

DRAFT Soil Erosion and Sediment Control Plan

For:

South Quay Marine Terminal

649 Waterfront Drive

East Providence, RI

Parcel ID 007/01/003/00

Owner:

RI Waterfront Enterprises, LLC

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Pawtucket, RI 02860

T +1 508 965 3342

melissa@riwaterfrontevents.com

Operator:

*TO BE DETERMINED UPON
CONTRACT AWARD*

Company Name

Name

Address

City, State, Zip Code

Telephone Number

Email Address

Estimated Project Dates:

Start Date: December 2021

Completion Date: June 2023

SESC Plan Prepared By:

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Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

**SESC Plan
Preparation Date:** May 2021

**SESC Plan Revision
Date:**

OPERATOR CERTIFICATION

Upon contract award, the OPERATOR must sign this certification statement before construction may begin.

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: Name

Contractor Title: Title

Contractor Company Name: Company Name (if applicable)

Address: Mailing Address

Phone Number: Phone Number

Email Address: Email

TABLE OF CONTENTS

OPERATOR CERTIFICATION.....	iii
TABLE OF CONTENTS	iv
INTRODUCTION.....	1
ADDITIONAL RESOURCES	2
SECTION 1: SITE DESCRIPTION	2
1.1 Project/Site Information.....	2
1.3 Natural Heritage Area Information	4
1.4 Historic Preservation/Cultural Resources	4
SECTION 2: EROSION, RUNOFF, AND SEDIMENT CONTROL.....	4
2.1 Avoid and Protect Sensitive Areas and Natural Features	5
2.2 Minimize Area of Disturbance	6
2.3 Minimize the Disturbance of Steep Slopes	9
2.4 Preserve Topsoil.....	9
2.5 Stabilize Soils	10
2.6 Protect Storm Drain Outlets.....	11
2.7 Establish Temporary Controls for the Protection of Post-Construction Stormwater Treatment Practices	12
2.8 Divert or Manage Run-on from Up-gradient Areas	13
2.9 Retain Sediment Onsite through Structural and Non-Structural Practices	14
2.10 Properly Design Constructed Stormwater Conveyance Channels.....	22
2.11 Erosion, Runoff, and Sediment Control Measure List	22
SECTION 3: CONSTRUCTION ACTIVITY POLLUTION PREVENTION	25
3.1 Existing Data of Known Discharges from Site.....	25
3.2 Prohibited Discharges.....	25
3.3 Proper Waste Disposal	26
3.4 Spill Prevention and Control	27
3.5 Control of Allowable Non-Stormwater Discharges	30
3.6 Control Dewatering Practices	31
3.7 Establish Proper Building Material Staging Areas.....	32
3.8 Minimize Dust	32
3.9 Designate Washout Areas	32
3.10 Establish Proper Equipment/Vehicle Fueling and Maintenance Practices	33
3.11 Chemical Treatment for Erosion and Sediment Control.....	33
3.12 Construction Activity Pollution Prevention Control Measure List.....	35
<i>Insert a new table for each additional construction phase.....</i>	<i>36</i>
SECTION 4: CONTROL MEASURE INSTALLATION, INSPECTION, and MAINTENANCE	36
4.1 Installation.....	36
4.2 Monitoring Weather Conditions.....	36
Providence, Theodore Francis Green State Airport (KPVD).....	37
4.3 Inspections.....	37
4.4 Maintenance	38
4.5 Corrective Actions.....	38
SECTION 5: AMENDMENTS	39

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

SECTION 6: RECORDKEEPING..... 39
SECTION 7: PARTY CERTIFICATIONS..... 40
LIST OF ATTACHMENTS..... 42

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

INTRODUCTION

This Construction Site Soil Erosion and Sediment Control Plan (SESC Plan) has been prepared for RI Waterfront Enterprises, LLC for the South Quay Marine Terminal. 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.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

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.ri.gov/pubs/regs/regs/water/swmanual15.pdf>

RI Soil Erosion and Sediment Control Handbook <http://www.dem.ri.gov/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.ri.gov/programs/water/permits/ripdes/stormwater/coordinated-stormwater-permitting.php>
RIDEM RIPDES Stormwater website
<http://www.dem.ri.gov/programs/water/permits/ripdes/stormwater/>
RIDEM Water Quality website (for 303(d) and TMDL listings)
<http://www.dem.ri.gov/programs/water/quality/>

RIDEM Rhode Island Natural Heritage Program <mailto:plan@dem.ri.gov>

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

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

Note:

The *Soil Survey of Rhode Island*, issued in 1980 is no longer available or supported. More information on site-specific soil data and maps for Rhode Island is available from the Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture through the Web Soil Survey. This information is available online at: <http://websoilsurvey.nrcs.usda.gov>.

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>.

SECTION 1: SITE DESCRIPTION

1.1 Project/Site Information

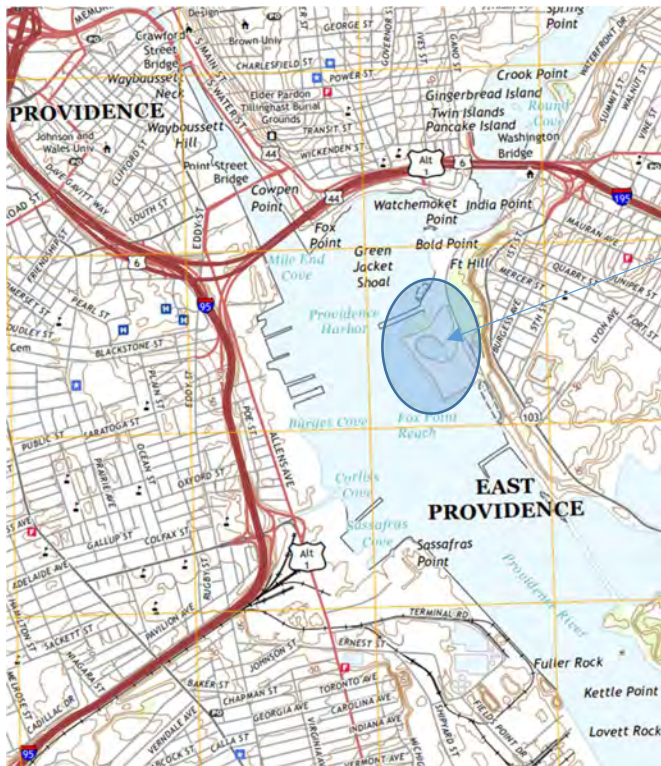
Project/Site Name: South Quay Marine Terminal

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

- The subject property is the 30+ acre South Quay site located along the east bank of the Providence River in East Providence, RI. The physical address is 649 Waterfront Drive.
- The South Quay project in Rhode Island will create a modern intermodal, state of the art, high capacity, high flexibility port that will be specially prepared to handle multiple types of cargo, including bulk, break bulk, container, heavy oversized, and the immense size and weights of equipment and components used for the growing offshore wind market. The SQMT is designed as a state-of-the-art port facility with access to deep water and high ground-bearing strength quay sides and uplands as required by the OSW industry. One of the primary goals of the project is to serve coaster vessels delivering heavy cargo consisting of large OSW components (e.g., foundation elements, towers, nacelles, blades, etc.).

Project Street/Location:

- 649 Waterfront Drive, East Providence, RI



Site Locus

Provide construction site estimates of the total area of the site and the total area of the site that is expected to undergo soil disturbance.

