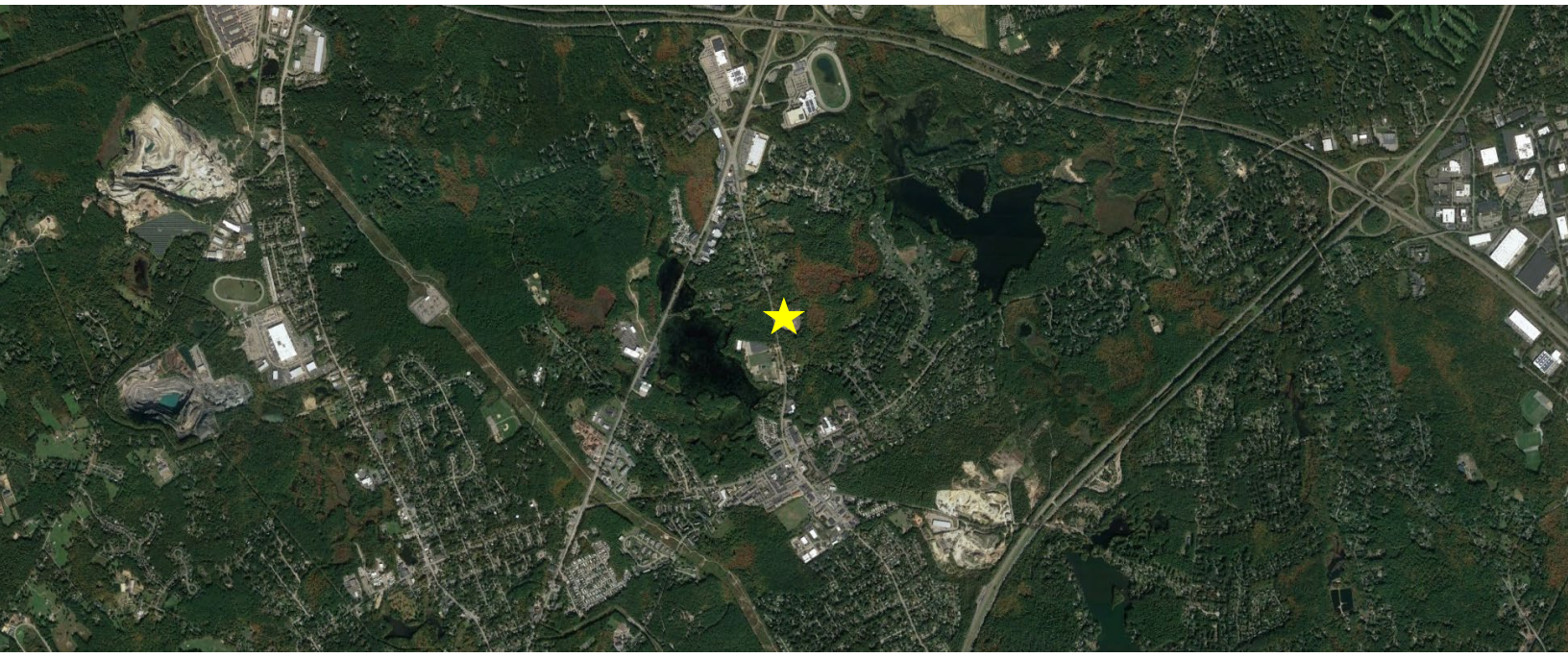
Project Address:	43 Taunton Street Plainville, MA 02762
Date Prepared:	March 24, 2022
Project Number:	21018
Prepared for:	TSC Taunton Street 43 LLC 175 Paramount Drive Raynham, MA 02767
Prepared by:	**Highpoint Engineering Inc.** Dedham Executive Center 980 Washington Street, Suite 216 Dedham, MA 02026 www.highpointeng.com



O&M UPDATE FORM

DATE OF UPDATE	DATE OF LAST UPDATE TO O&M PLAN

SECTIONS OUT OF DATE / REQUIRED UPDATES

MAINTENANCE LOG REVIEW

BMP	INSPECTION AND MAINTENANCE FREQUENCY		ACTION REQ'D?* (CIRCLE ONE)
	REQUIRED	ACTUAL	
CONTECH CDS WATER QUALITY UNITS			Y N
DEEP SUMP/ HOODED CATCH BASINS			Y N
SEDIMENT FOREBAYS			Y N
VEGETATED INFILTRATION BASIN			Y N
UNDERGROUND DETENTION SYSTEM			Y N
SAND FILTER			Y N
PRECAST OUTLET CONTROL MANHOLE			Y N
PRECAST OUTLET CONTROL STRUCTURES			Y N

*See next page for corrective action and training requirement updates (if applicable)

CORRECTIVE ACTION TO SCHEDULE(S) REQUIRED (IF YES TO ANY OF ABOVE)
EMPLOYEE AND CONTRACTOR TRAINING UPDATES (ATTACH BROCHURES AS NEEDED)

ANNUAL SITE INSPECTION AND UPDATE

OVERALL SITE CONDITION

_____
_____
_____
_____
_____

INSPECTION RESULTS

_____
_____
_____
_____
_____

EXCEPTIONAL CIRCUMSTANCES OBSERVED? _____

IF YES, DESCRIBE CIRCUMSTANCES AND CORRECTIVE ACTIONS NEEDED.

_____
_____
_____
_____
_____

OVERALL O&M PLAN EFFECTIVENESS (DESCRIBE)

_____
_____
_____
_____
_____

Reproduce update forms as necessary over the life of this Operation and Maintenance Plan.

SECTION 1 TABLE OF CONTENTS

SECTION 1 TABLE OF CONTENTS 1
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APPENDIX

Proprietary BMP Information

- Contech Water Quality Units
- R-Tank Stormwater Detention System

Date: March 24, 2022

I. OWNER:

TSC Taunton Street 43 LLC
175 Paramount Drive
Raynham, MA 02767

II. RESPONSIBLE PARTY:

TSC Taunton Street 43 LLC
175 Paramount Drive
Raynham, MA 02767

PROJECT OVERVIEW

Prevention of offsite flooding and implementation of stormwater runoff, water quality, and groundwater recharge improvements where none currently exist on-site are the main priorities of the project with respect to drainage design. The project will improve existing stormwater management within the property with respect to the existing site condition, which currently includes no such improvements, by installing a stormwater management system comprising various Best Management Practices (BMPs). Long-term water quality BMPs to mitigate the runoff generated by the site improvements include deep-sump catch basins with hoods, Contech CDS proprietary water quality units, an ACF R-TankHD underground detention system, a vegetated infiltration basin with two (2) upstream vegetated sediment forebays, a sand filter basin with upstream sediment forebay, and periodic sweeping to remove sand and sediment from paved surfaces.

It is the intent of the stormwater management design to achieve an 80% Total Suspended Solids (TSS) removal efficiency or 44% removal efficiency prior to discharge as outlined in the DEP Stormwater Management Standards.

The site is subject to an Activities and Use Limitation (AUL; RTN Tracking No.: 4-0000877) as a portion of the site comprises part of a disposal site as the result of release(s) of oil and/or hazardous material. In accordance with the AUL, the project is subject to a Health and Safety Plan and Soils Management Plan (HASP/SMP) to be prepared by Inland Professional Corp., the Licensed Site Professional (LSP) assigned to the project on behalf of the property owner. All sitework and earthmoving activities shall be conducted in conformance with the HASP/SMP and in direct coordination with the LSP.

The permanent BMPs used in this design were chosen for their effectiveness and ease of maintenance. Providing for maintenance requirements that are practical is essential to achieve the desired result of improved stormwater quality, and peak attenuation. This plan will be

provided to the property owner, property manager, and general contractor to educate them on the recommendations of this plan and the DEP Stormwater Management Guidelines.

POST-CONSTRUCTION BEST MANAGEMENT PRACTICES

a) NON-STRUCTURAL BEST MANAGEMENT PRACTICES

Implementing source controls can aid in reducing the types and concentrations of contaminants in stormwater runoff. This principle for pollution prevention and non-structural controls, or BMPs, is to minimize the volume of runoff and to minimize contact of stormwater with potential pollutants. Measures such as street sweeping, managing snow removal, and educating the owner/operator of good maintenance practices are examples of non-structural BMPs.

i. PUBLIC AWARENESS

The responsible party shall issue periodic reminders to the building tenants to avoid dumping or releasing pollutants into the storm drains and onto the ground.

ii. STREET SWEEPING

Parking lot, driveway, and loading area sweeping is an integral part of the stormwater management plan as a fundamental component of source reduction efforts. Sweeping activities shall begin on or around April 1. However, sweeping may be done after winter thaw and the onset of early spring. It is critical to remove the accumulated sediment in the parking, loading, and driveway areas from the winter months as soon as possible before spring precipitation.

Sweeping activities should be performed a minimum of two times annually (April 1 and September 1).

iii. SNOW AND SNOWMELT MANAGEMENT

The removal contractor shall avoid stockpiling snow directly on top of catch basin grates and avoid stockpiled snow within the paved parking lot to allow normal vehicular maneuverability. Also avoid stockpiling snow in the forebays, sand filter, and infiltration basin.

It is suggested that during snowfall events, the snow be stockpiled in the paved area east of the trailer parking area. During significant snow fall event, six (6) inches or greater, accumulated snow shall be stockpiled in the parking area nearest the Taunton Street right-of-way and/or removed from the site by a snow removal contractor. It is the responsibility of the owner to make sure the snow removal contractor utilizes previously approved areas. The owner shall remove sediment from snow storage areas every spring.

