Soil Erosion and Sediment Control Plan

For:

1498 Pippin Orchard Road

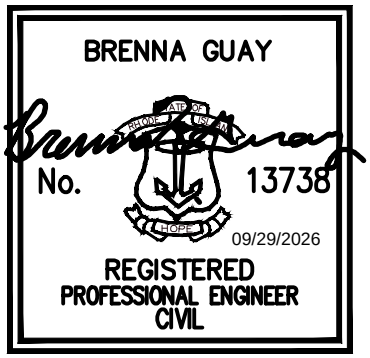
1489 Pippin Orchard Road

Cranston, Rhode Island 02921

AP 28, Lots 31 & 86

Owner: Removed by Planning Department for Security Puposes

Operator: *TO BE DETERMINED UPON CONTRACT AWARD*	Company Name Name Address City, State, Zip Code Telephone Number Email Address
Estimated Project Dates:	Start Date: TBD Completion Date: TBD
SESC Plan Prepared By:	DiPrete Engineering Brenna Guay, PE 2 Stafford Court Cranston, Rhode Island 02920 (401) 943-1000 bguay@diprete-eng.com Professional Engineer RI PE 13738



SESC Plan Preparation Date:	9/29/2026
SESC Plan Revision Date:	

Revision Date: 05/01/2015

OWNER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under the 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. I am aware that it is the responsibility of the site owner and operator to implement and amend the Soil Erosion and Sediment Control Plan as appropriate in accordance with the requirements of the RIPDES Construction General Permit.

_____

Owner Signature: Date

Removed by Planning Department for Security Puposes

OPERATOR CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under the 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. I am aware that it is the responsibility of the owner/operator to implement and amend the Soil Erosion and Sediment Control Plan as appropriate in accordance with the requirements of the RIPDES Construction General Permit.

_____

Operator Signature: Date

Contractor Representative:

Contractor Title:

Contractor Company Name:

Address:

Phone Number:

Email Address:

Contractor must fill out this section and sign after the contract is awarded and before any construction begins.

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INTRODUCTION

This Construction Site Soil Erosion and Sediment Control Plan (SESC Plan) has been prepared for NKC Investments LLC/Cersosimo Construction LLC for the Orchard Meadows subdivision in Cranston, Rhode Island. In accordance with the RIDEM Rhode Island Pollutant Discharge Elimination System (RIPDES) General Permit for Stormwater Discharge Associated with Construction Activity (RIPDES Construction General Permit ("CGP")), projects that disturb one (1) or more acres require the preparation of a SESC Plan. This SESC Plan provides guidance for complying with the terms and conditions of the RIPDES Construction General Permit and Minimum Standard 10 of the RI Stormwater Design and Installation Standards Manual. In addition, this SESC Plan is also consistent with Part D of the *RI SESC Handbook* entitled "Soil Erosion and Sediment Control Plans". This document does not negate or eliminate the need to understand and adhere to all applicable RIPDES regulations.

The purpose of erosion, runoff, and sedimentation control measures is to prevent pollutants from leaving the construction site and entering waterways or environmentally sensitive areas during and after construction. This SESC Plan has been prepared prior to the initiation of construction activities to address anticipated worksite conditions. The control measures depicted on the site plan and described in this narrative should be considered the minimum measures required to control erosion, sedimentation, and stormwater runoff at the site. Since construction is a dynamic process with changing site conditions, it is the operator's responsibility to manage the site during each construction phase so as to prevent pollutants from leaving the site. This may require the operator to revise and amend the SESC Plan during construction to address varying site and/or weather conditions, such as by adding or realigning erosion or sediment controls to ensure the SESC Plan remains compliant with the RIPDES Construction General Permit. Records of these changes must be added to the amendment log attached to the SESC Plan, and to the site plans as "red-lined" drawings. Please Note: **Even if practices are correctly installed on a site according to the approved plan, the site is only in compliance when erosion, runoff, and sedimentation are effectively controlled throughout the entire site.**

It is the responsibility of the site owner and the site operator to maintain the SESC Plan at the site, including all attachments, amendments and inspection records, and to make all records available for inspection by RIDEM during and after construction. (RIPDES CGP - Part III.G)

The site owner, the site operator, and the designated site inspector are required to review the SESC Plan and sign the Party Certification pages (Section 8). The primary contractor (if different) and all subcontractors (if applicable) involved in earthwork or exterior construction activities are also required to review the SESC Plan and sign the certification pages before construction begins.

Any questions regarding the SESC Plan, control measures, inspection requirements, or any other facet of this document may be addressed to the RIDEM Office of Water Resources, at 401-222-4700 or via email: water@dem.ri.gov.

ADDITIONAL RESOURCES

Rhode Island Department of Environmental Management
Office of Water Resources
235 Promenade Street
Providence, RI 02908-5767
phone: 401-222-4700
email: water@dem.ri.gov

RIDEM *RI Stormwater Design and Installation Standards Manual* (RISDISM) (as amended)
http://www.dem.state.ri.us/programs/benviron/water/permits/ripdes/stwater/t4guide/desman.htm

RI Soil Erosion and Sediment Control Handbook
http://www.dem.state.ri.us/soilerosion2014final.pdf

RIDEM 2013 RIPDES Construction General Permit
http://www.dem.ri.gov/pubs/regs/regs/water/ripdesca.pdf

Rhode Island Department of Transportation *Standard Specifications for Road and Bridge Design and Other Specifications* and *Standard Details*
http://www.dot.ri.gov/business/bluebook.php

RIDEM Office of Water Resources Coordinated Stormwater Permitting website
http://www.dem.state.ri.us/programs/benviron/water/permits/swcoord/index.htm

RIDEM RIPDES Stormwater website
http://www.dem.state.ri.us/programs/benviron/water/permits/ripdes/stwater/index.htm

RIDEM Water Quality website (for 303(d) and TMDL listings)
http://www.dem.ri.gov/programs/benviron/water/quality/index.htm

RIDEM Rhode Island Natural Heritage Program
http://www.dem.ri.gov/programs/bpoladm/plandev/heritage/index.htm

RIDEM Geographic Data Viewer – Environmental Resource Map
http://www.dem.ri.gov/maps/index.php

Natural Resources Conservation Service - Rhode Island Soil Survey Program
http://www.ri.nrcs.usda.gov/technical/soils.html

EPA NPDES – Stormwater Discharges from Construction Activities webpage:
http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-Discharges-From-Construction-Activities.cfm

EPA Construction Site Stormwater Runoff Control BMP Menu
http://water.epa.gov/polwaste/npdes/swbmp/Construction-Site-Stormwater-Run-Off-Control.cfm

SECTION 1: SITE DESCRIPTION

1.1 Project/Site Information

Orchard Meadows:

Located on 1489 Pippin Orchard Road in the City of Cranston, Rhode Island

- Total area of the site is 6.3± acres
- The proposed improvements include construction of one new home, with associated utilities and rain garden.
- Location Map:



The following are estimates of the construction site area:

- Total Project Area 6.3± acres
- Total Project Area to be Disturbed 1.16 acres

1.2 Receiving Waters

RIPDES CGP - Parts IV.A.7 & IV.A.8

List/description of separate storm sewer systems or drainage systems that may be impacted during construction and the water bodies that receive discharges from each storm sewer or drainage system:

- Furnace Hill Brook (Waterbody ID RI0006017R-01)

List/description of receiving waters that may be impacted during construction:

- Furnace Hill Brook (Waterbody ID RI0006017R-01)

Are any of the receiving waters in the vicinity of the proposed construction project listed as being impaired or subject to a TMDL?

☐ Yes ☒ No

1.3 Natural Heritage Area Information

RIPDES CGP - Part III.H

Are there any Natural Heritage Areas being disturbed by the construction activity or will discharges be directed to the Natural Heritage Area as a result of the construction activity?

☐ Yes ☒ No

1.4 Historic Preservation/Cultural Resources

Are there any historic properties, historic cemeteries or cultural resources on or near the construction site?

☒ Yes ☐ No

Describe how this determination was made and summarize state or tribal review comments:

- Site Identification Archaeology Survey by PAL, September 2023
    - Cemetery CR038 (AP 28 Lot 86)

If yes, describe or refer to documentation which determines the likelihood of an impact on this historic property, historic cemetery or cultural resource and the steps taken to address that impact including any conditions or mitigation measures that were approved by other parties.

- Site Identification Archaeology Survey by PAL, September 2023
- All work is greater than 25’ from the cemetery

1.5 Site Features and Constraints

List All Site Constraints and Sensitive Areas that require avoidance and protection through the implementation of control measures:

- Sensitive areas on site include:
    - All wetlands, perimeter wetlands and riverbank wetlands. The proposed limit of disturbance has been located out of all of these areas.
    - Streams and Rivers
    - Historic Cemeteries
    - Electric/Gas Easements
- See Erosion Control Plan in the latest plan set prepared by DiPrete Engineering

SECTION 2: EROSION, RUNOFF, AND SEDIMENT CONTROL

RIPDES Construction General Permit – Part III.J.1

The purpose of erosion controls is to prevent sediment from being detached and moved by wind or the action of raindrop, sheet, rill, gully, and channel erosion. Properly installed and maintained erosion controls are the primary defense against sediment pollution.

Runoff controls are used to slow the velocity of concentrated water flows. By intercepting and diverting stormwater runoff to a stabilized outlet or treatment practice or by converting concentrated flows to sheet flow erosion and sedimentation are reduced.

Sediment controls are the last line of defense against moving sediment. The purpose is to prevent sediment from leaving the construction site and entering environmentally sensitive areas.