The following are estimates of the construction site area:

- Total Project Area 31.25 acres
- Total Project Area to be Disturbed 30.1 acres

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

1.3 Natural Heritage Area Information

RIPDES CGP - Part III.H

Each project authorized under the RIPDES Construction General Permit must determine if the site is within or directly discharges to a Natural Heritage Area (NHA). DEM Natural Heritage Areas include known occurrences of state and federal rare, threatened and endangered species. Review RIDEM NHA maps to determine if there are natural heritage areas on or near the construction site that may be impacted during construction. (See also the RIDEM Notice of Intent instructions which can be found at the following link:

<http://www.dem.ri.gov/programs/benviron/water/permits/swcoord/pdf/maptutor.pdf>

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

If yes, describe or refer to documentation which determines the likelihood of an impact on this area and the steps that will be taken to address any impacts.

- Not Applicable

1.4 Historic Preservation/Cultural Resources

The National Historic Preservation Act, and any state, local, and tribal historic preservation laws apply to construction activities. As with endangered species, some permits may specifically require you to assess the potential impact of your stormwater discharges on historic properties. However, whether or not this is stated as a condition for permit coverage, the National Historic Preservation Act and any applicable state or tribal laws apply to you. Contact the Rhode Island Historic Preservation Officer (<http://www.preservation.ri.gov/>) or your Tribal Historic Preservation Officer (http://grants.cr.nps.gov/THPO_Review/index.cfm) for more information.

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:

- Search of RI Historical Commission Database

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.

- N/A

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.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

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 1.6 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.

*Constraints are identified to ensure a comprehensive understanding of the project and surrounding areas. The first goal in the low impact development (LID) site planning and design process is to avoid disturbance of natural features. This includes identification and preservation of natural areas that can be used in the protection of water resources. It is important to understand that minimizing the hydrologic alteration of a site is just as important as stormwater treatment for resource protection. Therefore, describe all site features and sensitive resources that exist at the site such as, view barriers,, steep slopes (>15%)that if disturbed will require additional erosion controls, areas with the potential to receive run-on from off-site areas, wetlands, surface waters, and their riparian buffers, specimen trees, natural vegetation, forest areas, stream crossings, historic properties, historic cemeteries or cultural resources that are to be preserved. **This includes those site features that should be avoided within the designated limits of disturbance.** These areas are often identified on a constraints map or in a separate constraints report. For additional discussion on this topic refer to Appendix F. Site Constraint Map of the RI SESC Handbook.*

Note:

The *Soil Survey of Rhode Island*, issued in 1980 is no longer available or supported. More information on site-specific soil data and maps for Rhode Island is available from the Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture through the Web Soil Survey. This information is available online at: <http://websoilsurvey.nrcs.usda.gov>.

Describe and illustrate on SESC Site Plans Sensitive Areas and Natural Features and how each will be protected during construction activity. Examples of areas to be protected include vegetated buffers, forests, stands of trees on the perimeter and within the site, large diameter trees, areas designated for infiltration (QPAs), bioretention, rain gardens, and OWTS leachfields. Protection for stands of trees and individual trees to be preserved must be specified and such protection must comply with the RI SESC Handbook and extend to the drip line.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

*Describe and illustrate on SESC Site Plans based on Constraints Map, the areas that will be disturbed with each phase of construction and the control measures (signs, fences, etc.) that will be used to protect those areas that should not be disturbed. **This includes marking for limits of disturbance at the perimeter and areas within the limits of disturbance.** Acceptable measures include but are not limited to construction fencing (plastic mesh, snow fence, chain link fence etc.) appropriate for the site, boundary markers using construction tape, flagged stakes, etc. for low density use, sediment barriers such as silt fence, compost socks with flagging where also required for sediment control, and signage. The narrative portion of the plan and SESC Site Plans must highlight measures to prevent soil compaction in areas designated as Qualified Pervious Areas (QPAs) and infiltration practices to protect infiltration capacity.*

Feature Requiring Protection	Construction Phase #	Method of Protection	Sheet #
Northern Salt Marsh	1	Flagging, Posts, Fencing	ESC-1
Southern Salt Marsh	2	Flagging Posts, Fencing	ESC-1
Insert Text	Insert Text	Insert Text	Insert Text
Insert Text	Insert Text	Insert Text	Insert Text

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

If yes, phasing must be utilized at this site.

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

Yes No

If yes, phasing is not required as long as all other performance criteria will be met and phasing is not necessary to protect sensitive or highly vulnerable areas.

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

Yes No

If yes, and phasing is required, describe phasing plan as prompted below.

Phasing will be performed to the maximum extent possible with the first area being centered around the entrance to the site along the northern edge to the bulkhead area. The second phase of work will be performed along the bulkhead area. Then another phase will be the remaining interior of the site. It is likely and required that more than 5 acres will be disturbed at once, as the nature of filling the 30 site to achieve uniform bearing capacity strength will require uniform filling and compaction.

If No, provide substantive reasons why this was determined to be infeasible.

Insert Text Here

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

PHASING PLAN

For each phase of the construction project, provide site estimates of the total area of the project phase, and the total area of the project phase that is expected to undergo soil disturbance.

The following are estimates of each phase of the construction project:

(Copy and paste this section for projects with multiple phases)

Phase No. or Identifier	1
Total Area of Phase	12 acres
Area to be Disturbed	11 acres

Description of Construction Sequencing for Phase 1

Phase 1 will include an area of disturbance from the site entrance on Waterfront Drive, up along the northern edge of the site to and along the proposed bulkhead area along the entire western face of the embankment.

Erosion controls shall be set in place prior to the earthwork beginning and they shall be inspected by the Owner's engineer. All control measures shown on the ESC drawings of the plan set shall be implemented to protect the site and the resources.

As the site will have shallow sloped grades, we don't anticipate a risk of high runoff rates, however the site will be graded into itself and away from the bordering resources and graded towards the temporary sedimentation basins.

The areas that are disturbed will likely remain disturbed continually, however if there are areas disturbed that are not used for more than 14 days, then those areas will be stabilized using erosion control blankets or other non-vegetation stabilization measures. Non vegetative stabilization measures are preferred as they will prevent organic matter from gathering into the soil substrate, which will have a negative impact on the proposed fully developed use on the site, which requires heavy bearing capacity.

The contractor shall review stabilization measures and practices on a daily basis and the Owner's engineer will conduct a weekly documented inspection of the site and highlight any measures or areas that need to be addressed. These inspections will also occur after any rainfall event of 0.5" or greater.

Phase No. or Identifier	2
Total Area of Phase	10 acres
Area to be Disturbed	10 acres

Description of Construction Sequencing for Phase 2

Phase 2 will include an area of disturbance along the southern perimeter of the site, from the western face to the eastern end near the continuation of Waterfront Drive.

Erosion controls shall be set in place prior to the earthwork beginning and they shall be inspected by the Owner's engineer. All control measures shown on the ESC drawings of the plan set shall be implemented to protect the site and the resources.

As the site will have shallow sloped grades, we don't anticipate a risk of high runoff rates, however the site will be graded into itself and away from the bordering resources and graded towards the temporary sedimentation basins.

The areas that are disturbed will likely remain disturbed continually, however if there are areas disturbed that are not used for more than 14 days, then those areas will be stabilized using erosion control blankets or other non-vegetation stabilization measures. Non vegetative stabilization measures are preferred as they

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

will prevent organic matter from gathering into the soil substrate, which will have a negative impact on the proposed fully developed use on the site, which requires heavy bearing capacity.

The contractor shall review stabilization measures and practices on a daily basis and the Owner's engineer will conduct a weekly documented inspection of the site and highlight any measures or areas that need to be addressed. These inspections will also occur after any rainfall event of 0.5" or greater.

Phase No. or Identifier	3
Total Area of Phase	10 acres
Area to be Disturbed	10 acres

Description of Construction Sequencing for Phase 3

Phase 3 will include an area of disturbance for the remaining interior of the site.

