Frey Engineering, LLC
1117 State Route 31, Suite 4
Lebanon, New Jersey 08833
908-735-8537 Fax 908-238-0502 www.freyengineering.com

SPRING STREET DEVELOPMENT CORPORATION
FORMER
METAL POWDER AND CHEMICAL WORKS SITE
For
BLOCK 8, LOT 1699.D
703 – 727 SPRING STREET
ELIZABETH, NEW JERSEY
And for adjacent lot
Block 8 Lot 1699.C – Spring Street Plaza

SITE AND STORMWATER MANAGEMENT ANALYSIS

PREPARED FOR:
The ELM Group, Inc.
345 Wall Street
Research Park
Princeton, NJ 08540

Burnham LLC
1241 Harrisburg Pike
Lancaster, PA 17603

PREPARED BY:
FREY ENGINEERING, LLC
1117 State Route 31, Suite 4
Lebanon, New Jersey 08833
908-238-0502

August 4, 2017
REVISED 2019-01-28
REVISED 2020-02-28

Date ____________________________
James A. Hill, PE New Jersey Professional Engineer #24GE03019000
# TABLE OF CONTENTS

I. INTRODUCTION ................................................................................................................................. 1  
II. PRELIMINARY SITE INVESTIGATION ................................................................................................. 1  
III. GEOTECHNICAL INVESTIGATION .................................................................................................... 2  
IV. SITE SURFACE WATER MANAGEMENT STUDY ............................................................................... 3  
V. EXISTING CONDITIONS ANALYSIS ................................................................................................. 5  
VI. PROPOSED CONDITIONS ANALYSIS ............................................................................................... 7  

# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>V-1</td>
<td>Existing Ground Cover Conditions Lots 1699 and 1699.C</td>
<td>5</td>
</tr>
<tr>
<td>V-2</td>
<td>Existing Conditions Stormwater Peak Flows</td>
<td>6</td>
</tr>
<tr>
<td>V-3</td>
<td>N.J.A.C 7:8-5 Required % Reduction in Stormwater Peak Flows (Bold) at Property Line</td>
<td>7</td>
</tr>
<tr>
<td>VI-1</td>
<td>Soils Information</td>
<td>8</td>
</tr>
<tr>
<td>VI-2</td>
<td>Proposed Land Cover</td>
<td>9</td>
</tr>
<tr>
<td>VI-3</td>
<td>Proposed Conditions Stormwater Peak Flows in (CFS)</td>
<td>11</td>
</tr>
<tr>
<td>VI-4</td>
<td>N.J.A.C. 7:8-5 Required % Reductions in Stormwater Peak Flows (Bold) at Property Line</td>
<td>11</td>
</tr>
<tr>
<td>VI-5</td>
<td>Proposed Conditions Stormwater Peak Flows in (CFS)</td>
<td>12</td>
</tr>
<tr>
<td>VI-6</td>
<td>N.J.A.C. 7:8-5 Required % Reductions in Stormwater Peak Flows (Bold) at Property Line in (CFS)</td>
<td>12</td>
</tr>
<tr>
<td>VI-7</td>
<td>Outlines the Expected Flows from the Blocked Outlet Conditions</td>
<td>14</td>
</tr>
<tr>
<td>VI-8</td>
<td>Outlines the Calculated Flows versus Existing Conditions Restricted by the 8&quot; Clay Pipe</td>
<td>15</td>
</tr>
</tbody>
</table>

# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Web Soil Survey for SSDC</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>South Property Line Existing Grading</td>
<td>13</td>
</tr>
<tr>
<td>3</td>
<td>South Property Line Existing Drainage</td>
<td>13</td>
</tr>
<tr>
<td>4</td>
<td>South View of Building - Alley Side</td>
<td>14</td>
</tr>
<tr>
<td>5</td>
<td>East End of Main Building</td>
<td>14</td>
</tr>
</tbody>
</table>

# APPENDICES

Appendix A – RUNOFF COMPUTATIONS FOR EXISTING CONDITIONS  
Appendix B – RUNOFF COMPUTATIONS FOR PROPOSED SITE PLAN CONDITIONS  

# SECTIONS

1. PROPOSED SITE PLAN – ROOFS TO RETAINITS™  
2. PROPOSED SITE PLAN – ROOFS TO GEOPAVE™  
3. PROPOSED SITE PLAN – BLOCKED OUTLET CONDITIONS
I. INTRODUCTION
Environmental remediation activities are underway at the former Metal Powder & Chemical Works, Inc. (MPCW) property, located at 703-727 Spring Street, Elizabeth New Jersey, Block 8, Lot 1699-D (the “Site”). These activities will include the installation of an asphalt cap engineering control and associated stormwater management improvements.

Pursuant to a Consent Order Embodying Settlement dated October 10, 2000 in Docket No. UNN-L-4892-94 of the Superior Court of New Jersey, Law Division – Union County, Burnham Corporation is required to remediate historic fill by designing and implementing an asphalt cap at the former Metal Powder & Chemical Works, Inc. (MPCW) property, Block 8, Lot 1699-D, 703-727 Spring Street, Elizabeth New Jersey the “Site”). This remediation requirement was reiterated in a Remediation Agreement Amendment issued by the New Jersey Department of Environmental Protection (NJDEP), effective December 2001. Burnham retained The ELM Group, Inc. (“ELM”) as environmental consultants, with Jeffery Fehr, PG, LSRP serving as ELM’s Licensed Site Remediation Professional (“LSRP”) of Record, who in turn retained Frey Engineering, LLC (“Frey”) to design the asphalt cap and associated storm water management facilities, as presented herein.

The Site is owned by Spring Street Development Corporation (SSDC), which is endeavoring to obtain approval from the City of Elizabeth (City) to implement certain Site improvements coincident with Burnham’s implementation of the asphalt cap and storm water management improvements. The primary focus of this Stormwater Management Plan, and the associated asphalt cap and profile details, is to meet the NJDEP requirements for a remedial cap in accordance with applicable NJDEP regulations and technical guidance, while at the same time addressing the needs of SSDC for stormwater and site cover improvements that will meet the requirements of the City of Elizabeth regulations, relevant portions of the NJDEP NJAC 7:8 Stormwater Management regulations, and to comply with the City of Elizabeth Municipal Separate Storm Sewer System (MS4) Plan.

