



JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



MELANIE LOYZIM
ACTING COMMISSIONER

January 11, 2019

ACF Environmental
c/o W. Scott Gorneau, P.E.
2831 Cardwell Rd
Richmond, VA 23234

Dear Mr. Gorneau,

This letter is to inform you that the Department of Environmental Protection (Department) will authorize the R-Tank modular underground stormwater system in conjunction with a subsurface sand filter as meeting the requirements of the General Standards (Section 4.C.) of the Stormwater Management Rules (Chapter 500), provided the system is sized, installed, and maintained in accordance with the following provisions:

1. The R-Tank system may be used as a subsurface chamber sand filter designed per Chapter 7.3 of Volume III of the Maine Stormwater Management BMP Manual. The system will provide storage and treatment of the water quality/channel protection volume (WQv) which consists of the first 1.0 inch of runoff from impervious surfaces and 0.4 inch from lawn and landscaped areas. The WQv should be hydraulically isolated from any additional stormwater storage by weirs or other means so that only the WQv is routed through the treatment system (sand filter). The R-Tank system must detain the WQv for a minimum of 24 hours and a maximum of 48 hours.
2. A pre-treatment system must be provided for the WQv that is routed to the sand filter, prior to discharging to the storage system above the filter. The pre-treatment system must meet the following requirements:
 - A. The R-Tank pre-treatment structure must be underlain with a bottom surface consisting of 2 layers of ADS 315 woven geotextile (or approved equal) that due to the R-Tank's design needs to wrap all sides of the R-Tank chamber.
 - B. The number of chambers in the pre-treatment structure must handle the projected one-year peak flow from the drainage area without activating the overflow and bypassing the underdrain sand filter. The ratio of fabric area to flow rate needs to be no greater than 0.00661 cfs per square foot. For each R-Tank module (1.31 ft X 2.35 ft = 3.08 SF) the corresponding module flow rate is 0.02 cfs.
 - C. If the area draining to the pre-treatment structure is a source of hydrocarbons or debris (i.e. parking lots, roads, drive-through commercial enterprises), the pretreatment structure must be preceded by a practice that will trap these products.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

- D. The pre-treatment structure must be continuous and without obstacle for cleaning and must have access at both ends for the removal of accumulated sediment and debris. The pre-treatment system should be inspected at least once every six months to maintain the established efficiency for pollutant removal. A five-year binding inspection and maintenance contract must be provided prior to review and approval by the Department, and must be renewed before contract expiration.
3. If required for flooding control, the R-Tank system may be part of a stormwater management system that will provide for the storage and release of the peak flow with a regulated flow rate from 24-hour storms of the 2, 10, and 25-year frequencies such that the peak flows from the project site do not exceed the peak flow prior to undertaking the project. This flood storage should be hydraulically isolated from the WQV (first flush/ treatment volume), such that the first flush is directed to the storage above the sand filter until the WQV has been captured, after which any additional flows are diverted around the WQV storage to the flood control storage.
 4. The overall stormwater management design must meet all Department criteria and sizing specifications and will be reviewed and approved by the Department prior to use.
 5. Review and approval by the manufacturer for the proposed use and sizing of the system at each specific project is required to ensure conformance with the manufacturer's design specifications.
 6. The R-Tank system must be delivered to the site and installed under the manufacturer's representative supervision.
 7. This approval is conditional to on-the-ground experience confirming that the pollutant removal efficiency and sizing of the R-Tank system are appropriate. The "permit shield" provision (Section 14) of the Chapter 500 rules will apply, and the Department will not require the replacement of the system if, with proper maintenance, pollutant removals do not satisfy the General Standard Best Management Practices.

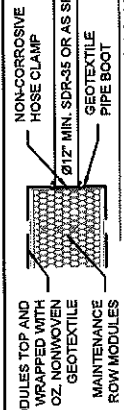
We look forward to working with you as these stormwater management structures are installed on new projects. Questions concerning this decision should be directed to David Waddell at (207) 215-6932 or Jeff Dennis at (207) 215-6376.

Sincerely,



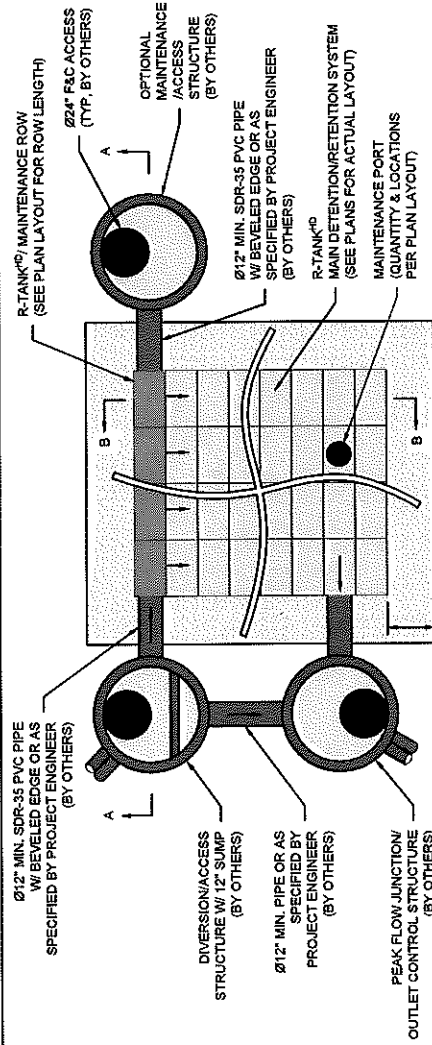
Mark Bergeron, P.E.
Director
Bureau of Land Resources