Erosion controls shall be set in place prior to the earthwork beginning and they shall be inspected by the Owner's engineer. All control measures shown on the ESC drawings of the plan set shall be implemented to protect the site and the resources.

As the site will have shallow sloped grades, we don't anticipate a risk of high runoff rates, however the site will be graded into itself and away from the bordering resources and graded towards the temporary sedimentation basins.

The areas that are disturbed will likely remain disturbed continually, however if there are areas disturbed that are not used for more than 14 days, then those areas will be stabilized using erosion control blankets or other non-vegetation stabilization measures. Non vegetative stabilization measures are preferred as they will prevent organic matter from gathering into the soil substrate, which will have a negative impact on the proposed fully developed use on the site, which requires heavy bearing capacity.

The contractor shall review stabilization measures and practices on a daily basis and the Owner's engineer will conduct a weekly documented inspection of the site and highlight any measures or areas that need to be addressed. These inspections will also occur after any rainfall event of 0.5" or greater.

Final stabilization will occur at the end of Phase 3. This will include the placement of the upper layer of dense graded aggregate, compacted in place, with an average land slope of 0.005 ft/ft. Once the site has achieved final grade, the infiltration trenches can be excavated in and the piping and crushed stone placed, allowing for the discharge of the stormwater.

Proper sequencing of construction activities is essential to maximize the effectiveness of erosion, runoff, and sediment control measures. Construction sequencing of construction activities for each phase must address the following elements:

- 1. Installation of control measures identifying limits of disturbance and areas internal to the site that require protection before start of land disturbance.*
- 2. Installation of all erosion, runoff, and sediment controls and temporary pollution prevention measures that are required to be in place and functional before any earthwork begins. This shall be done in accordance with the RI SESC Handbook and/or the RI Department of Transportation Standard Specifications for Road and Bridge Construction (as amended). Upon acceptable completion of site preparation and installation of erosion, runoff, and sediment controls and temporary pollution prevention measures, site construction activities may commence.*

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

3. *The phasing plan shall address the use of phasing to manage and limit increases in runoff rates and volumes during construction. Designated phases and timing of construction should also address the impacts to important or sensitive habitats.*
4. *Upon commencement of site construction activities, the operator shall initiate appropriate stabilization practices 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. Such temporary or permanent soil stabilization measures must be installed prior to initiating land disturbance in subsequent phases.*
5. *Routine inspection and maintenance and/or modification of erosion, runoff, and sediment controls and temporary pollution prevention measures while earthwork is ongoing is required.*
6. *Final site stabilization of any disturbed areas after earthwork has been completed and removal of temporary erosion, runoff, and sediment controls and temporary pollution prevention measures.*
7. *Activation of post-construction stormwater treatment conveyances and practices.*

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

If yes, steep slopes must be identified on SESC Site Plans.

If yes, also list the specific control measures that will be used to control surface runoff and reduce erosion potential on steep slopes during construction including references to SESC Site Plans where the locations of such control measures are shown. Examples include limiting the number of steep slopes that are disturbed at one time, implementing land grading techniques such as reverse slope benches, diversions, stair steps, and terraced landforms, installation of retaining walls for stabilization of challenging slopes, prevention of soil movement, and slope protection, applying materials for temporary and permanent protection of slopes to prevent erosion such as stone aggregates, rip-rap, erosion control blankets, appropriate spacing of sediment barriers as a function of barrier size, slope, and slope length, geotextile, cellular confinement systems, mattresses (gabions and others), and articulating blocks.

Steep slopes exist along the edges of the embankment. The existing slopes are secured in place with rip rap stone and concrete block. The slopes that exist along the southern and northern edges of the site will remain in place and not be touched. The slope that exists along the western edge of the site will be altered to construct the site, however they will be protected and measures will be implemented to keep the slope from eroding into the Providence River.

In order to construct the bulkhead, the rip rap stone and concrete block armoring of the embankment will need to be removed in order to install the sheet pile bulkhead. These work will be phased and the armoring will be removed only in advance of driving the sheets and not more than 14 days prior to the start of the sheet pile work.

2.4 Preserve Topsoil

Per RI Stormwater Design and Installation Standards Manual 3.3.7.4:

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

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

If Yes, describe how topsoil will be preserved at the site by describing the techniques that will be implemented to achieve appropriate depths of topsoil (4 inch minimum) and identify the locations where topsoil will be restored on SESC Site Plans.

Insert Text Here and references to SESC Site Plan Sheet Numbers

If No, provide substantive reasons why this was determined to be infeasible.

The site was created with backfill of dredge spoils, so no topsoil exists on site. Furthermore, the site requires several acres of filling with dense graded aggregate and it will need to be heavily compacted.

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*.

Identify the methods that will be used to restore and amend topsoil at the site. Include references to plan notes and SESC Site Plan sheet numbers where this information is made available for the site operator.

Topsoil will not be amended and restored on site, the terminal is being designed for industrial uses and requires a heavily compacted granular wearing surface to allow for free range of use for cranes and storage.

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

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

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).

Describe controls (i.e., temporary seeding with native vegetation, hydroseeding, mulching, application of rolled erosion control products, etc.) including design specifications and details that will be implemented to stabilize exposed soils where construction activities have temporarily or permanently ceased.

Temporary Vegetative Control Measures

- Vegetative Control Measures will not be used due to the lack of organic matter that will be used on site and the final cover of granular material.

Temporary Non-Vegetative Control Measures

- Non-vegetative control measures will include minimize the use of soil stockpiles, (not necessitated by site operations), surrounding stockpiles with silt fence and erosion controls, and when needed covering stockpiles with poly sheeting anchored down and secured.
- No steep slope disturbance should occur outside of the western face and therefore no specific steep slope erosion controls should occur.

Permanent Vegetative Control Measures

- No permanent vegetative controls will be required as a result of the industrial nature of the property.

Permanent Non-Vegetative Control Measures

- The permanent control measures that will be applied to this site include:
 1. The use of shallow slopes , 0.005 ft/ft
 2. Heavy roller compaction of granular material
 3. Maintaining slope armoring on northern and southern ends of the site.

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*.

Describe controls, including design specifications and details, which will be implemented to protect outlets discharging stormwater from the project.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

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

If Yes, describe the method(s) of outlet protection specified for each instance where a point source discharge will be generated. In addition, specifically reference SESC Site Plan Sheet Numbers which identify where the outlets will be constructed at the site and the corresponding control measures that will be utilized for their protection including any associated specifications required for their installation and maintenance.

There will likely be temporary de-watering or stormwater basins constructed during the buildout phase. The basins will be appropriately sized to provide sufficient retention time for the anticipated stormflow volumes to allow sediment to settle out prior to discharge. Any point source discharge shall be monitored by the Owner's engineer for Turbidity .

Groundwater dewatering, if necessary, may be conducted by pumping through a frac tank or geo-bag that is appropriately sized to reduce the level of suspended solids in the water.

If No, discuss rationale for not including these elements in the SESC Plan.

Insert text

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.

Examples of temporary control measures that can be used to protect permanent stormwater control measures include: establishing temporary sediment barriers around infiltrating practices, ensuring proper material staging areas and equipment routing (i.e. do not allow construction equipment to compact areas where infiltrating practices will be installed), and by conducting final cleaning of structural long term practices after construction is completed.

List and describe all post-construction stormwater treatment practices that will be installed during the construction process. Next, outline how these measures will be protected during the construction phase of the project to ensure that they will function appropriately once they are brought online.

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

Yes No

If Yes, describe the specific long-term stormwater treatment practices that will require protection from sedimentation and compaction. In addition, specifically reference SESC Site Plan Sheet Numbers which identify the location of these practices and the corresponding control measures that will be utilized for their protection including any associated specifications required for their installation and maintenance.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

The Site will be kept permeable and the stormwater will be managed through crushed stone infiltration trenches that contain a perforated underdrain pipe. The trenches will be lined with a geotextile fabric to prevent movement of smaller grained material into the trenches. The upper elevations of the crushed stone infiltration trenches can be removed and replaced if they become laden with sediment.

If No, discuss rationale for not including these elements in the SESC Plan.

Insert text

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

If Yes, describe the specific runoff control measures (i.e., check dams, water bars, diversions, perimeter dikes, lined waterways, vegetated waterways, temporary line channels, sediment barriers, pipe slope drains, etc.) that will be utilized at the site including references to the SESC Site Plan Sheet Numbers, design specifications and details. See the RI SESC Handbook, Section Five: Runoff Control Measures for additional guidance.

Pre-Construction and Construction sub-watershed maps are included for each phase in this SESC Plan submittal.

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 <i>RI SESC Handbook</i> or the <i>RI Department of Transportation Standard Specifications for Road and Bridge Construction</i> . Run-on and Run-off Management				
Construction Phase #	On-site or Off-site Run-on?	Control measure	Identified on Sheet #	Detail(s) is/are on Sheet #
1	Off - Site	Lined Waterway	3	11 of 12
Insert Text	Insert Text	Insert Text		Insert Text
Insert Text	Insert Text	Insert Text		Insert Text
Insert Text	Insert Text	Insert Text		Insert Text

If No, discuss rationale for not including these elements in the SESC Plan.

The site already sits several feet above the surrounding properties and it is being raised an additional five feet in elevation. Therefore, run-on coming from off-site onto the property is very unlikely.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

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, stockpile containment, temporary sediment traps, and temporary sediment basins 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

If Yes, Describe the rationale for selecting control measures to serve as sediment barriers at the toe of slopes and other down gradient areas subject to stormwater impacts during construction. Describe the specific sediment barriers that will be used at the site in the table provided.

If No, discuss rationale for not including these elements in the SESC Plan.

Sediment barriers, in the form of straw wattles will be placed around the downgradient perimeter of the site. The straw wattles will be staked into place and backed up by a silt fence. These barriers shall be inspected every two weeks and after any rainfall event of .5 inches or more. Accumulated sediment and debris noted during those inspections shall be removed within 48 hours.

Describe rationale for whether or sediment barriers are required at regular intervals along slopes in order to minimize the creation of concentrated flow paths (i.e. rilling, gully erosion) and to encourage sheet flow. Keep in mind that sediment barriers can be placed at the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow. The description of the selected control measures must focus on sediment barrier spacing as a function of slope length and steepness. Refer to the RI SESC Handbook, Section Six: Sediment Control Measure, Straw Wattles, Compost Tubes, and Fiber Rolls Control Measure for additional information on acceptable spacing distances.

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

Yes No

If Yes, list the specific sediment barriers that will be used at the site in the table provided. Describe the rationale for the locations and spacing frequency selected by the designer based on slope length and

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

steepness. For additional guidance refer to the RI SESC Handbook or sediment barrier manufacturer's specifications.

SEDIMENT BARRIERS			
Construction Phase #	Sediment Barrier Type	Sediment Barrier is Labeled on Sheet #	Detail is on Sheet #
1	20 inch dia. Fiber roll	5 of 12	11 of 12
Insert Text	Insert Text	Insert Text	Insert Text
Insert Text	Insert Text	Insert Text	Insert Text
Insert Text	Insert Text	Insert Text	Insert Text

If No, discuss rationale for not including these elements in the SESC Plan.

The site is going to be graded at a very shallow slope, 0.005 ft/ft. This flattened slope will minimize runoff velocities, thereby minimizing erosive tendencies of the soil. Furthermore, the site will be actively fill and compacted, so the sediment barrier would need to be continually removed and replaced.

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 work day in which it is found or by the end of the following work day if removal by the same work day is not feasible.

Describe controls, including design specifications and details, which will be implemented to protect all inlets receiving stormwater from the project during the entire duration of the project. For more information on inlet protection refer to the RI SESC Handbook Inlet Protection control measure.

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

Yes No

If Yes, describe the method(s) of inlet protection, including maintenance requirements and complete the table provided.

The following lists the proposed storm drain inlet types selected from Section Six of the *RI SESC Handbook*. Each row is unique for each phase and inlet protection type.

INLET PROTECTION			
Construction Phase #	Inlet Protection Type	Inlet Protection is labeled on Sheet #	Detail(s) is/are on Sheet #
1	Fabric Drop , Curb Drop	3 of 12	11 of 12
Insert Text	Insert Text	Insert Text	Insert Text
Insert Text	Insert Text	Insert Text	Insert Text

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

Insert Text	Insert Text	Insert Text	Insert Text
-------------	-------------	-------------	-------------

If No, discuss rationale for not including these elements in the SESC Plan.

The existing site is a permeable site, created with dredge spoils and there were no stormwater controls or inlet structures implemented during its creation. The site more or less drains into itself or discharges via overland flow into the Providence River.

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

If Yes, indicate location(s) of vehicle entrance(s) and exit(s), and stabilization practices used to prevent sediment from being tracked off-site in the table provided. See also RI SESC Handbook, Section Six, Construction Entrances Measure.

CONSTRUCTION ENTRANCE			
Construction Phase #	Soil Type at the Entrance	Entrance is located on Sheet #	Detail is on Sheet #
1	Crushed angular stone	ESC-1	D-3
2	Crushed angular stone	ESC-1	D-3
3	Crushed angular stone	ESC-1	D-3
Insert Text	Insert Text	Insert Text	Insert Text

If No, discuss rationale.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

Insert text

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.

Stock pile 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.

Describe materials expected to be stockpiled or stored on-site and procedures for storage of materials to minimize exposure of the materials to stormwater and to eliminate the discharge of stockpiled material from entering drainage systems and surface waters. Refer to the RI SESC Handbook, Stockpile and Staging Area Management Control Measure for additional guidance. Complete the table provided.

STOCKPILE CONTAINMENT				
Construction Phase #	Run-on measures necessary? (yes/no)	Stabilization or Cover Type	Stockpile Containment Measure	Sheet #
1	No	Poly	Silt fence/wattle	ESC-1
2	No	Poly	Silt fence/wattle	ESC-1
3	No	Poly	Silt fence/wattle	ESC-1
Insert Text	Insert Text	Insert Text	Insert Text	Insert Text

CONSTRUCTED SEDIMENT STRUCTURES

If each common drainage location receives water from an area with less than one (1) acre disturbed at a time, this section can be deleted and no sediment traps or basins are required. However, it is important to remember that there is still a requirement to retain sediment on-site. Therefore, if it is in the best professional judgment of the designer, that there is a condition or circumstance which may require structural controls (per Section 3.3.7.13 of the RI Stormwater Design and Installation Standards Manual), this section can be used.

TEMPORARY SEDIMENT TRAPS will be utilized onsite. There will be no disturbed drainage areas greater than one acre that will be exposed for longer than six months. Design and sizing calculations in accordance

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

with the *RI SESC Handbook*, Section Six are found in the appendix of this SESC Plan. A summary of the calculations are provided below:

For Disturbed Areas 1 to 5 Acres – Those areas with a common drainage location that serves an area between one (1) and five (5) acres disturbed at one time, a temporary sediment trap must be provided where attainable and where the sediment trap is only intended to be used for a period of six (6) months or less. For longer term projects with a common drainage location that serves between one (1) and five (5) acres disturbed at one time, a temporary sediment basin must be provided where attainable. Temporary sediment trapping practices must be designed in accordance with the RI SESC Handbook and must be sized to have a total storage volume capable of storing one (1) inch of runoff from the contributing area or one hundred and thirty four (134) cubic yards per acre of drainage area. A minimum of fifty percent (50%) of the total volume shall be storage below the outlet (wet storage). See RISDISM 3.3.7.12 for requirements and RI SESC Handbook, Section Six: Temporary Sediment Traps Measure for design details.