II. PRELIMINARY SITE INVESTIGATION
a. For the purpose of evaluating site conditions for a remedial capping plan and stormwater management a preliminary site investigation of the parking lot was conducted by Frey Engineering, LLC (Frey) with ELM personnel on June 10, 2015, again on March 28, 2016 and most recently on February 20, 2020.

b. The purpose of the site walks was to evaluate the existing ground conditions as shown on the topographic survey provided by Barry Isett and Associates, June 2015 (most recently updated January 28, 2020). The intent was to document the presence of existing cover on the Site. The review indicated that the Site should be considered primarily impervious cover consisting of existing broken pavement and highly compacted gravel substrate (from continuous use by heavy truck traffic and parking of vehicles). There is some solid pavement at the Site but the majority of the surface is broken asphalt/gravel due to lack of maintenance under the current truck and car traffic making use of the site.

c. According to information from the owner, in April 2017, the site is under the name of Spring Street Development Corporation (“SSDC”), 101 Clinton Street, Apt 5C, Brooklyn, NY 11201.
d. In a project meeting on April 12, 2017, the owner, SSDC, the owner’s engineering firm Jarmel-Kizel, Architects and Engineers, ELM and Frey was held concerning the development of the site for commercial use along with the required NJDEP Remedial Action Plan for a Remedial Capping and Stormwater Management Plan to be submitted to NJDEP through the ELM Group. A plan was first submitted to SSDC for filing with the City of Elizabeth on August 4, 2017, was submitted for review but later withdrawn from consideration by SSDC.

e. SSDC since late 2017 has taken action at the site to remove a portion of the standing buildings at the site and to pave or modify some existing grades with recycled asphalt millings.

f. In April 2019 on behalf of SSDC, Jarmel-Kizel submitted a revised Preliminary/Final Site Plan (Plan) to the City for consideration, which included an updated Stormwater Management Plan and associated capping plan and profile prepared by Frey.

g. In response to questions/comments on the Plan by Harbor Consultants (HC), the City’s Engineer, SSDC subsequently had Public Sewer Service, Inc. clean out the storm sewer system using jet-vac equipment, and video tape the piping. SSDC also had the Site resurveyed by Barry Isett Associates, to be able to better document the existing topography and storm sewer routing on the Site and several neighboring properties.

h. SSDC / Jarmel-Kizel is resubmitting its revised Preliminary / Final Site Plan at this time the ELM/Frey section of the SSDC/Jarmel-Kizel site plan submittal provides the planned stormwater management and site grading specifications for Lot 1699.D

III. GEOTECHNICAL INVESTIGATION

a. Geotechnical site work occurred on June 24, 2015, with six (6) locations sampled to a depth of four (4) feet with split spoon samples for grain size analysis, and blow counts for bearing strength.

b. Twelve soils samples were taken, at six (6) locations and tested by Craig Testing Laboratories, Inc. with a report on the samples issued dated 7/10/15.

i. The surface of the parking lot, down to about 12” is broken asphalt/gravel with a unified soil classification of GW-GM/GC (black well graded gravel with silt/clay/sand mixed in, or SM/SC black sands and silts mixed in with the asphaltic materials). Blow counts in this depth range were from 8 to 28.

ii. From about 16” to 24: the subsoils are of primarily black to brown SM/SC poorly graded sands and silts. Blow counts in this depth range varied from 8 to 16.

iii. From about 24” to 48” the soils grade toward a reddish-brown CL/CH and ML/MH fine soils. Blow counts at this depth ranged from 12 to 39.

c. Based upon the Site soils underlying the parking lot, the following two options were considered for the asphalt cap/repaving the lot:

i. Alternate 1 – (following SSDC’s removal of the 4-to 6-inch layer of asphalt millings spread across Site by SSDC for current parking/driving surface), remove approximately 12” of onsite soil for disposal, potential placement 12 oz. nonwoven geotextile upon compacted base, if deemed necessary, place 3” of compacted DGA, 6” (compacted) of bituminous asphaltic concrete subbase (current NJDOT mix), and top with 2” (compacted) of current NJDOT surface course, or if site phasing conditions allow,
ii. Alternate 2 – (following SSDC’s removal of the 4-to 6-inch layer of asphalt millings spread across Site by SSDC for current parking/driving surface), remove a minimum of approximately 2” minimum of surface materials for disposal (final excavation depth to match existing building entrance grades), undertake a soil stabilization project (Cold in Place Recycling [CIPR] of no less than an 8” depth with lime, concrete, or asphalt as the binder/stabilization method to create the equivalent strength of no less than 6” of NJDOT base course asphaltic concrete, and top with 2” of NJDOT surface wearing course material.

Whichever alternate is selected, it will be necessary to match grades/slopes to direct stormwater runoff into areas of proposed Geopave porous pavement, stormwater inlets, and Retain-it stormwater detention structures, per the plans.

IV SITE SURFACE WATER MANAGEMENT STUDY

a. The evaluation of the existing stormwater management collection and disposal system has been updated to take into account recent activities by SSDC to alter the existing conditions by removal of structures and repaving portions of the site, and to include pervious pavement on the site plan to assist in Total Suspended Solids (TSS) removal for all areas except the remaining roofs which may be connected directly to peak flow control storage elements.

b. The January 2020 updates to the topographic survey of the Site revealed that the existing stormwater line that runs from west to east through the south alley connects to a manhole [MHE2] in the southeast corner of the Site (Lot 1699.D); the line also extends westerly to the adjacent offsite lot 1699.C (Spring Street Plaza).

c. On the north side of the Site (Lot 1699.D) there are several inlets and manholes with 12” PVC piping that drains east and then south around the building, exiting the property at manhole MH-E2 in the southeast corner. The revised survey shows that an existing manhole on adjacent Lot 1699.B [A Inlet], connects through a 15” RCP to the stormwater line in the alley of Lot 1699.D, to MH-E2, which in turn drains to a manhole at the intersection of Woodruff Lane and Henry Street. According to the City’s MS4 online mapping prepared for the City by Mott McDonald, the storm drain then flows southerly on Henry Street through an RCP pipe system to the intersection with Fairmount Ave.

