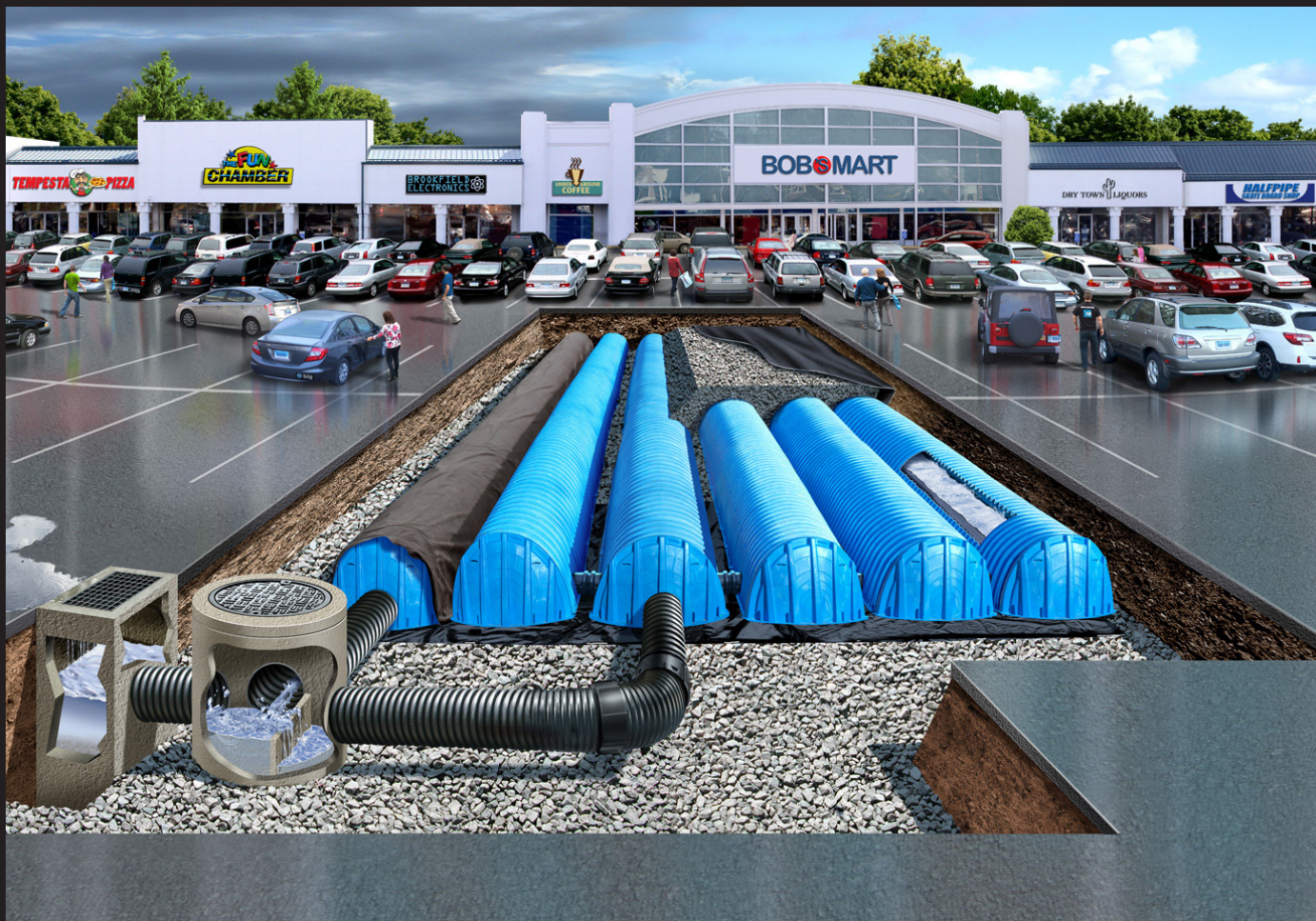


CULTEC SEPARATOR™ ROW

WATER QUALITY SYSTEM



OPERATION & MAINTENANCE GUIDE

FOR CULTEC STORMWATER MANAGEMENT SYSTEMS



STORMWATER MANAGEMENT SOLUTIONS



CULTEC



Published by

CULTEC, Inc.

P.O. Box 280
878 Federal Road
Brookfield, Connecticut 06804 USA
www.cultec.com

Copyright Notice

© 2022 CULTEC, Inc. All rights reserved. Printed in the USA.