Are temporary sediment traps required at the site?

Yes No

If Yes, complete the table provided. If an area greater than one acre will be exposed for longer than 6 months and a sediment trap is proposed, explain why the sediment basin was not attainable.

SEDIMENT TRAPS				
Construction Phase #	Exposed Area (acres)	Trap #	Sheet #	Detail found on Sheet#
1	11	1	ESC	D
2	10	2	ESC	D
3	10	3	ESC	D
Insert Text	Insert Text	Insert Text	Insert Text	Insert Text

Trap #	Wet Storage Volume (cu.ft)	Dry Storage Volume (cu.ft.)	Cleanout Depth (ft)	Provide Reference to Location of Supporting Design and Sizing Calculations
1	850	1650	2	See spreadsheet
2	765	1500	2	See spreadsheet
3	765	1500	2	See spreadsheet
Insert Text	Insert Text	Insert Text	Insert Text	Insert Text

All traps will be functional and installed prior to disturbance in the contributing drainage area. Access for sediment removal is provided on the plans with cleanout depth requirements. The removed sediment will be utilized onsite or disposed of properly off-site.

If No, discuss rationale.

Insert text

TEMPORARY SEDIMENT BASIN(S) will be utilized onsite. Every effort must be made to prevent erosion and control it near the source.

If the following criterion does not apply to your proposed construction project, then this section may be eliminated from the plan.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

For Disturbed Areas of 1 to 5 Acres – Those areas with a common drainage location that serves an area between one (1) and five (5) acres disturbed at one time for longer than six (6) months.

For Disturbed Areas > 5 Acres – Those areas with a common drainage location that serves an area with greater than five (5) acres disturbed at one time, a temporary (or permanent) sediment basin must be provided where attainable until final stabilization of the site is complete. Temporary sediment basins must be designed in accordance with the RI SESC Handbook. The volume of wet storage shall be at least twice the sediment storage volume and shall have a minimum depth of two (2) feet. Sediment storage volume must accommodate a minimum of one year of predicted sediment load as calculated using the sediment volume formula in the RI SESC Handbook. In addition to sediment storage volume and wet storage volume, the sediment basin shall provide adequate residence storage volume to provide a minimum 10 hours residence time for a ten (10) -year frequency, twenty four (24) hour duration, Type III distribution storm. To the maximum extent practicable, outlet structures must be utilized that withdraw water from the surface of temporary sedimentation basins for the purpose of minimizing the discharge of pollutants. Exceptions may include periods of extended cold weather, where alternative outlets are required during frozen periods. If such a device is infeasible for portions of or the entire construction period justification must be made in the SESC Plan. Describe the reasons sediment basins are required for this project. They may include physical conditions, land ownership, construction operations etc. For design details see RI SESC Handbook Section Six: Temporary Sediment Basins Measure.

Are temporary sediment basins required at the site?

Yes No

If No, discuss rationale.

Insert text

If Yes, complete the table provided.

There will be disturbed areas greater than 5 acres and/or disturbed areas greater than one acre but exposed for longer than six months. The basins have been located to intercept runoff only from disturbed areas and minimize interference with other construction activities and construction of utilities. They have been located outside of any natural buffers. The dam height is less than six feet and holds less than fifteen (15) acre-ft.

Modeling, Design and Sizing calculations in accordance with the *RI SESC Handbook*, Section Six are found in ___the Appendix of this A___ of this SESC Plan. The designs were also prepared to satisfy Section 3.3.7.13 of the Stormwater Manual and will control Temporary Increases in Stormwater Velocity, Volume, and Peak Flows.

The temporary sediment basins were designed to provide sedimentation controls to the site. Full compliance with the sediment basin sizing requirements is not feasible, as it would require over 1/3 of the site. This is not feasible as the site will be graded at a very shallow slope, 0.005 ft/ft, reducing the velocity of runoff and therefore the potential to carry sediment in the runoff. Furthermore, the sedimentation basins are designed to not discharge offsite, so runoff of a large volume even if not contained in the sedimentation basin, will pool and remain on-site, effectively meeting the spirit of the regulation.

A summary of the assumptions and calculations are provided below:

TEMPORARY SEDIMENT BASINS				
Construction Phase #	Exposed Area (acres)	Basin #	Sheet #	Detail found on Sheet#
1	11	1	ESC-1	D-4
2	10	2	ESC-1	D-4

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

3	10	3	ESC-1	D-4
Insert Text	Insert Text	Insert Text	Insert Text	Insert Text

Provide the following tables for each temporary sediment basin. Each basin shall be designed to contain sediment and runoff from the 10-year Type III distribution storm.

SEDIMENT BASIN #1					
Pre-Development					
Pre-Construction Cover Type	Contributing Area (acres)	Soil Type	Curve Number	Tc (minutes)	10- Year Type III (cfs, at time t, acre feet)
Gravel	11	B	85	16	30.95
Total Pre-Construction Volume (cuft):					30.95
During Construction					
Construction Cover Type	Contributing Area	Erosion Rates	Curve Number	Tc (minutes)	10-Year Type III (cfs, at time t, acre feet)
Granular Gravel	11	50	76	42.4	15.06
Total Runoff Volume During Construction (cuft):					15.06
Basin #1					
Pre-Construction Peak Discharge (cfs)	Wet Storage Volume (cuft)	Sediment Storage Volume (cuft)	Residence Storage Volume (cuft)	Outlet Max Discharge Rate (cfs)	Emergency Spillway Discharge Capacity (cfs)
30.95	14807	43420	51440	6.55	15.06 cfs

SEDIMENT BASIN #2					
Pre-Development					
Pre-Construction Cover Type	Contributing Area (acres)	Soil Type	Curve Number	Tc (minutes)	10- Year Type III (cfs, at time t, acre feet)
Gravel	10	B	85	11	32.11
Total Pre-Construction Volume (cuft):					32.11
During Construction					
Construction Cover Type	Contributing Area	Erosion Rates	Curve Number	Tc (minutes)	10-Year Type III (cfs, at time t, acre feet)

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

Granular Gravel	10	50	76	42.4	13.69
Total Runoff Volume During Construction (cuft):					13.69
Basin #2					
Pre-Construction Peak Discharge (cfs)	Wet Storage Volume (cuft)	Sediment Storage Volume (cuft)	Residence Storage Volume (cuft)	Outlet Max Discharge Rate (cfs)	Emergency Spillway Discharge Capacity (cfs)
32.11	58089	170340	207496	6.55	13.69

SEDIMENT BASIN #3 Pre-Development					
Pre-Construction Cover Type	Contributing Area (acres)	Soil Type	Curve Number	Tc (minutes)	10- Year Type III (cfs, at time t, acre feet)
Gravel	10	B	85	11	32.11
Total Pre-Construction Volume (cuft):					32.11
During Construction					
Construction Cover Type	Contributing Area	Erosion Rates	Curve Number	Tc (minutes)	10-Year Type III (cfs, at time t, acre feet)
Granular Gravel	10	50	76	42.4	13.69
Total Runoff Volume During Construction (cuft):					13.69
Basin #3					
Pre-Construction Peak Discharge (cfs)	Wet Storage Volume (cuft)	Sediment Storage Volume (cuft)	Residence Storage Volume (cuft)	Outlet Max Discharge Rate (cfs)	Emergency Spillway Discharge Capacity (cfs)
32.11	25058	73480	86648	6.55	13.69

As noted above, the function and the need for these temporary sediment basins is not truly applicable to this project. While large areas of the site may be disturbed, the areas will be actively used and filled. Most importantly with respect to erosion and fill, the geotechnical design of the site requires that as materials are placed on the site, they are heavy compacted in place in shallow lifts as they are put down. Furthermore the function and need for the basins is reduced as the site is graded at such a shallow grade of 0.005 ft/ft.

