The Capitol Subsurface Infiltration Gallery

SCVURPPP Green Stormwater Infrastructure Planning

November 29, 2018

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Agenda:

- Project Overview
- Initial Pump Design
- Revised Design
- Lessons Learned
- Construction Pics
- Questions
The Project:

10.32 acres
Residential
Retail/Commercial
Storage
Initial Design:

90’x 56’ vault
12’ tall
Pump to bioretention
Bio sized on pump rate
2,300 sf treatment

Figure 1. HM Vault as Modeled in BAHM
Revised Design:

Perc. Rate – 30 in/hr
10-ft below grade
Open bottom vault
C3 = infiltration
42’ x 90’
6’ tall
25% smaller footprint
Percolation does NOT equal Infiltration!

- Percolation Rate = 30 in/hr
- Infiltration rate = 9 in/hr
- Factor of Safety = 2.5

<table>
<thead>
<tr>
<th>Test Hole No.</th>
<th>Percolation Rate (in/hr)</th>
<th>Infiltration Rate (in/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-1</td>
<td>28</td>
<td>8.7</td>
</tr>
<tr>
<td>P-2</td>
<td>32</td>
<td>11.1</td>
</tr>
<tr>
<td>P-3</td>
<td>27</td>
<td>7.4</td>
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BAHM Reduction Factor
Site Plan
Bird’s Eye
Cross Section

Water Quality Volume
0.45 ac-feet required

0.57 ac-feet provided

Vault Storage = \frac{3.0 \times 105 \times 45}{43560 \ \text{ft}^3 \ \text{acre}} = 0.42 \text{ acre feet}

Gravel Storage = \frac{(4 \times 105 \times 45) \times 0.35}{43560 \ \text{ft}^3 \ \text{acre}} = 0.15 \text{ acre feet}
Vault System
Weir Plate Design
Excavation
Light Compaction
Gravel Layer & Vaults
Questions
Project Partners

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

TNT HAHN DEVELOPERS LLC

TARRAR UTILITY & CONSULTANTS

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS