

NOTES:

- ALL SITE PREPARATION NECESSARY TO COMPLETE THIS PROJECT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL UTILIZE ALL PRECAUTIONS AND MEASURES TO ENSURE THE SAFETY OF ALL PERSONAL AND PROPERTY DURING CONSTRUCTION IN ACCORDANCE WITH OSHA STANDARDS.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF VARIOUS UTILITY COMPANIES, AND WHEREVER POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY IN THE TOWN OF MARION, AND "DIGSAFE" (1-800-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK IN PREVIOUSLY UNALTERED AREAS TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE CONFLICTS BETWEEN THE PROPOSED UTILITIES AND FIELD-LOCATED UTILITIES AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED, INCOMPLETELY OR INACCURATELY SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCURATE RECORDS OF THE LOCATION AND ELEVATION OF ALL WORK INSTALLED AND EXISTING UTILITIES FOUND DURING CONSTRUCTION FOR THE PREPARATION OF THE AS-BUILT PLAN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCHMARKS DURING CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EXISTING UTILITIES IN WORKING ORDER AND FREE FROM DAMAGE DURING THE ENTIRE DURATION OF THE PROJECT.
- SUBDRAINAGE PIPING SHALL BE SCHEDULE 40 PERFORATED PVC PIPE WITH A MINIMUM PIPE SLOPE OF 0.4 PERCENT.
- BACKFILL ADJACENT TO PIPES AND STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. BACKFILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED TO A DENSITY OF 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +/- 2% OF OPTIMUM. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL GRADE STAKES SET BY THE SURVEYOR. GRADE STAKES SHALL REMAIN UNTIL A FINAL INSPECTION OF THE SITE HAS BEEN COMPLETED BY THE TOWN ENGINEER.
- ALL PROPOSED STRUCTURES SHALL BE DESIGNED BY THEIR MANUFACTURERS FOR AASHTO HS-20 LOADING. PRECAST CONCRETE SHALL HAVE A MINIMUM 28-DAY STRENGTH OF 5000 PSI UNLESS OTHERWISE NOTED HEREIN.
- THE CONTRACTOR SHALL RESTORE ALL SURFACES EQUAL TO THEIR ORIGINAL CONDITION AFTER CONSTRUCTION IS COMPLETE. THE INSTALLER SHALL TAKE CARE TO PREVENT DAMAGE TO SHRUBS, TREES AND OTHER LANDSCAPING, WHEREAS THE PLANS DO NOT SHOW ALL LANDSCAPE FEATURES, EXISTING CONDITIONS MUST BE VERIFIED BY THE CONTRACTOR IN ADVANCE OF THE WORK.
- UNLESS OTHERWISE SPECIFIED ON THE PLANS AND SPECIFICATIONS ALL SITE CONSTRUCTION MATERIALS AND METHODOLOGIES ARE TO CONFORM TO THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, 1988 EDITION.
- IN ORDER TO PROTECT THE PUBLIC SAFETY DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MAINTAINING AT ALL TIMES ALL NECESSARY SAFETY DEVICES AND PERSONNEL, WARNING LIGHTS, AND BARRICADES.
- THE CONTRACTOR SHALL REGULARLY INSPECT THE PERIMETER OF THE PROPERTY TO CLEAN UP AND REMOVE LOOSE CONSTRUCTION DEBRIS BEFORE IT LEAVES THE SITE. ALL DEMOLITION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE SITE TO AN APPROVED DUMP SITE. ALL TRUCKS LEAVING THE SITE SHALL BE COVERED OF THE PROPERTY PROPERTY?
- AT THE END OF CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS AND SURPLUS MATERIALS FROM THE SITE. A THOROUGH INSPECTION OF THE WORK PERIMETER IS TO BE MADE AND ALL DISCARDED MATERIALS, BLOWN OR WATER CARRIED DEBRIS, SHALL BE COLLECTED, AND REMOVED FROM THE SITE.
- AREAS NOT DISTURBED BY CONSTRUCTION SHALL BE LEFT NATURAL. CARE SHALL BE TAKEN TO PRESERVE EXISTING TREES, GROUND COVER AND OTHER NATURAL FEATURES WHENEVER POSSIBLE. ALL AREAS UNPAVED AND NOT LEFT IN A NATURAL CONDITION SHALL BE PLANTED WITH GRASS AND LANDSCAPING MATERIALS AS SHOWN ON THE PLAN.