This section describes the set of control measures that will be installed before and during the construction project to avoid, mitigate, and reduce impacts associated with construction activity. Specific control measures and their applicability are contained in Section Four: Erosion Control Measures, Section Five: Runoff Control Measures, and Section Six: Sediment Control Measures of the *RI SESC Handbook*. The *RI SESC Handbook* can be found at the following address:

http://www.dem.ri.gov/soilerosion2014final.pdf.

2.1 Avoid and Protect Sensitive Areas and Natural Features

Per RI Stormwater Design and Installation Standards Manual 3.3.7.1:

Areas of existing and remaining vegetation and areas that are to be protected as identified in the Section 1.5 of the SESC Plan must be clearly identified on the SESC Site Plans for each Phase of Construction. Prior to any land disturbance activities commencing on the site, the Contractor shall physically mark limits of disturbance (LOD) on the site and any areas to be protected within the site, so that workers can clearly identify the areas to be protected.

Feature Requiring Protection	Construction Phase #	Method of Protection	Sheet #
Perimeter Wetland Areas	All Phases	Silt Fence/Compost Filter Sock	RIDOT Detail
Rain Garden	All Phases	Silt Fence	RIDOT Detail
Down gradient undisturbed Areas	All Phases	Silt Fence/Compost Filter Sock	RIDOT Detail
Upgradient Undisturbed Areas	All Phases	Construction Fence	RIDOT Detail
Biological Wetland Areas	All Phases	Silt Fence/Compost Filter Sock	RIDOT Detail

2.2 Minimize Area of Disturbance

Per RI Stormwater Design and Installation Standards Manual 3.3.7.2:

Will >5 acres be disturbed in order to complete this project?

☐ Yes ☒ No

Will <5 acres be disturbed or will disturbance activities be completed within a six (6) month window?

☒ Yes ☐ No

Based on the answers to the above questions will phasing be required for this project?

☐ Yes ☒ No

Phasing is not required, as this project is based on the State of Rhode Island Stormwater Management Guidance for Individual Single-Family Residential Lot Development.

PHASING PLAN

Phase No. or Identifier	Lot 1 & Part of Lot 2
Total Area of Phase	6.3± acres (Total Lot Size)
Area to be Disturbed	1.16± acres (Limit of Disturbance)

Description of Construction Sequencing for Individual Single-Family Residential Lots

1. Contractor is responsible for Soil Erosion and Sediment Control (SESC) on site. Sequence of construction provided may be modified as field conditions warrant with prior approval from the Owner or their representative.

2. Construction to begin in the Spring 2027 or upon receipt of all necessary approvals.

3. Survey and stake limit of sedimentation barriers/limit of disturbance.

4. Cut Trees on site, within LOD. In no case is the tree cutting to extend beyond the LOD.

5. Place perimeter erosion control barriers as shown on the plans along Limit of disturbance. In no case is the limit of disturbance to extend beyond the sedimentation barriers.

6. Grub and remove tree stumps on site. Topsoil is to be stripped and stockpiled in approved locations. Stockpiles are to be protected by a row of silt fence and covered or temporarily seeded.

7. Install temporary drainage swales per site plans. All temporary control devices shall be installed per the Rhode Island Soil Erosion and Sedimentation Control Handbook. Erosion control blankets shall be used as necessary to stabilize the swales in steep slope areas. Check Dams installed as necessary to detain stormwater and prevent erosion.

8. Survey and stake drain lines, water lines, sewer lines and driveway centerline. Survey drainage BMPs and protect from runoff and construction vehicle traffic. Protect BMPs by installing erosion control devices around BMPs if possibility of runoff exists. If no stormwater can flow to BMP install construction fencing to prevent compaction of BMP area by construction traffic.

9. Excavate and grade the proposed driveway. Rough grade lots. Once rough grade on the lots has been established, disturbed areas shall be stabilized with hydroseeding or approved equal. Erosion control blankets shall be installed as necessary to stabilize soil and promote vegetation.

10. Install roof leader piping beginning at the lowest point and working up gradient. Place erosion controls at the discharge points. Install water, sewer, electric, telephone, cable, and gas in accordance with the approved final construction plans.

11. Construct BMPs per design plans.

12. Rain Garden may be brought online once all tributary area has been stabilized.

13. Install erosion control on individual lots as necessary to prevent sediments from reaching the main drive isle. Lots to be constructed individually.

14. Begin construction of the building foundation and structure. Contractor shall limit disturbed areas to the maximum extent practicable during building construction.

15. Install individual lot driveway.

16. Finalize permanent stabilization around building.

17. Remove excess sediments on lots or within pavement areas.

18. Repair drainage outlets and BMPs as required. Tree limbs, leaves, cobbles, boulders, etc. shall be removed from the bottom of the BMPs before the application of topsoil. Install plantings as needed.

19. Remove all temporary soil erosion and sedimentation control measures following final vegetative establishment of all disturbed areas.

20. Prior to activation of all utilities (water, sewer, and storm), the design engineer and the appropriate utility company shall be notified at least 48 hours in advance to schedule final inspection.

2.3 Minimize the Disturbance of Steep Slopes

Per RI Stormwater Design and Installation Standards Manual 3.3.7.3:

Are steep slopes (>15%) present within the proposed project area?

☐ Yes ☒ No

2.4 Preserve Topsoil

Per RI Stormwater Design and Installation Standards Manual 3.3.7.4:

Site owners and operators must preserve existing topsoil on the construction site to the maximum extent feasible and as necessary to support healthy vegetation, promote soil stabilization, and increase stormwater infiltration rates in the post-construction phase of the project.

Will existing topsoil be preserved at the site?

☒ Yes ☐ No

The site operator shall strip topsoil in proposed project limit of disturbance areas. Topsoil shall be stockpiled in the location specified on the SESC plan. Stockpile areas shall be surrounded by silt fence or approved erosion control measures to prevent migration of soils during rain events. Upon project completion, the site operation shall redistribute topsoil over disturbed areas ensuring at minimum a 4" layer is provided over all disturbed areas. Additional material shall be brought on site should the need arise. Final topsoil areas have been shown on the site plans as landscape areas. Topsoil should be screened and free of weeds, sticks, and stones over ¾" in size and otherwise complying with section M.18.01 of the RIDOT Standard

Specifications for Road and Bridge Construction. Contractor shall follow recommendations provided by the landscape plans and the Landscape Architect.

Soil compaction must be minimized by maintaining limits of disturbance throughout construction. In instances where site soils are compacted the site owner and operator must restore infiltration capacity of the compacted soils by tilling or scarifying compacted soils and amending soils as necessary to ensure a minimum depth of topsoil is available in these areas. In areas where infiltrating stormwater treatment practices are located compacted soils must be amended such that they will comply the design infiltration rates established in the *RI Stormwater Design and Installation Standards Manual*.

In areas of where over compaction has been compromised the natural infiltration rate of onsite soils, the contractor shall scarify or till these areas to restore them to their natural state. Areas prone to over compaction are paths proposed to be used by construction equipment and construction equipment storage areas. Construction equipment storage areas are shown on the SESC Plan.

2.5 Stabilize Soils

Per RI Stormwater Design and Installation Standards Manual 3.3.7.5:

Upon completion and acceptance of site preparation and initial installation of erosion, runoff, and sediment controls and temporary pollution prevention measures, the operator shall initiate appropriate temporary or permanent stabilization practices during all phases of construction on all disturbed areas as soon as possible, but not more than fourteen (14) days after the construction activity in that area has temporarily or permanently ceased.

Any disturbed areas that will not have active construction activity occurring within 14 days must be stabilized using the control measures depicted in the SESC Site Plans, in accordance with the *RI SESC Handbook*, and per manufacturer product specifications.

Only areas that can be reasonably expected to have active construction work being performed within 14 days of disturbance will be cleared/grubbed at any one time. It is NOT acceptable to clear and grub the entire construction site if portions will not be active within the 14-day time frame. Proper phasing of clearing and grubbing activities shall include temporary stabilization techniques for areas cleared and grubbed that will not be active within the 14-day time frame.

All disturbed soils exposed prior to October 15 of any calendar year shall be seeded by that date if vegetative measures are the intended soil stabilization method. Any such areas that do not have adequate vegetative stabilization, as determined by the site operator or designated inspector, by November 15, must be stabilized through the use of non-vegetative erosion control measures. If work continues within any of these areas during the period from October 15 through April 15, care must be taken to ensure that only the area required for that day's work is exposed, and all erodible soil must be restabilized within 5 working days. In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed (i.e. construction of a motocross track).

- When construction activities have temporarily or permanently ceased, stabilization controls shall consist of one or more of the following:
    - Seeding with native vegetation
    - Straw or straw application, in the amount of 2 tons/acre (temporary only)
    - Fiber mulch or covering consisting of mat/fiber lining (temporary only)
- Dust control generation shall be controlled by one or more of the following:
    - Vegetative cover (see stabilization controls above)
    - Sprinkle site with water until surface is wet. Take care to not create runoff from excessive use of water. The general contractor shall have an on-site water vehicle for dust control.
    - Stone to stabilize construction roads

- Calcium chloride (only with approval of the Design Engineer)

Temporary Vegetative Control Measures

- When construction activities have temporarily ceased, stabilization controls shall consist of one or more of the following:

    1. Hydro seeding
    2. Seeding with native vegetation

Temporary Non-Vegetative Control Measures

- When construction activities have temporarily ceased, stabilization controls shall consist of one or more of the following:

    1. Mulching
    2. Rolled Erosion control mats – Steep Slopes >15%
    3. Rolled Erosion control netting

Permanent Vegetative Control Measures

- When construction activities have permanently ceased, stabilization controls shall consist of one or more of the following:

    1. Hydro seeding
    2. Seeding with native vegetation
    3. Sodding

2.6 Protect Storm Drain Outlets

Per RI Stormwater Design and Installation Standards Manual 3.3.7.7:

Temporary or permanent outlet protection must be used to prevent scour and erosion at discharge points through the protection of the soil surface, reduction in discharge velocities, and through the promotion of infiltration. Outlets often have high velocity, high volume flows, and require strong materials that will withstand the forces of stormwater. Storm drain outlet control measures also offer a last line of protection against sediment entering environmentally sensitive areas.