c: Don Witherill, Maine DEP



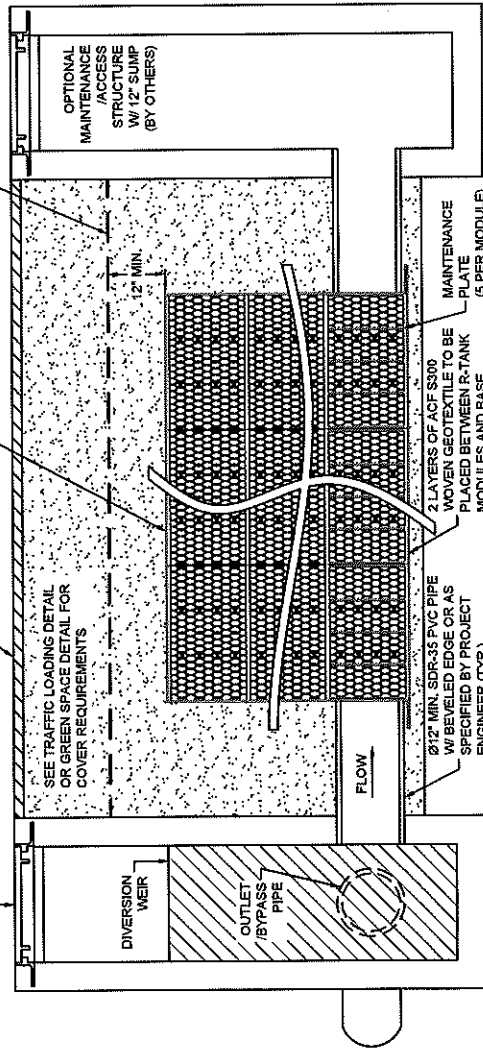
TYPICAL PIPE CONNECTION DETAIL

NOTE: IF PIPE CONNECTING TO MAINTENANCE ROW IS LARGER THAN Ø12" SDR-35, IT SHALL BE ABUTTED FLUSH TO END PLATE AND SEALED WITH A GEOTEXTILE BOOT.



R-TANK® MAINTENANCE ROW WITH PRECAST INLET/ACCESS STRUCTURE

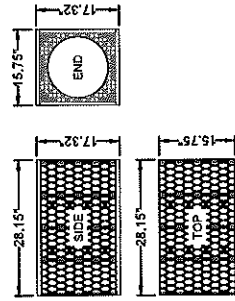
GEGRID (REQUIRED IN TRAFFIC AREAS) PLACED TO COVER THE R-TANK® SYSTEM OVERLAP JOINTS WITH PANELS BY 18" MIN. GEGRID SHOULD EXTEND 3' BEYOND THE EXCAVATION FOOTPRINT.



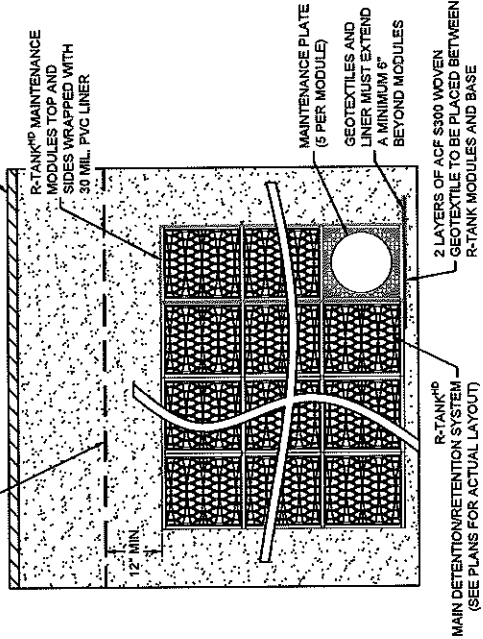
R-TANK® MAINTENANCE ROW SECTION A-A

NOTE: DIVERSION WEIR ELEVATION TO BE SET BY PROJECT ENGINEER BASED ON TREATMENT VOLUME/FLOW RATE REQUIRED.

NOTE: ENGINEER OF RECORD TO REVIEW, APPROVE AND ENDORSE FINAL SITE SPECIFIC DESIGN.



SINGLE R-TANK® - MAINTENANCE MODULE DETAIL (FOR MODULE DATA, SEE STANDARD MODULE DETAIL)



R-TANK® MAINTENANCE ROW SECTION B-B



ACF ENVIRONMENTAL
1-800-448-3038
www.acfenvironmental.com

R-TANK® MAINTENANCE ROW DETAILS
MAINE DEP BMP
ACF ENVIRONMENTAL, 1-800-448-3038, www.acfenvironmental.com

DATE	DESCRIPTION

DATE: 11/27/18
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SCALE: [blank]

SUBSURFACE SAND FILTER WITH R-TANK TREATMENT ROW

