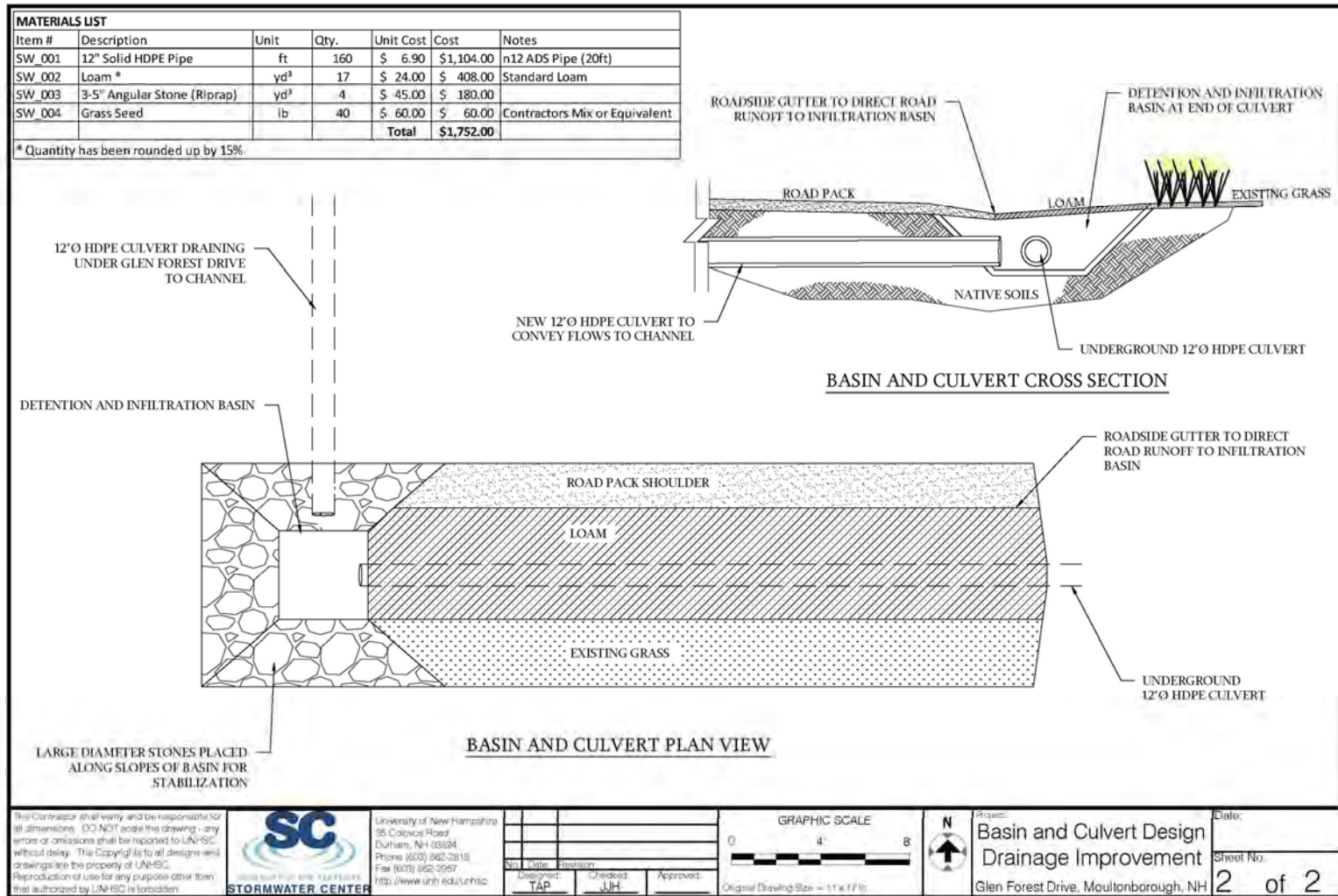


APPENDIX E: UNHSC DESIGNS FOR BMP SITES

Site 1-23: Glen Forest Drive, Balmoral, Moultonborough, NH

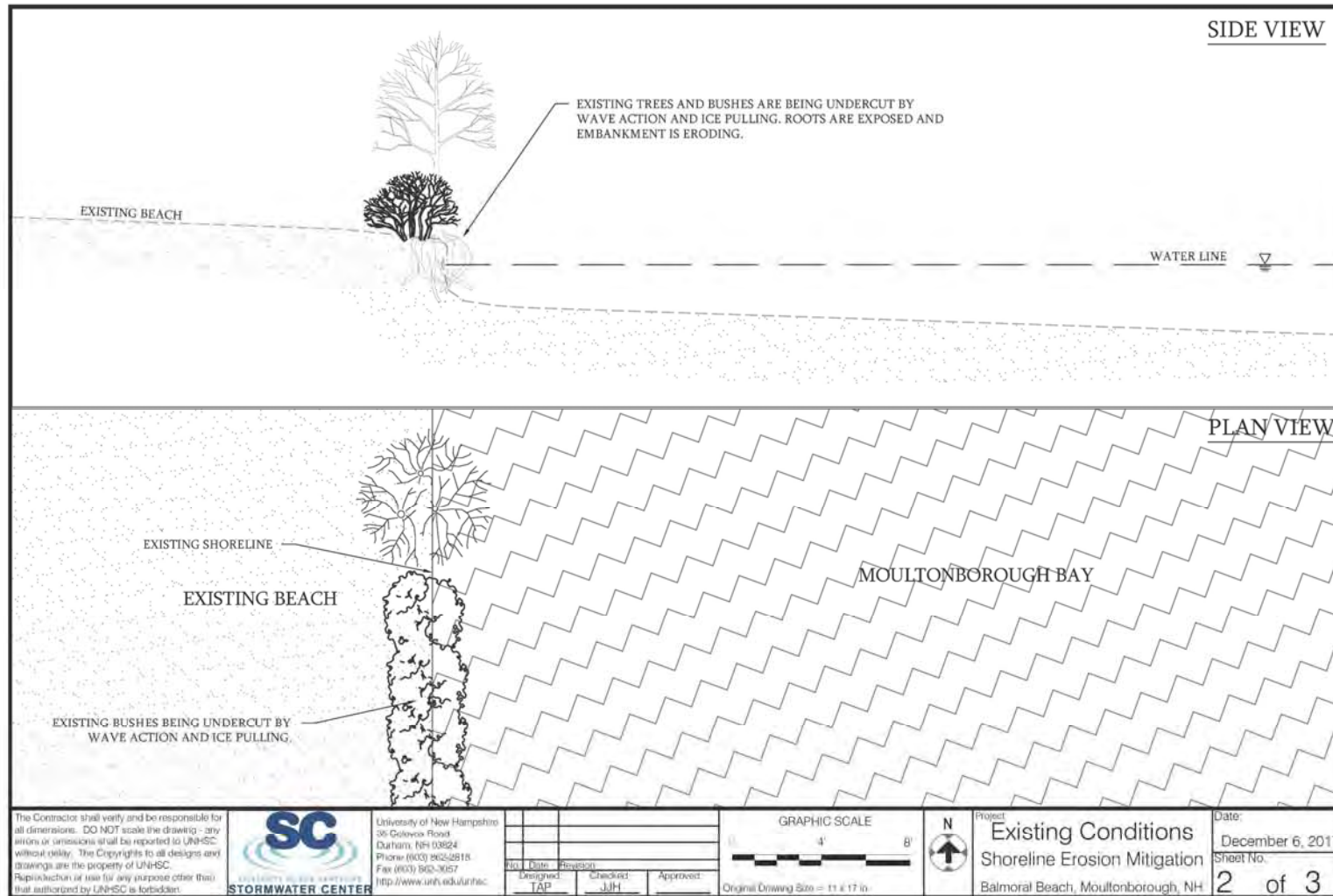


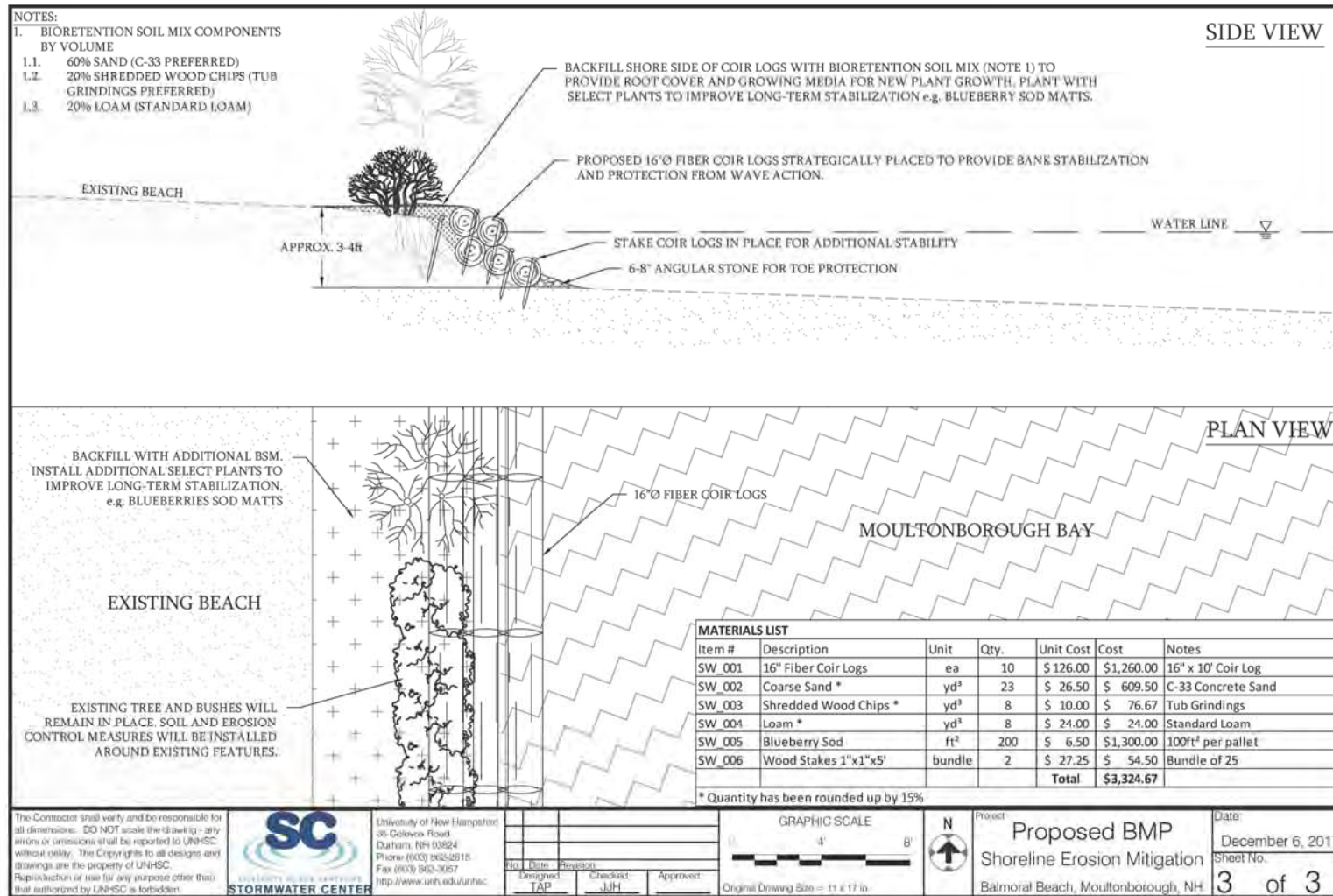
<p>The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to UNHSC without delay. The Copyrights to all designs and drawings are the property of UNHSC. Reproduction or use for any purpose other than that authorized by UNHSC is forbidden.</p>	<p>UNIVERSITY OF NEW HAMPSHIRE STORMWATER CENTER</p>	<p>University of New Hampshire 28 Colovos Road Durham, NH 03824 Phone: (603) 862-2618 Fax: (603) 862-3567 http://www.unh.edu/unhsc</p>	<table border="1"> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>										<p>GRAPHIC SCALE 0 NOT TO SCALE</p> <p>Original Drawing Size: 11 x 17 in.</p>	<p>Project Location Drainage Improvements Glen Forest Drive, Moultonborough, NH</p>	<p>Date: _____ Sheet No. _____</p>
<table border="1"> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>										<p>Project Location Drainage Improvements Glen Forest Drive, Moultonborough, NH</p>	<p>Date: _____ Sheet No. _____</p>				



Site 2-05: Balmoral Beach, Balmoral, Moultonborough, NH







Recommended BMPs – States Landing Beach Area Improvements

Moultonborough Bay Watershed Plan - Recommended BMPs – States Landing Beach

Project: Moultonborough Bay Watershed Plan - Recommended BMPs

Project Objectives:

Working in collaboration with FB Environmental, the University of New Hampshire Stormwater Center (UNHSC) was tasked with providing Green Infrastructure design recommendations for the States Landing redevelopment project.