The site will be raised evenly and continually as fill material is brought in and placed on site. Therefore the continual activity will leave very little "disturbed" area that would be vulnerable to erosion and sedimentation issues. These sedimentation basins may appear undersized based on the prescriptive manner from the guide book, however the reality of their implementation, based on previous experience, will show that there is more than sufficient capacity to control erosion and sedimentation that may occur on site.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

All sediment basins will be functional and installed prior to disturbance in the contributing drainage area. Access for sediment removal is provided on the plans with cleanout depth specifications. The removed sediment will be utilized onsite or properly disposed of off-site.

The outlets for each basin described above will actually function as hydraulic connection between the basins, so that one may support the other. Given that the basins will prevent downstream and therefore offsite runoff, the overflow will occur by backing up and flooding the site, creating residual temporary storage to prevent overflow.

2.10 Properly Design Constructed Stormwater Conveyance Channels

Conveyances are required to be designed for inlets to temporary sediment basins. The construction site planner must use best professional judgment to determine if additional conveyance design is required for run-on control or in any other location where velocity control is required.

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

Yes No

If Yes, describe the specific control measures that will be used at the site. Provide or attach design calculations associated with each proposed conveyance measure, demonstrating that each one is designed and sized to handle the peak flow from a 10-year, 24-hour, Type III design storm. Note where within the site plans each specified conveyance is depicted, including specifications and construction details.

The site will use crushed stone lined conveyance channels to transport runoff from disturbed areas to the temporary sedimentation basins. The channels will be underlain by a geotextile fabric.

The conveyance will be maintained as depicted on SESC Site Plans and in accordance with the *RI SESC Handbook* and if applicable.

If No, discuss rationale for not including conveyance measures in the SESC Plan.

Insert text

2.11 Erosion, Runoff, and Sediment Control Measure List

Complete the following table for each Phase of construction where Erosion, Runoff, and Sediment Control Measures are located. This table is to be used as part of the SESC Plan Inspection Report – please fill out accordingly.

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. #1		
Location/Station	Control Measure Description/Reference	Maintenance Requirement
Northern Perimeter of Work Area	Straw wattles and silt fence combination	Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

		Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.
Waterfront Drive Construction Entrance	Stone Stabilized Pad.	<p>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.</p> <p>Roads adjacent to entrance shall be clean at the end of each day.</p> <p>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.</p>
Southern end of Phase 1	Conveyance channel	<p>Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed.</p> <p>Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.</p>
Eastern end of Phase 1	Temporary Sedimentation Basin	<p>Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed.</p> <p>Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.</p>

Phase No. #2		
Location/Station	Control Measure Description/Reference	Maintenance Requirement
Southern Perimeter of Work Area	Straw wattles and silt fence combination	<p>Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed.</p> <p>Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.</p>

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

Southern end of Phase 2	Conveyance channel	<p>Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed.</p> <p>Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.</p>
Eastern end of Phase 2	Temporary Sedimentation Basin	<p>Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed.</p> <p>Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.</p>

Phase No. #3		
Location/Station	Control Measure Description/Reference	Maintenance Requirement
Eastern Perimeter of Work Area	Straw wattles and silt fence combination	<p>Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed.</p> <p>Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.</p>
Northern end of Phase 1	Conveyance channel	<p>Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed.</p> <p>Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.</p>
Eastern end of Phase 3	Temporary Sedimentation Basin	<p>Inspection should be made after each storm event or 1/week and repair or replacement should be made promptly as needed.</p> <p>Cleanout of accumulated sediment behind the wattle if sediment accumulates to at least ½ the distance between the top of wattle and ground surface.</p>

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:

List and provide existing data (if available) on the quality of any known discharges from the site. Examples include discharges from existing stormwater collection systems, discharges from industrial areas of the site, etc.

Are there known discharges from the project area?

Yes No

Describe how this determination was made:

- It is an un-used unimproved site.

If yes, list discharges and locations:

- INSERT TEXT HERE

Is there existing data on the quality of the known discharges?

Yes No

If yes, provide data:

- INSERT TEXT HERE

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.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

- 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

If Yes, provide a list of those that will be generated at the site and provide a discussion of how they will be managed, including references to the specific SESC Site Plans where such control measures are specified.

Pollutant-Generating Activity	Pollutants or Pollutant Constituents (that could be discharged if exposed to stormwater)	Location on Site (or reference SWPPP site map where this is shown)
Fuel	Diesel/Gasoline	Approved Storage container no closer than 100' from wetlands
Equipment Maintenance	Hydraulic Oil, Grease, Oil	Approved Storage container no closer than 100' from wetlands
Site grading and excavation	Fugitive Dust	In areas of disturbance
Solid Waste	Solid waste	Use appropriate containers placed on level impervious surface
Concrete/Mortar cleaning	Cement, mortar	For foundations and building construction

Insert text and references to SESC Site Plan Sheet Numbers here.

If No, discuss rationale.

Insert text

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.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

- 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 overflowing.
- 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

If Yes, identify potential building materials and other construction wastes and document how these wastes will be properly managed and disposed of at the construction site (i.e., trash disposal, sanitary wastes, recycling, and proper material handling). Include references to the specific SESC Site Plans where such control measures are specified.

- Insert text and references to SESC Site Plan Sheet Numbers here.

If No, discuss rationale.

The project is mostly site work and there are limited building materials. Building materials to be used includes steel for the bulkhead, steel reinforcing bars, concrete for the relieving platform and electrical trenches, and then piping and conduit. The rest of the building materials will be fill with natural earthen materials. There are no significant hazardous building products that will be used as part of this project.

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

If Yes, describe all areas where potential spills can occur, and their accompanying drainage points, and describe the spill prevention and control plan to reduce the chance of spills, stop the source of spills, contain and clean up spills, dispose of materials contaminated by spills, and train personnel responsible for spill prevention and control. Provide the method of establishing and making highly visible the location(s) for the storage of spill prevention equipment. Refer to the RI SESC Handbook, Spill Prevention and Control Plan for guidance.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

Oil containing materials are likely to be present in small quantities on site. When materials are transported on site using a forklift or heavy equipment, either a drum attachment is used or containers are strapped to pallets on the forklift to prevent the containers from falling during movement. If a barrel dolly is used, the operator will ensure that the barrel is compatible with the dolly and that the barrel is properly secured to the dolly. The following outlines delivery and transport procedures for small containers:

1. Containers are checked for damaged areas or signs of corrosion. If any is detected, the container contents are transferred to an appropriate container and labeled prior to moving.
2. Contractor's personnel ensure that containers are closed prior to moving.
3. Containers are secured on forks or pallets when using a forklift or heavy machinery or properly secured when using a dolly to prevent containers from falling during movement.

Discovery of a Release

The person discovering a release of material from a container, tank, or operating equipment should initiate certain actions immediately. These actions include the following:

First ensuring that no danger to human health exists, attempt to stop the release at its source. Simple procedures (turning valves, plugging leaks, etc.) may be attempted by the discoverer if there is no health or safety hazard and there is a reasonable certainty of the origin of the leak. All efforts to control leaks must be under the supervision of an appointed supervisor.