It is suggested that no de-icing compounds such as calcium chloride ($CaCl_2$), calcium magnesium acetate (CMA) or the like be used on the site. The snow removal contractor shall store all sand off-site. No quantities of sand compounds shall be stored on site.

iv. PUBLIC SAFETY FEATURES

The project has been designed with consideration for public safety and does not require any specific features as part of the stormwater management system.

b) STRUCTURAL BEST MANAGEMENT PRACTICES:

Structural BMPs are those physical facilities that are designed to manage both stormwater quantity and quality. Proper maintenance of the proposed structural BMPs will ensure design performance and promote longevity of the structure and may decrease operator maintenance costs.

i. DEEP-SUMP/HOODED CATCH BASINS

All proposed catch basins shall be a minimum of four feet in diameter and equipped with four-foot-deep sumps to trap sediments and any debris/trash. The pipe outlets shall be hooded to prevent floating debris and oils from entering the subsurface drainage conveyance system. The actual removal of sediments, trash, and associated pollutants only occurs when the deep sumps are cleaned out; therefore, frequent maintenance is required. The more frequent the cleaning, the less likely sediments will be re-suspended and subsequently discharged downstream. In addition, frequent cleaning also results in more volume available for future storms and enhances overall performance.

The recommended inspection frequency of the deep sumps is every three months, and cleaning two to three times per year, if necessary, post-construction. Disposal of accumulated sediment and trash is to be in accordance with all applicable local, state, and federal guidelines and regulations.

ii. CONTECH CDS® WATER QUALITY UNITS

Two (2) Contech CDS© water quality units are proposed to prevent sediments and oils from entering the underground detention basin in the north loading area. The actual removal of sediments, trash, and associated pollutants only occurs when the structures are cleaned out; therefore, frequent maintenance is required. The more frequent the cleaning, the less likely sediments will be re-suspended and subsequently discharged. In addition, frequent cleaning also results in more volume available for future storms and enhances overall performance. Contech CDS structures are an approved means of BMP for storm water management. See the TSS Removal Calculation Worksheet included in the Appendix C for the specific TSS removals rate of the Contech CDS© unit for this project.

Post-construction, the units shall be inspected every six months for the first year of operation to determine the oil and sediment accumulation rate. After the first year, inspections can be based on the first-year observations or local requirements. Cleaning, by full pump out, is recommended on an annual basis or when 15% of the units' storage capacity is filled with solids. Inspect the units immediately after an oil, fuel, or chemical spill. Maintenance shall be performed by conventional vacuum truck. Disposal of accumulated sediment, trash, and hydrocarbons shall be in accordance with the AUL and all applicable local, state, and federal guidelines and regulations. Refer to product brochure in the Appendix for more information.

iii. UNDERGROUND DETENTION SYSTEM

An underground detention system comprising stone-embedded ACF R-TankHD storage modules is proposed beneath the pavement area on the north side of the building to provide detention volume for loading area runoff for the project, as shown on the "Grading & Drainage Plan" (sheet C400) in the site plans. The detention system is sized to mitigate peak runoff increases associated with the proposed project for all storm events up to and including the 100-year storm. The system is designed to drain completely within 72 hours.

The system shall be inspected twice per year, at the beginning of July and late October/ early November, to determine if any loss of capacity has occurred. The system shall also be inspected 24 hours after a rainstorm of over 2.5 inches in a 24-hour period to ensure that the system is free of extraneous debris and fines and is draining adequately. The precast outlet manhole downstream of the system shall be inspected in conjunction with all inspections of the system. If inspections indicate accumulation of sediment within the system or the outlet manhole, cleaning shall be conducted via vacuum truck through the at-grade inspection ports.

Removed materials shall be hauled off site and disposed of in compliance with all local, state, and federal guidelines and regulations. Refer to product brochure in the Appendix for more information.

iv. DETENTION/INFILTRATION BASIN AND SEDIMENT FOREBAYS

A vegetated detention/ infiltration basin is proposed to the north of the loading and trailer parking area on the north side of the proposed building. The basin is equipped with a precast outlet control structure to allow controlled downstream discharge of overflow runoff toward the on-site wetland resource area east of the developed site. The basin is equipped with dual forebays arranged upstream in series, which provide water quality pre-treatment of surface runoff from proposed paved loading and trailer parking areas. The detention/infiltration basin is sized to mitigate peak runoff increases associated with the proposed project for all storm events up to and including the 100-year storm. The basin is designed to drain completely within 72 hours.

Each sediment forebay shall be inspected monthly, and cleaning shall be done on a quarterly basis. Check for erosion and cracking on side slopes and at spillways. Check for undesirable vegetative growth (i.e., trees) and differential settlement on side slopes and forebay floors. The stone aprons up gradient of the forebays shall be checked for clogging and wash-out and cleaned and re-stabilized as conditions warrant. Mowing of side slopes and forebay floors shall be performed in conjunction with overall site mowing schedule; clippings shall be removed from forebays.

The detention/infiltration basin shall be inspected twice a year at minimum and cleaned as needed. Check for erosion and cracking on side slopes. Check for undesirable vegetative growth (i.e., trees) and differential settlement on side slopes and basin floors. Confirm outlet control structure is clear of trash, sediment, debris, organics, or other obstructions. Clogged surfaces shall be broken up by way of deep tilling and re-vegetated immediately. Light machinery shall be used for all maintenance to avoid compaction of underlying soil. Mowing shall be performed in conjunction with overall site mowing schedule; clippings shall be removed from all basins.

Disposal of accumulated sediment and trash is to be in accordance with applicable local, state, and federal guidelines and regulations.

v. SAND FILTER AND SEDIMENT FOREBAY

A vegetated sand filter is proposed to the south of the paved parking and driveway on the south side of the proposed building. The sand filter is equipped with an impermeable bottom liner, stone-embedded perforated underdrain, and precast outlet control structure to allow controlled downstream discharge of runoff toward the on-site wetland resource area east of the developed site. The basin is equipped with an upstream forebay, which provides water quality pre-treatment of surface runoff from proposed paved parking and driveway areas. The sand filter is sized to mitigate peak runoff increases associated with the proposed project for all storm events up to and including the 100-year storm. The system is designed to drain completely within 72 hours.

The sediment forebay shall be inspected monthly, and cleaning shall be done on a quarterly basis. Check for erosion and cracking on side slopes and at spillway. Check for undesirable vegetative growth (i.e., trees) and differential settlement on side slopes and forebay floor. The stone apron up gradient of the forebay shall be checked for clogging and wash-out and cleaned and re-stabilized as conditions warrant. Mowing of side slopes and forebay floor shall be performed in conjunction with overall site mowing schedule; clippings shall be removed from forebay.

The sand filter basin shall be inspected twice a year at minimum and cleaned as needed. Check for erosion and cracking on side slopes. Check for undesirable vegetative growth (i.e., trees) and differential settlement on side slopes and basin floors. Confirm outlet control structure is clear of trash, sediment, debris, organics, or other obstructions. Clogged surfaces shall be broken up by way of deep tilling and re-vegetated immediately.

Light machinery shall be used for all maintenance to avoid compaction of underlying soil. Mowing shall be performed in conjunction with overall site mowing schedule; clippings shall be removed from all basins.

Disposal of accumulated sediment and trash is to be in accordance with applicable local, state, and federal guidelines and regulations.

SITE FURNISHINGS BEST MANAGEMENT PRACTICES

Site furnishings, as they pertain to this Operation and Maintenance Plan, comprise driveways and parking lots; walkways and hardscape areas; fences, walls, and guardrails; landscape areas; and solid waste management facilities.

i. DRIVEWAYS AND PARKING LOTS

All driveways, parking lots, loading areas, and emergency access ways shall be inspected twice annually (early Spring and Fall) to assess damage, cracking, differential settlement, and fading of pavement markings. Deteriorated asphalt and damaged curbs and signage shall be repaired as needed based on observation. Faded striping shall be re-painted in kind as needed.

Landscape vegetation around the perimeter and in the interior of the parking areas and within landscaped berm area adjacent to Taunton Street shall be inspected for overgrowth twice annually (early Spring and Summer) and pruned as needed based on inspection.

ii. WALKWAYS AND HARDSCAPE AREAS

All concrete walkways, landings, pads, and driveways shall be inspected annually for spalling, cracking, and heaving. Cracked or spalled concrete shall be patched and repaired with cement or grout as needed based on inspection. In the case of widespread structural damage to concrete surfaces, slabs shall be demolished and reconstructed in kind and sub-base shall be inspected for settlement or heaving and corrected and/or re-compacted as needed.

iii. FENCES, WALLS, AND GUARDRAILS

All chain link fences, retaining walls, guardrails, and galvanized steel pipe bollards shall be inspected annually.

The chain link fence between the north edge of the developed site and Turtle Brook shall be repaired of damaged mesh, rails, and hardware immediately upon observation. Accumulated debris, leaf litter, and trash shall be removed from the edge of fence immediately upon observation.

Walls (including all segmental block retaining walls) shall be inspected for damage, subsidence, and settlement of adjacent surfaces. Any such observed defects shall be repaired immediately. The Responsible Party shall monitor repairs on a weekly basis once established to ensure integrity of corrective action and coordinate follow-up action immediately upon observation of resurgence of defects, if applicable.

Bollards adjacent to outdoor pad-mounted electrical equipment shall be inspected for damage and rust upon observation. In the event of damage, pipes and concrete bases shall be replaced in kind immediately. In the event of rust, affected areas shall be smoothed manually and pipes shall be re-painted with emergency yellow paint to prevent further deterioration.

The guardrail along the top of the retaining wall east and northeast of the proposed building shall be inspected for rail and post damage and dislodgement, rust damage, and defacing. Any steel members observed to be structurally damaged or rusted out shall be replaced in kind immediately upon observation.

iv. LANDSCAPE AREAS

Spring clean-up shall be conducted twice annually in the months of March and April. Spring clean-up comprises removal of winter wraps from trees, lawn raking/ leaf blowing, weeding, and fertilization as needed. Landscape edges shall also be inspected and re-established as needed during Spring clean-up activities.

