CASE STUDY

StormTech® Fits CVS Footprint, Meets Stormwater Requirements

Kingwood, TX

OWNER
CVS Health Corporation, Woonsocket, RI

ENGINEER
Forsite Group LLC, Austin, TX

CONTRACTOR
Tex-Con Ready Mix, Kingwood, TX

INSTALLATION DATE
August 2020

PRODUCTS
379 StormTech SC-740 Chambers

CHALLENGE

A newly constructed CVS Pharmacy in Kingwood, TX, required a stormwater management system that could satisfy several design constraints. The solution needed to fit within a tight footprint and shallow installation depth, meet the city's detention requirements, and allow for gravity flow into Kingwood's existing stormwater sewer network.

SOLUTION

Advanced Drainage Systems provided the ideal solution for the project with StormTech SC-740 chambers, creating a high-capacity stormwater management system beneath nearly 90 percent of the parking lot.

A total of 379 SC-740 chambers satisfied the site's detention requirements and accommodated the project's shallow installation depth. With only 5' (1.5 m) between the top of the chambers and the

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pavement, the design fit within the limited space. The system was also installed with a slight slope to allow stormwater to flow by gravity into the city's existing storm sewer network.

In addition to collecting runoff from the parking lot, roof drains were tied directly into the inlet to maximize capture efficiency. An Isolator® Row was incorporated at the system entrance to remove sediment, trash, hydrocarbons, and Total Suspended Solids (TSS) before water entered the chamber field.

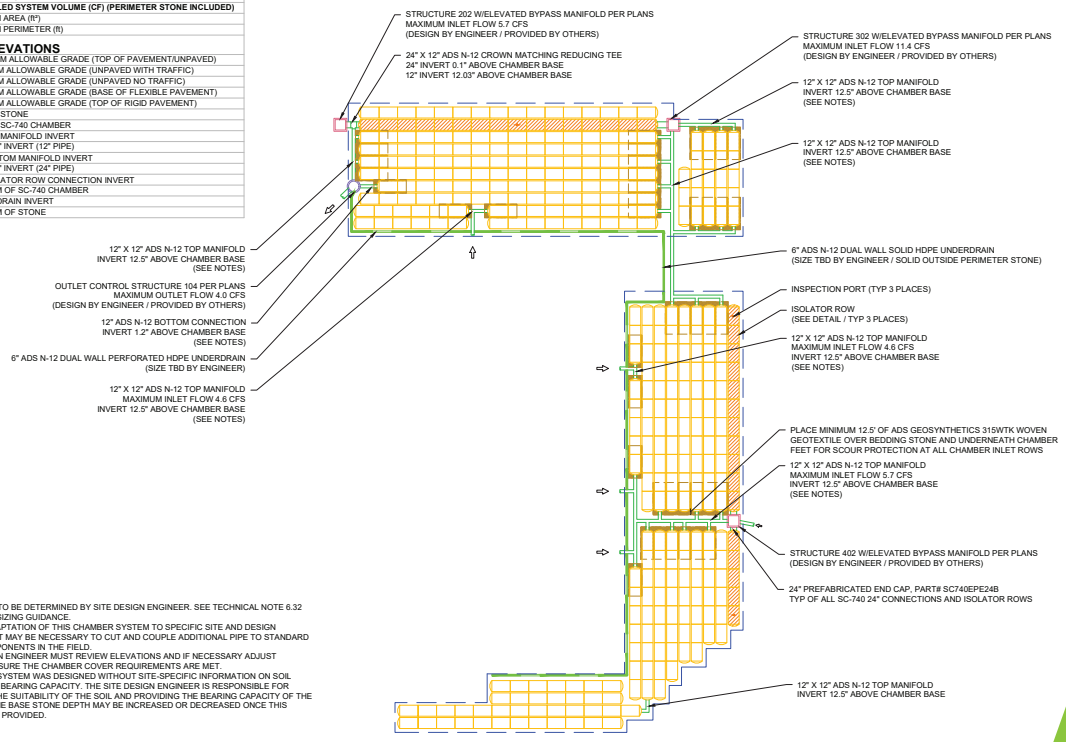
Despite challenges that included heavy rain events and numerous underground communication lines within the right of way, the StormTech system was successfully installed in less than three weeks.

PRODUCT DESCRIPTION

StormTech chambers are designed to save valuable land, reduce flooding risks and protect water resources. The chambers provide a durable structural system and are designed in accordance with AASHTO LRFD Bridge Design specification for the HS-20 Live loads. StormTech chambers are available in a variety of sizes to meet any project need and are injection molded for uniform wall thickness.

Isolator Row enhances Total Suspended Solids (TSS) and Total Phosphorus (TP) removal with easy access for inspection and maintenance. The Isolator Row is a row of StormTech chambers that has a continuous layer of ADS Plus fabric between the foundation stone and the chambers and is connected to a closely located manhole for easy access. The chambers provide for sediment settling and filtration as stormwater rises in the Isolator Row Plus and passes through the filter fabric.

PROPOSED LAYOUT	
379	STORMTECH SC-740 CHAMBERS
80	STORMTECH SC-740 END CAPS
15	STONE ABOVE (in)
9	STONE BELOW (in)
40	% STONE VOID
39486	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
16131	SYSTEM AREA (ft²)
1017	SYSTEM PERIMETER (ft)
PROPOSED ELEVATIONS	
60.37	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
54.37	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
53.87	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
53.87	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
53.87	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
53.62	TOP OF STONE
52.37	TOP OF SC-740 CHAMBER
50.91	12" TOP MANIFOLD INVERT
50.87	24" X 12" INVERT (12" PIPE)
49.97	12" BOTTOM MANIFOLD INVERT
49.88	24" X 12" INVERT (24" PIPE)
49.88	24" ISOLATOR ROW CONNECTION INVERT
49.87	BOTTOM OF SC-740 CHAMBER
49.12	UNDERDRAIN INVERT
49.12	BOTTOM OF STONE



NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.

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