All stormwater outlets that may discharge sediment-laden stormwater flow from the construction site must be protected using the control practices depicted on the approved plan set and in accordance with the *RI SESC Handbook*.

Temporary control measures have been designed in accordance with the RI SESC Handbook. Following development completion/implementation of the permanent stormwater control measures, all stormwater will either be directed to the rain gardens, or into the existing drainage network.

Will temporary or permanent point source discharges be generated at the site as the result of construction of sediment traps or basins, diversions, and conveyance channels?

☐ Yes ☒ No

Temporary erosion control blankets may be used to promote vegetation and eliminate erosion during stabilization, if needed. During construction, drainage outfalls should include strawbales, silt fence, and/or

straw wattle to reduce the chance of sediments entering the wetlands during construction. Once all tributary areas have been stabilized these measures can be removed.

2.7 Establish Temporary Controls for the Protection of Post-Construction Stormwater Treatment Practices

Per RI Stormwater Design and Installation Standards Manual 3.3.7.8:

Temporary measures shall be installed to protect permanent or long-term stormwater control and treatment measures as they are installed and throughout the construction phase of the project so that they will function properly when they are brought online.

- Storm drain outlets shall be protected during the entire duration of the project using the following:
    1. Staked strawbales or silt fence (RI Standards 9.1.0, 9.2.0 & 9.3.0) or straw wattles

- Storm drain outlets shall be protected by using one or more of the following:
    1. Catch basin inserts such as silt sacks. Install according to manufacturer specifications.
    2. Sandbags
    3. Staked strawbales or silt fence (for unpaved areas ONLY – RI Standards 9.1.0, 9.2.0 & 9.3.0)
    4. Staked filter socks (for unpaved areas ONLY). Install according to manufacturer specifications.

Will long-term stormwater treatment practices be installed at the site?

☒ Yes ☐ No

Long term stormwater treatment practices, that will use infiltration, will be staked off throughout the construction phases. No construction vehicles shall enter these staked areas to avoid sedimentation and compaction. See the SESC Plan prepared by DiPrete Engineering for locations of these areas.

2.8 Divert or Manage Run-on from Up-gradient Areas

Per RI Stormwater Design and Installation Standards Manual 3.3.7.10:

Is stormwater from off-site areas anticipated to flow onto the project area or onto areas where soils will be disturbed?

☒ Yes ☐ No

Stormwater from off-site undisturbed areas will be swaled/diverted around the site construction as conditions warrant.

Structural control measures will be used to limit stormwater flow from coming onto the project area, and to divert and slow on-site stormwater flow that is expected to impact exposed soils for the purpose of minimizing erosion, runoff, and the discharge of pollutants from the site.

Control measures shall be installed as depicted on the approved plan set and in accordance with the *RI SESC Handbook* or the *RI Department of Transportation Standard Specifications for Road and Bridge Construction*. **Run-on and Run-off Management**				
Construction Phase #	On-site or Off-site Run-on?	Control measure	Identified on Sheet #	Detail is on Sheet #
All	Off - Site	Diversion Swale	As needed	7

2.9 Retain Sediment Onsite through Structural and Non-Structural Practices

Per RI Stormwater Design and Installation Standards Manual 3.3.7.12:

Once the erosion control measures and the run-on diversions are identified and located on the plans, the next step to site planning is sediment control and sediment management. Sediment barriers, inlet protection, construction entrances, and stockpile containment, must be integrated into the SESC Plan if applicable. Refer to the RI SESC Handbook Section Six: Sediment Control Measures for additional guidance.

Per RI Stormwater Design and Installation Standards Manual 3.3.7.9:

SEDIMENT BARRIERS must be installed along the perimeter areas of the site that will receive stormwater from disturbed areas. This also may include the use of sediment barriers along the contour of disturbed slopes to maintain sheet flow and minimize rill and gully erosion during construction. Installation and maintenance of sediment barriers must be completed in accordance with the maintenance requirements specified by the product manufacturer or the *RI SESC Handbook*.

Will sediment barriers be utilized at the toe of slopes and other downgradient areas subject to stormwater impacts and erosion during construction?

☒ Yes ☐ No

Sediment barriers will be used to protect stormwater from discharging onto adjacent properties, sensitive areas and proposed BMPs.

Will sediment barriers be utilized along the contour of slopes to maintain sheet flow and minimize rill and gully erosion during construction?

☒ Yes ☐ No

SEDIMENT BARRIERS			
Construction Phase #	Sediment Barrier Type	Sediment Barrier is Labeled on Sheet #	Details are on Sheet #
1	Silt Fence/Straw Wattle or Filtrexx Sediment Control	5	RIDOT Detail

Per RI Stormwater Design and Installation Standards Manual 3.3.7.6:

INLET PROTECTION will be utilized to prevent soil and debris from entering storm drain inlets. These measures are usually temporary and are implemented before a site is disturbed. ALL stormwater inlets &/or catch basins that are operational during construction and have the potential to receive sediment-laden

stormwater flow from the construction site must be protected using control measures outlined in the *RI SESC Handbook*.

For more information on inlet protection refer to the *RI SESC Handbook*, Inlet Protection control measure.

Maintenance

The operator must clean, or remove and replace the inlet protection measures as sediment accumulates, the filter becomes clogged, and/or as performance is compromised. Accumulated sediment adjacent to the inlet protection measures should be removed by the end of the same workday in which it is found or by the end of the following workday if removal by the same work day is not feasible.

Do inlets exist adjacent to or within the project area that require temporary protection?

☐ Yes ☒ No

CONSTRUCTION ENTRANCES will be used in conjunction with the stabilization of construction roads to reduce the amount of sediment tracking off the project. This project has avoided placing construction entrances on poorly drained soils where possible. Where poorly drained soils could not be eliminated, the detail includes subsurface drainage.

Any construction site access point must employ the control measures on the approved SESC site plans and in accordance with the *RI SESC Handbook*. Construction entrances shall be used in conjunction with the stabilization of construction roads to reduce the amount of mud picked up by construction vehicles. All construction access roads shall be constructed prior to any roadway accepting construction traffic.

The site owner and operator must:

1. Restrict vehicle use to properly designated exit points.

2. Use properly designed and constructed construction entrances at all points that exit onto paved roads so that sediment removal occurs prior to vehicle exit.

3. When and where necessary, use additional controls to remove sediment from vehicle tires prior to exit (i.e. wheel washing racks, rumble strips, and rattle plates).

4. Where sediment has been tracked out from the construction site onto the surface of off-site streets, other paved areas, and sidewalks, the deposited sediment must be removed by the end of the same work day in which the track out occurs. Track-out must be removed by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal.

Will construction entrances be utilized at the proposed construction site?

☒ Yes ☐ No

Construction entrance has been shown on the Erosion Control Plan prepared by DiPrete Engineering. Construction entrance shall be installed per RIDOT Standard 9.9.0 and maintained in accordance with the RI SESC handbook and RIDOT Standards.

STOCKPILE CONTAINMENT will be used onsite to minimize or eliminate the discharge of soil, topsoil, base material or rubble, from entering drainage systems or surface waters. All stockpiles must be located within the limit of disturbance, protected from run-on with the use of temporary sediment barriers and provided with cover or stabilization to avoid contact with precipitation and wind where and when practical.

Stockpile management consists of procedures and practices designed to minimize or eliminate the discharge of stockpiled material (soil, topsoil, base material, rubble) from entering drainage systems or surface waters.

For any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil, you must comply with the following requirements:

1. Locate piles within the designated limits of disturbance.

2. Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier.

3. Where practicable, provide cover or appropriate temporary vegetative or structural stabilization to avoid direct contact with precipitation or to minimize sediment discharge.

4. NEVER hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance, storm drain inlet, or surface water.

5. To the maximum extent practicable, contain and securely protect from wind.

STOCKPILE CONTAINMENT				
Construction Phase #	Run-on measures necessary? (yes/no)	Stabilization or Cover Type	Stockpile Containment Measure	Sheet #
All Phases	Yes	Topsoil and sub-soil piles should be covered or vegetated	Silt Fence	7

CONSTRUCTED SEDIMENT STRUCTURES

TEMPORARY SEDIMENT TRAPS

Are temporary sediment traps required at the site?

☐ Yes ☒ No

Although the site has greater than one acre of disturbance, each disturbed drainage area is less than one acre that will be exposed for less than six months. Also, each individual single-family lot construction will disturb less than one acre. The site shall be graded during construction to promote sheet flow to the sedimentation barriers and should not concentrate any stormwater to single point discharges. Temporary sediment traps are not required.

2.10 Properly Design Constructed Stormwater Conveyance Channels

Are temporary stormwater conveyance practices required in order to properly manage runoff within the proposed construction project?

☒ Yes ☐ No

Temporary swales can be utilized as necessary, in accordance with the *RI SESC Handbook*.

2.11 Erosion, Runoff, and Sediment Control Measure List

It is expected that this table and corresponding Inspection Reports will be amended as needed throughout the construction project as control measures are added or modified.