Mulch areas shall be inspected once annually during the month of April. New mulch shall be added to planting beds as needed and washed-out mulch shall be removed from adjacent areas. Subgrade in washout areas shall be checked for erosion and re-graded as needed prior to replacement of mulch. Pre-emergent weed control shall be applied to planting beds concurrently with inspection activities.

Shrub and tree planting fertilization activities shall be limited to twice annually between April 15 and October 15 as needed. Fertilizer use shall be minimized to the extent practicable and shall never be applied before a heavy rainfall event, on frozen ground, or within vegetated stormwater management BMPs (i.e, forebays, detention/infiltration basin, and sand filter). Insect and disease sprays shall be used as needed on shrub and tree plantings throughout the Summer and never during frozen ground conditions or before heavy rainfall events.

The irrigation system shall operate between April and October. The irrigation system shall be winterized in advance of cold-weather months to prevent freeze damage.

Mowing shall be conducted as necessary between the months of May and October. Excess lawn clippings shall be removed from mowed surfaces prior to next rainfall, and no excess lawn clippings are to be left within vegetated surface BMPs. Shrub and ornamental tree

pruning shall be conducted twice annually during the months of July and August. Structural tree pruning shall be conducted twice annually during the months of August and September.

Turf aeration and overseeding shall be conducted once annually in the month of October. Aeration equipment shall be utilized to relieve soil compaction and allow oxygenation of roots. Aerated turf shall subsequently be overseeded.

Fall cleanup shall be conducted twice annually during the months of October and November. Fall cleanup activities comprise application of winter wraps to trees, raking/leaf blowing lawn areas, and weeding. Lawn fertilization, if conducted during fall cleanup, shall not occur after October 15. Lime application treatment for lawn areas shall be conducted once annually in the month of November.

v. SOLID WASTE MANAGEMENT FACILITIES

Dumpster enclosures shall be inspected weekly for damage, rust, leaks, and loose hardware. Any such defects shall be repaired immediately upon observation.

Concrete dumpster and compactor pads shall be inspected quarterly. Staining and accumulated spillage shall be managed by manual removal/sweeping and power washing. Power washing runoff shall be directed to catch basin inlets located in loading and waste disposal areas.

The site perimeter and the stormwater outfalls shall be inspected monthly for wind-blown trash and debris. Such trash and debris shall be hand collected and disposed of in the on-site dumpster containers.

SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURE PLAN

Landscape maintenance and parking and loading operations which occur on site necessitate the use of various materials and must be considered in the spill prevention and response practices. The following is a summary of pollutants and the respective property use and maintenance activities generating each:

Pollutant-Generating Activity	**Pollutants or Pollutant Constituents** (that could be discharged if exposed to stormwater)	**Location on Site**
Landscaping Maintenance Operations	Gasoline (from lawnmowers), fertilizers	Lawn and landscape areas throughout site
Parking and Loading Operations	Hydraulic oil/fluid, Antifreeze, diesel/gasoline (all from automobiles)	Driveway, parking, and loading areas throughout site

The Owner/Responsible Party shall be responsible for coordinating necessary containment and cleanup efforts in the event of a spill at any location on site. Should a spill occur, equipment

necessary to attend to spills or leaks shall be stored on site in a designated storage area within the building and shall consist, at minimum, of the following:

- Safety goggles.
- Chemically resistant gloves and overshoe boots.
- Water and chemical fire extinguishers.
- Shovels.
- Absorbent materials.
- Proprietary compact spill containment berms.
- Containers suitable for storage of site-specific materials.
- First aid kits.

Spills and leaks shall be treated according to the type, volume, and location of the released material. Generally, mitigation shall consist of the following:

- Prevention of additional material storage.
- Containment of spilled material.
- Safe, thorough, and environmentally sound removal of spilled material.
- Remediation of environmental damage.

The following describes specific preventative methods to be employed for materials to be used on site.

SPILLS FROM VEHICLES ACCESSING PARKING AND LOADING AREAS

Spills due to vehicular operations are not anticipated on pervious surfaces. In the case of a spill in the driveway, parking or loading areas, the spill shall be contained using spill berms and/or adhesive drain seals at all vulnerable catch basin inlets to prevent entering the subsurface drainage system, and the spill shall then be treated with absorbent material.

SPILLS FROM LANDSCAPE AND LAWN MAINTENANCE EQUIPMENT

In the case of a spill on a pervious surface, the spill shall be contained and treated with absorbent polymer material immediately and the affected soil, mulch, and/or planted vegetation shall be excavated and stored in a proprietary spill containment berm (by Ultratech or the like) for removal by a professional hazardous material removal company.

Town of Plainville Emergency Contacts are as follows:

- Emergency Management: (888) 304-1133 (MassDEP 24-Hour Spill Reporting)
- Police Department: 911
- Fire Department: (508) 695-5252

For spills of less than five (5) gallons of material, mitigation shall consist of source control, containment, and clean-up with absorbent materials, unless an imminent hazard necessitates that a local professional hazardous material removal company become involved to mitigate the spill.

For spills greater than five (5) gallons of material, the incident shall be reported immediately to the MassDEP Hazardous Waste Incident Response Group at (617) 792-7653 and a professional emergency response contractor (ERC). Information that shall be provided to the said ERC is as follows:

- Type of material spilled.
- Quantity of material spilled.
- Location of the spill.
- Time of the spill.

The Owner/Responsible Party shall then employ measures to prevent further spillage, contain and/or clean up the spill.

If a Reportable Quantity (RQ) of material is spilled during site maintenance and access activities, the National Response Center (NRC) shall be notified immediately at (800) 424-8802. Reportable Quantities of hazardous material are available in 310 CMR 40: Massachusetts Contingency Plan Subpart P: Massachusetts Oil and Hazardous Material List. Within 14 days a report shall be submitted to the EPA New England Regional Office describing the following:

- Type of material released.
- Date and circumstances of the release.
- Measures taken to prevent future releases.

This Spill Prevention Plan shall then be updated to document any such preventive measures implemented. The report shall then be submitted to the EPA New England Regional Office at the following address:

EPA New England, Region 1
1 Congress Street, Suite 1100
Boston, MA 02114-2023

Any inspection reports generated in accordance with a RQ spill shall be completed within 24 hours of completing any site inspection. A hard or electronic copy of the report must be retained on site for at least three (3) years from the date of reporting at the Responsible Party's office.

MAINTENANCE AGREEMENT

I, the undersigned, hereby certify that we understand and accept the terms specified in the Town of Plainville Stormwater Management Bylaw and Regulations (SMBR) and acknowledge the following:

1. I am responsible for the maintenance of permanent BMPs on this Site.
2. During a transfer of ownership, I am responsible for informing prospective new owner(s) of the requirements of the Long-Term Operation and Maintenance Plan and of the requirement to amend the Maintenance Agreement with the Town Stormwater Authority (Plainville Conservation Commission or its authorized Agent).
3. I am responsible for allocating and making funds available to perform the required operation and maintenance functions on site.
4. The Town Stormwater Authority may conduct inspections whenever deemed necessary to enforce any provision of the Town of Plainville Stormwater Management Bylaw and Regulations to determine compliance therewith.

I understand that failure to comply with the requirements of the approved Long-Term Operation and Maintenance Plan may result in fines and penalties in accordance with the Town of Plainville Stormwater Management Bylaw and Regulations.

Owner

(signature) (date)

Jamie Ciffolillo
TSC Taunton Street 43 LLC
c/o The Shearwater Companies
175 Paramount Drive, Suite 100A
Raynham, MA 02767
(508) 269-5426

Responsible Party

(signature) (date)

Jamie Ciffolillo
TSC Taunton Street 43 LLC
c/o The Shearwater Companies
175 Paramount Drive, Suite 100A
Raynham, MA 02767
(508) 269-5426

SECTION 1 APPENDIX - PROPRIETARY BMP IMFORMATION

CONTECH®
ENGINEERED SOLUTIONS

Hydrodynamic Separation

The experts you need to solve your stormwater challenges

Contech is the leader in stormwater solutions, helping engineers, contractors and owners with infrastructure and land development projects throughout North America.

With our responsive team of stormwater experts, local regulatory expertise and flexible solutions, Contech is the trusted partner you can count on for stormwater management solutions.

Your Contech Team

STORMWATER CONSULTANT

It's my job to recommend the best solution to meet permitting requirements.

STORMWATER DESIGN ENGINEER

I work with consultants to design the best approved solution to meet your project's needs.

REGULATORY MANAGER

I understand the local stormwater regulations and what solutions will be approved.

SALES ENGINEER

I make sure our solutions meet the needs of the contractor during construction.

Contech is your partner in stormwater management solutions

Removing Pollutants using Hydrodynamic Separation

Utilize high-performance hydrodynamic separation to effectively remove finer sediment, oil and grease, and floating and sinking debris.