Documents:

For these recommendations the concept design entitled States Landing Beach Area Improvement Project Conceptual Plan produced by G2+1 LLC and dated March 25, 2016 was used.

Comments:

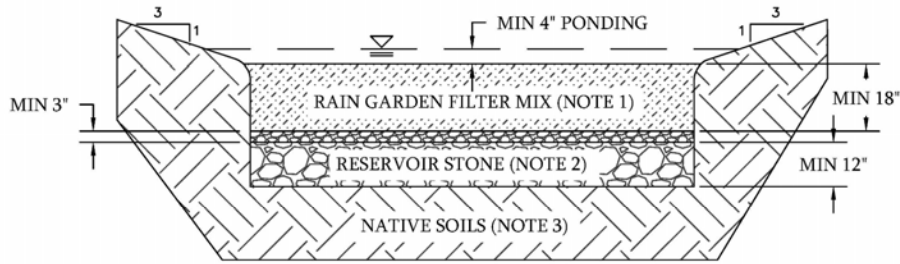
Overall, the concept design is detailed and well developed with its selection and siting of green infrastructure stormwater controls (raingardens and bioswales). UNHSC recommendations for system detail including system cross-sections, materials specification, sizing and pollutant load reduction potential are included here to assist with system design. Vegetation is not specified and can be selected based on the towns aesthetic needs. At minimum the systems should be densely vegetated with a grass (rye, fescue) mix.

Contents:

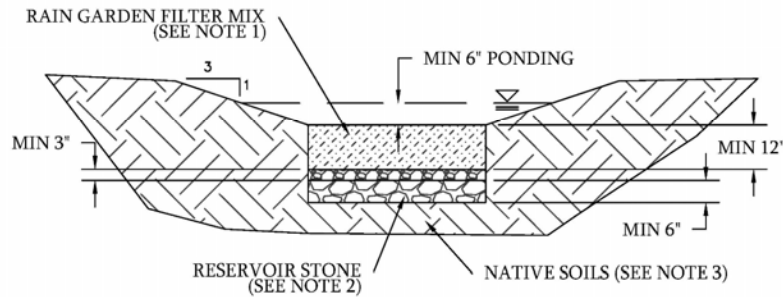
Raingarden and bioswale cross-section detail	Page 1
Bioretention Soil Mix specification	Page 2
Bioretention sizing and crediting worksheet	Page 7
Operation and Maintenance Guidelines and Checklist	Page 9

NOTES



1. RAIN GARDEN FILTER MIX IS COMPRISED OF THE FOLLOWING MATERIALS MIXED BY VOLUME
 - 1.1. 60% COARSE SAND (ASTM C-33)
 - 1.2. 20% STANDARD LOAM
 - 1.3. 20% SHREDDED WOOD CHIPS (TUB GRINDINGS)
2. RESERVOIR STONE SHALL BE 3/8" STONE OR LARGER. STONE GREATER THAN OR EQUAL TO 3/4" SHALL HAVE A 3" LAYER OF 3/8" STONE SEPARATING THE FILTER MIX AND RESERVOIR STONE.
3. DO NOT COMPACT NATIVE SOILS AT THE BOTTOM OF EXCAVATION
4. DO NOT USE ANY TEXTILE FABRICS WITHIN VERTICAL CROSS SECTION OF SYSTEM.
5. SURFACE SHALL BE DENSELY VEGETATED TO PREVENT EROSION. VEGETATION TYPE SHALL BE IN ACCORDANCE WITH PREFERRED MAINTENANCE PRACTICES.



TYPICAL RAIN GARDEN CROSS-SECTION



TYPICAL TREATMENT SWALE CROSS-SECTION

	GRAPHIC SCALE 	No. _____ Date _____ Revision _____		
		Designed: <u>TAP</u>	Checked: <u>JJH</u>	Approved: <u>TPB</u>
The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to UNHSC without delay. The Copyrights to all designs and drawings are the property of UNHSC. Reproduction or use for any purpose other than that authorized by UNHSC is forbidden.	University of New Hampshire 35 Coloyos Road Durham, NH 03824 Phone (603) 862-4024 Fax (603) 862-3957 http://www.unh.edu/unhsc	Project: Typical Cross-Sections States Landing Beach Moultonborough, NH		Date: December 7, 2017 Sheet No. 1 of 1