Phase No. #		
Location/Station	**Control Measure Description/Reference**	**Maintenance Requirement**
Down gradient Limit of disturbance Silt Fence	Straw Wattle/Straw Bales and/or Silt Fence Section Six: Sediment Control Measures – RI SESC Handbook.	Inspection should be made after each storm event and repair or replacement should be made promptly as needed. Cleanout of accumulated sediment behind the bales is necessary if ½ of the original height of the bales becomes filled in with sediment.
Construction Entrances	Stone Stabilized Pad. Section Six: Sediment Control Measures – Construction Entrances –RI SESC Handbook. Constriction pad per RIDOT Standard 9.9.0	The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto pave surfaces. Provide periodic top dressing with additional stone or additional length as conditions demand. Roads adjacent to entrance shall be clean at the end of each day. If maintenance alone is not enough to prevent excessive track out, increase length of entrance, modify construction access road surface, or install washrack or mudrack.
Silt Sacks	Inlet Protection, Section Six: Sediment Control Measures – Inlet Protection –RI SESC Handbook.	Install & maintain per manufacture specifications Inspect after each rain event Lift filters carefully from the drainage structure. Remove any accumulated sediment and reinsert device into drain opening. Remove all accumulated sediment and dispose of properly
Water or Calcium Chloride application for Dust Control	Dust Control, Section Three: Pollution Prevention and Good House Keeping –RI SESC Handbook.	When temporary measures are used, repetitive treatments should be applied as needed to control dust.

SECTION 3: CONSTRUCTION ACTIVITY POLLUTION PREVENTION

Per RI Stormwater Design and Installation Standards Manual 3.3.7.14:

The purpose of construction activity pollution prevention is to prevent day to day construction activities from causing pollution.

This section describes the key pollution prevention measures that must be implemented to avoid and reduce the discharge of pollutants in stormwater. Example control measures include the proper management of waste, material handling and storage, and equipment/vehicle fueling/washing/maintenance operations.

Where applicable, include *RI SESC Handbook* or the *RI Department of Transportation Standard Specifications for Road and Bridge Construction* (as amended) specifications.

3.1 Existing Data of Known Discharges from Site

Per RIPDES Construction General Permit – Part III.I:

Are there known discharges from the project area?

☐ Yes ☒ No

Describe how this determination was made:

- Existing Conditions Survey

Is there existing data on the quality of the known discharges? N/A

☐ Yes ☐ No

3.2 Prohibited Discharges

Per RI SESC Handbook – Part D

The following discharges are prohibited at the construction site:

- Contaminated groundwater, unless specifically authorized by the DEM. These types of discharges may only be authorized under a separate DEM RIPDES permit.
- Wastewater from washout of concrete, unless the discharge is contained and managed by appropriate control measures.
- Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials.
- Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance. Proper storage and spill prevention practices must be utilized at all construction sites.
- Soaps or solvents used in vehicle and equipment washing.
- Toxic or hazardous substances from a spill or other release.

All types of waste generated at the site shall be disposed of in a manner consistent with State Law and/or regulations.

Will any of the above listed prohibited discharges be generated at the site?

☐ Yes ☒ No

3.3 Proper Waste Disposal

Per RI SESC Handbook – Part D

Building materials and other construction site wastes must be properly managed and disposed of in a manner consistent with State Law and/or regulations.

- A waste collection area shall be designated on the site that does not receive a substantial amount of runoff from upland areas and does not drain directly to a waterbody or storm drain.
- All waste containers shall be covered to avoid contact with wind and precipitation.
- Waste collection shall be scheduled frequently enough to prevent containers from overfilling.
- All construction site wastes shall be collected, removed, and disposed of in accordance with applicable regulatory requirements and only at authorized disposal sites.
- Equipment and containers shall be checked for leaks, corrosion, support or foundation failure, or other signs of deterioration. Those that are found to be defective shall be immediately repaired or replaced.

Is waste disposal a significant element of the proposed project?

☒ Yes ☐ No

Building construction and general construction waste is anticipated. Before construction begins, an area within the project limits will be designated as a waste collection area. A waste collection time will be arranged so that the containers do not overflow. In the event that a container does spill, cleanup will be provided immediately. The construction waste will be collected, removed, and disposed of only at authorized disposal areas. All waste shall be disposed of in a manner consistent with federal, state and local regulations. Construction debris shall be disposed of daily to avoid exposure to precipitation.

3.4 Spill Prevention and Control

Per RI SESC Handbook – Part D

All chemicals and/or hazardous waste material must be stored properly and legally in covered areas, with containment systems constructed in or around the storage areas. Areas must be designated for materials delivery and storage. All areas where potential spills can occur and their accompanying drainage points must be described. The owner and operator must establish spill prevention and control measures to reduce the chance of spills, stop the source of spills, contain and clean-up spills, and dispose of materials contaminated by spills. The operator must establish and make highly visible location(s) for the storage of spill prevention and control equipment and provide training for personnel responsible for spill prevention and control on the construction site.

Are spill prevention and control measures required for this particular project?

☒ Yes ☐ No

- The construction site supervisor will create and adopt a spill control plan that includes measures to stop the source of the spill, contain the spill, clean up the spill, dispose of materials contaminated by the spill, and identify and train personnel responsible for spill prevention and control. The following measures will be appropriate for a spill prevention and response plan.
- Store and handle materials to prevent spills

  - Tightly seal containers.
  - Make sure all containers are clearly labeled
  - Stack containers neatly and securely
- Reduce storm water contact if there is a spill
  - Have cleanup procedures clearly posted
  - Have cleanup materials readily available
  - Contain any liquid
  - Stop the source of the spill
  - Cover spill with absorbent materials such as sawdust.
- At no time shall spills be cleaned and/or flushed down storm drains or to any environmentally sensitive area (stream, pond, wetland etc.)
- Dispose of contaminated materials according to manufacturer's instructions or according to state or local requirements.
- Equipment/vehicle fueling and repair/maintenance operations or hazardous material storage shall not take place within regulated wetlands or buffer zone area. Designated areas shall be approved by site owner and project engineer.
- Identify personnel responsible for responding to spill of toxic or hazardous materials.
  - Provide personnel spill response training
  - Post names of spill response personnel
  - Keep the spill area well ventilated
  - If necessary, use a private firm that specializes in spill cleanup
- Spills that exceed Reportable Quantity (RQ) levels or reportable materials must be reported and documented.
  - Notify the Rhode Island Department of Environmental Management (401) 222-3961, (401) 222-6519 or (401) 222-2284 at night as soon as there is knowledge of a spill.
  - Notify the permitting authority in writing within 5 days.
  - The SESC must be modified within 14-days to provide a description of the release, the circumstances leading to the release and the date of the release.
- Stone Stabilization Pad (RI Standard 9.9.0)
  - Located at construction site entrance/exit as shown on the SESC Site Plans.
  - The maintenance shall include top dressing with additional stone or additional length as conditions demand or as directed by the engineer.
  - Sediments spilled, dropped, washed or tracked on the public right of way must be removed immediately by the contractor and disposed of according to all applicable regulations.

3.5 Control of Allowable Non-Stormwater Discharges

Per RIPDES Construction General Permit – Part III.J.2.e:

Are there allowable non-Stormwater discharges present on or near the project area?

☒ Yes ☐ No

List of allowable non-stormwater discharge(s) and the associated control measure(s):

- Water for Dust Control
- Fire Hydrant / Water Main Flushing.
- Stormwater Main Flushing

If any existing or proposed discharges consist of contaminated groundwater, such discharges are not authorized under the RIPDES Construction General Permit. These discharges must be permitted separately by seeking coverage to treat and discharge under a separate RIPDES individual permit or under the RIPDES Remediation General Permit. Contact the RIDEM Office of Water Resources RIPDES Permitting Program at 401-222-4700 for application requirements and additional information.

Are there any known or proposed contaminated discharges, including anticipated contaminated dewatering operations, planned on or near the project area?

☐ Yes ☒ No

If yes, list the discharge types and the RIPDES individual permit number(s) or RIPDES Remediation General Permit Authorization number(s) associated with these discharges.

- N/A

3.6 Control Dewatering Practices

Per RI SESC Handbook – Part D

Site owners and operators are prohibited from discharging groundwater or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation, unless such waters are first effectively managed by appropriate control measures.

Examples of appropriate control measures include, but are not limited to, temporary sediment basins or sediment traps, sediment socks, dewatering tanks and bags, or filtration systems (e.g. bag or sand filters) that are designed to remove sediment. Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control.

At a minimum the following discharge requirements must be met for dewatering activities:

1. Do not discharge visible floating solids or foam.
2. To the extent feasible, utilize vegetated, upland areas of the site to infiltrate dewatering water before discharge. In no case will surface waters be considered part of the treatment area.
3. At all points where dewatering water is discharged, utilize velocity dissipation devices.
4. With filter backwash water, either haul it away for disposal or return it to the beginning of the treatment process.
5. Replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.
6. Dewatering practices must involve the implementation of appropriate control measures as applicable (i.e. containment areas for dewatering earth materials, portable sediment tanks and bags, pumping settling basins, and pump intake protection.)

Is it at all likely that the site operator will need to implement construction dewatering in order to complete the proposed project?

☒ Yes ☐ No

Dewatering may be required during deep utility construction. Any dewatering practices must comply with the RI SESC Handbook. Dewatering basins shall be used on site and comply with RIDOT Standard 9.7.0 or approved equal. Contractor to submit alternatives to project engineer for approval.