CASCADE separator®

CDS®

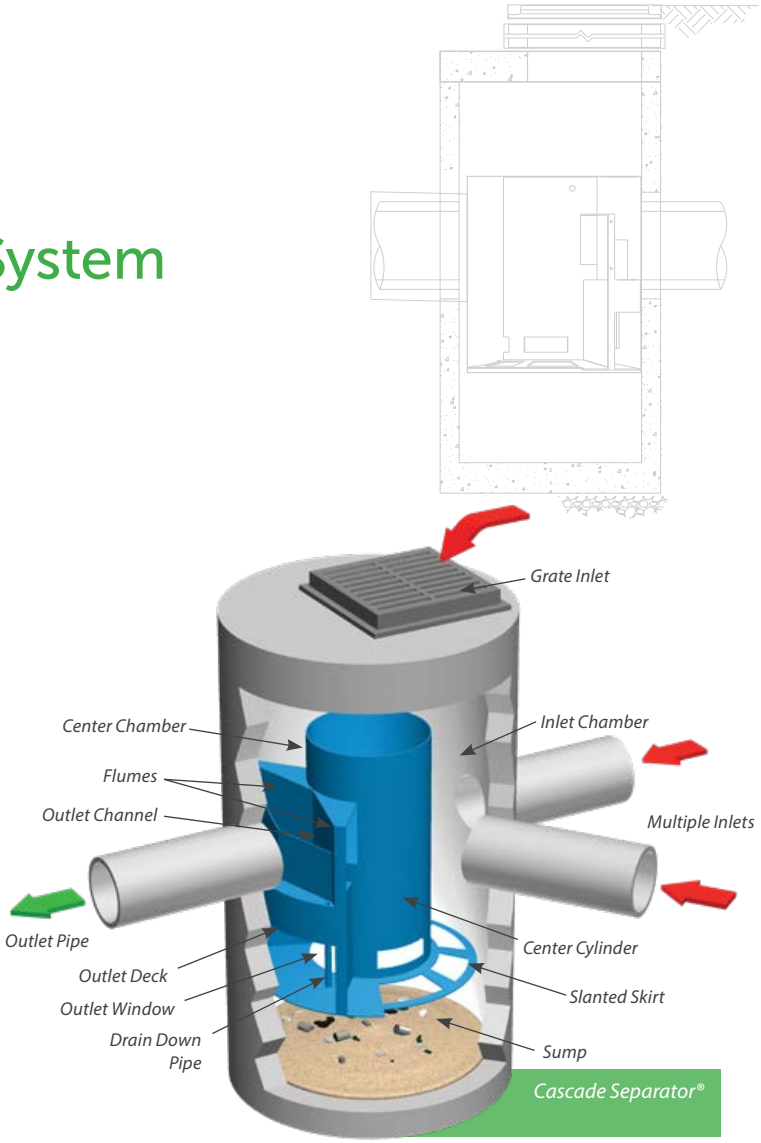
Vortechs®

HDS systems play a vital role in protecting our waterways by removing high levels of sediment, trash, debris, and hydrocarbons from stormwater runoff.

Frequently used as end-of-pipe solutions, they are also used to provide stormwater quality treatment in places where space is limited.

HDS systems capture and retain a variety of stormwater pollutants and are very easy to maintain. These two key benefits have resulted in new uses for HDS technologies, such as pretreating detention, Low Impact Development, and green infrastructure practices, as well as other land-based stormwater treatment systems.

The Cascade Separator® System



Advanced Sediment Capture Technology ...

The Cascade Separator® is the newest innovation in stormwater treatment from Contech. The Cascade Separator was developed by Contech's stormwater experts using advanced modeling tools and Contech's industry leading stormwater laboratory.

This innovative hydrodynamic separator excels at sediment capture and retention while also removing hydrocarbons, trash, and debris from stormwater runoff. What makes the Cascade Separator unique is the use of opposing vortices that enhance particle settling and a unique skirt design that allows for sediment transport into the sump while reducing turbulence and resuspension of previously captured material. These two factors allow the Cascade Separator to treat high flow rates in a small footprint, resulting in an efficient and economical solution for any site.

FEATURE	BENEFIT
Unique skirt design & opposing vortices	Superior TSS removal; reduced system size and costs
Inlet area accepts wide range of inlet pipe angles	Design and installation flexibility
Accepts multiple inlet pipes *	Eliminates the need for separate junction structure
Grate inlet option*	Eliminates the need for a separate grate inlet structure
Internal bypass	Eliminates the need for a separate bypass structure
Clear access to sump and stored pollutants	Fast, easy maintenance

** NJDEP testing based on Cascade Separator with one inlet pipe and no grate inlet*

Learn More:
www.ContechES.com/cascade

SELECT CASCADE APPROVALS

- New Jersey Department of Environmental Protection Certification (NJDEP)

CASCADE MAINTENANCE

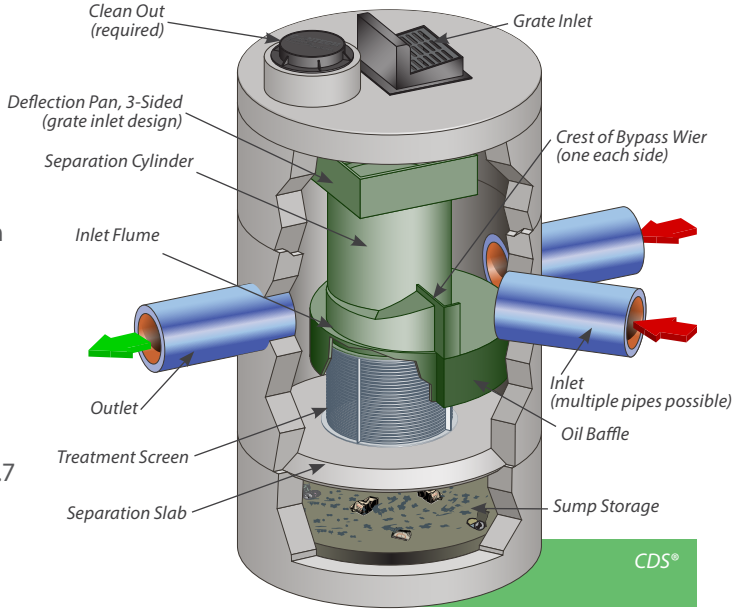
Cascade provides unobstructed access to stored pollutants, making it easy to maintain using a vacuum truck, with no requirement to enter the unit.

The CDS® System

Superior Trash Removal ...

The CDS is a hybrid technology that uses a combination of swirl concentration and indirect screening to separate and trap trash, debris, sediment, and hydrocarbons from stormwater runoff.

At the heart of the CDS system is a unique screening technology used to capture and retain trash and debris. The screen face is louvered so that it is smooth in the downstream direction. The effect created is called "Continuous Deflective Separation." The power of the incoming flow is harnessed to continually shear debris off the screen and to direct trash and sediment toward the center of the separation cylinder. This results in a screen that is self-cleaning and provides 100% removal of floatables and neutrally buoyant material debris 4.7 mm or larger, without blinding.



FEATURE	BENEFIT
Captures and retains 100% of floatables and neutrally buoyant debris 4.7 mm or larger	Superior trash removal
Self-cleaning screen	Ease of maintenance
Isolated storage sump eliminates scour potential	Excellent pollutant retention
Internal bypass	Eliminates the need for additional structures
Multiple pipe inlets and 90-180° angles	Design flexibility
Clear access to sump and stored pollutants	Fast, easy maintenance

Learn More:
www.ContechES.com/cds

SELECT CDS APPROVALS

- Washington Department of Ecology (GULD) – Pretreatment
- New Jersey Department of Environmental Protection Certification (NJDEP)
- Canadian Environmental Technology Verification (ETV)
- California Statewide Trash Amendments Full Capture System Certified*

** The CDS System has been certified by the California State Water Resources Control Board as a Full Capture System provided that it is sized to treat the peak flow rate from the region specific 1-year, 1-hour design storm, or the peak flow capacity of the corresponding storm drain, whichever is less.*

The Vortechs® System

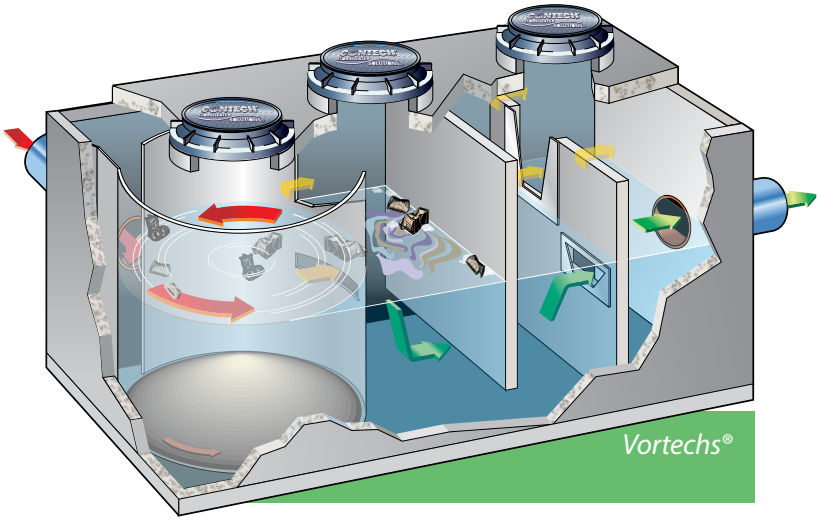
Stormwater Treatment in a Shallow Footprint ....

Vortechs combines swirl concentration and flow controls into a single treatment unit that captures and retains trash, debris, sediment, and hydrocarbons from stormwater runoff.

The Vortechs system's large swirl chamber and flow controls work together to create a low energy environment, ideal for capturing and retaining particles down to 50 microns.

Vortechs is the ideal solution for sites with high groundwater, bedrock, utility conflicts, or sites with a large volume runoff.

The Vortechs System is approved by the Washington Department of Ecology (GULD) - Pretreatment.



