drains to Ohio Creek which is located within the the Eastern Branch of the Elizabeth River watershed (HUC JL-54), a tributary to the even larger Chesapeake Bay watershed. The site generally drains from the center to the perimeter of the property. Runoff on the south end of the project site is collected through the campus storm drainage system. The remainder drains towards Corprew Avenue. The proposed development will decrease the impervious area of the site by more than 20% and will decrease the amount of runoff flowing overland onto Corprew Avenue.

General Project Phasing

Site development will occur in three overlapping stages:

1. Site Preparation,
2. Construction, and
3. Final grading and Stabilization.

Dates of major grading activities will be recorded on plans included in Appendix K.

Site Preparation Stage

Prior to beginning any construction activities, erosion control fencing will be installed as shown on the attached project plans. The contractor shall use existing pavement to access the site, as indicated on the plans included in Appendix K.

The erosion control barriers will be inspected and maintained routinely throughout the duration of the project. Following the installation of erosion and sedimentation controls, the site clearing and grading activities will occur. The erosion control barriers will be inspected and maintained routinely throughout the duration of the project.

Construction Stage

The proposed NSU New Residential Facility will be constructed during this phase. Prior to construction of the NSU New Residential Facility, demolition of indicated utilities, trees and shrubs, and the existing parking lot will occur. Immediately after the area has been cleared, construction will begin. Newly constructed and existing storm drain inlets will be protected with inlet protection and/or silt fence. Silt fence will also be placed around any stockpiles created from movement of extracted topsoil. All erosion and sediment control measures for the site will be constructed and maintained in accordance with current Virginia Erosion and Sedimentation Control Handbook.

Final Grading and Stabilization Stage

Final site grading and stabilization will be completed as soon as practicable to eliminate exposed soils and potential sources of erosion. Areas to be paved will be covered by bituminous pavement after final subgrades are established. All litter, as well as debris generated by construction activities, will be removed from the site and adjacent undeveloped areas.

Controls and Measures

The Permit requires the use of various types of controls and measures to control pollutants in storm water discharges from the project site. The Permit specifically requires the implementation of erosion and sediment control practices (both structural and non-structural), storm water management practices, and other specific controls to reduce pollutants. In general, controls employed in this project were selected to meet and/or exceed State and local requirements and are detailed in the referenced design plans (Appendix K). The design plans for this project contain detailed information regarding various types of controls used in this project. Table 2 summarizes where the detailed information can be found in the design plans:

Table 2: Control Measures – Included in the Design Documents

Type of Control Measure	***Plan Sheet No.***
Erosion and Sediment Control Notes and Narrative	C1.02
Erosion and Sediment Control Plan	C3.00 & C3.01
Details	C7.00

Several requirements of the Permit relating to controls (Section II D.2.d, Appendix B) are not included in the referenced design plans. A description of these required items is presented below, along with how they are addressed in this SWPPP:

a) A record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be maintained and included in Appendix E of this SWPPP.

b) If sediment escapes the construction site, off-site accumulations of sediment must be removed. Litter, construction debris, and construction chemicals shall be prevented from becoming a pollutant source in stormwater discharges. Solid materials, including building materials, garbage, and debris shall be cleaned up daily. If appropriate, a description of construction and waste materials to be stored onsite shall be added to this SWPPP. Descriptions of pollution from areas other than those designated construction will also be included. Onsite containers will be provided for collection of waste materials, debris, and rubbish. The Contractor will prevent the accumulation of wastes, which create hazardous conditions. Solid waste materials removed from the site shall be transported in a manner that will prevent spillage and legally disposed of at public or private waste disposal facilities. Volatile wastes will be stored in covered metal containers and removed from the premises daily. The disposal of volatile wastes in storm or sanitary drains is prohibited.

c) Certain materials stored and/or used onsite that must be controlled to prevent discharge to surface waters. The Contractor will store apparatus, materials, supplies and equipment in an orderly fashion. Materials will be stored and protected in accordance with the manufacturer's recommendations and requirements of the project specifications. The Contractor will completely remove temporary materials and equipment when their use is no longer required.

d) Other potential pollution sources such as the storage of fertilizers or chemicals; vehicle fueling, sanitary waste facilities, etc. will be managed in a manner consistent with local and state regulations. **Fertilizers shall be applied in accordance with manufacturer's recommendations, the landscape specifications, or an approved nutrient management plan and shall not be applied during rainfall events.** Any refueling and storage of hazardous materials, chemicals, fuels, and lubricant oil will be conducted in flat open areas to reduce the risk of spillage. Portable lavatories that are to be located on-site

will be serviced on a regular basis by a contractor. They are to be located in upland areas away from direct contact with surface waters.

e) Inspections shall be held **every 10 business days and no later than 48 hours following a measurable storm event.** These inspections shall be conducted by "qualified personnel". The inspection report should encompass the requirements detailed in Section II.D.4.e.

In addition, Appendix I includes all Erosion and sediment control measures as detailed in the *Virginia Erosion and Sediment Control Handbook, Third Edition* as well as an additional measure for a concrete washout area. The contractor is responsible for recording all potential pollutants associated with construction activities and must submit the record to the owner for review and approval prior to proceeding with construction activities. This record is included in Appendix H: Water Quality Protection. Minimum Erosion and Sediment Control Measures are indicated on the site plans (Appendix K) and may include but are not limited to the following measures:

- Silt fencing
- Tree protection
- Construction site entrance
- Concrete washout area
- Dust control
- Dewatering methods
- Safety fence
- Straw bales
- Storm Drain inlet protection
- Topsoiling
- Temporary and permanent seeding
- Soil stabilization blanket matting

Soil stabilization shall be applied to denuded areas within 7 days after final grade is reached.

Maintenance

Maintenance of temporary and permanent erosion and sediment control facilities shall be carried out in accordance with Section 1.7 of the Virginia Erosion and Sediment Control Regulations (VR 625-02-00, Ref. 1) and Section II D.3 of the Permit (Appendix B). During the period that the project site is under construction, the contractor will be responsible for maintenance of the temporary erosion and sediment control facilities. The site contractor shall inspect the erosion and sediment control facilities on a regular basis, especially after periods of rainfall, and repair any damage immediately. Furthermore, a readily available supply of erosion and sediment control materials will be maintained by the contractor at all times. Detailed descriptions of the maintenance procedures are contained in the project design plans and are incorporated in this SWPPP by reference.

Inspections

The SWPPP Coordinator shall appoint appropriate personnel, who are familiar with all aspects of this SWPPP and the employed control practices, to perform regular inspections of the construction site. Inspections shall include review of all disturbed

areas, structural and non-structural control measures, material storage areas, and vehicular access points. **Inspections are to be performed at least once every 10 business days and within 48 hours after any rainfall event producing more than 0.25"** of rain in a 24 hour period. Areas that already have been stabilized or where runoff is unlikely due to frozen or snow covered ground shall be inspected at least on a monthly basis.

Inspections are intended to identify areas where the pollutant control measures at the site are ineffective and are allowing pollutants to enter surface waters. Receiving waters shall be inspected to ascertain whether control measures are effective in preventing significant impacts. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

If as a result of the inspection, the site conditions and/or control measures are found to have changed, this SWPPP shall be updated within a period of 7 calendar days. If control measures need to be modified to assure effectiveness or if additional measures are determined necessary, implementation shall be completed prior to the next anticipated storm event or as soon as practicable.

A report summarizing the inspections and the subsequent maintenance activities must be completed and maintained as part of this SWPPP. The inspection forms are included in Appendix F. Required elements include major observations (including information on control measure performance and incidents of non-compliance), and information on the inspecting personnel. If an inspection does not identify any incidents or non-compliance, then the certification statement contained in the inspection form will apply.

Spill Prevention and Response Plan

Vehicles and equipment will be maintained off-site. All vehicles and equipment including subcontractor vehicles will be checked for leaking oil and fluids. Vehicles leaking fluids will not be allowed on-site. Drip pans will be placed under all vehicles and equipment that are parked overnight. Hazardous materials will be stored in accordance with local and federal regulations. Spill kits will be within the materials storage area and concrete washout areas. All spills will be cleaned up immediately upon discovery. Spent absorbent materials and rags will be hauled off-site immediately after the spill is cleaned up for disposal. Spills large enough to discharge to surface water will be reported to NSU. Material safety data sheets, a material inventory, and emergency contact information will be maintained at the on-site project trailer.

These spill prevention measures will be implemented once construction begins on-site. All personnel will be instructed, during tailgate training sessions, regarding the correct procedures for spill prevention and control. Notices that state these practices will be

posted in the office trailer, and the individual who manages day-to-day site operations will be responsible for seeing that these procedures are followed.

Concrete Washdown Areas

A designated temporary above-ground concrete washdown area will be constructed at the location approved by the Contractor and NSU inspector. Volume shall be sufficient to contain all liquid and concrete waste generated by washout operations. The washout area shall be lined with plastic sheeting at least 10 mils thick and free of holes and tears. Signs will be posted marking the location of the washout area to ensure that concrete equipment operators use the proper facility.

Concrete pours will not be conducted during or before an anticipated storm event. All excess concrete and concrete washout slurries from the concrete mixer trucks and chutes will be discharged to the washout area or hauled off-site for disposal. When the temporary washout area is no longer needed for the project, the hardened concrete and materials used to construct the areas will be removed and disposed of in accordance with local and federal regulations. Washout areas shall then be backfilled, graded, and stabilized with erosion control measures.

Portable Bathrooms

Portable bathrooms are to be located away from streets, gutters, waterways, and storm drains. Secondary containment techniques such as dikes, berms, curbing, or other containment methods shall be implemented to prevent spills from spreading and to protect groundwater and down grade storm inlets.

Storage/Staging and Waste Management Areas

Fuel containers are to be double-walled. The staging area for this project is to be located as indicated on the site logistics plan with appropriate erosion and sedimentation control measures for protection along the perimeter. Paints, solvents, pesticides, fuels, oils, other hazardous materials, or building materials that have the potential to contaminate stormwater shall be stored indoors or have a cover provided for them. Secondary containment techniques such as dikes, berms, curbing, or other containment methods should be in place to prevent spills from spreading and to protect groundwater and down grade storm inlets.

Dumpsters shall be located away from streets, gutters, waterways, and storm drains. They should be covered to prevent precipitation from entering container. Liquids are

not to be disposed of in dumpsters. Locations of the proposed dumpsters and liquid disposal areas will be coordinated between the contractor and the NSU inspector and shown on an exhibit. A copy of the exhibit shall be incorporated into the SWPPP.

Non-Storm Water Discharges

All discharges for this Site will be comprised entirely of storm water associated with construction activity. At this time, non-storm water discharges are not part of this project. The contractor shall be responsible for notifying the DEQ of any non-storm water discharges other than those authorized in Section 1, D.2. In the event that non-storm water discharges become part of the project, the SWPPP may be updated.

Water Quality Protection

The permittee must select, install, implement and maintain best management practices (BMPs) at the construction site that minimize pollutants in the discharge as necessary to meet applicable water quality standards, as presented in Section 1 H of the permit (Appendix B).

Post-Construction Stormwater Management Measures

No post-construction BMPs for water quantity and quality control are proposed with this project. Water quality and water quantity requirements are met with reductions in impervious area.

Nutrient Offset Credits

Nutrient offset credits will not be obtained for this site.

Total Maximum Daily Load (TMDL)

The project does not discharge directly to a waterbody with an approved Total Maximum Daily Load (TMDL). It should be noted that the Elizabeth River is listed on the 2016 Impaired Waters- 303(d) list as needing a total maximum daily load study with TMDL. The Impaired Waters list describes multiple impairment groups for the Elizabeth River. Aquatic life-dissolved oxygen, open-water aquatic life-dissolved oxygen, Enterococcus, and Estuarine Bioassessments are listed as a few of the water body's impairments. This water body is listed as a Category 5 and 4 water body.

Contractor Certification

All contractors and/or sub-contractors who have responsibility for implementing and maintaining the controls identified in this SWPPP must sign the certification statement contained in Appendix G. The person signing the certification must meet the signatory requirements, as presented in Permit Section III K (Appendix B). The certifications must be maintained as part of this SWPPP.

References

Virginia Erosion and Sediment Control Handbook. Third Edition. Virginia Department of Conservation and Recreation, 1992.

Site Plans titled Norfolk State University New Residential Facility, dated June 1, 2018 prepared by VHB.

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Construction Operators' Cooperative Agreement

The cooperative agreement describes stormwater responsibilities for NSU and its undersigned contractor (Contractor) regarding the NSU New Residential Facility. The construction operators below agree to abide by the following condition throughout the duration of the project, effective the date of signature.

This project is subject to the Virginia Stormwater Management Program (VSMP) General Permit for Storm Water Discharges Associated with Industrial Activity (Permit), as defined in General Permit No. VAR10 Effective Date: July 1, 2014 Expiration Date: June 30, 2019. The goal of this permit is to prevent the discharge of pollutants associated with construction activity from entering the storm drain system or surface waters. Vanasse Hangen Brustlin, Inc. has developed a SWPPP for the NSU New Residential Facility project and the SWPPP has been reviewed by NSU (owner) and the City of Norfolk. The SWPPP is available for review at the construction site.

Owner Responsibilities:

- Complete periodic inspections of construction activities
- Be involved with any changes in the SWPPP

Contractor Responsibilities:

- Maintain SWPPP documentation
- Conduct and document inspections on a weekly basis and within 24 hours of the end of a storm event
- Provide copies of the inspection reports to owner within 24 hours of each inspection. Any non-compliances must be immediately reported to owner
- Maintain compliance with applicable section of the SWPPP, including installation of erosion and sediment controls. Any BMP changes that will require a change to the SWPPP must be communicated immediately to owner.
- Maintain erosion and sediment control BMPs in all areas of the site under its day-to-day control.
- (If applicable) Provide adequately designated concrete washout areas throughout the construction project and properly dispose of the concrete, mortar, grout, or other construction materials collected here.

- Maintain the cleanliness of the streets and storm drain inlet protection BMPs throughout the construction project. Sweep streets as needed, especially before rain events. Inspect and replace storm drain inlet protection BMPs as necessary.
- Maintain a clean site. Trash and debris must be picked up and properly disposed of daily.
- Each operator is responsible for advising employees and subcontractors working on this project of the requirements of the SWPPP. Particulate emphasis will be placed on ensuring employees and subcontractors do not damage BMPs and do not introduce pollutants into the storm drain system. All personnel working on-site should have stormwater training.

Agreement

The undersigned agree to abide by the terms and conditions of this cooperative agreement as described above.

Owner

Operator Name	Signature
Title	Date

Contractor

Operator Name	Signature
Title	Date

Delegation of Authority

In accordance with the General VPDES Permit for Discharges of Stormwater from Construction Activities, the individuals or positions with delegated authority to sign inspection reports and/or amend this SWPPP must be identified. If the individual or position identified on the Title Sheet of the SWPPP changes or additional individuals or positions are given this responsibility after the preconstruction meeting occurs, the changes/additions must be noted below.

Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the VPDES "General Permit for Storm Water Discharges Associated with Construction Activity" (General Permit), at the

NSU New Residential Facility construction site.

Owner Signature: _____

Name of Operator: _____

Company: _____

Phone Number: _____

Owner Certification

"I acknowledge under the penalty of law that this document and all attachments were prepared on my behalf in accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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 and imprisonment for knowing violations."

Company: _____

Address: _____

Phone: _____

Name: _____
Printed Title

Signature: _____

Date: _____

Appendix A
Site Location Map

Vanasse Hangen Brustlin, Inc.

Figure 1: Site Location Map

Appendix B
Stormwater General Permit

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

General Permit No.: VAR10

Effective Date: July 1, 2014

Expiration Date: June 30, 2019

GENERAL VPDES PERMIT FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITIES

AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA STORMWATER MANAGEMENT PROGRAM AND THE VIRGINIA STORMWATER MANAGEMENT ACT

In compliance with the provisions of the Clean Water Act, as amended, and pursuant to the Virginia Stormwater Management Act and regulations adopted pursuant thereto, operators of construction activities are authorized to discharge to surface waters within the boundaries of the Commonwealth of Virginia, except those specifically named in State Water Control Board regulations that prohibit such discharges.

The authorized discharge shall be in accordance with this cover page, Part I - Discharge Authorization and Special Conditions, Part II - Stormwater Pollution Prevention Plan, and Part III - Conditions Applicable to All VPDES Permits as set forth herein.

PART I

DISCHARGE AUTHORIZATION AND SPECIAL CONDITIONS

A. Coverage under this general permit.

1. During the period beginning with the date of coverage under this general permit and lasting until the general permit's expiration date, the operator is authorized to discharge stormwater from construction activities.

2. This general permit also authorizes stormwater discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) located on-site or off-site provided that:

   a. The support activity is directly related to the construction activity that is required to have general permit coverage for discharges of stormwater from construction activities;

   b. The support activity is not a commercial operation, nor does it serve multiple unrelated construction activities by different operators;

   c. The support activity does not operate beyond the completion of the last construction activity it supports;

   d. The support activity is identified in the registration statement at the time of general permit coverage;

   e. Appropriate control measures are identified in a stormwater pollution prevention plan and implemented to address the discharges from the support activity areas; and

   f. All applicable state, federal, and local approvals are obtained for the support activity.

B. Limitations on coverage.

1. Post-construction discharges. This general permit does not authorize stormwater discharges that originate from the site after construction activities have been completed and the site, including any support activity sites covered under the general permit registration, has undergone final stabilization. Post-construction industrial stormwater discharges may need to be covered by a separate VPDES permit.

2. Discharges mixed with nonstormwater. This general permit does not authorize discharges that are mixed with sources of nonstormwater, other than those discharges that are identified in Part I E (Authorized nonstormwater discharges) and are in compliance with this general permit.

3. Discharges covered by another state permit. This general permit does not authorize discharges of stormwater from construction activities that have been covered under an individual permit or required to obtain coverage under an alternative general permit.

4. Impaired waters and TMDL limitation. Discharges of stormwater from construction activities to surface waters identified as impaired in the 2012 § 305(b)/303(d) Water Quality Assessment Integrated Report or for which a TMDL wasteload allocation has been established and approved prior to the term of this general permit for (i) sediment or a sediment-related parameter (i.e., total suspended solids or turbidity) or (ii) nutrients (i.e., nitrogen or phosphorus) are not eligible for coverage under this general permit unless the operator develops, implements, and maintains a SWPPP that minimizes the pollutants of concern and, when applicable, is consistent with the assumptions and requirements of the approved TMDL wasteload allocations. In addition, the operator shall implement the following items:

a. The impaired water(s), approved TMDL(s), and pollutant(s) of concern, when applicable, shall be identified in the SWPPP;

b. 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;

c. Nutrients shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and

d. The applicable SWPPP inspection requirements specified in Part II F 2 shall be amended as follows:

(1) Inspections shall be conducted at a frequency of (i) at least once every four business days or (ii) at least once every five business days and no later than 48 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 48 hours between business days, the inspection shall be conducted on the next business day; and

(2) Representative inspections used by utility line installation, pipeline construction, or other similar linear construction activities shall inspect all outfalls discharging to surface waters identified as impaired or for which a TMDL wasteload allocation has been established and approved prior to the term of this general permit.

5. Exceptional waters limitation. Discharges of stormwater from construction activities not previously covered under the general permit issued in 2009 to exceptional waters identified in 9VAC25-260-30 A 3 c are not eligible for coverage under this general permit unless the operator implements the following:

a. The exceptional water(s) shall be identified in the SWPPP;

b. 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;

c. Nutrients shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and

d. The applicable SWPPP inspection requirements specified in Part II F 2 shall be amended as follows:

(1) Inspections shall be conducted at a frequency of (i) at least once every four business days or (ii) at least once every five business days and no later than 48 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 48 hours between business days, the inspection shall be conducted on the next business day; and

(2) Representative inspections used by utility line installation, pipeline construction, or other similar linear construction activities shall inspect all outfalls discharging to exceptional waters.

6. There shall be no discharge of floating solids or visible foam in other than trace amounts.

C. Commingled discharges. Discharges authorized by this general permit may be commingled with other sources of stormwater that are not required to be covered under a state permit, so long as the commingled discharge is in compliance with this general permit. Discharges authorized by a separate state or VPDES permit may be commingled with discharges authorized by this general permit so long as all such discharges comply with all applicable state and VPDES permit requirements.

D. Prohibition of nonstormwater discharges. Except as provided in Parts I A 2, I C, and I E, all discharges covered by this general permit shall be composed entirely of stormwater associated with construction activities. All other discharges including the following are prohibited:

1. Wastewater from washout of concrete;

2. Wastewater from the washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;

3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;

4. Oils, toxic substances, or hazardous substances from spills or other releases; and

5. Soaps, solvents, or detergents used in equipment and vehicle washing.

E. Authorized nonstormwater discharges. The following nonstormwater discharges from construction activities are authorized by this general permit when discharged in compliance with this general permit:

1. Discharges from firefighting activities;

2. Fire hydrant flushings;

3. Waters used to wash vehicles or equipment where soaps, solvents, or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge;

4. Water used to control dust that has been filtered, settled, or similarly treated prior to discharge;

5. Potable water sources, including uncontaminated waterline flushings;

6. Routine external building wash down where soaps, solvents or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge;

7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (or where all spilled or leaked material has been removed prior to washing); where soaps, solvents, or detergents have not been used; and where the wash water has been filtered, settled, or similarly treated prior to discharge;

8. Uncontaminated air conditioning or compressor condensate;

9. Uncontaminated ground water or spring water;

10. Foundation or footing drains where flows are not contaminated with process materials such as solvents;

11. Uncontaminated excavation dewatering, including dewatering of trenches and excavations that have been filtered, settled, or similarly treated prior to discharge; and

12. Landscape irrigation.

F. Termination of general permit coverage.

1. The operator of the construction activity shall submit a notice of termination in accordance with 9VAC25-880-60 to the VSMP authority after one or more of the following conditions have been met:

a. Necessary permanent control measures included in the SWPPP for the site are in place and functioning effectively and final stabilization has been achieved on all portions of the site for which the operator is responsible. When applicable, long term responsibility and maintenance requirements shall be recorded in the local land records prior to the submission of a notice of termination;

b. Another operator has assumed control over all areas of the site that have not been finally stabilized and obtained coverage for the ongoing discharge;

c. Coverage under an alternative VPDES or state permit has been obtained; or

d. For residential construction only, temporary soil stabilization has been completed and the residence has been transferred to the homeowner.

2. The notice of termination should be submitted no later than 30 days after one of the above conditions in subdivision 1 of this subsection is met. Authorization to discharge terminates at midnight on the date that the notice of termination is submitted for the conditions set forth in subdivisions 1 b through 1 d of this subsection. Termination of authorizations to discharge for the conditions set forth in subdivision 1 a of this subsection shall be effective upon notification from the department that the provisions of subdivision 1 a of this subsection have been met or 60 days after submittal of the notice of termination, whichever occurs first.

3. The notice of termination shall be signed in accordance with Part III K of this general permit.

G. Water quality protection.

1. The operator must select, install, implement and maintain control measures as identified in the SWPPP at the construction site that minimize pollutants in the discharge as necessary to ensure that the operator's discharge does not cause or contribute to an excursion above any applicable water quality standard.

2. If it is determined by the department that the operator's discharges are causing, have reasonable potential to cause, or are contributing to an excursion above any applicable water quality standard, the department, in consultation with the VSMP authority, may take appropriate enforcement action and require the operator to:

a. Modify or implement additional control measures in accordance with Part II B to adequately address the identified water quality concerns;

b. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or

c. Submit an individual permit application in accordance with 9VAC25-870-410 B 3.

All written responses required under this chapter must include a signed certification consistent with Part III K.

PART II

STORMWATER POLLUTION PREVENTION PLAN

A stormwater pollution prevention plan (SWPPP) shall be developed prior to the submission of a registration statement and implemented for the construction activity, including any support activity, covered by this general permit. SWPPPs shall be prepared in accordance with good engineering practices. Construction activities that are part of a larger common plan of development or sale and disturb less than one acre may utilize a SWPPP template provided by the department and need not provide a separate stormwater management plan if one has been prepared and implemented for the larger common plan of development or sale.

The SWPPP requirements of this general permit may be fulfilled by incorporating by reference other plans such as a spill prevention control and countermeasure (SPCC) plan developed for the site under § 311 of the federal Clean Water Act or best management practices (BMP) programs otherwise required for the facility provided that the incorporated plan meets or exceeds the SWPPP requirements of Part II A. All plans incorporated by reference into the SWPPP become enforceable under this general permit. If a plan incorporated by reference does not contain all of the required elements of the SWPPP, the operator must develop the missing elements and include them in the SWPPP.

Any operator that was authorized to discharge under the general permit issued in 2009, and that intends to continue coverage under this general permit, shall update its stormwater pollution prevention plan to comply with the requirements of this general permit no later than 60 days after the date of coverage under this general permit.

A. Stormwater pollution prevention plan contents. The SWPPP shall include the following items:

1. General information.

    a. A signed copy of the registration statement, if required, for coverage under the general VPDES permit for discharges of stormwater from construction activities;

    b. Upon receipt, a copy of the notice of coverage under the general VPDES permit for discharges of stormwater from construction activities (i.e., notice of coverage letter);

    c. Upon receipt, a copy of the general VPDES permit for discharges of stormwater from construction activities;

    d. A narrative description of the nature of the construction activity, including the function of the project (e.g., low density residential, shopping mall, highway, etc.);

    e. A legible site plan identifying:

        (1) Directions of stormwater flow and approximate slopes anticipated after major grading activities;

        (2) Limits of land disturbance including steep slopes and natural buffers around surface waters that will not be disturbed;

        (3) Locations of major structural and nonstructural control measures, including sediment basins and traps, perimeter dikes, sediment barriers, and other measures intended to filter, settle, or similarly treat sediment, that will be installed between disturbed areas and the undisturbed vegetated areas in order to increase sediment removal and maximize stormwater infiltration;

        (4) Locations of surface waters;

(5) Locations where concentrated stormwater is discharged;

(6) Locations of support activities, when applicable and when required by the VSMP authority, including but not limited to (i) areas where equipment and vehicle washing, wheel wash water, and other wash water is to occur; (ii) storage areas for chemicals such as acids, fuels, fertilizers, and other lawn care chemicals; (iii) concrete wash out areas; (iv) vehicle fueling and maintenance areas; (v) sanitary waste facilities, including those temporarily placed on the construction site; and (vi) construction waste storage; and

(7) When applicable, the location of the on-site rain gauge or the methodology established in consultation with the VSMP authority used to identify measurable storm events for inspection purposes.

2. Erosion and sediment control plan.

a. An erosion and sediment control plan approved by the VESCP authority as authorized under the Erosion and Sediment Control Regulations (9VAC25-840), an "agreement in lieu of a plan" as defined in 9VAC25-840-10 from the VESCP authority, or an erosion and sediment control plan prepared in accordance with annual standards and specifications approved by the department. Any operator proposing a new stormwater discharge from construction activities that is not required to obtain erosion and sediment control plan approval from a VESCP authority or does not adopt department-approved annual standards and specifications shall submit the erosion and sediment control plan to the department for review and approval.

b. All erosion and sediment control plans shall include a statement describing the maintenance responsibilities required for the erosion and sediment controls used.

c. A properly implemented approved erosion and sediment control plan, "agreement in lieu of a plan," or erosion and sediment control plan prepared in accordance with department-approved annual standards and specifications, adequately:

(1) Controls the volume and velocity of stormwater runoff within the site to minimize soil erosion;

(2) Controls stormwater discharges, including peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion;

(3) Minimizes the amount of soil exposed during the construction activity;

(4) Minimizes the disturbance of steep slopes;

(5) Minimizes sediment discharges from the site in a manner that addresses (i) the amount, frequency, intensity, and duration of precipitation; (ii) the nature of resulting stormwater runoff; and (iii) soil characteristics, including the range of soil particle sizes present on the site;

(6) Provides and maintains natural buffers around surface waters, directs stormwater to vegetated areas to increase sediment removal, and maximizes stormwater infiltration, unless infeasible;

(7) Minimizes soil compaction and, unless infeasible, preserves topsoil;

(8) Ensures that stabilization of disturbed areas will be initiated immediately whenever any clearing, grading, excavating, or other land-disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 days; and

(9) Utilizes outlet structures that withdraw stormwater from the surface (i.e., above the permanent pool or wet storage water surface elevation), unless infeasible, when discharging from sediment basins or sediment traps.

3. Stormwater management plan.

a. New construction activities. A stormwater management plan approved by the VSMP authority as authorized under the Virginia Stormwater Management Program (VSMP) Regulation (9VAC25-870), or an "agreement in lieu of a stormwater management plan" as defined in 9VAC25-870-10 from the VSMP authority, or a stormwater management plan prepared in accordance with annual standards and specifications approved by the department. Any operator proposing a new stormwater discharge from construction activities that is not required to obtain stormwater management plan approval from a VSMP authority or does not adopt department-approved annual standards and specifications shall submit the stormwater management plan to the department for review and approval.

b. Existing construction activities. Any operator that was authorized to discharge under the general permit issued in 2009, and that intends to continue coverage under this general permit, shall ensure compliance with the requirements of 9VAC25-870-93 through 9VAC25-870-99 of the VSMP Regulation, including but not limited to the water quality and quantity requirements. The SWPPP shall include a description of, and all necessary calculations supporting, all post-construction stormwater management measures that will be installed prior to the completion of the construction process to control pollutants in stormwater discharges after construction operations have been completed. Structural measures should be placed on upland soils to the degree possible. Such measures must be designed and installed in accordance with applicable VESCP authority, VSMP authority, state, and federal requirements, and any necessary permits must be obtained.

4. Pollution prevention plan. A pollution prevention plan that addresses potential pollutant-generating activities that may reasonably be expected to affect the quality of stormwater discharges from the construction activity, including any support activity. The pollution prevention plan shall:

a. Identify the potential pollutant-generating activities and the pollutant that is expected to be exposed to stormwater;

b. Describe the location where the potential pollutant-generating activities will occur, or if identified on the site plan, reference the site plan;

c. Identify all nonstormwater discharges, as authorized in Part I E of this general permit, that are or will be commingled with stormwater discharges from the construction activity, including any applicable support activity;

d. Identify the person responsible for implementing the pollution prevention practice or practices for each pollutant-generating activity (if other than the person listed as the qualified personnel);

e. Describe the pollution prevention practices and procedures that will be implemented to:

(1) Prevent and respond to leaks, spills, and other releases including (i) procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases; and (ii) procedures for reporting leaks, spills, and other releases in accordance with Part III G;

(2) Prevent the discharge of spilled and leaked fuels and chemicals from vehicle fueling and maintenance activities (e.g., providing secondary containment such as spill berms, decks, spill containment pallets, providing cover where appropriate, and having spill kits readily available);

(3) Prevent the discharge of soaps, solvents, detergents, and wash water from construction materials, including the clean-up of stucco, paint, form release oils, and curing compounds (e.g., providing (i) cover (e.g., plastic sheeting or temporary roofs) to prevent contact with stormwater; (ii) collection and proper disposal in a manner to prevent contact with stormwater; and (iii) a similarly effective means designed to prevent discharge of these pollutants);

(4) Minimize the discharge of pollutants from vehicle and equipment washing, wheel wash water, and other types of washing (e.g., locating activities away from surface waters and stormwater inlets or conveyance and directing wash waters to sediment basins or traps, using filtration devices such as filter bags or sand filters, or using similarly effective controls);

(5) Direct concrete wash water into a leak-proof container or leak-proof settling basin. The container or basin shall be designed so that no overflows can occur due to inadequate sizing or precipitation. Hardened concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wastes. Liquid concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wash waters and shall not be discharged to surface waters;

(6) Minimize the discharge of pollutants from storage, handling, and disposal of construction products, materials, and wastes including (i) building products such as asphalt sealants, copper flashing, roofing materials, adhesives, and concrete admixtures; (ii) pesticides, herbicides, insecticides, fertilizers, and landscape materials; and (iii) construction and domestic wastes such as packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, Styrofoam, concrete, and other trash or building materials;

(7) Prevent the discharge of fuels, oils, and other petroleum products, hazardous or toxic wastes, and sanitary wastes; and

(8) Address any other discharge from the potential pollutant-generating activities not addressed above; and

f. Describe procedures for providing pollution prevention awareness of all applicable wastes, including any wash water, disposal practices, and applicable disposal locations of such wastes, to personnel in order to comply with the conditions of this general permit. The operator shall implement the procedures described in the SWPPP.

5. SWPPP requirements for discharges to impaired waters, surface waters with an applicable TMDL wasteload allocation established and approved prior to the term of this general permit, and exceptional waters. The SWPPP shall:

a. Identify the impaired water(s), approved TMDL(s), pollutant(s) of concern, and exceptional waters identified in 9VAC25-260-30 A 3 c, when applicable;

b. Provide clear direction that:

(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;

(2) Nutrients shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and

(3) A modified inspection schedule shall be implemented in accordance with Part I B 4 or Part I B 5.

6. Qualified personnel. The name, phone number, and qualifications of the qualified personnel conducting inspections required by this general permit.

7. Delegation of authority. The individuals or positions with delegated authority, in accordance with Part III K, to sign inspection reports or modify the SWPPP.

8. SWPPP signature. The SWPPP shall be signed and dated in accordance with Part III K.

B. SWPPP amendments, modification, and updates.

1. The operator shall amend the SWPPP whenever there is a change in the design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants to surface waters and that has not been previously addressed in the SWPPP.

2. The SWPPP must be amended if, during inspections or investigations by the operator's qualified personnel, or by local, state, or federal officials, it is determined that the existing control measures are ineffective in minimizing pollutants in discharges from the construction activity. Revisions to the SWPPP shall include additional or modified control measures designed and implemented to correct problems identified. If approval by the VESCP authority, VSMP authority, or department is necessary for the control measure, revisions to the SWPPP shall be completed no later than seven calendar days following approval. Implementation of these additional or modified control measures must be accomplished as described in Part II G.

3. The SWPPP must clearly identify the contractor(s) that will implement and maintain each control measure identified in the SWPPP. The SWPPP shall be amended to identify any new contractor that will implement and maintain a control measure.

4. The operator shall update the SWPPP no later than seven days following any modification to its implementation. All modifications or updates to the SWPPP shall be noted and shall include the following items:

    a. A record of dates when:

        (1) Major grading activities occur;

        (2) Construction activities temporarily or permanently cease on a portion of the site; and

        (3) Stabilization measures are initiated;

    b. Documentation of replaced or modified controls where periodic inspections or other information have indicated that the controls have been used inappropriately or incorrectly and where modified as soon as possible;

    c. Areas that have reached final stabilization and where no further SWPPP or inspection requirements apply;

    d. All properties that are no longer under the legal control of the operator and the dates on which the operator no longer had legal control over each property;

    e. The date of any prohibited discharges, the discharge volume released, and what actions were taken to minimize the impact of the release;

    f. Measures taken to prevent the reoccurrence of any prohibited discharge; and

    g. Measures taken to address any evidence identified as a result of an inspection required under Part II F.

5. Amendments, modifications, or updates to the SWPPP shall be signed in accordance with Part III K.

C. Public Notification. Upon commencement of land disturbance, the operator shall post conspicuously a copy of the notice of coverage letter near the main entrance of the construction activity. For linear projects, the operator shall post the notice of coverage letter at a publicly accessible location near an active part of the construction project (e.g., where a pipeline crosses a public road). The operator shall maintain the posted information until termination of general permit coverage as specified in Part I F.

D. SWPPP availability.

1. Operators with day-to-day operational control over SWPPP implementation shall have a copy of the SWPPP available at a central location on-site for use by those identified as having responsibilities under the SWPPP whenever they are on the construction site.

2. The operator shall make the SWPPP and all amendments, modifications, and updates available upon request to the department, the VSMP authority, the EPA, the VESCP authority, local government officials, or the operator of a municipal separate storm sewer system receiving discharges from the construction activity. If an on-site location is unavailable to store the SWPPP when no personnel are present, notice of the SWPPP's location must be posted near the main entrance of the construction site.

3. The operator shall make the SWPPP available for public review in an electronic format or in hard copy. Information for public access to the SWPPP shall be posted and maintained in accordance with Part II C. If not provided electronically, public access to the SWPPP may be arranged upon request at a time and at a publicly accessible location convenient to the operator or his designee but shall be no less than once per month and shall be during normal business hours. Information not required to be contained within the SWPPP by this general permit is not required to be released.

E. SWPPP implementation. The operator shall implement the SWPPP and subsequent amendments, modifications, and updates from commencement of land disturbance until termination of general permit coverage as specified in Part I F.

1. All control measures must be properly maintained in effective operating condition in accordance with good engineering practices and, where applicable, manufacturer specifications. If a site inspection required by Part II F identifies a control measure that is not operating effectively, corrective action(s) shall be completed as soon as practicable, but no later than seven days after discovery or a longer period as established by the VSMP authority, to maintain the continued effectiveness of the control measures.

2. If site inspections required by Part II F identify an existing control measure that needs to be modified or if an additional control measure is necessary for any reason, implementation shall be completed prior to the next anticipated measurable storm event. If implementation prior to the next anticipated measurable storm event is impracticable, then alternative control measures shall be implemented as soon as practicable, but no later than seven days after discovery or a longer period as established by the VSMP authority.

F. SWPPP Inspections.

1. Personnel responsible for on-site and off-site inspections. Inspections required by this general permit shall be conducted by the qualified personnel identified by the operator in the SWPPP. The operator is responsible for insuring that the qualified personnel conduct the inspection.

2. Inspection schedule.

    a. Inspections shall be conducted at a frequency of:

(1) At least once every five business days; or

(2) At least once every 10 business days and no later than 48 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 48 hours between business days, the inspection shall be conducted no later than the next business day.

b. Where areas have been temporarily stabilized or land-disturbing activities will be suspended due to continuous frozen ground conditions and stormwater discharges are unlikely, the inspection frequency may be reduced to once per month. If weather conditions (such as above freezing temperatures or rain or snow events) make discharges likely, the operator shall immediately resume the regular inspection frequency.

c. Representative inspections may be utilized for utility line installation, pipeline construction, or other similar linear construction activities provided that:

(1) Temporary or permanent soil stabilization has been installed and vehicle access may compromise the temporary or permanent soil stabilization and potentially cause additional land disturbance increasing the potential for erosion;

(2) Inspections occur on the same frequency as other construction activities;

(3) Control measures are inspected along the construction site 0.25 miles above and below each access point (i.e., where a roadway, undisturbed right-of-way, or other similar feature intersects the construction activity and access does not compromise temporary or permanent soil stabilization); and

(4) Inspection locations are provided in the report required by Part II F.

3. Inspection requirements.

a. As part of the inspection, the qualified personnel shall:

(1) Record the date and time of the inspection and when applicable the date and rainfall amount of the last measurable storm event;

(2) Record the information and a description of any discharges occurring at the time of the inspection;

(3) Record any land-disturbing activities that have occurred outside of the approved erosion and sediment control plan;

(4) Inspect the following for installation in accordance with the approved erosion and sediment control plan, identification of any maintenance needs, and evaluation of effectiveness in minimizing sediment discharge, including whether the control has been inappropriately or incorrectly used:

(a) All perimeter erosion and sediment controls, such as silt fence;

(b) Soil stockpiles, when applicable, and borrow areas for stabilization or sediment trapping measures;

(c) Completed earthen structures, such as dams, dikes, ditches, and diversions for stabilization;

(d) Cut and fill slopes;

(e) Sediment basins and traps, sediment barriers, and other measures installed to control sediment discharge from stormwater;

(f) Temporary or permanent channel, flume, or other slope drain structures installed to convey concentrated runoff down cut and fill slopes;

(g) Storm inlets that have been made operational to ensure that sediment laden stormwater does not enter without first being filtered or similarly treated; and

(h) Construction vehicle access routes that intersect or access paved roads for minimizing sediment tracking;

(5) Inspect areas that have reached final grade or that will remain dormant for more than 14 days for initiation of stabilization activities;

(6) Inspect areas that have reached final grade or that will remain dormant for more than 14 days for completion of stabilization activities within seven days of reaching grade or stopping work;

(7) Inspect for evidence that the approved erosion and sediment control plan, "agreement in lieu of a plan," or erosion and sediment control plan prepared in accordance with department-approved annual standards and specifications has not been properly implemented. This includes but is not limited to:

(a) Concentrated flows of stormwater in conveyances such as rills, rivulets or channels that have not been filtered, settled, or similarly treated prior to discharge, or evidence thereof;

(b) Sediment laden or turbid flows of stormwater that have not been filtered or settled to remove sediments prior to discharge;

(c) Sediment deposition in areas that drain to unprotected stormwater inlets or catch basins that discharge to surface waters. Inlets and catch basins with failing sediments controls due to improper installation, lack of maintenance, or inadequate design are considered unprotected;

(d) Sediment deposition on any property (including public and private streets) outside of the construction activity covered by this general permit;

(e) Required stabilization has not been initiated or completed on portions of the site;

(f) Sediment basins without adequate wet or dry storage volume or sediment basins that allow the discharge of stormwater from below the surface of the wet storage portion of the basin;

(g) Sediment traps without adequate wet or dry storage or sediment traps that allow the discharge of stormwater from below the surface of the wet storage portion of the trap; and

(h) Land disturbance outside of the approved area to be disturbed;

(8) Inspect pollutant generating activities identified in the pollution prevention plan for the proper implementation, maintenance and effectiveness of the procedures and practices;

(9) Identify any pollutant generating activities not identified in the pollution prevention plan; and

(10) Identify and document the presence of any evidence of the discharge of pollutants prohibited by this general permit.

4. Inspection report. Each inspection report shall include the following items:

   a. The date and time of the inspection and when applicable, the date and rainfall amount of the last measurable storm event;

   b. Summarized findings of the inspection;

   c. The location(s) of prohibited discharges;

   d. The location(s) of control measures that require maintenance;

   e. The location(s) of control measures that failed to operate as designed or proved inadequate or inappropriate for a particular location;

   f. The location(s) where any evidence identified under Part II F 3 a (7) exists;

   g. The location(s) where any additional control measure is needed that did not exist at the time of inspection;

   h. A list of corrective actions required (including any changes to the SWPPP that are necessary) as a result of the inspection or to maintain permit compliance;

   i. Documentation of any corrective actions required from a previous inspection that have not been implemented; and

   j. The date and signature of the qualified personnel and the operator or its duly authorized representative.

The inspection report and any actions taken in accordance with Part II must be retained by the operator as part of the SWPPP for at least three years from the date that general permit coverage expires or is terminated. The inspection report shall identify any incidents of noncompliance. Where an inspection report does not identify any incidents of noncompliance, the report shall contain a certification that the construction activity is in compliance with the SWPPP and this general permit. The report shall be signed in accordance with Part III K of this general permit.

G. Corrective actions.

1. The operator shall implement the corrective action(s) identified as a result of an inspection as soon as practicable but no later than seven days after discovery or a longer period as approved by the VSMP authority. If approval of a corrective action by a regulatory authority (e.g., VSMP authority, VESCP authority, or the department) is necessary, additional control measures shall be implemented to minimize pollutants in stormwater discharges until such approvals can be obtained.

2. The operator may be required to remove accumulated sediment deposits located outside of the construction activity covered by this general permit as soon as practicable in order to minimize environmental impacts. The operator shall notify the VSMP authority and the department as well as obtain all applicable federal, state, and local authorizations, approvals, and permits prior to the removal of sediments accumulated in surface waters including wetlands.

PART III

CONDITIONS APPLICABLE TO ALL VPDES PERMITS

NOTE: Discharge monitoring is not required for this general permit. If the operator chooses to monitor stormwater discharges or control measures, the operator must comply with the requirements of subsections A, B, and C, as appropriate.

A. Monitoring.

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitoring activity.

2. Monitoring shall be conducted according to procedures approved under 40 CFR Part 136 or alternative methods approved by the U.S. Environmental Protection Agency, unless other procedures have been specified in this general permit. Analyses performed according to test procedures approved under 40 CFR Part 136 shall be performed by an environmental laboratory certified under regulations adopted by the Department of General Services (1VAC30-45 or 1VAC30-46).

3. The operator shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals that will ensure accuracy of measurements.

B. Records.

1. Monitoring records and reports shall include:

   a. The date, exact place, and time of sampling or measurements;

   b. The individual(s) who performed the sampling or measurements;

   c. The date(s) and time(s) analyses were performed;

   d. The individual(s) who performed the analyses;

   e. The analytical techniques or methods used; and

   f. The results of such analyses.

2. The operator shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this general permit, and records of all data used to complete the registration statement for this general permit, for a period of at least three years from the date of the sample, measurement, report or request for coverage. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the operator, or as requested by the board.

C. Reporting monitoring results.

1. The operator shall update the SWPPP to include the results of the monitoring as may be performed in accordance with this general permit, unless another reporting schedule is specified elsewhere in this general permit.

2. Monitoring results shall be reported on a discharge monitoring report (DMR); on forms provided, approved or specified by the department; or in any format provided that the date, location, parameter, method, and result of the monitoring activity are included.

3. If the operator monitors any pollutant specifically addressed by this general permit more frequently than required by this general permit using test procedures approved under 40 CFR Part 136 or using other test procedures approved by the U.S. Environmental Protection Agency or using procedures specified in this general permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or reporting form specified by the department.

4. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this general permit.

D. Duty to provide information. The operator shall furnish, within a reasonable time, any information which the board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this general permit or to determine compliance with this general permit. The board, department, EPA, or VSMP authority may require the operator to furnish, upon request, such plans, specifications, and other pertinent information as may be necessary to determine the effect of the wastes from his discharge on the quality of surface waters, or such other information as may be necessary to accomplish the purposes of the CWA and the Virginia Stormwater Management Act. The operator shall also furnish to the board, department, EPA, or VSMP authority, upon request, copies of records required to be kept by this general permit.

E. Compliance schedule reports. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this general permit shall be submitted no later than 14 days following each schedule date.

F. Unauthorized stormwater discharges. Pursuant to § 62.1-44.5 of the Code of Virginia, except in compliance with a state permit issued by the department, it shall be unlawful to cause a stormwater discharge from a construction activity.

G. Reports of unauthorized discharges. Any operator who discharges or causes or allows a discharge of sewage, industrial waste, other wastes or any noxious or deleterious substance or a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, 40 CFR Part 302, or § 62.1-44.34:19 of the Code of Virginia that occurs during a 24-hour period into or upon surface waters or who discharges or causes or allows a discharge that may reasonably be expected to enter surface waters, shall notify the Department of Environmental Quality of the discharge immediately upon discovery of the discharge, but in no case later than within 24 hours after said discovery. A written report of the unauthorized discharge shall be submitted to the department and the VSMP authority within five days of discovery of the discharge. The written report shall contain:

1. A description of the nature and location of the discharge;

2. The cause of the discharge;

3. The date on which the discharge occurred;

4. The length of time that the discharge continued;

5. The volume of the discharge;

6. If the discharge is continuing, how long it is expected to continue;

7. If the discharge is continuing, what the expected total volume of the discharge will be; and

8. Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this general permit.

Discharges reportable to the department and the VSMP authority under the immediate reporting requirements of other regulations are exempted from this requirement.

H. Reports of unusual or extraordinary discharges. If any unusual or extraordinary discharge including a "bypass" or "upset," as defined herein, should occur from a facility and the discharge enters or could be expected to enter surface waters, the operator shall promptly notify, in no case later than within 24 hours, the department and the VSMP authority by telephone after the discovery of the discharge. This notification shall provide all available details of the incident, including any adverse effects on aquatic life and the known number of fish killed. The operator shall reduce the report to writing and shall submit it to the department and the VSMP authority within five days of discovery of the discharge in accordance with Part III I 2. Unusual and extraordinary discharges include but are not limited to any discharge resulting from:

1. Unusual spillage of materials resulting directly or indirectly from processing operations;

2. Breakdown of processing or accessory equipment;

3. Failure or taking out of service of some or all of the facilities; and

4. Flooding or other acts of nature.

I. Reports of noncompliance. The operator shall report any noncompliance which may adversely affect surface waters or may endanger public health.

1. An oral report to the department and the VSMP authority shall be provided within 24 hours from the time the operator becomes aware of the circumstances. The following shall be included as information that shall be reported within 24 hours under this subdivision:

    a. Any unanticipated bypass; and

    b. Any upset that causes a discharge to surface waters.

2. A written report shall be submitted within five days and shall contain:

    a. A description of the noncompliance and its cause;

    b. The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and

    c. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

    The department may waive the written report on a case-by-case basis for reports of noncompliance under Part III I if the oral report has been received within 24 hours and no adverse impact on surface waters has been reported.

3. The operator shall report all instances of noncompliance not reported under Part III I 1 or 2 in writing as part of the SWPPP. The reports shall contain the information listed in Part III I 2.

NOTE: The reports required in Part III G, H and I shall be made to the department and the VSMP authority. Reports may be made by telephone, email, or by fax. For reports outside normal working hours, leaving a recorded message shall fulfill the immediate reporting requirement. For emergencies, the Virginia Department of Emergency Management maintains a 24-hour telephone service at 1-800-468-8892.

4. Where the operator becomes aware of a failure to submit any relevant facts, or submittal of incorrect information in any report, including a registration statement, to the department or the VSMP authority, the operator shall promptly submit such facts or correct information.

J. Notice of planned changes.

1. The operator shall give notice to the department and the VSMP authority as soon as possible of any planned physical alterations or additions to the permitted facility or activity. Notice is required only when:

    a. The operator plans an alteration or addition to any building, structure, facility, or installation that may meet one of the criteria for determining whether a facility is a new source in 9VAC25-870-420;

    b. The operator plans an alteration or addition that would significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this general permit; or

2. The operator shall give advance notice to the department and VSMP authority of any planned changes in the permitted facility or activity, which may result in noncompliance with state permit requirements.

K. Signatory requirements.

1. Registration statement. All registration statements shall be signed as follows:

    a. For a corporation: by a responsible corporate officer. For the purpose of this chapter, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for state permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

    b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

    c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this chapter, a principal executive officer of a public agency includes: (i) the chief executive officer of the agency or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

2. Reports, etc. All reports required by this general permit, including SWPPPs, and other information requested by the board or the department shall be signed by a person described in Part III K 1 or by a duly authorized representative of that person. A person is a duly authorized representative only if:

    a. The authorization is made in writing by a person described in Part III K 1;

    b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the operator. (A duly authorized

representative may thus be either a named individual or any individual occupying a named position); and

c. The signed and dated written authorization is included in the SWPPP. A copy must be provided to the department and VSMP authority, if requested.

3. Changes to authorization. If an authorization under Part III K 2 is no longer accurate because a different individual or position has responsibility for the overall operation of the construction activity, a new authorization satisfying the requirements of Part III K 2 shall be submitted to the VSMP authority as the administering entity for the board prior to or together with any reports or information to be signed by an authorized representative.

4. Certification. Any person signing a document under Part III K 1 or 2 shall make the following certification:

"I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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 and imprisonment for knowing violations."

L. Duty to comply. The operator shall comply with all conditions of this general permit. Any state permit noncompliance constitutes a violation of the Virginia Stormwater Management Act and the Clean Water Act, except that noncompliance with certain provisions of this general permit may constitute a violation of the Virginia Stormwater Management Act but not the Clean Water Act. Permit noncompliance is grounds for enforcement action; for state permit termination, revocation and reissuance, or modification; or denial of a state permit renewal application.
The operator shall comply with effluent standards or prohibitions established under § 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if this general permit has not yet been modified to incorporate the requirement.

M. Duty to reapply. If the operator wishes to continue an activity regulated by this general permit after the expiration date of this general permit, the operator shall submit a new registration statement at least 90 days before the expiration date of the existing general permit, unless permission for a later date has been granted by the board. The board shall not grant permission for registration statements to be submitted later than the expiration date of the existing general permit.

N. Effect of a state permit. This general permit does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorize any injury to private property or invasion of personal rights, or any infringement of federal, state or local law or regulations.

O. State law. Nothing in this general permit shall be construed to preclude the institution of any legal action under, or relieve the operator from any responsibilities, liabilities, or penalties established pursuant to any other state law or regulation or under authority preserved by § 510 of the Clean Water Act. Except as provided in general permit conditions on "bypassing" (Part III U) and "upset" (Part III V), nothing in this general permit shall be construed to relieve the operator from civil and criminal penalties for noncompliance.

P. Oil and hazardous substance liability. Nothing in this general permit shall be construed to preclude the institution of any legal action or relieve the operator from any responsibilities, liabilities, or penalties to which the operator is or may be subject under §§ 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law or § 311 of the Clean Water Act.

Q. Proper operation and maintenance. The operator shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances), which are installed or used by the operator to achieve compliance with the conditions of this general permit. Proper operation and maintenance also includes effective plant performance, adequate funding, adequate staffing, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by the operator only when the operation is necessary to achieve compliance with the conditions of this general permit.

R. Disposal of solids or sludges. Solids, sludges or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering surface waters and in compliance with all applicable state and federal laws and regulations.

S. Duty to mitigate. The operator shall take all steps to minimize or prevent any discharge in violation of this general permit that has a reasonable likelihood of adversely affecting human health or the environment.

T. Need to halt or reduce activity not a defense. It shall not be a defense for an operator in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this general permit.

U. Bypass.

1. "Bypass," as defined in 9VAC25-870-10, means the intentional diversion of waste streams from any portion of a treatment facility. The operator may allow any bypass to occur that does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions of Part III U 2 and 3.

2. Notice.

    a. Anticipated bypass. If the operator knows in advance of the need for a bypass, the operator shall submit prior notice to the department, if possible at least 10 days before the date of the bypass.

    b. Unanticipated bypass. The operator shall submit notice of an unanticipated bypass as required in Part III I.

3. Prohibition of bypass.

    a. Except as provided in Part III U 1, bypass is prohibited, and the board or department may take enforcement action against an operator for bypass unless:

        (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage. Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production;

        (2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and

        (3) The operator submitted notices as required under Part III U 2.

b. The department may approve an anticipated bypass, after considering its adverse effects, if the department determines that it will meet the three conditions listed in Part III U 3 a.

V. Upset.

1. An "upset," as defined in 9VAC25-870-10, means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based state permit effluent limitations because of factors beyond the reasonable control of the operator. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2. An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based state permit effluent limitations if the requirements of Part III V 4 are met. A determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is not a final administrative action subject to judicial review.

3. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

4. An operator who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that:

   a. An upset occurred and that the operator can identify the cause(s) of the upset;

   b. The permitted facility was at the time being properly operated;

   c. The operator submitted notice of the upset as required in Part III I; and

   d. The operator complied with any remedial measures required under Part III S.

5. In any enforcement proceeding, the operator seeking to establish the occurrence of an upset has the burden of proof.

W. Inspection and entry. The operator shall allow the department as the board's designee, the VSMP authority, EPA, or an authorized representative of either entity (including an authorized contractor), upon presentation of credentials and other documents as may be required by law to:

1. Enter upon the operator's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this general permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this general permit;

3. Inspect and photograph at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this general permit; and

4. Sample or monitor at reasonable times, for the purposes of ensuring state permit compliance or as otherwise authorized by the Clean Water Act or the Virginia Stormwater Management Act, any substances or parameters at any location.

For purposes of this section, the time for inspection shall be deemed reasonable during regular business hours, and whenever the facility is discharging. Nothing contained herein shall make an inspection unreasonable during an emergency.

X. State permit actions. State permits may be modified, revoked and reissued, or terminated for cause. The filing of a request by the operator for a state permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any state permit condition.

Y. Transfer of state permits.

1. State permits are not transferable to any person except after notice to the department. Except as provided in Part III Y 2, a state permit may be transferred by the operator to a new operator only if the state permit has been modified or revoked and reissued, or a minor modification made, to identify the new operator and incorporate such other requirements as may be necessary under the Virginia Stormwater Management Act and the Clean Water Act.

2. As an alternative to transfers under Part III Y 1, this state permit may be automatically transferred to a new operator if:

    a. The current operator notifies the department at least 30 days in advance of the proposed transfer of the title to the facility or property;

    b. The notice includes a written agreement between the existing and new operators containing a specific date for transfer of state permit responsibility, coverage, and liability between them; and

    c. The department does not notify the existing operator and the proposed new operator of its intent to modify or revoke and reissue the state permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Part III Y 2 b.

3. For ongoing construction activity involving a change of operator, the new operator shall accept and maintain the existing SWPPP, or prepare and implement a new SWPPP prior to taking over operations at the site.

Z. Severability. The provisions of this general permit are severable, and if any provision of this general permit or the application of any provision of this state permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this general permit shall not be affected thereby.

DEFINITIONS

"Business day" means Monday through Friday excluding state holidays.

"Commencement of land disturbance" means the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities (e.g., stockpiling of fill material).

"Construction site" means the land where any land-disturbing activity is physically located or conducted, including any adjacent land used or preserved in connection with the land-disturbing activity.

"Final stabilization" means that one of the following situations has occurred:

1. All soil disturbing activities at the site have been completed and a permanent vegetative cover has been established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform (e.g., evenly distributed), mature enough to survive, and will inhibit erosion.

2. For individual lots in residential construction, final stabilization can occur by either:

    a. The homebuilder completing final stabilization as specified in subdivision 1 of this definition; or

    b. The homebuilder establishing temporary soil stabilization, including perimeter controls for an individual lot prior to occupation of the home by the homeowner, and informing the homeowner of the need for, and benefits of, final stabilization.

3. For construction projects on land used for agricultural purposes, final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to surface waters, and areas that are not being returned to their preconstruction agricultural use must meet the final stabilization criteria specified in subdivision 1 or 2 of this definition.

"Immediately" means as soon as practicable, but no later than the end of the next business day, following the day when the land-disturbing activities have temporarily or permanently ceased. In the context of this general permit, "immediately" is used to define the deadline for initiating stabilization measures.

"Impaired waters" means surface waters identified as impaired on the 2012 § 305(b)/303(d) Water Quality Assessment Integrated Report.

"Infeasible" means not technologically possible or not economically practicable and achievable in light of best industry practices.

"Initiation of stabilization activities" means:

1. Prepping the soil for vegetative or nonvegetative stabilization;

2. Applying mulch or other nonvegetative product to the exposed area;

3. Seeding or planting the exposed area;

4. Starting any of the above activities on a portion of the area to be stabilized, but not on the entire area; or

5. Finalizing arrangements to have the stabilization product fully installed in compliance with the applicable deadline for completing stabilization.

This list is not exhaustive.

"Measurable storm event" means a rainfall event producing 0.25 inches of rain or greater over 24 hours.