BASIC CONSTRUCTION SEQUENCE:

NOTE: ALSO SEE BIORETENTION CONSTRUCTION SEQUENCE THIS SHEET

- INSTALLATION OF EROSION AND SEDIMENT CONTROL DEVICES AT SURFACE STORMWATER MANAGEMENT AREAS, AND AS SHOWN IN THE EROSION AND SEDIMENT CONTROL PLAN.
- CLEARING & GRUBBING AT STORMWATER MANAGEMENT AREAS.
- ROUGH GRADING OF SURFACE STORMWATER MANAGEMENT AREAS (EXCEPT FILTER MEDIA IN BIORETENTION FACILITIES).
- PRELIMINARY PARKING AND ACCESS WAY GRADING.
- INSTALLATION OF ALL SUBSURFACE DRAINAGE STRUCTURES INCLUDING CATCH BASIN, DRAIN PIPE AND DRAINAGE PIPE AND STRUCTURES IN BIORETENTION BASINS.
- INSTALLATION OF PARKING LOT BINDER COURSE.
- FLUSHING AND CLEANING OF ALL STORM DRAIN SYSTEMS TO REMOVE SEDIMENT.
- SURFACE STABILIZATION (VEGETATION, GRAVEL, OR OTHER).
- REMOVAL OF ACCUMULATED SEDIMENT FROM SEDIMENT CONTROL AREAS.
- INSTALLATION OF FILTER MEDIA & PLANTINGS WITHIN THE BIORETENTION FACILITIES.
- INSTALLATION OF PARKING LOT TOP COURSE.
- FINAL SITE STABILIZATION.
- REMOVAL OF REMAINING EROSION & SEDIMENT CONTROL DEVICES AND FINAL CLEANUP.

CONSTRUCTION SPECIFICATIONS FOR BIORETENTION SYSTEMS

1. MATERIAL SPECIFICATIONS

THE ALLOWABLE MATERIALS TO BE USED IN BIORETENTION AREA ARE DETAILED IN TABLE 1.

PARAMETER	SPECIFICATION	SIZE	NOTES
PLANTING SOIL	SAND 80% SILT 15-20% CLAY 0-5%	N/A	USDA SOIL TYPES LOAMY SAND OR SANDY LOAM
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM
GEOTEXTILE	CLASS "C" APPARENT OPENING SIZE (ASTM-D-4751) GRAB TENSILE STRENGTH (ASTM-D-4632) BURST STRENGTH (ASTM-D-4833)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	AASHTO M-43	0.375" TO 0.75"	
UNDERDRAIN PIPING	ASTM D 1785 OR AASHTO M-278	4 TO 6" RIGID SCHEDULE 40 PVC	3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES
POURED IN PLACE CONCRETE (IF REQUIRED)	SEE LOCAL AOT STANDARDS AND SPECS.: F'C = 3,500 LB. @ 28 DAYS, NORMAL WEIGHT, AIR-ENTRAINED; RE-ENTRYING TO MEET ASTM 615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONCRETE REQUIRED; 28 DAY STRENGTH AND SLUMP TEST; ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A LICENSED PROFESSIONAL STRUCTURAL ENGINEER.
SAND (1" DEEP)	AASHTO M-6 OR ASTM C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DIOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO ROCK DUST CAN BE USED FOR SAND.

2. PLANTING SOIL

THE SOIL SHOULD BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHOULD BE MIXED OR DUMPED WITHIN THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHOULD BE FREE OF NOXIOUS WEEDS.

THE BIORETENTION SYSTEM SHALL UTILIZE PLANTING SOIL HAVING A COMPOSITION AS FOLLOWS\*:

SAND: 80%  
SILT: 15-20%  
CLAY: <5%

\*NOTE: FOR BIORETENTION APPLICATIONS WITH A PLANTING SOIL DEPTH OF 12 INCHES, OR LESS, ADD 20% (BY VOLUME) OF WELL AGED (6-12 MONTHS), WELL AERATED, LEAF COMPOST (OR APPROVED EQUIVALENT) TO THE ABOVE PLANTING SOIL MIXTURE.