SELECT VORTECHS APPROVALS

- Washington Department of Ecology (GULD) – Pretreatment

Learn More:
www.ContechES.com/vortechs

FEATURE	BENEFIT
Large swirl chamber	Fine particle removal down to 50 microns
Shallow profile – Typical depth below pipe invert is only 3 feet.	Can be used on sites with high groundwater, bedrock, or utility conflicts
Unobstructed access to stored pollutants	Fast, easy maintenance

The ideal solution for sites with high groundwater

Design Your Own Hydrodynamic Separator (DYOHDS™)

Learn More:
www.ContechES.com/dyohds

Quickly prepare designs for estimates and project meetings ...

Engineers are always looking for new ways to quickly prepare designs for estimates and project meetings. Contech has developed an online tool to help with the hydrodynamic separation product selection process… the Design Your Own Hydrodynamic Separator (DYOHDS™) tool.

This free, online tool fully automates the layout process for identifying the proper hydrodynamic separator for your site. You can create multiple systems for each project while saving all project information for future use.

- Multiple sizing methods available.
- Site-specific questions ensure the selected unit will comply with site constraints.
- Multiple treatment options may be available based on regulations and site parameters.
- Follow up reports contain a site-specific design, sizing summary, standard detail, and specification.

A free, online tool to aid in the selection of a hydrodynamic separation solution.

A partner you can rely on

STORMWATER SOLUTIONS

PIPE SOLUTIONS

STRUCTURES SOLUTIONS

Few companies offer the wide range of high-quality stormwater resources you can find with us — state-of-the-art products, decades of expertise, and all the maintenance support you need to operate your system cost-effectively.

THE CONTECH WAY

Contech® Engineered Solutions provides innovative, cost-effective site solutions to engineers, contractors, and developers on projects across North America. Our portfolio includes bridges, drainage, erosion control, retaining wall, sanitary sewer and stormwater management products.

TAKE THE NEXT STEP

For more information: www.ContechES.com

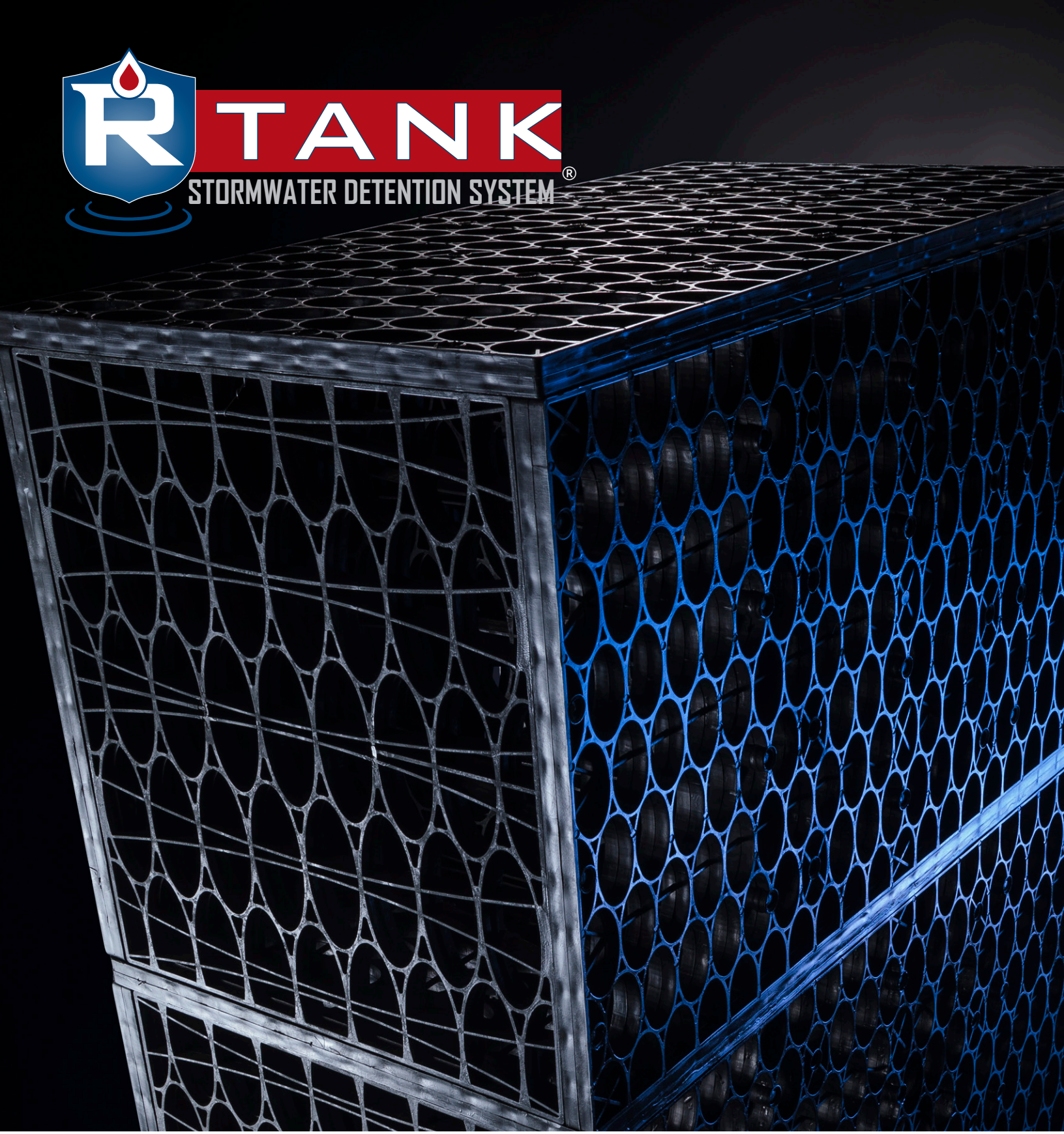
CONTECH® ENGINEERED SOLUTIONS

Get social with us:

800-338-1122 | www.ContechES.com

RTANK®

STORMWATER DETENTION SYSTEM



LD HD SD UD XD

LET'S GET IT DONE®

ACF ENVIRONMENTAL

STORMWATER MANAGEMENT

IS YOUR STORMWATER SYSTEM TAKING UP TOO MUCH SPACE?

Reduce the size with the R-Tank System, an efficient and versatile underground stormwater storage system. This system will reduce your underground stormwater storage system footprint to resolve a utility conflict or free up space for a future expansion.

It will also provide additional options for vehicular loading and cover depths, and deliver greater installation versatility.

DOES YOUR PROJECT REQUIRE A UNIQUE SOLUTION DUE TO DEPTH OR TRAFFIC LOADS?

With five different module configurations, R-Tank provides system height options from 2” to over 7’ deep. It also delivers support for HS-20 and HS-25 traffic, with cover depths from 6” to over 16’.

With an unlimited array of system footprints and configurations, R-Tank solves tough stormwater problems by adapting to the needs of your site - whether your’re designing a project at the beach with minimal depth over a water table or a deep system in the hills.

R TANK®

R-TANK®

BENEFITS

HIGH CAPACITY
- 95% void internal area

STRENGTH
- Easily supports traffic loading from parking lots and roads
- Module options for HS-20 and HS-25 rating with cover depths from 6 inches to 16 feet

DESIGN & CONSTRUCTION VERSATILITY
- Modules can be combined into various shapes efficiently and effectively use space
- Varied height from 2 inches to 7 feet

INCREASED INFILTRATION AND EXILFILTRATION
- Outer shell is 90% open
- Increases groundwater recharge, reducing post-construction discharge volumes

EASY TO TRANSPORT
- Can be supplied unassembled for reduced delivery costs

LIGHTWEIGHT AND QUICK TO INSTALL
- Installed by hand; no cranes required
- Reduces site access delays

RECYCLED CONTENT
- Manufactured with recycled polypropylene

R-TANK LD

- Light Duty module (30 psi)
- Ideal for applications in green space
- Not rated for vehicular traffic
- 12” Minimum cover, 36” maximum cover
- Four internal plates

R-TANK HD

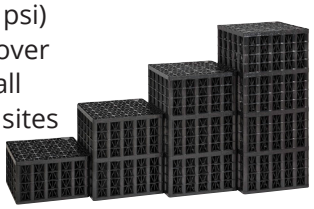
- Heavy Duty module (33.4 psi)
- Standard module for HS-20 traffic applications
- 20” Minimum cover,
- 84” Maximum cover
- Five internal plates

R-TANK SD

- Super Duty module (42.9 psi)
- Higher safety factors for shallow traffic applications and deeper cover
- 18” Minimum cover,
- 120” Maximum cover
- Five internal plates

R-TANK UD

- Ultra Duty module (134.2 psi)
- Traffic loads with 12” of cover
- Available from 14” – 66” tall
- Ideal for high water table sites



R-TANK XD

- Extreme Duty module (240.2 psi)
- Traffic loads with 6” cover
- 16.5’ maximum cover
- Available from 2” - 10’ tall
- 90% void

DESIGN CONSIDERATIONS

Many factors will influence the design of the R-Tank® system. While this list is not intended to be all-inclusive, the following design considerations are worth highlighting:

1. PRE-TREATMENT

Removing pollutants from runoff before they enter an underground detention system is the smart way to design & build a system. Trash Guard Plus® (see page 6) is a great tool for this. Be sure the system you select will remove, heavy sediments, gross pollutants (trash) and biodegradable debris.

2. BACKFILL MATERIALS

Backfill materials should be stone (<1.5" in diameter) or soil (GW, GP SW or SP per the Unified Soil Classification System). Material must be free from lumps, debris and sharp objects that could cut the geotextile. See the R-Tank® narrative specification section 2.03 for additional information.

3. RUNOFF REDUCTION

Most designs incorporate an outlet to drain the system at a controlled rate and/or an overflow to prevent flooding in extreme events. Any infiltration that can be achieved on the site should also be taken advantage of. Consider raising the invert of your outlet or creating a sump to capture and infiltrate the water quality volume whenever possible.