Extinguish any sources of ignition. Until the material is identified as nonflammable and noncombustible, all potential sources of ignition in the area should be removed. Vehicles should be turned off. If the ignition source is stationary, and cannot be extinguished, attempt to direct the spilled material away from the ignition source. Avoid sparks and movement creating static electricity.

Initiate spill notification and reporting procedures. Report the incident immediately to the Site Supervisor. If there is an immediate threat to human life (e.g., a fire in progress or fumes overcoming workers), an immediate alarm should be sounded to evacuate the building and the local Fire Department should be called. Request the assistance of a hazardous materials response contractor if an uncontrollable spill has occurred and/or if the spill has migrated beyond the site boundaries.

Containment of a Release

If a release should occur, all regulated oil at the facility can be safely contained within secondary containment structures or otherwise diverted to be retained onsite without impact to surface water if a release occurs. However, if material is released outside the containment areas, it is critical that the material is accurately identified and appropriate control measures are taken in the safest possible manner. Immediate containment measures can include the following:

Attempt to stop the release at the source. If the source of the release has not been found; if special protective equipment is necessary to approach the release area; or if assistance is required to stop the release, the local Fire Department and an emergency spill contractor should be called to halt the discharge at its source. Contractor personnel should be available to guide the Fire Department's efforts.

Contain the material released into the environment. Following proper safety procedures, the spill should be contained by absorbent materials and dikes using shovels and brooms.

Continue the notification procedures. Obtain assistance from a hazardous material contractor if necessary. The hazardous material contractor will be called for assistance if the spill exceeds 10 gallons, or if the Site Supervisor determines that outside help is necessary or desirable.

Soil Erosion and Sediment Control Plan South Quay Marine Terminal

Spill Cleanup

Cleanup of spills of more than 10 gallons of oil will be conducted by a hazardous material contractor. The MCP requires responsible parties to retain a Licensed Site Professional (LSP) to direct cleanup activities for all spills which are reportable under the MCP. The LSP should be contacted as soon as possible after the spill occurs so that they can direct and observe cleanup activities and ensure compliance with the applicable regulations.

Cleanup of spills less than 10 gallons of oil may be conducted by the Contractor's personnel using the following procedures, or may be cleaned up by an outside contractor, as determined by the Site Supervisor. Appropriate personal protective equipment and cleanup procedures can be found on material safety data sheets. Care must be taken when cleaning up spills to minimize the quantity waste generated, which is regulated as a hazardous waste by MassDEP.

Keep material separated from water if possible. An important facet of an effective response procedure during an oil or petroleum product release incident is to keep the material separated from water to minimize migration and the resulting potential increase in human and environmental exposure. Every effort should be made to prevent spills and emphasize substance containment at the source rather than resort to separation of the material from expanded portions of the environment or downstream waters.

Recover or cleanup the material spilled. As much material as possible should be recovered and reused where appropriate. Material that cannot be reused must be declared waste. Liquids absorbed by solid materials shall be shoveled into an open top, 55-gallon drum. When a drum is filled after a cleanup, the drum lid shall be secured and the drum shall be appropriately labeled identifying the substance(s) (i.e., Waste Oil), the hazard of the material (i.e. ignitable), the date of the spill/cleanup, and the location of the spill.

Do not mix non-compatible materials. Note that combining non-compatible materials can cause potentially dangerous chemical and/or physical reactions or may severely limit disposal options. Compatibility information can be found on material safety data sheets.

Cleanup of the spill area. Surfaces that are contaminated by the release shall be cleaned up by using an appropriate cleaner or water. Cleanup water must be minimized, contained, and properly disposed. Occasionally, porous materials (such as wood, soil, or oil-dry) may be contaminated; such materials will require special handling for disposal.

Decontaminate tools and equipment used in cleanup. Even if dedicated to cleanup efforts, tools and equipment that have been used must be decontaminated before replacing them in the spill control kit. Tools which can't be decontaminated should be disposed of properly and replaced.

Post Cleanup Procedures

Notification and reports to outside agencies. The Site Supervisor shall determine if a reportable spill has occurred. A spill over 10 gallons of oil or other appropriate RQ in Massachusetts is a reportable spill under the MCP (See Section 6.2 for further information). Notifications to Fire Departments, MassDEP, the National Response Center, the EPA Regional Office, and internal contacts shall be executed if necessary.

Arrange for proper disposal of any waste material. The waste materials from the cleanup must be characterized. Representative sampling and analysis may be necessary to make this determination. In any case, the Site Supervisor shall assure that the waste is transported and disposed of in compliance with applicable laws and regulations. When manifests are needed, the Site Supervisor shall see that they are prepared and, when appropriate, returned in the allotted time by the disposal site.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

Review the Contingency and Spill Plans. Management and operating personnel shall review spill response efforts, notification procedures and cleanup equipment usage to evaluate their adequacy during the episode. Where deficiencies are found, the Plan shall be revised and amended.

•

If No, discuss rationale.

Insert text

3.5 Control of Allowable Non-Stormwater Discharges

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

Discharges not comprised of stormwater are allowed under the RIPDES Construction General Permit but are limited to the following: discharges which result from the washdown of vehicles where no detergents are used; external building wash-down where no detergents are used; the use of water to control dust; firefighting activities; fire hydrant flushing; natural springs; uncontaminated groundwater; lawn watering; potable water sources including waterline flushing; irrigation drainage; pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents are not used; and foundation or footing drains where flows are not contaminated with process materials such as solvents, or contaminated by contact with soils where spills or leaks of toxic or hazardous materials has occurred. If any of these discharges may reasonably be expected to be present and to be mixed with stormwater discharges, they must be specifically listed here.

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

Yes No

If yes, list the sources of allowable non-Stormwater discharge(s) associated with construction activity. For each of the allowable non-stormwater discharge(s) identified, describe the controls and measures that will be implemented at those locations to minimize pollutant contamination of these discharges and to separate them from temporary discharges of stormwater during construction.

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

- Vehicle and Equipment Washing to be done on paved areas only, draining to sump area lined with poly sheeting
- The contractor will wet the soil surface as needed to suppress the creation of dust. The application may be done with a water truck or done with fire hoses at the site.
-

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

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

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.

- Discharge Type and RIPDES Individual Permit number : INSERT TEXT HERE
- Discharge Type and RIPDES Remediation General Permit Authorization number: INSERT TEXT HERE

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

If Yes, describe all areas where construction dewatering may be required and the proposed control measures that will be used to treat and manage dewatering fluids including all proposed discharge points. Proposed control measures must comply with the RI SESC Handbook. Include references to all relevant SESC Site Plans.

- Insert text and references to SESC Site Plan Sheet Numbers here.

If No, discuss rationale.

If needed, though not anticipated, water from excavations shall be pumped through a sedimentation filters such as a frac tank or geobag to reduce suspended solids, prior to discharge.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

The majority of the site work will involve raising the grade on the site and the proposed utilities will mostly be installed in the raised grade features, therefore groundwater dewatering is not anticipated.

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).

Describe construction materials expected to be stored on-site and procedures for storage of materials to minimize exposure of the materials to stormwater. Include references to all relevant SESC Site Plans.

All construction material storage shall be done in the designated location shown on Sheet ESC-1 . All building materials shall covered or inside and protected from the elements

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.

Describe dust control practices that will be used to suppress dust and limit its generation (i.e. applying water, limiting the amount of bare soil exposed at one time etc.).

- The contractor will wet the soil surface as needed to suppress the creation of dust. The application may be done with a water truck or done with fire hoses at the site.

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.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

Will washout areas be required for the proposed project?