THE PLANTING SOIL SHOULD BE TESTED AND SHOULD MEET THE FOLLOWING CRITERIA:

PH RANGE 5.2 - 7.0  
ORGANIC MATTER 1.5 - 4%  
MAGNESIUM 35 LB./AC.  
PHOSPHORUS P205 75 LB./AC  
POTASSIUM K20 85 LB./AC  
SOLUBLE SALTS NOT TO EXCEED 500 PPM

ALL BIORETENTION AREAS SHOULD HAVE A MINIMUM OF ONE TEST. EACH TEST SHOULD CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, PHOSPHORUS, AND POTASSIUM AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE'S STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHOULD BE PERFORMED FOR EACH LOCATION WHERE THE TOP SOIL WAS EXCAVATED.

SINCE DIFFERENT LABS CALIBRATE THEIR TESTING EQUIPMENT DIFFERENTLY, ALL TESTING RESULTS SHOULD COME FROM THE SAME TESTING FACILITY.

SHOULD THE PH FALL OUT OF THE ACCEPTABLE RANGE, IT MAY BE MODIFIED (HIGHER) WITH LIME OR (LOWER) WITH IRON SULFATE PLUS SULFUR.

3. MULCH LAYER SPECIFICATIONS.

MULCH AROUND INDIVIDUAL PLANTS ONLY. SHREDDED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE.

SHREDDED MULCH MUST BE WELL AGED (6-12 MONTHS) FOR ACCEPTANCE.

MIX APPROXIMATELY 1/2 THE SPECIFIED MULCH LAYER INTO THE PLANTING SOIL TO A DEPTH OF APPROXIMATELY 4 INCHES TO HELP FOSTER A HIGHLY ORGANIC SURFACE LAYER.

4. COMPACTION

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF BIORETENTION AREA IS EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND STORAGE VOLUMES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGH THE 12-INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" OR GREATER. DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

5. PLANT INSTALLATION

THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. ROOT STOCK OF THE PLANT MATERIAL SHOULD BE PROPERT PROPERTY??? KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE DIAMETER OF THE PLANTING PIT SHOULD BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.

TREES SHOULD BE BRACED USING 2" x 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.

GRASSES AND LEGUME SEED SHOULD BE TILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHOULD BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

THE PLANTING SOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF COMPOST OR MULCH IS USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1,000 SQUARE FEET.

6. UNDERDRAINS

UNDERDRAINS SHOULD BE PLACED ON A MINIMUM 3'-0" WIDE SECTION OF FILTER CLOTH. PIPE IS PLACED NEXT, FOLLOWED BY THE GRAVEL BEDDING. THE ENDS OF UNDERDRAIN PIPES NOT TERMINATING IN AN OBSERVATION WELL SHOULD BE CAPPED.

THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHOULD BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.4% OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (SEE PLANS FOR LOCATION).

7. MISCELLANEOUS

THE BIORETENTION FACILITY MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

STORMWATER FACILITY OPERATION & MAINTENANCE PLAN

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSPECTION AND MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES UNTIL SUCH TIME AS THE ROADWAYS, PARKING AREAS, AND ASSOCIATED UTILITIES ARE ACCEPTED BY THE OWNER.
- THE CONTRACTOR SHALL INSPECT AND RESTORE/CLEAN ALL FACILITIES (OUTLETS, CATCH BASINS, BIORETENTION FACILITIES, ETC.) OF SEDIMENT AND DEBRIS PRIOR TO THE OWNER'S ACCEPTANCE.
- ALL SEDIMENT AND DEBRIS SHALL BE DISPOSED OF PROPERLY IN A PRE-APPROVED LOCATION AS DIRECTED BY THE TOWN.
- ALL STORMWATER FACILITIES SHALL BE INSPECTED BY THE CONTRACTOR AFTER EVERY MAJOR RAINFALL EVENT FOR THE ENTIRE DURATION OF THE CONSTRUCTION PROJECT AND THE FIRST 3-MONTHS AFTER CONSTRUCTION TO ENSURE PROPER STABILIZATION AND CONSTRUCTION.
- SPECIFIC MAINTENANCE SHALL BE AS FOLLOWS:

DRAINAGE STRUCTURES (CATCH BASINS, INLETS, DRAIN MANHOLES, DRAIN PIPES): ALL STRUCTURES WILL BE INSPECTED ANNUALLY TO MONITOR FOR PROPER OPERATION, COLLECTION OF LITTER OR TRASH, AND STRUCTURAL DETERIORATION. THE STRUCTURES WILL BE CLEANED AS NECESSARY, AND REPAIRED WHEN REQUIRED.