d. In following up on concerns of the City and Harbor Consultants, additional information on the sub-watersheds for the Site was obtained from the City/Mott McDonald MS4 maps. Based on those maps, Lot 1699.D flows to Woodruff Lane. Lot 1699.C is shown as flowing to Spring Street. The updated topographic survey of Site and surrounding properties indicates that there are areas along the northern property line that currently drain northerly off site to the NJDOT property (Lot 1309) and to the adjacent Lot 1299.A, bounded by Meadow Street and North Ave. Along the east side of the Site, a strip of the parking lot drains onto the adjoining lot Lot 1864).

e. The updated survey, and storm sewer jet/vac and video work on lot 1699.B, toward Woodruff Lane, located the connection between the SSDC storm manhole MHE2 and Woodruff Lane, at the intersection with Henry Street. The results of the jet/vac and video of this line revealed an initial section of 8” clay pipe that transitions to a 12” PVC pipe. This information reduces the existing capacity of
the offsite line for stormwater flows from Lot 1699.D (SSDC) and Lot 1699.C (Spring Street Plaza), as both must flow through this line.

f. The first analysis of both properties indicated compliance with the HUC 14 Sub watersheds (E-45E and E-52), with 1699.C and the entrance driveways for 1699.D flowing to Spring Street. The updated topographic survey did not reveal a connection with Spring Street storm lines, and instead showed the easterly connection discussed above. The existing and proposed analyses have been adjusted to:

i. In the existing condition analysis, flows from the southern driveway and lot 1699.C are added to the flows going to Woodruff Lane. The northerly driveway continues to flow to Spring Street and onto the lot to the north.

ii. In the existing conditions analysis, some of the northerly and easterly edges of the existing parking lot for 1699.D flow to adjacent properties.

iii. For the proposed conditions, regrading of 1699.D shows that will contain all flows within the property to comply with the HUC 14 sub watersheds, the exception being Lot 1699.C which flows into E-45E.

g. Information on existing and proposed site conditions were exchanged with the City Engineer, Mr. Daniel Loomis at meetings with staff. From preliminary information provided it was determined that the site will be considered mostly impervious in its current condition, but would require compliance with N.J.A.C. 7:8-5 requirements to the extent possible for the change from a compacted gravel surface (per City) to a primarily paved surface, also a maximum size of pipe for drainage would be 12”.

h. After attendance at the September 2019 Board of Adjustment Meeting a revised site plan, is being re-submitted by the current owner (SSDC) of the site, through the firm of Jarmel-Kizel Architects and Engineers, Inc (J-K). ELM and Frey are submitting stormwater management information and plan sheets to J-K for that resubmittal. The full Remediation Capping and Stormwater Management plan for submittal to NJDEP will be independent of but in support of SSDC’s site development plan.

i. HydroCAD™ software is being used to evaluate the existing conditions as if it were a combination of broken pavement, hard packed gravel, concrete and existing roofed areas. For the proposed condition, as a parking lot for motor vehicles, it is presumed the lot will be approximately 84+-% impervious asphalt and concrete cover, with selected areas of pervious paving created by the use of Geopave products and/or river stone and landscaping for developing TSS removal areas. The exposed concrete slab area on the west side of the Site is very flat and is proposed to be paved and graded to seal the concrete and create drainage flow to the north.

j. The following stormwater drainage elements exist on the site as depicted on the site survey.

i. There are five (5) existing surface inlets and one (1) manhole in the main parking lot (north and east quadrants) connected by about 500 total linear feet (500’ l.f. of PVC drainage piping which exits the site from manhole MHE2 in the southeast corner of the property and flows to existing manhole in Woodruff Lane. The most recent survey and the jet and videos of the lines show there is a section of eight-inch (8”) clay pipe in the run between the southeast corner and the manhole by Woodward Lane. This restriction will need to be addressed.
ii. In the alley on the south side of the buildings, there are four (4) existing surface storm inlets (including the one on the southeast corner of Spring Street Plaza building) which flow or drain easterly toward the PVC line at the south property line. On Lot 1699.C there are two surface stormwater inlets which collect flows from the parking area and roof of Spring Street Plaza. These inlets drain to the fourth (4th) storm manhole located in the alley as noted above. Lot 1699.C connects to Lot 1699.D through the 4th storm manhole. This revised report adds all flows from 1699.C to those from 1699.D, but still allows the north driveway for 1699.D to flow to Spring Street.

iii. At the request of the City and Harbor Consulting, SSDC arranged for jet/vac and video documentation of various manholes, inlets and associated stormwater lines, and for an updated topographic survey to augment the initial map information. This data has been incorporated into the stormwater studies as requested.

iv. Frey obtained storm and sanitary pipe network maps for the vicinity of the property and Woodruff Lane from the City Engineer and City GIS mapping website. Based upon Section J9, Sheet 16 information there is a 15” RCP stormwater pipe in Woodruff Lane, draining to an 18” RCP pipe in Henry Street.

II. EXISTING CONDITIONS ANALYSIS

i. Land cover for the existing conditions is shown in Table V-1

<table>
<thead>
<tr>
<th>Area (sq.-ft)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>19,503</td>
<td>98</td>
<td>Concrete Parking Slab, HSG D (E-1SLB)</td>
</tr>
<tr>
<td>78,209</td>
<td>96</td>
<td>Gravel surface, HSG D - (E-2, E-3, E-4, E-5, E-7, OS-3, OS-4N, OS-4S)</td>
</tr>
<tr>
<td>93,112</td>
<td>98</td>
<td>Paved parking, HSG D - (E-1PVT, E-4, E-6, E-8, E-9, OS-5, OS-1E, OS-1W, OS-2)</td>
</tr>
<tr>
<td>17,538</td>
<td>98</td>
<td>Uncovered Slab HSG D - (E-9SLB)</td>
</tr>
<tr>
<td>258,813</td>
<td></td>
<td>TOTAL AREA</td>
</tr>
</tbody>
</table>

ii. The existing conditions have been evaluated for the Water Quality Storm (1.5” in 2 hours) and the standard 24-hour NJ precipitation events (Elizabeth City area), as per Harbor Consultants, for the 2, 10, 25, and 100-year storms. Those events, for Elizabeth, have rainfall amounts of 3.39, 5.17, 6.42, and 8.69 inches in 24 hours.