3.7 Establish Proper Building Material Staging Areas

Per RI SESC Handbook – Part D

All construction materials that have the potential to contaminate stormwater must be stored properly and legally in covered areas, with containment systems constructed in or around the storage areas. Areas must be designated for materials delivery and storage. Designated areas shall be approved by the site owner/engineer. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in the discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

- An inventory will be kept of all reportable materials and all materials with a reportable quantity on site. There will be neat and orderly storage of hazardous materials. Regular garbage, rubbish, construction waste, and sanitary waste disposal will be employed. There will be prompt cleanup of any spills, either liquid or dry materials. The following practices will be used to avoid problems associated with the disposal of hazardous materials.
- Check with local waste management authorities to determine what the requirements are for disposing of hazardous materials.
- Use the entire product before disposing of the container.
- Do not remove the original product label from the container, since it contains important information.
- If surplus products must be disposed, do not mix products together unless specifically recommended by the manufacturer.
- The correct method of disposal of hazardous materials varies with the product use. Follow the manufacturer's recommended method, which is often found on the label.

- Construction materials will consist of any or all of the following:

• Asphalt	• Detergents
• Concrete	• Fertilizers (no Phosphate based fertilizers permitted)
• Loam	• Petroleum Based Products
• Gravel for Roadway	• Cleaning Solvents
• Stone	• Wood
• Sewer Pipe	• Paints (enamel and latex)
• Drainage Pipe	• Roofing Shingles
• Water Pipe	• Masonry Block
• Gas pipe	• Sheet Rock / Gypsum Board
• Manholes	• Electrical Materials/Supplies
• Catch Basins	• Plumbing Materials/Supplies
• Catch Basin / Manhole Frames & Grates	

3.8 Minimize Dust

Per RI SESC Handbook – Part D

Dust control procedures and practices shall be used to suppress dust on a construction site during the construction process, as applicable. Precipitation, temperature, humidity, wind velocity and direction will determine amount and frequency of applications. However, the best method of controlling dust is to prevent dust production. This can best be accomplished by limiting the amount of bare soil exposed at one time. Dust Control measures outlined in the *RI SESC Handbook* shall be followed. Other dust control methods include watering, chemical application, surface roughening, wind barriers, walls, and covers.

- Dust control will be utilized throughout the entire construction process. For example, keeping disturbed surfaces moist during windy periods will be an effective control measure, especially for construction haul roads. The use of dust control will prevent the movement of soil to offsite areas. However, care must be taken to not create runoff from excessive use of water to control dust. The following are methods of Dust Control that may be used on-site:
  - Vegetative Cover - The most practical method for disturbed areas not subject to traffic.
  - Sprinkling - The site may be sprinkled until the surface is wet. Sprinkling will be effective for dust control on haul roads and other traffic routes.
  - Stone - Stone will be used to stabilize construction roads; it will also be effective for dust control.
  - Calcium Chloride – Calcium Chloride or other additive may be used with approval of Engineer.
  - The general contractor will have an on-site water vehicle to control dust.

3.9 Designate Washout Areas

Per RI SESC Handbook – Part D

At no time shall any material (concrete, paint, chemicals) be washed into storm drains, open ditches, streets, streams, wetlands, or any environmentally sensitive area. The site operator must ensure that construction waste is properly disposed of, to avoid exposure to precipitation, at the end of each working day.

Will washout areas be required for the proposed project?

☒ Yes ☐ No

- The construction site supervisor shall establish a washout area prior to construction as indicated on the SESC Plan prepared by DiPrete Engineering. This area shall not be located in or adjacent to a permanent stormwater BMP.
- Concrete trucks may be allowed to wash out or discharge surplus concrete or drum wash water in the washout area. However, this material must be disposed of in a manner that prevents contact between these materials and stormwater runoff.

3.10 Establish Proper Equipment/Vehicle Fueling and Maintenance Practices

Per RI SESC Handbook – Part D

Vehicle fueling shall not take place within regulated wetlands or buffer zone areas, or within 50-feet of the storm drain system. Designated areas shall be depicted on the SESC Site Plans, or shall be approved by the site owner.

Vehicle maintenance and washing shall occur off-site, or in designated areas depicted on the SESC Site Plans or approved of by the site owner. Maintenance or washing areas shall not be within regulated wetlands or buffer zone areas, or within 50-feet of the storm drain system. Maintenance areas shall be clearly designated, and barriers shall be used around the perimeter of the maintenance area to prevent stormwater contamination.

Construction vehicles shall be inspected frequently for leaks. Repairs shall take place immediately. Disposal of all used oil, antifreeze, solvents and other automotive-related chemicals shall be according to applicable regulations; at no time shall any material be washed down the storm drain or in to any environmentally sensitive area.

Vehicle fueling storage and maintenance should only be done in the area as shown on the SESC Plan prepared by DiPrete Engineering. Any spills should be handled per section 3.4.

3.11 Chemical Treatment for Erosion and Sediment Control

Per RI SESC Handbook – Appendix J

Chemical stabilizers, polymers, and flocculants are readily available on the market and can be easily applied to construction sites for the purposes of enhancing the control of erosion, runoff, and sedimentation. The following guidelines should be adhered to for construction sites that plan to use treatment chemicals as part of their overall erosion, runoff, and sedimentation control strategy.

The U.S. Environmental Protection Agency has conducted research into the relative toxicity of chemicals commonly used for the treatment of construction stormwater discharges. The research conducted by the EPA focused on different formulations of chitosan, a cationic compound, and both cationic and anionic polyacrylamide (PAM). In summary, the studies found significant toxicity resulting from the use of chitosan and cationic PAM in laboratory conditions, and significantly less toxicity associated with using anionic PAM. EPA's research has led to the conclusion that the use of treatment chemicals for erosion, runoff, and sedimentation control requires proper operator training and appropriate usage to avoid risk to aquatic species. In the case of cationic treatment chemicals additional safeguards may be necessary.

Application/Installation Minimum Requirements

If a site operator plans to use polymers, flocculants, or other treatment chemicals during construction the SESC plan must address the following:

1. Treatment chemicals shall not be applied directly to or within 100 feet of any surface water body, wetland, or storm drain inlet.

2. Use conventional erosion, runoff, and sedimentation controls prior to and after the application of treatment chemicals. Use conventional erosion, runoff, and sedimentation controls prior to chemical addition to ensure effective treatment. Chemicals may only be applied where treated stormwater is directed to a sediment control (e.g. temporary sediment basin, temporary sediment trap or sediment barrier) prior to discharge.

3. Sites shall be stabilized as soon as possible using conventional measures to minimize the need to use chemical treatment.

4. Select appropriate treatment chemicals. Chemicals must be selected that are appropriately suited to the types of soils likely to be exposed during construction and to the expected turbidity, pH, and flow rate of stormwater flowing into the chemical treatment system or treatment area. **Soil testing is essential. Using the wrong form of chemical treatment will result in some form of performance failure and unnecessary environmental risk.**

5. Minimize discharge risk from stored chemicals. Store all treatment chemicals in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures (e.g., spill berms, decks, spill containment pallets), or provide equivalent measures, designed and maintained to minimize the potential discharge of treatment chemicals in stormwater or by any other means (e.g., storing chemicals in covered areas or having a spill kit available on site).

6. Use chemicals in accordance with good engineering practices and specifications of the chemical provider/supplier. You must also use treatment chemicals and chemical treatment systems in accordance with good engineering practices, and with dosing specifications and sediment removal design specifications provided by the supplier of the applicable chemicals, or document specific departures from these practices or specifications and how they reflect good engineering practice.

Will chemical stabilizers, polymers, flocculants or other treatment chemicals be utilized on the proposed construction project?

☐ Yes ☒ No

3.12 Construction Activity Pollution Prevention Control Measure List

It is expected that this table will be amended as needed throughout the construction project.

Phase No. #		
Location/Station	**Control Measure Description/Reference**	**Maintenance Requirement**
Adjacent Roads	Public roads adjacent to a construction site shall be clean at the end of each day.	Street Sweep if construction site sediment is visible
Site Wide	Pick up of construction trash and debris.	All loose trash and debris must be disposed of properly at the end of each working day.
Construction Entrances	Stone Stabilized Pad. Section Six: Sediment Control Measures – Construction Entrances –RI SESC Handbook. Constriction pad per RIDOT Standard 9.9.0	The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto pave surfaces. Provide periodic top dressing with additional stone or additional length as conditions demand. Roads adjacent to entrance shall be clean at the end of each day. If maintenance alone is not enough to prevent excessive track out, increase length of entrance, modify construction access road surface, or install washrack or mudrack.
Water or Calcium Chloride application for Dust Control	Dust Control, Section Three: Pollution Prevention and Good House Keeping –RI SESC Handbook.	When temporary measures are used, repetitive treatments should be applied as needed to control dust.

SECTION 4: CONTROL MEASURE INSTALLATION, INSPECTION, and MAINTENANCE

4.1 Installation

Per RI SESC Handbook – Part D:

Complete the installation of temporary erosion, runoff, sediment, and pollution prevention control measures by the time each phase of earth-disturbance has begun. All stormwater control measures must be installed in accordance with good judgment, including applicable design and manufacturer specifications. Installation techniques and maintenance requirements may be found in manufacturer specifications and/or the *RI SESC Handbook*.

Erosion control measures shall be located per the Erosion Control Plan prepared by DiPrete Engineering.

4.2 Monitoring Weather Conditions

Per RI SESC Handbook – Part D:

Anticipating Weather Events - Care will be taken to the best of the operator's ability to avoid disturbing large areas prior to anticipated precipitation events. Weather forecasts must be routinely checked, and in the case of an expected precipitation event of over 0.25-inches over a 24-hour period, it is highly recommended that all control measures should be evaluated and maintained as necessary, prior to the weather event. In the case of an extreme weather forecast (greater than one-inch of rain over a 24-hour period), additional erosion/sediment controls may need to be installed.