"Stabilized" means land that has been treated to withstand normal exposure to natural forces without incurring erosion damage.

Appendix C
Forms: Notice of Registration and Notice of Termination

Registration Statement
General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10)

(Please Type or Print All Information)

1. **Construction Activity Operator:** *(General permit coverage will be issued to this operator. The Certification in Item #12 must be signed by the appropriate person associated with this operator.)*

   Name: SB Ballard Construction Company

   Contact: John Johnson

   Mailing Address: 2828 Shipps Corner Road

   City: Virginia Beach State: VA Zip: 23453 Phone: 757-440-5555

   Email address (if available): jjohnson@sbballard.com

   Indicate if DEQ may transmit general permit correspondence electronically: Yes ☑ No ☐

2. **Existing General Permit Registration Number (for renewals only):** N/A

3. **Name and Location of the Construction Activity:**

   Name: Norfolk State University New Residential Facility

   Address (if available): 700 Park Avenue

   City: Norfolk State: VA Zip: 23504

   County (if not located within a City):

   Latitude (decimal degrees): 36.84 Longitude (decimal degrees): -76.26

   Name and Location of all Off-site Support Activities to be covered under the general permit:

   Name: N/A

   Address (if available):

   City: State: Zip:

   County (if not located within a City):

   Latitude (decimal degrees): Longitude (decimal degrees):

4. **Status of the Construction Activity (check only one):** Federal ☐ State ☑ Public ☐ Private ☐

5. **Nature of the Construction Activity (e.g., commercial, industrial, residential, agricultural, oil and gas, etc.):**

   Commercial Construction of New Residential Facility

6. **Name of the Receiving Water(s) and Hydrologic Unit Code (HUC):**

   Name: Eastern Branch Elizabeth River Name:

   HUC: JL54 HUC:

7. **If the discharge is through a Municipal Separate Storm Sewer System (MS4), the name of the MS4 operator:**

   Norfolk State University

8. **Estimated Project Start and Completion Date:**

   Start Date (mm/dd/yyyy): 06/05/2018 Completion Date (mm/dd/yyyy): 07/15/2020

9. **Total Land Area of Development (to the nearest one-hundredth acre):** 6.10

   Estimated Area to be Disturbed (to the nearest one-hundredth acre): 5.63

10. **Is the area to be disturbed part of a larger common plan of development or sale?** Yes ☐ No ☑

11. **A stormwater pollution prevention plan (SWPPP) must be prepared in accordance with the requirements of the General VPDES Permit for Discharges of Stormwater from Construction Activities prior to submitting this Registration Statement. By signing this Registration Statement the operator is certifying that the SWPPP has been prepared.**

12. **Certification:** "I certify under penalty of law that I have read and understand this Registration Statement and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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 and imprisonment for knowing violations."

    Printed Name: Chuck Smith Title: VP

    Signature: Date: 6/6/2018

    (Please sign in INK. This Certification must be signed by the appropriate person associated with the operator identified in Item #1.)

Instructions for Completing the Registration Statement
General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10)

GENERAL

A. Coverage Under this General Permit.

Any operator applying for coverage under this general permit who is required to submit a Registration Statement (see Section B below) must submit a complete Registration Statement to the Department. The Registration Statement serves as a Notice of Intent for coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10).

B. Single-family Detached Residential Structures.

Operators with an existing stormwater discharge or proposing a new stormwater discharge associated with the construction of a single-family detached residential structure are not required to submit a Registration Statement or the Department of Environmental Quality (DEQ) portion of the general permit fee.

Operators of these types of discharges are authorized to discharge under this general permit immediately upon the general permit's effective date of July 1, 2014.

C. To Apply for Permit Coverage.

1. New Construction Activities. Any operator proposing a new stormwater discharge from construction activities shall submit a complete Registration Statement to the Department prior to the commencement of land disturbance, unless exempted by Section B above. Any operator proposing a new stormwater discharge from construction activities in response to a public emergency where the related work requires immediate authorization to avoid imminent endangerment to human health or the environment is immediately authorized to discharge under this general permit and must submit a complete Registration Statement to the Department no later than 30 days after commencing land disturbance; documentation to substantiate the occurrence of the public emergency must accompany the Registration Statement.

2. Existing Construction Activities. Any operator that was authorized to discharge under the general permit issued in 2009, and who intends to continue coverage under this general permit, shall submit a complete Registration Statement to the Department on or before June 1, 2014, unless exempted by Section B above.

D. Where to Submit Registration Statements.

All Registration Statements should be submitted to:

Department of Environmental Quality
Office of Stormwater Management, 10th Floor
P.O. Box 1105
Richmond, VA 23218

LINE-BY-LINE INSTRUCTIONS

Item 1: Construction Activity Operator Information.

"Operator" means the owner or operator of any facility or activity subject to the Stormwater Management Act and regulations. In the context of stormwater associated with a large or small construction activity, operator means any person associated with a construction project that meets either of the following two criteria: (i) the person has direct operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications or (ii) the person has day-to-day operational control of those activities at a project that are necessary to ensure compliance with a stormwater pollution prevention plan for the site or other state permit or VSMP authority permit conditions (i.e., they are authorized to direct workers at a site to carry out activities required by the stormwater pollution prevention plan or comply with other permit conditions).

The entities that are considered operators will commonly consist of the owner or developer of a project (the party with control of project plans and specifications) or the general contractor (the party with day to day operational control of the activities at the project site which are necessary to ensure compliance with the general permit).

Provide the legal name (do not use a colloquial name), contact, mailing address, telephone number, and email address (if available) of the construction activity operator; general permit coverage will be issued to this operator. Indicate if the Department may transmit general permit correspondence electronically.

Item 2: Existing General Permit Registration Number.

For reapplications only, provide the existing general permit registration number for the construction activity. This item does not need to be completed for new construction activities applying for general permit coverage.

Item 3: Name and Location of the Construction Activity Information.

Provide the official name, street address (if available), city or county (if not located within a City) of the construction activity. Also, provide the latitude and longitude in decimal degrees of the approximate center of the construction activity (e.g., N 37.5000, W 77.5000).

Name and Location of Off-site Support Activity Information.

This general permit also authorizes stormwater discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) located on-site or off-site provided that (i) the support activity is directly related to a construction activity that is required to have general permit coverage; (ii) the support activity is not a commercial operation, nor does it serve multiple unrelated construction activities by different operators; (iii) the support activity does not operate beyond the completion of the construction activity it supports; (iv) the support activity is identified in the registration statement at the time of general permit coverage; (v) appropriate control measures are identified in a SWPPP and implemented to address the discharges from the support activity areas; and (vi) all applicable state, federal, and local approvals are obtained for the support activity.

Provide the official name, street address (if available), City and County (if not located within a City) of all off-site support activities to be covered under this general permit. Also, provide the latitude and longitude in decimal degrees of the approximate center of the off-site support activities (e.g., N 37.5000, W 77.5000). Also, if an off-site support activity is going to be covered under this general permit the total land area of the off-site support activity and the estimated area to be disturbed by the off-site support activity need to be included in Item #9.

Item 4: Status of the Construction Activity.

Indicate the appropriate status (Federal, State, Public, or Private) of the construction activity.

Item 5: Nature of the Construction Activity.

Provide a brief description of the construction activity, such as commercial, residential, agricultural, oil and gas, etc. This list is not all inclusive.

Item 6: Receiving Waters(s) and HUC Information.

Provide the name of the receiving water(s) and corresponding HUC for all stormwater discharges including any stormwater discharges from off-site support activities to be covered under this general permit. Hydrologic Unit Code or HUC is a watershed unit established in the most recent version of Virginia's 6th order national watershed boundary dataset.

Item 7: MS4 Information.

If stormwater is discharged through a municipal separate storm sewer system (MS4), provide the name of the MS4 operator. The name of the MS4 operator is generally the Town, City, County, Institute or Federal facility where the construction activity is located.

Item 8: Construction Activity Start and Completion Date Information.

Provide the estimated start date (month/day/year) of the construction activity. Provide the estimated completion date (month/day/year) of the construction activity.

Item 9: Construction Activity Area Information.

Provide the total area (to the nearest one-hundredth acre) of the development (i.e.., the total acreage of the larger common plan of development or sale). Include the total acreage of any off-site support activity to be covered under this general permit.

Provide the estimated area (to the nearest one-hundredth acre) to be disturbed by the construction activity. Include the estimated area of land disturbance that will occur at any off-site support activity to be covered under this general permit.

Item 10: Common Plan of Development or Sale Information.

Indicate if the area to be disturbed by the construction activity is part of a larger common plan of development or sale. Larger common plan of development or sale is defined as a contiguous area where separate and distinct construction may be taking place at different times on different schedules. Plan is broadly defined as any announcement or documentation, including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, etc., or physical demarcation such as boundary signs, lot stakes, or surveyor markings indicating that construction activities may occur.

Item 11: Stormwater Pollution Prevention Plan (SWPPP).

A Stormwater Pollution Prevention Plan (SWPPP) must be prepared in accordance with the requirements of the General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) prior to submitting this Registration Statement. By signing this Registration Statement the operator is certifying that the SWPPP has been prepared.

Item 12: Certification.

A properly authorized individual associated with the operator identified in Item 1 of the Registration Statement is responsible for certifying and signing the Registration Statement. **Please sign the Registration Statement in INK.**

State statutes provide for severe penalties for submitting false information on the Registration Statement. State regulations require that the Registration Statement be signed as follows:

a. For a corporation: by a responsible corporate officer. For the purpose of this part, a responsible corporate officer means:

(i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation, or

(ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.

c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this part, a principal executive officer of a public agency includes:

(i) The chief executive officer of the agency, or

(ii) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

Notice of Termination
General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10)

(Please Type or Print All Information)

1. **Construction Activity Operator:**

   Name:_____

   Contact:_____

   Mailing Address:_____

   City:_____ State:_____ Zip:_____ Phone: _____

   Email address (if available):_____

2. **Name and Location of the Construction Activity:** (As listed on the Registration Statement.)

   Name:_____

   Address (if available):_____

   City:_____ State:_____ Zip:_____

   County (if not located within a City):_____

   Latitude (decimal degrees):_____ Longitude (decimal degrees):_____

3. **General Permit Registration Number:**_____

4. **Reason for Terminating Coverage Under the General Permit:** (The operator shall submit a Notice of Termination after one or more of the following conditions have been met.)

   ☐ A. Necessary permanent control measures included in the SWPPP for the site are in place and functioning effectively and final stabilization has been achieved on all portions of the site for which the operator is responsible. When applicable, long-term responsibility and maintenance requirements for permanent control measures shall be recorded in the local land records prior to the submission of a notice of termination;

   ☐ B. Another operator has assumed control over all areas of the site that have not been finally stabilized and obtained coverage for the ongoing discharge;

   ☐ C. Coverage under an alternative VPDES or state permit has been obtained; or

   ☐ D. For residential construction only, temporary soil stabilization has been completed and the residence has been transferred to the homeowner.

   The notice of termination should be submitted no later than 30 days after one of the above conditions being met. Authorization to discharge terminates at midnight on the date that the notice of termination is submitted for the conditions set forth in subsections B through D above, unless otherwise notified by the VSMP authority or the Department. Termination of authorizations to discharge for the conditions set forth in subsection A above shall be effective upon notification from the Department that the provisions of subsection A have been met or 60 days after submittal of the notice of terminations, whichever occurs first.

5. **Permanent Control Measures Installed:** (When applicable, a list of the on-site and off-site permanent control measures (both structural and nonstructural) that were installed to comply with the stormwater management technical criteria. Attach a separate list if additional space is needed.)

   Permanent Control Measure #1

   Type of Permanent Control Measure:_____

   Date Functional:_____

   Address (if available):_____

   City:_____ State:_____ Zip:_____

   County (if not located within a City):_____

   Latitude (decimal degrees):_____ Longitude (decimal degrees):_____

   Receiving Water:_____

   Total Acres Treated:_____ Impervious Acres Treated:_____

Permanent Control Measure #2

Type of Permanent Control Measure:_____

Date Functional:_____

Address (if available):_____

City:_____ State:_____ Zip:_____

County (if not located within a City):_____

Latitude (decimal degrees):_____ Longitude (decimal degrees):_____

Receiving Water:_____

Total Acres Treated:_____ Impervious Acres Treated:_____

Permanent Control Measure #3

Type of Permanent Control Measure:_____

Date Functional:_____

Address (if available):_____

City:_____ State:_____ Zip:_____

County (if not located within a City):_____

Latitude (decimal degrees):_____ Longitude (decimal degrees):_____

Receiving Water:_____

Total Acres Treated:_____ Impervious Acres Treated:_____

6. **Participation in a Regional Stormwater Management Plan:** (When applicable, information related to the participation in a regional stormwater management plan. Attach a separate list if additional space is needed.)

Regional Stormwater Management Facility

Type of Regional Stormwater Management Facility:_____

Address (if available):_____

City:_____ State:_____ Zip:_____

County (if not located within a City):_____

Latitude (decimal degrees):_____ Longitude (decimal degrees):_____

Total Site Acres Treated:_____ Impervious Site Acres Treated:_____

7. **Perpetual Nutrient Credits:** (When applicable, information related to perpetual nutrient credits that were acquired in accordance with § 62.1-44.15:35 of the Code of Virginia. Attach a separate list if additional space is needed.)

Nonpoint Nutrient Credit Generating Entity

Name:_____

Perpetual Nutrient Credits Acquired (lbs/acre/year):_____

8. **Certification:** "I certify under penalty of law that I have read and understand this Notice of Termination and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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 and imprisonment for knowing violations."

Printed Name:_____ Title:_____

Signature:_____ Date:_____

(Please sign in INK. This Certification must be signed by the appropriate person associated with the operator identified in Item #1.)

Instructions for Completing the Notice of Termination
General VDPES Permit for Discharges of Stormwater from Construction Activities (VAR10)

GENERAL

A Notice of Termination must be submitted when an operator no longer wishes to be covered under the General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10).

All Notice of Terminations should be submitted to:

Department of Environmental Quality
Office of Stormwater Management, 10th Floor
P.O. Box 1105
Richmond, VA 23218

LINE-BY-LINE INSTRUCTIONS

Item 1: Construction Activity Operator Information.

Provide the legal name (do not use a colloquial name), contact, mailing address, telephone number, and email address (if available) of the construction activity operator that was issued general permit coverage.

Item 2: Name and Location of the Construction Activity Information.

Provide the official name, street address (if available), city or county (if not located within a City) of the construction activity. Also, provide the latitude and longitude in decimal degrees of the approximate center of the construction activity (e.g., N 37.5000, W 77.5000). NOTE: This information can be obtained from the previously submitted Registration Statement.

Item 3: General Permit Registration Number.

Provide the existing general permit registration number for the construction activity identified in Item 2.

Item 4: Reason for Termination.

Indicate the appropriate reason for submitting this Notice of Termination. The Notice of Termination may only be submitted after one or more of the following conditions have been met:

a. Necessary permanent control measures included in the SWPPP for the site are in place and functioning effectively and final stabilization has been achieved on all portions of the site for which the operator is responsible. When applicable, long-term responsibility and maintenance requirements for permanent control measures shall be recorded in the local land records prior to the submission of a notice of termination;

b. Another operator has assumed control over all areas of the site that have not been finally stabilized and obtained coverage for the ongoing discharge;

c. Coverage under an alternative VPDES or state permit has been obtained; or

d. For residential construction only, temporary soil stabilization has been completed and the residence has been transferred to the homeowner.

The Notice of Termination should be submitted no later than 30 days after one of the above conditions being met.

Item 5: Permanent Control Measures (when applicable).

For each on-site and off-site permanent control measure (both structural and non-structural) that was installed to comply with the stormwater management technical criteria provide the following information:

a. The type of permanent control measure;

b. The date that the permanent control measure became functional as a post-development stormwater management control;

c. The street address (if available), City or County (if not located within a City) of the permanent control measure;

d. The latitude and longitude in decimal degrees of the approximate center of the permanent control measure;

e. The receiving water of the permanent control measure; and

f. The number of total and impervious acres treated by the permanent control measure (to the nearest one-tenth of an acre).

Attach a separate list if additional space is needed.

Item 6: Participation in a Regional Stormwater Management Plan (when applicable).

For each Regional Stormwater Management Facility provide the following information:

a. The type of regional facility to which the site contributes;

b. The street address (if available), City or County (if not located within a City) of the regional facility;

c. The latitude and longitude in decimal degrees of the approximate center of the regional facility; and

d. The number of total and impervious site acres treated by the regional facility (to the nearest one-tenth of an acre).

Attach a separate list if additional space is needed.

Item 7: Perpetual Nutrient Credits (when applicable).

Provide the following information related to perpetual nutrient credits that were acquired in accordance with § 62.1-44.15:35 of the Code of Virginia:

a. The name of the nonpoint nutrient credit generating entity from which perpetual nutrient credits were acquired; and

b. The number of perpetual nutrient credits acquired (lbs. per acre per year).

Attach a separate list if additional space is needed.

Item 8: Certification.

A properly authorized individual associated with the operator identified in Item 1 of the Registration Statement is responsible for certifying and signing the Registration Statement. **Please sign the Registration Statement in INK.**

State statutes provide for severe penalties for submitting false information on the Registration Statement. State regulations require that the Registration Statement be signed as follows:

a. For a corporation: by a responsible corporate officer. For the purpose of this part, a responsible corporate officer means:

(i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation, or

(ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated

facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.

c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this part, a principal executive officer of a public agency includes:

(i) The chief executive officer of the agency, or

(ii) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

Appendix D
Notice of Project Completion

Notice of Project Completion

Construction Activity Operator

Name:_____

Title: _____

Firm: _____

Name: _____

Address:_____

_____

Telephone:_____

Date: _____

Signature: _____

Location of Construction Activity

Name:_____

Title: _____

Firm: _____

Name: _____

Address:_____

_____

Telephone:_____

Date: _____

Signature:_____

Project Completed Certification
Under the site specific SWPPP

Certification:

"I certify under penalty of law that in signing this notice of project completion all necessary post-construction control measures included in the SWPPP for the site are in place and functioning effectively and final stabilization has been achieved on all portions of the site for which the operator is responsible."

Name:_____

Title: _____

Date: _____

RLD Signature: _____

Appendix E
Record of Land Disturbance

Record of Land Disturbance

Location (Attach a map showing the location of the activity)	*Dates*		
	Land Disturbance Began	*Land Disturbance Ended*	*Stabilization Measures Implemented*

Appendix F
Record of Inspections

Record of Site Inspection

(Attach as many sheets as necessary, including maps)

Inspection Item	*Location*	*Control Measure*			*Incident of Non-Compliance (Y/N)*[1]	*Comments*	*Corrective Measure*	*Re-Inspection*
		Type	*Maintenance Req'd (Y/N)*	*Additional BMP Req'd (Y/N)*				
Concrete Washout Area								
Construction Entrance								
Exit								
Silt Fencing								
Stockpile								
Chemical Storage								
Equipment Storage								
Receiving Waterway								
Dry Weather Flow Pumpback								
Runoff Appearance								
Tree Protection								

Inspection Item	*Location*	*Control Measure*			*Incident of Non-Compliance (Y/N)*[1]	*Comments*	*Corrective Measure*	*Re-Inspection*
		Type	*Maintenance Req'd (Y/N)*	*Additional BMP Req'd (Y/N)*				
Dust Control								
Dewatering Methods								
Safety Fencing								
Straw Bales								
Storm Drain Inlet Protection								
Topsoiling								
Temporary & Permanent Seeding								
Soil Stabilization Blanket Matting								
Receiving Channel								

Name:_____ Title:_____ Date:_____

Signature:_____

[1]If no incidents of Non-Compliance have been noted above, I certify that the site complies with the provisions of this SWPPP and Permit.

[2]Blank lines should be used for additional inspection items including potential pollutants and items defined by owner.

Record of Potential Construction Site Pollutants

Material/Chemical	*Physical Description*	*Stormwater Pollutant*	*Location*

Appendix G
Record of Contractor Certification

Record of Contractor Certification

"I certify under penalty of law that I understand the terms and conditions of this Virginia Stormwater Management Program (VSMP) general permit that authorizes the storm water discharges from the construction activity identified as part of this certification."

Site:_____

Contractor No. _____

Name:_____

Title: _____

Firm: _____

Address:_____

_____

Telephone:_____

Date: _____

Signature: _____

Contractor No. _____

Name:_____

Title: _____

Firm: _____

Address:_____

_____

Telephone:_____

Date: _____

Signature:_____

Appendix H
Water Quality Protection

Water Quality Protection

Permanent BMP Description	*Geographic Location*	*Water body Discharge*	*Acres Treated*

Appendix I
Details of Best Management Practices

Designate Washout Areas

Instructions

Describe location(s) and controls to eliminate the potential for discharges from washout areas for concrete mixers, paint, stucco, and so on.

BMP Description

A designated temporary, above-grade concrete washout area will be constructed as detailed on the site plans. The temporary concrete washout area could be constructed as shown in the figure below, with a recommended minimum length and minimum width of 10 feet and with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations. The washout area will be lined with plastic sheeting at least 10 mils thick and free of any holes or tears. Signs will be posted marking the location of the washout area to ensure that concrete equipment operators use the proper facility.

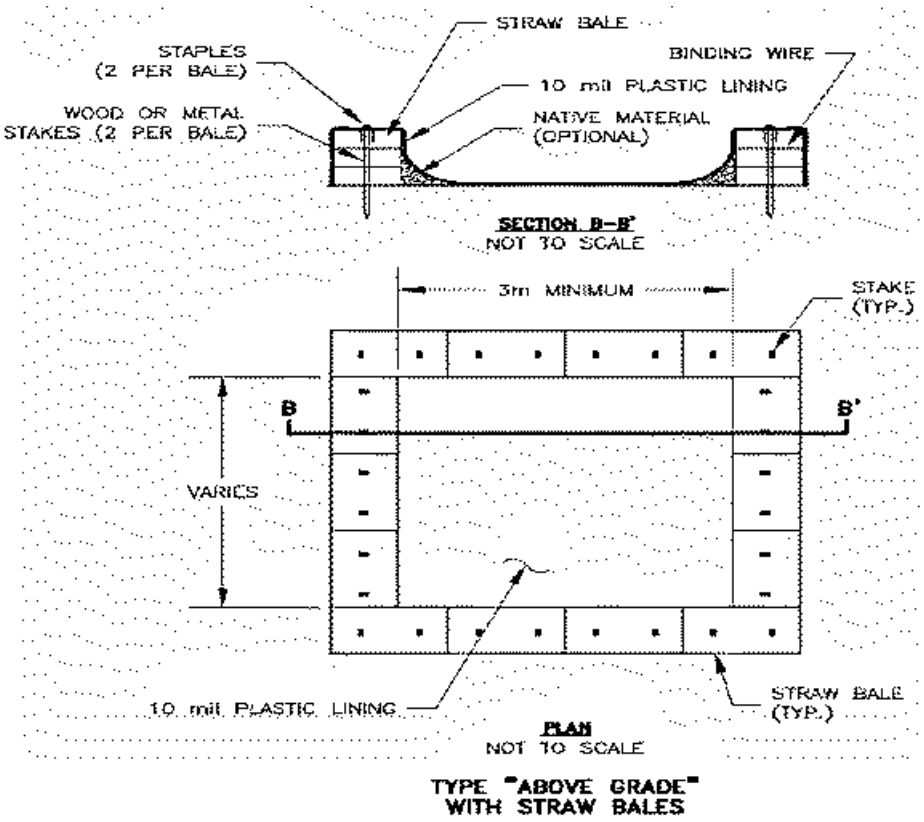
Concrete pours will not be conducted during or before an anticipated storm event. Concrete mixer trucks and chutes will be washed in the designated area or concrete wastes will be properly disposed of off-site. When the temporary washout area is no longer needed for the construction project, the hardened concrete and materials used to construct the area will be removed and disposed of according to the maintenance section below, and the area will be stabilized.

Installation Schedule

The washout area will be constructed before concrete pours occur at the site.

Maintenance and Inspection

The washout areas will be inspected daily to ensure that all concrete washing is being discharged into the washout area, no leaks or tears are present, and to identify when concrete wastes need to be removed. The washout areas will be cleaned out once the area is filled to 75 percent of the holding capacity. Once the area's holding capacity has been reached, the concrete wastes will be allowed to harden; the concrete will be broken up, removed, and taken to a nearby Landfill for disposal. The plastic sheeting will be replaced if tears occur during removal of concrete wastes from the washout area.



Design Specifications:

1. Temporary concrete washout type Above Grade will be constructed as shown above, with a recommended minimum length and minimum width of 10 feet.
2. The washout will be a minimum of 50 feet from storm drain inlets.
3. Plastic lining will be free of holes, tears, or other defects that compromise the impermeability of the material.

Responsible Staff: Contractor

STD & SPEC 3.02

TEMPORARY STONE CONSTRUCTION ENTRANCE

CE

Definition

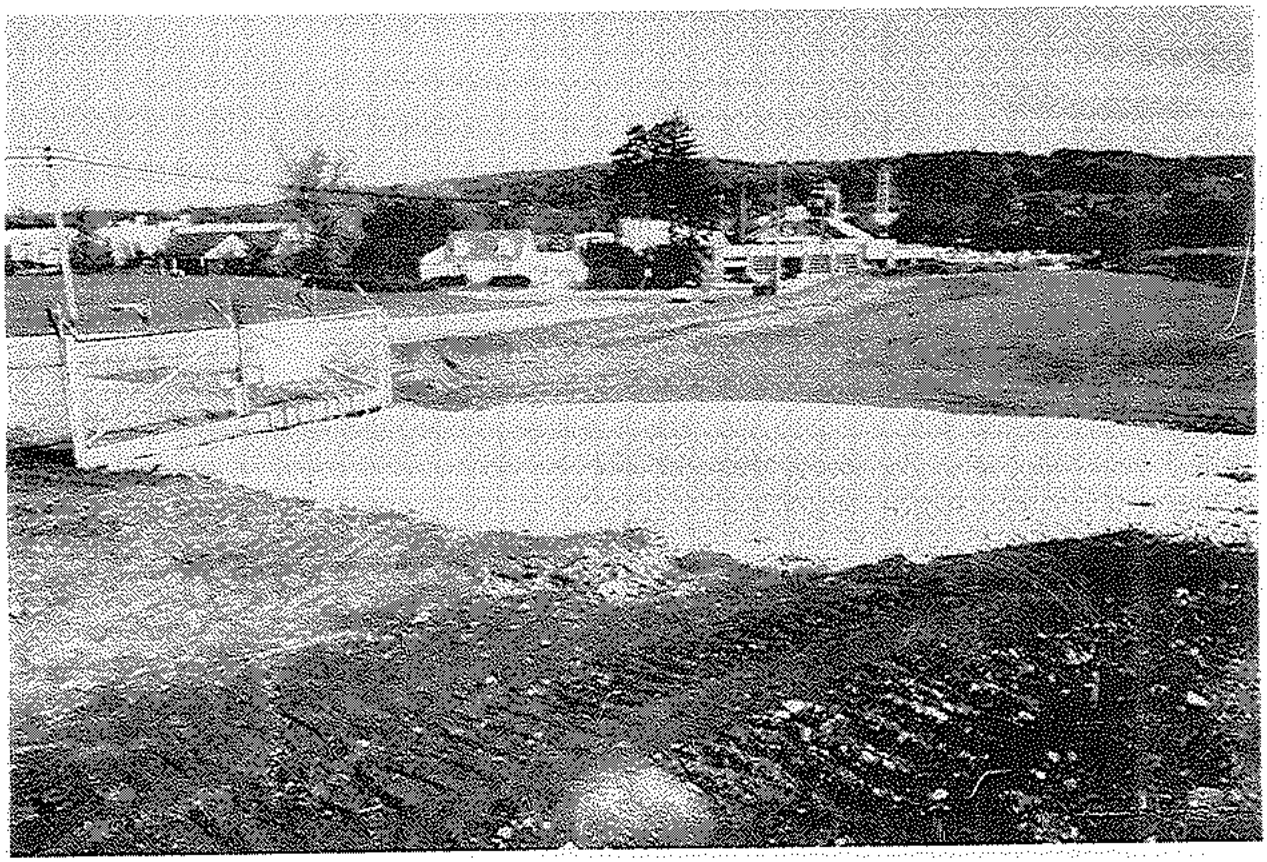
A stabilized stone pad with a filter fabric underliner located at points of vehicular ingress and egress on a construction site.

Purpose

To reduce the amount of mud transported onto paved public roads by motor vehicles or runoff.

Conditions Where Practice Applies

Wherever traffic will be leaving a construction site and move directly onto a public road or other paved area.



Planning Considerations

Minimum Standard #17 (MS #17) requires that provisions be made to minimize the transport of sediment by vehicular traffic onto a paved surface. Construction entrances provide an area where a significant amount of mud can be removed from construction vehicle tires before they enter a public road and, just as important, the soil adjacent to the paved surface can be kept intact. A filter fabric liner is used as a "separator" to minimize the dissipation of aggregate into the underlying soil due to construction traffic loads. If the action of the vehicles traveling over the gravel pad is not sufficient to remove the majority of the mud or there exists an especially sensitive traffic situation on the adjacent paved road, the tires must be washed before the vehicle enters the public road. If washing is necessary, provisions must be made to intercept the wash water and trap the sediment so it can be collected and stabilized. Construction entrances should be used in conjunction with the stabilization of construction roads (see Std. & Spec. 3.03, CONSTRUCTION ROAD STABILIZATION) to reduce the amount of mud picked up by construction vehicles and to do a better job of mud removal. Other innovative techniques for accomplishing the same purpose (such as a bituminous entrance) can be utilized, but only after specific plans and details are submitted to and approved by the appropriate Plan-Approving Authority.

Design Criteria

Aggregate Size

VDOT #1 Coarse Aggregate (2- to 3-inch stone) should be used.

Entrance Dimensions

The aggregate layer must be at least 6 inches thick; a minimum three inches of aggregate should be placed in a cut section to give the entrance added stability and to help secure filter cloth separator. It must extend the full width of the vehicular ingress and egress area and have a minimum 12-foot width. The length of the entrance must be at least 70 feet (see Plate 3.02-1).

Washing

If conditions on the site are such that the majority of the mud is not removed by the vehicles traveling over the stone, then the tires of the vehicles must be washed before entering the public road. Wash water must be carried away from the entrance to a approved settling area to remove sediment. All sediment shall be prevented from entering storm drains, ditches, or watercourses. A wash rack may also be used to make washing more convenient and effective (see Plate 3.02-1).

Location

The entrance should be located to provide for maximum utilization by all construction vehicles.

Construction Specifications

The area of the entrance must be excavated a minimum of 3 inches and must be cleared of all vegetation, roots, and other objectionable material. The filter fabric underliner will then be placed the full width and length of the entrance.

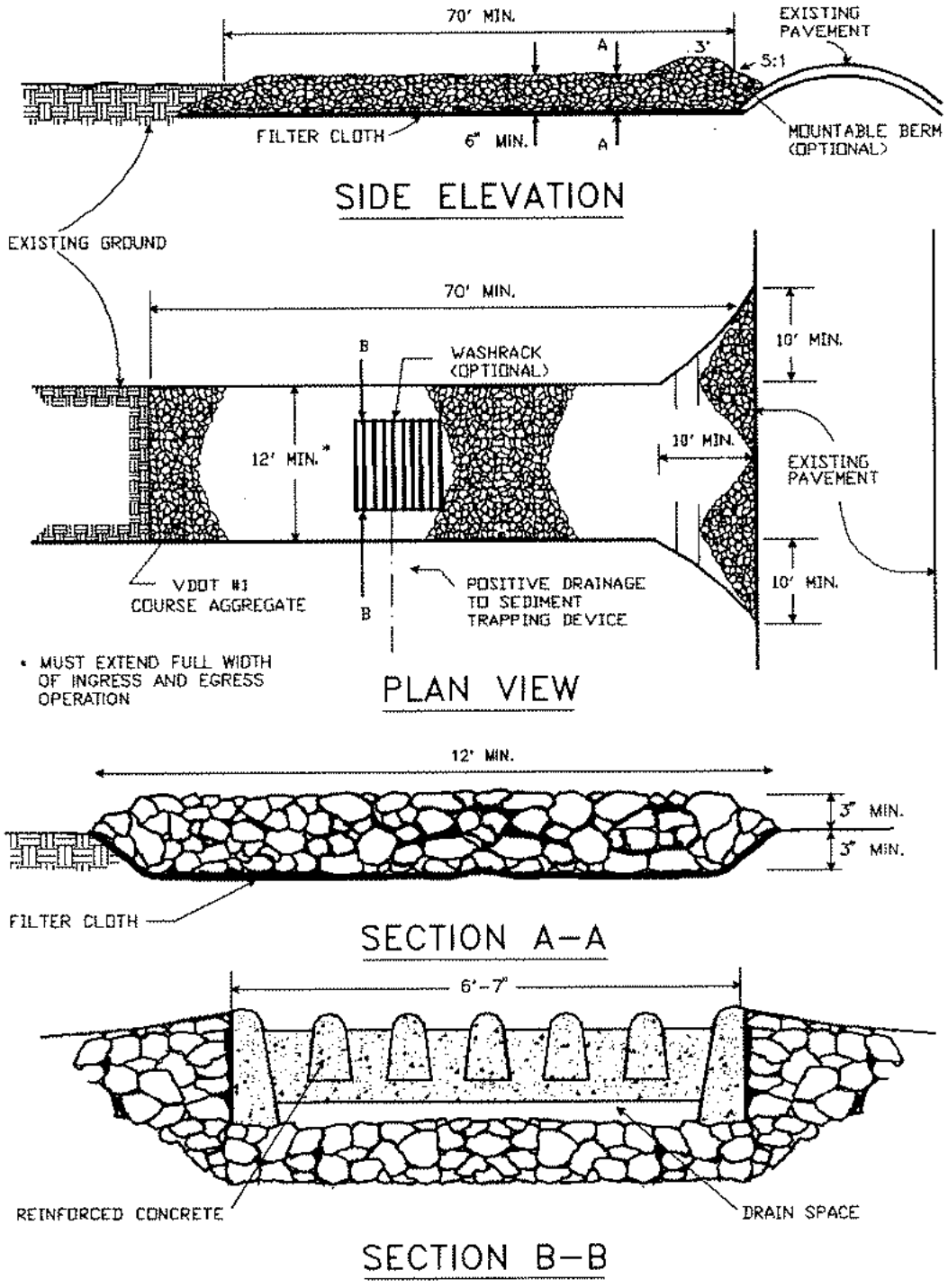
Following the installation of the filter cloth, the stone shall be placed to the specified dimensions. If wash racks are used, they should be installed according to manufacturer's specifications. Any drainage facilities required because of washing should be constructed according to specifications. Conveyance of surface water under entrance, through culverts, shall be provided as required. If such conveyance is impossible, the construction of a "mountable" berm with 5:1 slopes will be permitted.

The filter cloth utilized shall be a woven or nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals and hydrocarbons, be mildew and rot resistant, and conform to the physical properties noted in Table 3.02-A.

Maintenance

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 top dressing with additional stone or the washing and reworking of existing stone as conditions demand and 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.

STONE CONSTRUCTION ENTRANCE



Source: Adapted from 1983 Maryland Standards for Soil Erosion and Sediment Control, and Va. DSWC

Plate 3.02-1

TABLE 3.02-A

CONSTRUCTION SPECIFICATIONS FOR FILTER CLOTH UNDERLINER

Fabric Properties[1]	Light-Duty Entrance[2] (Graded Subgrade)	Heavy-Duty Entrance[3] (Rough Graded)	Test Method
Grab Tensile Strength (lbs.)	200	220	ASTM D1682
Elongation at Failure (%)	50	220	ASTM D1682
Mullen Burst Strength (lbs.)	190	430	ASTM D3786
Puncture Strength (lbs.)	40	125	ASTM D751 (modified)
Equivalent Opening Size (mm)	40-80	40-80	U.S. Standard Sieve CW-02215

[1] Fabrics not meeting these specifications may be used only when design procedure and supporting documentation are supplied to determine aggregate depth and fabric strength.

[2] Light Duty Entrance: Sites that have been graded to subgrade and where most travel would be single axle vehicles and an occasional multi-axle truck. Examples of fabrics which can be used are: Trevira Spunbond 1115, Mirafi 100X, Typar 3401, or equivalent.

[3] Heavy Duty Entrance: Sites with only rough grading and where most travel would be multi-axle vehicles. Examples of fabrics which can be used are: Trevira Spunbond 1135, Mirafi 600X, or equivalent.

Source: Virginia Highway and Transportation Research Council (VHTRC)

STD & SPEC 3.05

SILT FENCE

SF

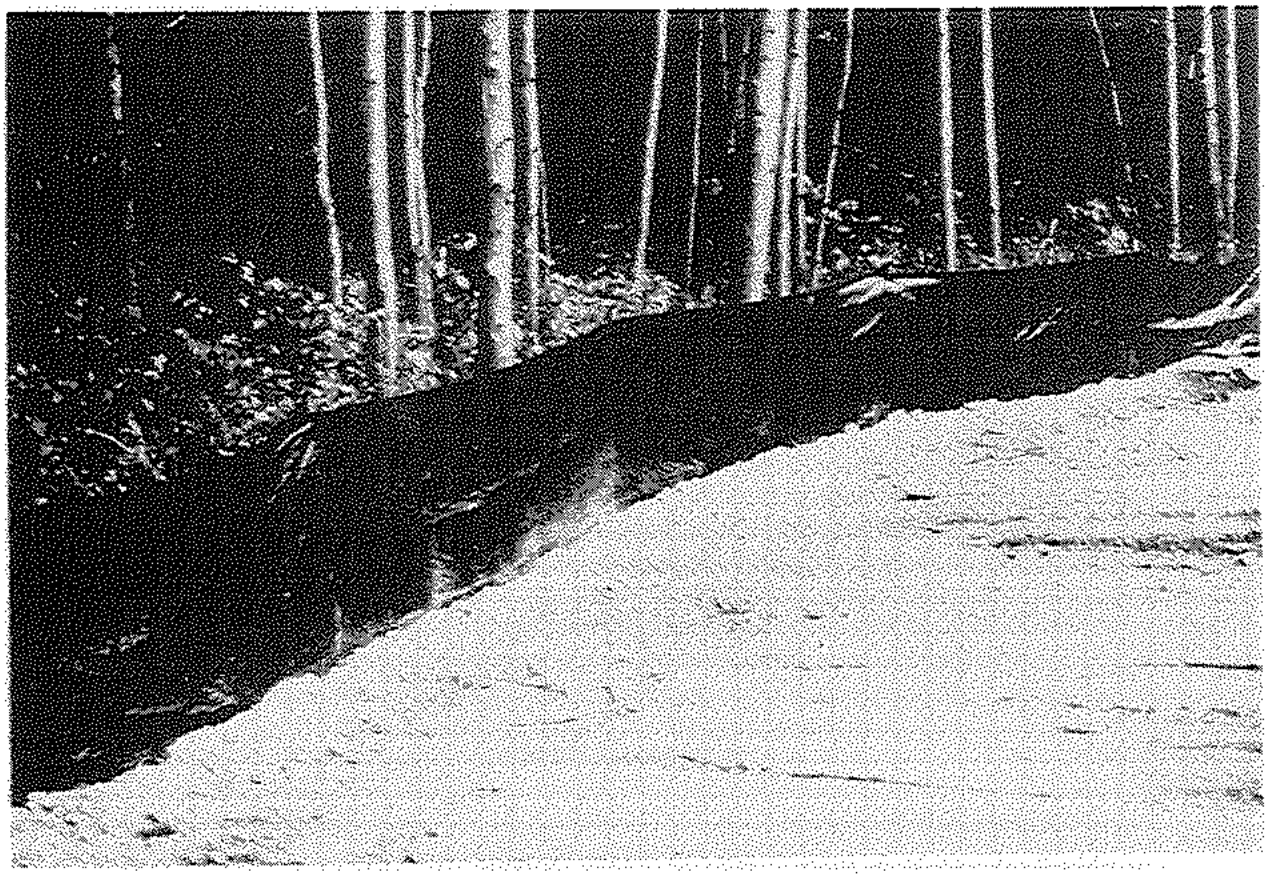
Definition

A temporary sediment barrier consisting of a synthetic filter fabric stretched across and attached to supporting posts and entrenched.

Purposes

1. To intercept and detain small amounts of sediment from disturbed areas during construction operations in order to prevent sediment from leaving the site.

2. To decrease the velocity of sheet flows and low-to-moderate level channel flows.



Conditions Where Practice Applies

1. Below disturbed areas where erosion would occur in the form of sheet and rill erosion.

2. Where the size of the drainage area is no more than one quarter acre per 100 feet of silt fence length; the maximum slope length behind the barrier is 100 feet; and the maximum gradient behind the barrier is 50 percent (2:1).

3. In minor swales or ditch lines where the maximum contributing drainage area is no greater than 1 acre and flow is no greater than 1 cfs.

4. Silt fence will not be used in areas where rock or some other hard surface prevents the full and uniform depth anchoring of the barrier.

Planning Considerations

Laboratory work at the Virginia Highway and Transportation Research Council (VHTRC) has shown that silt fences can trap a much higher percentage of suspended sediments than straw bales, though silt fence passes the sediment-laden water slower. Silt fences are preferable to straw barriers in many cases because of their durability and potential cost savings. While the failure rate of silt fences is lower than that of straw barriers, many instances have been observed where silt fences are improperly installed, inviting failure and sediment loss. The installation methods outlined here can improve performance and reduce failures.

As noted, flow rate through silt fence is significantly lower than the flow rate for straw bale barriers. This creates more ponding and hence more time for sediment to fall out. Table 3.05-A demonstrates these relationships.

Both woven and non-woven synthetic fabrics are commercially available. The woven fabrics generally display higher strength than the non-woven fabrics and, in most cases, do not require any additional reinforcement. When tested under acid and alkaline water conditions, most of the woven fabrics increase in strength, while the reactions of non-woven fabrics to these conditions are variable. The same is true of testing under extensive ultraviolet radiation. Permeability rates vary regardless of fabric type. While all of the fabrics demonstrate very high filtering efficiencies for sandy sediments, there is considerable variation among both woven and non-woven fabrics when filtering the finer silt and clay particles.

Design Criteria

1. No formal design is required. As with straw bale barriers, an effort should be made to locate silt fence at least 5 feet to 7 feet beyond the base of disturbed slopes with grades greater than 7%.

TABLE 3.05-A

TYPICAL FLOW RATES AND FILTERING EFFICIENCIES OF PERIMETER CONTROL

Material	Flow Rate (gal./sq.ft./min)	Filter Efficiency(%)
Straw	5.6	67
Synthetic Fabric	0.3	97

Source: VHTRC

2. The use of silt fences, because they have such a low permeability, is limited to situations in which only sheet or overland flows are expected and where concentrated flows originate from drainage areas of 1 acre or less.

3. Field experience has demonstrated that, in many instances, silt fence is installed too short (less than 16 inches above ground elevation). The short fence is subject to breaching during even small storm events and will require maintenance "clean outs" more often. Properly supported silt fence which stands 24 to 34 inches above the existing grade tends to promote more effective sediment control.

Construction Specifications

Materials

1. Synthetic filter fabric shall be a pervious sheet of propylene, nylon, polyester or ethylene yarn and shall be certified by the manufacturer or supplier as conforming to the requirements noted in Table 3.05-B.

2. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0° F to 120° F.

3. If wooden stakes are utilized for silt fence construction, they must have a diameter of 2 inches when oak is used and 4 inches when pine is used. Wooden stakes must have a minimum length of 5 feet.

TABLE 3.05-B

PHYSICAL PROPERTIES OF FILTER FABRIC IN SILT FENCE

Physical Property	Test	Requirements
Filtering Efficiency	ASTM 5141	75% (minimum)
Tensile Strength at 20% (max.) Elongation*	VTM-52	Extra Strength - 50 lbs./linear inch (minimum) Standard Strength - 30 lbs./linear inch (minimum)
Flow Rate	ASTM 5141	0.2 gal./sq.ft./ minute (minimum)
Ultraviolet Radiation Stability %	ASTM-G-26	90% (minimum)

* Requirements reduced by 50% after six months of installation.

Source: VHTRC

4. If steel posts (standard "U" or "T" section) are utilized for silt fence construction, they must have a minimum weight of 1.33 pounds per linear foot and shall have a minimum length of 5 feet.

5. Wire fence reinforcement for silt fences using standard-strength filter cloth shall be a minimum of 14 gauge and shall have a maximum mesh spacing of 6 inches.

Installation

1. The height of a silt fence shall be a minimum of 16 inches above the original ground surface and shall not exceed 34 inches above ground elevation.

2. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are unavoidable, filter cloth shall be spliced together only at a support post, with a minimum 6-inch overlap, and securely sealed.

3. A trench shall be excavated approximately 4-inches wide and 4-inches deep on the upslope side of the proposed location of the measure.

4. When wire support is used, standard-strength filter cloth may be used. Posts for this type of installation shall be placed a maximum of 10-feet apart (see Plate 3.05-1). The wire mesh fence must be fastened securely to the upslope side of the posts using heavy duty wire staples at least one inch long, tie wires or hog rings. The wire shall extend into the trench a minimum of two inches and shall not extend more than 34 inches above the original ground surface. The standard-strength fabric shall be stapled or wired to the wire fence, and 8 inches of the fabric shall be extended into the trench. The fabric shall not be stapled to existing trees.

5. When wire support is not used, extra-strength filter cloth shall be used. Posts for this type of fabric shall be placed a maximum of 6-feet apart (see Plate 3.05-2). The filter fabric shall be fastened securely to the upslope side of the posts using one inch long (minimum) heavy-duty wire staples or tie wires and eight inches of the fabric shall be extended into the trench. The fabric shall not be stapled to existing trees. This method of installation has been found to be more commonplace than #4.

6. If a silt fence is to be constructed across a ditch line or swale, the measure must be of sufficient length to eliminate endflow, and the plan configuration shall resemble an arc or horseshoe with the ends oriented upslope (see Plate 3.05-2). Extra-strength filter fabric shall be used for this application with a maximum 3-foot spacing of posts.

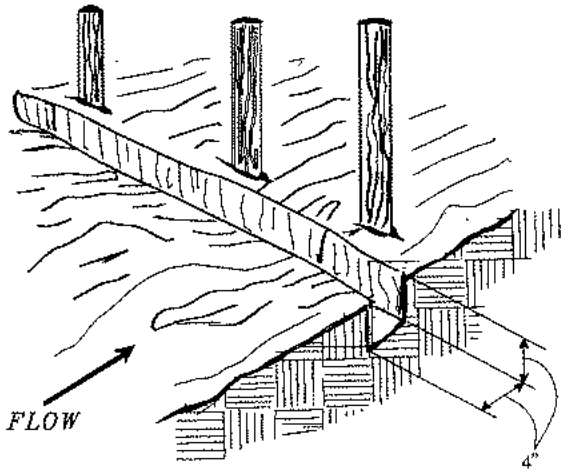
   All other installation requirements noted in #5 apply.

7. The 4-inch by 4-inch trench shall be backfilled and the soil compacted over the filter fabric.

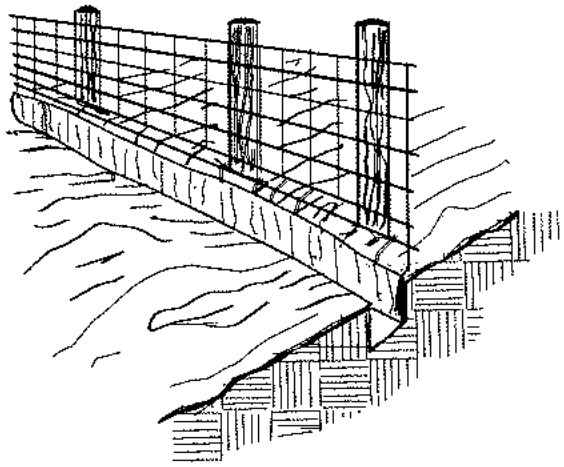
8. Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

CONSTRUCTION OF A SILT FENCE (WITH WIRE SUPPORT)

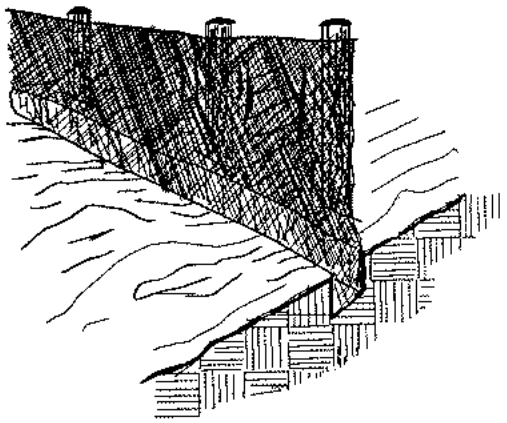
1. SET POSTS AND EXCAVATE A 4"X4" TRENCH UPSLOPE ALONG THE LINE OF POSTS.



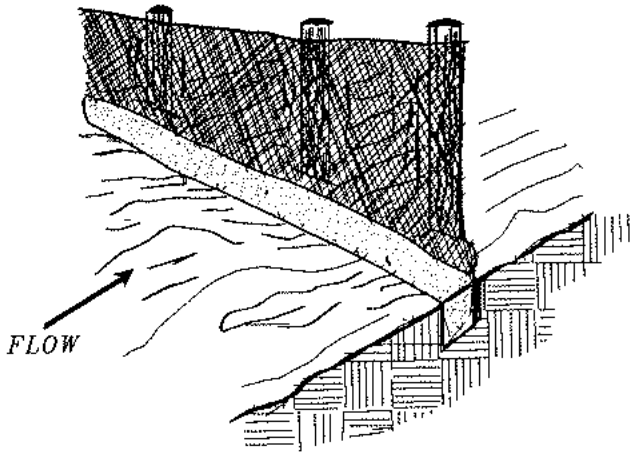
2. STAPLE WIRE FENCING TO THE POSTS.



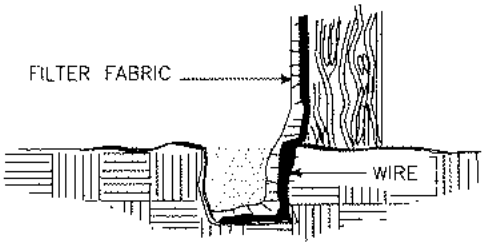
3. ATTACH THE FILTER FABRIC TO THE WIRE FENCE AND EXTEND IT INTO THE TRENCH.



4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



EXTENSION OF FABRIC AND WIRE INTO THE TRENCH.

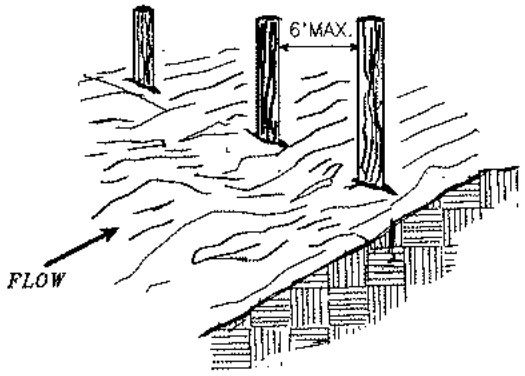


Source: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant

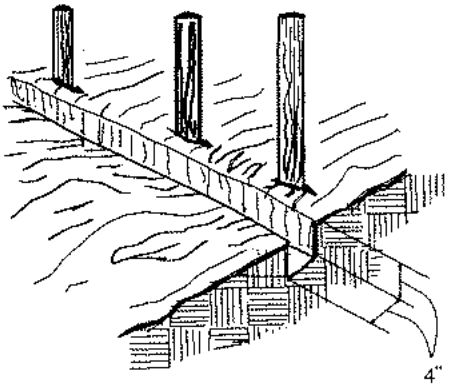
Plate 3.05-1

CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)

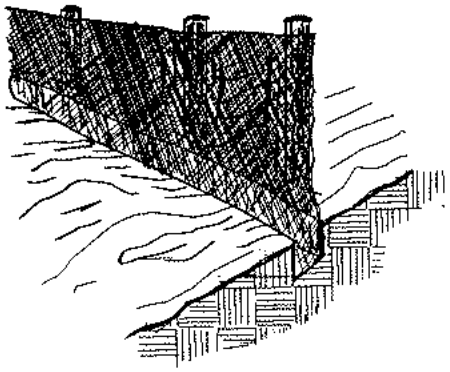
1. SET THE STAKES.



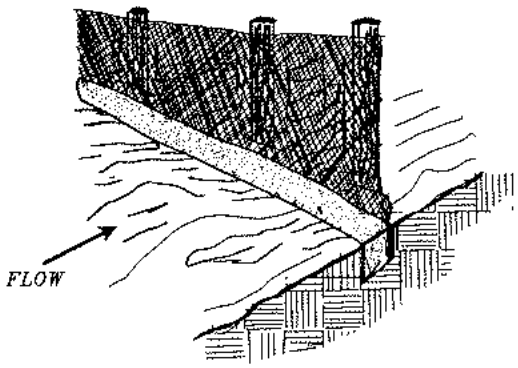
2. EXCAVATE A 4"X 4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.



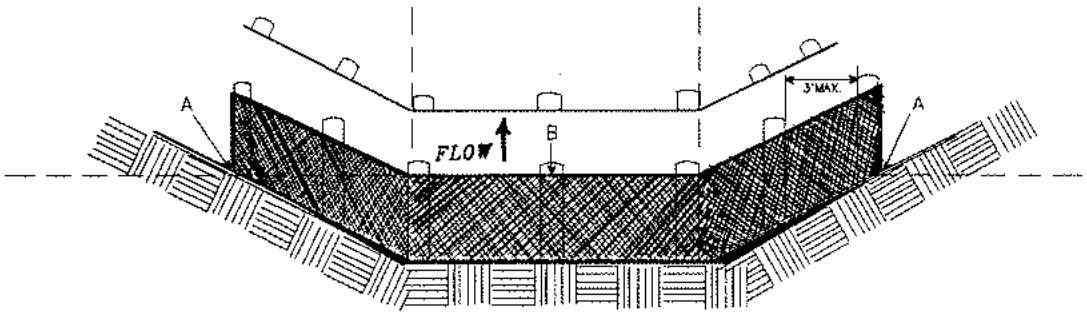
3. STAPLE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.



4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



SHEET FLOW INSTALLATION
(PERSPECTIVE VIEW)



POINTS A SHOULD BE HIGHER THAN POINT B.

DRAINAGEWAY INSTALLATION
(FRONT ELEVATION)

Source: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant

Plate 3.05-2

Maintenance

1. Silt fences shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.

2. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting.

3. 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.

4. Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the barrier.

5. 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.

STD & SPEC 3.07

STORM DRAIN INLET PROTECTION

IP

Definition

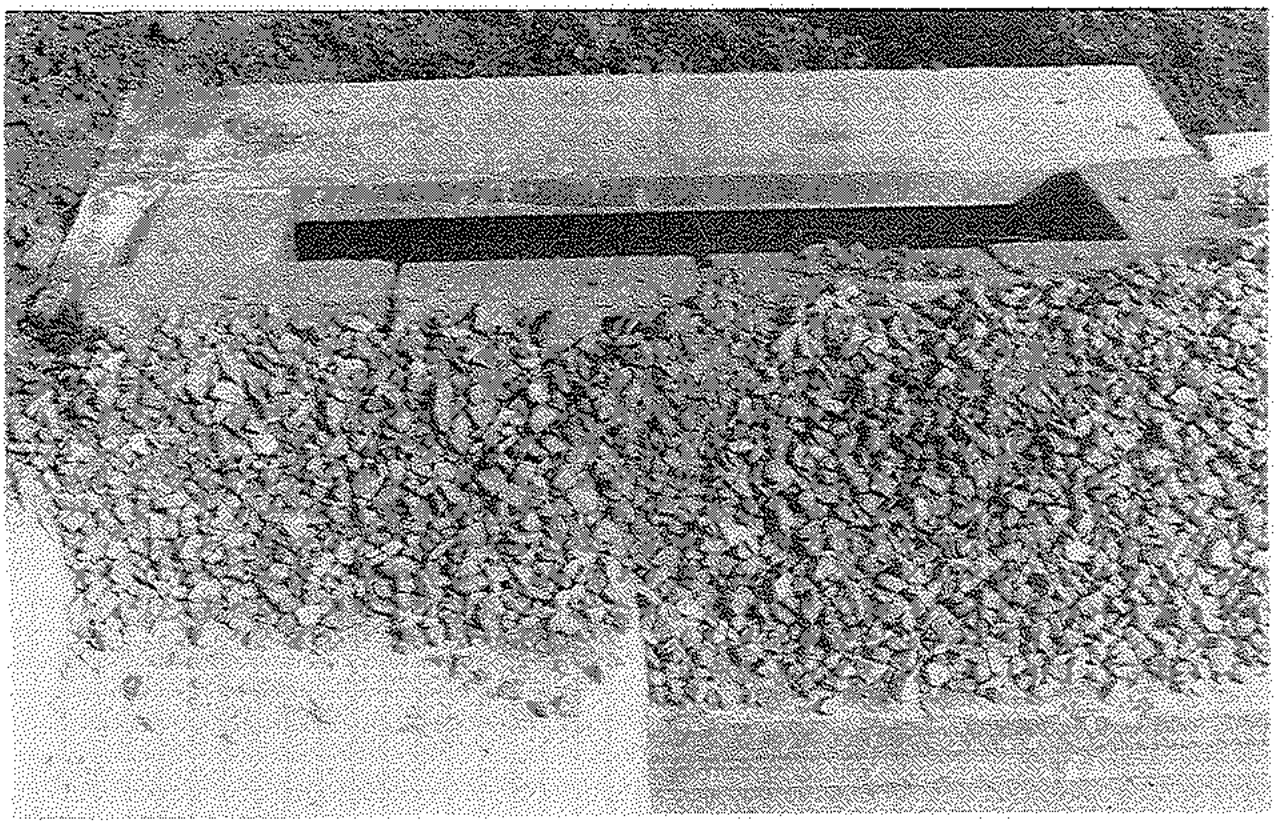
A sediment filter or an excavated impounding area around a storm drain drop inlet or curb inlet.

Purpose

To prevent sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.

Conditions Where Practice Applies

Where storm drain inlets are to be made operational before permanent stabilization of the corresponding disturbed drainage area. Different types of structures are applicable to different conditions (see Plates 3.07-1 through 3.07-8).