iii. The results of the evaluation found that the existing 8” pipe’s capacity will begin to be overloaded beyond the 2-year event and will create ponding in various areas of the parking lot. During this type of situation, the areas with ponded water will overflow and flow to either Spring Street or Woodruff Lane.
iv. With ponding and overland flows anticipated node SW-3 on the existing conditions map shows a possible exit area in the southeast corner of Lot 1699.D for surface flows which would cross the adjacent parking lot to the south to reach Woodruff Lane.

ii. The existing 12” and smaller 8” sections of pipes do not have enough capacity.

iii. The peak flow analysis of the existing conditions is depicted in units of cubic feet/sec. (CFS) in Table V-2. This condition is controlled by the 8” restriction in the pipe run between MH-E2 and Woodruff Lane.

iv. The site in the existing conditions has four (4) points where flow does or can occur onto adjoining properties, these are areas shown as OS2 (north driveway, OS3 (north property line by NJDOT facilities), and OS4N & S which flow from the easterly line onto Block 8 Lot 1864 (Somet Tire Center). The rest of 1699.D and 1699.C flow to the manhole in the southeast corner of 1699.D thence to Woodruff Lane.

Table II-2: Existing Conditions Stormwater Peak Flows

<table>
<thead>
<tr>
<th>STORM EVENT</th>
<th>OS-2 North Driveway</th>
<th>OS-3 toward NJDOT facility</th>
<th>OS-4N</th>
<th>OS-4S</th>
<th>MH-E2 flows to MH E-3 and 4 at Woodruff 8” swale</th>
<th>SW-3 Overland Swale</th>
<th>WOODRUFF LANE SW-3 + MH E-2</th>
<th>Site Totals for On and offsite receptors</th>
</tr>
</thead>
<tbody>
<tr>
<td>NJWQ</td>
<td>0.44</td>
<td>0.73</td>
<td>0.14</td>
<td>0.22</td>
<td>3.13</td>
<td>6.59</td>
<td>9.72</td>
<td>11.25</td>
</tr>
<tr>
<td>2-YEAR</td>
<td>0.49</td>
<td>0.90</td>
<td>0.18</td>
<td>0.27</td>
<td>3.17</td>
<td>8.88</td>
<td>12.05</td>
<td>13.89</td>
</tr>
<tr>
<td>10-YEAR</td>
<td>0.75</td>
<td>1.40</td>
<td>0.28</td>
<td>0.42</td>
<td>3.26</td>
<td>14.92</td>
<td>18.18</td>
<td>21.03</td>
</tr>
<tr>
<td>25-YEAR</td>
<td>0.94</td>
<td>1.76</td>
<td>0.35</td>
<td>0.52</td>
<td>3.27</td>
<td>18.95</td>
<td>22.22</td>
<td>25.79</td>
</tr>
<tr>
<td>100-YEAR</td>
<td>1.27</td>
<td>2.39</td>
<td>0.48</td>
<td>0.71</td>
<td>3.29</td>
<td>24.62</td>
<td>27.91</td>
<td>32.76</td>
</tr>
</tbody>
</table>

v. Table V-3 depicts the N.J.A.C. 7:8-5 peak flow reductions required for any proposed site development, at point of discharge to offsite receptors, compared with current 8” restriction in the piping leaving MH-E2 to MH E3 and 4 at Woodruff Lane.
Table II-3: N.J.A.C 7:8-5 Required % Reduction in Stormwater Peak Flows (Bold) at Property Line

Table V-3 - N.J.A.C. 7:8-5 REQUIRED % REDUCTIONS IN STORMWATER PEAK FLOWS (BOLD) AT PROPERTY LINE in (C.F.S.) BASED UPON EXISTING 8” DIAMETER RESTRICTION IN PIPE BETWEEN MH-E3 AND 4 AT WOODRUFF LANE

<table>
<thead>
<tr>
<th>STORM EVENT</th>
<th>OS-2 North Driveway</th>
<th>OS-3 toward NJDOT facility</th>
<th>OS-4N</th>
<th>OS-4S</th>
<th>MH-E2 flows to MH E-3 and 4 at Woodruff</th>
<th>SW-3 Overland Swale</th>
<th>WOODRUFF LANE SW-3 + MH E-2</th>
<th>FLOWS FROM ENTIRE SITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NJWQ</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2-YEAR</td>
<td>0.49</td>
<td>0.90</td>
<td>0.18</td>
<td>0.27</td>
<td>3.17</td>
<td>8.88</td>
<td>12.05</td>
<td>13.89</td>
</tr>
<tr>
<td>50% REDUCTION</td>
<td>0.25</td>
<td>0.45</td>
<td>0.09</td>
<td>0.14</td>
<td>1.59</td>
<td>4.44</td>
<td>6.03</td>
<td>6.95</td>
</tr>
<tr>
<td>10-YEAR</td>
<td>0.75</td>
<td>1.40</td>
<td>0.28</td>
<td>0.42</td>
<td>3.26</td>
<td>14.92</td>
<td>18.18</td>
<td>21.03</td>
</tr>
<tr>
<td>25% REDUCTION</td>
<td>0.56</td>
<td>1.05</td>
<td>0.21</td>
<td>0.32</td>
<td>2.45</td>
<td>11.19</td>
<td>13.64</td>
<td>15.77</td>
</tr>
<tr>
<td>25-YEAR</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>100-YEAR</td>
<td>1.27</td>
<td>2.39</td>
<td>0.48</td>
<td>0.71</td>
<td>3.29</td>
<td>24.62</td>
<td>27.91</td>
<td>32.76</td>
</tr>
<tr>
<td>20% REDUCTION</td>
<td>1.02</td>
<td>1.91</td>
<td>0.38</td>
<td>0.57</td>
<td>2.63</td>
<td>19.70</td>
<td>22.33</td>
<td>26.21</td>
</tr>
</tbody>
</table>