Yes No

If Yes, describe location(s) and control measures that will be used to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, washout areas for concrete mixers, paint, stucco, etc. The recommended location(s) of washout areas should be identified, or at a minimum the locations where these washout areas should not be sited should be called out.

The concrete washout shall be performed in the designated area, as shown on sheet ESC-1 and shall not be allowed to discharge off-site or into any stormwater receptors.

If No, discuss rationale.

Insert text

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.

Describe equipment/vehicle fueling and maintenance practices that will be implemented to prevent pollutants from mixing with stormwater (e.g., secondary containment, drip pans, spill kits, etc.) Provide recommended location(s) of fueling/maintenance areas, or, at minimum, locations where fueling/maintenance should be avoided.

Vehicle and Equipment Washing to be done in the designated areas only, draining to sump area lined with poly sheeting, as shown on the ESC plans

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.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

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

If Yes, create a Treatment Chemical Application Plan and describe how the owner or SESC Plan preparer/designer intends to educate the designated operator prior to the application of such treatment chemicals.

Treatment Chemical Application Plan Required Elements

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

Insert information listed below:

1. *List Manufacturer's name and product name for each treatment chemical proposed for use at the site.*
2. *Attach a copy of applicable Material Safety Data Sheets (MSDSs) or Safety Data Sheets (SDS) for each proposed treatment chemical.*
3. *Provide the results of third party toxicity testing of the materials proposed for use at the site.*
4. *Provide a certification from the site owner and operator that all proposed treatment chemicals are the same as those used in the toxicity tests and will not be altered in any way.*
5. *Provide an explanation as to why conventional erosion, runoff, and sediment control measures, alone or in combination, will not be sufficient to prevent turbidity impacts and sedimentation in downstream receptors.*
6. *Provide a plan prepared in consultation with the chemical treatment manufacturer(s) or authorized manufacturer's representative which includes the following:*
 - a. *Identification of the areas of the site where treatment chemicals will be applied and the name, location, and distance to all downstream receptors that have the potential to be impacted from the discharges from the treatment areas.*
 - b. *List the expected start and end dates or specific phases of the project during which each treatment chemical will be applied.*
 - c. *Provide test results for representative soils from the site, and any recommendations from the manufacturer based on the soil tests, indicating the type of treatment chemical and the recommended application rate.*
 - d. *List the frequency, method, and rates of application which are designed to ensure that treatment chemical concentrations will not exceed 50% of the IC25 or NOEC toxicity values, whichever is less, for each treatment chemical proposed.*
 - e. *Provide the frequency of inspection and maintenance of the treatment chemical application system.*
 - f. *List the method proposed for the collection, removal, and disposal or stabilization of settled particles to prevent re-suspension.*
 - g. *Describe the training that will be provided to all persons who will handle and use treatment chemicals at the construction site. Training must include appropriate, product-specific training and proper dosing requirements for each product.*

Treatment Chemical SESC Plan Weekly Inspection Report Documentation Requirements

1. Document the type and quantity of treatment chemicals applied.
2. List the date, duration of discharge, and estimated discharge rate.
3. Provide an estimate of the volume of water treated.
4. Provide an estimate of the concentration of treatment chemicals in the discharge, with supporting calculations.

3.12 Construction Activity Pollution Prevention Control Measure List

Complete the following table for each Phase of construction where Pollution Prevention Control Measures will be implemented. This table is to be used as part of the SESC Plan Inspection Report – please fill out accordingly.

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

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

All Phases		
Location/Station	Control Measure Description/Reference	Maintenance Requirement
Staging Area	Controlled Fueling and Maintenance Activities	Using noted control measures and ensuring complete spill kits and absorbent pads are available.
Concrete Relieving Platform	Prefabricated Concrete Washout Container with Ramp. Used to contain concrete washout during concrete pouring operations.	Verify that concrete washout container(s) are in place prior to pouring concrete. Inspect daily to verify continued proper performance. Check remaining capacity during pouring operations. Check for leaks periodically.
Entire Site	Dust control watering	Have a water truck/trailer on site and water available.
INSERT TEXT	INSERT TEXT	INSERT TEXT

Insert a new table for each additional construction phase.

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*.

Include references to SESC Site Plans where installation requirements are located.

All erosion control measures shall be installed as noted on the ESC plans and the details sheets D-2 and D-3.

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

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

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.

In order for an operator to successfully satisfy this requirement list the weather gauge station that will be utilized to monitor weather conditions on the construction site. See www.wunderground.com or www.weather.gov for available stations.

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

Weather monitoring shall be done at the National Weather Services station at TF Green Airport:

Providence, Theodore Francis Green State Airport (KPVD)

Lat: 41.72° N Lon: 71.43° W Elev: 49 ft.

<https://www.wunderground.com/precipitation/us/ri/t-f-green-airport/02886>

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.

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

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. ex/ Inspection reference number for the 4th 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

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

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.

Reference RI Model SESC Plan ATTACHMENT G

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:

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

- 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 (*To save paper and file space, do not include in DEM/CRMC submittal, for operator copy only*)
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 (*if required as part of the application, see RIPDES Construction General Permit for applicability*)
INCLUDED AS ATTACHMENT E
 - 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: Insert Onsite Location Here, 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:

RI Waterfront Enterprises, LLC
Melissa Martin
1080 Main Street
Pawtucket, RI 02860
508-965-3342, melissa@riwaterfrontevents.com

signature/date

Site Operator:

Soil Erosion and Sediment Control Plan
South Quay Marine Terminal

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

Insert more contact/signature lines as necessary

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 *(To save paper and file space, do not include in DEM/CRMC submittal, for operator copy only)*

Attachment D - Copy of Other Regulatory Permits

Attachment E - Copy of RIPDES NOI *(if required as part of application, see RIPDES Construction General Permit for applicability)*

Attachment F - Inspection Reports w/ Corrective Action Log

Attachment G - SESC Plan Amendment Log

Temporary Sediment Trap

Wet Volume

$$Wv = 0.85 * Aw * Dw$$

Wv= wet storage volume

Aw= surface area of the flooded area

Dw = maximum depth in feet

Dry Storage

$$Vd = (Aw+Ad)/2 * Dd$$

Vd = dry storage volume

Aw= surface area of the flooded area at the base

Ad = surface area of the flooded area at the top

Dd = depth in feet

Size requirement = 134 cy /acre

	Trib Area	Volume tot	Volume Wet
1	11	1474	737
2	10	1340	670
3	10	1340	670

Sed Trap Sizing

	Aw	Dw	Ad	Dd	Wv	Vd
1	500	2	600	3	850	1650
2	450	2	550	3	765	1500
3	450	2	550	3	765	1500

Temporary Sediment Basin

$$V = ((DA)(A)(DR)(TE)(2000 \text{ lbs/ton})) / ((\gamma)(43560 \text{ sf/ac}))$$

V= volume of sediment trapped in ac ft/yr

DA= Drainage Area in acres

A = Average annual erosion in tons per acre per year

DR = Delivery Ratio

TE= Sediment Trap Efficiency

γ = Estimated Sediment Density in lbs/cf

For RIWE Site

DA = 10 acres

A= 50 ton/ac/yr

DR = 35 % Sandy

TE = 0.8

γ = 95 lbs/cf sand -silt mixture

V 6.766227 ac ft/yr

Basin Sizing

	Area	Height	Volume	Volume -ac-ft
3 Basin SE	21662	4	86648	1.989164
1 Basin NE	22520	4	90080	2.067952
2 Basin E	51874	4	207496	4.763453

Sed Basin Sizing

	Aw	Dw	Ad	Dd	Wv	Vd
1	8710	2	13000	4	14807	43420
2	34170	2	51000	4	58089	170340
3	14740	2	22000	4	25058	73480