This document and any accompanying CULTEC products are copyrighted by CULTEC, Inc. Any reproduction and/or distribution without prior written consent from CULTEC, Inc. is strictly prohibited.

Disclaimers:

The drawings, photographs and illustrations shown in this document are for illustrative purposes only and are not necessarily to scale.

Actual designs may vary.

CULTEC reserves the right to make design and/or specification changes at any time without notice at CULTEC's sole discretion.

CULTEC is not responsible for typographical errors.

Protected by one or more of the following patents:

Protected by one or more of the following patents:

U.S. Patents 6,129,482; 6,322,288; 6,854,925; 7,226,241; 7,806,627; 8,366,346; 8,425,148; and others; U.S. Designs D613819; D638,095; D668,318 and others; Canadian Patent 2,591,255 and others; Community Designs 1092191; 1745209; and others.

CULTEC, the CULTEC logo, RECHARGER, CONTACTOR, HVLV, PAC, STORMFILTER, STORMGENIE and The Chamber with The Stripe are registered trademarks of CULTEC, Inc.

Chamber of Choice, 902, HD, 100, 125, 150, 150XL, 180, 280, 330, 330XL, 360, V8, 902, Field Drain Panel, C-1, C-2, C-3, C-4, EZ-24, Landscape Series are trademarks of CULTEC, Inc. All rights reserved.

Contact Information:

For general information on our other products and services, please contact our offices within the United States at (800)428-5832, (203)775-4416 ext. 202, or e-mail us at custservice@cultec.com.

For technical support, please call (203)775-4416 ext. 203 or e-mail tech@cultec.com.

Visit www.cultec.com/downloads.html for Product Downloads and CAD details.