Planning Considerations

Storm sewers which are made operational prior to stabilization of the associated drainage areas can convey large amounts of sediment to natural drainageways. In case of extreme sediment loading, the storm sewer itself may clog and lose a major portion of its capacity. To avoid these problems, it is necessary to prevent sediment from entering the system at the inlets.

This practice contains several types of inlet filters and traps which have different applications dependent upon site conditions and type of inlet. Other innovative techniques for accomplishing the same purpose are encouraged, but only after specific plans and details are submitted to and approved by the appropriate Plan-Approving Authority.

Care should be taken when choosing a specific type of inlet protection. Field experience has shown that inlet protection which causes excessive ponding in an area of high construction activity may become so inconvenient that it is removed or bypassed, thus transmitting sediment-laden flows unchecked. In such situations, a structure with an adequate overflow mechanism should be utilized.

The following inlet protection devices are for drainage areas of one acre or less. Runoff from larger disturbed areas should be routed to a TEMPORARY SEDIMENT TRAP (Std. & Spec. 3.13) or a TEMPORARY SEDIMENT BASIN (Std. & Spec. 3.14).

The best way to prevent sediment from entering the storm sewer system is to stabilize the site as quickly as possible, preventing erosion and stopping sediment at its source.

Stone is utilized as the chief ponding/filtering agent in most of the inlet protection types described in this specification. The various types of "coarse aggregates" which are depicted are able to filter out sediment mainly through slowing down flows directed to the inlet by creating an increased flow path for the stormwater (through void space in the respective stone). The stone filtering medium by no means slows stormwater flowrate as does filter cloth and therefore cannot provide the same degree of filter efficiency when smaller silt and clay particles are introduced into stormwater flows. However, as mentioned earlier, excessive ponding in busy areas adjacent to stormwater inlets is in many cases unacceptable - that is why stone must be utilized with many installations.

Fortunately, in most instances, inlet protection utilizing stone should not be the sole control measure. At the time that storm sewer inlet and associated appurtances become operational, areas adjacent to the structures are most likely at final grade or will not be altered for extended periods; this is the time when TEMPORARY SEEDING (Std. & Spec. 3.31) and other appropriate controls should be implemented to enhance sediment-loss mitigation. In addition, by varying stone sizes used in the construction of inlet protection, a greater degree of sediment removal can be obtained. As an option, filter cloth can be used with the stone in these devices to further enhance sediment removal. Notably, the potential inconvenience of excessive ponding must be examined with these choices, especially the latter.

Design Criteria

1. The drainage area shall be no greater than 1 acre.

2. The inlet protection device shall be constructed in a manner that will facilitate clean-out and disposal of trapped sediment and minimize interference with construction activities.

3. The inlet protection devices shall be constructed in such a manner that any resultant ponding of stormwater will not cause excessive inconvenience or damage to adjacent areas or structures.

4. Design criteria more specific to each particular inlet protection device will be found on Plates 3.07-1 through 3.07-8.

5. For the inlet protection devices which utilize stone as the chief ponding/filtering medium, a range of stone sizes is offered; VDOT #3, #357, or #5 Coarse Aggregate should be used. The designer/plan reviewer should attempt to get the greatest amount of filtering action possible (by using smaller-sized stone), while not creating significant ponding problems.

6. In all designs which utilize stone with a wire-mesh support as a filtering mechanism, the stone can be completely wrapped with the wire mesh to improve stability and provide easier cleaning.

7. Filter Fabric may be added to any of the devices which utilize "coarse aggregate" stone to significantly enhance sediment removal. The fabric, which must meet the physical requirements noted for "extra strength" found in Table 3.05-B, should be secured between the stone and the inlet (on wire-mesh if it is present). As a result of the significant increase in filter efficiency provided by the fabric, a larger range of stone sizes (VDOT #1, #2 or #3 Coarse Aggregate) may be utilized with such a configuration. The larger stone will help keep larger sediment masses from clogging the cloth. Notably, significant ponding may occur at the inlet if filter cloth is utilized in this manner.

Construction Specifications

1. Silt Fence Drop Inlet Protection

   a. Silt Fence shall conform to the construction specifications for "extra strength" found in Table 3.05-B and shall be cut from a continuous roll to avoid joints.

   b. For stakes, use 2 x 4-inch wood (preferred) or equivalent metal with a minimum length of 3 feet.

c. Space stakes evenly around the perimeter of the inlet a maximum of 3-feet apart, and securely drive them into the ground, approximately 18-inches deep (see Plate 3.07-1).

d. To provide needed stability to the installation, frame with 2 x 4-inch wood strips around the crest of the overflow area at a maximum of 1½ feet above the drop inlet crest.

e. Place the bottom 12 inches of the fabric in a trench (see Plate 3.07-1) and backfill the trench with 12 inches of compacted soil.

f. Fasten fabric securely by staples or wire to the stakes and frame. Joints must be overlapped to the next stake.

g. It may be necessary to build a temporary dike on the downslope side of the structure to prevent bypass flow.

2. Gravel and Wire Mesh Drop Inlet Sediment Filter

a. Wire mesh shall be laid over the drop inlet so that the wire extends a minimum of 1 foot beyond each side of the inlet structure. Wire mesh with 1/2-inch openings shall be used. If more than one strip of mesh is necessary, the strips shall be overlapped.

b. Coarse aggregate shall be placed over the wire mesh as indicated on Plate 3.07-2. The depth of stone shall be at least 12 inches over the entire inlet opening. The stone shall extend beyond the inlet opening at least 18 inches on all sides.

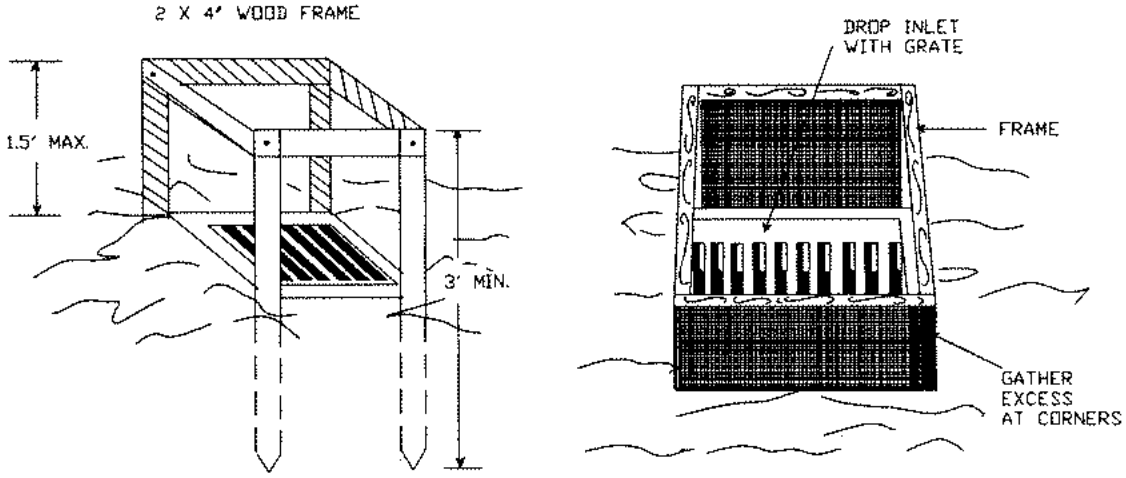
c. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stones must be pulled away from the inlet, cleaned and/or replaced.

Note: This filtering device has no overflow mechanism; therefore, ponding is likely especially if sediment is not removed regularly. This type of device must never be used where overflow may endanger an exposed fill slope. Consideration should also be given to the possible effects of ponding on traffic movement, nearby structures, working areas, adjacent property, etc.

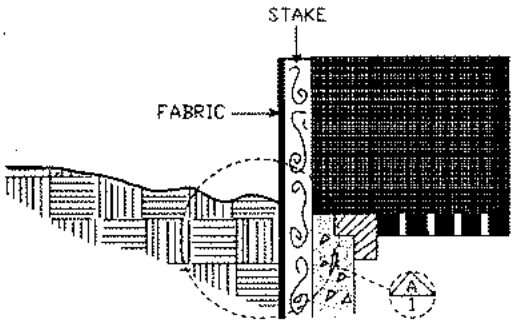
3. Block and Gravel Drop Inlet Sediment Filter

a. Place concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, with the ends of adjacent blocks abutting. The height of the barrier can be varied, depending on design needs, by stacking combinations of 4-inch, 8-inch and 12-inch wide blocks. The barrier of blocks shall be at least 12-inches high and no greater than 24-inches high.

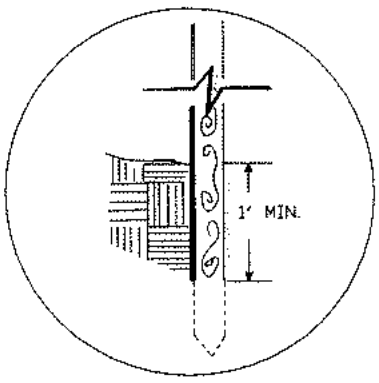
SILT FENCE DROP INLET PROTECTION



PERSPECTIVE VIEWS



ELEVATION OF STAKE AND FABRIC ORIENTATION



DETAIL A

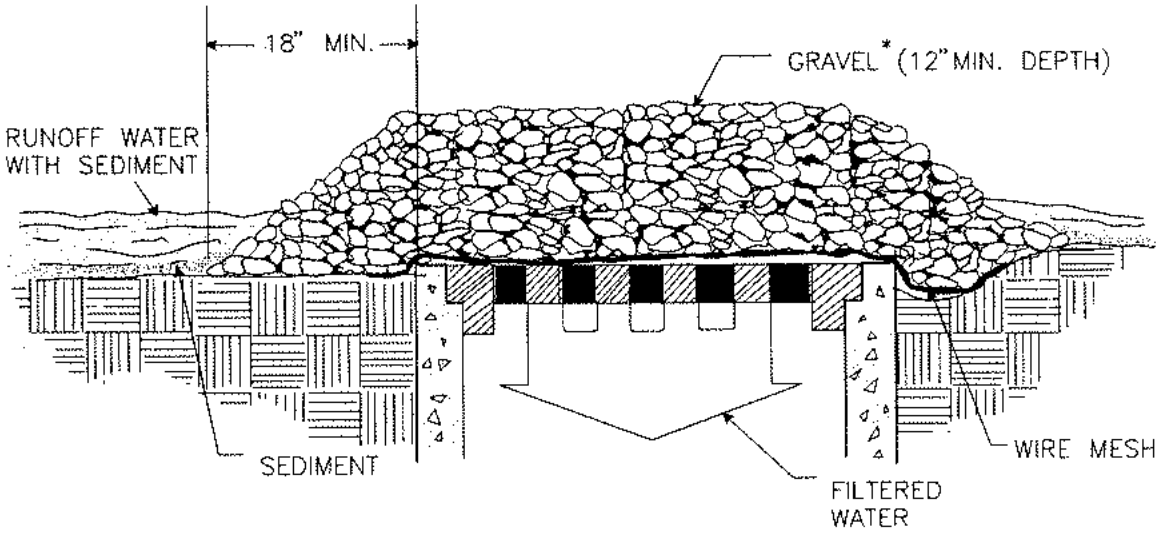
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

Source: N.C. Erosion and Sediment Control Planning and Design Manual, 1988

Plate 3.07-1

GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

Source: Va. DSWC

Plate 3.07-2

b. Wire mesh shall be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the holes in the blocks. Wire mesh with 1/2-inch openings shall be used.

c. Stone shall be piled against the wire to the top of the block barrier, as shown in Plate 3.07-3.

d. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the blocks, cleaned and replaced.

4. Excavated Drop Inlet Sediment Trap

a. The excavated trap shall be sized to provide a minimum storage capacity calculated at the rate of 134 cubic yards per acre of drainage area. A trap shall be no less than 1-foot nor more than 2-feet deep measured from the top of the inlet structure. Side slopes shall not be steeper than 2:1 (see Plate 3.07-4).

b. The slope of the basin may vary to fit the drainage area and terrain. Observations must be made to check trap efficiency and modifications shall be made as necessary to ensure satisfactory trapping of sediment. Where an inlet is located so as to receive concentrated flows, such as in a highway median, it is recommended that the basin have a rectangular shape in a 2:1 (length/width) ratio, with the length oriented in the direction of the flow.

c. 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 a manner such that it will not erode.

5. Sod Drop Inlet Sediment Filter

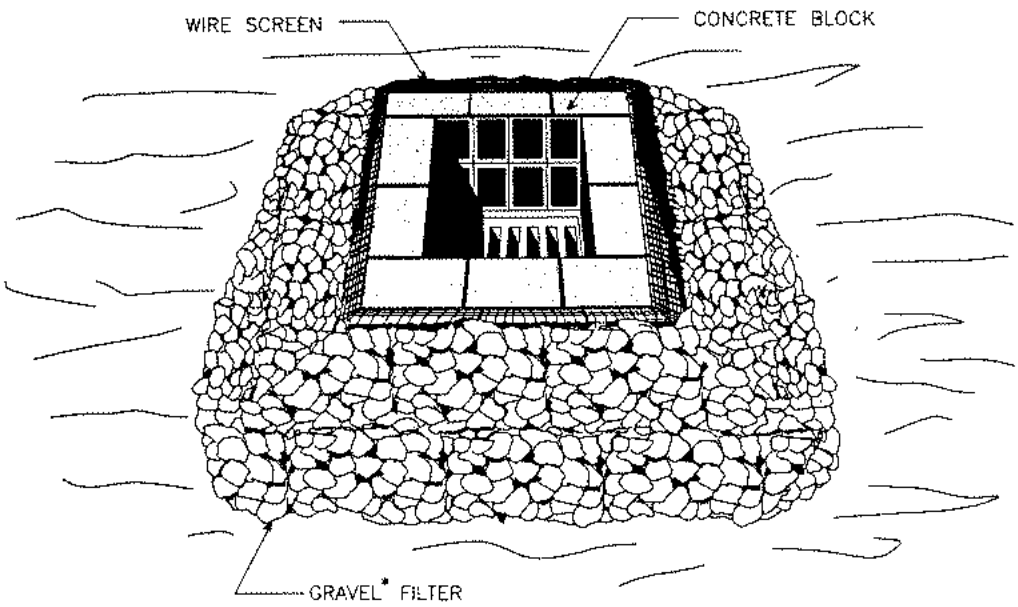
a. Soil shall be prepared and sod installed according to the specifications in Std. & Spec. 3.33, SODDING.

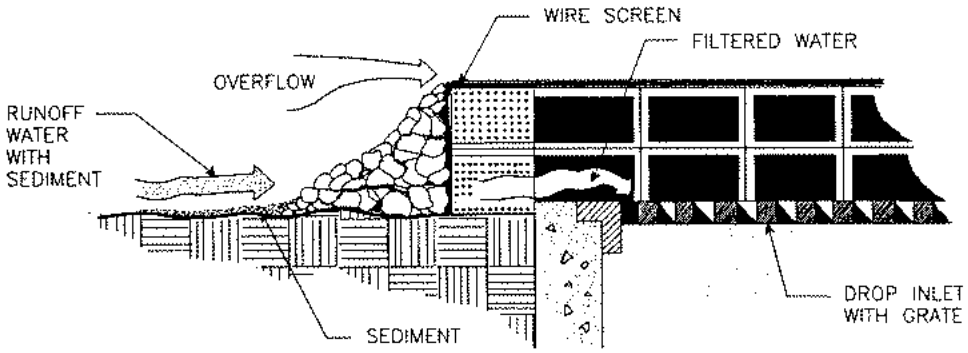
b. Sod shall be placed to form a turf mat covering the soil for a distance of 4 feet from each side of the inlet structure, as depicted in Plate 3.07-5.

6. Gravel Curb Inlet Sediment Filter

a. Wire mesh with 1/2-inch openings shall be placed over the curb inlet opening so that at least 12 inches of wire extends across the inlet cover and at least 12 inches of wire extends across the concrete gutter from the inlet opening, as depicted in Plate 3.07-6.

BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER





SPECIFIC APPLICATION

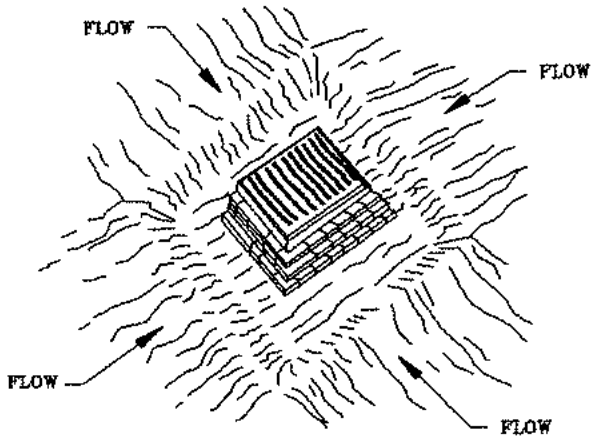
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

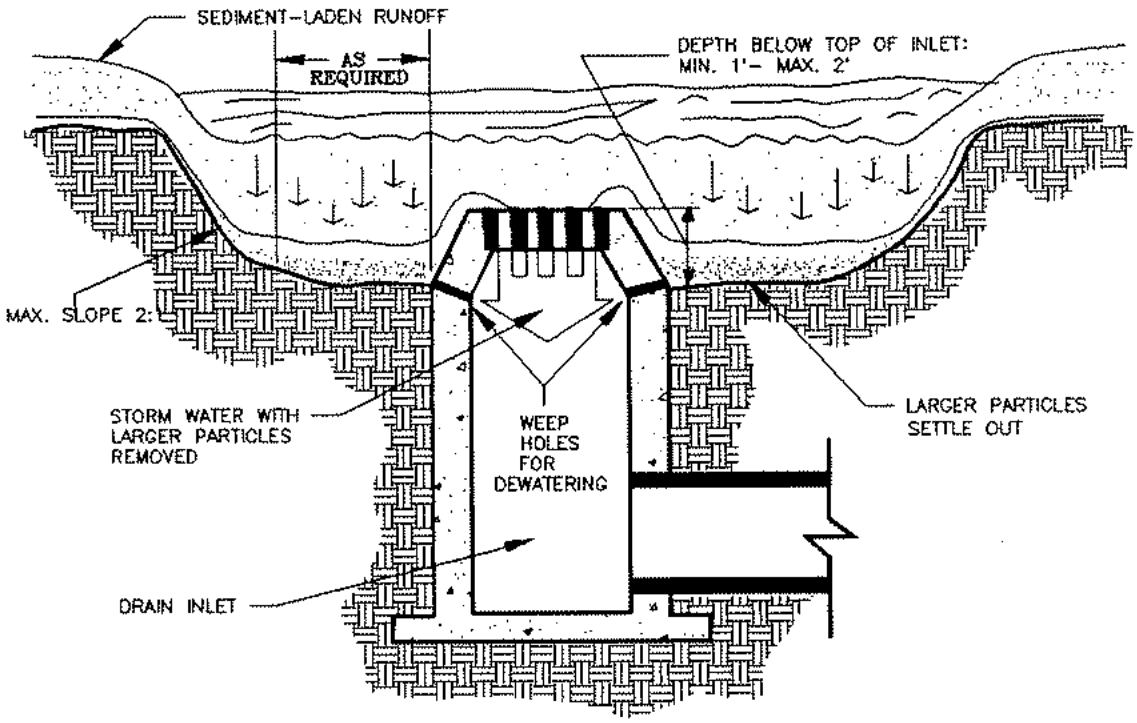
* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

Source: Va. DSWC

Plate 3.07-3

EXCAVATED DROP INLET SEDIMENT TRAP





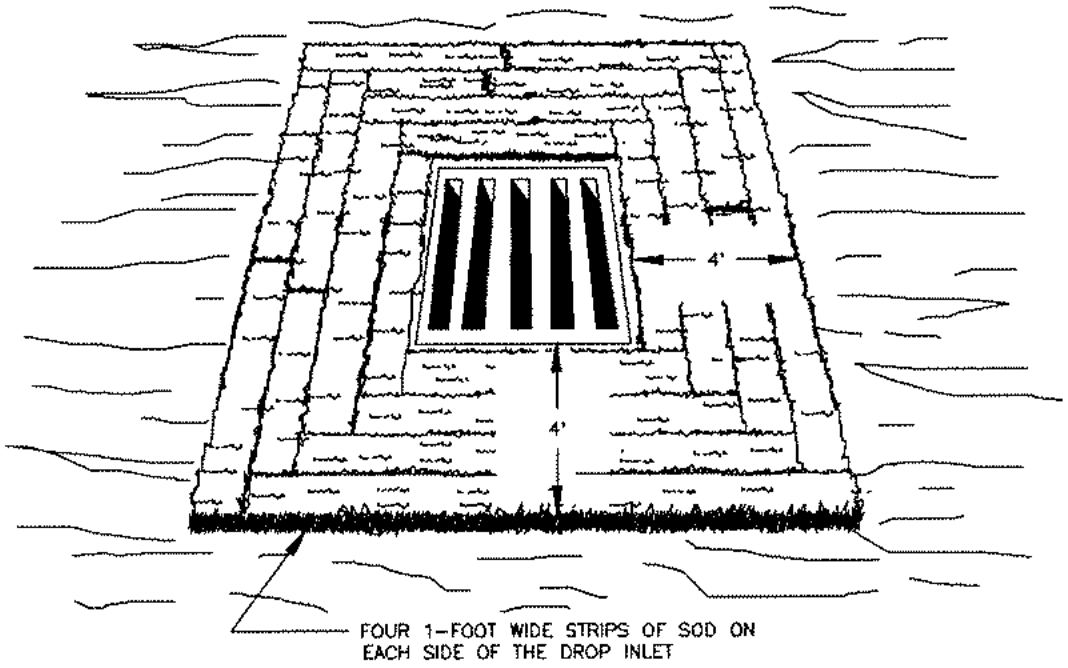
SPECIFIC APPLICATION

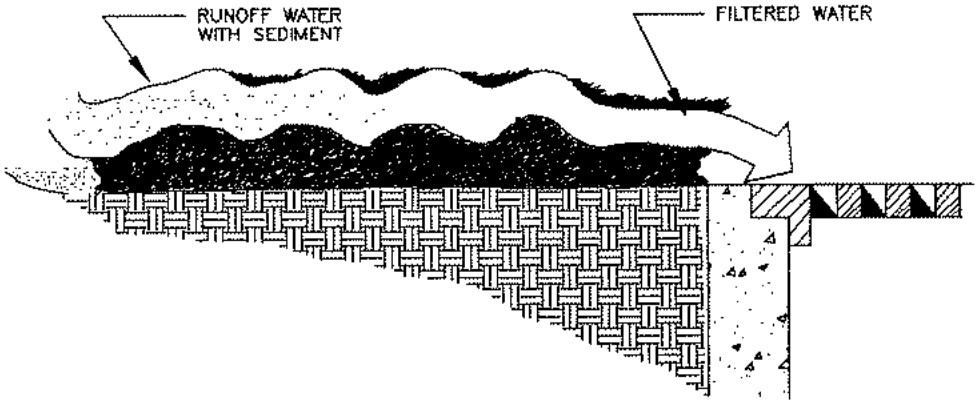
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPABILITY AND EASE OF MAINTENANCE ARE DESIRABLE.

Source: Michigan Soil Erosion and Sediment Control Guidebook, 1975, and USDA-SCS

Plate 3.07-4

SOD DROP INLET SEDIMENT FILTER



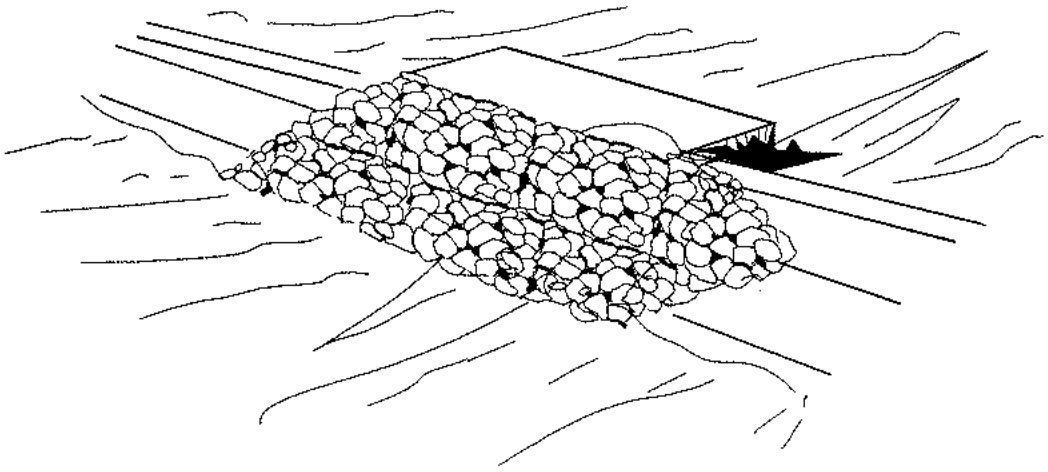


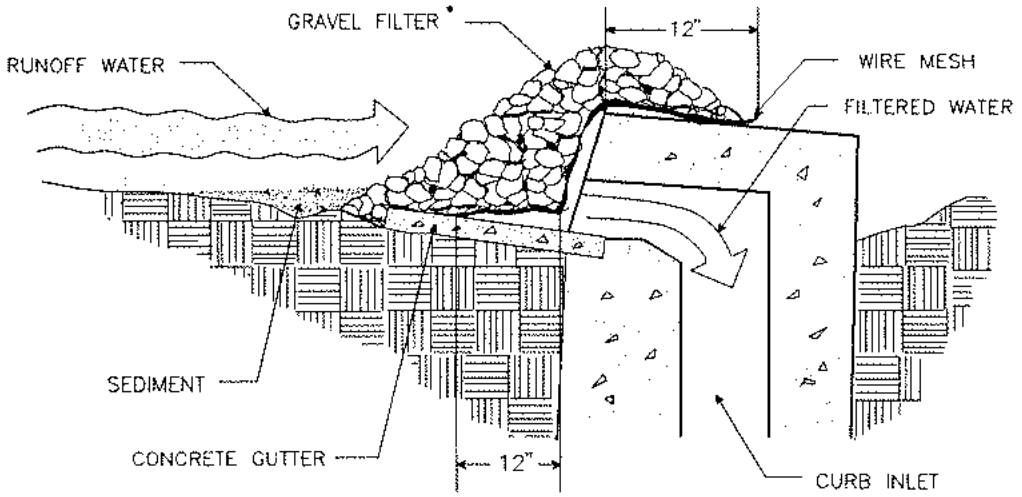
SPECIFIC APLLICATION

THIS METHOD OF INLET PROTECTION IS APPPLICABLE ONLY AT THE TIME OF PERMANENT SEEDING, TO PROTECT THE INLET FROM SEDIMENT AND MULCH MATERIAL UNTIL PERMANENT VEGETATION HAS BECOME ESTABLISHED.

Source: Va. DSWC Plate 3.07-5

GRAVEL CURB INLET SEDIMENT FILTER





SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR 5 COARSE AGGREGATE.

Source: Va. DSWC Plate 3.07-6

b. Stone shall be piled against the wire so as to anchor it against the gutter and inlet cover and to cover the inlet opening completely.

c. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the block, cleaned and replaced.

7. Curb Inlet Protection with 2-inch x 4-inch Wooden Weir

a. Attach a continuous piece of wire mesh (30-inch minimum width x inlet throat length plus 4 feet) to the 2-inch x 4-inch wooden weir (with a total length of throat length plus 2 feet) as shown in Plate 3.07-7. Wood should be "construction grade" lumber.

b. Place a piece of approved "extra-strength" filter cloth of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2-inch x 4-inch weir.

c. Securely nail the 2-inch x 4-inch weir to the 9-inch long vertical spacers which are to be located between the weir and inlet face at a maximum 6-foot spacing.

d. Place the assembly against the inlet throat and nail 2-foot (minimum) lengths of 2-inch x 4-inch board to the top of the weir at spacer locations. These 2-inch x 4-inch anchors shall extend across the inlet tops and be held in place by sandbags or alternate weight.

e. The assembly shall be placed so that the end spacers are a minimum 1 foot beyond both ends of the throat opening.

f. Form the wire mesh and filter cloth to the concrete gutter and against the face of curb on both sides of the inlet. Place coarse aggregate over the wire mesh and filter fabric in such a manner as to prevent water from entering the inlet under or around the filter cloth.

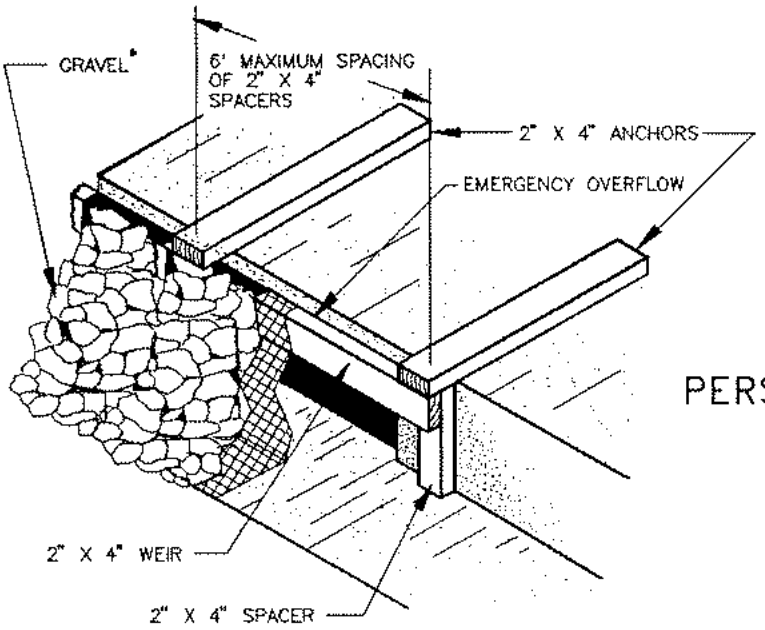
g. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

h. Assure that storm flow does not bypass inlet by installing temporary earth or asphalt dikes directing flow into inlet.

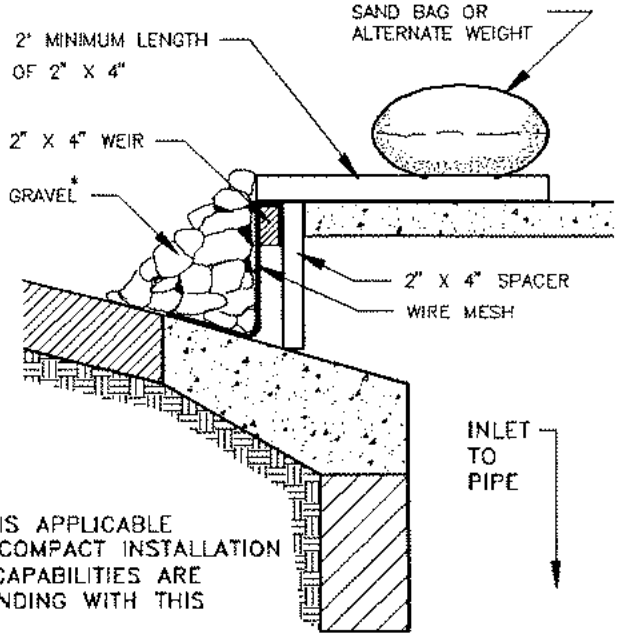
8. Block and Gravel Curb Inlet Sediment Filter

a. Two concrete blocks shall be placed on their sides abutting the curb at either side of the inlet opening.

CURB INLET PROTECTION WITH 2-INCH X 4-INCH WOODEN WEIR



PERSPECTIVE VIEW



SIDE ELEVATION

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE TO CURB INLETS WHERE A STURDY, COMPACT INSTALLATION IS DESIRED. EMERGENCY OVERFLOW CAPABILITIES ARE MINIMAL, SO EXPECT SIGNIFICANT PONDING WITH THIS MEASURE.

*GRAVEL SHALL BE VDOT COARSE AGGREGATE #3, #357 OR #5

Source: 1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control, and USDA-SCS

Plate 3.07-7

b. A 2-inch x 4-inch stud shall be cut and placed through the outer holes of each spacer block to help keep the front blocks in place.

c. Concrete blocks shall be placed on their sides across the front of the inlet and abutting the spacer blocks as depicted in Plate 3.07-8.

d. Wire mesh shall be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the holes in the blocks. Wire mesh with 1/2-inch openings shall be used.

e. Coarse aggregate shall be piled against the wire to the top of the barrier as shown in Plate 3.07-8.

f. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the blocks, cleaned and/or replaced.

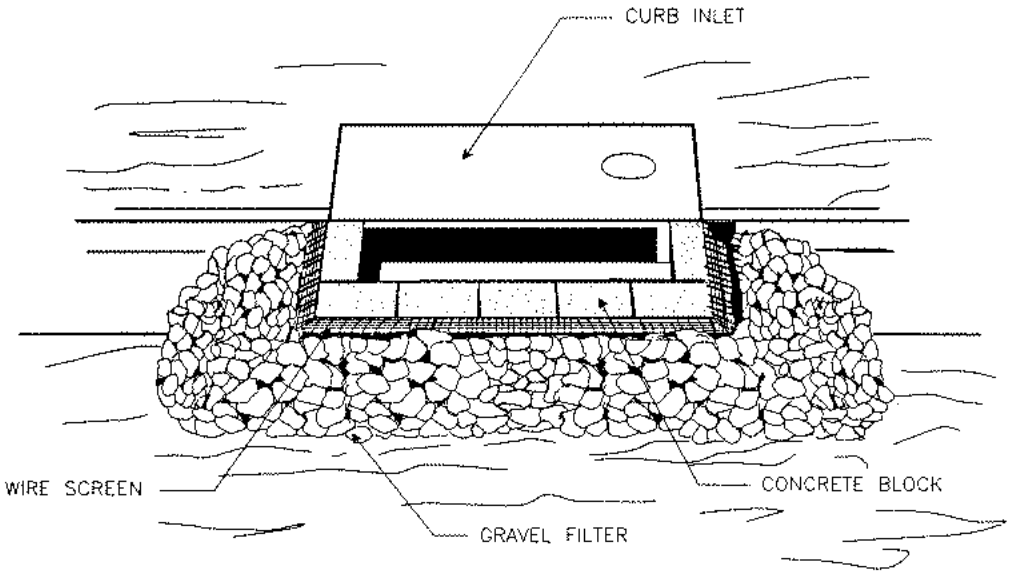
Maintenance

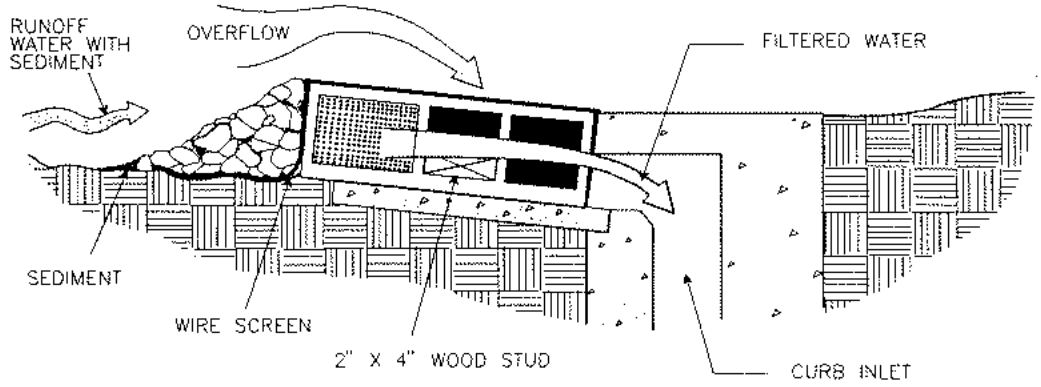
1. The structure shall be inspected after each rain and repairs made as needed.

2. 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.

3. Structures shall be removed and the area stabilized when the remaining drainage area has been properly stabilized.

BLOCK & GRAVEL CURB INLET SEDIMENT FILTER





SPECIAL APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE

Source: Va. DSWC

Plate 3.07-8

STD & SPEC 3.08

CULVERT INLET PROTECTION

CIP

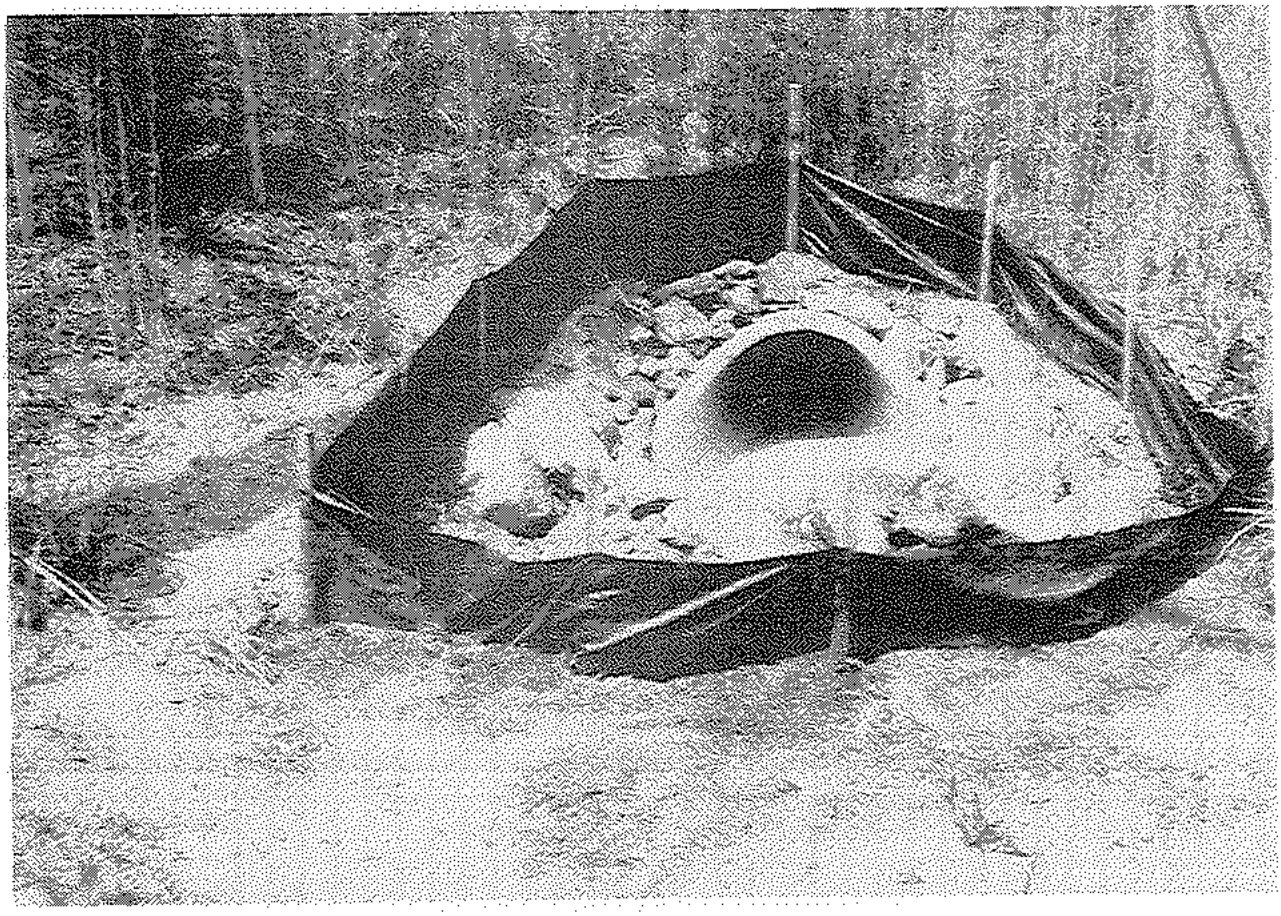
Definition

A sediment filter located at the inlet to storm sewer culverts.

Purposes

1. To prevent sediment from entering, accumulating in and being transferred by a culvert and associated drainage system prior to permanent stabilization of a disturbed project area.

2. To provide erosion control at culvert inlets during the phase of a project where elevation and drainage patterns change, causing original control measures to be ineffective or in need of removal.



Conditions Where Practice Applies

Where culvert and associated drainage system is to be made operational prior to permanent stabilization of the disturbed drainage area. Different types of structures are applicable to different conditions (see Plates 3.08-1 and 3.08-2).

Planning Considerations

When construction on a project reaches a stage where culverts and other storm sewer appurtenances are installed and many areas are brought to a desired grade, the erosion control measures used in the early stages normally need to be modified or may need to be removed altogether. At that time, there is a need to provide protection at the points where runoff will leave the area via culverts and drop or curb inlets.

Similar to drop and curb inlets, culverts which are made operational prior to stabilization of the associated drainage areas can convey large amounts of sediment to natural drainageways. In case of extreme sediment loading, the pipe or pipe system itself may clog and lose a major portion of its capacity. To avoid these problems, it is necessary to prevent sediment from entering the culvert by using one of the methods noted in this section.

General Guidelines (All Types)

1. The inlet protection device shall be constructed in a manner that will facilitate clean-out and disposal of trapped sediment and minimize interference with construction activities.

2. The inlet protection devices shall be constructed in such a manner that any resultant ponding of stormwater will not cause excessive inconvenience or damage to adjacent areas or structures.

3. Design criteria more specific to each particular inlet protection device will be found in Plates 3.08-1 through 3.08-2.

Design Criteria

1. Silt Fence Culvert Inlet Protection

   a. No formal design is required.

   b. Silt fence culvert inlet protection has an expected maximum usable life of three months.

   c. The maximum area draining to this practice shall not exceed one acre.

2. Culvert Inlet Sediment Trap

a. Runoff storage requirements shall be in accordance with information outlined under Std. & Spec. 3.13, TEMPORARY SEDIMENT TRAP.

b. Culvert inlet sediment traps have a maximum expected useful life of 18 months.

c. The maximum area draining to this practice shall not exceed 3 acres.

Construction Specifications

1. Silt Fence Culvert Inlet Protection

a. The height of the silt fence (in front of the culvert opening) shall be a minimum of 16 inches and shall not exceed 34 inches.

b. Extra strength filter fabric with a maximum spacing of stakes of 3 feet shall be used to construct the measure.

c. The placement of silt fence should be approximately 6 feet from the culvert in the direction of incoming flow, creating a "horseshoe" shape as shown in Plate 3.08-1.

d. If silt fence cannot be installed properly or the flow and/or velocity of flow to the culvert protection is excessive and may breach the structure, the stone combination noted in Plate 3.08-1 should be utilized.

2. Culvert Inlet Sediment Trap

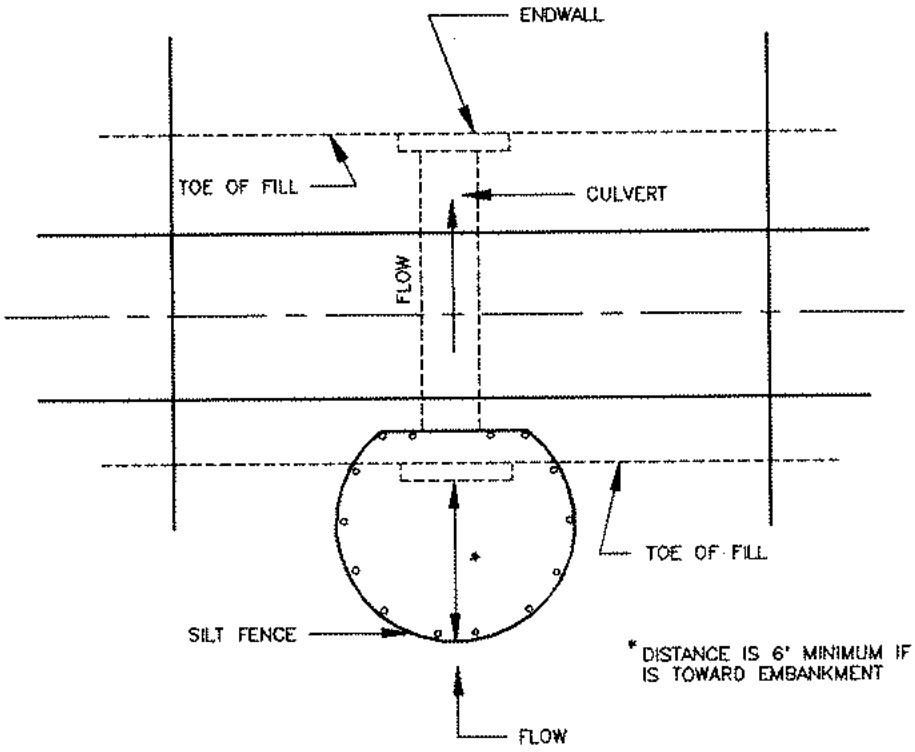
a. Geometry of the design will be a "horseshoe" shape around the culvert inlet (see Plate 3.08-2).

b. The toe of riprap (composing the sediment filter dam) shall be no closer than 24" from the culvert opening in order to provide an acceptable emergency outlet for flows from larger storm events.

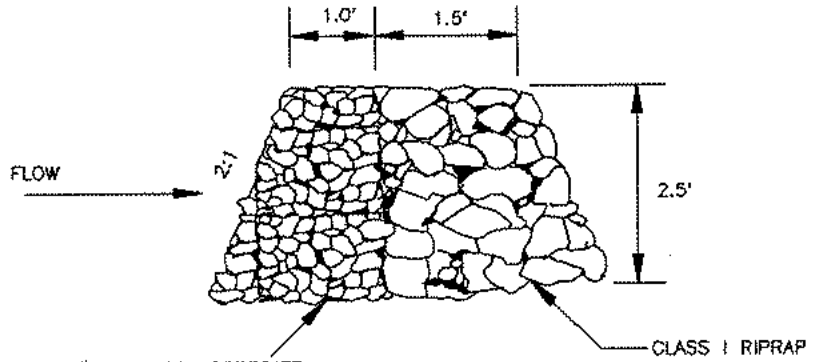
c. All other "Construction Specifications" found within Std. & Spec. 3.13, TEMPORARY SEDIMENT TRAP, also apply to this practice.

e. The proper installation of the culvert inlet sediment trap is a viable substitute for the installation of the TEMPORARY SEDIMENT TRAP.

SILT FENCE CULVERT INLET PROTECTION



OPTIONAL STONE COMBINATION**

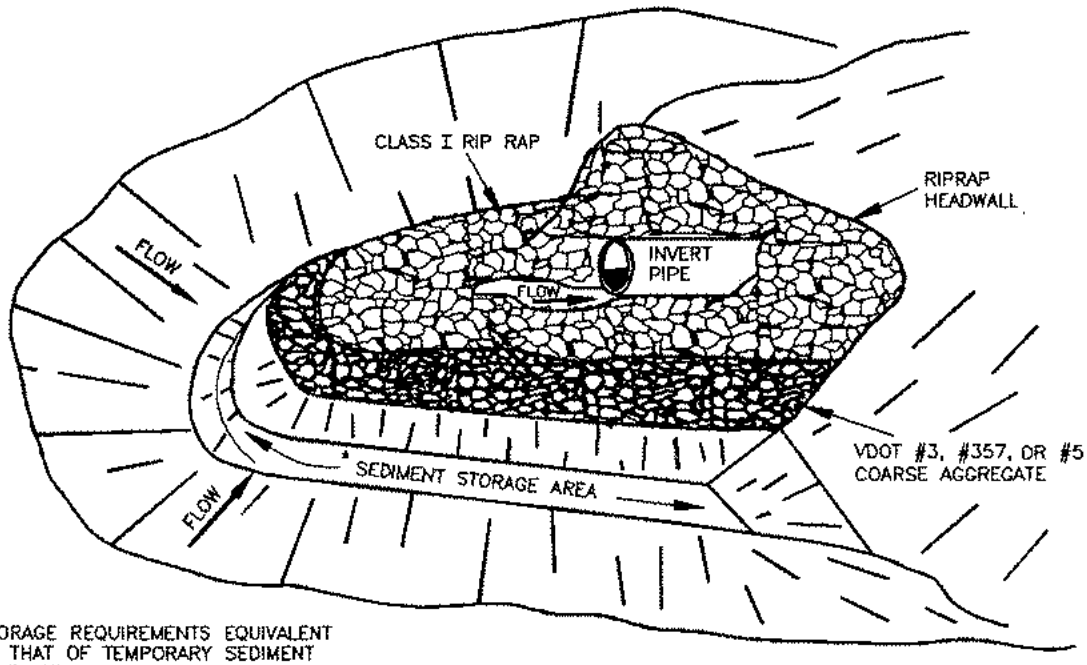


** VDOT #3, #357 OR #5 COARSE AGGREGATE TO REPLACE SILT FENCE IN " HORSESHOE " WHEN HIGH VELOCITY OF FLOW IS EXPECTED

Source: Adapted from VDOT Standard Sheets and Va. DSWC

Plate 3.08-1

CULVERT INLET SEDIMENT TRAP

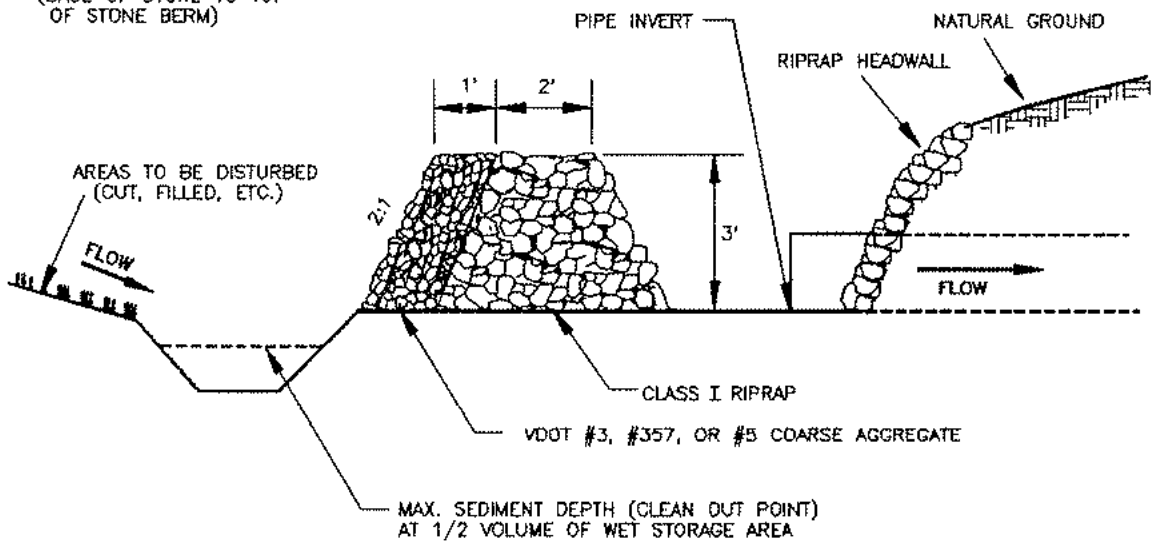


*STORAGE REQUIREMENTS EQUIVALENT TO THAT OF TEMPORARY SEDIMENT TRAP, STD. & SPEC. 3.13

67 C.Y./ACRE WET STORAGE (BELOW BASE OF STONE)

67 C.Y./ACRE DRY STORAGE (BASE OF STONE TO TOP OF STONE BERM)

PERSPECTIVE VIEW



ELEVATION

Source: North Carolina Sediment Control Commission

Plate 3.08-2

Maintenance

1. The structure shall be inspected after each rain and repairs made as needed.

2. Aggregate shall be replaced or cleaned when inspection reveals that clogged voids are causing ponding problems which interfere with on-site construction.

3. Sediment shall be removed and the impoundment restored to its original dimensions when sediment has accumulated to one-half the design depth. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode and cause sedimentation problems.

4. Temporary structures shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

STD & SPEC 3.31

TEMPORARY SEEDING

TS

Definition

The establishment of a temporary vegetative cover on disturbed areas by seeding with appropriate rapidly growing annual plants.

Purposes

1. To reduce erosion and sedimentation by stabilizing disturbed areas that will not be brought to final grade for a period of more than ~~30~~ 14 days. RWE; DEQ-OTS 3-12-14

2. To reduce damage from sediment and runoff to downstream or off-site areas, and to provide protection to bare soils exposed during construction until permanent vegetation or other erosion control measures can be established.

Conditions Where Practice Applies

Where exposed soil surfaces ~~are not to be fine-graded for periods longer than 30~~ will not be at final grade for more than 14 days. Such areas include denuded areas, soil stockpiles, dikes, dams, sides of sediment basins, temporary roadbanks, etc. (see MS #1 and MS #2). A permanent vegetative cover shall be applied to areas that will be left dormant for a period of more than 1 year.

Planning Considerations

Sheet erosion, caused by the impact of rain on bare soil, is the source of most fine particles in sediment. To reduce this sediment load in runoff, the soil surface itself should be protected. The most efficient and economical means of controlling sheet and rill erosion is to establish vegetative cover. Annual plants which sprout rapidly and survive for only one growing season are suitable for establishing temporary vegetative cover. Temporary seeding is encouraged whenever possible to aid in "controlling" construction sites.

Temporary seeding also prevents costly maintenance operations on other erosion control systems. For example, sediment basin clean-outs will be reduced if the drainage area of the basin is seeded where grading and construction are not taking place. Perimeter dikes will be more effective if not choked with sediment.

Temporary seeding is essential to preserve the integrity of earthen structures used to control sediment, such as dikes, diversions, and the banks and dams of sediment basins.

Proper seedbed preparation and the use of quality seed are important in this practice just as in permanent seeding. Failure to carefully follow sound agronomic recommendations will often result in an inadequate stand of vegetation that provides little or no erosion control.

Specifications

Prior to seeding, install necessary erosion control practices such as dikes, waterways, and basins.

Plant Selection

Select plants appropriate to the season and site conditions from Tables 3.31-B and 3.31-C. Note that Table 3.31-B presents plants which can be used without extensive evaluation of site conditions; Table 3.31-C presents more in-depth information on the plant materials.

Seedbed Preparation

To control erosion on bare soil surfaces, plants must be able to germinate and grow. Seedbed preparation is essential.

1. Liming: An evaluation should be conducted to determine if lime is necessary for temporary seeding. In most soils, it takes up to 6 months for a pH adjustment to occur following the application of lime. Therefore, it may be difficult to justify the cost of liming a temporary site, especially when the soil will later be moved and regraded. The following table may be used to determine the actual need along with suggested application rates.

TABLE 3.31-A

LIMING REQUIREMENTS FOR TEMPORARY SITES

pH Test	Recommended Application of Agricultural Limestone
below 4.2	3 tons per acre
4.2 to 5.2	2 tons per acre
5.2 to 6	1 ton per acre

Source: Va. DSWC

2. Fertilizer: Shall be applied as 600 lbs./acre of 10-20-10 (14 lbs./1,000 sq. ft.) or equivalent nutrients. Lime and fertilizer shall be incorporated into the top 2 to 4 inches of the soil if possible.

3. Surface Roughening: If the area has been recently loosened or disturbed, no further roughening is required. When the area is compacted, crusted, or hardened, the soil surface shall be loosened by discing, raking, harrowing, or other acceptable means (see SURFACE ROUGHENING, Std. & Spec. 3.29).

4. Tracking: Tracking with bulldozer cleats is most effective on sandy soils. This practice often causes undue compaction of the soil surface, especially in clayey soils, and does not aid plant growth as effectively as other methods of surface roughening.

Seeding

Seed shall be evenly applied with a broadcast seeder, drill, cultipacker seeder or hydroseeder. Small grains shall be planted no more than 1½ inches deep. Small seeds, such as Kentucky Bluegrass, should be planted no more than 1/4 inch deep. Other Grasses and Legumes should be planted from 1/4 inch to 1/2 inch deep.

Mulching

1. Seedings made in fall for winter cover and during hot and dry summer months shall be mulched according to MULCHING, Std. & Spec. 3.35, except that hydromulches (fiber mulch) will not be considered adequate. Straw mulch should be used during these periods.

2. Temporary seedings made under favorable soil and site conditions during optimum spring and fall seeding dates may not require mulch.

Re-seeding

Areas which fail to establish vegetative cover adequate to prevent rill erosion will be re-seeded as soon as such areas are identified.

TABLE 3.31-B

ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS

"QUICK REFERENCE FOR ALL REGIONS"

Planting Dates	Species	Rate (lbs./acre)
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (Lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50 - 100
Feb. 16 - Apr. 30	Annual Ryegrass (Lolium multi-florum)	60 - 100
May 1 - Aug 31	German Millet (Setaria italica)	50

Source: Va. DSWC

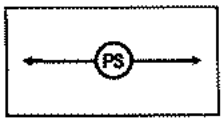
TABLE 3.31-C

TEMPORARY SEEDING PLANT MATERIALS, SEEDING RATES, AND DATES

SPECIES	SEEDING RATE		NORTH[a]			SOUTH[b]			PLANT CHARACTERISTICS
	Acre	1000 ft^2	3/1 to 4/30	5/1 to 8/15	8/15 to 11/1	2/15 to 4/30	5/1 to 9/1	9/1 to 11/15	
OATS (Avena sativa)	3 bu. (up to 100 lbs., not less than 50 lbs.)	2 lbs.	X	-	-	X	-	-	Use spring varieties (e.g., Noble).
RYE[d] (Secale cereale)	2 bu. (up to 110 lbs., not less than 50 lbs.)	2.5 lbs.	X	-	X	X	-	X	Use for late fall seedings, winter cover. Tolerates cold and low moisture.
GERMAN MILLET (Setaria italica)	50 lbs.	approx. 1 lb.	-	X	-	-	X	-	Warm-season annual. Dies at first frost. May be added to summer mixes.
ANNUAL RYEGRASS[c] (Lolium multi-florum)	60 lbs.	1½ lbs.	X	-	X	X	-	X	May be added in mixes. Will mow out of most stands.
WEEPING LOVEGRASS (Eragrostis curvula)	15 lbs.	5½ ozs.	-	X	-	-	X	-	Warm-season perennial. May bunch. Tolerates hot, dry slopes and acid, infertile soils. May be added to mixes.
KOREAN LESPEDEZA[c] (Lespedeza stipulacea)	25 lbs.	approx. 1½ lbs.	X	X	-	X	X	-	Warm season annual legume. Tolerates acid soils. May be added to mixes.

[a] Northern Piedmont and Mountain region. See Plates 3.22-1 and 3.22-2.
[b] Southern Piedmont and Coastal Plain.
[c] May be used as a cover crop with spring seeding.
[d] May be used as a cover crop with fall seeding.
X May be planted between these dates.
- May not be planted between these dates.