Storm Event Monitoring For Inspections - At a minimum, storm events must be monitored and tracked in order to determine when post-storm event inspections must be conducted. Inspections must be conducted and documented at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event, which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff or snowmelt.

The weather gauge station and website that will be utilized to monitor weather conditions on the construction site is as follows:

Cranston Station https://www.wunderground.com/weather/us/ri/cranston/02921

4.3 Inspections

Per RI SESC Handbook – Part D:

Minimum Frequency - Each of the following areas must be inspected by or under the supervision of the owner and operator at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event, which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff or snowmelt:

a. All areas that have been cleared, graded, or excavated and where permanent stabilization has not been achieved;

b. All stormwater erosion, runoff, and sediment control measures (including pollution prevention control measures) installed at the site;

c. Construction material, unstabilized soil stockpiles, waste, borrow, or equipment storage, and maintenance areas that are covered by this permit and are exposed to precipitation;

d. All areas where stormwater typically flows within the site, including temporary drainage ways designed to divert, convey, and/or treat stormwater;

e. All points of discharge from the site;

f. All locations where temporary soil stabilization measures have been implemented;

g. All locations where vehicles enter or exit the site.

Reductions in Inspection Frequency - If earth disturbing activities are suspended due to frozen conditions, inspections may be reduced to a frequency of once per month. The owner and operator must document the beginning and ending dates of these periods in an inspection report.

Qualified Personnel – The site owner and operator are responsible for designating personnel to conduct inspections and for ensuring that the personnel who are responsible for conducting the inspections are "qualified" to do so. A "qualified person" is a person knowledgeable in the principles and practices of erosion, runoff, sediment, and pollution prevention controls, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of the permit.

Recordkeeping Requirements - All records of inspections, including records of maintenance and corrective actions must be maintained with the SESC Plan. Inspection records must include the date and time of the inspection, and the inspector's name, signature, and contact information.

General Notes

- A separate inspection report will be prepared for each inspection.
- The Inspection Reference Number shall be a combination of the RIPDES Construction General Permit No - consecutively numbered inspections. For example, Inspection Reference Number for the **4**th inspection of a project would be: RIR10####-**4**
- Each report will be signed and dated by the Inspector and must be kept onsite.
- Each report will be signed and dated by the Site Operator.
- The corrective action log contained in each inspection report must be completed, signed, and dated by the site operator once all necessary repairs have been completed.
- It is the responsibility of the site operator to maintain a copy of the SESC Plan, copies of all completed inspection reports, and amendments as part of the SESC Plan documentation at the site during construction.

Failure to make and provide documentation of inspections and corrective actions under this part constitutes a violation of your permit and enforcement actions under 46-12 of R.I. General Laws may result.

4.4 Maintenance

Per RI SESC Handbook – Part D:

Maintenance procedures for erosion and sedimentation controls and stormwater management structures/facilities are described on the SESC Site Plans and in the *RI SESC Handbook*.

Site owners and operators must ensure that all erosion, runoff, sediment, and pollution prevention controls remain in effective operating condition and are protected from activities that would reduce their effectiveness. Erosion, runoff, sedimentation, and pollution prevention control measures must be maintained throughout the course of the project.

Note: It is recommended that the site operator designates a full-time, on-site contact person responsible for working with the site owner to resolve SESC Plan-related issues.

4.5 Corrective Actions

Per RI SESC Handbook – Part D:

If, in the opinion of the designated site inspector, corrective action is required, the inspector shall note it on the inspection report and shall inform the site operator that corrective action is necessary. The site operator must make all necessary repairs whenever maintenance of any of the control measures instituted at the site is required.

In accordance with the *RI SESC Handbook*, the site operator shall initiate work to fix the problem immediately after its discovery, and complete such work by the close of the next work day, if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance.

When installation of a new control or a significant repair is needed, site owners and operators must ensure that the new or modified control measure is installed and made operational by no later than seven (7) calendar days from the time of discovery where feasible. If it is infeasible to complete the installation or repair within seven (7) calendar days, the reasons why it is infeasible must be documented in the SESC Plan along with the schedule for installing the control measures and making it operational as soon as practicable after the 7-day timeframe. Such documentation of these maintenance procedures and timeframes should be described in the inspection report in which the issue was first documented. If these actions result in changes to any of the control measures outlined in the SESC Plan, site owners and operators must also modify the SESC Plan accordingly within seven (7) calendar days of completing this work.

SECTION 5: AMENDMENTS

Per RIPDES Construction General Permit – Part III.F:

This SESC Plan is intended to be a working document. It is expected that amendments will be required throughout the active construction phase of the project. **Even if practices are installed on a site according to the approved plan, the site is only in compliance when erosion, runoff, and sedimentation are effectively controlled throughout the entire site for the entire duration of the project.**

The SESC Plan shall be amended within seven (7) days whenever there is a change in design, construction, operation, maintenance or other procedure which has a significant effect on the potential for the discharge of pollutants, or if the SESC Plan proves to be ineffective in achieving its objectives (i.e. the selected control measures are not effective in controlling erosion or sedimentation).

In addition, the SESC Plan shall be amended to identify any new operator that will implement a component of the SESC Plan.

All revisions must be recorded in the Record of Amendments Log Sheet, which is contained in Attachment G of this SESC Plan, and dated red-lined drawings and/or a detailed written description must be appended to the SESC Plan. Inspection Forms must be revised to reflect all amendments. Update the Revision Date and the Version # in the footer of the Report to reflect amendments made.

All SESC Plan Amendments, except minor non-technical revisions, must be approved by the site owner and operator. Any amendments to control measures that involve the practice of engineering must be reviewed, signed, and stamped by a Professional Engineer registered in the State of RI.

The amended SESC plan must be kept on file at the site while construction is ongoing and any modifications must be documented.

Attach a copy of the Amendment Log.

SECTION 6: RECORDKEEPING

RIPDES Construction General Permit – Parts III.D, III.G, III.J.3.b.iii, & V.O

It is the site owner and site operator's responsibility to have the following documents available at the construction site and immediately available for RIDEM review upon request:

- A copy of the fully signed and dated SESC Plan, which includes:
    - A copy of the General Location Map
      INCLUDED AS ATTACHMENT A
    - A copy of all SESC Site Plans
      INCLUDED AS ATTACHMENT B
    - A copy of the RIPDES Construction General Permit
      INCLUDED AS ATTACHMENT C
    - A copy of any regulatory permits (RIDEM Freshwater Wetlands Permit, CRMC Assent, RIDEM Water Quality Certification, RIDEM Groundwater Discharge Permit, RIDEM RIPDES Construction General Permit authorization letter, etc.)
      INCLUDED AS ATTACHMENT D
    - The signed and certified NOI form or permit application form
    - Completed Inspection Reports w/Completed Corrective Action Logs
      INCLUDED AS ATTACHMENT F
    - SESC Plan Amendment Log
      INCLUDED AS ATTACHMENT G

SECTION 7: PARTY CERTIFICATIONS

RIPDES Construction General Permit – Part V.G

All parties working at the project site are required to comply with the Soil Erosion and Sediment Control Plan (SESC Plan including SESC Site Plans) for any work that is performed on-site. The site owner, site operator, contractors and sub-contractors are encouraged to advise all employees working on this project of the requirements of the SESC Plan. A copy of the SESC Plan is available for your review at the following location: Construction Trailer, or may be obtained by contacting the site owner or site operator.

The site owner and site operator and each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement.

I acknowledge that I have read and understand the terms and conditions of the Soil Erosion and Sediment Control (SESC) Plan for the above designated project and agree to follow the control measures described in the SESC Plan and SESC Site Plans.

Site Owner:

Removed by Planning Department for Security Puposes

_____
signature/date

Site Operator:
Insert Company or Organization Name
Insert Name & Title
Insert Address
Insert City, State, Zip Code
Insert Telephone Number, Insert Fax/Email

_____
signature/date

Designated Site Inspector:
Insert Company or Organization Name
Insert Name & Title
Insert Address
Insert City, State, Zip Code
Insert Telephone Number, Insert Fax/Email

_____
signature/date

SubContractor SESC Plan Contact:
Insert Company or Organization Name
Insert Name & Title
Insert Address
Insert City, State, Zip Code
Insert Telephone Number, Insert Fax/Email

_____
signature/date

LIST OF ATTACHMENTS

Attachment A - General Location Map

Attachment B - SESC Site Plans

Attachment C - Copy of RIPDES Construction General Permit and Authorization to Discharge

Attachment D - Copy of Other Regulatory Permits

Attachment E - Copy of RIPDES NOI

Attachment F - Inspection Reports w/ Corrective Action Log

Attachment G - SESC Plan Amendment Log

Attachment H – Temporary Swales Calculations

Attachment A - General Location Map

(See latest plan set prepared by DiPrete Engineering)

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SESC Plan
Inspection Report Instructions

For all projects subject to the requirements of the *RI Stormwater Design and Installation Standards Manual* or the *RIPDES Construction General Permit* the site owner and operator are required to develop and comply with a site specific Soil Erosion and Sediment Control Plan (SESC Plan) in order to remain in compliance with applicable regulations.

This inspection report template has been provided by RIDEM for use by the site operator and designated inspector to document the adequacy and condition of erosion, runoff, sediment, and pollution prevention control measures specified for use on the construction site. It should be customized for your specific site conditions and consistent with the SESC Plan developed for your site.