Doc ID: CLT043 02-22

Feb 2022

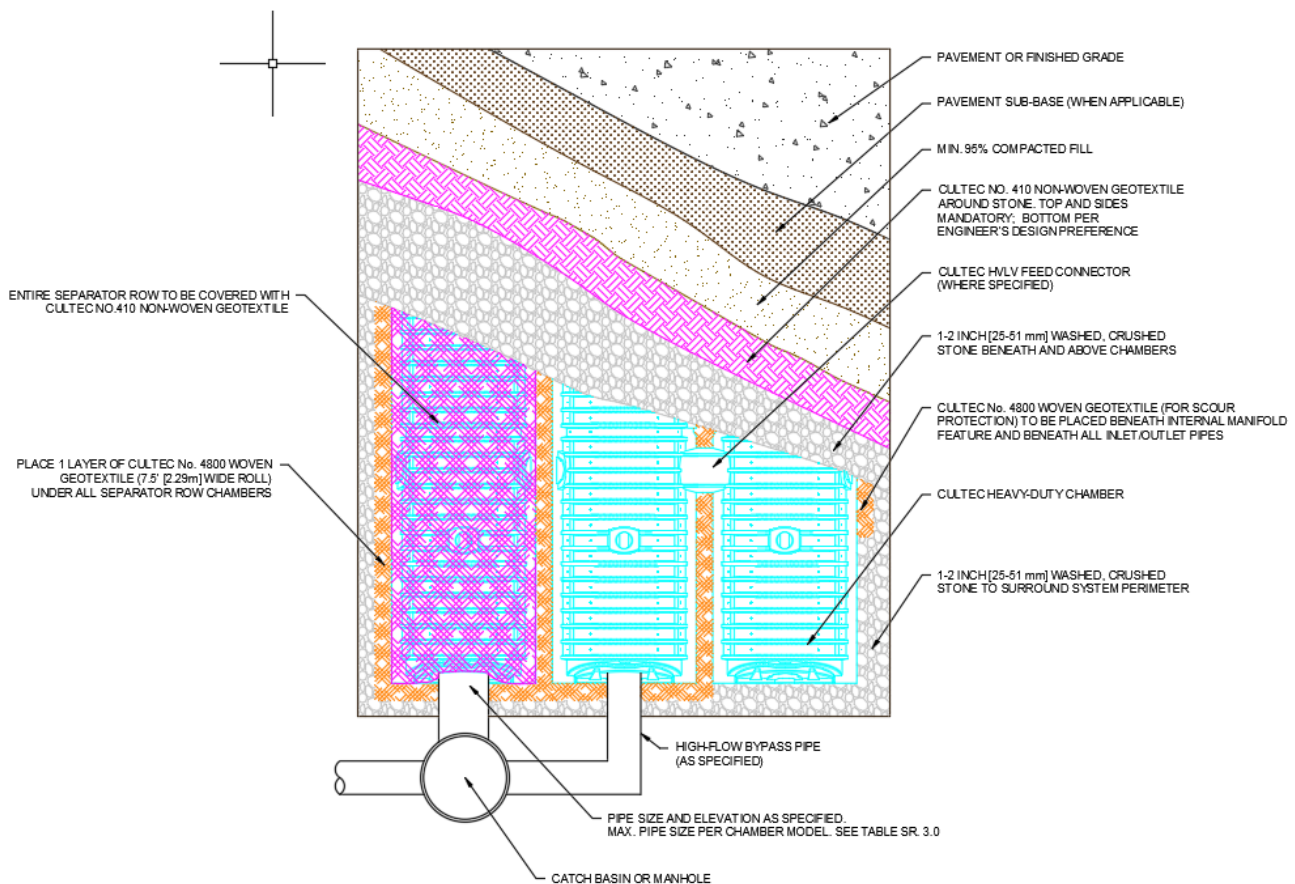
Introduction

CULTEC's Separator™ Row is an inexpensive means of removing Total Suspended Solids from the CULTEC chamber system, as well as providing easier access for inspection and maintenance. The Separator Row is designed to capture the First Flush of a rain event and is typically included as part of the "Treatment Train" for water quality.

The CULTEC Separator Row is a row of CULTEC Contactor or Recharger Chambers that are surrounded on all sides by filter fabric. One layer of CULTEC No. 4800™ Woven Geotextile are placed between the clean foundation stone and the chamber feet. The chambers are then completely wrapped with CULTEC No. 410™ non-woven geotextile. This configuration is designed to trap any sediment and/or debris that may pass through the upstream water-quality structures and into the chamber system.

A manhole is typically located adjacent to the separator row for ease of inspection and maintenance. This manhole is placed upstream of the system and can include a high-flow bypass pipe to pass peak-flows onto adjacent rows of chambers. The upstream manhole is designed with a sump to trap heavier sediment and allow for proper cleaning of the Separator Row. A JetVac process with a high pressure water nozzle is introduced down the Separator Row via the access manhole to clean all sediment and debris from the Separator Row. Captured pollutants are flushed into the sumped access manhole for vacuuming, and the process is repeated until the Separator Row is completely free of sediment and debris.

The Separator Row performance has been tested and verified to the protocols and procedures as defined by Environmental Technology Verification (ETV) Canada to achieve 80% TSS removal.



Design

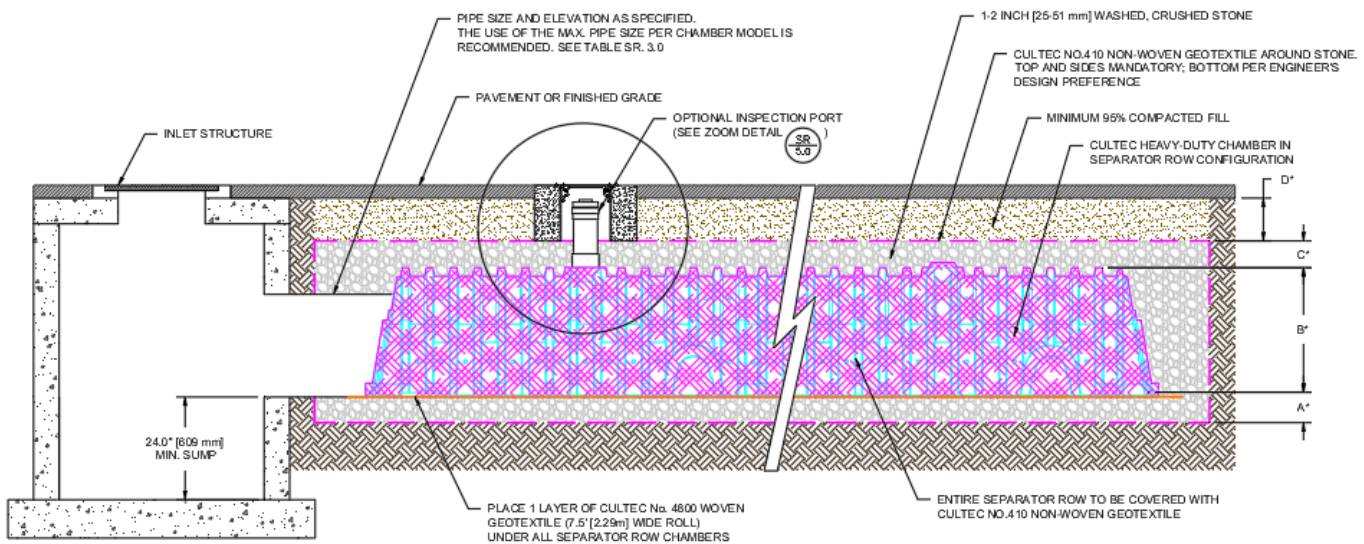
There is no single design to achieve a high level of water quality. The CULTEC Separator Row should be designed as part of an overall best management practices water quality system. Pre-treatment devices such as sump catch basins, inlet baffles and proprietary oil-grit separators and filter systems can all be incorporated upstream of the CULTEC Separator Row. Sumped access/diversion manholes should be installed directly upstream of the Separator Row.