STD & SPEC 3.32



PERMANENT SEEDING

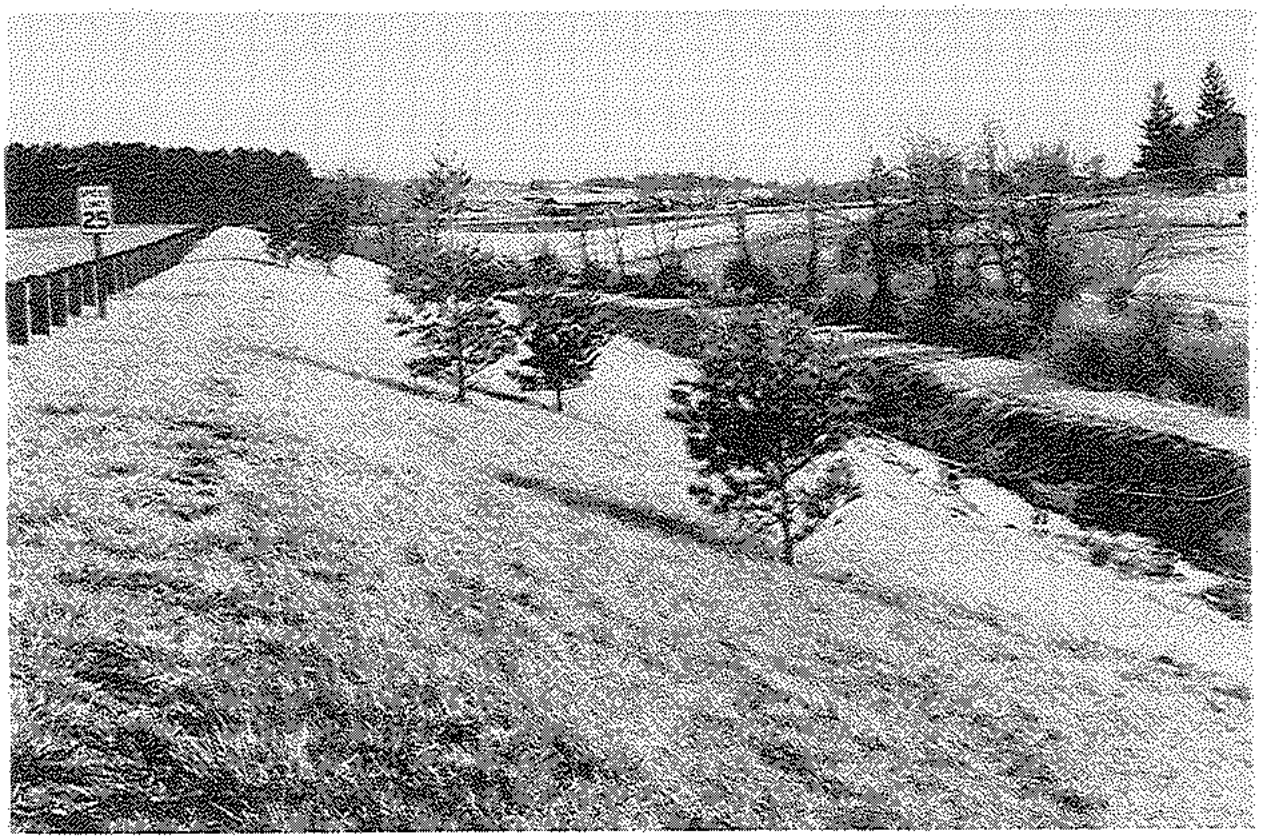
PS

Definition

The establishment of perennial vegetative cover on disturbed areas by planting seed.

Purposes

1. To reduce erosion and decrease sediment yield from disturbed areas.
2. To permanently stabilize disturbed areas in a manner that is economical, adaptable to site conditions, and allows selection of the most appropriate plant materials.
3. To improve wildlife habitat.
4. To enhance natural beauty.



Conditions Where Practice Applies

1. Disturbed areas where permanent, long-lived vegetative cover is needed to stabilize the soil.

2. Rough-graded areas which will not be brought to final grade for a year or more.

Planning Considerations

Vegetation controls erosion by reducing the velocity and the volume of overland flow and protecting the bare soil surface from raindrop impact.

Areas which must be stabilized after the land has been disturbed require vegetative cover. The most common and economical means of establishing this cover is by seeding grasses and legumes. Permanent vegetative covers must meet the requirements of Minimum Standard #3.

Advantages of seeding over other means of establishing plants include the small initial establishment cost, the wide variety of grasses and legumes available, low labor requirement, and ease of establishment in difficult areas.

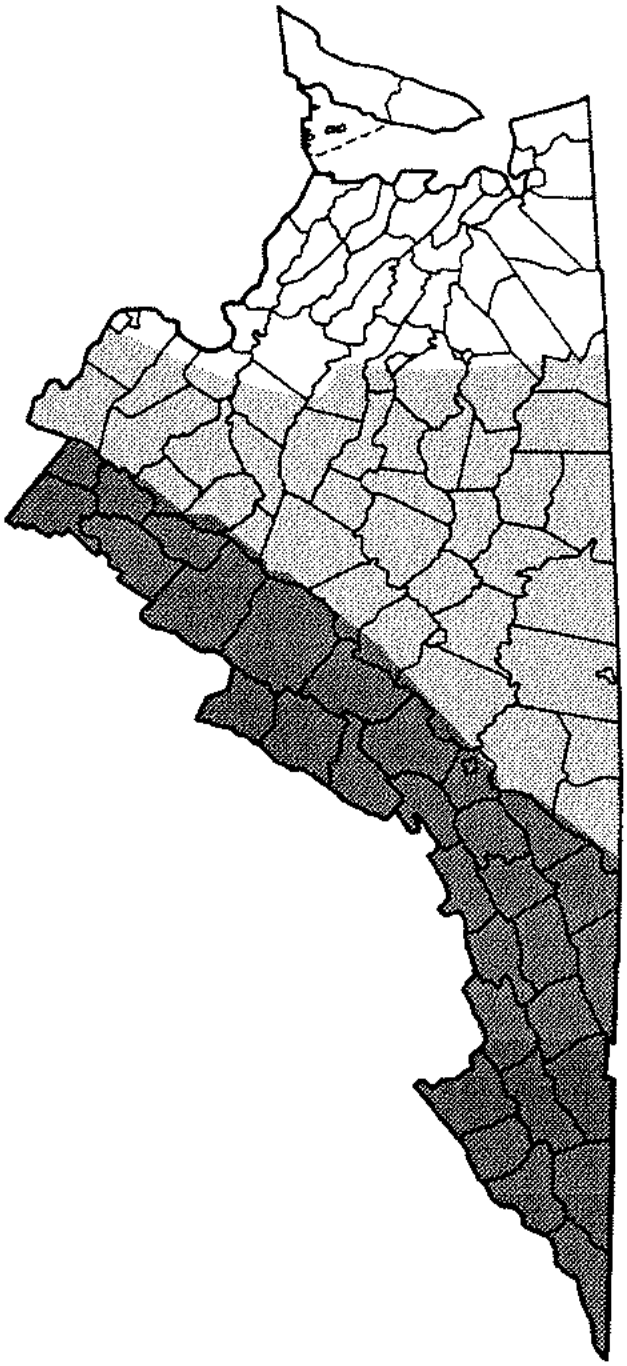
Disadvantages which must be dealt with are the potential for erosion during the establishment stage, a need to reseed areas that fail to establish, limited periods during the year suitable for seeding, the potential need for weed control during the establishment phase, and a need for water and appropriate climatic conditions during germination.

There are so many variables in plant growth that an end product cannot be guaranteed. Much can be done in the planning stages to increase the chances for successful seeding. Selection of the right plant materials for the site, good seedbed preparation, and conscientious maintenance are important.

SELECTING PLANT MATERIALS: The factors affecting plant growth are climate, soils, and topography. In Virginia, there are three major physiographic regions that reflect changes in soil and topography. In selecting appropriate plant materials, one should take into account the characteristics of the physiographic region in which the project is located (see Plate 3.32-1).

PHYSIOGRAPHIC REGIONS:

Coastal Plain - Soils on the Coastal Plain are deeply weathered, stratified deposits of sand and clay. They are generally acidic and low in plant nutrients. The sandy soils are hot and droughty in summer. This region receives more rain and is warmer than the other regions of the state. The land is fairly level, and many areas are poorly drained. Warm season grasses traditionally perform well in these areas.



PHYSIOGRAPHIC PROVINCES IN VIRGINIA

Source: Va. DSWC

Plate 3.32-1

Piedmont - Soils on the Piedmont plateau are highly variable. They tend to be shallow, with clayey subsoils. Piedmont soils are low in phosphorus. Soils derived from mica schist are highly erodible. Topography is rolling and hilly. The southern Piedmont has much the same climate as the Coastal Plain. Often referred to as the "transition zone" in planting. Contains areas that will support both warm or cool season grasses.

Appalachian and Blue Ridge Region - This region is divided into plateaus, mountains, and narrow valleys. Soils tend to be shallow and acid, and may erode rapidly on steep slopes. Shaley slopes are often unstable and droughty. This area is colder and drier than the rest of the State. The rugged topography makes plant establishment difficult. Cool season grasses are normally specified in this region.

SOILS: On the whole, soils in Virginia always require some nitrogen (N) fertilization to establish plants. Phosphorus (P) and potassium (K) are usually needed. Except for some small pockets of shallow limestone soils, lime is universally needed.

Soils can be modified with lime and fertilizer, but climate cannot be controlled. For this reason, the State has been divided into two major climatic regions, referred to as the Northern Piedmont and Mountain Region and the Southern Piedmont and Coastal Plain Region, for grass and legume selection (see map, Plate 3.32-2).

Microclimate, or localized climate conditions, can affect plant growth. A south-facing slope is drier and hotter than a north-facing slope, and may require drought-tolerant plants. Shaded areas require shade-tolerant plants; the windward side of a ridge will be drier than the leeward, etc.

LAND USE: A prime consideration in selecting which plants to establish is the intended use of the land. All of these uses - residential, industrial, commercial, recreational - can be separated into two major categories: high-maintenance and low-maintenance.

High-maintenance areas will be mowed frequently, limed and fertilized regularly, and will either receive intense use (e.g., athletics) or require maintaining to an aesthetic standard (home lawns). Grasses used for these situations must be fine-leaved and attractive in appearance, able to form tight sod, and be long-lived perennials. They must be well-adapted to the geographic area where they are planted, because constant mowing puts turf under great stress. Sites where high-maintenance vegetative cover is desirable include homes, industrial parks, schools, churches, athletic playing surfaces as well as some recreational areas.

Low-maintenance areas will be mowed infrequently or not at all; lime and fertilizer may not be applied on a regular basis; the areas will not be subjected to intense use, nor required to have a uniform appearance. These plants must be able to persist with little maintenance over long periods of time. Grass and legume mixtures are favored for these sites because legumes are capable of fixing nitrogen from the air for their own use, and the use of the plants around them. Such mixed stands are better able to withstand adverse conditions.

Sites that would be suitable for low-maintenance vegetation include steep slopes, stream or channel banks, some commercial properties, and "utility turf" areas such as roadbanks.

Seedbed Preparation - The soil on a disturbed site must be modified to provide an optimum environment for seed germination and seedling growth. The surface soil must be loose enough for water infiltration and root penetration. The pH (acidity and alkalinity) of the soil must be such that it is not toxic and nutrients are available, usually between pH 6.0-7.0. Sufficient nutrients (added as fertilizer) must be present. After seed is in place, it must be protected with a mulch to hold moisture and modify temperature extremes, and to prevent erosion while seedlings are growing.

The addition of lime is equally as important as applying fertilizer. Lime is best known as a pH, or acidity, modifier, but it also supplies calcium and magnesium which are plant nutrients. Its effect on pH makes other nutrients more available to the plant. It can also prevent aluminum toxicity by making aluminum less soluble in the soil. Many soils in Virginia are high in aluminum, which stunts the growth of plant roots.

MAINTENANCE: Even with careful, well-planned seeding operations, failures can occur. When it is clear that plants have not germinated on an area or have died, these areas must be reseeded immediately to prevent erosion damage. However, it is extremely important to determine for what reason germination did not take place and make any corrective action necessary prior to reseeding the area. Healthy vegetation is the most effective erosion control available.

Specifications

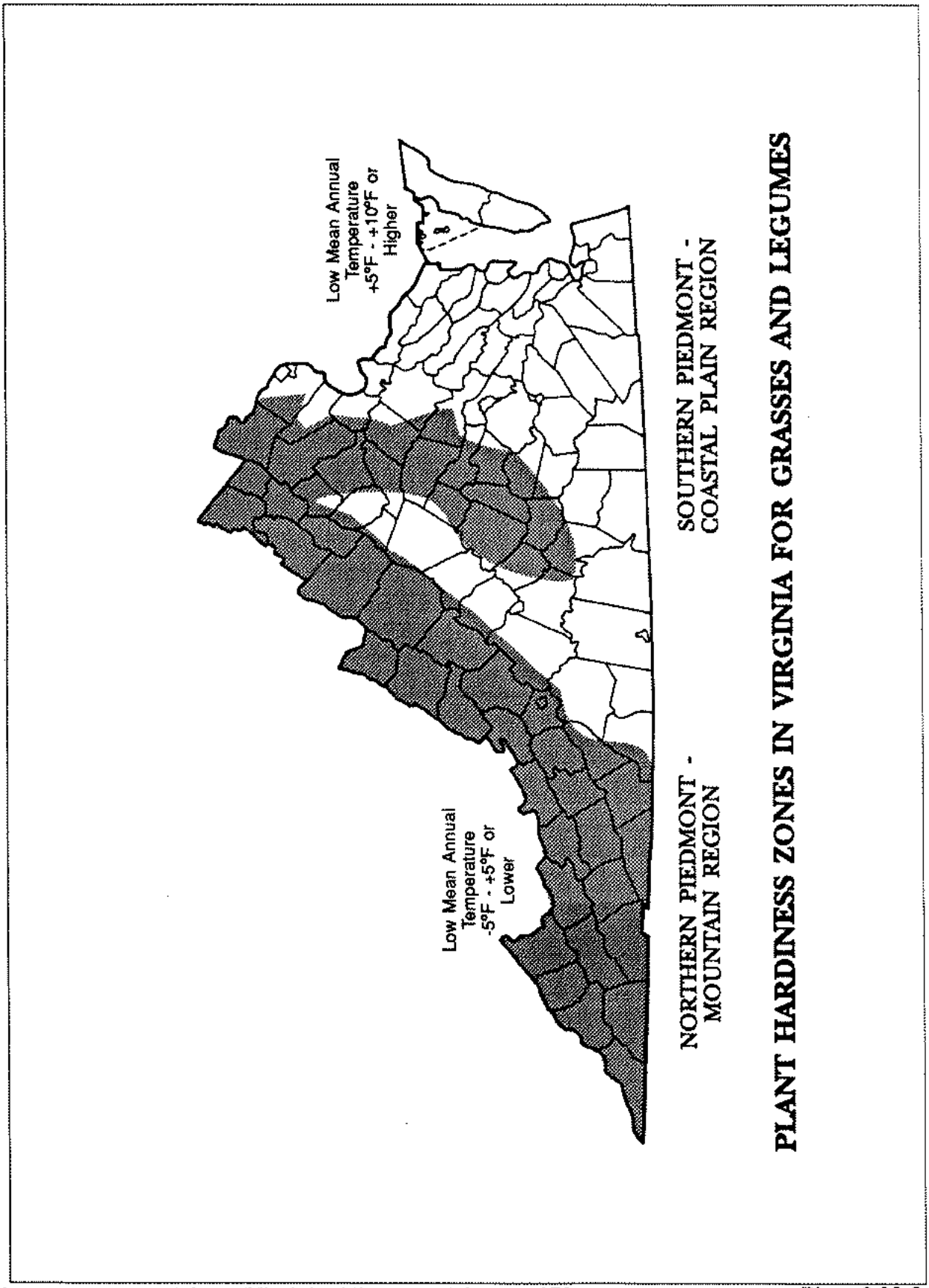
Selection of Plant Materials

1. Selection of plant materials is based on climate, topography, soils, land use, and planting season. To determine which plant materials are best adapted to a specific site, use Tables 3.32-A and 3.22-B which describe plant characteristics and list recommended varieties.

2. Appropriate seeding mixtures for various site conditions in Virginia are given in Tables 3.32-C, 3.32-D and 3.32-E. These mixtures are designed for general use, and are known to perform well on the sites described. Check Tables 3.32-A and 3.32-B for recommended varieties.

3. A more extensive description of plant materials (grasses and legumes), their usage and pictorial representation can be found in Appendix 3.32-c.

4. When using some varieties of turfgrasses, the Virginia Crop Improvement Association (VCIA) recommended turfgrass mixtures may also be used. Consumer protection programs have been devised to identify quality seed of the varieties recommended by the Virginia Cooperative Extension Service. These will bear a label indicating



Source: Adapted from Virginia Climate Advisory, 1979. Plate 3.32-2

that they are approved by the Association. Mixtures may be designed for a specific physiographic region or based on intended use. Special consideration is given to plant characteristics, performance, etc.

TABLE 3.32-A
CHARACTERISTICS OF COMMONLY SELECTED GRASSES

COMMON NAME (Botanical Name)	Life Cycle	Season	pH Range	Germination Time In Days	Optimum Germination Temperature (°F)	Winter Hardiness	Drought Tolerance	Fertility	Soil Drainage Tolerance	Seeds Per Pound	MAINTENANCE REQUIREMENTS	REMARKS	Suggested Varieties for Virginia
TALL FESCUE (Festuca arundinacea)	P	C	5.5-6.2	10-14	60-85	F	F	M	SPD	225K	Low when used for erosion control; high when used in lawn	Better suited for erosion control and rough turf application.	Ky 31
TALL FESCUES (Improved)	P	C	5.5-6.2	10-14	60-85	F	G	M	SPD	220K	Responds well to high maintenance.	Excellent for lawn and fine turf.	See current VCIA list.
KENTUCKY BLUEGRASS (Poa pratense)	P	C	6.0-6.5	14	60-75	G	P	M	SPD	2.2m	Needs fertile soil, favorable moisture. Requires several years to become well established.	Excellent for fine turfs-takes traffic, mowing. Poor drought/heat tolerance.	See current VCIA list.
PERENNIAL RYEGRASS (Lolium perenne)	P	C	5.8-6.2	7-10	60-75	F	F	M-H	SPD	227K	Will tolerate traffic.	May be added to mixes. * Improved varieties will perform well all year.	See current VCIA list.

KEY

A = Annual P = Perennial C = Cool Season Plant W = Warm Season Plant G = Good F = Fair P = Poor VP = Very Poor H = High
M = Medium L = Low SPD = Somewhat Poorly Drained MPD = Moderately Poorly Drained PD = Poorly Drained VPD = Very Poorly Drained

TABLE 3.32-A (Continued)
CHARACTERISTICS OF COMMONLY SELECTED GRASSES

COMMON NAME (Botanical Name)		Life Cycle	Season	pH Range	Germination Time, In Days	Optimum Germination Temperature (°F)	Winter Hardiness	Drought Tolerance	Fertility	Soil Drainage Tolerance	Seeds Per Pound	MAINTENANCE REQUIREMENTS	REMARKS	Suggested Varieties for Virginia
FINE FESCUES	HARD FESCUE (Festuca Longifolia)	P	C	5.0-6.2	10-14	60-80	VG	G	L	MWD	400K	Grows well in sun or shade and will tolerate infertile soils; improved disease resistance.	Exceeds all fine fescues in most tests. Excellent for low-maintenance situations.	Reliant, Spartan, Aurora
	CHEWINGS FESCUE	P	C	5.0-6.2	10-14	60-80	VG	G	L	MWD	400K	Tolerates shade, dry infertile soils.	Poor traffic tolerance, less thatch than other fine fescues.	Flyer
	RED FESCUE (Festuca Rubra)	P	C	5.0-6.2	10-14	60-80	VG	G	L	MWD	400K	Low to medium fertility requirements. Requires well-drained soil.	Spreads by rhizomes, tillers and stolons. Will not take traffic - very shade tolerant.	Long-fellow, Victory
REED CANARYGRASS (Phalaris arundinacea)		P	C	5.8-6.2	21	70-85	G	G	M-H	VPD	530K	Do not mow closely or often.	Conservation cover in wet areas.	No named varieties

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TABLE 3.32-A (Continued)
CHARACTERISTICS OF COMMONLY SELECTED GRASSES

COMMON NAME (Botanical Name)	Life Cycle	Season	pH Range	Germination Time, In Days	Optimum Germination Temperature (°F)	Winter Hardiness	Drought Tolerance	Fertility	Soil Drainage Tolerance	Seeds Per Pound	MAINTENANCE REQUIREMENTS	REMARKS	Suggested Varieties for Virginia
REDTOP (Agrostis alba)	P	C	5.8-6.2	10	65-85	G	F	L	PD	5m	Will tolerate poor, infertile soils; deep rooted.	Does well in erosion control mixes - not for lawns.	No named varieties.
WEEPING LOVEGRASS (Evagrostis curvula)	P	W	4.5-6.2	14	65-85	F-P	G	L-M	SPD	1.5m	Low-fertility requirements; excellent drought tolerance.	Fast-growing, warm-season bunch grass. Excellent cover for erosion control.	No named varieties.
BERMUDAGRASS (Cynodon dactylon)	P	W	5.8-6.2	21	70-95	P	G	M-H	SPD	1.8m hulled	High nitrogen utilization, excellent drought tolerance. Some varieties adapted to western VA.	Common varieties used for erosion control. Hybrids used for fine turf.	See current VCIA list.
ORCHARDGRASS (Dactylis glomerata)	P	C	5.8-6.2	18	60-75	F	F	M	SPD	625K	Does best on well-drained, loamy soil.	Good pasture selection - may be grazed.	Virginia origin or Potomac

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TABLE 3.32-A (Continued)
CHARACTERISTICS OF COMMONLY SELECTED GRASSES

COMMON NAME (Botanical Name)	Life Cycle	Season	pH Range	Germination Time In Days	Optimum Germination Temperature (°F)	Winter Hardiness	Drought Tolerance	Fertility	Soil Drainage Tolerance	Seeds Per Pound	MAINTENANCE REQUIREMENTS	REMARKS	Suggested Varieties for Virginia
ANNUAL RYEGRASS (Lolium multiflorum)	A	C	5.8-6.2	7	60-70	G	P	M-H	SPD	227K	Will grow on most Virginia Soils. Do not use in fine-turf areas.	May be added into mixes or established alone as temporary cover in spring and fall.	No named varieties.
RYE (Secale cereale)	A	C	5.8-6.2	7	55-70	VG	G	L-M	SPD	18K	Will establish in most all Virginia soils. Do not use in fine-turf areas.	May be added into mixes or established alone for late fall/winter cover.	Abruzzi, Balboa
FOXTAIL MILLET (Setaria italica)	A	W	5.8-6.2	10	65-85	VP	G	M	MWD	220K	Establishes well during summer. Very low moisture requirements.	May be added to erosion-control mixes or established alone.	Common, German

KEY

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TABLE 3.32-B
CHARACTERISTICS OF LEGUMES APPROPRIATE FOR EROSION CONTROL

COMMON NAME (Botanical Name)	Life Cycle	Season	pH Range	Germination Time In Days	Optimum Germination Temperature (°F)	Winter Hardiness	Drought Tolerance	Fertility	Soil Drainage Tolerance	Seeds Per Pound	MAINTENANCE REQUIREMENTS	REMARKS	Suggested Varieties for Virginia
CROWNVETCH (Coronilla varia)	P	C	6.0-6.5	14-21	70	G	VG	M	MWD	110K	Does best on well-drained soils. Minimum maintenance when established. May need phosphorus. Inoculation is essential.	Excellent for steep, rocky slopes. Produces colorful blooms in May/June. Slow to establish. Does best when seeded in spring.	Penngift Chemung Emerald
SERICEA LESPEDEZA (Lespedeza cuneata)	P	W	5.8-6.2	21-28	70-85	F	VG	L	MWD	335K	Grows in most well-drained soils. Low fertility requirements. Inoculation is essential.	Use hulled seed in spring; unhulled in fall. Very deep-rooted legume. Excellent choice for eastern Va.	Serecia Interstate
FLATPEA (Lathyrus silvestrus)	P	C	5.0-7.0	14-28	65-75	G	G	L	PD	15K	Needs lime and high phosphorus. Good shade tolerance.	Tolerates acidic and wetter soils better than other legumes.	Lathco
BIRDSFOOT TREFOIL (Lotus corniculatus)	P	C	6.0-6.5	7	65-70	G	F	M	SPD	375K	Inoculation is essential. Grows in medium-fertile, slightly acid soils.	Grows better on poorly drained soils than most legumes. Poor drought/heat tolerance.	No named varieties.

KEY

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M = Medium L = Low SPD = Somewhat Poorly Drained MPD = Moderately Poorly Drained PD = Poorly Drained VPD = Very Poorly Drained

TABLE 3.32-B (Continued)
CHARACTERISTICS OF LEGUMES APPROPRIATE FOR EROSION CONTROL

COMMON NAME (Botanical Name)	Life Cycle	Season	pH Range	Germination Time In Days	Optimum Germination Temperature (°F)	Winter Hardiness	Drought Tolerance	Fertility	Soil Drainage Tolerance	Seeds Per Pound	MAINTENANCE REQUIREMENTS	REMARKS	Suggested Varieties for Virginia
ANNUAL LESPEDEZAS (Lespedeza striata, L. stipulacea)	A	W	5.8-6.2	14	70-85	F	VG	L	MWD	200K	Will grow on almost any well-drained soil.	Choose Kobe for southeastern Va.; needs almost no nitrogen to survive.	Kobe, Korean
RED CLOVER (Trifolium pratense)	P	C	6.0-6.5	7-14	70	G	F	M	SPD	275K	Needs high levels of phosphorus and potassium.	Acts as a biennial. Can be added to low-maintenance mixes.	Kenstar, Kenland
WHITE CLOVER (Trifolium repens)	P	C	6.0-6.5	10	70	G	P	M	PD	700K	Requires favorable moisture, fertile soils, high pH.	Spreads by soil surface stolons, white flowers.	Common, White Dutch

KEY

A = Annual P = Perennial C = Cool Season Plant W = Warm Season Plant G = Good F = Fair P = Poor VP = Very Poor H = High
M = Medium L = Low SPD = Somewhat Poorly Drained MPD = Moderately Poorly Drained PD = Poorly Drained VPD = Very Poorly Drained

TABLE 3.32-C
SITE SPECIFIC SEEDING MIXTURES
FOR APPALACHIAN/MOUNTAIN AREA

Minimum Care Lawn	Total Lbs. Per Acre
- Commercial or Residential	200-250 lbs.
- Kentucky 31 or Turf-Type Tall Fescue	90-100%
- Improved Perennial Ryegrass *	0-10%
- Kentucky Bluegrass	0-10%
High-Maintenance Lawn	
Minimum of three (3) up to five (5) varieties of bluegrass from approved list for use in Virginia.	125 lbs.
General Slope (3:1 or less)	
- Kentucky 31 Fescue	128 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop **	20 lbs.
	150 lbs.
Low-Maintenance Slope (Steeper than 3:1)	
- Kentucky 31 Fescue	108 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop **	20 lbs.
- Crownvetch ***	20 lbs.
	150 lbs.

* Perennial Ryegrass will germinate faster and at lower soil temperatures than fescue, thereby providing cover and erosion resistance for seedbed.

** Use seasonal nurse crop in accordance with seeding dates as stated below:

March, April through May 15th	Annual Rye
May 16th through August 15th	Foxtail Millet
August 16th through September, October	Annual Rye
November through February	Winter Rye

*** If Flatpea is used, increase to 30 lbs./acre. All legume seed must be properly inoculated. Weeping Lovegrass may also be included in any slope or low-maintenance mixture during warmer seeding periods; add 10-20 lbs/acre in mixes.

TABLE 3.32-D
SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA

	Total Lbs. Per Acre
Minimum Care Lawn	
- Commercial or Residential	175-200 lbs.
- Kentucky 31 or Turf-Type Tall Fescue	95-100%
- Improved Perennial Ryegrass	0-5%
- Kentucky Bluegrass	0-5%
High-Maintenance Lawn	200-250 lbs.
- Kentucky 31 or Turf-Type Tall Fescue	100%
General Slope (3:1 or less)	
- Kentucky 31 Fescue	128 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
	150 lbs.
Low-Maintenance Slope (Steeper than 3:1)	
- Kentucky 31 Fescue	108 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
- Crownvetch **	20 lbs.
	150 lbs.

* Use seasonal nurse crop in accordance with seeding dates as stated below:
February 16th through April ..... Annual Rye
May 1st through August 15th ..... Foxtail Millet
August 16th through October ..... Annual Rye
November through February 15th ..... Winter Rye

** Substitute Sericea lespedeza for Crownvetch east of Farmville, Va. (May through September use hulled Sericea, all other periods, use unhulled Sericea). If Flatpea is used in lieu of Crownvetch, increase rate to 30 lbs./acre. All legume seed must be properly inoculated. Weeping Lovegrass may be added to any slope or low-maintenance mix during warmer seeding periods; add 10-20 lbs./acre in mixes.

TABLE 3.32-D

SITE SPECIFIC SEEDING MIXTURES FOR COASTAL PLAIN AREA

	Total Lbs. Per Acre
Minimum Care Lawn	
- Commercial or Residential	
- Kentucky 31 or Turf-Type Tall Fescue	175-200 lbs.
or	
- Common Bermudagrass **	75 lbs.
High-Maintenance Lawn	
- Kentucky 31 or Turf-Type Tall Fescue	200-250 lbs.
or	
- Hybrid Bermudagrass (seed) **	40 lbs. (unhulled)
or	30 lbs. (hulled)
- Hybrid Bermudagrass (by other vegetative establishment method, see Std. & Spec. 3.34)	
General Slope (3:1 or less)	
- Kentucky 31 Fescue	128 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
	150 lbs.
Low Maintenance Slope (Steeper than 3:1)	
- Kentucky 31 Tall Fescue	93-108 lbs.
- Common Bermudagrass **	0-15 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
- Sericea Lespedeza **	20 lbs.
	150 lbs.

* Use seasonal nurse crop in accordance with seeding dates as stated below:

February, March through April . . . . . Annual Rye
May 1st through August . . . . . Foxtail Millet
September, October through November 15th . . . . . Annual Rye
November 16th through January . . . . . Winter Rye

** May through October, use hulled seed. All other seeding periods, use unhulled seed. Weeping Lovegrass may be added to any slope or low-maintenance mix during warmer seeding periods; add 10-20 lbs./acre in mixes.

Seedbed Requirements

Vegetation should not be established on slopes that are unsuitable due to inappropriate soil texture, poor internal structure or internal drainage, volume of overland flow, or excessive steepness, until measures have been taken to correct these problems.

To maintain a good stand of vegetation, the soil must meet certain minimum requirements as a growth medium. The existing soil must have these characteristics:

1. Enough fine-grained material to maintain adequate moisture and nutrient supply.

2. Sufficient pore space to permit root penetration. A bulk density of 1.2 to 1.5 indicates that sufficient pore space is present. A fine granular or crumb-like structure is also favorable.

3. Sufficient depth of soil to provide an adequate root zone. The depth to rock or impermeable layers such as hardpans shall be 12 inches or more, except on slopes steeper than 2:1 where the addition of soil is not feasible.

4. A favorable pH range for plant growth. If the soil is so acidic that a pH range of 6.0-7.0 cannot be attained by addition of pH-modifying materials, then the soil is considered an unsuitable environment for plant roots and further soil modification would be required.

5. Freedom from toxic amounts of materials harmful to plant growth.

6. Freedom from excessive quantities of roots, branches, large stones, large clods of earth, or trash of any kind. Clods and stones may be left on slopes steeper than 3:1 if they do not significantly impede good seed soil contact.

If any of the above criteria cannot be met, i.e., if the existing soil is too coarse, dense, shallow, acidic, or contaminated to foster vegetation, then topsoil shall be applied in accordance with TOPSOILING, Std. & Spec. 3.30.

Necessary structural erosion and sediment control practices will be installed prior to seeding. Grading will be carried out according to the approved plan.

Surfaces will be roughened in accordance with SURFACE ROUGHENING, Std. & Spec. 3.29.

Soil Conditioners

In order to modify the texture, structure, or drainage characteristics of a soil, the following materials may be added to the soil:

1. Peat is a very costly conditioner, but works well. If added, it shall be sphagnum moss peat, hypnum moss peat, reed-sedge peat or peat humus, from fresh-water sources. Peat shall be shredded and conditioned in storage piles for at least six months after excavation.

2. Sand shall be clean and free of toxic materials. Sand modification is ineffective unless you are adding 80 to 90% sand on a volume basis. This is extremely difficult to do on-site. If this practice is considered, consult a professional authority to ensure that it is done properly.

3. Vermiculite shall be horticultural grade and free of toxic substances. It is an impractical modifier for larger acreage due to expense.

4. Raw manure is more commonly used in agricultural applications. However, when stored properly and allowed to compost, it will stabilize nitrogen and other nutrients. Manure, in its composted form, is a viable soil conditioner; however, its use should be based on site-specific recommendations offered by a professional in this field.

5. Thoroughly rotted sawdust shall have 6 pounds of nitrogen added to each cubic yard and shall be free of stones, sticks, and toxic substances.

6. The use of treated sewage sludge has benefitted from continuing advancements in its applications in the agricultural community. When composted, it offers an alternative soil amendment. Limitations include a potentially undesirable pH (because of lime added during the treatment process) and the possible presence of heavy metals. This practice should be thoroughly evaluated by a professional and be used in accordance with any local, state, and federal regulations.

Lime and Fertilizer

Lime and fertilizer needs should be determined by soil tests. Soil tests may be performed by the Cooperative Extension Service Soil Testing Laboratory at VPI&SU, or by a reputable commercial laboratory. Information concerning the State Soil Testing Laboratory is available from county extension agents. Reference Appendix 3.32-d for liming applications (in lbs.) needed to correct undesirable pH for various soil types.

Under unusual conditions where it is not possible to obtain a soil test, the following soil amendments will be applied:

Lime

Coastal Plain: 2 tons/acre pulverized agricultural grade limestone (90 lbs./1000 ft.^{2}).

Piedmont and Appalachian Region: 2 tons/acre pulverized agricultural grade limestone (90 lbs./1000 ft.^{2}).

Note: An agricultural grade of limestone should always be used.

Fertilizer

Mixed grasses and legumes: 1000 lbs./acre 10-20-10 or equivalent nutrients (23 lbs./1000 ft.^{2}).

Legume stands only: 1000 lbs./acre 5-20-10 (23 lbs./ 1000 ft.^{2}) is preferred; however, 1000 lbs./acre of 10-20-10 or equivalent may be used.

Grass stands only: 1000 lbs./acre 10-20-10 or equivalent nutrients, (23 lbs./1000 ft.^{2}).

Other fertilizer formulations, including slow-release sources of nitrogen (preferred from a water quality standpoint), may be used provided they can supply the same amounts and proportions of plant nutrients.

Incorporation - Lime and fertilizer shall be incorporated into the top 4-6 inches of the soil by discing or other means whenever possible. For erosion control, when applying lime and fertilizer with a hydroseeder, apply to a rough, loose surface.

Seeding

1. Certified seed will be used for all permanent seeding whenever possible. Certified seed is inspected by the Virginia Crop Improvement Association or the certifying agency in other states. The seed must meet published state standards and bear an official "Certified Seed" label (see Appendix 3.32-a).

2. Legume seed should be inoculated with the inoculant appropriate to the species. Seed of the Lespedezas, the Clovers and Crownvetch should be scarified to promote uniform germination.

3. Apply seed uniformly with a broadcast seeder, drill, culti-packer seeder, or hydroseeder on a firm, friable seedbed. Seeding depth should be 1/4 to 1/2 inch.

4. To avoid poor germination rates as a result of seed damage during hydroseeding, it is recommended that if a machinery breakdown of 30 minutes to 2 hours occurs, 50% more seed be added to the tank, based on the proportion of the slurry remaining in the tank. Beyond 2 hours, a full rate of new seed may be necessary.

   Often hydroseeding contractors prefer not to apply lime in their rigs as it is abrasive. In inaccessible areas, lime may have to be applied separately in pelletized or liquid form. Surface roughening is particularly important when hydroseeding, as a roughened slope will provide some natural coverage of lime, fertilizer and seed.

   Legume inoculants should be applied at five times the recommended rate when inoculant is included in the hydroseeder slurry.

   Mulching

   All permanent seeding must be mulched immediately upon completion of seed application. Refer to MULCHING, Std. & Spec. 3.35.

   Maintenance of New Seedings

   In general, a stand of vegetation cannot be determined to be fully established until it has been maintained for one full year after planting.

   Irrigation: New seedings should be supplied with adequate moisture. Supply water as needed, especially late in the season, in abnormally hot or dry weather, or on adverse sites. Water application rates should be controlled to prevent excessive runoff. Inadequate amounts of water may be more harmful than no water.

   Re-seeding: Inspect seeded areas for failure and make necessary repairs and re-seedings within the same season, if possible.

   a. If vegetative cover is inadequate to prevent rill erosion, over-seed and fertilize in accordance with soil test results.

   b. If a stand has less than 40% cover, re-evaluate choice of plant materials and quantities of lime and fertilizer. The soil must be tested to determine if acidity or nutrient imbalances are responsible. Re-establish the stand following seedbed preparation and seeding recommendations.

Fertilization: Cool season grasses should begin to be fertilized 90 days after planting to ensure proper stand and density. Warm season fertilization should begin at 30 days after planting.

Apply maintenance levels of fertilizer as determined by soil test. In the absence of a soil test, fertilization should be as follows:

Cool Season Grasses

4 lbs. nitrogen (N)

1 lb. phosphorus (P) } Per 1000 ft.^{2} per year

2 lbs. potash (K)

Seventy-five percent of the total requirements should be applied between September 1 and December 31st. The balance should be applied during the remainder of the year. **More than 1 lb. of soluble nitrogen per 1000 ft.^{2} should not be applied at any one time.**

Warm Season Grasses

Apply 4-5 lbs. nitrogen (N) between May 1 and August 15th per 1000 ft.^{2} per year.

Phosphorus (P) and Potash (K) should only be applied according to soil test.

Note: The use of slow-release fertilizer formulations for maintenance of turf is encouraged to reduce the number of applications and the impact on groundwater.

Additional Information on the Successful Establishment of Grasses and Legumes

See Appendix 3.32-b for "helpful hints" in achieving high success rates in grass or legume plantings.

APPENDIX 3.32-a

SEED QUALITY CRITERIA

Where certified seed is not available, the minimum requirements for grass and legume seed used in vegetative establishment are as follows:

a. All tags on containers of seed shall be labeled to meet the requirements of the State Seed Law.

b. All seed shall be subject to re-testing by a recognized seed laboratory that employs a registered seed technologist or by a state seed lab.

c. All seed used shall have been tested within twelve (12) months.

d. Inoculant - the inoculant added to legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared for the species. Inoculants shall not be used later than the date indicated on the container. Twice the supplier's recommended rate of inoculant will be used on dry seedings; five times the recommended rate if hydroseeded.

e. The quality of the seed used shall be shown on the bag tags to conform to the guidelines in Table 3.32-E.

TABLE 3.32-E

QUALITY OF SEED*

	Minimum Seed Purity (%)	Minimum Germination (%)
Legumes		
Crownvetch	98	65**
Lespedeza, Korean	97	85**
Lespedeza, Sericea	98	85**
Grasses		
Bluegrass, Kentucky	97	85
Fescue, Tall (Improved, Turf-Type Cultivars)	98	85
Fescue, Tall (Ky-31)	97	85
Fescue, Red	98	85
Redtop	94	80
Reed Canarygrass	98	80
Perennial Ryegrass	98	90
Weeping Lovegrass	98	87
Annuals		
Annual Ryegrass	97	90
German Millet	98	85
Oats	98	80
Cereal Rye	98	85

* Seed containing prohibited or restricted noxious weeds should not be accepted. Seed should not contain in excess of 0.5% weed seed. To calculate percent pure, live seed, multiply germination times purity and divide by 100.

Example: Ky-31 Tall Fescue with a germination of 85 percent and a purity of 97 percent.

97 x 85 = 8245. 8245 ÷ 100 = 82.45 percent pure live seed.

** Includes "hard seed"

APPENDIX 3.32-b

KEYS TO SUCCESSFUL ESTABLISHMENT OF GRASSES AND LEGUMES

Planning

Where feasible, grading operations should be planned around optimal seeding dates for the particular region. The most effective times for establishing perennial grass in Virginia generally extend from March through May and from August through October. Outside these dates, the probability of failure is much higher. If the time of year is not suitable for seeding a permanent cover (perennial species), a temporary cover crop should be planted. Temporary seeding of annual species (small grains, ryegrasses or millets) often succeeds during periods of the year that are unsuitable for seeding permanent (perennial) species.

Variations in weather and local site conditions can modify the effects of regional climate on seeding success. For this reason, mixtures including both cool and warm season species are preferred for low-maintenance cover, particularly in the Coastal Plain. Such mixtures promote cover which can adapt to a range of conditions. Many of these mixtures are not desirable, however, for high quality lawns, where variation in texture of the turf is inappropriate. It is important to note that in Virginia the establishment of 100% warm season grasses in a high quality lawn is limited to the extreme eastern portions of the Coastal Plain.

Selection

Species selection should be considered early in the process of preparing an erosion and sediment control plan. A variety of vegetation can be established in Virginia due to the diversity in both soils and climate. However, for practical, economical stabilization and long-term protection of disturbed sites, species selection should be made judiciously.

Seasonality must be considered when selecting species. Grasses and legumes are usually classified as warm or cool season in reference to their season of growth. Cool season plants realize most of their growth during the spring and fall and are relatively inactive or dormant during the hot summer months. Therefore, fall is the most favorable time to plant them. Warm season plants "green-up" late in the spring, grow most actively during the summer, and go dormant at the time of the first frost in fall. Spring and early summer are preferred planting times for warm season plants.

Seed Mixtures

As previously noted, the establishment of high quality turf frequently involves planting one single species. However, in seedings for erosion control purposes, the inclusion of more than one species should always be considered. Mixtures need not be excessive in poundage or seed count. The addition of a quick-growing annual provides early protection and facilitates establishment of one or two perennials in a mix. More complex mixtures might include a quick-growing annual, one or two legumes and more than one perennial grass.

The addition of a "nurse" crop (quick-growing annuals added to permanent mixtures) is a sound practice for soil stabilization, particularly on difficult sites - those with steep slopes; poor, rocky, erosive soils; those seeded out the optimum seeding periods; or in any situation where the development of permanent cover is likely to be slow. The nurse crop germinates and grows rapidly, holding the soil until the slower-growing perennial seedlings become established.

APPENDIX 3.32-c

PLANT INFORMATION SHEETS

Contents:

Annual Grasses and Grains

- Oats
- Rye
- Foxtail Millet
- Annual Ryegrass

Annual Legumes

- Annual Lespedeza

Perennials

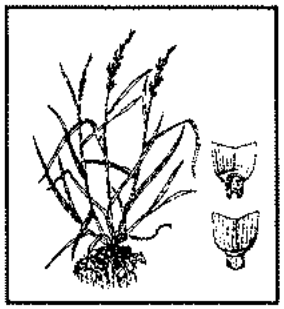
- Tall Fescue
- Kentucky Bluegrass
- Perennial Ryegrass
- Fine Fescues
- Bermudagrass
- Reed Canarygrass

Miscellaneous Erosion Control Grasses

- Weeping Lovegrass
- Redtop

Legumes

- Crownvetch
- Flatpea
- Sericea Lespedeza
- White Clover



ANNUAL GRASSES AND GRAINS

Small grains are cool season annual grasses primarily grown for animal feed and human consumption. In Virginia, the grains used for soil stabilization are primarily Rye and Oats. Foxtail Millet, which is sometimes considered a small grain, is becoming a very popular and successful planting for soil stabilization.

1. Oats (Avenasativa): A cool season annual grass primarily grown for animal feed and human consumption, but also used for soil stabilization. Oats are seeded in early spring in the western part of the state (winter oats may be sown in the Coastal Plain). Seeding rates are 3 bushels (100 lbs.) per acre bare ground or 2-1/2 lbs. per 1000 square feet.

2. Rye (Secale cereale): Often referred to as Winter Rye because of its winter hardiness, Rye is the most common small grain used for soil stabilization. It is also the most productive grain on dry, infertile, acid or sandy soils. It may be seeded in the fall for winter ground cover. By maturing early, it offers less competition during the late spring period, a critical time in the establishment of perennial species. Rye grain germinates quickly and is tolerant of poor soils. Including Rye grain in fall-seeded mixtures is almost always advantageous, but it is particularly helpful on difficult and erodible soils, erodible slopes or when seeding is late. Rates up to 100 lbs. for bare ground. Overly thick stands of Rye grain will suppress the growth of perennial seedlings. Approximately 50 lbs. per acre is the maximum for this purpose and, where lush growth is

Rye (Secale cereale)

expected, that rate should either be cut in half, or Rye grain should be totally eliminated from the mixture.

3. Foxtail Millet (Setaria italica): A warm season annual grass which may be used for temporary cover. German Millet (variety commonly used in Virginia) germinates quickly and goes to seed quickly. These features make it an excellent companion grass for summer seedlings. It dies at first frost. Seeding rates are up to 50 lbs. per acre for temporary cover. Use 10 to 20 lbs. per acre in mixes.

4. Annual Rye (Lolium multiflorum): A cool season annual grass used for temporary cover or as a nurse grass to allow for germination of permanent stands. Most commonly used in mixes for erosion control. Performs well throughout the state in neutral to slightly acid soils. Rates up to 100 lbs. per acre for temporary cover. Use 10 to 20 lbs. per acre in mixes.

Foxtail Millet (Setaria italica)

Annual Rye (Lolium multiflorum)

ANNUAL LEGUMES

1. Annual Lespedezas (Lespedeza striata)

Uses: Pasture, hay, erosion control, soil improvement, wildlife food.

Description: Annual warm season legumes. Korean Lespedeza is larger and coarser than Common Lespedeza and grows to about 12 inches. Seed of Korean is shiny and black, while seed of Common is stippled. Kobe is the most desirable variety of Common Lespedeza.

Adaptation: Throughout Virginia. Optimum pH range is 6.0 to 6.5; will grow from 5.5 to 7.0. Will grow in soil textures ranging from sands to clays and through a wide range of fertility conditions.

Establishment: Seed should always be inoculated. May be seeded alone or mixed with grasses or small grains. Requires a firm seedbed; may be broadcast or drilled. Should be seeded in early spring at 25 to 40 lbs. per acre or one-half to 1 lb. per 1000 square feet, depending on use. (Use lower figure as half the seeding rate of any spring seeding with grass or grain.) Should not be mowed at less than three inches. Lespedeza will not make a large contribution in sod grasses like Bluegrass; they do best in open sod grasses like tall fescue.

Sources: Seed of common variety (Kobe) and Korean varieties (Climax, Harbin and Rowan) are commercially available.

Annual Lespedezas (Lespedeza striata)

PERENNIALS

1. Tall Fescue (Festuca arundinacea)

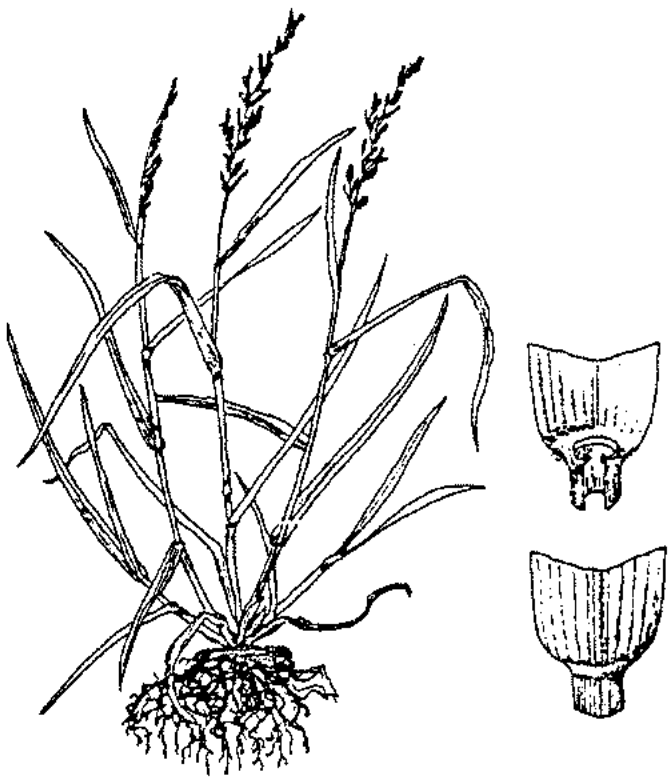
Uses: Pasture, hay, recreation areas, lawns and stabilization of waterways, banks, slopes, cuts, fills, and spoils. It is the most widely used grass at this time for stabilizing large disturbed areas.

Description: A robust, cool season, long-lived, deep-rooted bunchy grass which may have short rhizomes (underground stems). Kentucky 31 is the best-known variety. A number of new varieties of Tall Fescue are becoming available for lawn and other fine-turf uses, and several offer definite improvements. However, their higher cost over the old standby, KY 31, is seldom justified when used for purposes of stabilization and erosion control. Tall Fescue tolerates a wide range of seeding dates; however, with the possible exception of high mountain elevation, it is most dependable when planted in fall.

Adaptation: Adapts well to both high and low maintenance uses throughout Virginia. Adapted to a wide range of climatic conditions. Optimum pH range is 6.0 to 7.0; will tolerate from 3.0 to 8.0. Will grow on shallow and claypan soils if they are moist. Growth is limited more by moisture than by temperature extremes, but it will tolerate drought, infertile soils and moderate shade.

Establishment: Requires a firm seedbed. Hydroseeding is successful. Seeding rates vary from 100 lbs. per acre for erosion control to 250 lbs. per acre for lawns. Plant in early spring or from the middle of August through September. Legumes may not thrive in fescue stands due to the aggressive growth habits of this grass. Mowing is desirable on critical areas at least once every two years; lack of periodic mowing will encourage clumpiness.

Sources: Readily available as seed and sod.



Tall Fescue (Festuca arundinacea)

2. Kentucky Bluegrass (Poa pratense)

Uses: Pasture, turf for lawns, athletic fields, golf courses, and playgrounds. Also used to stabilize waterways, slopes, cuts and fills. Choice food for grouse, turkeys, deer and rabbits.

Description: Long-lived, cool season perennial grass which forms a dense sod. Becomes dormant in the heat of summer since its growing season is spring and fall.

Adaptation: Best adapted to well-drained, fertile soils of limestone origin and the climate of northern and western Virginia. Optimum pH range is 6.0 to 7.0. Bluegrasses are better suited to high maintenance situations in the transition zone. Essentially dormant during dry or hot weather; however, it will normally survive severe drought.

Establishment: Requires a firm, weed-free seedbed and adequate fertilization (liberal phosphorus) and lime are important. Can be used with Tall Fescues at low rates. Minimum mowing height is 1-1/2 inches. Critical erosion areas may be mowed only once per year, if desired. This grass is usually seeded with a mixture of other grasses or legumes; several varieties of Bluegrass should be used together to ensure good stand survival. Bare ground rates are 120 lbs. per acre. Overseed 1 to 1-1/2 per 1000 square feet.

Sources: Readily available as seed and sod.

Kentucky Bluegrass (Poa pratense)

3. Perennial Ryegrass (Lolium perrenne)

Uses: Erosion control, soil improvement, lawns, pasture, and hay; newer varieties are excellent for high-traffic areas.

Description: Perennial Ryegrasses are an excellent selection where rapid establishment is desired. Cool season. Ryegrasses cross-pollinate freely so "Common Ryegrass" may be a mixture of annual and perennial species. Certified seed of Perennial Ryegrass varieties is produced: Blaser, Palmer, Goalie, Fiesta II, Ranger, Regal and Pennfine may be used in Virginia.

Perennial Ryegrass (Lolium perrenne)

Adaptation: Throughout Virginia. Grows best on dark, rich soils in mild climates. Newer varieties have good drought tolerance but may require irrigation if under drought stress or heavy traffic. Will tolerate wet soils with good surface drainage.

Establishment: A firm, mellow surface over compact subsoils gives good results. Seed in fall or spring. Perennial Ryegrass may also be seeded in mid-August to early September. For turf, use a rate of 5 to 8 lbs. per 1000 square feet, if seeded alone; lesser amounts are suitable in mixtures, depending on the characteristics of the companion species. Generally not seeded alone except on athletic fields with intensive use. Perennial Ryegrass does best when used with bluegrass as 20 percent or less of the mixture. Ryegrasses germinate rapidly which makes them particularly suited to disturbed-area stabilization and temporary

seeding. They will, however, tend to dominate stands in mixtures if percentage is too high.

Sources: Readily available commercially. Care should be taken to buy seed appropriate to the needs of the project.

4. Fine Fescues

* Red Fescue
* Hard Fescue
* Chewings Fescue

Uses: Excellent for shady, low maintenance areas and north-facing slopes. May be used to stabilize waterways, slopes, banks, cuts, fills, and as a cover crop in orchards.

Description: Red Fescue is a cool season perennial that occurs in two forms: bunch-type and creeping. Creeping Red Fescue forms a tight sod. The leaves of Red Fescue are narrow and wiry. Hard Fescues are slow-growing with excellent shade tolerance.

Adaptation: Shade tolerant and somewhat drought-resistant once established. Grows well in sandy and acidic soils. Optimum pH range is 4.5 to 6.0. Prefers well-drained soils but requires adequate moisture for establishment. In areas of high temperature and humidity (such as southeastern Virginia), some Fine Fescues may turn brown or deteriorate during the summer. Newer varieties of Hard Fescue are more drought tolerant.

Establishment: Rarely seeded in pure stands. Seedbed preparation and fertility adjustments are usually dictated by the other grasses in the mixture. Red Fescues may comprise 25 to 60% by weight of a seeding mixture. In shaded areas red fescue may be the key grass in the mixture. Mowing consistently below 1-1/2 is not recommended.

Sources: Readily available commercially. New Hard Fescues may be in short supply.

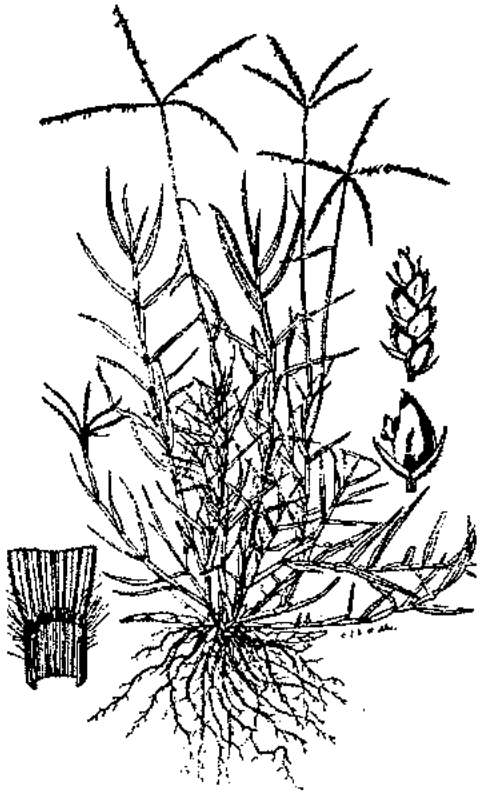
Red Fescue (Festuca rubra)

5. Bermudagrass (Cynodon dactylion)

Uses: Soil and water conservation, pasture, hay, silage, lawns, both high maintenance and general purpose turf, and stabilization of grassed waterways.

Description: A long-lived, warm season perennial that spreads by stolons and rhizomes (runners and underground stems). Height of stems of Common Bermudagrass may be 12 inches. The stems are short-jointed and the leaves flat and spreading. Common Bermudagrass may be established vegetatively with sprigs (sections of stems) or from seeds; however, it has the potential to develop into a weed problem because it spreads vigorously. Cold-tolerant hybrids are usually specified. These are traditionally established from sprigs or sod, but seed is now available.

Adaptation: Southern Piedmont and Coastal Plain in Virginia and some southern appalachian ridges and valleys. Check Std. & Spec. 3.34 for regional adaptations of varieties. Makes its best growth when average daily temperatures are above 75 degrees. Grows on a wide range of soils from heavy clays to deep sands. Optimum pH is 6.0 to 6.5. It is drought-resistant and salt-tolerant. Tolerates floods of short duration but will not thrive on waterlogged soils; does not persist under heavy shade. For rough areas, the varieties Midland (a forage hybrid) and Coastal are recommended. For fine-turf areas, Tufcote (a fine-leaved turf hybrid), Midiron, Tifway, and Vamont are used in Virginia.



Bermudagrass (Cynodon dactylion)

Establishment: By sodding or planting sprigs. Sprigs should be planted (by hand or machine) when soil is warm in a well-prepared, moist seedbed. One end of the sprig should extend above ground, and the other should be covered by firmly packed soil.

Sources: Readily available as seed, sprigs, and sod.

6. Reed Canarygrass (Phalaris arundinacea)

Uses: Pasture, hay silage, and erosion control. An excellent grass for stabilizing waterways, healing and controlling gullies, and protecting shorelines of ponds and reservoirs from wave action. Also provides good cover for shooting preserves. Can be used in deep gullies and drainage ditches where streamflow is rapid. Vigorous growth may impede flow in small, low velocity channels.

Description: A long-lived, cool season, clumpy perennial with coarse rhizomes (underground stems). Grows 4 to 7 feet tall. Most widely used variety is Ioreed.

Adaptation: Throughout Virginia. Does best in a cool, moist climate. Makes best growth on fertile, moist, medium to fine soils; but will grow in a wide range of soil moisture conditions. Will also grow well on swampy or floodplain soils consisting of peat, muck or sand. Will withstand flooding, yet is quite drought-tolerant when mature. Optimum pH range 5.0 to 7.5.

Reed Canarygrass (Phalaris arundinacea)

Establishment: Requires a well-prepared seedbed that is firm and weed free. Seed in spring or late summer; drill seed alone or with a legume. Seed must be fresh - it should be labeled as having at least 70% germination tested within the last 6 months. Normally, pure stands should be established because this grass is not very compatible with other plants. Mowing should not occur more than twice a year on stabilized critical erosion areas or waterway as this will result in reduced stands.

Sources: Available commercially.