III. PROPOSED CONDITIONS ANALYSIS

The base map layout for the site plan prepared Jarmel-Kizel, Architects and Engineers, revised to 1/20/2020 for the proposed parking lot, lighting, and landscaping was used by Frey and ELM to prepare the proposed Stormwater Management Elements of the Site Plan and for use in the eventual Remedial Capping and Stormwater Management Plan.

i. For the propose of site plan the owner proposes to keep the remaining structures on the site and use the exposed concrete slabs and asphalt remediation cap for parking of motor vehicles to be used by a tenant logistics business.

ii. The proposed drainage area map considers the approximate drainage features of the concrete slab based upon survey points near openings and entrances of the buildings, adjusted to grade to the north by topping the concrete slab with varied thicknesses of paving.

iii. The results of the study depict required adjustments in grading of the concrete slab areas by applying a varied depth of asphalt surface to cause the slabs to drain northward to TSS and Peak flow control areas.

iv. Soils – USDA-NRCS, Web Soil Survey

For information for onsite soils the 2020 USDA-NRCS Web Soil Survey website was used to obtain the type and hydrologic conditions of the soils, as found on the site in an Urban based, previously disturbed and filled condition. In urban settings, the soils are normally classified as “Urban Land” and due to the complex mixture of soils on the sites due to development no Hydrologic Soil Group (HSG A, B, C, or D) is assigned. For stormwater management purposes the HSG classification is necessary. For Urban Lands when they are disturbed, compacted, or otherwise affected, soils tests, such as
those conducted on this site are used to approximate the HSG classification. Based upon the soils testing HSG D was used for the entire site due to disturbance and soils compaction from years of high traffic with tractor trailers and other heavy vehicles. Figure 1 shows the Web Soil Survey information, Table 3 outlines the USDA Web Soil Survey data.

![Web Soil Survey](image)

Figure 1: Web Soil Survey for SSDC

**Table III-1: Soils Information**

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>UR</td>
<td>Urban land</td>
<td>5.0</td>
<td>100.0%</td>
</tr>
<tr>
<td>Totals for Area of Interest</td>
<td></td>
<td>5.0</td>
<td>100.0%</td>
</tr>
<tr>
<td>Hydrologic Soil Group</td>
<td>N/A urban soils - undisturbed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrologic Soil Group – based upon underlying soils (CL/CH-ML/MH D°)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

°As determined by soil testing

v. Proposed Site Conditions
The developed conditions proposed by the landowner for Block 8 Lot 1699.D requires site plan approval by the City of Elizabeth. Site conditions on the adjoining lot bounded by Meadow Street and North Ave (Block 8 Lot 1299.S) are being separately analyzed by Jarmel-Kizel for appropriate Stormwater Management needs. Based upon team meetings with the City the landowner has prepared a site plan which creates the ground conditions for future stormwater flows for Lot 1699.D and Lot 1699.C, as shown in Table VI-2. These conditions were used to compute runoff peak flows for the
N.J.A.C., 7:8-5 range of storms, as were pre-existing coverage conditions used for the pre-developed conditions.

### Table III-2: Proposed Land Cover

<table>
<thead>
<tr>
<th>Area (sq-ft)</th>
<th>CN</th>
<th>Description (sub catchment-numbers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,548</td>
<td>76</td>
<td>Geopave Infiltration 4PGP2 - (P-4S)</td>
</tr>
<tr>
<td>2,268</td>
<td>76</td>
<td>Geopave Infiltration Area - (P3N)</td>
</tr>
<tr>
<td>1,014</td>
<td>76</td>
<td>Geopave Infiltration Area 2pgp3 - (P-2NE)</td>
</tr>
<tr>
<td>4,560</td>
<td>76</td>
<td>Geopave Infiltration Area 2pgps - (P-2M)</td>
</tr>
<tr>
<td>292</td>
<td>76</td>
<td>Geopave Infiltration area 2pgp1 - (P-2S)</td>
</tr>
<tr>
<td>1,502</td>
<td>76</td>
<td>Geopave Infiltration3GPGPE - (B-4)</td>
</tr>
<tr>
<td>3,462</td>
<td>76</td>
<td>Geopave infiltration area - (P-1)</td>
</tr>
<tr>
<td>2,160</td>
<td>76</td>
<td>Geopave Infiltration 4PGP1 - (B-5)</td>
</tr>
<tr>
<td>3,700</td>
<td>76</td>
<td>Geopave Infiltration 5PGP1- (B-6, B7)</td>
</tr>
<tr>
<td>930</td>
<td>76</td>
<td>Landscape Buffer - (B1)</td>
</tr>
<tr>
<td>1,432</td>
<td>80</td>
<td>Landscape Buffer Good, -HSG D (B-2)</td>
</tr>
<tr>
<td>5,281</td>
<td>98</td>
<td>North Driveway Paved - HSG D (OS1)</td>
</tr>
<tr>
<td>149,136</td>
<td>98</td>
<td>Paved parking, HSG D (OS - 5, OS-6E, OS-6W, P-1, P-10A, P-2M, P-2NE, P-3E, P-4S, P-7A, P-7B, P-8, P-9, P-9R, P3N, P4-N, P4W)</td>
</tr>
<tr>
<td>30,112</td>
<td>98</td>
<td>Paved parking, and slab HSG D - (P-7)</td>
</tr>
<tr>
<td>1,494</td>
<td>91</td>
<td>River Stone HSG D - (B-6)</td>
</tr>
<tr>
<td>1,073</td>
<td>91</td>
<td>River Stone HSG D - (B-4)</td>
</tr>
<tr>
<td>1,224</td>
<td>76</td>
<td>River Stone Island - (ISL 4, ISL-1, ISL-2, ISL-3)</td>
</tr>
<tr>
<td>3,919</td>
<td>91</td>
<td>River Stone, HSG D - (B-3, B-5, B7)</td>
</tr>
<tr>
<td>42,706</td>
<td>98</td>
<td>Roofs, HSG D - (OS-6R, P-1R, P-2R, P-4R, P-6R, P-7R, P-8R)</td>
</tr>
<tr>
<td>1,000</td>
<td>98</td>
<td>Sidewalk and pavers (P-2S)</td>
</tr>
<tr>
<td>258,813</td>
<td></td>
<td>TOTAL AREA</td>
</tr>
</tbody>
</table>