The following is a list of recommended design practices to ensure proper maintenance for the life of the system:

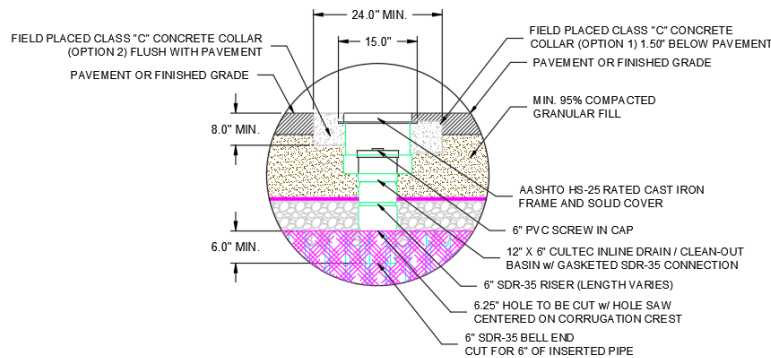
- Install sumped access/diversion manholes, including a minimum 24" (600 mm) sump, directly upstream of the Separator Row.

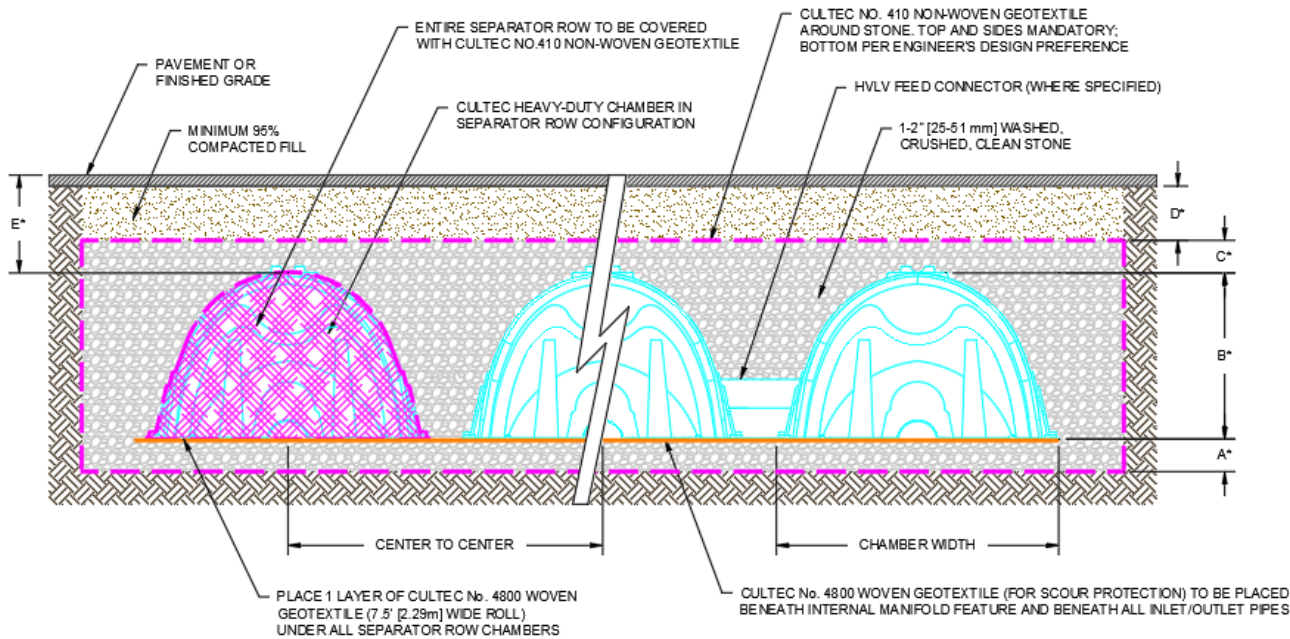
- Include a high-flow bypass pipe to divert peak flows that exceed the capacity of the Separator Row to adjacent rows.
- Connect the access manhole to the Separator Row with the largest diameter pipe allowable based on the CULTEC chamber model used.
- Maintain a minimum distance between the access manhole and the Separator Row to promote efficient maintenance.
- Include at least one inspection port per Separator Row for periodic inspection.