MISCELLANEOUS EROSION CONTROL GRASSES

1. Weeping Lovegrass (Eragrostis curvula)

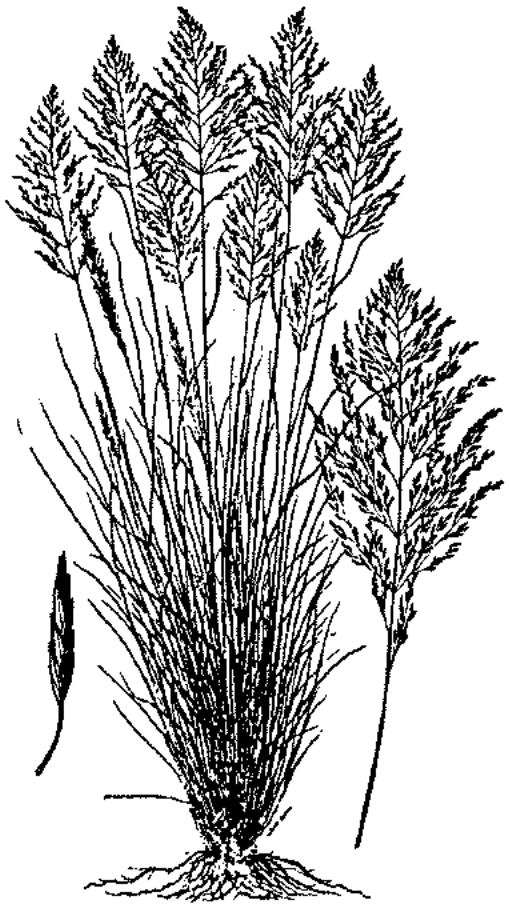
Uses: Fast-growing cover for erosion control. In the northeast, weeping lovegrass acts as a summer annual. The normal life of 3 to 5 years may be foreshortened by low winter temperatures. May provide permanent cover on southern exposure.

Description: A rapid-growing, warm season bunch grass introduced from East Africa. The long, narrow leaves are numerous, very fine, and droop over to the ground, hence the name. Leaf height is rarely above 12 inches.

Adaptation: Prefers light-textured, well-drained soil; will thrive on soil of low fertility. Low winter temperatures may deplete stand.

Establishment: Easy to establish by seed; germinates rapidly and grows quickly. Lime and fertilizer needs are similar to those of Tall Fescue and Ryegrass. Requires pH of 5.5 or higher. May be planted any time after danger of frost and throughout the summer. Very fine seed, commonly added to erosion control seed mixtures. Use of hydroseeders is successful if the seeding rate is increased to compensate for the lack of a firm seedbed. Normal seeding rates are 5 to 20 lbs. per acre in mixes.

Sources: Readily available from large seed companies.



Weeping Lovegrass (Eragrostis curvula)

2. Redtop (Agrostis alba)

Uses: Erosion control, pasture, companion grass in turf seedings and stabilizing ditch and channel banks, grassed waterways, and other disturbed areas.

Description: A coarse, cool season perennial grass with rhizomes (underground stems). Grows to 30 to 40 inches.

Adaptation: Throughout Virginia; does better in the cool, humid areas. Will grow under a wide variety of soil and moisture conditions. Grows on very acid soils (pH 4.0 to 7.5) and poor, clay soils of low fertility. While drought-resistant, it is also a useful wetland grass.

Establishment: Has very small seed and requires a compact seedbed. May be sown in early spring or late summer. Seldom seeded alone except as temporary turf. Adequate fertilization is essential on critical areas to obtain good cover rapidly. Most commonly added to mixes, usually 2 to 3 lbs. per acre. Redtop will disappear from a stand under frequent low mowing.

Sources: Available from commercial sources.

Redtop (Agrostis alba)

LEGUMES

1. Crownvetch (Coronilla varia)

Uses: For erosion control of critical areas such as steep roadbanks, surface mine spoil and industrial waste areas. It is also useful as a residential ground cover. It provides high-quality forage for ruminant animals and serves as a wildlife food and cover plant.

Description: A deep-rooted, cool season, perennial, herbaceous legume with a semi-reclining growth habit. It reaches 2 to 3 feet in height, and does not climb or twine. It fixes nitrogen in the soil and makes a dense mat of vegetative cover.

Crownvetch (Coronilla varia)

Adaptation: Best adapted to the northern Piedmont and Mountain regions of Virginia. It grows best on well-drained soils with a pH range of 5.5 to 8.3. It will persist on more acid soils for a prolonged period once established. It is not adapted to soils with poor drainage. Crownvetch is winter-hardy and drought-tolerant. Varieties commonly used are Chemung, Penngift and Emerald.

Establishment: Only inoculated seed should be used. Requires at least 500 lbs. per acre of 5-10-10 fertilizer (or the area should be fertilized according to soil test results). Soil acidity must be raised above a pH of 5.5. Crownvetch requires mulch and can be hydroseeded successfully. Seeding in the spring is most successful. Frost-seeding may be used on steep or stony sites (seed in late winter, and allow frost action to work the seed into soil). Crownvetch often takes 2 to 3 years to establish a dense stand. A companion grass such as Perennial Ryegrass or Redtop needs to be mixed into the initial planting, but the Crownvetch will eventually crowd out the companion plants. It will not persist under frequent mowing.

Sources: Available commercially.

2. Flatpea (Lathyrus sylvestris)

Uses: Flatpea is an erosion control plant that provides a thick mat of vegetative cover, fixes nitrogen in the soil, and can be maintained with a minimum of management. It is useful on roadbanks, dams, borrow area, gravel pits, surface mine spoil, and industrial waste areas. It is an ideal plant for stabilizing logging roads and utility right-of-ways since it will restrict the invasion of many woody species. It also provides good wildlife cover and food.

Description: A cool season perennial legume. It will climb to a height of 6 to 7 feet if support is available, but the normal height is 2 to 3 feet.

Flatpea (Lathyrus sylvestris)

Adaptation: Flatpea is adaptable to a wide variety of soil conditions. It is drought-tolerant, cold-hardy, and does well on low-fertility sites such as sands, gravels, and soils from acid sandstones. It is not adapted to wet sites, but it will grow on somewhat poorly drained soils. It will tolerate minor shade and a minor degree of flooding. The optimum pH range is from 6.0 to 6.5. The only available variety is Lathco, developed by the USDA-Soil Conservation Service.

Establishment: Use only inoculated seed. The seedbed should be scarified, if possible. The seed is normally drilled or band seeded, but on rough sites or steep slopes, it can be broadcast and then worked into the soil by light dragging. Where possible, a light application of mulch, properly anchored, will assure a good stand. Lime is essential if the soil is below a pH of 5.0. Fertilize according to a soil test or apply 400 lbs. per acre of 10-20-10. Work lime and fertilizer into soil when preparing

the seedbed. For a primary stand, use a seeding rate of 30 to 40 lbs. in a mixture with 8 to 10 lbs. of Perennial Ryegrass or 10 to 15 lbs. of Tall Fescue. Flatpea is slow to germinate, so grasses are needed to provide quick cover. Early spring seedings in April or May are best; June seedings are less desirable. Grass seedings may be overseeded with Flatpea from November through March. Flatpea is usually not winter-hardy if seeded in mid or late summer; therefore, dormant seedings are recommended. Mulch with straw at a minimum rate of 1-1/2 tons per acre on all critical sites, and anchor. Little management is required. Remove woody vegetation if the site is invaded. Mowing is acceptable once the stand is established. Mow after full bloom at a 6-inch minimum height.

Sources: Lathco is commercially available.

3. Sericea Lespedeza (Lespedeza cuneata)

Uses: Hay, pasture, erosion control, cover crop, wildlife food.

Description: Warm season perennial legume with upright woody stems 12 to 18 inches tall. Roots widely branched penetrating soil 3 feet or more.

Adaptation: Well adapted to all parts of Virginia. Best on well-drained, deep soils of medium texture. Will also grow on sandy, rather acidic, infertile soils. Most often the legume of choice for eastern Virginia. Optimum pH range is 6.0 to 6.5, but will tolerate a range of 5.0 to 7.0. It is drought-tolerant. Common varieties in Virginia are Serala and Interstate.

Sericea Lespedeza (Lespedeza cuneata)

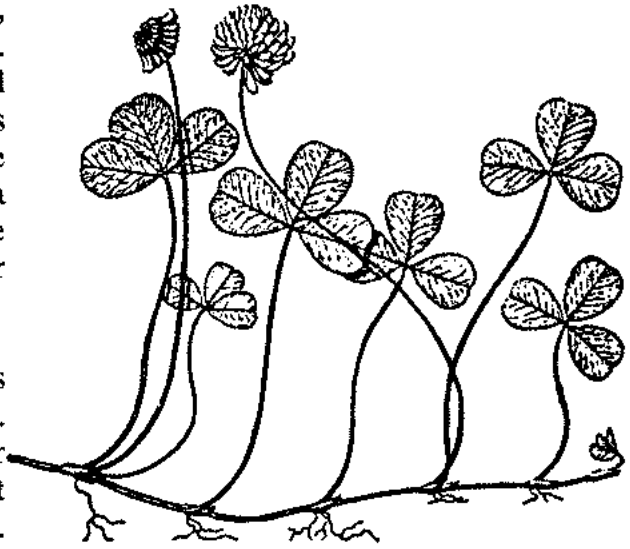
Establishment: Seed from April to June. Requires a firm seedbed. Use only inoculated seed. Rates vary from 20 to 30 lbs. of unhulled seed per acre. Requires phosphate and potash. Will not persist under frequent mowing (once a year recommended).

Sources: Seed of common varieties is commercially available.

4. White Clover (Trifolium repens)

Uses: Common White Clover is used mostly for pastures. Ladino clover, a giant white clover, is also used for hay and silage in mixtures with a grass. The thick-growing, spreading characteristics of the common type make it ideal for erosion control.

Description: A cool season perennial legume. The common type has a prostrate type of growth, while the Ladino is more upright. Both spread by stolons (horizontal branches along ground) and by roots at the nodes. Representative common varieties used in Virginia are Tillman, Common and White Dutch. Ladino is the only cultivar for the large type.



White Clover (Trifolium repens)

Adaptation: Thrives in cool climates and on moist, rich soils with full sun. Will not tolerate extremes of cold or drought. Where soil moisture is not adequate, Ladino is short-lived. Optimum soil pH is 6.5, but it will grow in a range of 5.0 to 7.5. Common White Clover volunteers readily in Bluegrass mixtures where moderate to high fertility is maintained. Stands are persistent.

Establishment: Ladino Clover requires inoculation, fertilizing, and liming for successful growth. Phosphorus and potash are the key fertilizer elements required. Ladino makes a good companion crop with grasses such as Orchardgrass, Bromegrass, Tall Fescue and Timothy. These grasses will normally crowd out the Ladino after 2 to 3 years. Seed should be planted (drilled or broadcast) at shallow depths, and a firm seedbed is desirable.

Sources: Available commercially.

APPENDIX 3.32-d

TABLE 3.32-F

LBS. OF GROUND AGRICULTURAL LIMESTONE* PER THOUSAND SQUARE FEET NEEDED TO CORRECT pH LEVEL OF ACID SOILS TO 6.5

Existing pH	Soil Texture		
	Sandy Loam	Loam	Clay Loam
6.2	20	35	40
6.0	40	55	70
5.8	55	65	85
5.6	70	80	105
5.4	90	100	125
5.2	105	120	140
5.0	120	140	160
4.8	125	180	205
4.6	155	210	230
4.0	200	250	300

* Lime should always be applied in accordance with the results of a soil test, such as may be obtained through the soil testing laboratory at VPI&SU or through a reputable commercial laboratory.

Source: DSWC's Basic Urban E&S in Virginia

Appendix J
ESC & SWM Approval Letters

13880 Dulles Corner Lane, Suite 100
Herndon, VA 20171
T: 703-449-6700
F: 703-449-6713

www.pennoni.com

June 4, 2018

Ms. Myrina Gaglione, PE
Associate/Project Manager
Two Columbus Center
4500 Main Street
Virginia Beach, VA 23462

RE: E&S and SWM Plan Approval
New Residential Facility Norfolk State University
Project Code: #213-171818-000
VHB Project #32771.42

Dear Ms. Myrina Gaglione,

Based upon my review of the 4th submission of the site plans and stormwater, drainage and erosion control report dated June 1, 2018. I have found the plans to be consistent with the Virginia State requirements as set forth in 9VAC25-870 and I am recommending for approval of the stormwater and erosion control plans titled "New Residential Facility Norfolk State University" dated June 1, 2018.

If you have any questions or concerns, please contact Marco Restivo at 703-840-4843 or at mrestivo@pennoni.com.

Sincerely,
PENNONI ASSOCIATES INC.

Marco B. Restivo, PE
DEQ Certification No. SWCA0400

https://pennoni1-my.sharepoint.com/personal/mrestivo_pennoni_com/Documents/Documents/DEQ Review/2018-06-04 NSUVA18006 Res Dacility SWM Erosion 4th Sub/Sent/L-Comment-Letter-2018-06-04.docx

Enclosures / Attachments: 1 – E&S Checklist
2 – SWM Checklist

timely manner if the RLD changes during the course of the project.

N/A Local Consideration – Plans have been provided to the applicable jurisdictions.

- ☐ Dulles Airport (MWAA)
- ☐ Fairfax County
- ☐ Loudoun County
- ☐ Town of Herndon
- ☐ Dulles Greenway (Trip II)
- ☐ VDOT

CHECKLIST PREPARER

I certify that I am a professional in adherence to all minimum standards and requirements pertaining to the practice of that profession in accordance with Chapter 4 (§ 54.1-400 et seq.) of Title 54.1 of the Code of Virginia and attendant regulations. By signing this checklist I am certifying that this document and all attachments are, to the best of my knowledge and belief, true, accurate, and complete.

SIGNATURE 

PRINTED NAME MARCO B. RESTIVO, PE

QUALIFICATIONS DEQ COMBINED ADMINISTRATOR SWCA0400

DATE JUNE 4, 2018

PROJECT NAME: NEW RESIDENCE FACILITY, NORFOLK STATE UNIVERSITY **SUBMITTAL#:** 4

PLANS DATED: 2018-06-01

NARRATIVE

Please reference plan sheet numbers where the information may be found.

C1.02 CALC BOOK — Project description - Briefly describe the nature and purpose of the land-disturbing activity. Provide the area (acres) to be disturbed.

C1.02 — Existing site conditions - A description of the existing topography (% slopes), ground cover, and drainage (on-site and receiving channels).

C1.02 — Adjacent areas - A description of all neighboring areas such as residential developments, agricultural areas, streams, lakes, roads, etc., that might be affected by the land disturbance.

N/A — Off-site areas - Describe any off-site land-disturbing activities that may occur (borrow sites, disposal areas, easements, etc.). Identify the Owner of the off-site area and the entity responsible for plan review. Include a statement that any off-site land-disturbing activity associated with the project must have an approved ESC Plan. Submit documentation of the approved ESC Plan for each of these sites.

C1.02 — Soils - Provide a description of the soils on the site, giving such information as soil name, mapping unit, erodibility, permeability, surface runoff, and a *brief* description of depth, texture and soil structure. Show the site location on the Soil Survey, if it is available. Include a plan showing the boundaries of each soil type on the development site.

C1.02 C7.00 — Critical areas - A description of areas on the site that have potentially serious erosion problems or that are sensitive to sediment impacts (e.g., steep slopes, watercourses, wet weather / underground springs, etc.).

C1.02 — Erosion and sediment control measures - A description of the structural and vegetative methods that will be used to control erosion and sedimentation on the site. Controls should satisfy applicable minimum standards and specifications in Chapter 3 of the 1992 *Virginia Erosion and Sediment Control Handbook* (VESCH) or more stringent local requirements.

C3.00 C3.01 — Management strategies / Sequence of construction - Address management strategies, the sequence of construction, and any phasing of installation of ESC measures.

C1.02 — Permanent stabilization - A brief description, including specifications, of how the site will be stabilized after construction is completed.

C1.02 — Maintenance of ESC measures - A schedule of regular inspections, maintenance, and repair of erosion and sediment control structures should be set forth.

N/A — Calculations for temporary erosion and sediment control measures - For each temporary ESC measure, provide the calculations required by the standards and specifications.

C1.02 CALC BOOK — Stormwater management considerations - Will the development of the site cause an increase in peak runoff rates? Will the increase in runoff cause flooding or channel degradation downstream? Describe the strategy to control stormwater runoff, including during construction.

PROJECT NAME: NEW RESIDENCE FACILITY, NORFOLK STATE UNIVERSITY **SUBMITTAL#:** 4

PLANS DATED: 2018-06-01

C7.00 Specifications / Detail Drawings for erosion and sediment control measures - For each erosion and sediment control measure employed in the plan, include, at a minimum, the detail from the standard and specification in the VESCH or more stringent local requirements. Include any approved variances or revisions to the standards and specifications.

SPECS Specifications for stormwater and stormwater management structures - Provide specifications for stormwater and stormwater management structures, i.e., pipe materials, pipe bedding, stormwater structures.

PROJECT NAME: NEW RESIDENCE FACILITY, NORFOLK STATE UNIVERSITY **SUBMITTAL#:** 4

PLANS DATED: 2018-06-01

SITE PLAN

Please reference plan sheet numbers where the information may be found.

C0.00 Vicinity map - A small map locating the site in relation to the surrounding area. Include any landmarks that might assist in locating the site.

RELEVANT SHTS Indicate north - The direction of north in relation to the site.

N/A Off-site areas - Include any off-site land-disturbing activities (e.g., borrow sites, disposal areas, etc.) not covered by a separate approved ESC Plan.

C3.00 C3.01 Legend - Provide a complete listing of all ESC measures used, including the VESCH uniform code symbol and the standard and specification number. Include any other items necessary to identify pertinent features in the plan.

SV-1 Property lines and easements - Show all property and easement lines. For each adjacent property, list the deed book and page number and the property owner's name and address.

SV-1 Existing vegetation – Show the existing tree lines, grassed areas, or unique vegetation.

C5.00 Limits of clearing and grading – Delineate all areas that are to be cleared and graded.

C3.00 Protection of areas not being cleared - Fencing or other measures to protect areas that are not to be disturbed on the site.

N/A Critical areas – Note all critical areas on the plan.

C5.00 Existing contours – Show the existing contours of the site.

C5.00 Final contours and elevations – Show changes to the existing contours, including final drainage patterns.

C5.00 C6.00 Site development – Show all improvements such as buildings, parking lots, access roads, utility construction, etc. Show all physical items that could affect or be affected by erosion, sediment, and drainage.

C3.00 C3.01 Location of practices - The locations of erosion and sediment control and stormwater management practices used on the site. Use the standard symbols and abbreviations in Chapter 3 of the VESCH.

C5.00 CALC BOOK Adequate Conveyances – Ensure that stormwater conveyances with adequate capacity and adequate erosion resistance have been for provided all on-site concentrated stormwater runoff. Off-site channels that receive runoff from the site, including those receiving runoff from stormwater management facilities, must be adequate. Increased volumes of sheet flows must be diverted to a stable outlet, adequate channel, pipe or pipe system, or a stormwater management facility.

PROJECT NAME: NEW RESIDENCE FACILITY, NORFOLK STATE UNIVERSITY **SUBMITTAL#:** 4

PLANS DATED: 2018-06-01

[X] Provide exhibits showing the drainage divides, the direction of flow, and the size (acreage) of each of the site drainage areas that discharge runoff off-site, both existing and proposed.
[X] Provide calculations for pre- and post-development runoff from these drainage areas.
[X] Ensure that Minimum Standard 19 is satisfied for each off-site receiving channel, including those that receive runoff from stormwater management facilities.
[N/A] Provide calculations for the design of each permanent stormwater management facility.
[X] Ensure that increased volumes of sheet flows are diverted to a stable outlet, to an adequate channel, pipe or pipe system, or to a stormwater management facility.
[X] Provide adequacy calculations for all on-site stormwater conveyances.

CALC BOOK Calculations for permanent stormwater conveyances - For each permanent stormwater conveyance or structure, provide the following design calculations, as applicable:

[X] Drainage area map with time of concentration (T_C) path shown
[X] T_C calculation/nomograph
[N/A] Locality IDF curve
[X] Composite runoff coefficient or RCN calculation
[X] Peak runoff calculations USED RATIONAL METHOD
[N/A] Stormwater conveyance channel design calculations
[X] Storm drain and storm sewer system design calculations
[X] Hydraulic Grade Line if any pipe in the system is more than 90% full for a 10-year storm
[N/A] Culvert design calculations
[N/A] Drop inlet backwater calculations
[N/A] Curb inlet length calculations

C5.00 Direction of Flow for Conveyances - Indicate the direction of flow for all stormwater conveyances (storm drains, stormwater conveyance channels).

CALC BOOK Storm Drain Profiles - Provide profiles of all storm drains except roof drains. If the type of pipe (RCP, CMP, HDPE, etc.) is not called out on the profiles, then the most conservative pipe material that may be specified for the project must be used in the adequacy calculations.
PROFILES PROVIDED IN CALC BOOK FOR HGL ILLUSTRATION

MINIMUM STANDARDS
Plan Sheet #

C1.02 **Minimum Standards - All Minimum Standards must be addressed.**

Yes	No	NA		
[X]	[]	[]	MS-1	Have temporary and permanent stabilization been addressed in the narrative?
[X]	[]	[]		Are practices shown on the plan?
[X]	[]	[]		Temporary and permanent seed specifications?
[]	[X]	[]		Lime and fertilizer?
[]	[X]	[]		Mulching?
[]	[X]	[]		Blankets/Matting?
[X]	[]	[]		Pavement/Construction Road Stabilization?
[X]	[]	[]	MS-2	Has stabilization of soil stockpiles, borrow areas, and disposal areas been addressed in the narrative and on the plan?
[X]	[]	[]		Have sediment trapping measures been provided?
[X]	[]	[]	MS-3	Has the establishment and maintenance of permanent vegetative stabilization been addressed?
[X]	[]	[]	MS-4	Does the plan specifically state that sediment-trapping facilities shall be constructed as a first step in land-disturbing activities?
[]	[]	[X]	MS-5	Does the plan specifically state that stabilization of earthen structures is required immediately after installation? Is this noted for each measure on the plan?
[]	[]	[X]	MS-6	Are sediment traps and sediment basins specified where needed and designed to the standard and specification?
[X]	[]	[]	MS-7	Have the design and temporary/permanent stabilization of cut and fill slopes been adequately addressed? Is Surface Roughening provided for slopes steeper than 3:1?
[]	[]	[X]	MS-8	Have adequate temporary or permanent conveyances (paved flumes, channels, slope drains) been provided for concentrated stormwater runoff on cut and fill slopes?
[]	[]	[X]	MS-9	Has water seeping from a slope face been addressed (e.g., subsurface drains)?
[X]	[]	[]	MS-10	Is adequate inlet protection provided for all operational storm drain and culvert inlets?

PROJECT NAME: NEW RESIDENCE FACILITY, NORFOLK STATE UNIVERSITY **SUBMITTAL#:** 4

PLANS DATED: 2018-06-01

Yes No NA

[X] [] [] MS-11 Are adequate outlet protection and/or channel linings provided for all stormwater conveyance channels and receiving channels? Is there a schedule indicating:
[] [] [X] Dimensions of the outlet protection? Lining? Size of riprap?
[] [] [X] Cross section and slope of the channels? Type of lining? Size of riprap, if used?

[] [] [X] MS-12 Are in-stream protection measures required so that channel impacts are minimized?

[] [] [X] MS-13 Are temporary stream crossings of non-erodible material required where applicable?

[] [] [X] MS-14 Are all applicable federal, state and local regulations pertaining to working in or crossing live watercourses being followed?

[] [] [X] MS-15 Has immediate restabilization of areas subject to in-stream construction (bed and banks) been adequately addressed?

[X] [] [] MS-16 Have disturbances from underground utility line installations been addressed?
[X] [] [] No more than 500 linear feet of trench open at one time?
[X] [] [] Effluent from dewatering filtered or passed through a sediment-trapping device?
[X] [] [] Proper backfill, compaction, and restabilization?

[X] [] [] MS-17 Is the transport of soil and mud onto public roadways properly controlled? (i.e., Construction Entrances, wash racks, transport of sediment to a trapping facility, cleaning of roadways at the end of each day, no washing before sweeping and shoveling)

[X] [] [] MS-18 Has the removal of temporary practices been addressed?
[X] [] [] Have the removal of accumulated sediment and the final stabilization of the resulting disturbed areas been addressed?

[X] [] [] MS-19 Are properties and waterways downstream from development adequately protected from sediment deposition, erosion, and damage due to increases in volume, velocity and peak flow rate of stormwater runoff? Have adequate channels been provided on-site?

PROJECT NAME: NEW RESIDENCE FACILITY, NORFOLK STATE UNIVERSITY **SUBMITTAL#:** 4

PLANS DATED: 2018-06-01

PLAN SUBMITTER'S CHECKLIST

FOR STORMWATER MANAGEMENT PLANS

Please fill in all blanks and **please reference the plan sheets/pages where the information may be found,** where appropriate, or write N/A by items that are not applicable.

GENERAL

Plan Submission Date 2018-06-01
Project Name NEW RESIDENCE FACILITY, NORFOLK STATE UNIVERSITY
VSMP Permit Number TBD
Site Plan Number PROJECT CODE #213-171818-000 (VHB PROJECT #32771.42)
Site Address 2401 COPREW AVE, NORFOLK, VA 23504
Applicant VHB Phone Number 757-490-0132
Applicant Legal Address 4500 MAIN ST, SUITE 400, VIRGINIGA BEACH, VA 23462
Owner NORFOLK STATE UNIVERSITY Phone Number 757-536-1159
Owner E-mail Address RICHARD LAW, AIA - RALAW@NSU.EDU
Principal Designer VHB, MYRINA GAGLIONE Phone Number 757-490-0132
Principal Designer E-mail Address MGAGLIONE@VHB.COM
Total Disturbed Area Figure 5.63AC

X — Professional's seal - The designer's original seal, signature, and date are required on the *cover* sheet of each Narrative and each set of Plan Sheets. A facsimile is acceptable for subsequent Plan Sheets. ALL SHEETS

SUBMITTED ELECTORNICALLY — Number of plan sets – Attach two sets of SWM Plans.

N/A — Exceptions - Exceptions requested are governed by Section 9VAC25-870-57 of the *Virginia Stormwater Management Regulations*.

N/A — Local Consideration – Provide contact information for the locality's plan review coordinator.

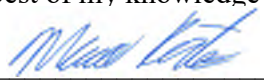
Name _____ Phone Number _____
Address _____

N/A — Grandfathering - Attach supporting documentation consistent with the requirements of Section 9VAC25-870-48 of the *Virginia Stormwater Management Regulations*.

N/A — Offsite Compliance – Attach letter of availability from the off-site provider as governed by Section 9VAC25-870-55 of the *Virginia Stormwater Management Regulations*.

CHECKLIST PREPARER

I certify that I am a professional in adherence to all minimum standards and requirements pertaining to the practice of that profession in accordance with Chapter 4 (§ 54.1-400 et seq.) of Title 54.1 of the Code of Virginia and attendant regulations. By signing this checklist I am certifying that this document and all attachments are, to the best of my knowledge and belief, true, accurate, and complete.

SIGNATURE 

PRINTED NAME MARCO B. RESTIVO, PE

QUALIFICATIONS DEQ COMBINED ADMINISTRATOR SWCA0400

DATE JUNE 1, 2018

PROJECT NAME: NEW RESIDENCE FACILITY, NORFOLK STATE UNIVERSITY **SUBMITTAL#:** 4

PLANS DATED: 2018-06-01

SITE PLANS

Please reference the plan sheet numbers where specific information may be found in the blanks below.

C0.00 Common address and legal description of the site, including the tax reference number(s) and parcel number(s) of the property or properties affected.

C1.02 A narrative that includes a description of current site conditions and proposed development and final site conditions, including proposed use of environmental site design techniques and practices, stormwater control measures, relevant information pertaining to long-term maintenance of these measures, and a construction schedule.

C0.00
C2.00
C3.00
C3.01
C4.00
C5.00
C6.00
SV-1

Existing and proposed mapping and plans (recommended scale of 1" = 50', or greater detail), which illustrates the following at a minimum:

[X] North arrow
[X] Legend
[X] Vicinity map
[X] Existing and proposed topography (minimum of 2-foot contours recommended)
[X] Property lines
N/A Perennial and intermittent streams
[X] Mapping of predominant soils from USDA soils surveys as well as the location of any site-specific test bore hole investigations that may have been conducted and information identifying the hydrologic characteristics and structural properties of soils used in the installation of stormwater management facilities PROVIDED IN CALC BOOK
[X] Boundaries of existing predominant vegetation and proposed limits of clearing and grading
N/A Location and boundaries of natural feature protection and conservation areas (e.g.,wetlands, lakes, ponds, aquifers, public drinking water supplies, etc.) and applicable setbacks (e.g., stream buffers, drinking water well setbacks, septic drainfield setbacks, building setbacks, etc.)
N/A Identification of any on-site or adjacent water bodies included on the Virginia 303(d) list of impaired waters
[X] Current land use and location of existing and proposed roads, buildings, parking lots and other impervious areas
[X] Location and description of any planned demolition of existing structures, roads, etc.
[X] Proposed land use(s) with a tabulation of the percentage of surface area to be adapted to various uses, including but not limited to planned locations of utilities, roads, parking lots, stormwater management facilities, and easements
[X] Location of existing and proposed utilities [e.g., water (including wells), sewer (including septic systems), gas, electric, telecommunications, cable TV, etc.] and easements
[X] Earthwork specifications
N/A Show the BMP name, **geographic coordinates** and design of both structural and non-structural stormwater control measures, including maintenance access and limits of disturbance
[X] Storm drainage plans for site areas not draining to any BMP(s)
[X] Location of existing and proposed conveyance systems, such as storm drains, inlets, catch basins, channels, lateral groundwater movement interceptors (French drains, agric. tile drains, etc.), swales, and areas of overland flow, including grades, dimensions, and direction of flow
[X] Final drainage patterns and flow paths
N/A Location of floodplain/floodway limits and relationship of site to upstream and downstream properties and drainage systems

PROJECT NAME: NEW RESIDENCE FACILITY, NORFOLK STATE UNIVERSITY **SUBMITTAL#:** 4

PLANS DATED: 2018-06-01

[X] Location of all contributing drainage areas and points of stormwater discharge, receiving surface waters or karst features into which stormwater discharges, the pre-development and post-development conditions for drainage areas, and the potential impacts of site stormwater on adjoining parcels

N/A [X] Location and dimensions of proposed channel modifications, such as bridge or culvert crossings

[X] Final stabilization and landscaping plans LANDSCAPING N/A

C0.00
C1.02
C4.00
CALC BOOK

Hydrologic and hydraulic analysis, including the following:

[X] Site map with locations of design points and drainage areas (size in acres) for runoff calculations

N/A [X] Identification and calculation of stormwater site design credits, if any apply

[X] Summary description of the water quantity and water quality compliance strategy.

[X] Time of concentration (and associated flow paths)

[X] Imperviousness of the entire site and each drainage area SHOWN ON COVER AS # AND IN CALC BOOK

[X] NRCS runoff curve numbers or volumetric runoff coefficients RATIONAL C-FACTOR USED

[X] A hydrologic analysis for the existing (pre-development) conditions, including runoff rates, volumes, and velocities, showing the methodologies used and supporting calculations

[X] A hydrologic analysis for the proposed (post-development) conditions, including runoff rates, volumes, and velocities, showing the methodologies used and supporting calculations

[X] Hydrologic and hydraulic analysis of the stormwater management system for all applicable design storms

[X] Pollution load and load reduction requirements and calculations

[X] Final good engineering and sizing calculations for stormwater control measures, including contributing drainage areas, storage, and outlet configurations, verifying compliance with the water quality and water quantity requirements of the regulations

N/A [X] Stage-discharge or outlet rating curves and inflow and outflow hydrographs for storage facilities

[X] Final analysis of the potential downstream impacts/effects of the project, where necessary

N/A [X] Downstream analysis, where detention is proposed

N/A [X] Dam safety and breach analysis, where necessary

C5.00

Representative cross-section and profile drawings and details of stormwater control measures and conveyances which include the following: NOT PROVIDED IN PLANS BUT SHOWN IN CALC BOOK

[X] Existing and proposed structural elevations (e.g., inverts of pipes, manholes, etc.)

[X] Design water surface elevations

N/A [X] Structural details of BMP designs, outlet structures, embankments, spillways, grade control structures, conveyance channels, etc.

C0.00
C1.01
C1.02

Applicable construction and material specifications, including references to applicable material and construction standards (ASTM, etc.)

C7.00
N/A

Landscaping plans for stormwater control measures and any site reforestation or revegetation

PROJECT NAME: NEW RESIDENCE FACILITY, NORFOLK STATE UNIVERSITY **SUBMITTAL#:** 4

PLANS DATED: 2018-06-01

N/A Long term operations and maintenance plan/agreement as governed by 9VAC25-870-112 of the Virginia Stormwater Management Program Regulations.

N/A Evidence of acquisition of all applicable local and non-local permits

N/A Waiver/exception requests

N/A Evidence of acquisition of all necessary legal agreements (e.g., easements, covenants, land trusts, etc.)

X Applicable supporting documents and studies (e.g., infiltration tests, geotechnical investigations, TMDLs, flood studies, etc.)

N/A Other required permits: _____

PROJECT NAME: NEW RESIDENCE FACILITY, NORFOLK STATE UNIVERSITY **SUBMITTAL#:** 4

PLANS DATED: 2018-06-01

Appendix K
Site Plans (11” x 17” reductions)

Erosion & Sediment Control
and Stormwater Plan

Issued for	Early E&S and Stormwater Approval
Date Issued	March 30, 2018
Latest Issue	June 1, 2018

Norfolk State University
New Residential Facility
Corprew Avenue
Norfolk, Virginia

Site Location Map

0 500 1000 Feet

Owner:

Norfolk State University
700 Park Avenue
Norfolk, Virginia 23504
Telephone: 757.823.8440

University Architect:

Richard A. Law, AIA
Email: ralaw@nsu.edu
Telephone: 757.536.1159

Director, Capital Planning and Improvements:

Terry G. Woodhouse
Email: twoodhouse@nsu.edu
Telephone: 757.823.8440

Development Summary

Site Address:	2539 Corprew Ave Norfolk, VA 23504
GPIN Number:	1437863517
Instrument Number:	040033257
Zoning:	IN-C
Overlay District:	N/A
Character District:	Traditional
Existing Use:	Parking Lot
Proposed Use:	Residence Hall
Site Area:	6.55 AC
Disturbed Area:	245,243 SF (5.63 AC)
Existing Impervious Area:	217,800 SF (5.00 AC)
Existing Pervious Area:	27,443 SF (0.63 AC)
Existing Open Space:	0 SF (0 AC)
Proposed Impervious Area:	140,566 SF (3.23 AC)
Proposed Pervious Area:	104,677 SF (2.40 AC)
Proposed Open Space:	0 SF (0.00 AC)
Watershed:	Elizabeth River
Soil Type:	Urban Land
Hydrologic Unit Code	HUC 020802080204 JL54 Eastern Branch Elizabeth River

Sheet Index

No.	Drawing Title	Latest Issue
C1.00	Legend, Abbreviations, and General Notes	June 1, 2018
C1.01	City of Norfolk General Notes	June 1, 2018
C1.02	Erosion & Sediment Control Notes and Narrative	June 1, 2018
C2.00	Demolition Plan	June 1, 2018
C3.00	Erosion and Sediment Control Plan - Phase 1	June 1, 2018
C3.01	Erosion and Sediment Control Plan - Phase 2	June 1, 2018
C4.00	Layout and Materials Plan	June 1, 2018
C5.00	Grading and Drainage Plan	June 1, 2018
C6.00	Utility Plan	June 1, 2018
C6.01	Utility Plan	June 1, 2018
C7.00	Details	June 1, 2018
B1.00	Boring Location Plan	June 1, 2018
B1.01	Boring Logs	June 1, 2018
B1.02	Boring Logs	June 1, 2018

Reference Drawings

No.	Drawing Title	Latest Issue
Sv-1	Existing Conditions Topographic Survey	April 6, 2017

The following person MYRINA L. GAGLIONE, PE (print), _____ (sign), is identified as the Responsible Land Disturber who will be in charge of and responsible for carrying out the land disturbing activity. This person meets the applicable requirements of Virginia Code Section 10.1–563 and 10.1–566 by virtue of the following (check the category that applies):

_____ Responsible Land Disturber Certificate

_____ DCR Certification for Combined Administrator, Administrator, Plan Reviewer, Inspector, or Contractor

___X___ VA Professional Engineer, Land Surveyor, Landscape Architect, or Architect

Upon Award of the contract and before any land disturbing activity can begin, the Contractor shall execute and submit a Responsible Land Disturber Notification form to the Department of Planning, Environmental Services, Rm. 508, City Hall Building, 810 Union Street, Norfolk VA 23510 Tel: (757) 664–4368. Award of the contract will relieve the above signer of all responsibility.

THE RESPONSIBLE LAND DISTURBER'S SIGNATURE THAT APPEARS ABOVE HAS ONLY BEEN PROVIDED AS A CONDITION OF PLAN APPROVAL. THIS INDIVIDUAL TAKES NO RESPONSIBILITY FOR ANY LAND DISTURBING ACTIVITIES RELATED TO THIS PROJECT. THE SITEWORK CONTRACTOR SHALL PROVIDE TO VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION THE NAME OF A RESPONSIBLE LAND DISTURBER WHO SHALL BE RESPONSIBLE FOR LAND DISTURBING ACTIVITIES PRIOR TO APPLYING FOR A LAND DISTURBING PERMIT.

vhb.com

vhb

Two Columbus Center
4500 Main Street
Suite 400
Virginia Beach, VA 23462
757.490.0132

S.B. BALLARD CONSTRUCTION COMPANY
2828 SHIPPS CORNER ROAD
VIRGINIA BEACH, VIRGINIA 23453
TELEPHONE: 757.440.5555
FACSIMILE: 757.451.2873

IN ASSOCIATION WITH :

Commonwealth Architects

NILES BOLTON ASSOCIATES

vhb

SPEIGHT MARSHALL FRANCIS

THOMPSON Consulting Engineers

PROJECT TEAM

S. B. BALLARD CONSTRUCTION COMPANY
CONTRACTOR

COMMONWEALTH ARCHITECTS
ARCHITECT OF RECORD

NILES BOLTON ASSOCIATES
ARCHITECT OF DESIGN

VHB
CIVIL ENGINEER

SPEIGHT MARSHALL FRANCIS
STRUCTURAL ENGINEER

THOMPSON CONSULTING ENGINEERS
MEP ENGINEER

NORFOLK STATE UNIVERSITY
OWNER

NEW RESIDENTIAL FACILITY
NORFOLK STATE UNIVERSITY
PROJECT CODE: #213-17818-000

IRO / SEAL

COMMONWEALTH OF VIRGINIA
MYRINA L. GAGLIONE
Lic. No. 041433
04/04/18
PROFESSIONAL ENGINEER

NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

DESIGNED BY MLG
REVIEWED BY JDH
DRAWN BY JAM
PROJECT NUMBER XXX-XXXXX-XX
ISSUE EARLY E&S AND STORMWATER PLAN
DATE 3/30/18
SHEET TITLE COVER
SHEET NUMBER C0.00

TRUE PROJECT

2/20/2015 08:00:00 AM

Legend

Exist.	Prop.	
L=43.84'		PROPERTY LINE
		PROJECT LIMIT LINE
		RIGHT-OF-WAY/PROPERTY LINE
		EASEMENT
10+00	10+00	BUILDING SETBACK
		BASELINE
		CONSTRUCTION LAYOUT
		ZONING LINE
TL		TOWN LINE
		LIMIT OF DISTURBANCE
		WETLAND LINE WITH FLAG
		FLOODPLAIN
BLSF		BORDERING LAND SUBJECT TO FLOODING
BZ		WETLAND BUFFER ZONE
RMA		RMA - RESOURCE MANAGEMENT AREA
RPA		RPA - RESOURCE PROTECTION AREA
		GRAVEL ROAD
EOP	EOP	EDGE OF PAVEMENT
MS-3, 3A	MS-3, 3A	ASPHALT CONCRETE CURB AND MEDIAN
CG-2	CG-2	STANDARD 6" CURB
CG-3	CG-3	STANDARD 4" CURB
CG-6	CG-6	COMBINATION 6" CURB & GUTTER
CG-7	CG-7	COMBINATION 4" CURB & GUTTER
		FIRE LANE STRIPING
		LIMIT OF CURB TYPE
		SAWCUT
		BUILDING
	EN	BUILDING ENTRANCE
	LD	LOADING DOCK
		BOLLARD
D	D	DUMPSTER PAD
		SIGN
		DOUBLE SIGN
		STEEL GUARDRAIL
		WOOD GUARDRAIL
		PATH
		TREE LINE
		WIRE FENCE
		FENCE
		STOCKADE FENCE
		CHAIN LINK FENCE
		STONE WALL
		RETAINING WALL
		STREAM / POND / WATER COURSE
		DETENTION BASIN
		HAY BALES
		SILT FENCE
4	4	MINOR CONTOUR
20	20	MAJOR CONTOUR
10	10	PARKING COUNT
	CHC	COMPACT PARKING STALLS
DYL	DYL	DOUBLE YELLOW LINE
SL	SL	STOP LINE
		CROSSWALK
		ACCESSIBLE CURB RAMP
		HANDICAP PARKING
VAN	VAN	VAN-ACCESSIBLE HANDICAP PARKING

Exist.	Prop.	
		CONCRETE
		HEAVY DUTY PAVEMENT
		BUILDINGS
		RIPRAP
		CONSTRUCTION ENTRANCE
27.35 TC×	TC27.35×	TOP OF CURB ELEVATION
26.85 BC×	BC26.85×	BOTTOM OF CURB ELEVATION
26.85 FL×	FL26.85×	FLOW LINE ELEVATION
26.85 EP×	EP26.85×	EDGE OF PAVEMENT ELEVATION
132.75 ×	132.75 ×	SPOT ELEVATION
45.0 TW × 35.5 BW	45.0 TW × 35.5 BW	TOP & BOTTOM OF WALL ELEVATION
		BORING LOCATION
		TEST PIT LOCATION
MW	MW	MONITORING WELL
UD	UD	UNDERDRAIN
12"D	12"D	DRAINAGE LINE
6"RD	6"RD	ROOF DRAIN
12"S	12"S	SEWER LINE
OHW	OHW	OVERHEAD WIRE
6"W	6"W	WATER LINE
4"FP	4"FP	FIRE PROTECTION LINE
2"DW	2"DW	DOMESTIC WATER LINE
3"G	G	GAS LINE
UGE	UGE	UNDERGROUND ELECTRIC
T	T	TELEPHONE LINE
FA	FA	FIRE ALARM
CATV	CATV	CABLE TV
	DI	DRAIN INLET (VDOT DI-1 OR DI-7)
		DRAIN INLET (VDOT DI-3B)
		DRAIN INLET (VDOT DI-3C)
		DRAIN MANHOLE
		TRENCH DRAIN
		PLUG OR STUB
		FLARED END SECTION
		HEADWALL
S		SEWER MANHOLE
		SEWER CLEANOUT
CB		CURB STOP & BOX
WV		WATER VALVE & BOX
TSV		TAPPING SLEEVE, VALVE & BOX
		SIAMESE CONNECTION
HYD		FIRE HYDRANT
WM		WATER METER
PIV		POST INDICATOR VALVE
W		WATER WELL
GC		GAS GATE
GM		GAS METER
E		ELECTRIC MANHOLE
EM		ELECTRIC METER
		LIGHT POLE
T		TELEPHONE MANHOLE
T		TRANSFORMER PAD
		UTILITY POLE
		GUY POLE
		GUY WIRE & ANCHOR
HH		HAND HOLE
PB		PULL BOX

Abbreviations

General

ABAN	ABANDON
ACR	ACCESSIBLE CURB RAMP
ADJ	ADJUST
APPROX	APPROXIMATE
BIT	BITUMINOUS
BS	BOTTOM OF SLOPE
BWLL	BROKEN WHITE LANE LINE
CONC	CONCRETE
DYCL	DOUBLE YELLOW CENTER LINE
EL	ELEVATION
ELEV	ELEVATION
EXIST	EXISTING
FDN	FOUNDATION
FFE	FIRST FLOOR ELEVATION
GRAN	GRANITE
GTD	GRADE TO DRAIN
LA	LANDSCAPE AREA
LOD	LIMIT OF DISTURBANCE
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PERF	PERFORATED
PROP	PROPOSED
REM	REMOVE
RET	RETAIN
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
SWEL	SOLID WHITE EDGE LINE
SWLL	SOLID WHITE LANE LINE
TS	TOP OF SLOPE
TYP	TYPICAL

Utility

CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
DCB	DOUBLE CATCH BASIN
DMH	DRAIN MANHOLE
DI	DRAIN INLET
CIP	CAST IRON PIPE
COND	CONDUIT
DIP	DUCTILE IRON PIPE
ES	END SECTION
EW	END WALL
FES	FLARED END SECTION
F&G	FRAME AND GRATE
F&C	FRAME AND COVER
FM	FORCE MAIN
GI	GUTTER INLET
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
INV	INVERT ELEVATION
I=	INVERT ELEVATION
LP	LIGHT POLE
MES	METAL END SECTION
PWW	PAVED WATER WAY
PVC	POLYVINYLCHLORIDE PIPE
PIV	POST INDICATOR VALVE
RCP	REINFORCED CONCRETE PIPE
R=	RIM ELEVATION
SMH	SEWER MANHOLE
TSV	TAPPING SLEEVE, VALVE AND BOX
UG	UNDERGROUND
UP	UTILITY POLE

Notes

General

1. THE "MISS UTILITY LAW" REQUIRES FOR THE CONTRACTOR TO CALL 811 AT LEAST 3 WORKING DAYS IN ADVANCE OF THE PLANNED WORK TO ALLOW TIME FOR MARKING, THAT THE MARKS BE RESPECTED AND PROTECTED, AND THAT EXCAVATION BE COMPLETED CAREFULLY.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
3. ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
4. AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL FOLLOW DETAIL PROVIDED BY VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK FOR SITE SPECIFIC SEEDING MIXTURES IN ACCORDANCE WITH STANDARD & SPECIFICATION 3.32.
5. WITHIN THE LIMITS OF THE BUILDING FOOTPRINT, THE SITE CONTRACTOR SHALL PERFORM EARTHWORK OPERATIONS REQUIRED UP TO SUBGRADE ELEVATIONS.
6. WORK WITHIN THE LOCAL RIGHTS-OF-WAY SHALL CONFORM TO LOCAL MUNICIPAL STANDARDS. WORK WITHIN STATE RIGHTS-OF-WAY SHALL CONFORM TO THE LATEST EDITION OF THE STATE HIGHWAY DEPARTMENTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
7. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
8. TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
10. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
11. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
12. DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
13. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
14. THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND AND FALLS WITHIN THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP). GENERAL CONSTRUCTION PERMIT (GCP) PROGRAM AS ADMINISTERED BY THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) UNDER THE JURISDICTION OF THE EPA. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL FILE A GCP NOTICE OF INTENT WITH THE DEQ AND PREPARE A STORMWATER POLLUTION PREVENTION PLAN IN ACCORDANCE WITH THE VSMP REGULATIONS.
15. ALL CONSTRUCTION METHODS AND MATERIALS WITHIN CITY RIGHT-OF-WAYS OR CITY EASEMENTS SHALL CONFORM WITH THE CURRENT SPECIFICATIONS AND STANDARDS OF THE CITY OF NORFOLK DEPARTMENT OF PUBLIC WORKS, CITY OF NORFOLK DEPARTMENT OF UTILITIES, AND THE VIRGINIA DEPARTMENT OF TRANSPORTATION.

Utilities

1. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR IT'S REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND, SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
3. SET CATCH BASIN RIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE GRADING AND UTILITY PLANS.
4. RIM ELEVATIONS FOR DRAIN AND SEWER MANHOLES, WATER VALVE COVERS, GAS GATES, ELECTRIC AND TELEPHONE PULL BOXES, AND MANHOLES, AND OTHER SUCH ITEMS, ARE APPROXIMATE AND SHALL BE SET/RESET AS FOLLOWS:
   A. PAVEMENTS AND CONCRETE SURFACES: FLUSH
   B. ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
   C. LANDSCAPE, TOPSOIL AND SEED, AND OTHER EARTH SURFACE AREAS: ONE INCH ABOVE SURROUNDING AREA AND TAPER EARTH TO THE RIM ELEVATION.
5. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). FINAL DESIGN LOADS AND LOCATIONS TO BE COORDINATED WITH OWNER AND ARCHITECT.
6. THE OWNER SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR PAYING FEES FOR POLE RELOCATION AND FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
7. **UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:**
   A. WATER PIPES SHALL BE C900 PVC PIPE FOR PIPES GREATER THAN 2" DIAMETER WORKING PRESSURE SHALL BE A MINIMUM OF 250 PSI. WATER PIPES LESS THAN OR EQUAL TO 2" DIAMETER SHALL BE TYPE "K" COPPER.
   B. SANITARY SEWER PIPES SHALL BE SDR 26 PVC PIPE.
   C. **STORM DRAINAGE PIPES SHALL BE CLASS III REINFORCED CONCRETE PIPE (RCP).**
8. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ELECTRICAL FURNISHED SITEWORK RELATED ITEMS SUCH AS PULL BOXES, CONDUITS, DUCT BANKS, LIGHT POLE BASES, AND CONCRETE PADS. CONTRACTOR SHALL FURNISH CONCRETE ENCASEMENT OF DUCT BANKS IF REQUIRED BY THE UTILITY COMPANY AND AS INDICATED ON THE DRAWINGS.
9. CONTRACTOR SHALL EXCAVATE AND BACKFILL TRENCHES FOR GAS IN ACCORDANCE WITH GAS COMPANY'S REQUIREMENTS.
10. ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4' MIN.) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS AND LOCAL MUNICIPAL STANDARDS. FOR MANHOLES THAT ARE 20 FEET IN DEPTH AND GREATER, THE MINIMUM DIAMETER SHALL BE 5 FEET.
11. LOCATION OF FITTINGS SHOWN HEREON ARE APPROXIMATE ONLY. CONTRACTOR SHALL DETERMINE ALL FITTING REQUIREMENTS AND LOCATIONS FROM ACTUAL FIELD CONDITIONS.
12. PIPE LENGTHS SHOWN HEREON ARE FROM CENTERLINE TO CENTERLINE OF STRUCTURE AND ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL PIPE LENGTHS FROM FIELD CONDITIONS.
13. INVERTS CONTROL ELEVATIONS AT ALL STRUCTURES, SLOPES AND LENGTHS ARE APPROXIMATE ONLY.
14. RIM ELEVATIONS SHOWN HEREON ARE APPROXIMATE ONLY. CONTRACTOR SHALL SET ALL STRUCTURES FLUSH WITH FINAL GRADE.

Layout and Materials

1. DIMENSIONS ARE FROM THE FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED.
2. CURB RADII ARE FIVE (5) FEET TO FACE OF CURB UNLESS OTHERWISE NOTED.
3. CURBING SHALL BE VDOT CG-2 WITHIN THE SITE UNLESS OTHERWISE INDICATED ON THE PLANS.
4. SEE ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS AND DETAILS CONTIGUOUS TO THE BUILDING, INCLUDING SIDEWALKS, RAMPS, BUILDING ENTRANCES, STAIRWAYS, UTILITY PENETRATIONS, CONCRETE DOOR PADS, COMPACTOR PAD, LOADING DOCKS, BOLLARDS, ETC.
5. PROPOSED BOUNDS AND ANY EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.
6. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
7. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
8. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.

Demolition

1. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS. REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS AND UNSUITABLE MATERIAL BENEATH AND FOR A DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS.
2. EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.
3. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
4. CONTRACTOR SHALL APPLY FOR AND OBTAIN ALL NECESSARY PERMITS FROM LOCAL AND STATE AUTHORITIES TO COMPLETE THE WORK.
5. THE DEMOLITION LIMITS DEPICTED IN THE PLANS IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION BEFORE SUBMITTING ITS BID/PROPOSAL TO PERFORM THE WORK AND SHALL MAKE NO CLAIMS AND SEEK NO ADDITIONAL COMPENSATION FOR CHANGED CONDITIONS OR UNFORESEEN OR LATENT SITE CONDITIONS RELATED TO ANY CONDITIONS DISCOVERED DURING EXECUTION OF THE WORK.
6. UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER HAS NOT PREPARED DESIGNS FOR AND SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS OF LOSS, DAMAGE, EXPENSE, DELAY, INJURY OR DEATH ARISING FROM THE PRESENCE OF HAZARDOUS MATERIAL AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ANY CLAIMS MADE IN CONNECTION THEREWITH. MOREOVER, THE ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACTOR AMENDMENT INVOLVING THE ISSUES OF PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS MATERIALS.
7. REFER TO DEMOLITION DRAWINGS FROM OTHER DISCIPLINES FOR ADDITIONAL INFORMATION AND INSTRUCTIONS.
8. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER ANY INTERRUPTIONS OF ELECTRICAL, MECHANICAL, FIRE PROTECTION, PLUMBING, COMMUNICATION AND OTHER SERVICES WHICH MAY AFFECT FACILITY OPERATION OR OTHER BUILDINGS NEARBY. ANY INTERRUPTION TO THESE SERVICES ARE TO BE SCHEDULED IN ADVANCE IN ACCORDANCE WITH SPECIFICATION DIVISION ONE IN THE PROJECT MANUAL.
9. COORDINATE PHASING OF DEMOLITION WORK WITH OWNER PRIOR TO COMMENCING.
10. ANY ITEMS INDICATED TO BE REUSED SHALL BE REMOVED SO AS NOT TO DAMAGE THEM. ANY SUCH ITEMS THAT ARE DAMAGED SHALL BE REPLACED WITH SIMILAR OR COMPARABLE ITEMS AT THE CONTRACTOR'S EXPENSE AND WITH THE OWNERS/ENGINEER'S APPROVAL. THE ENGINEER IS TO REVIEW ALL REUSED ITEMS PRIOR TO REINSTALLATION. CONTRACTOR SHALL STORE REUSABLE ITEMS UNTIL REINSTALLATION.

Existing Conditions Information

1. BASE PLAN: THE PROPERTY LINES SHOWN WERE DETERMINED BY AN ACTUAL FIELD SURVEY CONDUCTED BY VHB, AND FROM PLANS OF RECORD. THE TOPOGRAPHY AND PHYSICAL FEATURES ARE BASED ON AN ACTUAL FIELD SURVEY PERFORMED ON THE GROUND BY VHB IN FEBRUARY 2018.
2. MERIDIAN SOURCE: VIRGINIA STATE PLANE COORDINATE SYSTEM SOUTH ZONE NAD 83(93) HARN AND ARE BASED ON CITY OF NORFOLK CONTROL MONUMENTS 1816, A307, GPS118, GPS026.
3. TOPOGRAPHY: ELEVATIONS SHOWN HEREON ARE IN FEET AND ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND ARE BASED ON CITY OF NORFOLK CONTROL MONUMENT NO. A307.
4. GEOTECHNICAL DATA INCLUDING TEST PIT AND BORING LOCATIONS AND ELEVATIONS WERE OBTAINED FROM GET SOLUTIONS, INC.
5. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS, DESIGNATIONS MARKED BY OTHERS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN. UNDERGROUND UTILITY DESIGNATED LINE LOCATIONS PROVIDED BY ACCUMARK.

Document Use

1. THESE PLANS AND CORRESPONDING CADD DOCUMENTS ARE INSTRUMENTS OF PROFESSIONAL SERVICE, AND SHALL NOT BE USED, IN WHOLE OR IN PART, FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS CREATED WITHOUT THE EXPRESSED, WRITTEN CONSENT OF VHB. ANY UNAUTHORIZED USE, REUSE, MODIFICATION OR ALTERATION, INCLUDING AUTOMATED CONVERSION OF THIS DOCUMENT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY OR LEGAL EXPOSURE TO VHB.

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2828 SHIPPS CORNER ROAD
VIRGINIA BEACH, VIRGINIA 23453
TELEPHONE: 757.440.5555
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IN ASSOCIATION WITH :

COMMONWEALTH ARCHITECTS
NILES BOLTON ASSOCIATES
VHB
SPEIGHT, MARSHALL, FRANCIS
THOMPSON CONSULTING ENGINEERS

PROJECT TEAM

S. B. BALLARD CONSTRUCTION COMPANY
CONTRACTOR

COMMONWEALTH ARCHITECTS
ARCHITECT OF RECORD

NILES BOLTON ASSOCIATES
ARCHITECT OF DESIGN

VHB
CIVIL ENGINEER

SPEIGHT, MARSHALL, FRANCIS
STRUCTURAL ENGINEER

THOMPSON CONSULTING ENGINEERS
MEP ENGINEER

NORFOLK STATE UNIVERSITY
OWNER

NEW RESIDENTIAL FACILITY
NORFOLK STATE UNIVERSITY
PROJECT CODE: #213-17818-000

IRO / SEAL

COMMONWEALTH OF VIRGINIA
MYRINA L. GAULIONE
Lic. No. 041433
06/01/18
PROFESSIONAL ENGINEER

NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

DESIGNED BY: MLG
REVIEWED BY: JDH
DRAWN BY: JAM
PROJECT NUMBER: XXX-XXXXX-XX
ISSUE: EARLY E&S AND STORMWATER PLAN
DATE: 3/30/18

SHEET TITLE
LEGEND, ABBREVIATIONS, AND GENERAL NOTES

SHEET NUMBER
C1.00

TRUE PROJECT

2/20/2015 08:00:00 AM

City Of Norfolk Notes

City of Norfolk Standard Erosion and Sediment Control Notes

1. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (3RD EDITION, 1992) AND THE CITY OF NORFOLK EROSION AND SEDIMENT CONTROL ORDINANCE.
2. THE CONTRACTOR SHALL CONTACT THE CITY OF NORFOLK, BUREAU OF ENVIRONMENTAL SERVICES (757-664-4368) AT LEAST 48 HOURS PRIOR TO ANY LAND DISTURBING ACTIVITY (INCLUDING DEMOLITION) SO THAT A PRECONSTRUCTION CONFERENCE CAN BE SCHEDULED.
3. THE CONTRACTOR SHALL APPLY PERMANENT OR TEMPORARY SOIL STABILIZATION TO ALL DENUDED OR DISTURBED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. SOIL STABILIZATION MUST ALSO BE APPLIED TO DENUDED OR DISTURBED AREAS WHICH MAY NOT BE AT FINAL GRADE BUT WHICH WILL REMAIN UNDISTURBED FOR LONGER THAN 14 DAYS. SOIL STABILIZATION MEASURES INCLUDE VEGETATIVE ESTABLISHMENT, MULCHING AND THE EARLY APPLICATION OF GRAVEL BASE MATERIAL ON AREAS TO BE PAVED.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION.
5. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES AND CLEANUP OF SEDIMENTATION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MADE IMMEDIATELY.
6. THE CONTRACTOR SHALL LIMIT SITE ACCESS BY CONSTRUCTION VEHICLES TO ENTRANCES PROTECTED BY A STONE CONSTRUCTION ENTRANCE (VESCH STD. & SPEC. 3.02) OR AN APPROVED COMPARABLE CONTROL MEASURE. SEDIMENT SHALL BE REMOVED FROM PAVED AREAS ON A DAILY BASIS.
7. STOCK PILES OF SOIL AND OTHER ERODIBLE MATERIALS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION FOR STOCKPILES ON SITE AS WELL AS FOR MATERIALS TRANSPORTED FROM THE PROJECT SITE.
8. THE CONTRACTOR SHALL MONITOR AND TAKE PRECAUTIONS TO CONTROL DUST INCLUDING (BUT NOT LIMITED TO) USE OF WATER, MULCH, OR CHEMICAL DUST ADHESIVES AND CONTROL OF CONSTRUCTION SITE TRAFFIC.
9. EFFLUENT FROM DE-WATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT ADJACENT PROPERTIES, WETLANDS, WATERWAYS OR THE STORM DRAINAGE SYSTEM.
10. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ANY ADDITIONAL CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED NECESSARY BY THE PLAN APPROVING AUTHORITY.
11. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. AFTER STABILIZATION IS COMPLETE, ALL MEASURES SHALL BE REMOVED WITHIN 30 DAYS. TRAPPED SEDIMENT SHALL BE SPREAD AND SEEDED.

