

MoDOT Rte I64 VE Stormwater Case Study



The Midwest's Most Trusted
Site Solutions Provider

Project: MoDOT Rte I64 VE

Salesperson: Guy Litteken

Location: Chesterfield, MO
(I-64 WB @ Timberlake exit)

Owner: MoDOT

Application/Solution:
Stormwater Quality & Volume Reduction

Engineer: CMT Engineers

Market Sector: DOT

Contractor: Gershenson Construction,
Chuck Risley – PM, Jamie Siler – Supt.

Installed: Late September, 2015

case study

case study

Challenge

The original design was let in May, 2014 and included approximately 19,000 sf of “traditional” bioretention. This included excavation to accommodate a large amount of bioretention soil mix, PVC underdrain and thousands of native plant plugs. The challenge was introducing a new “nex gen” bioretention system – FocalPoint to both MoDOT and the consulting engineer. After consulting with CMT Engineers and both MoDOT construction and roadside management departments, the FocalPoint System was submitted for acceptance as a VE solution.

Solutions

FocalPoint was approved by MoDOT. The largest and first of the 4 basins was constructed in one day on September 25th, 2015. The components of the FP system are: A geotextile separator, ACF R-Tank underdrain, Miramesh TR open mesh bridging/separation geotextile, washed pea gravel, FocalPoint High Flow 100+ inch per hour media, clean shredded bark mulch, PVC Gabion and native plants. The FocalPoint is currently buttoned up and protected by a lightweight plastic liner and geotextile protective layer. The design of the slopes in the basin was left unchanged. CMT Engineers selected a TRM-Turf Reinforcement Mat for the 3:1 slopes that surrounded the basin. North American Green SC250 TRM was selected and installed by Site System Landscaping. MoDOT’s cool season seed mix was used to vegetate the slopes. Native plants will be placed in the FocalPoint media in the Spring of 2016. The basin is draining very well and meets the 48 hour draw down time including the 24 hour storm event.

Results

The results are staggering! MoDOT realized a 43% cost reduction that resulted in savings of more than \$125,000 to Missouri residents and taxpayers. The scale drives cost model reduced the bioretention component factor by more than 30 times. 570 sf of FocalPoint media was installed vs. 19,000 sf of “traditional” media. Better yet, the “nex gen” FocalPoint High Performance System is backed by a 1 year guarantee. Included in its design, non-proprietary specification and construction are 2 maintenance visits and 2 hydro-conductivity tests providing assurance that the system is working as expected before turning the facility over to the owner. Most of the native plant plugs originally designed for installation in the basin bottom were replaced with a cool season fescue sod. This reduced the construction cost greatly and it too will reduce the maintenance cost. The sod provided immediate stabilization and protection for the media by eliminating sedimentation from erosion, thus preventing “clogging” the system. The 3 other basins and bio-swale at I-64 and Maryville Center are to be installed in Spring of 2016.



1 ACF R-Tanks for underdrain.



2 Miramesh TR and washed pea gravel.



3 Focal Point High Performance Media.

Products

Manufacturers included in solutions and product:

Product:
 FocalPoint
 Manufacturer:
 Convergent

Product:
 SC250 TRM
 Manufacturer:
 North American Green

Product:
 MoDOT Cool Season Grasses
 Manufacturer:
 Columbia Seed



4 Clean Shredded Hardwood Mulch.



5 Gabion Level Spreader.



7 Vegetation for Stabilization.



6 Buttoned-Up until Commissioning.

Company Information

ASP Enterprises, Inc. and Quick Supply Co. For more than three decades, A.S.P. Enterprises and Quick Supply Co. has served the erosion control industry with integrity and expertise. We provide engineers and landscape contractors the exceptional value for their money and have grown to become the Midwest's full-line distributor of erosion-control, geosynthetics, storm water management products, wall block, landscape pavers, and drainage products.

ASP Enterprises, Inc.
 Corporate
 Headquarters
www.aspent.com
info@aspent.com

St. Louis, MO
 636.343.4357
 800.869.9600

Quick Supply Co.
 Corporate
 Headquarters
www.quicksupplydm.com
info@quicksupplydm.com

Des Moines, IA
 515.289.1271
 800.362.2245

Kansas City, MO
 816.554.1191
 800.519.2304

Omaha, NE
 402.8618579
 877.678.8027

Wichita, KS
 316.393.1554