### vi. Hydrologic Analysis

In the developed conditions, Lot 1699.D was evaluated for a change in ground cover while Lot 1699.C was kept in the existing conditions. The sites were analyzed, and stormwater control facilities introduced based upon the peak flows outlined in Table VI-3. For the SSDC site, Lot 1699.D, no stormwater recharge is required due to the presence of impacted soils, pursuant to N.J.A.C. 7:8-5.4(a)2.iii. The site plan proposes a landscape buffer along the North portion of the property with the East and a Portion of the South boundary having a River Stone buffer and four (4) River Stone Islands in the parking areas as part of the pervious areas. In addition, Pervious Pavement areas consisting of Geopave structures for TSS removal have been added to the plan. The Geopave areas are being developed as NJDEP BMP 9.7 Pervious Pavement, with adequate depth, size and fill mixture intended to meet BMP 9.7 requirements. Lot 1699.C was analyzed with no change in conditions.
All stormwater facilities on Lot 1699.D are designed as watertight piping or treatment areas wrapped in a minimum 30 mil impermeable liners to prevent infiltration. The buffer area will continue to contribute to the overall site flows at intensities more than the Water Quality storm due to the slow permeability of the underlying soils. For the remainder of Lot 1699.D the site stormwater flows will be controlled by installation of Retainit™ stormwater management structures for under pavement storage and release of peak flows. For TSS removal at the NJWQ level the Geopave systems can provide for 80% TSS removal.

The results of the analysis are based upon the January 20, 2020 update of the SSDC Site Plan (now noted as 2/28/20 Zoning Board Submission). SSDC’s revised plan shows that several buildings/structures have recently been demolished, leaving exposed concrete floor slabs. Runoff from the slabs will need TSS control. SSDC’s revised Site Plans show that the remaining buildings/structures are to remain. SSDC intends to reuse the exposed slabs for parking as depicted upon the Jarmel Kizel/ELM Group plan sheet C-300. That same drawing indicates SSDC will use an asphalt overlay on the exposed concrete and fill the old “courtyard” with concrete and overlay that area. The stormwater plan was adjusted to cap the slab with sufficient depths of asphalt to redirect drainage of the slab toward the north to Retain-it 1P.

The updated topographic survey found that adjacent Lot 1699.C (Spring Street Plaza) is not connected to Spring Street drainage facilities and actually contributes to the drainage piping in the South Alley of 1699.D which adds to flows going to Woodruff Lane through the 8” piping exiting MH-E2. The systems had to be redesigned to accommodate this flow and to minimize more than usual the eventual peak flows to be expected from 1699.D in order not to impact the flows from 1699.C. The additional area of contribution increased the total developed areas by about 25%, which resulted in the need to significantly resize the 1699.D stormwater facilities in order to accommodate the additional TSS from the concrete slabs, but also to keep the total flows at MH-E2 acceptable. Per discussion with the City Engineer, the Site can use a 12” PVC pipe connection to Woodruff Lane, which will require replacing the section of undersized 8” clay pipe located between MH-E2 and MH-E3. To accomplish this action “pipe bursting” and relining with 12” pipe would reduce impacts on disturbing adjacent lands.

With the exception of the addition of Lot 1699.C, which is theoretically in a separate sub watershed based on the City MS4 mapping, the regrading of Lot 1699.D to contain all drainage, except the north driveway, allows 1699.D to conform to the sub-watershed shown on the City maps. All runoff to adjacent lands to the north and east are now cut off and forced to flow to the southeast corner. Table VI-3 shows the point discharges for the entirety of parcels 1699.D and 1699.C. Section 1 of Appendix B provides the analysis of the basic proposed conditions of development.
Table III-3: Proposed Conditions Stormwater Peak Flows in (CFS)

<table>
<thead>
<tr>
<th>STORM EVENT</th>
<th>OS-2 North Driveway</th>
<th>OS-3 toward NJDOT facility</th>
<th>OS-4N</th>
<th>OS-4S</th>
<th>MH-E2 flows to MH E-3 and 4 at Woodruff 12” PVC</th>
<th>SW-3 Overland Swale</th>
<th>WOODRUFF LANE SW-3 + MH E-2</th>
<th>Site Totals for On and offsite receptors</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCATION</td>
<td>Spring St</td>
<td>NJDOT</td>
<td>Somer Tire Center</td>
<td>Flows to Woodruff Lane</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NJWQ</td>
<td>0.31</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>3.31</td>
<td>0.74</td>
<td>4.05</td>
<td>4.36</td>
</tr>
<tr>
<td>2-YEAR</td>
<td>0.34</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>5.49</td>
<td>0.79</td>
<td>6.28</td>
<td>6.62</td>
</tr>
<tr>
<td>10-YEAR</td>
<td>0.52</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>7.65</td>
<td>0.98</td>
<td>8.63</td>
<td>9.15</td>
</tr>
<tr>
<td>25-YEAR</td>
<td>0.65</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>7.82</td>
<td>1.88</td>
<td>9.70</td>
<td>10.35</td>
</tr>
<tr>
<td>100-YEAR</td>
<td>0.88</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>8.41</td>
<td>9.52</td>
<td>17.93</td>
<td>18.81</td>
</tr>
</tbody>
</table>

For the site in total and for the point along the south property, where the main drainage flows could leave the site, the proposed flows ARE less than the existing conditions. The issue for the site is that the 2-year flow does not meet the total requirement for 50% reduction but the 10 and 100-year flows are at or below the required peaks.

Table VI-4 shows the peak flows at discharge points compared to required conditions. In Table VI-4, the roofs on lot 1699.D are presumed to be connected directly to the Retainits™.