City of Norfolk Right of Way Division Standard Site Plan

Excavation and Restoration in the Right of Way

1. ALL WORK WITHIN THE RIGHT-OF-WAY SHALL COMPLY WITH THE CITY OF NORFOLK RIGHT-OF-WAY EXCAVATION & RESTORATION MANUAL, (ORDINANCE NO. 40,778), DEPARTMENT OF PUBLIC WORKS RIGHT-OF-WAY DIVISION. DOWNLOAD AT HTTP://WWW.NORFOLK.GOV/DOCUMENTCENTER/VIEW/779. IT IS IMPORTANT THAT CONTRACTORS FAMILIARIZE THEMSELVES WITH THE REQUIREMENTS OUTLINED IN THE MANUAL. FAILURE TO DO SO MAY IMPACT PROJECT COSTS. ALSO SEE "OTHER" IN THIS SECTION. EXCEPTIONS MAY BE PERMITTED. A REVIEW MEETING WITH RIGHT-OF-WAY IS REQUIRED. PLEASE CONTACT PUBLIC WORKS AT PWROW@NORFOLK.GOV TO SCHEDULE.
2. ALL WORK WITHIN THE RIGHT-OF-WAY SHALL COMPLY WITH THE CITY OF NORFOLK DESIGN STANDARDS. DOWNLOAD AT HTTP://WWW.NORFOLK.GOV/INDEX.ASPX?NID=819. EXCEPTIONS MAY BE PERMITTED. A REVIEW MEETING WITH RIGHT-OF-WAY IS REQUIRED. PLEASE CONTACT PUBLIC WORKS AT PWROW@NORFOLK.GOV TO SCHEDULE.
3. FLOWABLE FILL IS NOT AN APPROVED MATERIAL FOR USE IN THE CITY OF NORFOLK FOR BACKFILL WITHOUT PRIOR APPROVAL. THE SELECT MATERIAL AND 21A STONE SHALL BE IN ACCORDANCE WITH THE 2002 VDOT ROAD AND BRIDGE SPECIFICATIONS. FOR BACKFILL AROUND THE PIPE USE SELECT MATERIAL (SECTION 207) - TYPE I AND 20 CBR COMPACTION. FOR THE SUB BASE MATERIAL USE 6" MIN. VDOT 21A STONE IN ACCORDANCE WITH SECTION 208.
4. NEW DEVELOPMENTS, CONSTRUCTION, AND ADDITIONS REQUIRE NEW SIDEWALK, CURB, GUTTER, AND DRIVEWAYS. EXCEPTIONS MAY BE PERMITTED. A REVIEW MEETING WITH RIGHT-OF-WAY IS REQUIRED. PLEASE CONTACT PUBLIC WORKS AT PWROW@NORFOLK.GOV TO SCHEDULE.
5. IF APPROVED BY RIGHT-OF-WAY, WHEN THE CONTRACTOR'S WORK REQUIRES THE SAWCUTTING AND/OR PARTIAL DEMOLITION AND/OR REMOVAL OF ANY SECTION OF AN EXISTING APRON OR SIDEWALK, THE CONTRACTOR WILL BE REQUIRED TO REMOVE SAID EXISTING APRON OR SIDEWALK AND REPLACE IT WITH A NEW MONOLITHIC APRON OR SIDEWALK. SIDEWALK SHALL BE REMOVED TO THE NEAREST JOINT. ALL CONCRETE IS TO BE SAW CUT. NO PATCHING WILL BE ALLOWED. COMMERCIAL APRONS SHALL BE REPLACED WITH AN APPROVED COMMERCIAL APRON. RESIDENTIAL APRONS SHALL BE REPLACED WITH AN APPROVED RESIDENTIAL APRON (HS-207). SIDEWALKS SHALL BE REPLACED WITH AN APPROVED SIDEWALK DETAIL. CONTACT THE DIVISION OF RIGHT-OF-WAY FOR APPROVAL AT PWROW@NORFOLK.GOV (ORDINANCE NO. 40,778).
6. UTILITY POLES MUST BE RELOCATED AT THE COST OF THE PROJECT. A COPY OF THE WORK ORDER FOR POLE RELOCATIONS MUST ACCOMPANY RIGHT-OF-WAY PERMITS.

Permits

1. A PERMIT AND INSPECTION IS REQUIRED TO PERFORM EXCAVATION AND INSTALLATION WORK OF ANY KIND IN THE RIGHT-OF-WAY. APPLICATIONS: HTTP://WWW.NORFOLK.GOV/INDEX.ASPX?NID=362
2. A PERMIT AND INSPECTION IS REQUIRED TO SLOW, CLOSE, REDIRECT, DETOUR, OR ALTER VEHICULAR AND PEDESTRIAN TRAFFIC FOR ANY DURATION. APPLICATIONS: HTTP://WWW.NORFOLK.GOV/INDEX.ASPX?NID=362
3. A PERMIT AND INSPECTION IS REQUIRED FOR LANE OR SIDEWALK CLOSURES FOR WORK WASHING, GRADING, OR INSTALLING ANY ITEM ABOVE OR UNDERGROUND. APPLICATIONS: HTTP://WWW.NORFOLK.GOV/INDEX.ASPX?NID=362
4. A PERMIT AND INSPECTION IS REQUIRED TO PLACE ANY OBJECT IN THE CITY RIGHT-OF-WAY. APPLICATIONS: HTTP://WWW.NORFOLK.GOV/INDEX.ASPX?NID=362
5. A PERMIT IS REQUIRED TO HAUL OVERSIZED, OVERWEIGHT, OR OVERHEIGHT LOADS. APPLICATIONS: HTTP://WWW.NORFOLK.GOV/INDEX.ASPX?NID=362
6. A PERMIT AND INSPECTION IS REQUIRED WHEN A NEW APRON AND/OR SIDEWALK IS INSTALLED. ALL NEW OR EXISTING UTILITY STRUCTURES SHALL BE INSTALLED AND/OR RELOCATED OUTSIDE THE AREA OF THE NEW APRON AND/OR SIDEWALK. APPLICATION: WWW.NORFOLK.GOV/INDEX.ASPX?NID=362
7. A PERMIT AND INSPECTION IS REQUIRED FOR TEMPORARY BULK WASTE CONTAINERS PLACED IN THE RIGHT-OF-WAY. IF THE CONTAINER IS PLACED ON PRIVATE PROPERTY A PERMIT FROM THE HEALTH DEPARTMENT IS REQUIRED.

Fees

1. CURRENT RIGHT OF WAY PERMIT FEES: HTTP://WWW.NORFOLK.GOV/DOCUMENTCENTER/VIEW/789
2. EXEMPTION: CONTRACTORS PERFORMING WORK UNDER CONTRACT WITH THE CITY OF NORFOLK ARE EXEMPT FROM PERMIT FEES THROUGH JULY 1, 2014. EFFECTIVE JULY 1, 2014, CONTRACTORS PERFORMING WORK UNDER CONTRACT WITH THE CITY OF NORFOLK MUST PAY STREET, LANE, AND SIDEWALK CLOSURE FEES.
3. EXEMPTION: CONTRACTORS PERFORMING WORK UNDER CONTRACT WITH VDOT ARE EXEMPT FROM ALL PERMIT FEES.

Traffic Control

1. ALL TRAFFIC CONTROL SHALL COMPLY WITH THE LATEST EDITION OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)", THE "VIRGINIA WORK AREA PROTECTION MANUAL" AND THE "CITY OF NORFOLK RIGHT OF WAY EXCAVATION AND RESTORATION MANUAL WHETHER IN EFFECT OR NOT AT THE TIME OF BID. ADDITIONAL CHARGES APPLY IF OFF-DUTY OFFICERS ARE REQUIRED. A LIST OF PERMIT FEES IS LOCATED AT WWW.NORFOLK.GOV//INDEX.ASPX?NID=362
2. FOR CONSTRUCTION IN OR ADJACENT TO ANY ARTERIAL AND/OR COLLECTOR STREETS REQUIRING TEMPORARY LANE OR STREET CLOSURE, THE CONTRACTOR MUST SCHEDULE A MEETING WITH THE CITY'S TRAFFIC MITIGATION TEAM. PLEASE CONTACT PUBLIC WORKS AT PWROW@NORFOLK.GOV TO SCHEDULE.
3. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A DETAILED TRAFFIC CONTROL PLAN (MOT) WITH THE CONTRACTOR'S PERMIT APPLICATION TO WORK IN THE RIGHT-OF-WAY AT LEAST 14 DAYS IN ADVANCE OF THE START DATE. THE MOT SHALL BE A DRAWING OR AERIAL PHOTO WITH SITE SPECIFIC DETAILS. THESE SHALL INCLUDE BUT ARE NOT LIMITED TO: TRAFFIC SIGNS, DIRECTIONAL SIGNS, DESTINATION SIGNAGE, CHANNELIZING DEVICES, WATER-FILLED BARRIERS, PORTABLE MESSAGE BOARDS WITH MESSAGES TO BE DISPLAYED AND TIMES AND DURATIONS OF DISPLAYED MESSAGES. ADDITIONALLY THE MOT SHALL DISPLAY THE EXACT LOCATION OF ALL SIGNS AND/OR DEVICES INCLUDING SPACING FOR EACH SIGN AND/OR DEVICE, SPACING BEING APPROPRIATE FOR THE WORK ZONE LOCATION AND POSTED SPEED LIMITS. ALL MAINTENANCE OF TRAFFIC (MOT) PLANS SHALL CONFORM TO THE CURRENT ISSUE OF "THE VIRGINIA WORK AREA PROTECTION MANUAL. COPIES OR REPRODUCTIONS OF STANDARD VWAPM TTC PLANS MAY NOT BE SUFFICIENT. CONTRACTORS SHOULD CONSIDER THESE ITEMS WHEN BIDDING FOR CONSTRUCTION AS IT MAY AFFECT COSTS.
4. NORFOLK POLICE REQUIRES OFF-DUTY OFFICERS FOR TRAFFIC CONTROL IN ANY SIGNALIZED INTERSECTION AND AS REQUIRED BY PERMIT. OFF-DUTY OFFICERS ARE INDEPENDENT CONTRACTORS. THE COST FOR OFF-DUTY OFFICERS IS A CONTRACTOR/OWNER RESPONSIBILITY.

Bonds

1. THE CONTRACTOR, OWNER, OR DEVELOPER WILL BE REQUIRED TO POST A CASH, CHECK, OR SURETY BOND OR LETTER OF CREDIT TO EXCAVATE IN THE RIGHT OF WAY." DOWNLOAD THE FORM: HTTP://WWW.NORFOLK.GOV/DOCUMENTCENTER/VIEW/1406
2. BOND AMOUNT MUST INCLUDE 100% TOTAL COST OF ROW INSTALLATION INCLUDING STREETLIGHTS, WATER, SEWER, STORM, BMPS, ROADWAY, SIDEWALK, CURB, GUTTER AS WELL AS ANY STORMWATER INFRASTRUCTURE WORK BEING DONE ON THE PRIVATE PROPERTY SIDE. AN ADDITIONAL AMOUNT MAY BE SET AT THE DISCRETION OF THE DIRECTOR OF PUBLIC WORKS AND/OR ROW MANAGER.
3. BOND WILL BE REDUCED DOWN TO 10% FROM THE DATE OF FINAL INSPECTION FOR A 2 YEAR WARRANTY TERM. A SEPARATE WARRANTY BOND IS ACCEPTABLE IN LIEU OF A BOND REDUCTION. A LETTER REQUESTING RELEASE OR REDUCTION MUST BE SENT TO THE RIGHT-OF-WAY PERMITS OFFICE VIA E-MAIL AT PWROW@NORFOLK.GOV

NOTES TO CITY AND SPECIAL UTILITY PROJECT A/E DESIGNERS AND CONTRACTORS:

4. ALL CITY PROJECTS AND SPECIAL UTILITY PROJECTS (AS DETERMINED BY THE ROW ADMINISTRATOR) CANNOT BE BID UNTIL UTILITIES ARE RELOCATED OR ARRANGEMENTS HAVE BEEN COORDINATED BY THE CITY'S PROJECT MANAGER, A/E, AND RIGHT-OF-WAY DIVISION. PLEASE PROVIDE A LIST AND DRAWINGS OF ALL UTILITIES NEEDING RELOCATION TO RIGHT-OF-WAY DIVISION AT OR BEFORE 30% SUBMITTAL.
5. PROJECT DESIGNERS MUST INCLUDE A DETAILED TRAFFIC CONTROL PLAN FOR UTILITY WORK WITHIN THE RIGHT-OF-WAY IN THE PLANS. FOR CONSTRUCTION IN OR ADJACENT TO ANY ARTERIAL AND/OR COLLECTOR STREETS AS DEFINED IN THE VIRGINIA WORK AREA PROTECTION MANUAL REQUIRING TEMPORARY LANE OR STREET CLOSURE, THE CONTRACTOR MUST SCHEDULE A MEETING WITH THE CITY'S TRAFFIC MITIGATION TEAM. PLEASE CONTACT PUBLIC WORKS AT PWROW@NORFOLK.GOV TO SCHEDULE.
6. ANY DEVIATION FROM THE CITY'S ROW EXCAVATION & RESTORATION MANUAL THAT IS BEING REQUESTED MUST BE MARKED ON THE PLANS. ALSO, A DETAILED LIST OF THE DEVIATIONS MUST BE PROVIDED AS WELL.

Other

1. PLEASE INCLUDE A SEQUENCE OF CONSTRUCTION IN THE PLANS. (REFER TO SHEET C1.02)
2. DETAILED STAMPED DRAWINGS FOR SHORING AND SCAFFOLDING WILL BE REQUIRED AS PART OF THE RIGHT-OF-WAY PERMIT PROCESS.
3. ANY EXCAVATION IN THE ROADWAY MUST BE PATCHED WITH ASPHALT. STONE IS NOT ACCEPTABLE.
4. FULL CURB TO CURB RESURFACING WILL BE REQUIRED IF ROADWAY PORTION IS CUT WITHIN THE FIRST 5 YEARS AFTER RESURFACING. AN ADMINISTRATIVE FEE OF $500 WILL BE ASSESSED IN ACCORDANCE WITH CITY CODE.
5. AS PART OF THE CONTRACTOR'S PERMIT APPLICATION TO WORK IN THE RIGHT-OF-WAY, THE CONTRACTOR MUST SUBMIT A MAP IDENTIFYING THE PROJECT'S STORAGE AND LAY DOWN AREA. THE CITY DOES NOT ALLOW STORAGE, STAGING OR LAY DOWN AREAS WITHIN THE RIGHT-OF-WAY. CONTRACTORS ARE ENCOURAGED TO MAKE ARRANGEMENTS TO STORE MATERIALS AND LAY DOWN ON PRIVATE PROPERTY OR THEY MUST BE STORED WITHIN CONSTRUCTION SITE.
6. ALL MISS UTILITY MARKINGS IN THE RIGHT-OF-WAY ARE REQUIRED TO BE ERADICATED AT THE COMPLETION OF THE PROJECT IN ACCORDANCE WITH THE CITY'S ROW EXCAVATION & RESTORATION MANUAL LOCATED AT WWW.NORFOLK.GOV//INDEX.ASPX?NID=362
7. DESIGNERS ARE RESPONSIBLE TO CHECK IN-FIELD GRADES AND TO CONSULT WITH THE PROPER CITY OF NORFOLK STAFF IF THERE ARE QUESTIONS OR CONCERNS. DESIGNERS MUST SUBMIT A NOTICE VIA EMAIL TO THE RIGHT-OF-WAY DIVISION AT PWROW@NORFOLK.GOV VERIFYING THAT GRADES HAVE BEEN CHECKED AND ARE CORRECT.
8. A CONSTRUCTION FENCE MAY BE REQUIRED FOR YOUR SITE. IN DOWNTOWN, CONCRETE BARRIERS AND WOOD PANELS ARE REQUIRED IN MOST CASES. IN SOME CASES, CHAIN LINK FENCE IS ACCEPTABLE. A REVIEW BY RIGHT-OF-WAY IS REQUIRED TO DETERMINE THE TYPE OF FENCE. PLEASE CONTACT PUBLIC WORKS AT PWROW@NORFOLK.GOV

Notifications

1. NOTIFICATION MUST BE APPROACHED FROM 3 LEVELS OR TIERS FOCUSING ON THOSE AFFECTED BY THE CONSTRUCTION. CONTRACTORS AND/OR PROJECT SPONSOR ARE REQUIRED TO NOTIFY RESIDENTS AND BUSINESSES IN THE IMMEDIATE AREA THAT WILL BE AFFECTED BY THE CONSTRUCTION. DOOR HANGERS MUST BE PLACED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION AND MUST INCLUDE A 24 HOUR CONTACT PHONE NUMBER FOR EMERGENCIES. UPDATES MUST BE PROVIDED TO RESIDENTS AND BUSINESSES ON A BI-WEEKLY OR MONTHLY BASIS DEPENDING ON THE FOLLOWING:

A. IMMEDIATE IMPACT - BUSINESS OR RESIDENTS WITHIN THE CONSTRUCTION ZONE WHO WILL BE AFFECTED BY ACCESS RESTRICTIONS, NOISE, DIRT AND DUST, USE OF PROPERTY DIRECTLY ADJACENT TO THEM, ETC.

B. AREA IMPACT - THOSE WHO TRAVEL THROUGH OR WILL BE DETOURED AROUND LOCAL OR COLLECTOR STREETS, AFFECTED BY CONSTRUCTION INCLUDING CIVIC LEAGUES, BUSINESS ASSOCIATIONS AND PROPERTY OWNERS.

C. CITYWIDE IMPACT - THOSE WHO ARE AFFECTED BY VEHICULAR OR PEDESTRIAN ACCESS ON ARTERIAL STREETS OR IN BUSINESS OR OTHER PUBLIC ACTIVITY AREAS (SCHOOLS, UNIVERSITIES, GOVERNMENT FACILITIES, ETC.)

City of Norfolk Department of Utilities Notes (Updated 4/11/2017)

Water and Sewer Utility Notes

1. ANY TIE-INS TO EXISTING LINES THAT WILL RESULT IN INTERRUPTION OF SERVICE TO ANY CUSTOMER MUST BE COORDINATED WITH THE CITY OF NORFOLK AS TO ACCEPTABLE TIME AND DURATION OF INTERRUPTION. SCHEDULED INTERRUPTIONS OF SERVICE (TIE-INS, ABANDONMENT, ETC.) REQUIRE 3 DAYS ADVANCE NOTICE.
2. ALL TEES, BENDS, PLUGS, AND VALVES SHALL BE PROVIDED WITH MECHANICAL THRUST RESTRAINT AND RESTRAINED TO PROPER LENGTH. PLUGS INSTALLED ON ACTIVE WATER MAINS SHALL BE RESTRAINED. ENDS OF EXISTING LINES TO BE ABANDONED SHALL BE CAPPED WATER-TIGHT.
3. WHERE WATER MAINS PASS OVER SEWER MAINS, THEY MUST BE 18 INCHES ABOVE, OR THE SEWER MUST BE A 20 FOOT SECTION OF AWWA APPROVED PRESSURE PIPE. WHERE WATER LINES PASS BELOW SEWER, 18 INCHES OF CLEARANCE IS REQUIRED AND SEWER MUST BE CONSTRUCTED OF AWWA APPROVED PIPE (18 FOOT LONG PIECE MINIMUM) CENTERED ON WATER MAIN PIPE SECTION.
4. NEOPRENE PADS SHALL BE USED BETWEEN PROPOSED AND EXISTING UTILITIES AT CROSSINGS WHERE THE VERTICAL CLEARANCE IS LESS THAN SIX (6) INCHES.
5. RIGHT-OF-WAY PIPE MATERIAL SHALL BE PVC SDR 26 OR CLASS 52 DI. ALL SANITARY SEWER DUCTILE IRON PIPE SHALL BE LINED WITH PROTECTO 401 OR APPROVED EQUAL.
6. THE LOCATIONS OF EXISTING AND/OR PROPOSED SEWER LATERALS, PRIVATE PROPERTY LINE CLEAN-OUTS AND WATER METER RELOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE, BASED ON CURRENT RECORDS AND PRELIMINARY FIELD INVESTIGATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING SEWER LATERAL AND WATER SERVICE CONNECTIONS AT THE MAIN, CLEANOUT BOXES, AND WATER METER BOXES, (WHERE APPLICABLE) AND AT THE RESIDENCE PRIOR TO COMPLETING ANY REHAB OR REPLACEMENT WORK.
7. PRIOR TO CONSTRUCTION OR EXCAVATION, CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR TO ALL DAMAGED UTILITIES AT HIS EXPENSE.
8. UTILITIES FIELD ENGINEERING OFFICE SHALL BE CONTACTED AT 757-823-1001 FIVE (5) DAYS PRIOR TO START OF WORK TO SCHEDULE AN INSPECTOR AND PRECONSTRUCTION CONFERENCE. APPROVED SUBMITTALS ARE REQUIRED FOR ALL INSPECTED MATERIALS.
9. ALL CITY RIGHT-OF-WAY AND CITY UTILITY EASEMENT WATER AND SANITARY SEWER WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST HAMPTON ROADS PLANNING DISTRICT COMMISSION REGIONAL SPECIFICATIONS, CITY OF NORFOLK MODIFICATIONS TO THE HRPDC STANDARDS, AND THE VIRGINIA DEPARTMENT OF HEALTH REGULATIONS. APPROVED SUBMITTALS ARE REQUIRED BEFORE UTILITY WORK CAN PROCEED.
10. RIGHT-OF-WAY METER INSTALLATIONS:

A. ALL TAPS, PIPING, SERVICE LINES, VALVES, VALVE BOXES, METER BOXES, AND FIRE HYDRANTS SHALL BE INSTALLED BY THE DEVELOPER'S CONTRACTOR AND INSPECTED BY THE DEPARTMENT OF UTILITIES.
B. CITY CREWS SHALL INSTALL ALL METERS, AND DETECTOR CHECKS AT DEVELOPER'S EXPENSE. SUCH ITEMS SHALL BE INSTALLED WITHIN 90 DAYS FROM PAYMENT OF FEES.

11. DOMESTIC TAPS 4 INCHES OR GREATER AND ALL FIRE SERVICE LINES TAPS SHALL BE A MINIMUM OF 5 FEET FROM ANY PIPE JOINT.
12. FOR JOINTS BETWEEN SANITARY SEWER MANHOLE SECTIONS, "RAM NECK" OR EQUIVALENT SHALL BE USED.
13. ALL MANHOLE CASTINGS IN PAVED AREAS SHALL BE ADJUSTABLE TYPE. SURFACE FEATURES SUCH AS MANHOLE COVERS, VALVE BOX COVERS, METER BOX COVERS, SEWER CLEAN-OUTS, AND VENTS SHALL BE RE-ESTABLISHED TO FINISH GRADE.
14. ALL SANITARY SEWER MANHOLES GREATER THAN 12 FEET IN DEPTH SHALL BE 60" IN DIAMETER BELOW SIX FEET OF MANHOLE DEPTH. ABOVE SIX FEET OF MANHOLE DEPTH THE MANHOLE DIAMETER SHALL BE 48".
15. LOCATION AND DEPTH OF ALL PUBLIC UTILITIES SHALL BE FIELD VERIFIED BY DEVELOPER'S CONTRACTOR WITH A NORFOLK DEPARTMENT OF UTILITIES INSPECTOR PRESENT. CONTRACTOR SHALL CONTACT THE UTILITIES FIELD ENGINEERING OFFICE, TELEPHONE 757-823-1001, AT LEAST 72 HOURS PRIOR TO EXCAVATION TO ARRANGE FOR A NORFOLK DEPARTMENT OF UTILITIES INSPECTOR TO BE PRESENT.
16. RIGHT-OF-WAY SANITARY SEWER INSTALLATIONS SHALL BE PERFORMED BY THE DEVELOPER'S CONTRACTOR AND INSPECTED BY THE DEPARTMENT OF UTILITIES.
17. CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICES AT ALL TIMES; ANY DAMAGE TO EXISTING UTILITIES SHALL BE IMMEDIATELY REPAIRED AT THE CONTRACTOR'S EXPENSE.
18. ANY ACTIVITIES THAT WILL RESULT IN INTERRUPTION OF SERVICE TO ANY CUSTOMER MUST BE COORDINATED WITH THE UTILITIES WATER DISTRIBUTION AT 823-1001 AS TO AN ACCEPTABLE TIME AND DURATION OF INTERRUPTION. SCHEDULED INTERRUPTIONS OF SERVICE REQUIRE 3 WORKING DAYS ADVANCE NOTICE.
19. ALL UTILITIES SURFACE FEATURES SUCH AS SEWER MANHOLE COVERS, VALVE BOX COVERS, METER BOX COVERS, AND SEWER CLEANOUT LIDS WITHIN THE PROJECT AREA ARE TO BE REESTABLISHED TO FINISH GRADES.
20. EXISTING FIRE HYDRANTS LOCATED IN THE PROJECT AREA SHALL BE VISIBLE AND ACCESSIBLE AT ALL TIMES.
21. AT LEAST 95% STANDARD PROCTOR COMPACTION SHALL BE ACHIEVED FOR THE BACKFILL OF THE OPEN CUTS FOR THE WATER SEWER MAIN TRENCHES.
22. DURING CONSTRUCTION, PROVIDE ADEQUATE PIPE PROTECTION, RESTRAINT, AND SUPPORT BETWEEN PROPOSED UTILITIES AND EXISTING WATER AND SANITARY SEWER MAINS WHERE VERTICAL SEPARATION IS LESS THAN 12 INCHES. CONTRACTOR SHALL SUBMIT DETAIL TO CITY OF NORFOLK PRIOR TO INSTALLATION.
23. FOR REQUIRED WATER MAIN SHUTDOWNS, THE CONTRACTOR SHALL COORDINATE IN ADVANCE WITH THE DEPARTMENT OF UTILITIES INSPECTOR. THIS IS TO ENSURE PREREQUISITE REQUIREMENTS AND PRECAUTIONS TAKE PLACE AND ARE SATISFIED.
24. PARALLEL ELECTRONIC CABLING SHALL NOT BE INSTALLED WITHIN 4 FEET OF EDGE OF RAW WATER AND FINISH WATER TRANSMISSION MAINS.
25. HAND DIGGING IN VICINITY OF RAW WATER MAINS IS REQUIRED WHEN INSTALLING OTHER CROSSING UTILITIES.
26. CONTRACTOR SHALL EXERCISE EXTREME CARE WHILE DEMOLISHING EXISTING STREET PAVEMENT AROUND RAW WATER LINES.
27. NO MATERIALS SHALL BE STORED WITHIN 15 FEET OF RAW WATER MAINS.
28. CONTRACTOR IS REQUIRED TO PROVIDE CITY UTILITY INSPECTOR AS BUILT DRAWINGS. AS BUILT INFORMATION SHALL BE PERFORMED UNDER THE SUPERVISION OF A CITY INSPECTOR.
29. WATER SERVICE LINES:

A. WHERE WATER SERVICE LINE MUST CROSS OVER SEWERS, STORM DRAINS OR GAS LINES, THE SERVICE LINE MUST BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE SERVICE LINE IS AT LEAST EIGHTEEN (18) INCHES ABOVE THE TOP OF THE SEWER OR OTHER PIPE. THIS VERTICAL SEPARATION MUST BE MAINTAINED FOR THAT PORTION ON THE SERVICE LINE WITHIN TEN FEET HORIZONTALLY OF ANY SEWER LINE THAT IT CROSSES. MEASURED AS THE CLEARANCE FROM THE SERVICE LINE TO THE SEWER OR OTHER PIPE. MINIMUM COVER OF 24 INCHES AT THE DITCH INVERT SHALL BE MAINTAINED.

B. SHOULD TEMPORARY WATER SERVICE LINE REMOVAL BECOME NECESSARY DUE TO LAYING OF SEWERS, STORM DRAIN PIPES AND GAS LINES, THE WATER SERVICE LINE SHALL BE REPLACED IN ITS ENTIRETY BETWEEN THE CORPORATION STOP AND METER STOP. CUTTING AND SPLICING WATER SERVICE FOR RESOLVING UTILITY CONFLICTS IS NOT PERMITTED. WATER SERVICE REPLACEMENT WORK SHALL BE PERFORMED IN THE PRESENCE OF A DEPARTMENT OF UTILITIES FIELD ENGINEERING OFFICE INSPECTOR.

TRUE PROJECT

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NEW RESIDENTIAL FACILITY
NORFOLK STATE UNIVERSITY
PROJECT CODE: #213-17818-000

IRO / SEAL

COMMONWEALTH OF VIRGINIA
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04/04/2018
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NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

DESIGNED BY: MLG
REVIEWED BY: JDH
DRAWN BY: JAM
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ISSUE: EARLY E&S AND STORMWATER PLAN
DATE: 3/30/18
SHEET TITLE: CITY OF NORFOLK GENERAL NOTES
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Erosion And Sediment Control Notes

Erosion and Sediment Control Notes (VHB)

1. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
2. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN TWELVE HOURS AFTER EACH STORM EVENT AND DISPOSE OF SEDIMENTS IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
3. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND OR DIRECT DEPOSIT.
4. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEEDED OR OTHERWISE STABILIZED TO PREVENT EROSION.
5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS.
6. EROSION CONTROL STRUCTURES SHALL REMAIN IN PLACE UNTIL ALL DISTURBED EARTH HAS BEEN SECURELY STABILIZED. AFTER REMOVAL OF STRUCTURES, DISTURBED AREAS SHALL BE REGRADED AND STABILIZED AS NECESSARY.

Minimum Standard Notes

1. UNLESS OTHERWISE SPECIFIED, ALL TREES AND SHRUBS WITHIN THE PROJECT LIMITS SHALL BE CLEARED, GRUBBED, AND DISPOSED OF OFFSITE. VOIDS FROM TREE STUMPS SHALL BE BACKFILLED WITH SELECT MATERIAL OR AS DIRECTED BY THE OWNER OR THEIR REPRESENTATIVE.
2. ALL SILT FENCING MUST BE INSTALLED OUTSIDE THE CRITICAL ROOT ZONE (CRZ-CROWN SPREAD) TO AVOID ROOT DAMAGE DURING INSTALLATION.
3. ALL EXCAVATED MATERIAL SHALL BE STORED USING APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES AND DISPOSED OF IN A LAWFUL MANNER.
4. IN COMPLIANCE WITHIN 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.
5. IN COMPLIANCE WITHIN MS-2, DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES.
6. IN COMPLIANCE WITHIN MS-3, A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED.
7. IN COMPLIANCE WITHIN 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.
8. IN COMPLIANCE WITHIN MS-5, STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
9. IN COMPLIANCE WITHIN MS-6, SEDIMENT TRAPS AND BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN. SEDIMENT TRAPS SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES WITH A MINIMUM STORAGE CAPACITY OF 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. SEDIMENT BASINS SHALL ONLY CONTROL DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES WITH A MINIMUM STORAGE CAPACITY OF 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A TWENTY FIVE YEAR STORM OF 24-HOUR DURATION
10. IN COMPLIANCE WITH MS-7 AND 8 THE CONTRACTOR SHALL CONSTRUCT SLOPES TO MINIMIZE EROSION AND PROVIDE MEASURES TO PREVENT CONCENTRATED RUNOFF. SLOPES FOUND TO BE ERODING SHALL BE REPAIRED WITH PERMANENT STABILIZATION.
11. IN COMPLIANCE WITH MS-9 ADEQUATE DRAINAGE SHALL BE PROVIDED TO PROTECT WATER SEEPS FROM A SLOPE FACE.
12. IN COMPLIANCE WITH MS-10 ALL OPERATIONAL STORMWATER INLETS MUST BE PROTECTED.
13. IN COMPLIANCE WITH MS-11 ADEQUATE OUTLET PROTECTION AND REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND THE RECEIVING CHANNEL BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL.
14. IN COMPLIANCE WITH MS-12, WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED:
    A. PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT, AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION
    B. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS
    C. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS
15. IN COMPLIANCE WITH MS-13 AND MS-14, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED IF A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN A SIX-MONTH PERIOD. ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS MUST BE MET.
16. IN COMPLIANCE WITH MS-15, WATERCOURSE BEDS AND BANKS SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
17. IN COMPLIANCE WITH MS-16, THE CONTRACTOR SHALL:
    A. OPEN NO MORE THAN 500 LF. OF UTILITY TRENCH AT A TIME
    B. PLACE EXCAVATED TRENCH MATERIAL ON HIGH SIDE OF TRENCH
    C. FILTER SITE EFFLUENT WITH AN APPROVED SEDIMENT TRAPPING DEVICE
    D. BACKFILL TRENCHES WITH PROPER COMPACTION TO MINIMIZE EROSION
    SEED/SOD DISTURBED AREA WITHIN (7) DAYS OF REACHING FINAL GRADE
18. IN COMPLIANCE WITH MS-17, WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS:
    A. MINIMIZE VEHICULAR SEDIMENT TRACKING ONTO THE PAVED SURFACE
    B. CLEAN THE ROAD SURFACE THOROUGHLY AT THE END OF EACH DAY
    C. SEDIMENT SHALL BE REMOVED BY SHOVELING OR SWEEPING AND THEN TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
19. IN COMPLIANCE WITH 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 PROGRAM 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.
20. IN COMPLIANCE WITH 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. 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.
21. INLET PROTECTION FOR INLETS SCHEDULED TO BE CAPPED MAY BE REMOVED UPON MODIFICATION OF EXISTING STRUCTURE.

Erosion And Sediment Control Narrative

Project Description

THE EXISTING SITE CONSISTS OF APPROXIMATELY 6.10 ACRES LOCATED AT THE NORTHEAST QUADRANT OF THE NSU CAMPUS IN THE CITY OF NORFOLK, VIRGINIA. THE BUILDING SITE IS CURRENTLY AN EXISTING GRAVEL PARKING LOT AND FORMERLY NORFOLK CITY HOSPITAL. A PORTION OF THE PROJECT SITE IS ENCUMBERED BY A LEASE LINE FOR THE BENEFIT OF SPARTAN SUITES APARTMENTS. THE PROPOSED PROJECT CONSISTS OF TWO RESIDENCE HALLS (NORTH HALL AND SOUTH HALL) EACH WITH 302 BEDS FOR A TOTAL OF 604 BEDS AND A CENTRAL AMENITY AREA.

THE SITE IS BOUND BY CORPREW AVENUE TO THE NORTH, CAMPUS PARKING LOTS AND MAJESTIC AVENUE TO THE EAST, SPARTAN SUITES APARTMENTS TO THE SOUTH, AND THE NORFOLK STATE UNIVERSITY POLICE BUILDING TO THE WEST. THE SURROUNDING LAND COVER IS MOSTLY IMPERVIOUS AND CONSISTS OF BUILDINGS, DRIVE AISLES, GRAVEL PARKING AREAS AND PEDESTRIAN WALKWAYS.

Existing Site Conditions

THE EXISTING TERRAIN OF THE SITE IS RELATIVELY FLAT WITH SLOPES AROUND 1-3%. SITE ELEVATIONS (BASED ON NAVD88(92)(CITY OF NORFOLK 2000), VERTICAL DATUM) RANGE FROM APPROXIMATELY 12.4 FEET AT THE SOUTH END OF THE SITE TO 15.7 FEET IN THE CENTER OF THE SITE. THE SITE GENERALLY DRAINS FROM THE CENTER TO THE PERIMETER OF THE PROPERTY. EXCAVATION AND FILLING OF THE SITE WILL BE NECESSARY FOR THE PROPOSED PROJECT. IMPACTS TO EXISTING TOPOGRAPHY ARE EXPECTED TO FILL THE SITE ON AVERAGE 1-3 FEET.

THE FINISHED FLOOR ELEVATION WILL BE SET AT ELEVATION 15.5 FEET; THEREFORE, THE FINISHED FLOOR IS APPROXIMATELY TWO (2) FEET ABOVE THE AVERAGE SITE GRADE ELEVATION. SPARTAN SUITES APARTMENTS FINISHED FLOOR IS AT ELEVATION 14.5 FEET. THE CLOSE PROXIMITY OF SPARTAN SUITES TO THE SOUTH HALL BUILDING WILL BE CONSIDERED WITH THE SITE GRADING DESIGN. THE POLICE PRECINCT FINISHED FLOOR IS ALSO AT ELEVATION 14.5 FEET AND THE ADJACENT ROADWAY IS AT ELEVATION 12.0 FEET.

Adjacent Areas

THE PROJECT IS BOUNDED BY CORPREW AVENUE TO THE NORTH, CAMPUS PARKING LOTS AND MAJESTIC AVENUE TO THE EAST, SPARTAN SUITES APARTMENTS TO THE SOUTH, AND THE NORFOLK STATE UNIVERSITY POLICE BUILDING TO THE WEST.

Soils

PLEASE REFER TO SHEETS B1.00 AND B1.01 FOR THE SOIL BORING LOG LOCATION PLAN AND BORING LOGS WHICH ARE REFERENCED IN THE "REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL SERVICES" PREPARED BY GET SOLUTIONS, INC. AND DATED MARCH 12, 2018.

Offsite Areas

THERE ARE NO OFFSITE AREAS TO BE DISTURBED WITH THIS PROJECT. IF OFFSITE LAND DISTURBING ACTIVITY IS FOUND TO BE NECESSARY, IT SHALL BE CONDUCTED UNDER A SEPARATE, APPROVED EROSION AND SEDIMENT CONTROL PLAN.

Critical Erosion Areas

THERE ARE NO CRITICAL EROSION AREAS IDENTIFIED ON THE PROJECT SITE WITH RESPECT TO HIGHLY ERODIBLE SOILS OR STEEP SLOPES.

Erosion and Sediment Control Measures

DUST AND EROSION CONTROL WILL BE CONSIDERED AN INTEGRAL PART OF ALL DESIGN. ALL STRUCTURAL AND VEGETATIVE EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 1992. THE FOLLOWING EROSION AND SEDIMENTATION CONTROLS WILL BE EMPLOYED DURING THE EARTHWORK AND CONSTRUCTION PHASES OF THE PROJECT, BUT ARE NOT LIMITED TO: CONSTRUCTION ENTRANCE, SILT FENCE, TREE PROTECTION, INLET PROTECTION AND SEEDING MEASURES. THE SITE WILL BE SURROUNDED BY CONSTRUCTION SAFETY FENCE TO PREVENT THE CONFLICT OF PUBLIC AND CONSTRUCTION TRAFFIC.

NEARLY ALL OF THE EXISTING AND PROPOSED INLETS WILL RECEIVE LESS THAN 1 ACRE OF OVERLAND FLOW. FOR THE TWO INLETS WITH CONTRIBUTING DRAINAGE AREAS GREATER THAN 1 ACRE. IN ADDITION, THE INLETS WILL NOT BE RECEIVING SEDIMENT-LADEN RUNOFF FROM THE FULL DRAINAGE AREA. SILT FENCE WILL BE INSTALLED ALONG THE EDGE OF THE DISTURBED UPLAND AREAS TO PREVENT THE INLETS FROM BEING OVERLOADED WITH SEDIMENT.

SAFETY FENCE (STD. 3.01)

SAFETY FENCE WILL BE INSTALLED AROUND THE SITE PERIMETER TO PREVENT UNWANTED ACCESS TO THE SITE.

TEMPORARY CONSTRUCTION ENTRANCE/EXIT (STD. 3.02)

A TEMPORARY CRUSHED-STONE CONSTRUCTION ENTRANCE/EXIT WILL BE CONSTRUCTED. A CROSS SLOPE WILL BE PLACED IN THE ENTRANCE TO DIRECT RUNOFF TO A PROTECTED CATCH BASIN INLET OR SETTLING AREA. IF DEEMED NECESSARY AFTER CONSTRUCTION BEGINS, A WASH PAD MAY BE INCLUDED TO WASH OFF VEHICLE WHEELS BEFORE LEAVING THE PROJECT SITE.

SILT FENCE (STD. 3.05)

SILT FENCE WILL BE PLACED ALONG THE PERIMETER OF THE SITE WHERE OTHER SEDIMENT CONTROL MEASURES ARE NOT IN PLACE (EX. DIVERSION DIKES). THE SILT FENCE WILL BE REPAIRED OR REPLACED AS DETERMINED BY PERIODIC FIELD INSPECTIONS.

STORM DRAIN INLET PROTECTION (STD. 3.07)

NEWLY CONSTRUCTED AND EXISTING STORM DRAIN INLETS WILL BE PROTECTED WITH SEDIMENT FILTERS AND/OR SILT FENCE BARRIERS THROUGHOUT CONSTRUCTION.

TREE PROTECTION (STD. 3.38)

TREE PROTECTION FENCING OR OTHER SUITABLE DEVICES SHALL BE PLACED ALONG THE LIMITS OF CLEARING TO PROTECT DESIRABLE TREES FROM MECHANICAL AND OTHER INJURY DURING LAND DISTURBING AND CONSTRUCTION ACTIVITY.

VEGETATIVE PRACTICES

TOPSOIL SHALL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. THE CONTRACTOR SHALL STOCKPILE TOPSOIL IN AN APPROPRIATE MANNER IF NO LOCATION IS INDICATED ON THE SITE PLANS. SILT FENCE SHALL BE PLACED ALONG THE PERIMETER OF THE STOCKPILE.

ALL DISTURBED AREAS SHALL BE SEEDED WITH FAST-GERMINATING, TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING OR WHERE EXPOSED SOIL SURFACES WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF TIME EXCEEDING 15 DAYS. SELECTION OF THE APPROPRIATE SEED MIXTURE AS RECOMMENDED BY THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 1992 WILL DEPEND ON THE TIME OF YEAR IT IS TO BE APPLIED. ESTABLISHMENT OF TEMPORARY VEGETATIVE COVER MAY BE ESTABLISHED BY HYDRO-SEEDING.

VEGETATIVE SLOPE STABILIZATION WILL BE USED TO MINIMIZE EROSION ON SLOPES OF 3:1 OR FLATTER. EROSION CONTROL MATTING SHALL BE USED ON SLOPES STEEPER THAN 3:1.

PERMANENT STABILIZATION WILL BE COMPLETED WITH THE PLANTING OF PERENNIAL GRASSES OR LEGUMES. ESTABLISHMENT OF PERMANENT VEGETATIVE COVER MAY BE ESTABLISHED BY HYDRO_SEEDING OR SODDING. A SUITABLE TOPSOIL, GOOD SEEDBED PREPARATION, AND ADEQUATE LIME, FERTILIZER AND WATER SHALL BE PROVIDED FOR EFFECTIVE ESTABLISHMENT OF THESE VEGETATIVE STABILIZATION METHODS. STRAW MULCH SHALL BE USED AFTER PERMANENT SEEDING TO PROTECT SOIL DURING SEED ESTABLISHMENT.

Stormwater Management:

IN THE EXISTING CONDITION, MUCH OF THE SITE DRAINS VIA OVERLAND FLOW TO A CLOSED STORM DRAINAGE SYSTEM ON THE SOUTH END OF THE SITE, WHICH ULTIMATELY DISCHARGES TO THE EAST THROUGH THE CAMPUS STORM DRAINAGE SYSTEM. THE REMAINDER OF THE SITE DRAINS TOWARDS CORPREW AVENUE. THE PROPOSED DEVELOPMENT WILL DECREASE THE IMPERVIOUS AREA OF THE SITE BY MORE THAN 20% AND WILL DECREASE THE AMOUNT OF RUNOFF FLOWING OVERLAND ONTO CORPREW AVENUE.

STORMWATER WILL BE REVIEWED FOR BOTH WATER QUANTITY (9VAC25-870-66) AND WATER QUALITY (9VAC25-870-63). WATER QUANTITY WILL BE ADDRESSED FOR CHANNEL PROTECTION AND FLOOD PROTECTION. CHANNEL PROTECTION WILL BE ADDRESSED BY ANALYZING THE 2-YEAR STORM SYSTEM FOR EROSION WHILE FLOOD PROTECTION BE ADDRESSED BY ANALYZING THE 10-YEAR STORM FOR CAPACITY AND FLOODING. WATER QUALITY WILL BE ADDRESSED VIA THE VIRGINIA RUNOFF REDUCTION METHOD FOR REDEVELOPMENT SITES.

WATER QUALITY COMPLIANCE IS ACHIEVED BY REDUCING THE IMPERVIOUS COVER OF THE SITE BY ADDING LAWN AND LANDSCAPING AREAS AROUND THE NEW RESIDENCE HALLS. THE REDUCTION OF IMPERVIOUS COVER ALSO REDUCES THE NET RUNOFF FROM THE SITE BELOW THE EXISTING CONDITION. THE TWO DISCHARGE POINTS IN TO THE SOUTH OF THE SITE WILL EXPERIENCE INCREASES IN FLOW DUE TO THE DIVERSION OF WATER AWAY FROM CORPREW AVENUE. HOWEVER, THESE DISCHARGE POINTS ARE MANMADE CONCRETE CULVERTS THAT DO NOT DAYLIGHT TO A NATURAL CHANNEL UNTIL THE CAMPUS'S STORM SEWER SYSTEM ULTIMATELY DISCHARGES TO OHIO CREEK (A WATERSHED OF OVER 280 ACRES). BECAUSE THE NET FLOW FROM THE SITE IS REDUCING FOR THE POST-DEVELOPED CONDITION, THIS PROJECT WILL NOT RESULT IN AN INCREASE IN FLOW AT THE OUTFALL TO OHIO CREEK. THEREFORE, THERE IS NO RISK OF CHANNEL EROSION.

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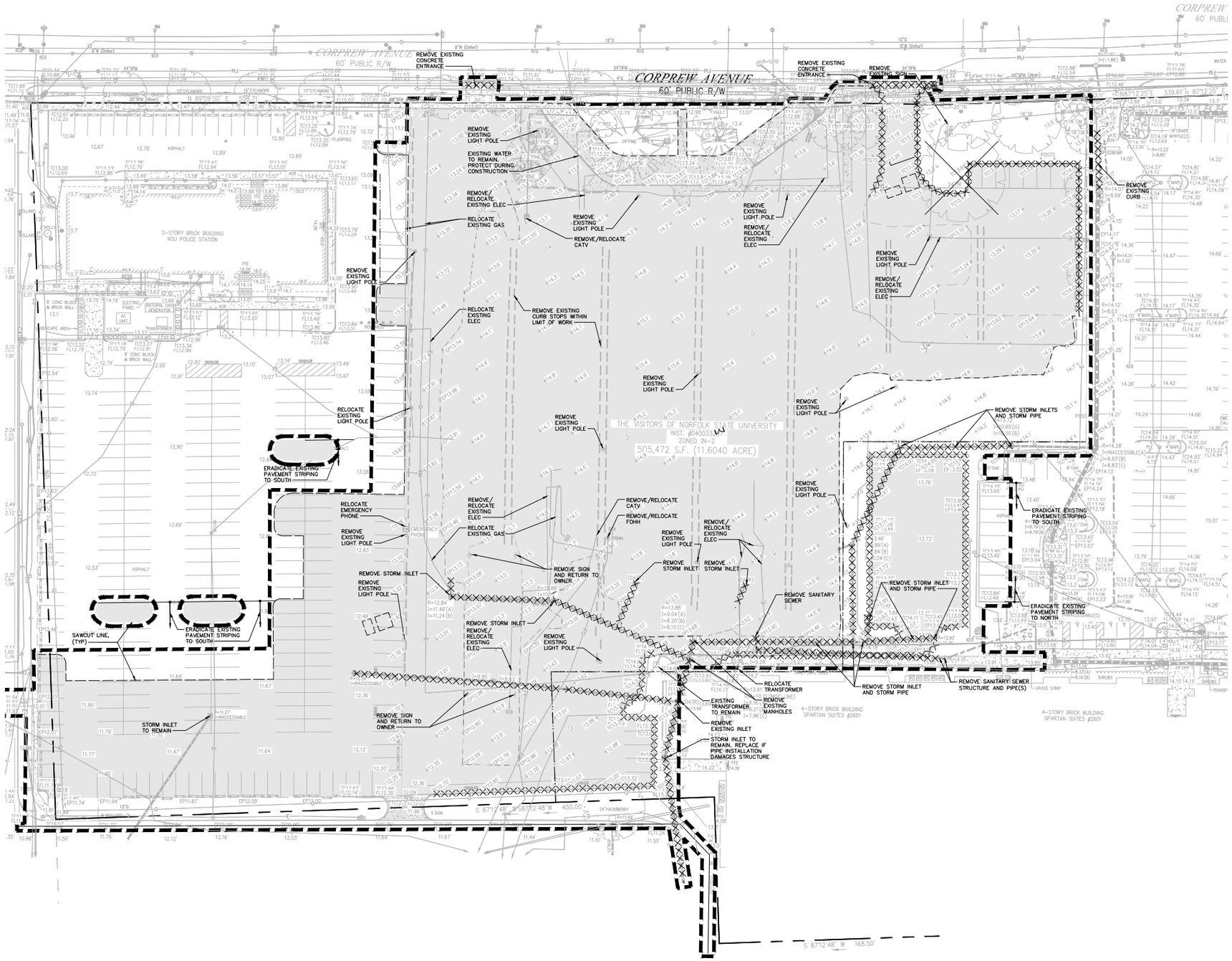
DATE: 3/30/18
SHEET TITLE: EROSION & SEDIMENT CONTROL NOTES AND NARRATIVE
SHEET NUMBER: C1.02

TRUE PROJECT

2/20/2015 08:00:00 AM



Notes

1. PLANIMETRICS AND UTILITIES OUTSIDE SURVEY LIMITS ARE BASED ON AS-BUILTS, GIS, AND NORFOLK STATE UNIVERSITY RECORDS COMPILED FOR COORDINATION PURPOSES.
2. REMOVE OR RELOCATE EXISTING LIGHTPOLES WHERE IN CONFLICT WITH PROPOSED WORK.
3. ELECTRIC AND TELECOM SHALL BE REMOVED OR RELOCATED WHERE IN CONFLICT WITH PROPOSED WORK.
4. FIBER OPTIC SHALL BE RELOCATED AROUND THE BUILDING FOOTPRINT. CONDUIT NOT SHOWN.
5. REMOVE CONCRETE TO THE NEAREST JOINT.

Demolition Legend

- DENOTES REMOVAL OF TREE/SHRUB
- XXXX - DENOTES REMOVAL OF EXISTING UTILITIES
- DENOTES REMOVAL OF ALL SURFACE FEATURES WITHIN SHADED AREA
- LIMIT OF WORK/DISTURBANCE

0 15 30 60 Feet

TRUE PROJECT

S.B. BALLARD CONSTRUCTION COMPANY
2828 SHIPPS CORNER ROAD
VIRGINIA BEACH, VIRGINIA 23453
TELEPHONE: 757.440.5555
FACSIMILE: 757.451.2873
IN ASSOCIATION WITH :
COMMONWEALTH ARCHITECTS
NILES BOLTON ASSOCIATES
vhb
SPEIGHT, MARSHALL, FRANCIS
THOMPSON Consulting Engineers

PROJECT TEAM
S. B. BALLARD CONSTRUCTION COMPANY — CONTRACTOR
COMMONWEALTH ARCHITECTS — ARCHITECT OF RECORD
NILES BOLTON ASSOCIATES — ARCHITECT OF DESIGN
VHB — CIVIL ENGINEER
SPEIGHT,MARSHALL,FRANCIS — STRUCTURAL ENGINEER
THOMPSON CONSULTING ENGINEERS — MEP ENGINEER
NORFOLK STATE UNIVERSITY — OWNER

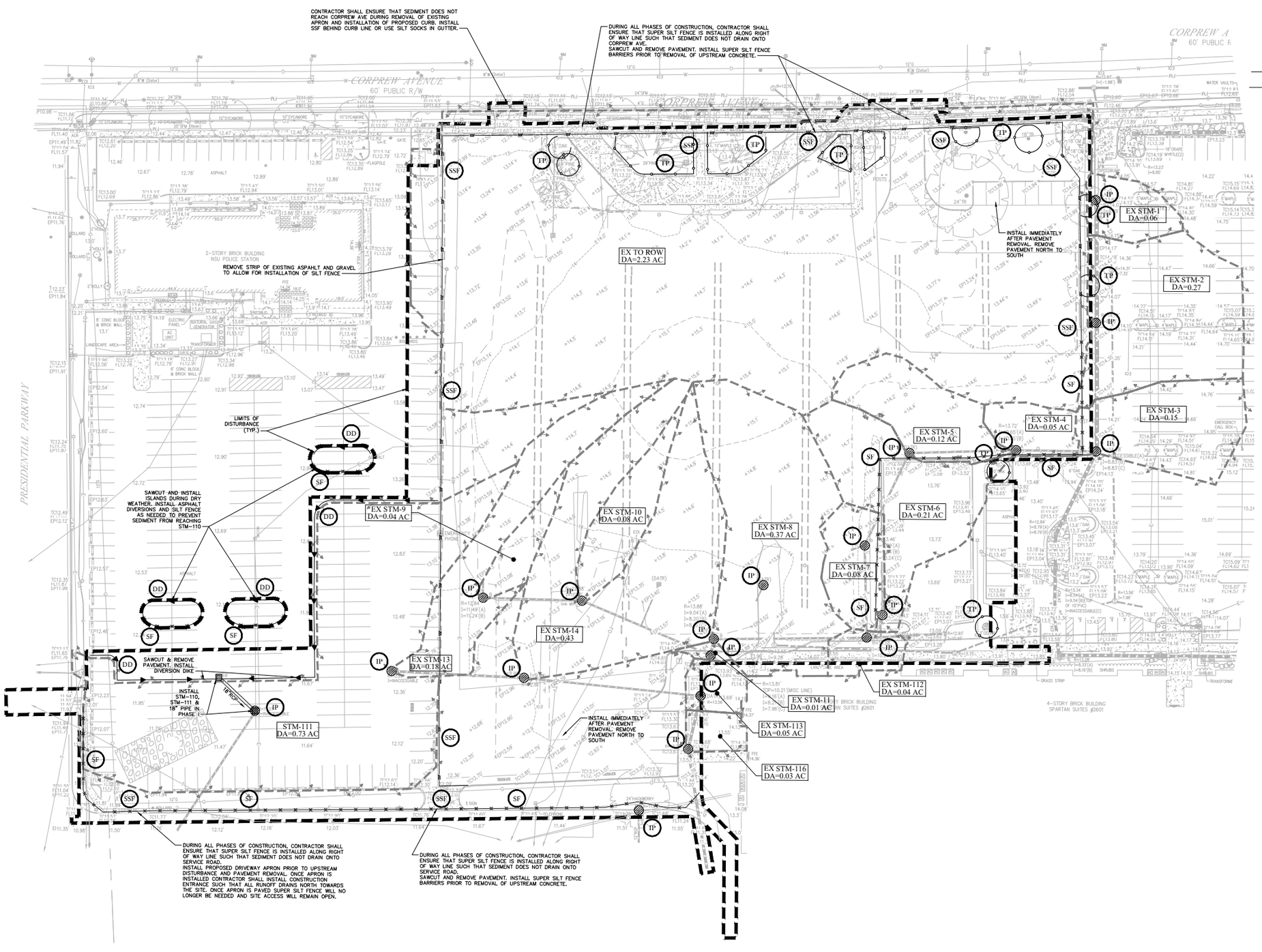
NEW RESIDENTIAL FACILITY
NORFOLK STATE UNIVERSITY
PROJECT CODE: #213-17818-000

SEAL
COMMONWEALTH OF VIRGINIA
MYRINA L. GAGLIONE
Lic. No. 041433
04/30/2018
PROFESSIONAL ENGINEER

NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

DESIGNED BY
REVIEWED BY
DRAWN BY
PROJECT NUMBER: XXX-XXXXX-XX
ISSUE: EARLY E&S AND STORMWATER PLAN
DATE: 3/30/18
SHEET TITLE: DEMOLITION PLAN
SHEET NUMBER: C2.00

2/20/2015 08:00:00 AM



Erosion & Sediment Control Legend Phase 1

- LIMITS OF DISTURBANCE
- (CE) CONSTRUCTION ENTRANCE
- (IP) STORM DRAIN INLET PROTECTION
- (SF) SILT FENCE
- (TP) TREE PROTECTION
- (STB) STRAW WATTLE/HAY BALE BARRIER
- (PS) PERMANENT SEEDING
- (DD) DIVERSION DIKE
- (SSF) SUPER SILT FENCE

Phase 1 Sequence Of Construction

1. OBTAIN NECESSARY PERMITS.
2. THE CONTRACTOR SHALL CONTACT NORFOLK STATE UNIVERSITY AT LEAST 48 HOURS PRIOR TO ANY LAND DISTURBING ACTIVITY.
3. ESTABLISH PERIMETER PROTECTION AND MAINTAIN THROUGHOUT CONSTRUCTION.
4. INSTALL TREE PROTECTION AND MAINTAIN THROUGHOUT.
5. INSTALL CONSTRUCTION ENTRANCE AND TRAFFIC SIGNAGE INDICATING CONSTRUCTION ENTRANCE AND PRESENCE OF CONSTRUCTION TRAFFIC.
6. BEGIN SITE DEMOLITION.
7. BEGIN ROUGH GRADING OPERATIONS.
8. IF TEMPORARY STOCKPILES ARE USED, CONTRACTOR SHALL INSTALL DOUBLE SILT FENCE AT THE BASE TO PREVENT SEDIMENT RUNOFF.