4. WATER TABLE

While installing R-Tank® below the water table is manageable, a stable base must be created to account for the system's ability to drain water out or limit its ability to enter the system. If a liner is used to prevent ground water from entering, measures must be taken to prevent the system from floating.

5. CONSTRUCTION LOADS

Construction loads are often the heaviest loads the system will experience. Care must be taken during backfilling and compaction (see specification section 3.05), and post-installation construction traffic should be routed around the system (Install Guide step 12).

6. LATERAL LOADS

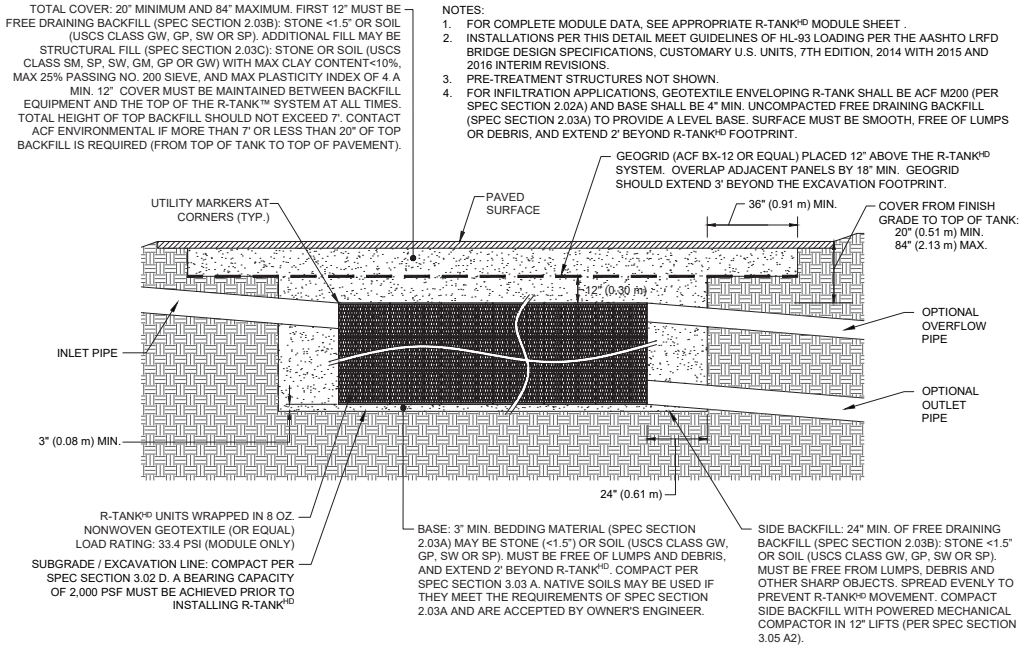
As systems get deeper, the loads acting on the sides of the tank increase. While vertical loads often control the design, lateral loads should also be considered.

7. R-TANK MODULES

Selecting the right module for your application is critical. See page 3 and the specs on the back of this brochure, for details. Our team is also here to help!

8. LOAD MODELING

A safety factor of >1.75 is required when designing an R-Tank System using the AASHTO LRFD Bridge Design Specifications. It is also necessary to run your own loading model with specific site requirements. Example models can be found in our Tech Note on loading capabilities, and minimum cover requirements can be found in the specs on the back of this brochure.



LOW IMPACT DESIGN & GREEN INFRASTRUCTURE

As much of the nation's Gray Infrastructure continues to decay, new concepts for rebuilding it are emerging through Green Infrastructure (GI) and Low Impact Development (LID). This type of reconstruction moves beyond traditional systems that do one thing well, to systems that accomplish multiple objectives simultaneously.

ACF Environmental has several technologies that dovetail with the goals of LID and GI and can play a significant role in the redevelopment process.

R-TANK®

SPACE EFFICIENT SUBSURFACE STORAGE

Pipe and stone are used in traditional systems to move and store runoff. R-Tank accomplishes the same purpose with several additional benefits.

- Stores and moves runoff
- Moves water slowly, increasing time of concentration
- Open system encourages infiltration
- Fully accessible for maintenance
- Stores 138% more water than stone
- Maximizes storage potential of GI practices
- Easily handles traffic loads
- Ships flat to reduce site disturbance

PERMEABLE PAVEMENTS

RUNOFF REDUCTION TECHNIQUES

Traditional pavements move vehicles efficiently, but are easily damaged by stormwater. ACF Environmental specializes in permeable pavements that handle traffic loads, while providing surface infiltration rates 10x higher than traditional pervious pavements, helping reduce the expense of long-term maintenance.

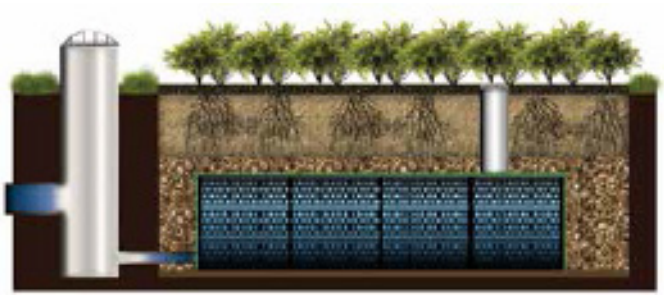
- Handles all vehicular loads
- Drains ten times faster than competing pervious pavements
- Reduces long-term maintenance costs
- Encourages infiltration
- Pair with R-Tank® to maximize water storage and transport

FOCALPOINT

VEGETATED/ BIOLOGICAL TREATMENT SYSTEM

Traditional landscaping adds aesthetic value to projects, but has more potential. Many developers turn to bioretention, but are forced to surrender massive land areas and dedicate significant future funds to maintenance. FocalPoint reduces the space requirements and maintenance costs of bioretention by up to 90% while providing similar pollutant removal.

- Adds aesthetic value to properties
- Cleans runoff to improve water quality
- Reduces space requirements and maintenance costs of traditional bioretention systems
- Encourages infiltration to reduce volume of water discharged
- Pairs with R-Tank® to maximize water storage and transport



R-Tank maximizes the storage capabilities of bioretention and permeable pavement systems.

MAINTENANCE

DESIGNING AN R-TANK SYSTEM WITH LONGEVITY & MAINTENANCE IN MIND IS A THREE-STEP PROCESS:

1. PREVENT

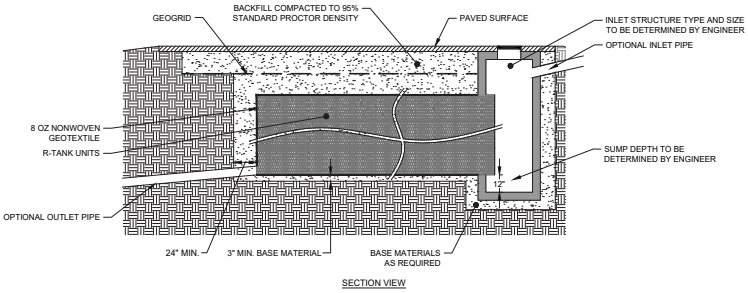
Keep debris and sediment out of the system by pre-treating runoff with the Trash Guard Plus® unit (see below). For a more centralized approach, you could consider having the R-Tank units penetrate the connecting structure, which allows the use of the R-Tank® as its own trash screen. This works best with a structure that includes a sump (see Inlet Connection drawing below).

2. ISOLATE

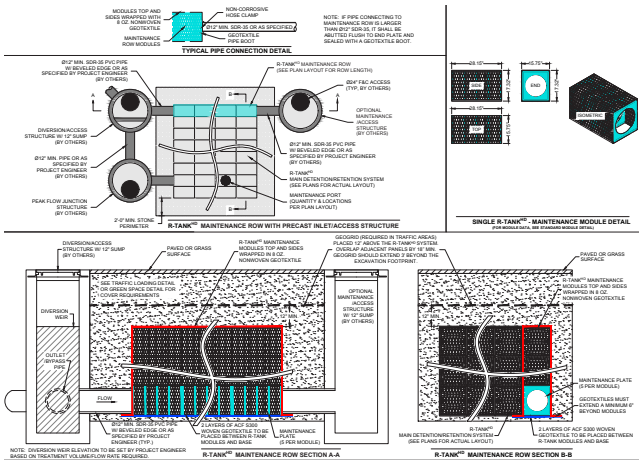
Trap solid pollutants inside the maintenance row (see Maintenance Row drawing below) where they can be easily removed, using the Maintenance Modules (available in LD, HD, and UD only). These modules are wrapped in geotextile to retain solids and are fully accessible by conventional jet-vac systems to remove captured pollutants.

3. PROTECT

Ensure a long system life by including maintenance ports to remove any pollutants that evade the pre-treatment system and maintenance row. Maintenance ports should be specified within 10’ of inlet and outlet connections, and roughly 50’ on center (see detail on page 7).



INLET CONNECTION



MAINTENANCE ROW

MAINTENANCE PREVENTION

TRASH GUARD PLUS ®

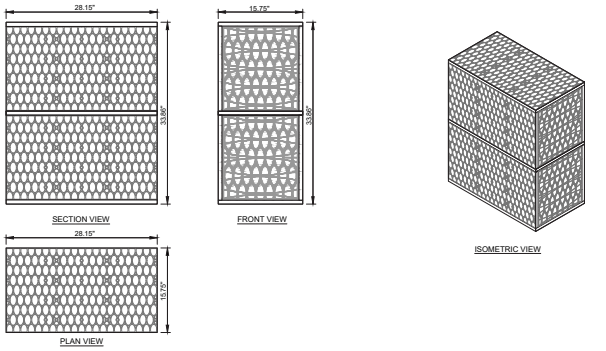
Trash Guard Plus® is a patented stormwater pretreatment device that captures debris, sediment and floatables. Easy to install and maintain, it is a fraction of the cost of other pretreatment devices.