DOWNSTREAM DEFENDER: THE DOWNSTREAM DEFENDER WILL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.

BIORETENTION SYSTEMS: THE BIORETENTION SYSTEMS WILL BE INSPECTED EVERY FOUR MONTHS (4 TIMES TOTAL) FOR THE FIRST YEAR OF OPERATION AND BI-ANNUALLY AFTER THE FIRST YEAR, AND AFTER MAJOR STORM EVENTS. GENERAL MAINTENANCE OF BIORETENTION SYSTEMS FALLS UNDER LANDSCAPING PRACTICES. THE PLANTING SOIL BED WILL BE MONITORED FOR PROPER PH, EROSION, AND AERATION. MULCH WILL BE REPLACED EVERY TWO YEARS TO THE ORIGINAL DESIGN DEPTH, AND ILL-ESTABLISHED, DEAD OR SEVERELY DISEASED PLANTS WILL BE REMOVED AND REPLACED ANNUALLY. SEDIMENT BUILD-UP AT THE PAVEMENT LINE OR CURB CUTS TO THE BIORETENTION AREAS WILL BE REMOVED AS NEEDED, AND THE RIPRAP OVERFLOW SPILLWAY WILL BE REPAIRED OR REPLACED WHEN NECESSARY.

ROUTINE MAINTENANCE: OTHER ROUTINE MAINTENANCE WILL INCLUDE REMOVAL OF TRASH AND LITTER FROM PAVED AND PERIMETER AREAS, AND ANNUAL STREET AND PARKING LOT SWEEPING AFTER THE SPRING THAW TO AVOID EXCESSIVE ACCUMULATION OF SEDIMENT IN THE DRAINAGE SYSTEM. THE PIPES DRAINING THE PROJECT WILL BE INSPECTED ANNUALLY FOR PROPER FLOW.

NOTE: OPERATION AND MAINTENANCE CHECKLIST AVAILABLE UPON REQUEST

BIORETENTION CONSTRUCTION SEQUENCE

SEQUENCE OF CONSTRUCTION AND INSPECTOR'S CHECK-OFF LIST FOR BIORETENTION FACILITIES	STAGE		DESIGN ENGINEER'S APPROVAL		TOWN'S/CITY'S INSPECTOR	
	INITIALS	DATE	INITIALS	DATE	INITIALS	DATE
1. PRE-CONSTRUCTION MEETING*						
2. INSTALLATION OF EROSION AND SEDIMENT CONTROL PRACTICES						
3. CLEAR/GRUB PROPOSED DISTURBED AREAS						
4. EXCAVATE BIORETENTION FACILITY(IES) TO WITHIN 1 FOOT OF UNDERDRAIN BOTTOM						
5. GRADE AND STABILIZE ALL CONTRIBUTORY DRAINAGE AREAS TO BIORETENTION FACILITY						
6. EXCAVATE BIORETENTION FACILITY TO INVERT OF UNDERDRAIN SYSTEM & INSTALL FILTER FABRIC* <sup>1</sup>						
7. INSTALL UNDERDRAIN STONE, PERFORATED PIPE AND OVERFLOW DRAINAGE INLET*						
8. INSTALL INFLOW DRAINAGE SYSTEM (PIPES, CHANNEL, ETC)						
9. BACKFILL BIORETENTION PLANTING SOIL TO DESIGN GRADE (UN-COMPACTED).						
10. INSTALL APPROX 1/2 SURFACE MULCH LAYER, MIXED WITH PLANTING SOIL.						
11. STABILIZE ANY REMAINING DISTURBED AREAS AROUND FACILITY*						
12. INSTALL BIORETENTION PLANTINGS						
13. INSTALL REMAINING MULCH AROUND AND AMONG PLANTINGS						
14. REMOVE ANY REMAINING EROSION/SEDIMENT CONTROL PRACTICES						
NOTE: SEE OVERALL CONSTRUCTION SEQUENCE FOR SITE GENERAL CONSTRUCTION; SEE GENERAL NOTES/SPECIFICATIONS FOR DETAILED REQUIREMENTS.						
* MANDATORY NOTIFICATION/APPROVAL OF ENGINEER AND/OR TOWN'S INSPECTOR PRIOR TO PROCEEDING WITH NEXT STAGE. <sup>1</sup> CALL HORSLEY WITTEN GROUP AT 508-833-6600 PRIOR TO 12:00 NOON ON PRECEDING DAY TO ARRANGE FOR NOTIFICATION. FOR FACILITIES DESIGNED TO PROMOTE INFILTRATION, SUBSTITUTE FILTER FABRIC WITH A 6" ZONE OF ROTO-TILLED PLANTING SOIL AND NATIVE SOIL TO AVOID A HARD EDGE.						