Table III-4: N.J.A.C. 7:8-5 Required % Reductions in Stormwater Peak Flows (Bold) at Property Line

<table>
<thead>
<tr>
<th>STORM</th>
<th>OS-2 North Driveway</th>
<th>OS-3 toward NJDOT facility</th>
<th>OS-4N</th>
<th>OS-4S</th>
<th>MH-E2 flows to MH E-3 and 4 at Woodruff</th>
<th>SW-3 Overland Swale</th>
<th>WOODRUFF LANE SW-3 + MH E-2</th>
<th>FLOWS FROM ENTIRE SITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NJWQ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2-YEAR (50%)</td>
<td>0.34</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>5.49</td>
<td>0.79</td>
<td>6.28</td>
<td>6.62</td>
</tr>
<tr>
<td>50% REDUCTION</td>
<td>0.25</td>
<td>0.45</td>
<td>0.09</td>
<td>0.14</td>
<td>1.59</td>
<td>4.44</td>
<td>4.35</td>
<td>5.27</td>
</tr>
<tr>
<td>10-YEAR (25%)</td>
<td>0.52</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>7.65</td>
<td>0.98</td>
<td>8.63</td>
<td>9.15</td>
</tr>
<tr>
<td>25% REDUCTION</td>
<td>0.56</td>
<td>1.05</td>
<td>0.21</td>
<td>0.32</td>
<td>1.63</td>
<td>8.23</td>
<td>9.86</td>
<td>12.00</td>
</tr>
<tr>
<td>25-YEAR</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>100-YEAR (20%)</td>
<td>0.88</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>8.41</td>
<td>9.52</td>
<td>17.93</td>
<td>18.81</td>
</tr>
<tr>
<td>20% REDUCTION</td>
<td>1.02</td>
<td>1.91</td>
<td>0.38</td>
<td>0.57</td>
<td>1.76</td>
<td>20.34</td>
<td>22.10</td>
<td>25.98</td>
</tr>
</tbody>
</table>

The site was also analyzed for the possibility of the roofs not having to be, or unable to be connected to the Retainits™ due to gutter issues, subsurface conditions, or potential future demolition of additional buildings, to avoid unnecessary disturbance of impacted soils, or due to
potential changes in the N.J.A.C. 7:8. Tables VI-5 and 6 show summaries of flows (further supported by graphs and summaries in the appendices), documenting that the Geopave structures have adequate capacity to handle the additional roof areas for TSS at the Water Quality Storm and still reduce flows. The % of required reduction flows are still based upon the 8” restricted pipe condition from the existing conditions exhibited in Table V-3. Figures 4 and 5 show typical existing conditions of roof/gutter areas on east end and alley portions of the structures. Section 2 of Appendix B addresses the connection of the roofs to the Geopave structures.

Table III-5: Proposed Conditions Stormwater Peak Flows in (CFS)

<table>
<thead>
<tr>
<th>STORM EVENT</th>
<th>OS-2 North Driveway</th>
<th>OS-3 toward NJDOT facility</th>
<th>OS-4N</th>
<th>OS-4S</th>
<th>MH-E2 flows to MH E-3 and 4 at Woodruff 12” PVC</th>
<th>SW-3 Overland Swale</th>
<th>WOODRUFF LANE SW-3 + MH E-2</th>
<th>Site Totals for On and offsite receptors</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCATION</td>
<td>Spring St</td>
<td>NJDOT</td>
<td>Somet Tire Center</td>
<td>Flows to Woodruff Lane</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NJWQ</td>
<td>0.31</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>3.05</td>
<td>0.74</td>
<td>3.79</td>
<td>4.10</td>
</tr>
<tr>
<td>2-YEAR</td>
<td>0.34</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>5.65</td>
<td>0.79</td>
<td>6.44</td>
<td>6.78</td>
</tr>
<tr>
<td>10-YEAR</td>
<td>0.52</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>7.70</td>
<td>3.16</td>
<td>10.86</td>
<td>11.38</td>
</tr>
<tr>
<td>25-YEAR</td>
<td>0.65</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>7.92</td>
<td>5.33</td>
<td>13.25</td>
<td>13.90</td>
</tr>
<tr>
<td>100-YEAR</td>
<td>0.88</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>8.58</td>
<td>11.23</td>
<td>19.81</td>
<td>20.69</td>
</tr>
</tbody>
</table>

Table III-6: N.J.A.C. 7:8-5 Required % Reductions in Stormwater Peak Flows (Bold) at Property Line in (CFS)

<table>
<thead>
<tr>
<th>STORM</th>
<th>OS-2 North Driveway</th>
<th>OS-3 toward NJDOT facility</th>
<th>OS-4N</th>
<th>OS-4S</th>
<th>MH-E2 flows to MH E-3 and 4 at Woodruff 12” PVC</th>
<th>SW-3 Overland Swale</th>
<th>WOODRUFF LANE SW-3 + MH E-2</th>
<th>FLOWS FROM ENTIRE SITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NJWQ</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>m/a</td>
<td>n/a</td>
<td>n/a</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2-YEAR</td>
<td>0.34</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>5.65</td>
<td>0.79</td>
<td>6.44</td>
<td>6.78</td>
</tr>
<tr>
<td>50% REDUCTION</td>
<td>0.25</td>
<td>0.45</td>
<td>0.09</td>
<td>0.14</td>
<td>1.59</td>
<td>4.44</td>
<td>4.35</td>
<td>5.27</td>
</tr>
<tr>
<td>10-YEAR</td>
<td>0.52</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>7.70</td>
<td>3.16</td>
<td>10.86</td>
<td>11.38</td>
</tr>
<tr>
<td>25% REDUCTION</td>
<td>0.56</td>
<td>1.05</td>
<td>0.21</td>
<td>0.32</td>
<td>1.63</td>
<td>8.23</td>
<td>9.86</td>
<td>12.00</td>
</tr>
<tr>
<td>25-YEAR</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>m/a</td>
<td>n/a</td>
<td>n/a</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>100-YEAR</td>
<td>0.88</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>8.58</td>
<td>11.23</td>
<td>19.81</td>
<td>20.69</td>
</tr>
<tr>
<td>20% REDUCTION</td>
<td>1.02</td>
<td>1.91</td>
<td>0.38</td>
<td>0.57</td>
<td>1.76</td>
<td>20.34</td>
<td>22.10</td>
<td>25.98</td>
</tr>
</tbody>
</table>
As required by City ordinance and noted in the Harbor Consulting comments on the previous submittal, the stormwater system on 1699.D also needed to be analyzed under the blocked outlet condition which presumes the major outlet for the stormwater management system is blocked and peak flows, during the 100-year event, need to seek exit through an alternate route, which is traditionally presumed to be an “Emergency Spillway”. Lot 1699.D’s systems are not the traditional one basin - one set of outlets condition. There are five (5) Retainit™ locations which have inlets and outlets along with ten (10) Geopave installations that have independent inlets that overflow to the five (5) Retainits™ peak flow containments. The main area of concern in a blockage that would affect the system is at MH-E2 in the southeast corner of 1699.D through which all flows travel to reach the off-site municipal manhole along Woodruff Lane. Section 3 of Appendix B provides the analysis required.