Using the Inspection Report

This inspection report is designed to be customized according to the control measures and conditions at the site. On a copy of the applicable SESC Site Plans, number or label all stormwater control measures and areas of the site that will be inspected. Include all control measures (temporary traps, basins, inlet protection measures, etc.) and areas that will be inspected. Also, identify all point source discharges/outfalls, and the priority natural resource areas (i.e. streams, wetlands, mature trees, etc). List each control measure or area to be inspected separately in the site-specific control measure section of the inspection report.

Complete any items that will remain constant, such as the project information and control measure locations and descriptions. Then, print out multiple copies of this customized inspection report to use during the inspections.

When conducting the inspection, walk the site by following the SESC Site Plans and numbered control measure locations for inspection. Also note whether the overall site issues have been addressed. Customize this list according to the conditions at the site.

Minimum Monitoring and Reporting Requirements

Your site must be inspected by or under the supervision of the owner and operator at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff. Read Section 4.2 of your SESC Plan for more information regarding the importance of monitoring weather conditions.

General Notes

- A separate inspection report will be prepared for each inspection.

Revision Date: May 1, 2015

- The Inspection Reference Number shall be a combination of the RIPDES Permit Authorization Number - consecutively numbered inspections. For example: Inspection reference number for the **4**th inspection of a project would be: RIR101000-**4**

- Each report will be signed and dated by the inspector and forwarded to the site operator within 24 hours of the inspection.

- Each report will be signed and dated by the site operator upon his/her receipt and after completion of all required corrective actions.

- It is the responsibility of the site operator to maintain a copy of the SESC Plan, copies of all completed inspection reports, and amendments as part of the SESC Plan documentation at the site during construction.

Corrective Actions

If the SESC Plan Inspection determines that corrective actions are necessary to install or repair control measures, the resultant actions taken must be documented by the site operator. The actions must be recorded in the Corrective Action Log attached to each SESC Plan inspection form. If the site operator disagrees with the corrective action recommendations, it must be documented, with justifiable reasons, in the Corrective Action Log, as well. **Required timeframes for corrective actions are established by regulation and are discussed in Section 4.5 of your SESC Plan.**

Amendments

All SESC Plan Amendments, except minor non-technical revisions, must be approved by the site owner and site operator. The revision must be recorded in the Record of Amendments Log Sheet within the SESC Plan, and dated red-line drawings and/or a detailed written description of the revision must be appended to the SESC Plan. Inspection forms must be revised to reflect all amendments. Update the *Revision Date* and the *Version* # in the footer of the report to reflect amendments made.

The SESC Plan shall be amended whenever there is a change in design, construction, operation, maintenance or other procedure, which has a significant effect on the potential for the discharge of pollutants, or if the SESC Plan proves to be ineffective in achieving its objectives.

******Remember that the regulations are performance-oriented. Even if all control measures are installed on a site according to the SESC Plan, the site is only in compliance when erosion, runoff, sedimentation, and pollution are effectively controlled. ******

SESC Plan Inspection Report

Project Information			
Name			
Location			
DEM Permit No.			
Site Owner	**Name**	**Phone**	**Email**
Site Operator	**Name**	**Phone**	**Email**

Inspection Information			
Inspector Name	**Name**	**Phone**	**Email**
Inspection Date		**Start/End Time**	

Inspection Type
❑ **Weekly** ❑ **Pre-storm event** ❑ **During storm event** ❑ **Post-storm event** ❑ **Other**

Weather Information
Last Rain Event **Date:** **Duration (hrs):** **Approximate Rainfall (in):**
Rain Gauge Location & Source:
Weather at time of this inspection:

Check statement that applies then sign and date below:

☐ **I, as the designated Inspector, certify that this site has been inspected as required by regulation and I have determined that maintenance and corrective actions are not required at this time.**

☐ **I, as the designated Inspector, certify that this site has been inspected as required by regulation and I have made the determination that the site requires corrective actions. The required corrective actions are noted within this inspection report.**

	Print Name	**Signature**	**Date**
Inspector:			

The Site Operator acknowledges by his/her signature, the receipt of this SESC Plan inspection report and its findings. He/she acknowledges that all recommended corrective actions must be completed and documentation of all such corrective actions must be made in this inspection report per applicable regulations.

	Print Name	**Signature**	**Date**
Operator:			

Site-specific Control Measures

Number the structural and non-structural stormwater control measures identified in the SESC Plan and on the SESC Site Plans and list them below (add as necessary). Bring a copy of this inspection form and any applicable SESC Site Plans with you during your inspections. This list will assist you to inspect all control measures at your site.
FILL THIS TABLE USING THE SESC PLAN TABLES 2.11 & 3.12.

	Location/Station	Control Measure Description	Installed & Operating Properly?	Assoc. Photo/ Figure #	Corrective Action Needed (Yes or No; if 'Yes', please detail action required)
1	Example 1: Eastern Parcel – Slope No. 4 Adjacent to I-95. Straw Wattles	Straw Wattle. Section Six, Sediment Control Measures, Straw Wattles, Compost Tubes and Fiber Rolls - *RI SESC Handbook*.	❑Yes ❑No		
2	Example 2: Western Parcel – Green Street Construction Entrance	Stone Stabilized Pad. Section Six: Sediment Control Measures – Construction Entrances –*RI SESC Handbook*.	❑Yes ❑No		
3	Example 3: Hospital Main Footings – Excavation Area – SESC Site Plan Sheet No. 3.	Pump Intake Protection Using Stone Filled Sump with Standpipe. Section Six: Sediment Control Measures, Pump Intake Protection, *RI SESC Handbook.*	❑Yes ❑No		
4	Example 4: Bridge Abutment Construction Southbound Bridge Abutment, Bridge No. 244 – SESC Site Plan Sheet No. 18.	Prefabricated Concrete Washout Container with Ramp. Used to contain concrete washout during concrete pouring operations. Section Three: Pollution Prevention and Good Housekeeping, Concrete Washouts, *RI SESC Handbook*.	❑Yes ❑No		
5	INSERT TEXT	INSERT TEXT	❑Yes ❑No		
6	**Attention Operator:**	**You must modify this inspection form as the project progresses, control measure locations change, and amendments to the SESC Plan are instituted in the field.**	❑Yes ❑No		
7			❑Yes ❑No		
8			❑Yes ❑No		

	Location/Station	Control Measure Description	Installed & Operating Properly?	Assoc. Photo/ Figure #	Corrective Action Needed (Yes or No; if 'Yes', please detail action required)
9			❑Yes ❑No		
10			❑Yes ❑No		
11			❑Yes ❑No		
12			❑Yes ❑No		
13			❑Yes ❑No		
14			❑Yes ❑No		
15			❑Yes ❑No		
16			❑Yes ❑No		
17			❑Yes ❑No		
18			❑Yes ❑No		
19			❑Yes ❑No		
20			❑Yes ❑No		
21			❑Yes ❑No		
22			❑Yes ❑No		
23			❑Yes ❑No		
24			❑Yes ❑No		

	Location/Station	Control Measure Description	Installed & Operating Properly?	Assoc. Photo/ Figure #	Corrective Action Needed (Yes or No; if 'Yes', please detail action required)
25			❑Yes ❑No		
26			❑Yes ❑No		
27			❑Yes ❑No		
28			❑Yes ❑No		
29			❑Yes ❑No		
30			❑Yes ❑No		

(add more as necessary)

General Site Issues

*Below are some general site issues that should be assessed during inspections. Please **customize** this list as needed for conditions at the site.*

	Compliance Question		**Assoc. Photo/ Figure #**	**Corrective Action Needed (If 'Yes', please detail action required and include location/station)**
1	Have all control measures been installed as specified in the RISESC Handbook and prior to any earth disturbing activities?	❑Yes ❑No ❑ N/A		
2	Are appropriate limits of disturbance (LOD) established?	❑Yes ❑No ❑ N/A		
3	Are controls that limit runoff from exposed soils by diverting, retaining, or detaining flows (such as check dams, sediment basins, etc.) in place?	❑Yes ❑No ❑ N/A		
4	Are all temporary conveyance practices installed correctly and functioning as designed?	❑Yes ❑No ❑ N/A		
5	Has maintenance been performed as required to ensure continued proper function of all temporary conveyances practices?	❑Yes ❑No ❑ N/A		
6	Were all exposed soils seeded by October 15th?	❑Yes ❑No ❑ N/A		
7	Have soils been stabilized where earth disturbance activities have permanently or temporarily ceased on any portion of the site and will not resume for more than 14 days?	❑Yes ❑No ❑ N/A		
8	In instances where adequate vegetative stabilization was not established by November 15th, have non-vegetative erosion control measures must be employed?	❑Yes ❑No ❑ N/A		
9	If work is to continue from October 15th through April 15th, are steps taken to ensure that only the day's work area will be exposed and all erodible soil is stabilized within 5 working days?	❑Yes ❑No ❑ N/A		
10	Have inlet protection measures (such as fabric drop inlet protection, curb drop inlet protection, etc.) been properly installed?	❑Yes ❑No ❑ N/A		
11	Has the operator cleaned and maintained inlet protection measures when needed?	❑Yes ❑No ❑ N/A		
12	Has the operator removed accumulated sediment adjacent to inlet protection measures within 24 hours of detection?	❑Yes ❑No ❑ N/A		