EROSION & SEDIMENT CONTROL NOTES:

- SILTATION CONTROL FENCE OR SILTATION CONTROL FENCE WITH HAY BALES, AT THE DISCRETION OF THE CONSERVATION COMMISSION OR ITS AGENT, SHALL BE INSTALLED AT THE LOCATIONS INDICATED ON THE DESIGN PLANS. SOIL STOCKPILES LEFT OVERNIGHT SHALL BE SURROUNDED ON THEIR PERIMETERS WITH HAYBALES. HAYBALES FILTERS SHALL BE PLACED AROUND CATCHBASINS WITHIN PROJECT AREAS UNTIL STABILIZATION OF DISTURBED AREAS.
- PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL INSTALL ALL SEDIMENT AND EROSION CONTROL MEASURES AS SHOWN ON THE DESIGN PLANS OR AS DETERMINED NECESSARY IN THE FIELD. THESE MEASURES SHALL BE CHECKED, MAINTAINED/REPLACED AS NECESSARY DURING THE ENTIRE CONSTRUCTION PERIOD OF THE PROJECT.
- ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN A PRE-APPROVED LOCATION BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PLACEMENT OF FILTER FABRIC (SILT SACK OR EQUIVALENT) OVER THE MOUTHS OF ALL INLETS DURING THE ENTIRE CONSTRUCTION PERIOD. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE THE FILTER FABRIC AFTER THE FINAL INSPECTION OF THE SITE HAS BEEN COMPLETED BY THE ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MAINTAINING PROPER EROSION CONTROL MEASURE TO ENSURE THAT NO ERODED SEDIMENT (NON-NATURAL) MATERIAL IS ALLOWED TO ENTER ANY STORMWATER MANAGEMENT AREA (BIORETENTION FACILITY) DURING THE ENTIRE CONSTRUCTION PERIOD. IF ERODED SEDIMENT IS FOUND WITHIN A STORMWATER MANAGEMENT AREA THE ENGINEER SHALL BE INFORMED. ALL ERODED MATERIAL SHALL BE REMOVED AND THE CONTRACTOR SHALL INVESTIGATE IF CLOGGING OF THE STORMWATER MANAGEMENT SURFACE HAS OCCURRED. IF CLOGGING HAS OCCURRED THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING THE STORMWATER MANAGEMENT AREA TO ITS ORIGINAL DESIGN STANDARDS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE INSPECTION OF ALL STORMWATER FACILITIES INSTALLED OR AFFECTED BY THE PROJECT. ANY SEDIMENT OR DEBRIS SHALL BE REMOVED PRIOR TO THE OWNER'S ACCEPTANCE.



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NOTES  
 ISLAND WHARF  
 STORMWATER IMPROVEMENTS  
 MARION, MASSACHUSETTS

PLAN TITLE

Revisions	Date	By	Description
1	5/13/05	TW	CW Revisions per Town Comments

Prepared For:  
**Town of Marion**  
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Phone: 508-748-3500

Registration:

Project Number:

5022

Sheet Number:

4

Checked By: RAC  
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 Survey By: DVM  
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