BENEFITS

- Simple retrofit to existing catch basins
- Installs without heavy equipment
- Quick and easy assembly
- Adjusts to irregular catch basin bottoms and/or walls
- Eliminates stormwater trash at public parks, beaches, and waterways
- Removes harmful nutrients and regulated metals

TYPICAL DESIGN

MODULE DRAWING - DOUBLE



MODULE DATA

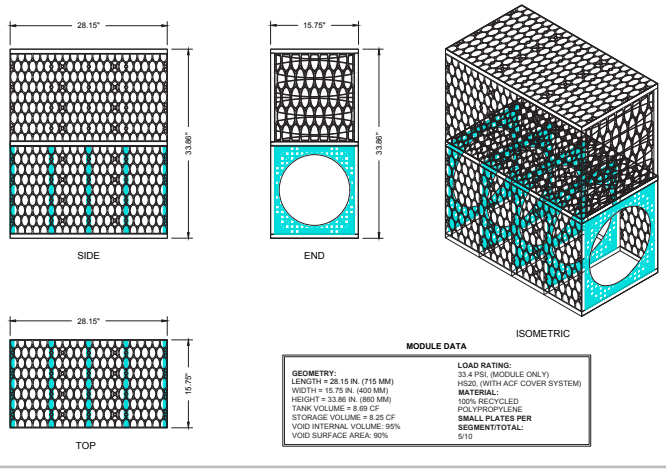
GEOMETRY: LENGTH = 28.15 IN. (715 MM)
WIDTH = 15.75 IN. (400 MM)
HEIGHT = 33.86 IN. (860 MM)
TANK VOLUME = 8.69 CF
STORAGE VOLUME = 8.25 CF
VOID INTERNAL VOLUME: 95%
VOID SURFACE AREA: 90%

LOAD RATING: 33.4 PSI, (MODULE ONLY)
HS25, (WITH ACF COVER SYSTEM)

MATERIAL: 100% RECYCLED POLYPROPYLENE

SMALL PLATES PER SEGMENT/TOTAL: 5/10

MAINTENANCE MODULE - DOUBLE



MODULE DATA

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LENGTH = 28.15 IN. (715 MM)
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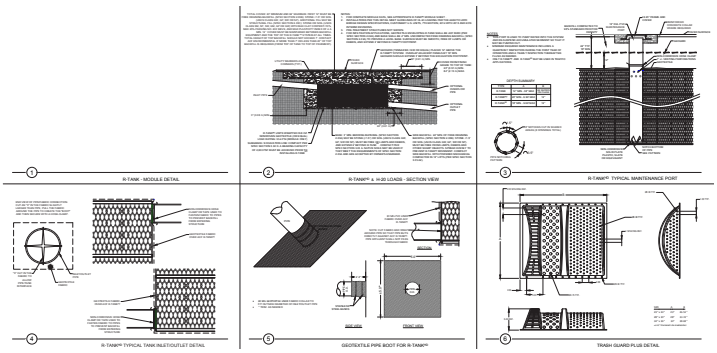
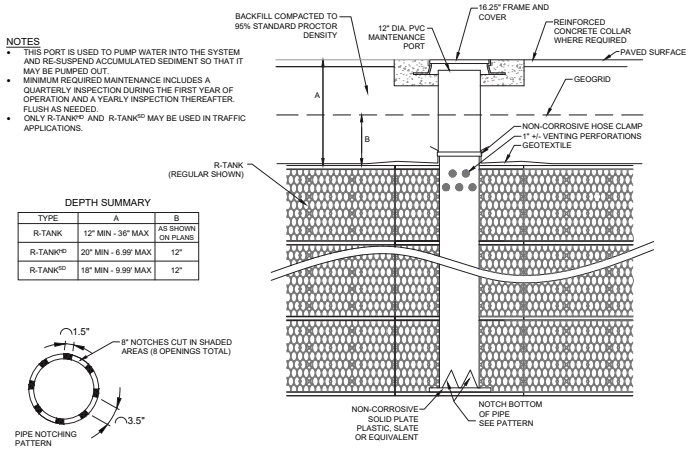
HEIGHT = 33.86 IN. (860 MM)
TANK VOLUME = 8.69 CF
STORAGE VOLUME = 8.25 CF
VOID INTERNAL VOLUME: 95%
VOID SURFACE AREA: 90%

LOAD RATING:
33.4 PSI, (MODULE ONLY)
HS20, (WITH ACF COVER SYSTEM)
MATERIAL:
100% RECYCLED POLYPROPYLENE
SMALL PLATES PER SEGMENT/TOTAL:
5/10

COMPOSITE DETAILS



MAINTENANCE PORT



SELECTING THE RIGHT R-TANK MODULE

Cover Depth (inches)*	LD	HD	SD	UD	XD
Min. 6"	Green Space - No Traffic	Green Space - No Traffic	Green Space - No Traffic	Green Space - No Traffic	HS-20
12"	Green Space - No Traffic	Green Space - No Traffic	Green Space - No Traffic	HS-20**	HS-20
14"	Green Space - No Traffic	Green Space - No Traffic	Green Space - No Traffic	HS-20	HS-20
18"	Green Space - No Traffic	Green Space - No Traffic	HS-20	HS-20	HS-20
20"	Green Space - No Traffic	HS-20	HS-20	HS-20	HS-20
24"	Green Space - No Traffic	HS-20	HS-20	HS-20	HS-20
36"	Green Space - No Traffic	HS-20	HS-20	HS-20	HS-20
48"		HS-20	HS-20	HS-20	HS-20
60"		HS-20	HS-20	HS-20	HS-20
72"		HS-20	HS-20		HS-20
84"			HS-20		HS-20
120"			HS-20		HS-20
160"					HS-20
Max. 200"					HS-20

HS-20 designation based on AASHTO LRFD Bridge Design Spec for single lane traffic. HS-25 loading is available. Call ACF for details.
*Cover depth is measured from top of module to finished grade or top of pavement
**The UD module requires STONE backfill (not soil) on sides at this depth

R-TANK SPECIFICATIONS

LD HD

DIMENSIONS & CAPACITY

Module (Segments)	Width (inch)	Length (inch)	Height (in/ft)	Volume (cf)	Capacity (cf)	Weight* (lbs)
Mini	15.75	28.15	9.45”/0.79’	2.42	2.30	10.1/10.9
Single(1)	15.75	28.15	17.32”/1.44’	4.44	4.22	15.7/17.3
Single + Mini(1.5)	15.75	28.15	25.98”/2.17’	6.67	6.33	23.6/25.9
Double (2)	15.75	28.15	33.86”/2.82’	8.69	8.25	29.1/32.3
Double + Mini(2.5)	15.75	28.15	42.52”/3.54’	10.91	10.36	37.0/41.0
Triple (3)	15.75	28.15	50.39”/4.20’	12.93	12.28	42.5/47.4
Triple + Mini(3.5)	15.75	28.15	59.06”/4.92’	15.15	14.39	50.4/56.0
Quad(4)	15.75	28.15	66.93”/5.58’	17.17	16.31	55.9/62.4
Quad + Mini(4.5)	15.75	28.15	75.59”/6.30’	19.39	18.42	63.8/71.0
Pent(5)	15.75	28.15	83.46”/6.96’	21.41	20.34	69.3/77.4

*Weights shown are for LD/HD modules.

SD

DIMENSIONS & CAPACITY

Module (Segments)	Width (inch)	Length (inch)	Height (in/ft)	Volume (cf)	Capacity (cf)	Weight (lbs)
Single (1)	15.75	28.15	9.45”/0.79’	2.42	2.30	10.95
Double (2)	15.75	28.15	18.12”/1.51’	4.64	4.41	19.58
Triple (3)	15.75	28.15	26.79”/2.23’	6.86	6.52	28.21
Quad (4)	15.75	28.15	35.46”/2.96’	9.08	8.63	36.84
Pent (5)	15.75	28.15	44.13”/3.68’	11.30	10.74	45.47
Hex (6)	15.75	28.15	52.80”/4.40’	13.52	12.84	54.10
Septa (7)	15.75	28.15	61.47”/5.12’	15.74	14.95	62.73
Octo (8)	15.75	28.15	70.14”/5.85’	17.96	17.06	71.36
Nono (9)	15.75	28.15	78.81”/6.57’	20.18	19.17	79.99
Decka (10)	15.75	28.15	87.48”/7.29’	22.40	21.28	88.62

UD

DIMENSIONS & CAPACITY

Module (Segments)	Width (inch)	Length (inch)	Height (in/ft)	Volume (cf)	Capacity (cf)	Weight (lbs)
Single (1)	23.62	23.62	14.17”/1.18’	4.57	4.35	21.2
Double (2)	23.62	23.62	27.17”/2.26’	8.77	8.33	39.0
Triple (3)	23.62	23.62	40.16”/3.35’	12.97	12.32	56.8
Quad (4)	23.62	23.62	53.15”/4.43’	17.16	16.30	74.6
Pent (5)	23.62	23.62	66.14”/5.5’	21.35	20.29	92.4

XD

DIMENSIONS & CAPACITY

Module (Segments)	Width (inch)	Length (inch)	Height (inch)	Volume (cf)	Capacity (cf)	Weight (lbs)
Single (1)	19.68	23.62	1.97	0.53	0.48	4
Double (2)	19.68	23.62	3.94	1.06	0.95	8
Triple (3)	19.68	23.62	5.91	1.59	1.43	12
Quad (4)	19.68	23.62	7.87	2.12	1.91	16
Pent (5)	19.68	23.62	9.84	2.65	2.38	20

Note: XD modules may be stacked up to 10’ tall (60 layers).