	Compliance Question		**Assoc. Photo/ Figure #**	**Corrective Action Needed (If 'Yes', please detail action required and include location/station)**
13	Has the operator properly installed outlet protection (such as riprap, turf mats, etc.) at all temporary and permanent discharge points?	❑Yes ❑No ❑ N/A		
14	Are all outlet protection measures functioning properly in order to reduce discharge velocity, promote infiltration, and eliminate scour?	❑Yes ❑No ❑ N/A		
15	Have all discharge points been inspected to ensure the prevention of scouring and channel erosion?	❑Yes ❑No ❑ N/A		
16	Have sediment controls been installed along perimeter areas that will receive stormwater from earth disturbing activities?	❑Yes ❑No ❑ N/A		
17	Is the operator maintaining sediment controls in accordance with the requirements in the *RI SESC Handbook*?	❑Yes ❑No ❑ N/A		
18	Have temporary sediment barriers been installed around permanent infiltration areas (such as bioretention areas, infiltration basins, etc.)?	❑Yes ❑No ❑ N/A		
19	Have staging areas and equipment routing been implemented to avoid compaction where permanent infiltration areas will be located?	❑Yes ❑No ❑ N/A		
20	Are surface outlet structures (such as skimmers, siphons, etc.) installed for each temporary sediment basin? [Exception: frozen conditions]	❑Yes ❑No ❑ N/A		
21	Have all temporary sediment basins or traps been inspected and maintained as required to ensure proper function?	❑Yes ❑No ❑ N/A		
22	Does the project include the use of polymers, flocculants, or other chemicals to control erosion, sedimentation, or runoff from the site?	❑Yes ❑No ❑ N/A		
23	Are all chemicals being managed in accordance with Appendix J of the *RISESC Handbook* and current best management practices?	❑Yes ❑No ❑ N/A		
24	Has the site operator taken steps to **prohibit** the following pollutant discharges on the site?			
a	Contaminated groundwater.	❑Yes ❑No ❑ N/A		

	Compliance Question		**Assoc. Photo/ Figure #**	**Corrective Action Needed (If 'Yes', please detail action required and include location/station)**
b	Wastewater from washout of concrete; unless properly contained, managed, and disposed of.	❑Yes ❑No ❑ N/A		
c	Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction products.	❑Yes ❑No ❑ N/A		
d	Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.	❑Yes ❑No ❑ N/A		
e	Soaps or solvents used in vehicle and equipment washing.	❑Yes ❑No ❑ N/A		
f	Toxic or hazardous substances from a spill or other release.	❑Yes ❑No ❑ N/A		
25	Is the operator using properly constructed entrances/exits to the site so sediment removal occurs prior to vehicles exiting?	❑Yes ❑No ❑ N/A		
26	If needed, are additional controls (such as rumble strips, rattle plates, etc.) in place to remove sediment from tires prior to exiting?	❑Yes ❑No ❑ N/A		
27	Is sediment track-out being removed by the end of the same workday in which it occurs (via sweeping, shoveling, or vacuuming)?	❑Yes ❑No ❑ N/A		
28	Are all wastes generated at the site being managed and properly disposed of by the end of each workday?	❑Yes ❑No ❑ N/A		
29	Are all chemicals and hazardous waste materials stored properly in covered areas and surrounded by containment control systems?	❑Yes ❑No ❑ N/A		
30	Has the operator established highly visible locations for the storage of spill prevention and control equipment on the construction site?	❑Yes ❑No ❑ N/A		
31	Are allowable non-stormwater discharges being managed properly with adequate controls?	❑Yes ❑No ❑ N/A		
32	Is the site operator properly managing groundwater or stormwater that is removed from excavations, trenches, or similar points of accumulation?	❑Yes ❑No ❑ N/A		
33	Are proper procedures and controls in place for the storage of materials that may discharge pollutants if	❑Yes ❑No ❑ N/A		

	Compliance Question		**Assoc. Photo/ Figure #**	**Corrective Action Needed (If 'Yes', please detail action required and include location/station)**
	exposed to stormwater?			
	Are stockpiles located within the limits of disturbance?	❑Yes ❑No ❑ N/A		
	Are stockpiles being protected from contact with stormwater using a temporary sediment barrier?	❑Yes ❑No ❑ N/A		
	Where needed, has cover or appropriate temporary vegetative or structural stabilization been utilized for stockpiles?	❑Yes ❑No ❑ N/A		
	Is the operator effectively managing the generation of dust through the use of water, chemicals, or minimization of exposed soil?	❑Yes ❑No ❑ N/A		
	Are designated washout areas (such as wheel washing stations, washout for concrete, paint, stucco, etc.) clearly marked on the site?	❑Yes ❑No ❑ N/A		
	Are vehicle fueling and maintenance areas properly located to prevent pollutants from impacting stormwater and sensitive receptors?	❑Yes ❑No ❑ N/A		
	(Other)			

(add more as necessary)

General Field Comments:

Photos:

(Associated photos – each photo should be dated and have a unique identification # and written description indicating where it is located within the project area. If a close up photo is required, it should be preceded with a photo including both the detail area and some type of visible fixed reference point. Photos should be annotated with Station numbers and other identifying information where needed.)

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

(add more as necessary)

Corrective Action Log

TO BE FILLED OUT BY SITE OPERATOR

Describe repair, replacement, and maintenance of control measures, actions taken, date completed, and note the person that completed the work.

	Location/Station	Corrective Action	Date Completed	Person Responsible
Operator Signature:			**Date:**	

Attachment G - SESC Plan Amendment Log

PROJECT:

Amendment Log

TO BE FILLED OUT BY SITE OPERATOR

Describe amendment(s) to be made to the SESC Plan, the date, and the person/title making the amendment. ALL amendments must be approved by the Site Owner.

#	Date	Description of Amendment	Amended by: Person/Title	Site Owner Must Initial
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Add more lines/pages as necessary

Attachment H - Temporary Swales Calculations

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 13S: Watershed 1 Runoff Area=0.617 ac 0.00% Impervious Runoff Depth=2.12"
Tc=6.0 min CN=72 Runoff=1.52 cfs 0.109 af

Subcatchment 15S: Watershed 2 Runoff Area=0.383 ac 0.00% Impervious Runoff Depth=2.12"
Tc=6.0 min CN=72 Runoff=0.94 cfs 0.068 af

Reach 14R: Temp Swale 1 Avg. Flow Depth=0.48' Max Vel=2.14 fps Inflow=1.52 cfs 0.109 af
n=0.030 L=194.0' S=0.0134 '/' Capacity=10.46 cfs Outflow=1.48 cfs 0.109 af

Reach 17R: Temp Swale 2 Avg. Flow Depth=0.43' Max Vel=1.65 fps Inflow=0.94 cfs 0.068 af
n=0.030 L=125.0' S=0.0092 '/' Capacity=8.67 cfs Outflow=0.92 cfs 0.068 af

Summary for Subcatchment 13S: Watershed 1

Runoff = 1.52 cfs @ 12.09 hrs, Volume= 0.109 af, Depth= 2.12"
Routed to Reach 14R : Temp Swale 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.90"

Area (ac)	CN	Description
0.249	70	Woods, Good, HSG C
0.368	74	>75% Grass cover, Good, HSG C
0.617	72	Weighted Average
0.617		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 15S: Watershed 2

Runoff = 0.94 cfs @ 12.09 hrs, Volume= 0.068 af, Depth= 2.12"
Routed to Reach 17R : Temp Swale 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.90"

Area (ac)	CN	Description
0.198	70	Woods, Good, HSG C
0.185	74	>75% Grass cover, Good, HSG C
0.383	72	Weighted Average
0.383		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

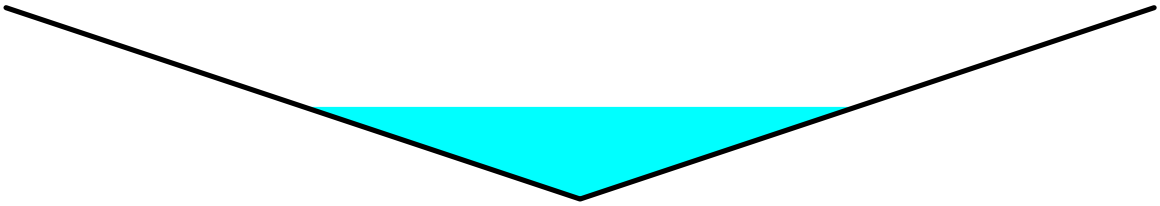
Summary for Reach 14R: Temp Swale 1

Inflow Area = 0.617 ac, 0.00% Impervious, Inflow Depth = 2.12" for 10-Year event
Inflow = 1.52 cfs @ 12.09 hrs, Volume= 0.109 af
Outflow = 1.48 cfs @ 12.11 hrs, Volume= 0.109 af, Atten= 3%, Lag= 1.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.14 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 0.88 fps, Avg. Travel Time= 3.7 min

Peak Storage= 134 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.48' , Surface Width= 2.88'
Bank-Full Depth= 1.00' Flow Area= 3.0 sf, Capacity= 10.46 cfs

0.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 6.00'
Length= 194.0' Slope= 0.0134 '/'
Inlet Invert= 337.27', Outlet Invert= 334.67'



Summary for Reach 17R: Temp Swale 2

Inflow Area = 0.383 ac, 0.00% Impervious, Inflow Depth = 2.12" for 10-Year event
Inflow = 0.94 cfs @ 12.09 hrs, Volume= 0.068 af
Outflow = 0.92 cfs @ 12.11 hrs, Volume= 0.068 af, Atten= 2%, Lag= 1.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.65 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 0.69 fps, Avg. Travel Time= 3.0 min

Peak Storage= 70 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.43' , Surface Width= 2.59'
Bank-Full Depth= 1.00' Flow Area= 3.0 sf, Capacity= 8.67 cfs

0.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 6.00'
Length= 125.0' Slope= 0.0092 '/'
Inlet Invert= 337.27', Outlet Invert= 336.12'