Notes

1. PLANIMETRICS AND UTILITIES OUTSIDE SURVEY LIMITS BASED ON AS-BUILTS, GIS, AND NORFOLK STATE UNIVERSITY RECORDS COMPILED FOR COORDINATION PURPOSES.
2. ACCORDING TO THE NATURAL RESOURCES CONSERVATION SERVICE-SOIL SURVEY MAP THE SITE IS CLASSIFIED AS HYDROLOGIC SOIL GROUP D.
3. CONTRACTOR SHALL NOT DIRECT MORE THAN ONE (1) ACRE OF DISTURBED RUNOFF TO EACH STORM DRAIN INLET PROTECTION.
4. CONSTRUCTION SAFETY FENCE DENOTES LIMITS OF CLEARING AND GRADING, UNLESS OTHERWISE INDICATED.
5. ALL DISTURBED AREAS WITHIN THE LIMITS OF DISTURBANCE WITHOUT PROPOSED FEATURES SHALL BE SODDED.

0 15 30 60 Feet

TRUE PROJECT

S.B. BALLARD CONSTRUCTION COMPANY
2828 SHIPPS CORNER ROAD
VIRGINIA BEACH, VIRGINIA 23453
TELEPHONE: 757.440.5555
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vhb
SPEIGHT MARSHALL FRANCIS
THOMPSON CONSULTING ENGINEERS

PROJECT TEAM

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SPEIGHT MARSHALL FRANCIS — STRUCTURAL ENGINEER
THOMPSON CONSULTING ENGINEERS — MEP ENGINEER
NORFOLK STATE UNIVERSITY — OWNER

NEW RESIDENTIAL FACILITY
NORFOLK STATE UNIVERSITY
PROJECT CODE: #213-17818-000

RO / SEAL

COMMONWEALTH OF VIRGINIA
MYRINA L. GAGLIONE
Lic. No. 041433
04/01/18
PROFESSIONAL ENGINEER

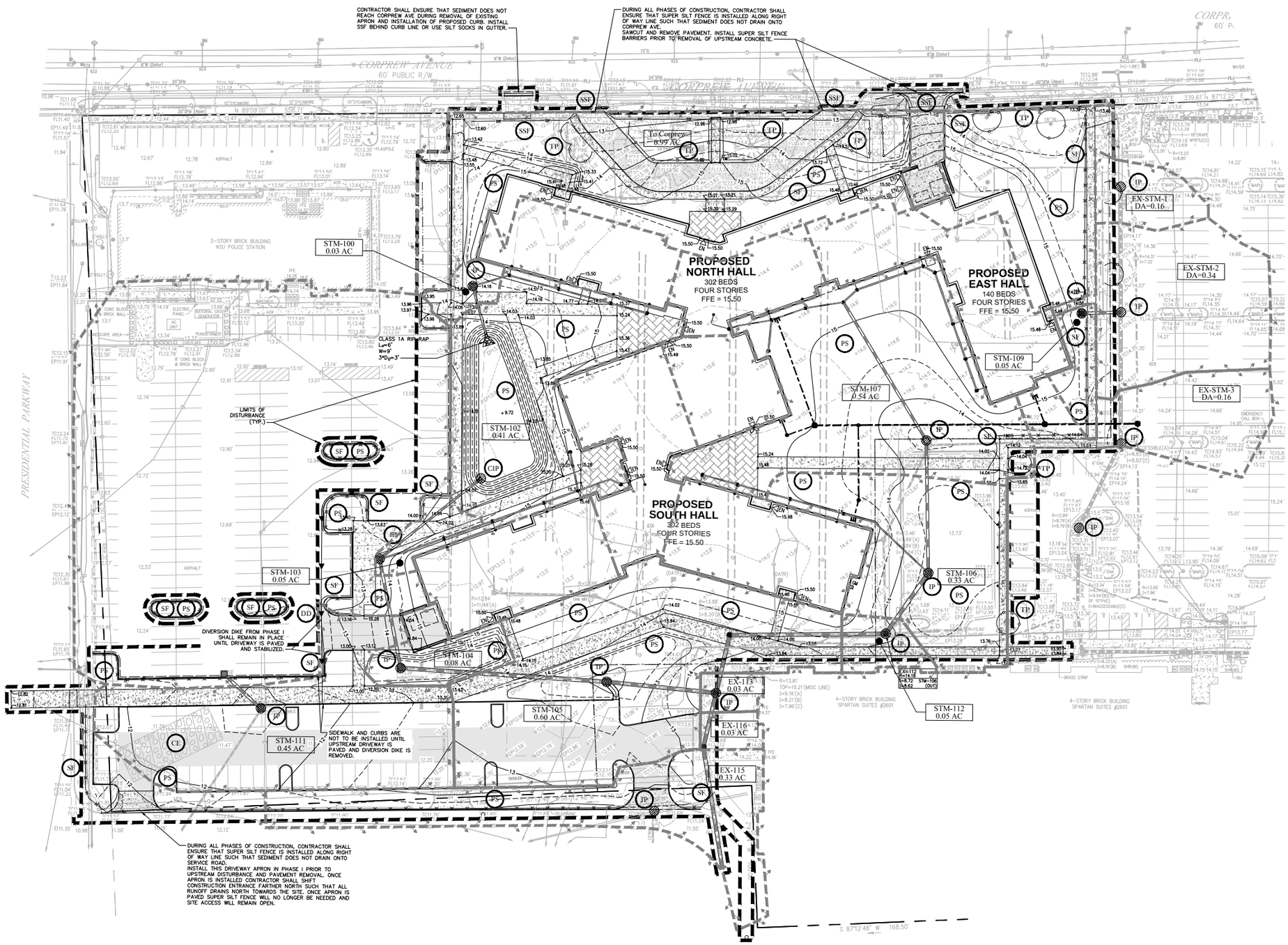
NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

DESIGNED BY: MLG
REVIEWED BY: JDH
DRAWN BY: JAM
PROJECT NUMBER: XXX-XXXXX-XX
ISSUE: EARLY E&S AND STORMWATER PLAN
DATE: 3/30/18

SHEET TITLE: EROSION AND SEDIMENT CONTROL PLAN - PHASE 1

SHEET NUMBER: C3.00

2/20/2015 08:00:00 AM



Erosion & Sediment Control Legend Phase 2

- LIMITS OF DISTURBANCE
- (CE) CONSTRUCTION ENTRANCE
- (IP) STORM DRAIN INLET PROTECTION
- (SF) SILT FENCE
- (TP) TREE PROTECTION
- (STB) STRAW WATTLE/HAY BALE BARRIER
- (PS) PERMANENT SEEDING
- (SSF) SUPER SILT FENCE

Phase 2 Sequence Of Construction

1. ONCE REMOVAL OF EXISTING STORM SEWER SYSTEM IS COMPLETE, BEGIN TRENCHING FOR NEW STORM SEWER SYSTEM. CONTRACTOR SHALL USE PUMP-AROUNDS AND SILT BAGS IF A RAIN EVENT OCCURS DURING THE CONSTRUCTION OF A STORM INLET.
2. INSTALL INLET PROTECTION AROUND NEW INLETS AND ROUGH GRADE SITE.
3. COMMENCE BUILDING AND PAVEMENT INSTALLATION.
4. FINE GRADE SITE AND INSTALL FINAL STABILIZATION MEASURES AND VEGETATIVE COVER.
5. REMOVE CONSTRUCTION EQUIPMENT AND PREPARE SITE FOR OCCUPANCY.
6. REMOVE TEMPORARY EROSION CONTROL MEASURES WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION.
7. REMOVE ALL TEMPORARY EQUIPMENT, CONSTRUCTION MATERIALS, AND DEBRIS FROM SITE.

Notes

1. PLANIMETRICS AND UTILITIES OUTSIDE SURVEY LIMITS BASED ON AS-BUILTS, GIS, AND NORFOLK STATE UNIVERSITY RECORDS COMPILED FOR COORDINATION PURPOSES.
2. ACCORDING TO THE NATURAL RESOURCES CONSERVATION SERVICE-SOIL SURVEY MAP THE SITE IS CLASSIFIED AS HYDROLOGIC SOIL GROUP D.
3. CONTRACTOR SHALL NOT DIRECT MORE THAN ONE (1) ACRE OF DISTURBED RUNOFF TO EACH STORM DRAIN INLET PROTECTION.
4. CONSTRUCTION SAFETY FENCE DENOTES LIMITS OF CLEARING AND GRADING, UNLESS OTHERWISE INDICATED.
5. ALL DISTURBED AREAS WITHIN THE LIMITS OF DISTURBANCE WITHOUT PROPOSED FEATURES SHALL BE SODDED.

0 15 30 60 Feet

TRUE PROJECT

S.B. BALLARD CONSTRUCTION COMPANY
2828 SHIPPS CORNER ROAD
VIRGINIA BEACH, VIRGINIA 23453
TELEPHONE: 757.440.5555
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Commonwealth Architects
NILES BOLTON ASSOCIATES
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THOMPSON Consulting Engineers

PROJECT TEAM

S. B. BALLARD CONSTRUCTION COMPANY
CONTRACTOR

COMMONWEALTH ARCHITECTS
ARCHITECT OF RECORD

NILES BOLTON ASSOCIATES
ARCHITECT OF DESIGN

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CIVIL ENGINEER

SPEIGHT, MARSHALL, FRANCIS
STRUCTURAL ENGINEER

THOMPSON CONSULTING ENGINEERS
MEP ENGINEER

NORFOLK STATE UNIVERSITY
OWNER

NEW RESIDENTIAL FACILITY
NORFOLK STATE UNIVERSITY
PROJECT CODE: #213-17818-000

IRO / SEAL

COMMONWEALTH OF VIRGINIA
MYRINA L. GAGLIONE
Lic. No. 041433
06/01/2018
PROFESSIONAL ENGINEER

NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

DESIGNED BY: MLG
REVIEWED BY: JDH
DRAWN BY: JAM
PROJECT NUMBER: XXX-XXXXX-XX
ISSUE: EARLY E&S AND STORMWATER PLAN
DATE: 3/30/18

SHEET TITLE
EROSION AND SEDIMENT CONTROL PLAN - PHASE 2

SHEET NUMBER
C3.01

2/20/2015 08:00:00 AM

Sign Summary

M.U.T.C.D. Number	Specification Width	Specification Height	Desc.
R1-1	30"	30"	
R7-8	12"	18"	
R7-8P	12"	6"	

Pavement Legend

CONCRETE PAVING (PEDESTRIAN LOADED)
4" CLASS A3 (3,000 PSI)
6" AGGREGATE BASE MATERIAL TYPE-1 SIZE 21A OR 21B STABLE SUBGRADE COMPACTED TO MIN. 95% STD. PROCTOR MAX. DRY DENSITY WITH GEOTEXTILE FABRIC (MIRAFI 500X OR EQUIV.) AND APPROVED BY THE GEOTECHNICAL ENGINEER

CONCRETE PAVING (VEHICULAR LOADED)
6" CLASS A3 (3,000 PSI) W/6X6 (W1.4)
6" AGGREGATE BASE MATERIAL TYPE-1 SIZE 21A OR 21B STABLE SUBGRADE COMPACTED TO MIN. 95% STD. PROCTOR MAX. DRY DENSITY WITH GEOTEXTILE FABRIC (MIRAFI 500X OR EQUIV.) AND APPROVED BY THE GEOTECHNICAL ENGINEER

HEAVY DUTY PAVEMENT SECTION:
1.5" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5A
2.5" ASPHALT CONCRETE BASE COURSE TYPE BM-25
8" AGGREGATE BASE MATERIAL TYPE-1 SIZE 21A OR 21B STABLE SUBGRADE COMPACTED TO MIN. 95% STD. PROCTOR MAX. DRY DENSITY WITH GEOTEXTILE FABRIC (MIRAFI 500X OR EQUIV.) AND APPROVED BY THE GEOTECHNICAL ENGINEER

STANDARD DUTY PAVEMENT SECTION:
2" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5A
8" AGGREGATE BASE MATERIAL TYPE-1 SIZE 21A OR 21B STABLE SUBGRADE COMPACTED TO MIN. 95% STD. PROCTOR MAX. DRY DENSITY WITH GEOTEXTILE FABRIC (MIRAFI 500X OR EQUIV.) AND APPROVED BY THE GEOTECHNICAL ENGINEER

PAVER (PEDESTRIAN)
REFER TO LANDSCAPE PLAN FOR PAVER SECTION

Parking Summary Chart

Description	Size	Required	Provided	NSU Residence Hall Required	NSU Residence Hall Provided	Police Precinct Removed	Police Precinct Provided	Adjacent Lot Removed	Adjacent Lot Provided
STANDARD SPACES*	9 x 18	9 x 18		146	73	158	178	9	0
STANDARD ACCESSIBLE SPACES **	8 x 18	8 x 18		4	5	0	1	0	5
VAN ACCESSIBLE SPACES**	8 x 18	8 x 18		1	1	0	2	0	1
TOTAL SPACES				151	79	158	181	9	6

* PARKING GROUP 'R-2' (REQUIRED):
1 PARKING SPACE/2 EMPLOYEES (MINIMUM)

TOTAL NUMBER OF EMPLOYEES = 4 EMPLOYEES
4 EMPLOYEES * 1 SPACE/2 EMPLOYEES =2 SPACES

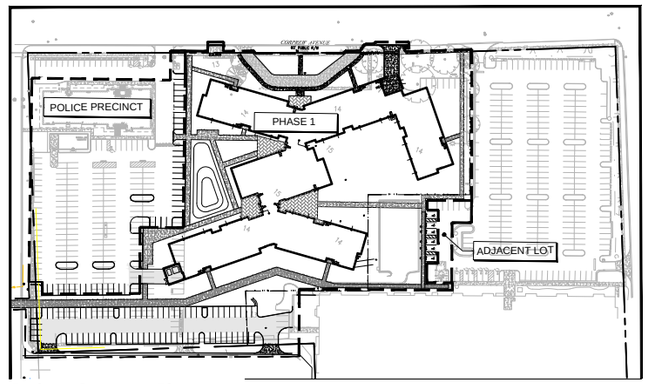
* PARKING GROUP 'R-2' (REQUIRED):
1 PARKING SPACE/5 BEDS (MINIMUM)

TOTAL NUMBER OF BEDS = 744 BEDS
744 BEDS * 1 SPACE/5 BEDS = 149 SPACES

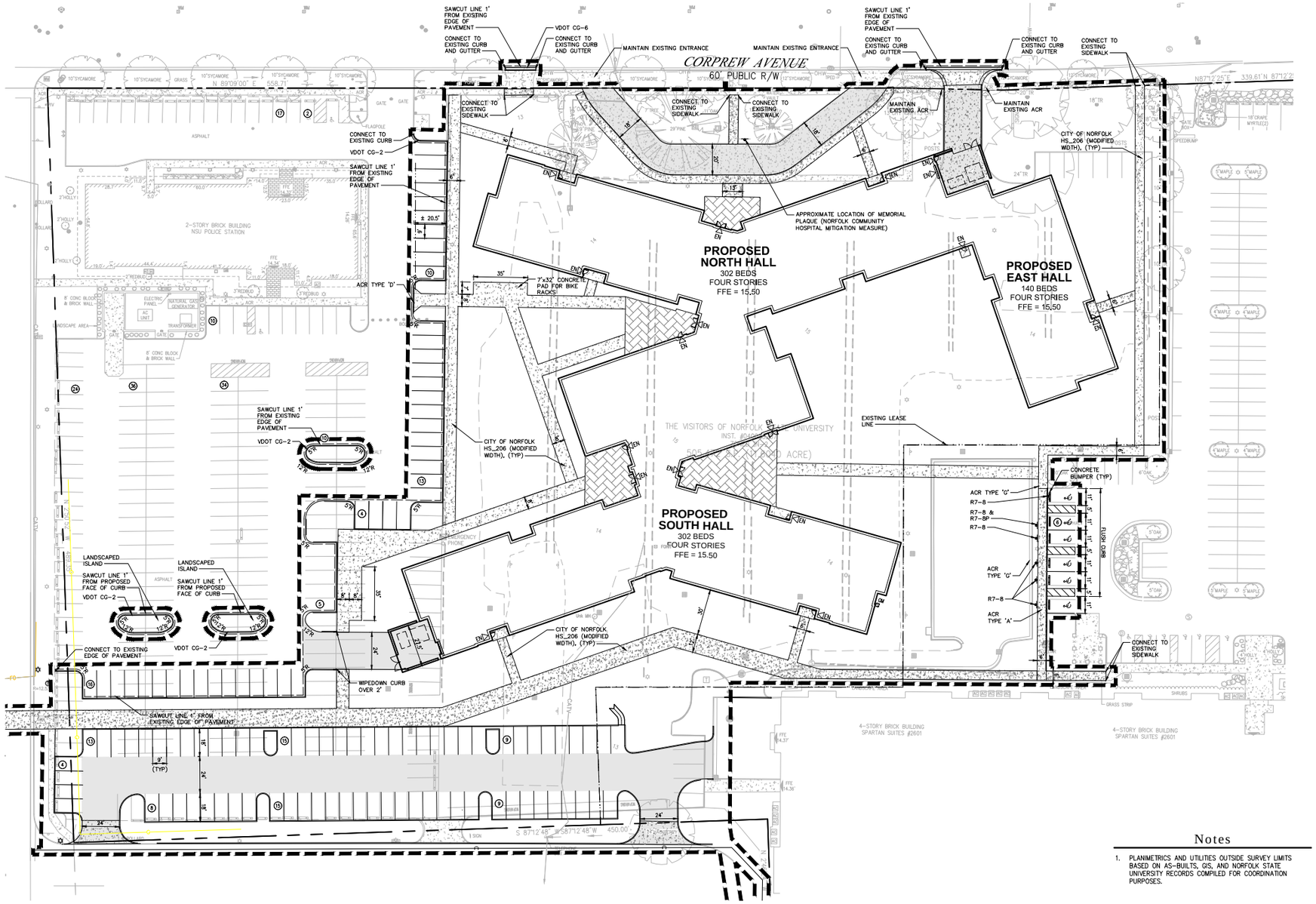
TOTAL NUMBER OF PARKING SPACES REQUIRED
EMPLOYEES = 2 SPACES
BEDS = 149 SPACES
TOTAL 151 SPACES

** ADA/STATE/LOCAL REQUIREMENTS

PARKING IS PROVIDED IN GARAGES THROUGHOUT CAMPUS



Parking Summary Plan
Scale: 1"=100'



Notes

1. PLANIMETRICS AND UTILITIES OUTSIDE SURVEY LIMITS BASED ON AS-BUILTS, GIS, AND NORFOLK STATE UNIVERSITY RECORDS COMPILED FOR COORDINATION PURPOSES.

0 15 30 60 Feet

TRUE PROJECT

S.B. BALLARD CONSTRUCTION COMPANY
2828 SHIPPS CORNER ROAD
VIRGINIA BEACH, VIRGINIA 23453
TELEPHONE: 757.440.5555
FACSIMILE: 757.451.2873
IN ASSOCIATION WITH :
COMMONWEALTH ARCHITECTS
NILES BOLTON ASSOCIATES
vhb
SPEIGHT, MARSHALL, FRANCIS
THOMPSON CONSULTING ENGINEERS

PROJECT TEAM
S. B. BALLARD CONSTRUCTION COMPANY — CONTRACTOR
COMMONWEALTH ARCHITECTS — ARCHITECT OF RECORD
NILES BOLTON ASSOCIATES — ARCHITECT OF DESIGN
VHB — CIVIL ENGINEER
SPEIGHT,MARSHALL,FRANCIS — STRUCTURAL ENGINEER
THOMPSON CONSULTING ENGINEERS — MEP ENGINEER
NORFOLK STATE UNIVERSITY — OWNER

NEW RESIDENTIAL FACILITY
NORFOLK STATE UNIVERSITY
PROJECT CODE: #213-17818-000

IRO / SEAL

COMMONWEALTH OF VIRGINIA
MYRINA L. GAGLIONE
Lic. No. 041433
04/30/2018
PROFESSIONAL ENGINEER

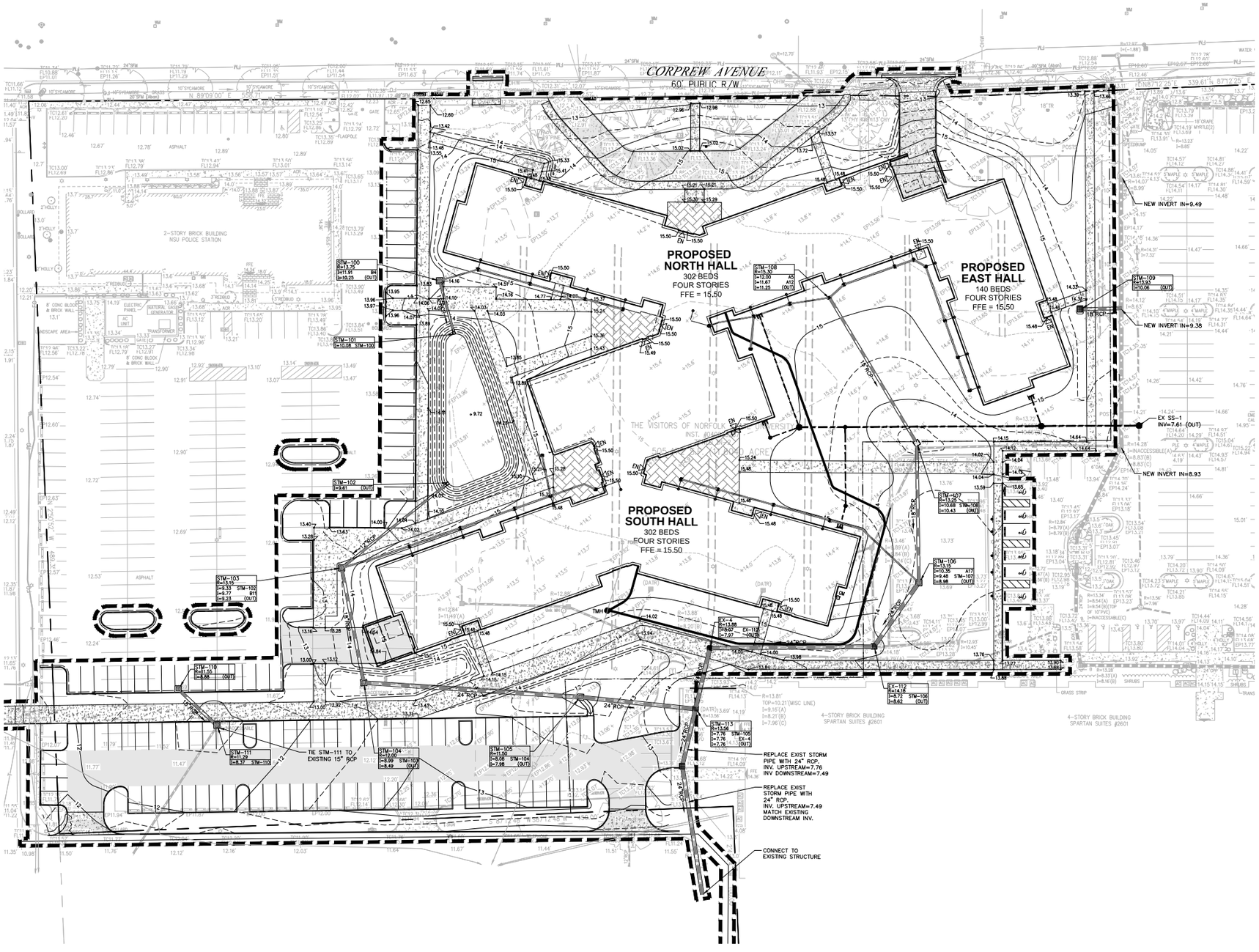
NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

DESIGNED BY: MLG
REVIEWED BY: JDH
DRAWN BY: JAM
PROJECT NUMBER: XXX-XXXXX-XX
ISSUE: EARLY E&S AND STORMWATER PLAN
DATE: 3/30/18

SHEET TITLE
LAYOUT AND MATERIALS PLAN

SHEET NUMBER
C4.00

2/20/2015 08:00:00 AM



Notes

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0 15 30 60 Feet

TRUE PROJECT

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VIRGINIA BEACH, VIRGINIA 23453
TELEPHONE: 757.440.5555
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IN ASSOCIATION WITH :

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NILES BOLTON ASSOCIATES

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THOMPSON Consulting Engineers

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MYRINA L. GALLIONE
Lic. No. 041433
04/30/18
PROFESSIONAL ENGINEER

NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

DESIGNED BY: MLG
REVIEWED BY: JDH
DRAWN BY: JAM
PROJECT NUMBER: XXX-XXXXX-XX
ISSUE: EARLY E&S AND STORMWATER PLAN
DATE: 3/30/18

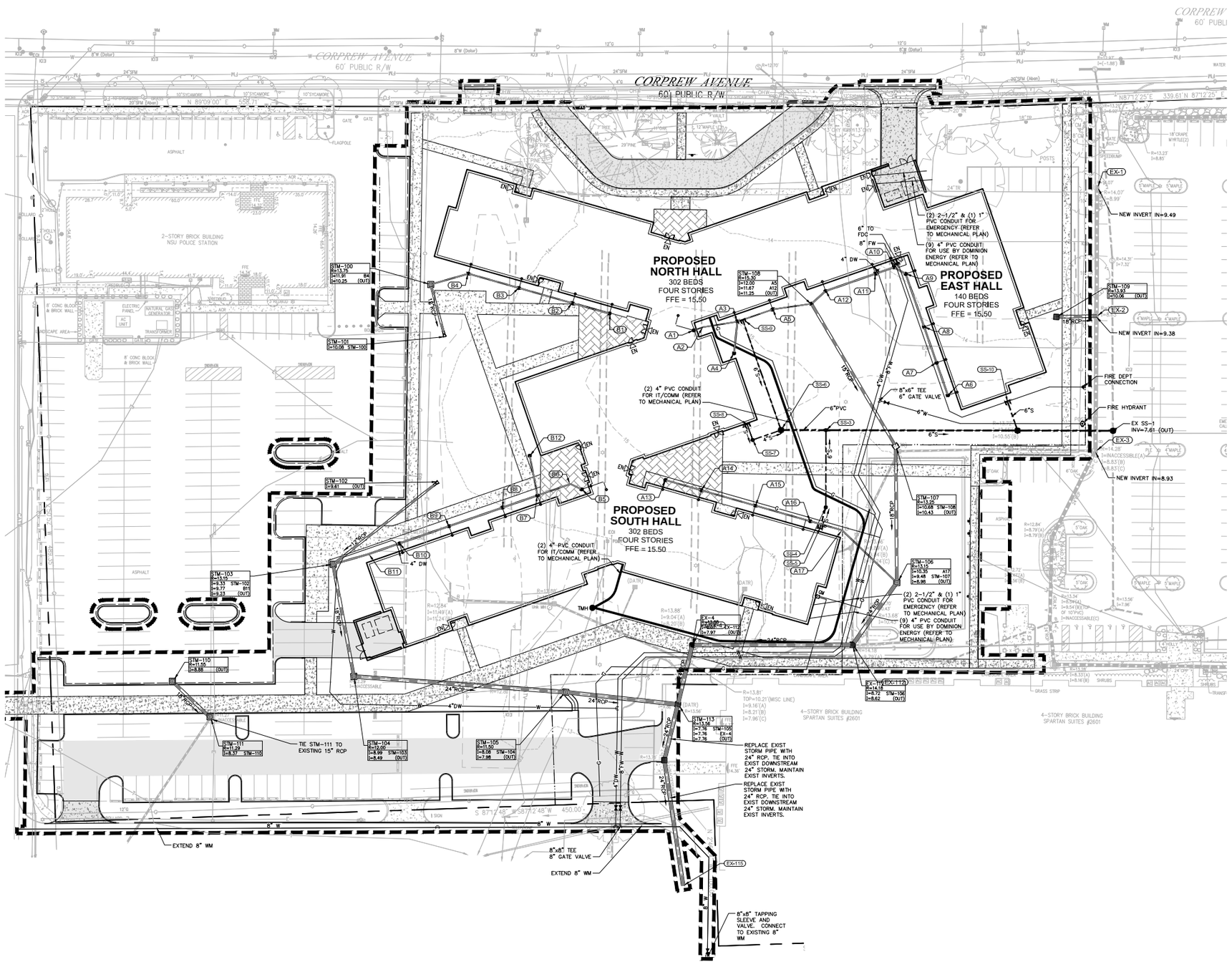
SHEET TITLE

GRADING AND DRAINAGE PLAN

SHEET NUMBER

C5.00

2/30/2015 08:00:00 AM



Notes

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0 15 30 60 Feet

TRUE PROJECT

2/20/2015 08:09:00 AM

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PROJECT CODE: #213-17818-000

IRO / SEAL

COMMONWEALTH OF VIRGINIA
MYRINA L. GAGLIONE
Lic. No. 041433
04/10/18
PROFESSIONAL ENGINEER

NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

DESIGNED BY: MLG
REVIEWED BY: JDH
DRAWN BY: JAM
PROJECT NUMBER: XXX-XXXXX-XX
ISSUE: EARLY E&S AND STORMWATER PLAN
DATE: 3/30/18
SHEET TITLE: UTILITY PLAN
SHEET NUMBER: C6.00

Storm Sewer Structure Schedule

Number	Type	Top	Height
A1	SDCO	15.50	1.91
A2	45	15.49	2.01
A3	SDCO	15.40	2.42
A4	SDCO	15.47	1.83
A5	SDCO	15.40	2.95
A6	SDCO	15.21	1.96
A7	SDCO	15.22	2.22
A8	SDCO	15.34	2.60
A9	SDCO	15.40	2.99
A10	SDCO	15.43	3.18
A11	SDCO	15.40	3.33
A12	SDCO	15.40	3.65
A13	SDCO	15.50	3.00
A14	SDCO	15.42	3.27
A15	SDCO	15.12	3.45
A16	SDCO	15.08	3.89
A17	45	15.07	4.20
B1	SDCO	15.36	2.12
B2	SDCO	15.35	2.42
B3	SDCO	15.18	2.66

Storm Sewer Structure Schedule

Number	Type	Top	Height
B4	SDCO	15.18	3.05
B5	SDCO	15.49	2.91
B6	45	15.47	3.03
B7	SDCO	15.38	3.50
B8	SDCO	15.25	3.78
B9	SDCO	14.80	3.91
B10	SDCO	14.78	4.43
B11	45	14.60	4.52
B12	SDCO	17.66	3.35
EX-1	Existing Combination Inlet	14.07	5.08
EX-2	Existing Combination Inlet	14.12	5.49
EX-3	Existing Combination Inlet	16.41	7.58
EX-4	SDMH TOP	13.96	5.99
EX-112	Existing YDI	11.73	???
EX-115	Existing MH	2.04	3.29
STM-100	YDI	13.75	3.50
STM-101	ES-1	11.33	2.42
STM-102	ES-1	10.86	4.54
STM-103	YDI	13.15	3.92
STM-104	YDI	13.77	5.28

Storm Sewer Structure Schedule

Number	Type	Top	Height
STM-105	YDI	11.50	3.52
STM-106	DI-1	13.15	4.17
STM-107	DI-1	14.75	4.32
STM-108	DMH	15.30	4.05
STM-109	YDI	13.93	3.87
STM-110	VDOT DI-1	11.55	5.39
STM-111	VDOT DI-1	11.32	5.67
STM-113	YDI	13.56	7.26
STM-114	YDI	12.57	5.08

Sanitary Sewer Structure Schedule

Number	Type	Top	Height
SS-1	EX SS	14.00	6.39
SS-2	SSMH	17.75	9.70
SS-3	CS_09	14.32	5.38
SS-4	CS_09	14.47	5.17
SS-5	6" STUB		
SS-6	SSMH	14.98	5.83
SS-7	CS_09	15.20	5.74
SS-8	4" STUB		
SS-9	6" STUB		
SS-10	6" STUB		

Storm Sewer Pipe Schedule

Start Str.	End Str.	Size	Material	Length	Slope	Start Inv.	End Inv.
A1	A2	6	PVC	7	1.65%	13.59	13.48
A2	A3	6	PVC	24	1.68%	13.48	13.08
A3	A5	6	PVC	25	1.69%	12.98	12.55
A4	A3	6	RCP	22	2.58%	13.64	13.08
A5	STM-108	6	PVC	27	1.68%	12.45	12.00
A6	A7	10	PVC	24	0.64%	13.25	13.10
A7	A8	10	PVC	26	0.62%	13.00	12.84
A8	A9	10	PVC	38	0.60%	12.74	12.51
A9	A10	10	PVC	9	0.65%	12.41	12.35
A10	A11	10	PVC	13	0.60%	12.25	12.17
A11	A12	10	PVC	36	0.61%	12.07	11.85
A12	STM-108	10	PVC	13	0.62%	11.75	11.67
A13	A14	8	PVC	25	0.98%	12.50	12.25
A14	A15	8	PVC	38	0.99%	12.15	11.77
A15	A16	8	PVC	39	0.98%	11.67	11.29
A16	A17	8	PVC	23	0.97%	11.19	10.97
A17	STM-106	8	PVC	52	1.00%	10.87	10.35
B1	B2	8	PVC	26	0.80%	13.24	13.03
B2	B3	8	PVC	38	0.82%	12.93	12.62
B3	B4	8	PVC	36	0.81%	12.52	12.23
B4	STM-100	8	PVC	27	0.82%	12.13	11.91
B5	B6	8	PVC	8	1.66%	12.58	12.44
B6	B7	8	PVC	24	1.63%	12.44	12.05

Storm Sewer Pipe Schedule

Start Str.	End Str.	Size	Material	Length	Slope	Start Inv.	End Inv.
B7	B8	10	PVC	25	1.22%	11.88	11.57
B8	B9	10	PVC	39	1.25%	11.47	10.99
B9	B10	10	PVC	36	1.22%	10.89	10.45
B10	B11	10	PVC	22	1.21%	10.35	10.08
B11	STM-103	10	PVC	25	1.23%	10.08	9.77
B12	B7	8	PVC	28	1.67%	12.51	12.05
EX-1	EX-2	24	RCP	88	0.41%	8.99	8.63
EX-2	EX-3	24	RCP	92	-0.22%	8.63	8.83
EX-4	STM-113	24	RCP	42	0.50%	7.97	7.76
EX-112	EX-4	24	RCP	110	0.50%	8.62	8.07
STM-100	STM-101	12	RCP	37	0.46%	10.25	10.08
STM-102	STM-103	12	RCP	91	0.31%	9.61	9.33
STM-103	STM-104	18	RCP	78	0.31%	9.23	8.99
STM-104	STM-105	24	RCP	145	0.28%	8.49	8.08
STM-105	STM-113	24	RCP	77	0.29%	7.98	7.76
STM-106	EX-112	24	RCP	52	0.50%	8.98	8.72
STM-107	STM-106	18	RCP	93	1.02%	10.43	9.48
STM-108	STM-107	15	RCP	113	0.50%	11.25	10.68
STM-109	EX-2	18	RCP	28	2.46%	10.06	9.38
STM-110	STM-111	18	RCP	35	1.46%	8.88	8.37
STM-113	STM-114	24	RCP	39	0.69%	7.76	7.49
STM-114	EX-115	24	RCP	87	0.60%	7.49	6.97

Sanitary Sewer Pipe Schedule

Start Str.	End Str.	Size	Material	Length	Slope	Start Inv.	End Inv.
SS-2	SS-1	6	PVC	65.242	0.68%	8.05	7.61
SS-3	SS-2	6	PVC	130.893	0.68%	8.94	8.05
SS-4	SS-3	6	PVC	52.682	0.68%	9.30	8.94
SS-5	SS-4	6	PVC	14.998	0.68%	9.40	9.30
SS-6	SS-3	6	PVC	30.723	0.68%	9.15	8.94
SS-7	SS-6	4	PVC	20.505	1.04%	9.46	9.25
SS-8	SS-7	4	PVC	11.486	1.04%	9.58	9.46
SS-9	SS-6	6	PVC	79.746	0.68%	11.00	10.46
SS-10	SS-2	6	PVC	21.220	0.68%	11.50	11.36

Notes

1. PLANIMETRICS AND UTILITIES OUTSIDE SURVEY LIMITS BASED ON AS-BUILTS, GIS, AND NORFOLK STATE UNIVERSITY RECORDS COMPILED FOR COORDINATION PURPOSES.

0 15 30 60 Feet

TRUE PROJECT

S.B. BALLARD CONSTRUCTION COMPANY
2828 SHIPPS CORNER ROAD
VIRGINIA BEACH, VIRGINIA 23453
TELEPHONE: 757.440.5555
FACSIMILE: 757.451.2873

IN ASSOCIATION WITH :

Commonwealth Architects

NILES BOLTON ASSOCIATES

vhb

SPEIGHT MARSHALL FRANCIS

THOMPSON Consulting Engineers

PROJECT TEAM

S. B. BALLARD CONSTRUCTION COMPANY
CONTRACTOR

COMMONWEALTH ARCHITECTS
ARCHITECT OF RECORD

NILES BOLTON ASSOCIATES
ARCHITECT OF DESIGN

VHB
CIVIL ENGINEER

SPEIGHT, MARSHALL, FRANCIS
STRUCTURAL ENGINEER

THOMPSON CONSULTING ENGINEERS
MEP ENGINEER

NORFOLK STATE UNIVERSITY
OWNER

NEW RESIDENTIAL FACILITY
NORFOLK STATE UNIVERSITY
PROJECT CODE: #213-17818-000

IRO / SEAL

COMMONWEALTH OF VIRGINIA
MYRNA L. GAGLIONE
Lic. No. 041433
04/04/18
PROFESSIONAL ENGINEER

NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

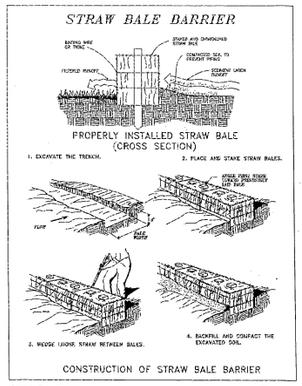
DESIGNED BY: MLG
REVIEWED BY: JDH
DRAWN BY: JAM
PROJECT NUMBER: XXX-XXXXX-XX
ISSUE: EARLY E&S AND STORMWATER PLAN
DATE: 3/30/18

SHEET TITLE
UTILITY PLAN

SHEET NUMBER
C6.01

2/20/2015 08:00:00 AM

1992 3.04

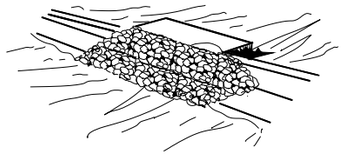


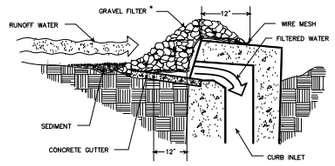
Source: Va. DSWC Plate 3.04-1

Hay Bale Barrier

STB 11/02

N.T.S. Source: Virginia Erosion and Sediment Control Handbook Plate 3.04-1





Specific Application

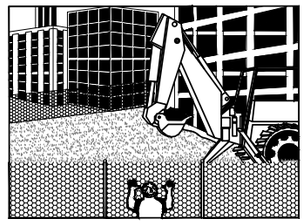
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR 5 COARSE AGGREGATE.

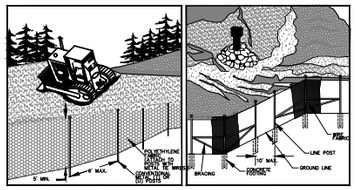
Gravel Curb Inlet Sediment Filter

IP 6/08

N.T.S. Source: Virginia Erosion and Sediment Control Handbook Plate 3.07-6



Perspective View

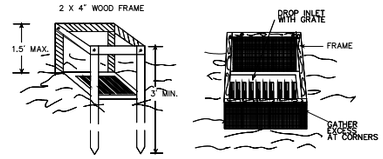


Perspective View Plastic Fence **Perspective View Metal Fence**

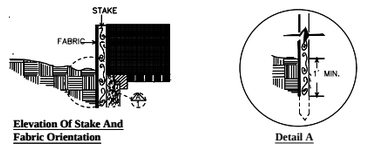
Construction Fence/Safety Fence

CSF 11/02

N.T.S. Source: Conwed Plastics VDOT Road and Bridge Standards VDOT DSWC Plate 3.01-1



Perspective Views



Elevation Of Stake And Fabric Orientation **Detail A**

Specific Application

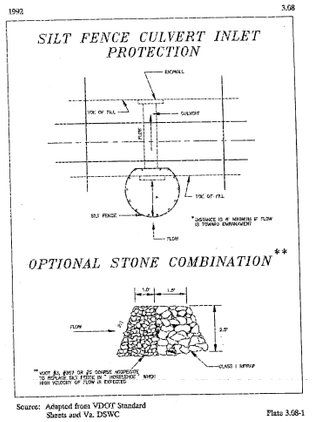
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

Silt Fence Drop Inlet Protection

IP 11/02

N.T.S. Source: Virginia Erosion And Sediment Control Plate 3.07-1

1992 3.08



Source: Adapted from VDOT Standard Sheets and Va. DSWC Plate 3.08-1

Culvert Inlet Protection

CIP 6/08

N.T.S. Source: Virginia Erosion and Sediment Control Handbook Plate 3.08-1

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 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.htm#pubs

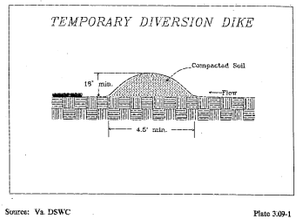
Temporary Seeding Specification

TS 6/08

N.T.S. Source: Virginia Erosion and Sediment Control Handbook PL 3.31-B

Height

The minimum allowable height measured from the upslope side of the dike is 18 inches (see Plate 3.09-1).

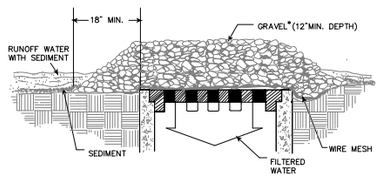


Source: Va. DSWC Plate 3.09-1

Temporary Diversion Dike

DD 6/08

N.T.S. Source: Virginia Erosion and Sediment Control Handbook



Specific Application

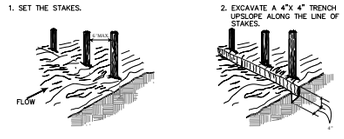
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

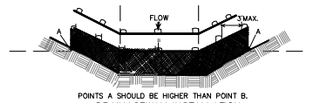
Gravel and Wire Mesh Drop Inlet Sediment Filter

IP 6/08

N.T.S. Source: Virginia Erosion and Sediment Control Handbook Plate 3.07-2



SHEET FLOW INSTALLATION
(PERSPECTIVE VIEW)



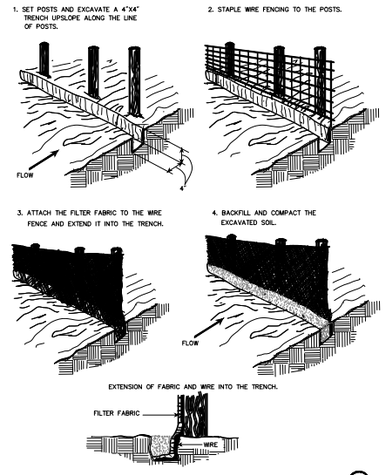
POINTS A SHOULD BE HIGHER THAN POINT B.
DRAINAGEWAY INSTALLATION
(FRONT ELEVATION)

SILT FENCE MUST BE 36" HIGH WITH 2"x2"x5' HARDWOOD STAKES PLACED 6" ON CENTER

Construction of a Silt Fence (Without Wire Support)

SF 6/08

N.T.S. Source: Virginia Erosion and Sediment Control Handbook PL3-05-2



Construction of a Silt Fence (With Wire Support)

SSF 6/08

N.T.S. Source: Virginia Erosion and Sediment Control Handbook Plate 3.05-1

TABLE 3.32-E
(Revised June 2003)
PERMANENT SEEDING SPECIFICATIONS FOR COASTAL PLAIN AREA

	SEED[1]	
LAND USE	SPECIES	APPLICATION RATES
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. 20 lbs. 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 804-746-4894 or at http://sudan.cses.vt.edu/html/TurfHurf/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 seeding 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

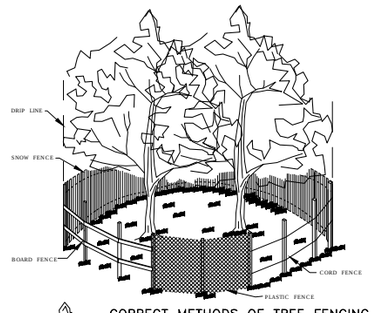
- Apply 10-20-10 **fertilizer** at a rate of **500** lbs. / acre (or 12 lbs. / 1,000 sq. ft.)
- Apply **Pulverized Agricultural Limestone** at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)

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

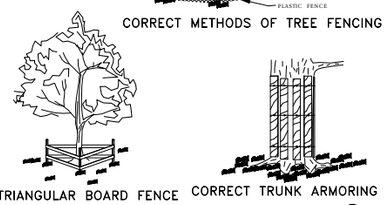
Permanent Seeding Mixtures

PS 6/08

N.T.S. Source: Virginia Erosion and Sediment Control Handbook PL 3.32-E



CORRECT METHODS OF TREE FENCING

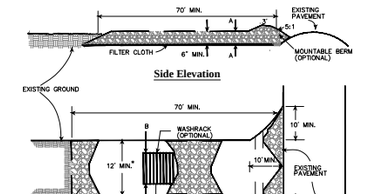


TRIANGULAR BOARD FENCE CORRECT TRUNK ARMORING

Fencing and Armoring

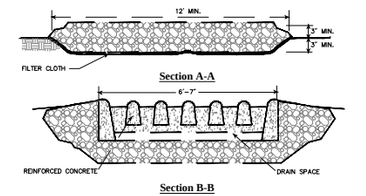
TF 6/08

N.T.S. Source: Virginia Erosion and Sediment Control Handbook Plate 3.38-2



Side Elevation

Plan View



Section A-A **Section B-B**

Stone Construction Entrance

CE 6/08

N.T.S. Source: Virginia Erosion and Sediment Control Handbook Plate 3.02-1

TRUE PROJECT

S.B. BALLARD CONSTRUCTION COMPANY
2828 SHIPPS CORNER ROAD
VIRGINIA BEACH, VIRGINIA 23453
TELEPHONE: 757.440.5555
FACSIMILE: 757.451.2873
IN ASSOCIATION WITH :
COMMONWEALTH ARCHITECTS
NILES BOLTON ASSOCIATES
VHB
SPEIGHT, MARSHALL, FRANCIS
THOMPSON Consulting Engineers

PROJECT TEAM
S. B. BALLARD CONSTRUCTION COMPANY — CONTRACTOR
COMMONWEALTH ARCHITECTS — ARCHITECT OF RECORD
NILES BOLTON ASSOCIATES — ARCHITECT OF DESIGN
VHB — CIVIL ENGINEER
SPEIGHT, MARSHALL, FRANCIS — STRUCTURAL ENGINEER
THOMPSON CONSULTING ENGINEERS — MEP ENGINEER
NORFOLK STATE UNIVERSITY — OWNER

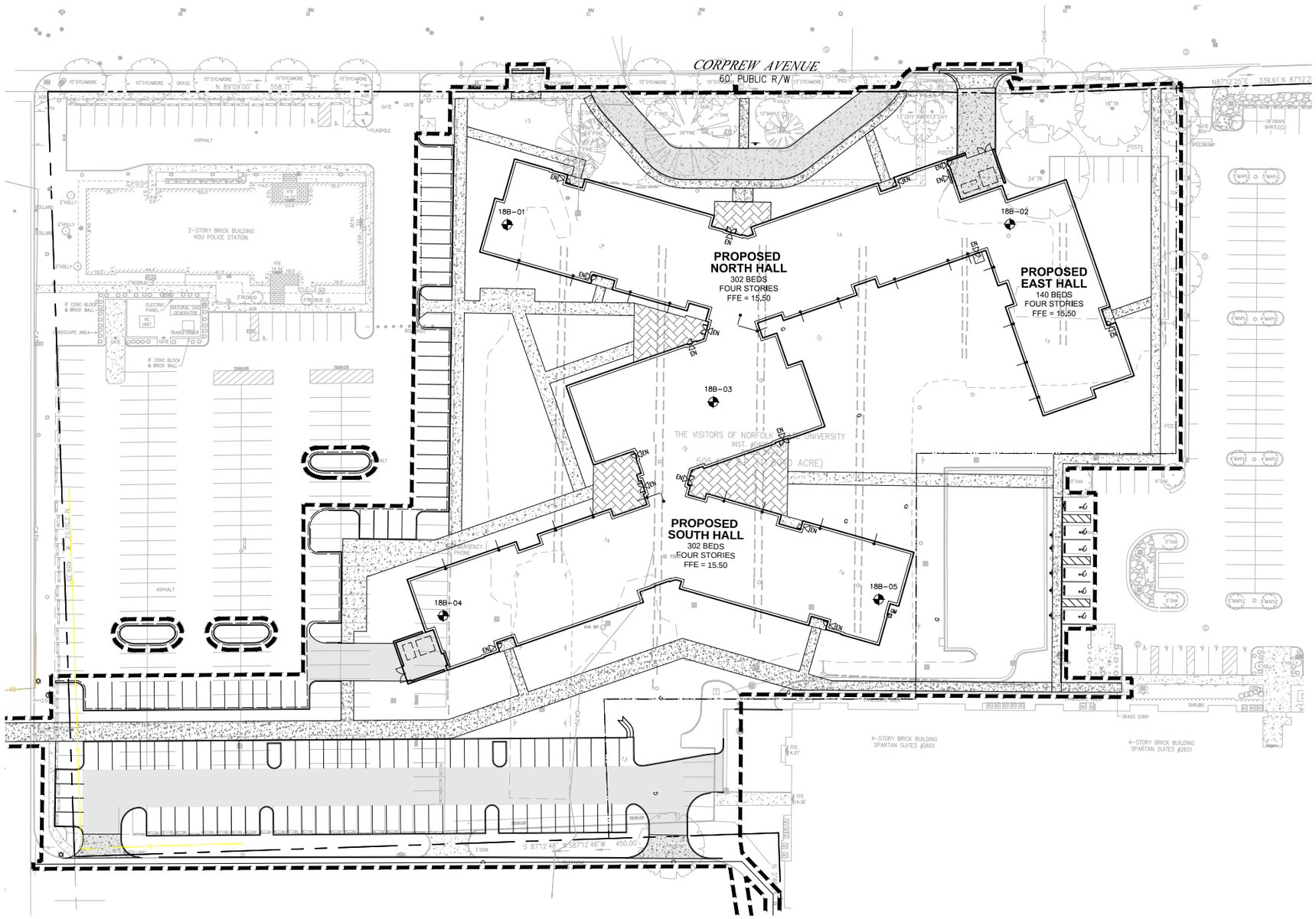
NEW RESIDENTIAL FACILITY
NORFOLK STATE UNIVERSITY
PROJECT CODE: #213-17818-000

IRO / SEAL

NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

DESIGNED BY MLG
REVIEWED BY JDH
DRAWN BY JAM
PROJECT NUMBER XXX-XXXXX-XX
ISSUE EARLY E&S AND STORMWATER PLAN
DATE 3/30/18
SHEET TITLE DETAILS
SHEET NUMBER C7.00

2/20/2015 08:00:00 AM



Notes

1. PLANIMETRICS AND UTILITIES OUTSIDE SURVEY LIMITS BASED ON AS-BUILTS, GIS, AND NORFOLK STATE UNIVERSITY RECORDS COMPILED FOR COORDINATION PURPOSES.

Legend

APPROXIMATE LOCATION OF SOIL TEST BORING

0 15 30 60 Feet

TRUE PROJECT

S.B. BALLARD CONSTRUCTION COMPANY
2828 SHIPPS CORNER ROAD
VIRGINIA BEACH, VIRGINIA 23453
TELEPHONE: 757.440.5555
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vhb
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THOMPSON CONSULTING ENGINEERS — MEP ENGINEER
NORFOLK STATE UNIVERSITY — OWNER

NEW RESIDENTIAL FACILITY
NORFOLK STATE UNIVERSITY
PROJECT CODE: #213-17818-000

SEAL

COMMONWEALTH OF VIRGINIA
MYRINA L. GAGLIONE
Lic. No. 041433
04/01/2018
PROFESSIONAL ENGINEER

NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

DESIGNED BY

REVIEWED BY

DRAWN BY

PROJECT NUMBER
XXX-XXXXX-XX

ISSUE
EARLY E&S AND STORMWATER PLAN

DATE
3/30/18

SHEET TITLE
BORING LOCATION PLAN

SHEET NUMBER
B1.00

2/20/2015 08:09:09 AM

RECORD OF SUBSURFACE EXPLORATION

BORING ID 18B-01

PROJECT NAME: NSU New Residence Hall Buildings
CLIENT: Speight Marshall & Francis
PROJECT LOCATION: Norfolk, Virginia
BORING COORDINATES: EAST: 12136356.649 NORTH: 3676785.055
DRILLING METHOD(S): Rotary wash "mud"
GROUNDWATER: INITIAL (ft) ▽: 7 AFTER ____ HOURS (ft) ▼: ____ CAVE-IN (ft) C: ____
The initial groundwater reading(s) are not intended to indicate, realistic groundwater level.
PROJECT NUMBER: V813-121G
SURFACE ELEVATION (MSL) (ft): 13.7
LOGGED BY: M. English, P.E.
DATE STARTED: 2/12/2016
DATE COMPLETED: 2/20/2016
DRILLER: GET Solutions, Inc.

STRATA DESCRIPTION

0.4 5" Asphalt
Brown, moist, Lean CLAY (CL), medium stiff, "Possible Fill"
4.0
Tan and gray, moist, Clayey fine to medium SAND (SC), loose
6.0
Tan and gray, moist to wet, Poorly graded fine to medium SAND (SP-SM) with Silt, very loose to medium dense
16.5
Gray, wet, Poorly graded fine to medium SAND (SP-SM) with Silt, very loose to loose
26.5
Gray, wet, Clayey fine SAND (SC), very loose
29.3
Gray, wet, Lean CLAY (CL) with trace to little fine Sand, very soft

Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)
1	18	2-4-2 (6)	
2	24	3-3-2-3 (5)	
3	18	4-4-4-5 (8)	
4	20	4-6-6-5 (11)	
5	18	2-5-8-9 (13)	
6	24	3-3-2-2 (5)	
7	20	1-1-0-0 (1)	
8	22	2-3-3-2 (5)	
9	24	1-0-2-1 (3)	
10	24	0-0-1-2 (1)	
11	24	0-0-0-1 (1)	PI=

TEST RESULTS: Plastic Limit ⊢●⊣ Liquid Limit; Water Content - ●; Penetration - ▽▽▽; %-#200; 10 20 30 40 50 60 70

Sample Type(s): SS - Split Spoon
Notes:

RECORD OF SUBSURFACE EXPLORATION

BORING ID 18B-01

PROJECT NAME: NSU New Residence Hall Buildings
CLIENT: Speight Marshall & Francis
PROJECT LOCATION: Norfolk, Virginia
BORING COORDINATES: EAST: 12136356.649 NORTH: 3676785.055
DRILLING METHOD(S): Rotary wash "mud"
GROUNDWATER: INITIAL (ft) ▽: 7 AFTER ____ HOURS (ft) ▼: ____ CAVE-IN (ft) C: ____
The initial groundwater reading(s) are not intended to indicate, realistic groundwater level.
PROJECT NUMBER: V813-121G
SURFACE ELEVATION (MSL) (ft): 13.7
LOGGED BY: M. English, P.E.
DATE STARTED: 2/12/2016
DATE COMPLETED: 2/20/2016
DRILLER: GET Solutions, Inc.

STRATA DESCRIPTION

Gray, wet, Lean CLAY (CL) with trace to little fine Sand, very soft *(layer continued from previous page)*
39.2
Gray, wet, Clayey fine SAND (SC), contains trace marine shell fragments, very loose
41.5
Tan and gray, wet, Poorly graded fine to medium SAND (SP-SM) with Silt, contains trace marine shell fragments, medium dense
50.0
Boring terminated at 50 feet below existing grade.

Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)
12	24	1-1-1-3 (2)	
13	18	5-10-12-16 (22)	
14	18	2-2-14-13 (17)	

TEST RESULTS: Plastic Limit ⊢●⊣ Liquid Limit; Water Content - ●; Penetration - ▽▽▽; %-#200; 10 20 30 40 50 60 70

Sample Type(s): SS - Split Spoon
Notes:

RECORD OF SUBSURFACE EXPLORATION

BORING ID 18B-02

PROJECT NAME: NSU New Residence Hall Buildings
CLIENT: Speight Marshall & Francis
PROJECT LOCATION: Norfolk, Virginia
BORING COORDINATES: EAST: 12136596.612 NORTH: 3676792.794
DRILLING METHOD(S): Rotary wash "mud"
GROUNDWATER: INITIAL (ft) ▽: 8 AFTER ____ HOURS (ft) ▼: ____ CAVE-IN (ft) C: ____
The initial groundwater reading(s) are not intended to indicate, realistic groundwater level.
PROJECT NUMBER: V816-121G
SURFACE ELEVATION (MSL) (ft): 14
LOGGED BY: M. English, P.E.
DATE STARTED: 2/12/2016
DATE COMPLETED: 2/20/2016
DRILLER: GET Solutions, Inc.