SPECIFICATIONS

Item	Description	LD	HD	SD	UD	XD
		Value	**Value**	**Value**	**Value**	**Value**
Void Area	Volume available for water storage	95%	95%	95%	95%	90%
Surface Area Void	% of exterior available for infiltration	90%	90%	90%	90%	90%
Compressive Strength	ASTM D 2412/ ASTM F 2318	30.0 psi	33.4 psi	42.9 psi	134.2 psi	240.2 psi
Unit Weight	Weight of plastic per cubic foot of tank	3.29 lbs/cf	3.62 lbs/cf	3.96 lbs/cf	4.33 lbs/cf	7.55 lbs/cf
Rib Thickness	Thickness of load-bearing members	0.18”	0.18”	0.18”	-	-
Service Temperature	Safe temperature range for use	-14 - 167º F	-14 - 167º F	-14 - 167º F	-14 - 167º F	-14 - 167º F
Recycled Content	Use of recycled polypropylene	100%	100%	100%	100%	100%
Minimum Cover	Cover required for HS-20 loading	Not traffic rated	20”	18”	12” - 14”	6”
	Cover required for HS-25 loading	Not traffic rated	24”	18”	15” - 17”	6”
Maximum Cover	Maximum allowable cover depth	36”	6.99’	9.99’	5.0’	16.7’

SECTION 2: INSPECTION AND MAINTENANCE LOGS

APPENDIX

Logs and Checklists

- BMP Maintenance Log
- Inspection Form: Deep Sump/ Hooded Catch Basin
- Inspection Form: Underground Detention System
- Inspection Form: Precast Outlet Control Manhole
- Inspection Form: Precast Outlet Control Structure
- Inspection Form: Sediment Forebay
- Inspection Form: Vegetated Infiltration Basin
- Inspection Form: Contech CDS Water Quality Unit
- Inspection Form: Sand Filter

BMP MAINTENANCE LOG

DATE	NAME OF MAINTENANCE PERSONNEL/COMPANY	TYPE OF MAINTENANCE PERFORMED	ISSUES/NEED FOR FOLLOW-UP	WORK ORDER PROVIDED?

DATE	NAME OF MAINTENANCE PERSONNEL/COMPANY	TYPE OF MAINTENANCE PERFORMED	ISSUES/NEED FOR FOLLOW-UP	WORK ORDER PROVIDED?

Reproduce log sheets as necessary over the life of this Operation and Maintenance Plan.

INSPECTION FORM: DEEP SUMP/ HOODED CATCH BASIN

Unit Number: CB _____ (Refer to Site Grading and Drainage Plan)

Inspector Name:

Date/Time:

Weather:

TYPE OF INSPECTION (CHECK ONE)	
	Routine (Every Three Months)
	Annual
	Post-Storm (Rainfall Depth =_____inches)
	Post-Spill (Time/Date of Spill:_____)

INSPECTION CHECKLIST (CHECK ALL THAT APPLY)	
	Check sediment depth (Sediment Depth =_____inches)
	Check for settlement/ cracking of pavement around frame and grate
	Remove floating trash and sediment
	Confirm water level in sump is at invert elevation
	Confirm oil/gas hood is secure and functioning
CORRECTIVE ACTION REQUIRED	
ADDITIONAL NOTES/OBSERVATIONS	

INSPECTION FORM: UNDERGROUND DETENTION SYSTEM

Inspector Name:

Date/Time:

Weather:

TYPE OF INSPECTION (CHECK ONE)	
	Routine (Every Six Months)
	Annual
	Post-Storm (Depth =_____inches; Storm Duration =_____hrs; Storm End Date =_____)
	Post-Spill (Time/Date of Spill:_____)

INSPECTION CHECKLIST (CHECK ALL THAT APPLY)	
	Check for settlement/ cracking of pavement
	Check for ground settlement at inspection port locations
	Check for sediment accumulation at inlets/outlet via inspection ports
	Confirm dry condition within system

CORRECTIVE ACTION REQUIRED

ADDITIONAL NOTES/OBSERVATIONS

INSPECTION FORM: PRECAST OUTLET CONTROL MANHOLE

Unit Number: OCS _____ (Refer to Site Grading and Drainage Plan)

Inspector Name:

Date/Time:

Weather:

	TYPE OF INSPECTION (CHECK ONE)
	Routine (Every Six Months)
	Annual
	Post-Storm (Depth =_____inches; Storm Duration =_____hrs; Storm End Date =_____)
	Post-Spill (Time/Date of Spill:_____)

	INSPECTION CHECKLIST (CHECK ALL THAT APPLY)
	Underground Detention System inspection and form also completed?
	Check for ground settlement/ pavement cracking around frame and cover
	Confirm dry condition within structure
	Check for weeping/ cracking in inner wall or baffle wall
	Check for obstructions (sediment, trash, debris) at outlet invert and baffle orifices
	Check sediment depth at inlet and outlet (Sediment Depth =_____inches)
	CORRECTIVE ACTION REQUIRED
	ADDITIONAL NOTES/OBSERVATIONS

INSPECTION FORM: PRECAST OUTLET CONTROL STRUCTURE

Unit Number: OCS _____ (Refer to Site Grading and Drainage Plan)

Inspector Name:

Date/Time:

Weather:

	TYPE OF INSPECTION (CHECK ONE)
	Routine (Every Six Months)
	Annual
	Post-Storm (Depth =_____inches; Storm Duration =_____hrs; Storm End Date =_____)
	Post-Spill (Time/Date of Spill:_____)

	INSPECTION CHECKLIST (CHECK ALL THAT APPLY)
	Infiltration Basin or Sand Filter inspection and form also completed?
	Check for ground settlement/ rilling at and around structure
	Confirm dry condition within structure
	Check for weeping/ cracking in inner wall or baffle wall
	Check for obstructions (sediment, trash, debris) at outlet invert and baffle orifices
	Check sediment depth at inlet and outlet (Sediment Depth =_____inches)
CORRECTIVE ACTION REQUIRED	
ADDITIONAL NOTES/OBSERVATIONS	

INSPECTION FORM: SEDIMENT FOREBAY

Forebay Number: _____ (Refer to Site Grading and Drainage Plan)

Inspector Name:

Date/Time:

Weather:

TYPE OF INSPECTION (CHECK ONE)	
	Routine (Monthly)
	Cleaning (Quarterly)
	Post-Storm (Depth =_____inches; Storm Duration =_____hrs; Storm End Date =_____)
	Post-Spill (Time/Date of Spill:_____)

INSPECTION CHECKLIST (CHECK ALL THAT APPLY)	
	Infiltration Basin inspection and form also completed?
	Check for erosion and cracking on side slopes and spillway
	Check for tree growth on side slopes and at forebay floor
	Check for differential settlement at forebay floor
	Mow side slopes and forebay floor; remove clippings
	Remove accumulated trash, sediment, organics
CORRECTIVE ACTION REQUIRED	
ADDITIONAL NOTES/OBSERVATIONS	

INSPECTION FORM: VEGETATED INFILTRATION BASIN

Inspector Name:

Date/Time:

Weather:

TYPE OF INSPECTION (CHECK ONE)	
	Routine (Every Six Months)
	Annual
	Post-Storm (Depth =_____inches; Storm Duration =_____hrs; Storm End Date =_____)
	Post-Spill (Time/Date of Spill:_____)

INSPECTION CHECKLIST (CHECK ALL THAT APPLY)	
	Sediment Forebay/ Precast Outlet Control Structure inspections and forms also completed?
	Check for erosion and cracking on side slopes
	Check for tree growth on side slopes and at basin floor
	Check for differential settlement at basin floor
	Confirm outlet control structure is clear of debris, organics
	Mow side slopes and basin floor; remove clippings
	Remove accumulated trash, sediment, organics
CORRECTIVE ACTION REQUIRED	
ADDITIONAL NOTES/OBSERVATIONS	

INSPECTION FORM: CONTECH CDS WATER QUALITY UNIT

Unit Number: CDS _____ (Refer to Site Grading and Drainage Plan)

Inspector Name:

Date/Time:

Weather:

TYPE OF INSPECTION (CHECK ONE)	
	Routine (Monthly)
	Annual
	Post-Storm (Rainfall Depth =_____inches)
	Post-Spill (Time/Date of Spill:_____)

INSPECTION CHECKLIST (CHECK ALL THAT APPLY)	
	Clear down pipe and riser pipe of debris and/or trash (as needed)
	Remove accumulated sediment from settling chamber (if >15% full of sediment)
	Remove floatables, oil, and hydrocarbons
	Ensure watertightness of structure
	Securely seat manhole cover after inspection
CORRECTIVE ACTION REQUIRED	
ADDITIONAL NOTES/OBSERVATIONS	

INSPECTION FORM: SAND FILTER

Inspector Name:

Date/Time:

Weather:

TYPE OF INSPECTION (CHECK ONE)	
	Routine (Every Six Months)
	Annual
	Post-Storm (Depth =_____inches; Storm Duration =_____hrs; Storm End Date =_____)
	Post-Spill (Time/Date of Spill:_____)

INSPECTION CHECKLIST (CHECK ALL THAT APPLY)	
	Sediment Forebay/ Precast Outlet Control Structure inspections and forms also completed?
	Check for erosion and cracking on side slopes, at spillways, and at roof drain outlet
	Check for tree/shrub growth on side slopes and at basin floor
	Check for differential settlement at basin floor
	Confirm outlet control structure is clear of debris, organics
	Mow side slopes and basin floor; remove clippings
	Remove accumulated trash, sediment, organics
CORRECTIVE ACTION REQUIRED	
ADDITIONAL NOTES/OBSERVATIONS	