Note: Typical JetVac maintenance reels have a maximum of 400 feet (121.9 m) of available hose. Consider this when designing the length of the CULTEC Separator Rows.



*SEE SR 3.0 - CROSS SECTION TABLE REFERENCE





*SEE SR 3.0 - CROSS SECTION TABLE REFERENCE

Table SR 3.0

Description	Contactor 100HD	Recharger 150XLHD	Recharger 280HD	Recharger 330XLHD	Recharger 360HD	Recharger 902HD
A Min. depth of stone base	6" 152 mm	6" 152 mm	6" 152 mm	6" 152 mm	6" 152 mm	9" 229 m
B Chamber height	12.5" 318 mm	18.5" 470 mm	26.5" 673 mm	30.5" 775 mm	36" 914 mm	48" 1219 mm
C Min. depth of stone required above units for traffic applications	6" 152 mm	6" 152 mm	6" 152 mm	6" 152 mm	6" 152 mm	12" 305 mm
D Min. depth required of 95% compacted fill for paved traffic application	8" 203 mm	8" 203 mm	8" 203 mm	10" 254 mm	12" 305 mm	12" 305 mm
E Max. depth of cover allowed above crown of chamber	12' 3.65 m	12' 3.65 m	12' 3.65 m	12' 3.65 m	12' 3.65 m	8.5' 2.59 m
Max. allowable pipe size into chamber end wall/end cap	10" 250 mm	12" 300 mm	18" 450 mm	24" 600 mm	24" 600 mm	24" 600 mm

Inspection and Maintenance

CULTEC recommends inspection of the Separator Row to be performed every six months for the first year of service. Future inspection frequency can be adjusted based upon previous inspection observations. However annual inspections are recommended. Inspection of the Separator Row can be achieved via an inspection port riser installed during construction. This inspection port riser will connect the top of the Separator Row chambers to finished grade with a removable lid. Alternatively the Separator Row may be inspected via the manhole(s) located at the end(s) of the Separator Row. However this method of inspection requires confined space entry. If entry into the manhole is required, all local and OSHA rules for confined space entries must be strictly followed.

To inspect:

- Remove the inspection port lid from the floor box frame.

- Remove the riser pipe cap.
- With a flashlight and stadia rod, measure the depth of sediment.
- Record results in a maintenance log.
- When depth of sediment exceeds 3" (76 mm), use the JetVac procedure described below.

The JetVac process utilizes a high pressure water nozzle controlled from the surface. The high pressure nozzle is introduced down the Separator Row via the access manhole(s). The high pressure water cleans all sediment and debris from the Separator Row as the nozzle is retrieved. Captured pollutants are flushed into the sumped access manhole for vacuuming. This process is repeated until the Separator Row is completely free of sediment and debris. A small diameter culvert cleaning nozzle is recommended for this procedure.



High pressure water nozzle



Cleaning Separator Row and pipes with high pressure water nozzle



SEPARATOR ROW: Separator Row prior to cleaning



ADJACENT ROW: When the Separator Row is working properly, the adjacent rows will not show signs of sediment.

Inspection and Maintenance Record

Date	Mode of Access	Frequency	Depth of Sediment	Actions	Expenses	Inspector	Notes
Ex.	Inspection Port	Semi-annually	2"	Measure sediment depth with stadia rod. Visually inspect	\$100	DPG	Depth of Sediment was measured via Northeast Inspection Port Adjacent to MH-1. Sediment depth was found to be 2". No further action required at this time.
Ex.	Access Manhole	Annually					



CULTEC, Inc.

878 Federal Road • P.O. Box 280 • Brookfield, CT 06804 USA

P: (203) 775-4416 • Toll Free: 1(800) 4-CULTEC • www.cultec.com



RETENTION • DETENTION • INFILTRATION • WATER QUALITY