STRATA DESCRIPTION

0.7 8" Gravel
Brown, moist, Lean CLAY (CL) with trace fine Gravel, stiff, "Fill"
2.0
Tan and gray, moist, Lean CLAY (CL) with trace to little fine Sand, stiff
7.0
Tan and gray, moist, Clayey fine to medium SAND (SC), medium dense
8.0
Tan and gray, wet, Poorly graded fine to medium SAND (SP-SM) with Silt, with trace Clay nodules, loose to medium dense
12.5
Gray, wet, Poorly graded fine to medium SAND (SP-SM) with Silt, loose
26.5
Gray, wet, Sandy Lean CLAY (CL), very soft
30.5
Gray, wet, Lean to Fat CLAY (CL-CH) with trace to some fine Sand, very soft

Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)
1	5	13-8-6-6 (10)	
2	3	6-5-4-3 (9)	
3	6	8-6-6-6 (12)	
4	6	10-8-8-8 (16)	
5	7	2-5-7-7 (12)	
6	5	3-4-6-5 (9)	
7	1	1-0-1-1 (2)	
8	2	2-3-3-2 (5)	
9	2	2-4-5-2 (7)	
10	0	0-0-0-0 (0)	62
11	1	1-1-1-1 (2)	88

TEST RESULTS: Plastic Limit ⊢●⊣ Liquid Limit; Water Content - ●; Penetration - ▽▽▽; %-#200; 10 20 30 40 50 60 70

Sample Type(s): SS - Split Spoon
Notes:

RECORD OF SUBSURFACE EXPLORATION

BORING ID 18B-02

PROJECT NAME: NSU New Residence Hall Buildings
CLIENT: Speight Marshall & Francis
PROJECT LOCATION: Norfolk, Virginia
BORING COORDINATES: EAST: 12136596.612 NORTH: 3676792.794
DRILLING METHOD(S): Rotary wash "mud"
GROUNDWATER: INITIAL (ft) ▽: 8 AFTER ____ HOURS (ft) ▼: ____ CAVE-IN (ft) C: ____
The initial groundwater reading(s) are not intended to indicate, realistic groundwater level.
PROJECT NUMBER: V816-121G
SURFACE ELEVATION (MSL) (ft): 14
LOGGED BY: M. English, P.E.
DATE STARTED: 2/12/2016
DATE COMPLETED: 2/20/2016
DRILLER: GET Solutions, Inc.

STRATA DESCRIPTION

Gray, wet, Lean to Fat CLAY (CL-CH) with trace to little fine Sand, very soft *(layer continued from previous page)*
41.5
Gray, wet, Poorly graded fine to coarse SAND (SP-SM) with Silt, medium dense
50.0
Boring terminated at 50 feet below existing grade.

Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)
12	1	1-1-1-1 (2)	
13	13	2-3-12-13 (15)	
14	11	5-9-11-11 (17)	

TEST RESULTS: Plastic Limit ⊢●⊣ Liquid Limit; Water Content - ●; Penetration - ▽▽▽; %-#200; 10 20 30 40 50 60 70

Sample Type(s): SS - Split Spoon
Notes:

RECORD OF SUBSURFACE EXPLORATION

BORING ID 18B-03

PROJECT NAME: NSU New Residence Hall Buildings
CLIENT: Speight Marshall & Francis
PROJECT LOCATION: Norfolk, Virginia
BORING COORDINATES: EAST: 12136447.950 NORTH: 3676668.858
DRILLING METHOD(S): Rotary wash "mud"
GROUNDWATER: INITIAL (ft) ▽: 8 AFTER ____ HOURS (ft) ▼: ____ CAVE-IN (ft) C: ____
The initial groundwater reading(s) are not intended to indicate, realistic groundwater level.
PROJECT NUMBER: V815-131G
SURFACE ELEVATION (MSL) (ft): 14.9
LOGGED BY: M. English, P.E.
DATE STARTED: 2/12/2016
DATE COMPLETED: 2/21/2016
DRILLER: GET Solutions, Inc.

STRATA DESCRIPTION

0.2 2" Gravel
Brown and tan, moist, Clayey fine to medium SAND (SC) with trace fine Gravel, contains trace brick fragments, loose, "Fill"
2.0
Brown and tan, moist, Lean CLAY (CL) with little fine Sand, medium stiff
4.0
Tan and gray, moist, Clayey fine to medium SAND (SC), medium dense
8.0
Tan and gray, wet, Poorly graded fine to medium SAND (SP-SM) with Silt, loose to medium dense
12.5
Gray, wet, Poorly graded fine to medium SAND (SP-SM) with Silt, very loose to loose
26.5
Gray, wet, Clayey fine to medium SAND (SC), very loose
31.5
Gray, wet, Lean to Fat CLAY (CL-CH) with trace fine Sand, very soft to soft

Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)
1	18	8-9-3-7 (6)	
2	24	3-2-2-4 (7)	
3	24	6-6-7-6 (13)	
4	24	6-7-8-8 (15)	
5	18	3-4-6-8 (10)	
6	18	6-7-6-6 (13)	
7	24	1-1-1-1 (2)	
8	24	2-3-4-4 (7)	
9	24	2-2-2-2 (4)	
10	24	1-2-2-2 (4)	32
11	24	1-2-2-2 (4)	62

TEST RESULTS: Plastic Limit ⊢●⊣ Liquid Limit; Water Content - ●; Penetration - ▽▽▽; %-#200; 10 20 30 40 50 60 70

Sample Type(s): SS - Split Spoon
Notes:

RECORD OF SUBSURFACE EXPLORATION

BORING ID 18B-03

PROJECT NAME: NSU New Residence Hall Buildings
CLIENT: Speight Marshall & Francis
PROJECT LOCATION: Norfolk, Virginia
BORING COORDINATES: EAST: 12136447.950 NORTH: 3676668.858
DRILLING METHOD(S): Rotary wash "mud"
GROUNDWATER: INITIAL (ft) ▽: 8 AFTER ____ HOURS (ft) ▼: ____ CAVE-IN (ft) C: ____
The initial groundwater reading(s) are not intended to indicate, realistic groundwater level.
PROJECT NUMBER: V815-131G
SURFACE ELEVATION (MSL) (ft): 14.9
LOGGED BY: M. English, P.E.
DATE STARTED: 2/12/2016
DATE COMPLETED: 2/21/2016
DRILLER: GET Solutions, Inc.

STRATA DESCRIPTION

Gray, wet, Lean to Fat CLAY (CL-CH) with trace fine Sand, very soft to soft *(layer continued from previous page)*
44.5
Gray, wet, Clayey fine SAND (SC), contains trace marine shell fragments, very loose
46.5
Gray, wet, Poorly graded fine to medium SAND (SP-SM) with Silt, contains trace marine shell fragments, dense
56.5
Greenish gray, wet, Clayey fine to medium SAND (SC), contains trace marine shell fragments, medium dense, "Yorktown Formation"
60.0
Boring terminated at 60 feet below existing grade.

Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)
12	24	1-1-1-1 (2)	81
13	24	1-2-2-3 (4)	76
14	24	10-13-15-21 (36)	
15	12	10-16-16-17 (34)	
16	24	9-15-13-13 (28)	

TEST RESULTS: Plastic Limit ⊢●⊣ Liquid Limit; Water Content - ●; Penetration - ▽▽▽; %-#200; 10 20 30 40 50 60 70

Sample Type(s): SS - Split Spoon
Notes:

RECORD OF SUBSURFACE EXPLORATION

BORING ID 18B-04

PROJECT NAME: NSU New Residence Hall Buildings
CLIENT: Speight Marshall & Francis
PROJECT LOCATION: Norfolk, Virginia
BORING COORDINATES: EAST: 12136308.452 NORTH: 3676542.814
DRILLING METHOD(S): Rotary wash "mud"
GROUNDWATER: INITIAL (ft) ▽: 7 AFTER ____ HOURS (ft) ▼: ____ CAVE-IN (ft) C: ____
The initial groundwater reading(s) are not intended to indicate, realistic groundwater level.
PROJECT NUMBER: V815-131G
SURFACE ELEVATION (MSL) (ft): 13.9
LOGGED BY: M. English, P.E.
DATE STARTED: 2/12/2016
DATE COMPLETED: 2/21/2016
DRILLER: GET Solutions, Inc.

STRATA DESCRIPTION

0.4 3.5" Asphalt
2.0 5" Aggregate Base Material
Brown and tan, moist, Lean CLAY (CL) with little fine to medium Sand and trace fine Gravel, contains trace organics, very stiff, "Fill"
4.0
Tan, moist, Lean CLAY (CL) with trace fine Sand, stiff
6.0
Tan and gray, moist, Clayey fine to medium SAND (SC), medium dense
8.0
Tan and gray, moist to wet, Silty fine to medium SAND (SM), medium dense
Tan and gray, wet, Poorly graded fine to medium SAND (SP-SM) with Silt, loose to medium dense
16.5
Gray, wet, Poorly graded fine to medium SAND (SP-SM) with Silt, very loose
26.5
Gray, wet, Lean to Fat CLAY (CL-CH) with trace to little fine Sand and trace fine Gravel, very soft to soft

Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)
1	12	10-6-6 (12)	
2	16	5-5-5-6 (10)	
3	22	7-6-6-5 (11)	
4	24	7-6-6-6 (12)	
5	18	4-5-6-6 (11)	
6	18	7-10-7-6 (17)	
7	18	1-0-5-7 (7)	
8	24	3-5-7-6 (9)	
9	24	3-1-1-1 (2)	19
10	24	0-0-1-1 (1)	21
11	24	0-0-0-1 (0)	65

TEST RESULTS: Plastic Limit ⊢●⊣ Liquid Limit; Water Content - ●; Penetration - ▽▽▽; %-#200; 10 20 30 40 50 60 70

Sample Type(s): SS - Split Spoon
Notes:

RECORD OF SUBSURFACE EXPLORATION

BORING ID 18B-04

PROJECT NAME: NSU New Residence Hall Buildings
CLIENT: Speight Marshall & Francis
PROJECT LOCATION: Norfolk, Virginia
BORING COORDINATES: EAST: 12136308.452 NORTH: 3676542.814
DRILLING METHOD(S): Rotary wash "mud"
GROUNDWATER: INITIAL (ft) ▽: 7 AFTER ____ HOURS (ft) ▼: ____ CAVE-IN (ft) C: ____
The initial groundwater reading(s) are not intended to indicate, realistic groundwater level.
PROJECT NUMBER: V815-131G
SURFACE ELEVATION (MSL) (ft): 13.9
LOGGED BY: M. English, P.E.
DATE STARTED: 2/12/2016
DATE COMPLETED: 2/21/2016
DRILLER: GET Solutions, Inc.

STRATA DESCRIPTION

Gray, wet, Lean to Fat CLAY (CL-CH) with trace to little fine Sand and trace fine Gravel, very soft to soft *(layer continued from previous page)*
46.5
Gray, wet, Clayey fine SAND (SC), loose
51.5
Greenish gray, wet, Clayey fine to medium SAND (SC), contains trace marine shell fragments, medium dense, "Yorktown Formation"
60.0
Boring terminated at 60 feet below existing grade.

Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)
12	24	1-1-0-1 (1)	85
13	24	1-1-2-2 (3)	75
14	20	4-4-5-6 (9)	
15	24	4-8-14-22 (33)	
16	24	9-8-8-11 (16)	

TEST RESULTS: Plastic Limit ⊢●⊣ Liquid Limit; Water Content - ●; Penetration - ▽▽▽; %-#200; 10 20 30 40 50 60 70

Sample Type(s): SS - Split Spoon
Notes:

Legend

APPROXIMATE LOCATION OF SOIL TEST BORING

TRUE PROJECT

S.B. BALLARD CONSTRUCTION COMPANY
2828 SHIPPS CORNER ROAD
VIRGINIA BEACH, VIRGINIA 23453
TELEPHONE: 757.440.5555
FACSIMILE: 757.451.2873

IN ASSOCIATION WITH :
COMMONWEALTH ARCHITECTS
NILES BOLTON ASSOCIATES
vhb
SPEIGHT MARSHALL FRANCIS
THOMPSON Consulting Engineers

PROJECT TEAM
S. B. BALLARD CONSTRUCTION COMPANY — CONTRACTOR
COMMONWEALTH ARCHITECTS — ARCHITECT OF RECORD
NILES BOLTON ASSOCIATES — ARCHITECT OF DESIGN
VHB — CIVIL ENGINEER
SPEIGHT,MARSHALL,FRANCIS — STRUCTURAL ENGINEER
THOMPSON CONSULTING ENGINEERS — MEP ENGINEER
NORFOLK STATE UNIVERSITY — OWNER

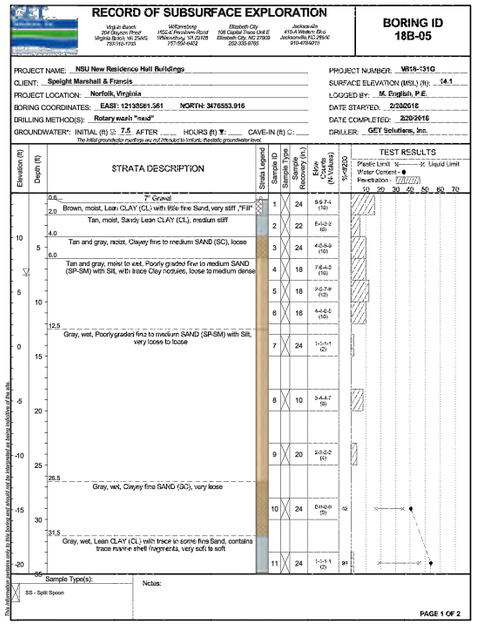
NEW RESIDENTIAL FACILITY
NORFOLK STATE UNIVERSITY
PROJECT CODE: #213-17818-000

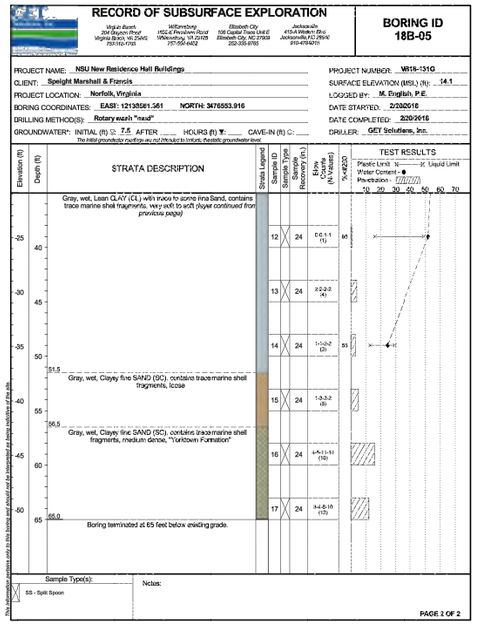
SEAL
COMMONWEALTH OF VIRGINIA
MYRINA L. GAGLIONE
Lic. No. 041433
04/30/2018
PROFESSIONAL ENGINEER

NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

DESIGNED BY
REVIEWED BY
DRAWN BY
PROJECT NUMBER: XXX-XXXXX-XX
ISSUE: EARLY E&S AND STORMWATER PLAN
DATE: 3/30/18
SHEET TITLE: BORING LOGS
SHEET NUMBER: B1.01

2/20/2015 08:09:09 AM





Legend

APPROXIMATE LOCATION OF SOIL TEST BORING

TRUE PROJECT

S.B. BALLARD CONSTRUCTION COMPANY
2828 SHIPPS CORNER ROAD
VIRGINIA BEACH, VIRGINIA 23453
TELEPHONE: 757.440.5555
FACSIMILE: 757.451.2873

IN ASSOCIATION WITH :

Commonwealth architects

NILES BOLTON ASSOCIATES

vhb

SPEIGHT MARSHALL FRANCIS

THOMPSON Consulting Engineers

PROJECT TEAM

S. B. BALLARD CONSTRUCTION COMPANY
CONTRACTOR

COMMONWEALTH ARCHITECTS
ARCHITECT OF RECORD

NILES BOLTON ASSOCIATES
ARCHITECT OF DESIGN

VHB
CIVIL ENGINEER

SPEIGHT.MARSHALL.FRANCIS
STRUCTURAL ENGINEER

THOMPSON CONSULTING ENGINEERS
MEP ENGINEER

NORFOLK STATE UNIVERSITY
OWNER

NEW RESIDENTIAL FACILITY
NORFOLK STATE UNIVERSITY
PROJECT CODE: #213-17818-000

SEAL

COMMONWEALTH OF VIRGINIA
MYRINA L. GAGLIONE
Lic. No. 041433
04/01/2018
PROFESSIONAL ENGINEER

NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

DESIGNED BY

REVIEWED BY

DRAWN BY

PROJECT NUMBER
XXX-XXXXX-XX

ISSUE
EARLY E&S AND STORMWATER PLAN

DATE
3/30/18

SHEET TITLE
BORING LOGS

SHEET NUMBER
B1.02

2/20/2015 08:09:09 AM

General Notes

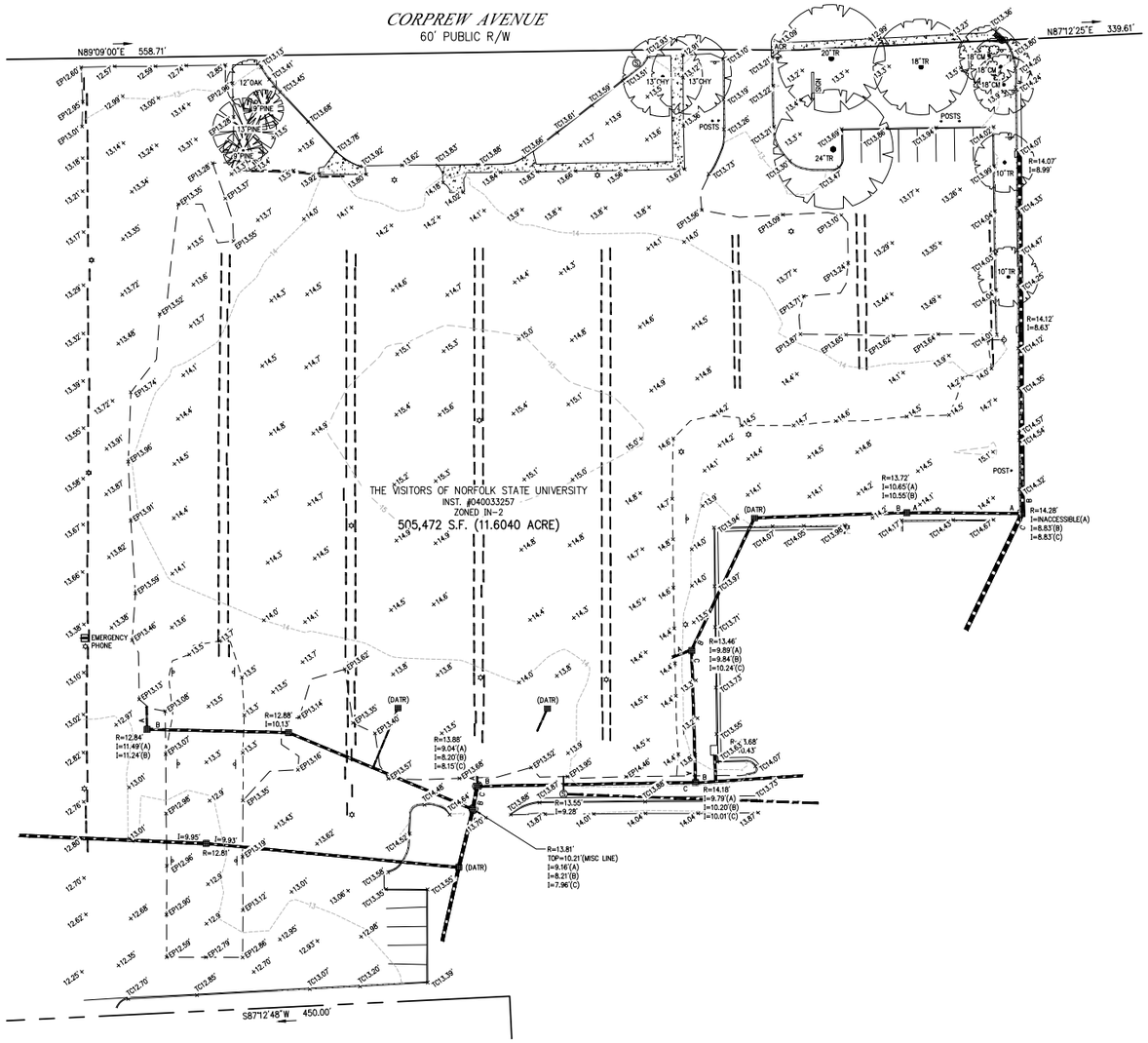
1. THE EXISTING CONDITIONS SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY VHB IN FEBRUARY 2018.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS, DESIGNATIONS MARKED BY OTHERS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN.
3. MERIDIAN SOURCE: VIRGINIA STATE PLANE COORDINATE SYSTEM SOUTH ZONE (NAD 83/93) AND ARE BASED ON CITY OF NORFOLK CONTROL MONUMENTS LR16, A307, GPS118 AND GPS026
4. ELEVATIONS SHOWN HEREON ARE IN FEET AND ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)(92)(CITY OF NORFOLK 2000) AND ARE BASED ON CITY OF NORFOLK CONTROL MONUMENT NO. A307.
5. ALL UTILITY INVERTS SHOWN ARE DEPICTED ACCORDING TO RECORD AND NOT FIELD VERIFIED.
6. THIS EXISTING CONDITIONS TOPOGRAPHIC SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF DAVID W. ANDREA FROM AN ACTUAL ☑ GROUND OR ☐ AIRBORNE SURVEY MADE UNDER MY SUPERVISION; THAT THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED ON FEBRUARY 20-26, 2018; AND THAT THIS PLAT MAP OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.
7. THIS PROPERTY IS IN FLOOD ZONE X (AREAS OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS INDICATED ON THE FLOOD INSURANCE RATE MAP FOR THE CITY OF NORFOLK, VIRGINIA HAVING COMMUNITY PANEL NUMBER 510104 0057H, DATED FEBRUARY 17, 2018.

Abbreviations

ACR	ACCESSABLE CURB RAMP
CHY	CHERRY TREE
CM	CRAPE MYRTLE TREE
DATR	DEPICTED ACCORDING TO RECORD
INST	INSTRUMENT
TR	TREE (UNKNOWN SPECIES)

Legend

IRF IRON ROD FOUND	BOLLARD
IRS IRON ROD SET	STREET SIGN
DHS DRILL HOLE SET	MONITORING WELL
NLS NAIL SET	BORING LOCATION
PROPERTY ANGLE POINT	TEST PIT LOCATION
STORM SEWER MANHOLE	WELL
CDI CURB DRAIN INLET (CDI)	EDGE OF PAVEMENT
DRAIN INLET (YDI)	CONCRETE CURB
FLARED END SECTION	CONCRETE CURB & GUTTER
SANITARY SEWER MANHOLE	GUARD RAIL
SEWER CLEANOUT	CHAIN LINK FENCE
ELECTRIC MANHOLE	STORM SEWER LINE
TELEPHONE MANHOLE	SANITARY SEWER LINE
WATER MANHOLE	OVERHEAD WIRE
MANHOLE	UNDERGROUND ELECTRIC
WATER VALVE	TELEPHONE LINE
FIRE HYDRANT	CABLE TV
WATER METER	GAS LINE
SIAMESE CONNECTION	WATER LINE
PIV POST INDICATOR VALVE (PIV)	STONE WALL
GAS VALVE	HEDGEROW
GAS METER	50-FT RMA LINE
ELECTRIC BOX	100-FT RPA LINE
ELECTRIC METER	100-FT BUFFER ZONE
HH - HANDHOLE	LIMIT MEAN LOW WATER
TPED TELEPHONE PEDESTAL	LIMIT OF BANK
CATV CABLE TV BOX	VEGETATED WETLAND BOUNDARY
TRAFFIC SIGNAL	
SIGNAL BOX	MINOR CONTOUR
TRANSFORMER PAD	MAJOR CONTOUR
LIGHT POLE ON CONC BASE	CONC. PAVEMENT
UTILITY POLE	RIP RAP
UTILITY POLE W/LIGHT	HANDICAP WARNING STRIP
GUY WIRE	
PEDESTRIAN PEDESTAL	BUILDING W/OVERHANG



0 15 30 60 Feet

TRUE PROJECT

S.B. BALLARD CONSTRUCTION COMPANY
2828 SHIPPS CORNER ROAD
VIRGINIA BEACH, VIRGINIA 23453
TELEPHONE: 757.440.5555
FACSIMILE: 757.451.2873

IN ASSOCIATION WITH :
Commonwealth ARCHITECTS
NILES BOLTON ASSOCIATES
vhb
SPEIGHT, MARSHALL, FRANCIS
THOMPSON Consulting Engineers

PROJECT TEAM

S. B. BALLARD CONSTRUCTION COMPANY
CONTRACTOR

COMMONWEALTH ARCHITECTS
ARCHITECT OF RECORD

NILES BOLTON ASSOCIATES
ARCHITECT OF DESIGN

VHB
CIVIL ENGINEER

SPEIGHT, MARSHALL, FRANCIS
STRUCTURAL ENGINEER

THOMPSON CONSULTING ENGINEERS
MEP ENGINEER

NORFOLK STATE UNIVERSITY
OWNER

NEW RESIDENTIAL FACILITY
NORFOLK STATE UNIVERSITY
PROJECT CODE: #213-17818-000

IRO / SEAL

COMMONWEALTH OF VIRGINIA
DAVID W. ANDREA
NO. No. 2205
LAND SURVEYOR

NO.	DATE	REVISION
1	4/30/18	E&S/SWM 1st REVIEW
2	5/23/18	E&S/SWM 2nd REVIEW
3	6/01/18	E&S/SWM 3rd REVIEW

DESIGNED BY

REVIEWED BY
DWA

DRAWN BY
DWP

PROJECT NUMBER
XXX-XXXXX-XX

ISSUE
EARLY E&S AND STORMWATER PLAN

DATE
3/30/18

SHEET TITLE
EXISTING CONDITIONS TOPOGRAPHIC SURVEY

SHEET NUMBER
Sv-1

2/20/2015 08:00:00 AM

Appendix L
Amendment Log

SWPPP Amendment Log

Instructions: Include additions of new BMPs, replacement of failed BMPs, significant changes in the activities or the timing of the project, changes in personnel, changes in inspection and maintenance procedures, and updates to site maps, etc.

Date Changed	***Concern***	***Actions Taken***	***Completed By***	***Signature***

CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Park Ave.

Address: 700 Park Ave. CGP: No #:

Inspection Date: 7/28/17
Inspection Time: 1118 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading
__Utility Work __ Demo x Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						x
Silt Fence (SF)	✓		x			
Sediment Trap/Basin (ST)						x
Soil Stabilization (SS)	✓					
Soil Stockpile Stabilization (SPS)	✓					
Tree Protection (TP)						x
Dewatering Structure (DS)						x
Concrete Washout (CW)						
Hay Bales	✓					x

Trash/Debris on Site: No

Sediment Leaving Site: Yes — Continue sweeping daily

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

✓ CE IP SF SPS Hay Bales

**Installed Correctly - Maintain until surrounding area is stabilized

SF - Install SF IMMEDIATELY

**NW of site

Targeted Re-inspection Date / Compliance Time: 7 calendar days from the receipt of this notice.

Reported to: Nef Lopez
Print Name

Signature

757 672 0522 7/28/17
Phone Number Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839 7/28/17
Phone Number Date

CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 8/3/17
Inspection Time: 1100 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo X Bldg Const. X F. Grading X F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						X
Silt Fence (SF)	✓		X			
Sediment Trap/Basin (ST)						X
Soil Stabilization (SS)	✓		X			
Soil Stockpile Stabilization (SPS)	✓					
Tree Protection (TP)						X
Dewatering Structure (DS)						X
Concrete Washout (CW)						X
Hay bales	✓		X			

Trash/Debris on Site: No

Sediment Leaving Site: Yes — Continue sweeping daily

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

✓ CE IP SF SPS Hay bales

**Installed Correctly - Maintain until surrounding area is stabilized

✓ silt fence installed NW of site

SF - Install SF South of site IMMEDIATELY after laying brick pavers

Hay Bales - add more hay bales to stabilize bare soils SE of site

-OR-

SS - Stabilize bare soils with sod

Targeted Re-inspection Date / Compliance Time: 5 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

7571672752 8/3/17
Phone Number Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839 8/3/17
Phone Number Date

CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 8/9/17
Inspection Time: 10:35 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo x Bldg Const. __F. Grading x F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓	✗	✗			
Outlet Protection (OP)						✗
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						✗
Soil Stabilization (SS)	✓					
Soil Stockpile Stabilization (SPS)		✗				
Tree Protection (TP)						✗
Dewatering Structure (DS)						✗
Concrete Washout (CW)						✗

Trash/Debris on Site: No

Sediment Leaving Site: Yes — Continue sweeping daily

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

✓ CE IP SF

**Installed Correctly - Maintain until surrounding area is stabilized

IP - Install IP IMMEDIATELY

**IP missing W of site

IP - Reinstall IP within 24 hours

**Drop inlet protection, fabric needs to be reinstall properly

SPS - Install SPS within 24 hours

**need new hay bales for stockpile stabilization NE of site

Targeted Re-inspection Date / Compliance Time: 2 calendar days from the receipt of this notice.

Reported to: Carlton Bitgood
Print Name

Signature

Phone Number — Date: 8/9/17

Inspector: JaonTray D. Coley
Print Name

Signature

Phone Number: 620-0839 — Date: 8/9/17

CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. CGP: No #:

Inspection Date: 8/11/17
Inspection Time: 1:55 pm

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo __Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓		✗			
Outlet Protection (OP)						✗
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						✗
Soil Stabilization (SS)						✗
Soil Stockpile Stabilization (SPS)		✗	✗			
Tree Protection (TP)						✗
Dewatering Structure (DS)						✗
Concrete Washout (CW)						✗

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

✓ CE IP SF

**Installed Correctly - Maintain until surrounding area is stabilized

IP - Repair IP IMMEDIATELY (drop inlet protection E of site needs to be repaired)

IP - Install IP IMMEDIATELY

**install gutter buddy NW of site

SPS - Install SPS NE of site IMMEDIATELY

Targeted Re-inspection Date / Compliance Time: 4 calendar days from the receipt of this notice.

Reported to: Nef Lopez
Print Name

Signature

757 672 1065 22
Phone Number

8/11/17
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

8/11/17
Date

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 8/15/17
Inspection Time: 2:00 pm

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo x Bldg Const. __F. Grading x F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						✗
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						✗
Soil Stabilization (SS)	✓		✗			
Soil Stockpile Stabilization (SPS)	✓	✗				
Tree Protection (TP)						✗
Dewatering Structure (DS)						✗
Concrete Washout (CW)						✗
Hay Bales	✓					

Trash/Debris on Site: No

Sediment Leaving Site: Yes — Shovel / Sweep pavement adjacent to site

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

✓ CE IP SF Sod SPS Hay Bales

**Installed Correctly - Maintain until surrounding area is stabilized

✓ IP reinstalled correctly

✓ stockpile S of site has been covered with plastic

SS - Stabilize bare soils (finish putting down sod S & E of site

**keep silt fence installed until all bare areas are stabilized

SPS - repair SPS within 24 hours (pile of sand used for brick pavers, S of site)

*Shovel / Sweep brick area S of site IMMEDIATELY

Targeted Re-inspection Date / Compliance Time: 3 **calendar days from the receipt of this notice.**

Reported to: Carlton Bitgood
Print Name

Signature

Phone Number

8/15/17
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

8/15/17
Date

CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. CGP: No #:

Inspection Date: 8/18/17
Inspection Time: 2:00 pm

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo X Bldg Const. __F. Grading X F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓	X				
Outlet Protection (OP)						X
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						X
Soil Stabilization (SS)	✓		X			
Soil Stockpile Stabilization (SPS)	✓					
Tree Protection (TP)						X
Dewatering Structure (DS)						X
Concrete Washout (CW)						X

Trash/Debris on Site: No

Sediment Leaving Site: No — Continue sweeping daily

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

✓ CE IP SF Sod SPS

**Installed Correctly - Maintain until surrounding area is stabilized

SS - Stabilize bare soils within 7 days

**finish install sod E of site

IP - Reinstall IP within 24 hours

**reinstall drop inlet protection, fabric to IP E of site

Targeted Re-Inspection Date / Compliance Time: 7 calendar days from the receipt of this notice.

Reported to: Nef Lopez
Print Name

Signature

7574672052 8/18/17
Phone Number Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839 8/18/17
Phone Number Date

RI - 3.73" 8/29

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 8/30/17
Inspection Time: 1116 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo x Bldg Const. __F. Grading x F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓		x			
Outlet Protection (OP)						x
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						x
Soil Stabilization (SS)	✓					
Soil Stockpile Stabilization (SPS)	✓					
Tree Protection (TP)						x
Dewatering Structure (DS)						x
Concrete Washout (CW)						x

Trash/Debris on Site: No

Sediment Leaving Site: Yes — Continue sweeping daily

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

✓ CE IP SF SPS

**Installed Correctly - Maintain until surrounding area is stabilized

✓ stockpile is removed

✓ sod installed E of site

IP - Install IP W of site IMMEDIATELY

**clean debris from inside of stormdrain

*Shovel / Sweep sediment W of site IMMEDIATELY

Targeted Re-inspection Date / Compliance Time: 2 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name
Signature
7576720522
Phone Number
8/30/17
Date

Inspector: JaonTray D. Coley
Print Name
Signature
620-0839
Phone Number
8/30/17
Date

CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 9/1/17
Inspection Time: 9:56 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo x Bldg Const. __F. Grading x F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						x
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						x
Soil Stabilization (SS)						x
Soil Stockpile Stabilization (SPS)	✓					
Tree Protection (TP)						x
Dewatering Structure (DS)						x
Concrete Washout (CW)						x

Trash/Debris on Site: No

Sediment Leaving Site: Yes — Shovel / Sweep pavement adjacent to site

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

✓ CE IP SF SPS

**Installed Correctly - Maintain until surrounding area is stabilized

✓ Inlet protection reinstalled

Targeted Re-inspection Date / Compliance Time: 14 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

7547672572 9/1/17
Phone Number Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839 9/1/17
Phone Number Date

RI - .8" 9/2

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 9/6/17
Inspection Time: 9:18 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __Demo __Bldg Const. __F. Grading x F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						x
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						x
Soil Stabilization (SS)	✓	x				
Soil Stockpile Stabilization (SPS)	✓					
Tree Protection (TP)						x
Dewatering Structure (DS)						x
Concrete Washout (CW)						x

Trash/Debris on Site: No

Sediment Leaving Site: No — Continue sweeping daily

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

✓ CE IP SF SPS

**Installed Correctly - Maintain until surrounding area is stabilized

SS - Stabilize bare soils within 7 days

**install seeding and matting to ALL bare soils S and E of site

Targeted Re-inspection Date / Compliance Time: 7 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name
Signature
Phone Number
9/6/17
Date

Inspector: JaonTray D. Coley
Print Name
Signature
620-0839
Phone Number
9/6/17
Date

CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. CGP: No #:

Inspection Date: 9/20/17
Inspection Time: 10:32 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading
__Utility Work __ Demo x Bldg Const. __F. Grading x F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						x
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						x
Soil Stabilization (SS)	✓					
Soil Stockpile Stabilization (SPS)	✓					
Tree Protection (TP)						x
Dewatering Structure (DS)						x
Concrete Washout (CW)						x

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

✓ CE IP SF SPS

**Installed Correctly - Maintain until surrounding area is stabilized

✓ bare soils are stabilized

**stabilize bare soils Far East of site

Targeted Re-inspection Date / Compliance Time: 14 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

7577720522
Phone Number

9/20/17
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

9/20/17
Date

CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 9/25/18
Inspection Time: 1:45 pm

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo x Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						X
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						X
Soil Stabilization (SS)						X
Soil Stockpile Stabilization (SPS)						X
Tree Protection (TP)						X
Dewatering Structure (DS)						X
Concrete Washout (CW)						X
Wattles	✓					

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: [x] 1st [ ] 2nd [ ] 3rd / Stop Work

✓ CE IP SF Wattles

**Installed Correctly - Maintain until surrounding area is stabilized

Targeted Re-inspection Date / Compliance Time: 14 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

7576720522 9/25/18
Phone Number Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839 9/25/18
Phone Number Date

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 9/10/18
Inspection Time: 12:44 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo x Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						x
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)	✓					
Soil Stabilization (SS)	✓					
Soil Stockpile Stabilization (SPS)	✓					
Tree Protection (TP)						x
Dewatering Structure (DS)						x
Concrete Washout (CW)						x

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: [x] 1st [ ] 2nd [ ] 3rd / Stop Work

✓ CE IP SF SPS ST

**Installed Correctly - Maintain until surrounding area is stabilized

Targeted Re-inspection Date / Compliance Time: 14 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

7576720522
Phone Number

9/10/18
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

9/10/18
Date

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 9/4/18
Inspection Time: 10:11 pm

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo x Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						x
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						x
Soil Stabilization (SS)	✓					
Soil Stockpile Stabilization (SPS)	✓					
Tree Protection (TP)						x
Dewatering Structure (DS)						x
Concrete Washout (CW)						x

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: [x] 1st [ ] 2nd [ ] 3rd / Stop Work

✓ CE IP SF SPS

**Installed Correctly - Maintain until surrounding area is stabilized

Targeted Re-inspection Date / Compliance Time: 14 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

7576720522
Phone Number

9/4/18
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

9/4/18
Date

RI - 2.05" 8/20

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 8/21/18
Inspection Time: 12:11 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __Demo x Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						x
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						x
Soil Stabilization (SS)	✓					
Soil Stockpile Stabilization (SPS)	✓					
Tree Protection (TP)						x
Dewatering Structure (DS)						x
Concrete Washout (CW)						x

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: ☐1st ☐2nd ☐3rd / Stop Work

✓ CE IP SF SPS sod

**Installed Correctly - Maintain until surrounding area is stabilized

Targeted Re-inspection Date / Compliance Time: 14 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

8/21/18
Phone Number Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839 8/21/18
Phone Number Date

RI - 3.72" 8/11

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 8/16/18
Inspection Time: 1145 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo x Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						x
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						x
Soil Stabilization (SS)	✓					
Soil Stockpile Stabilization (SPS)	✓					
Tree Protection (TP)						x
Dewatering Structure (DS)						x
Concrete Washout (CW)						x

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:
Violations: ☐1st ☐2nd ☐3rd / Stop Work

✓ CE IP SF SPS sod

**Installed Correctly - Maintain until surrounding area is stabilized

✓ rest of sod has been installed to bare soils N and NE of site

Targeted Re-inspection Date / Compliance Time: 14 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

Phone Number

8/16/18
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

8/16/18
Date

CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 8/10/18
Inspection Time: 11:31 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo x Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						X
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						X
Soil Stabilization (SS)	✓		X			
Soil Stockpile Stabilization (SPS)						X
Tree Protection (TP)						X
Dewatering Structure (DS)						X
Concrete Washout (CW)						X

Trash/Debris on Site: No

Sediment Leaving Site: Yes — Shovel / Sweep pavement adjacent to site

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: ☐ 1st ☐ 2nd ☐ 3rd / Stop Work

✓ CE IP SF Sod

**Installed Correctly - Maintain until surrounding area is stabilized

✓ sod has been installed to most bare areas

SS - Stabilize bare soils within 7 days

**finish installing rest of the sod

*Shovel / Sweep Corprew Ave. IMMEDIATELY

Targeted Re-inspection Date / Compliance Time: 7 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

75706720522
Phone Number

8/10/18
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0838
Phone Number

8/10/18
Date

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 8/3/18
Inspection Time: 10:50 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __Demo x Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						X
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						X
Soil Stabilization (SS)			X			
Soil Stockpile Stabilization (SPS)						X
Tree Protection (TP)						X
Dewatering Structure (DS)						X
Concrete Washout (CW)						X

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: ☐ 1st ☐ 2nd ☐ 3rd / Stop Work

✓ CE IP SF

**Installed Correctly - Maintain until surrounding area is stabilized

SS - Stabilize bare soils within 7 days

**all bare soils must be stabilized IMMEDIATELY (sod installed or seed and matted)

Targeted Re-inspection Date / Compliance Time: 7 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

7576720522
Phone Number

8/3/18
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

8/3/18
Date

RI - 2.36" 7/30

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. CGP: No #:

Inspection Date: 7/31/18
Inspection Time: 10:40 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading
__Utility Work __ Demo x Bldg Const. __F. Grading x F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)		X				
Outlet Protection (OP)						X
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						X
Soil Stabilization (SS)			X			
Soil Stockpile Stabilization (SPS)						X
Tree Protection (TP)						X
Dewatering Structure (DS)						X
Concrete Washout (CW)						X

Trash/Debris on Site: No

Sediment Leaving Site: Yes — Shovel / Sweep pavement adjacent to site

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: ☐1st ☐2nd ☐3rd / Stop Work

✓ CE SF

**Installed Correctly - Maintain until surrounding area is stabilized

IP - Clean ALL IP's IMMEDIATELY

IP - Repair/Replace (that need to be) ALL IP's IMMEDIATELY

SS - Stabilize bare soils within 7 days

Targeted Re-inspection Date / Compliance Time: 3 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

7576720522
Phone Number

7/31/18
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

7/31/18
Date

CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. CGP: No #:

Inspection Date: 7/18/18
Inspection Time: 2:48 pm

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo x Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						✗
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						✗
Soil Stabilization (SS)						✗
Soil Stockpile Stabilization (SPS)						
Tree Protection (TP)	✓					
Dewatering Structure (DS)						✗
Concrete Washout (CW)	✓					

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: ☐ 1st ☐ 2nd ☐ 3rd / Stop Work

✓ CE IP SF TP CW

**Installed Correctly - Maintain until surrounding area is stabilized

✓ silt fence is repaired correctly

Targeted Re-inspection Date / Compliance Time: 14 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Nef Lopez
Signature

7576720522
Phone Number

7/18/18
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

7/18/18
Date

CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. CGP: No #:

Inspection Date: 7/17/18
Inspection Time: 1:34 pm

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __Demo x Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✔					
Inlet Protection (IP)	✔					
Outlet Protection (OP)						x
Silt Fence (SF)	✔	x	x			
Sediment Trap/Basin (ST)						x
Soil Stabilization (SS)						x
Soil Stockpile Stabilization (SPS)						x
Tree Protection (TP)	✔					
Dewatering Structure (DS)						x
Concrete Washout (CW)	✔					

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: x 1st x 2nd ☐ 3rd / Stop Work

✓ CE IP SF TP CW

**Installed Correctly - Maintain until surrounding area is stabilized

SF - Repair SF IMMEDIATELY

SF - Install SF IMMEDIATELY

**along Corprew Ave.

*Failure to comply will result in a violation

*Failure to comply will result in a violation

Targeted Re-inspection Date / Compliance Time: 2 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

7576720522
Phone Number

7/17/18
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

7/17/18
Date

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 7/9/18
Inspection Time: 2:52 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo x Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						✗
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						✗
Soil Stabilization (SS)						✗
Soil Stockpile Stabilization (SPS)	✓					
Tree Protection (TP)	✓					
Dewatering Structure (DS)						✗
Concrete Washout (CW)						✗

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: ☐1st ☐2nd ☐3rd / Stop Work

✓ CE IP SF TP

**Installed Correctly - Maintain until surrounding area is stabilized

Targeted Re-inspection Date / Compliance Time: 14 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

7576720522
Phone Number

7/9/18
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

7/9/18
Date

RI - 2.28" 6/22

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 6/25/18
Inspection Time: 2:10 pm

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo x Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✔					
Inlet Protection (IP)	✔					
Outlet Protection (OP)						x
Silt Fence (SF)	✔					
Sediment Trap/Basin (ST)						x
Soil Stabilization (SS)						x
Soil Stockpile Stabilization (SPS)						x
Tree Protection (TP)	✔					
Dewatering Structure (DS)						x
Concrete Washout (CW)	✔					

Trash/Debris on Site: No

Sediment Leaving Site: Yes — Shovel / Sweep pavement adjacent to site

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: ☐1st ☐2nd ☐3rd / Stop Work

✓ CE IP SF TP CW

**Installed Correctly - Maintain until surrounding area is stabilized

Targeted Re-inspection Date / Compliance Time: 14 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

Phone Number

6/25/18
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

6/25/18
Date

RI - .66" 6/10

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 6/11/18
Inspection Time: 9:16 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo x Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						✗
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						✗
Soil Stabilization (SS)						✗
Soil Stockpile Stabilization (SPS)						✗
Tree Protection (TP)	✓					
Dewatering Structure (DS)						✗
Concrete Washout (CW)	✓					
Straw Bales	✓					

Trash/Debris on Site: No

Sediment Leaving Site: No — Continue sweeping daily

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: ☐1st ☐2nd ☐3rd / Stop Work

✓ CE IP SF TP CW Straw Bales

**Installed Correctly - Maintain until surrounding area is stabilized

Targeted Re-inspection Date / Compliance Time: 14 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

7576720522
Phone Number

6/11/18
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

6/11/18
Date

CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. **CGP:** No **#:**

Inspection Date: 5/24/18
Inspection Time: 3:07 pm

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work __ Demo x Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)		X				
Inlet Protection (IP)	✓					
Outlet Protection (OP)						X
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						X
Soil Stabilization (SS)						X
Soil Stockpile Stabilization (SPS)						X
Tree Protection (TP)						X
Dewatering Structure (DS)						X
Concrete Washout (CW)						X

Trash/Debris on Site: No

Sediment Leaving Site: Yes — Minor Tracking - Continue sweeping daily

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: ☐1st ☐2nd ☐3rd / Stop Work

✓ IP SF

**Installed Correctly - Maintain until surrounding area is stabilized

✓ Inlet protection installed correctly

CE - Repair CE IMMEDIATELY

**install stone to construction entrance -OR- remove sediment to prevent tracking

Targeted Re-inspection Date / Compliance Time: 7 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name
Nef Lopez
Signature
75706720522
Phone Number
5/24/18
Date

Inspector: JaonTray D. Coley
Print Name
Signature
620-0839
Phone Number
5/24/18
Date

RI - 4/7 .6"

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. CGP: No #:

Inspection Date: 4/10/18
Inspection Time: 12:14 pm

Stage of Construction: __Pre-Con __Clearing x Rough Grading __Utility Work x Demo __Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						x
Silt Fence (SF)	✓	x				
Sediment Trap/Basin (ST)						
Soil Stabilization (SS)						x
Soil Stockpile Stabilization (SPS)						x
Tree Protection (TP)	✓	x				
Dewatering Structure (DS)						x
Concrete Washout (CW)						x

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:
Violations: ☐ 1st ☐ 2nd ☐ 3rd / Stop Work

✓ CE IP SF TP

**Installed Correctly - Maintain until surrounding area is stabilized

SF - Repair SF within 24 hours

**S of site

SPS - Install SPS within 7 days

TP - Repair TP within 3 days

Targeted Re-inspection Date / Compliance Time: 3 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

7577672052 2
Phone Number

4/10/18
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0829
Phone Number

4/10/18
Date

CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. CGP: No #:

Inspection Date: 4/3/18
Inspection Time: 10:27 am

Stage of Construction: __Pre-Con __Clearing x Rough Grading
__Utility Work x Demo __Bldg Const. x F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						x
Silt Fence (SF)	✓	x				
Sediment Trap/Basin (ST)						x
Soil Stabilization (SS)						x
Soil Stockpile Stabilization (SPS)						x
Tree Protection (TP)	✓					
Dewatering Structure (DS)						x
Concrete Washout (CW)						x

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: ☐ 1st ☐ 2nd ☐ 3rd / Stop Work

✓ CE IP SF TP

**Installed Correctly - Maintain until surrounding area is stabilized

SF - Repair SF (minor issues)

-E of site

Targeted Re-inspection Date / Compliance Time: 7 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

7576720522
Phone Number

4/3/18
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

4/3/18
Date

RI - .84* 3/12/18

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. CGP: No #:

Inspection Date: 3/13/18
Inspection Time: 9:26 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading __Utility Work X Demo __Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✔					
Inlet Protection (IP)	✔	✘				
Outlet Protection (OP)						✘
Silt Fence (SF)	✔					
Sediment Trap/Basin (ST)						✘
Soil Stabilization (SS)						✘
Soil Stockpile Stabilization (SPS)						✘
Tree Protection (TP)	✔					
Dewatering Structure (DS)						✘
Concrete Washout (CW)						✘
Straw Bales	✔					

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: ☐ 1st ☐ 2nd ☐ 3rd / Stop Work

✓ CE IP SF TP Straw Bales

**Installed Correctly - Maintain until surrounding area is stabilized

IP - Repair IP within 24 hours

**replace two drop inlet protection N of site

Targeted Re-inspection Date / Compliance Time: 2 **calendar days from the receipt of this notice.**

Reported to: Nef Lopez
Print Name

Signature

7576720522
Phone Number

3/13/18
Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839
Phone Number

3/13/18
Date

CITY OF NORFOLK
BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. CGP: No #:

Inspection Date: 3/9/18
Inspection Time: 10:26 am

Stage of Construction: __Pre-Con __Clearing __Rough Grading
__Utility Work * Demo __Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓					
Outlet Protection (OP)						✗
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						✗
Soil Stabilization (SS)						✗
Soil Stockpile Stabilization (SPS)						✗
Tree Protection (TP)	✓					
Dewatering Structure (DS)						✗
Concrete Washout (CW)						✗
Straw Bales	✓					

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: ☐1st ☐2nd ☐3rd / Stop Work

✓ CE IP SF

**Installed Correctly - Maintain until surrounding area is stabilized

✓ inlet protection repaired correctly

Targeted Re-inspection Date / Compliance Time: 14 calendar days from the receipt of this notice.

Reported to: Nef Lopez
Print Name

Signature

7574672052 3/9/18
Phone Number Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839 3/9/18
Phone Number Date

RI - .57" 3/6

CITY OF NORFOLK

BUREAU OF ENVIRONMENTAL SERVICES

Erosion and Sediment Control Inspection Report

Project Name: NSU Brown Hall

Address: 700 Park Ave. CGP: No #:

Inspection Date: 3/7/18
Inspection Time: 12:10 pm

Stage of Construction: __Pre-Con __Clearing __Rough Grading
__Utility Work * Demo __Bldg Const. __F. Grading __F. Stabilization

E & S Control Practices	Installed Effective	Installed Not Effective	Not Installed	Violation	Remove	N/A
Construction Entrance (CE)	✓					
Inlet Protection (IP)	✓	✗				
Outlet Protection (OP)						✗
Silt Fence (SF)	✓					
Sediment Trap/Basin (ST)						✗
Soil Stabilization (SS)						✗
Soil Stockpile Stabilization (SPS)						✗
Tree Protection (TP)	✓					
Dewatering Structure (DS)						✗
Concrete Washout (CW)						✗
Straw Bales	✓					

Trash/Debris on Site: No

Sediment Leaving Site: No

The inspection reveals that deficiencies are present in the above categories.
The following actions are required to correct the deficiencies:

Violations: ☐ 1st ☐ 2nd ☐ 3rd / Stop Work

✓ CE IP SF

**Installed Correctly - Maintain until surrounding area is stabilized

IP - Reinstall IP within 24 hours

**replace inlet protection to drop inlet NE of site

SF - Repair SF (minor issues)

Targeted Re-inspection Date / Compliance Time: 2 calendar days from the receipt of this notice.

Reported to: Net Lopez
Print Name

Signature

7571672052 3/7/18
Phone Number Date

Inspector: JaonTray D. Coley
Print Name

Signature

620-0839 3/7/18
Phone Number Date

NORFOLK STATE UNIVERSITY

EROSION AND SEDIMENT CONTROL INSPECTION REPORT

PROJECT: New Residentail Facility **STATE PROJECT NO:** 213-17818-00

RLD NAME: SB Ballard Construction **DATE:** 08/07/2018 **TIME:** 10:30am

An erosion and sediment control inspection was conducted at the above referenced project, and the following deficiencies were found. Work must begin to correct these deficiencies immediately.

- ☐ Safety Fence (3.01)
- ☒ Construction Entrance (3.02)
- ☐ Straw Bale Barrier (3.04)
- ☒ Silt Fence (3.05)
- ☒ Storm Drain Inlet Protection (3.07)
- ☐ Sediment Trap (3.13)
- ☐ Sediment Basin (3.14)
- ☐ Outlet Protection (3.18)
- ☐ Temporary Seeding (3.31)
- ☐ Permanent Seeding (3.32)
- ☐ Sodding (3.33)
- ☐ Tree Protection (3.38)
- ☐ Dust Control (3.39)
- ☒ CW - concrete washout pits
- ☐

Comments:

CE - Rework stone at main Corprew Ave entrance, Provide stone at all other site entry points

Ensure sediment control at full perimeter of site. There are areas where green tubular control is missing

IP - Provide inlet protection throughout site

SF - Repair damaged silt fence on east side behind trailer

CW - properly maintain concrete washouts

☐ An erosion and sediment control inspection was conducted at the above referenced project and no deficiencies were found.

Trash/Debris on site: ☐ YES ☑ NO

Sediment Leaving site: ☑ YES ☐ NO Sweep road

Targeted Re-inspection Date / Compliance Time: 7 **calender days from receipt of this notice.**

Inspected by: (*print*) **Richard Law** (*signature*)

NORFOLK STATE UNIVERSITY

EROSION AND SEDIMENT CONTROL INSPECTION REPORT

PROJECT: New Residentail Facility **STATE PROJECT NO:** 213-17818-00

RLD NAME: SB Ballard Construction **DATE:** 08/17/2018 **TIME:** 9:22am

An erosion and sediment control inspection was conducted at the above referenced project, and the following deficiencies were found. Work must begin to correct these deficiencies immediately.

- ☐ Safety Fence (3.01)
- ☒ Construction Entrance (3.02)
- ☐ Straw Bale Barrier (3.04)
- ☐ Silt Fence (3.05)
- ☒ Storm Drain Inlet Protection (3.07)
- ☐ Sediment Trap (3.13)
- ☐ Sediment Basin (3.14)
- ☐ Outlet Protection (3.18)
- ☐ Temporary Seeding (3.31)
- ☐ Permanent Seeding (3.32)
- ☐ Sodding (3.33)
- ☐ Tree Protection (3.38)
- ☐ Dust Control (3.39)
- ☐ _____
- ☐ _____

Comments:

Provide inlet protection by Spartan Suites, see image 1

Provide stone at construction entrance of Corprew Ave. by the Police Building, see image 2

Provide continuous perimeter control, see image 3

Rework concrete washout station, see image 4

☐ An erosion and sediment control inspection was conducted at the above referenced project and no deficiencies were found.

Trash/Debris on site: ☐ YES ☑ NO

Sediment Leaving site: ☑ YES ☐ NO Sweep road

Targeted Re-inspection Date / Compliance Time: 7 **calender days from receipt of this notice.**

Inspected by: (*print*) **Richard Law** (*signature*)

IMAGE 1

IMAGE 2

IMAGE 3

IMAGE 4

NORFOLK STATE UNIVERSITY

EROSION AND SEDIMENT CONTROL INSPECTION REPORT

PROJECT: New Residentail Facility **STATE PROJECT NO:** 213-17818-00

RLD NAME: SB Ballard Construction **DATE:** 08/29/18 **TIME:** 2:33pm

An erosion and sediment control inspection was conducted at the above referenced project, and the following deficiencies were found. Work must begin to correct these deficiencies immediately.

- ☐ Safety Fence (3.01)
- ☒ Construction Entrance (3.02)
- ☐ Straw Bale Barrier (3.04)
- ☐ Silt Fence (3.05)
- ☒ Storm Drain Inlet Protection (3.07)
- ☐ Sediment Trap (3.13)
- ☐ Sediment Basin (3.14)
- ☐ Outlet Protection (3.18)
- ☐ Temporary Seeding (3.31)
- ☐ Permanent Seeding (3.32)
- ☐ Sodding (3.33)
- ☒ Tree Protection (3.38)
- ☐ Dust Control (3.39)
- ☐ Concrete washout pits
- ☐ _____

Comments:

Protect inlet by Spartan Suites, see image 1

Sweep pavement at Spartan Suites dumpster area, see image 2

Provide gravel at southern construction entrance by Spartan Suites, see image 3

Provide inlet protection at walkway, see image 4

Sweep pavement n Corprew, see image 5

Install gravel at northwest entrance at Corprew Avenue entrance, see image 6

Fix tree protection on north side of site, see image 7

☐ An erosion and sediment control inspection was conducted at the above referenced project and no deficiencies were found.

Trash/Debris on site: ☐ YES ☑ NO

Sediment Leaving site: ☑ YES ☐ NO sweep pavement around site

Targeted Re-inspection Date / Compliance Time: 7 **calender days from receipt of this notice.**

Inspected by: (*print*) **Richard Law** (*signature*) 

IMAGE 1

IMAGE 2

IMAGE 3

IMAGE 4

IMAGE 5

IMAGE 6

IMAGE 7

NORFOLK STATE UNIVERSITY

EROSION AND SEDIMENT CONTROL INSPECTION REPORT

PROJECT: New Residentail Facility **STATE PROJECT NO:** 213-17818-00

RLD NAME: SB Ballard Construction **DATE:** 09/17/18 **TIME:** 2:12pm

An erosion and sediment control inspection was conducted at the above referenced project, and the following deficiencies were found. Work must begin to correct these deficiencies immediately.

- ☐ Safety Fence (3.01)
- ☒ Construction Entrance (3.02)
- ☐ Straw Bale Barrier (3.04)
- ☒ Silt Fence (3.05)
- ☒ Storm Drain Inlet Protection (3.07)
- ☐ Sediment Trap (3.13)
- ☐ Sediment Basin (3.14)
- ☐ Outlet Protection (3.18)
- ☐ Temporary Seeding (3.31)
- ☐ Permanent Seeding (3.32)
- ☐ Sodding (3.33)
- ☐ Tree Protection (3.38)
- ☐ Dust Control (3.39)
- ☐ CW - concrete washout pits
- ☐ _____

Comments:

Provide inlet protection at location of future walkway, see image 1

Provide gravel at construction entrance by Police Building. Sweep road, see image 2

Fix tree protection throughout site

Fix silt fence by trailer office

☐ An erosion and sediment control inspection was conducted at the above referenced project and no deficiencies were found.

Trash/Debris on site: ☐ YES ☑ NO

Sediment Leaving site: ☑ YES ☐ NO Sweep Corprew Avenue by secondary entrance

Targeted Re-inspection Date / Compliance Time: 7 **calender days from receipt of this notice.**

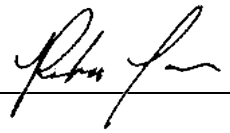
Inspected by: (*print*) **Richard Law** (*signature*) 

IMAGE 1

IMAGE 2