To maximize the effect of blocked outlets all manholes and outlets for the Retainits™ were blocked. This did allow all the Geopave units and the Retainit™ units to fill up and overflow and store water temporarily in the parking lot. The grading in the main parking lot does not exceed Elevation 18 which is meant to coincide with presumed entrance elevations of the remaining structures. The blocked condition presumes that there will be points of elevation in the lot as one travels from west to east and north to south that can be set at elevation 17.90 or slightly less to allow any ponded area to flow east and south during the blocked conditions. These are noted with nodes labelled EMPSY-X. These nodes connect to node SW3 (surface swale) in the southeast corner in the area where existing flows exit the property now (see Figures 2 and 3).

Figure 2 South Property Line Existing Grading

Figure 3 South Property Line Existing Drainage
Tables VI-7 and 8 provide information on the peak flows for the blocked condition.

Table III-7: Outlines the Expected Flows from the Blocked Outlet Conditions

<table>
<thead>
<tr>
<th>STORM EVENT</th>
<th>LOCATION</th>
<th>OS-2 North Driveway</th>
<th>OS-3 toward NJDOT facility</th>
<th>OS-4N</th>
<th>OS-4S</th>
<th>MH-E2 flows to MH E-3 and 4 at Woodruff 12” PVC</th>
<th>SW-3 Overland Swale</th>
<th>WOODRUFF LANE SW-3 + MH E-2</th>
<th>Site Totals for On and offsite receptors</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN BLOCKED CONDITIONS ALL FLOW IS DIRECTED TO SW-3 AS OVERLAND FLOWS</td>
<td>100-YEAR</td>
<td>0.88</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>15.67</td>
<td>15.67</td>
<td>16.55</td>
<td></td>
</tr>
</tbody>
</table>
Table III-8: Outlines the Calculated Flows versus Existing Conditions Restricted by the 8” Clay Pipe

TABLE VI-8 - N.J.A.C. 7:8-5 REQUIRED % REDUCTIONS IN STORMWATER PEAK FLOWS (BOLD) AT PROPERTY LINE in (C.F.S.) BASED UPON ANALYSIS OF 12” PVC REPLACEMENTY FOR 8” CLAY TILE FROM EXISTING CONDITIONS, BLOCKED OUTLET CONDITIONS

<table>
<thead>
<tr>
<th>STORM</th>
<th>OS-2 North Driveway</th>
<th>OS-3 toward NJDOT facility</th>
<th>OS-4N</th>
<th>OS-4S</th>
<th>MH-E2 flows to MH E-3 and 4 at Woodruff</th>
<th>SW-3 Overland Swale</th>
<th>WOODRUFF LANE SW-3 + MH E-2</th>
<th>FLOWS FROM ENTIRE SITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN BLOCKED CONDITIONS ALL FLOW IS DIRECTED TO SW-3 AS OVERLAND FLOW</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100-YEAR (20%)</td>
<td>0.88</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>15.67</td>
<td>15.67</td>
<td>16.55</td>
</tr>
<tr>
<td>20% REDUCTION</td>
<td>1.02</td>
<td>1.91</td>
<td>0.38</td>
<td>0.57</td>
<td>1.76</td>
<td>20.34</td>
<td>22.10</td>
<td>25.98</td>
</tr>
</tbody>
</table>

Appendices A and B contain the HydroCad™ reports for the Existing and Proposed Conditions. The reports are assembled to present basic summary information on the existing or proposed elements of the site such as ground cover, soils, piping, sub drainage areas, and flow structures (inlets, piping, storm basins).

For the Existing Conditions we provided detailed information for all drainage areas, receptors, and all storms. For the Proposed Conditions due to the repetitive nature of the summaries and hydrographs we are providing individual node summaries for all storms and locations.

For proposed hydrographs we are providing summaries of the hydrographs for each node on the site and then selected hydrographs that show the shape and peaking of several events such as the water quality storm and 100-year event runs. For the Retainit structures we use the HydroCad wizards for developing the sizes against the 100-year storm. The final sizes are shown on Sheet 401. The node summary sheets show the individual characteristics of each node on the site.
APPENDIX A
RUNOFF COMPUTATIONS FOR EXISTING CONDITIONS
### Area Listing (all nodes)

<table>
<thead>
<tr>
<th>Area</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>19,503</td>
<td>98</td>
<td>Concrete Parking Slab, HSG D (E-1SLB)</td>
</tr>
<tr>
<td>78,209</td>
<td>96</td>
<td>Gravel surface, HSG D (E-2, E-3, E-4, E-5, E-7, OS-3, OS-4N, OS-4S)</td>
</tr>
<tr>
<td>93,112</td>
<td>98</td>
<td>Paved parking, HSG D (E-1PVT, E-4, E-6, E-8, E-9, OS-5, OS-1E, OS-1W, OS-2)</td>
</tr>
<tr>
<td>17,538</td>
<td>98</td>
<td>Uncovered Slab HSG D (E-9SLB)</td>
</tr>
<tr>
<td>258,813</td>
<td>97</td>
<td>TOTAL AREA</td>
</tr>
</tbody>
</table>
### Soil Listing (all nodes)

<table>
<thead>
<tr>
<th>Area (sq-ft)</th>
<th>Soil Group</th>
<th>Subcatchment Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>HSG A</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>HSG B</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>HSG C</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>258,813</td>
<td>TOTAL AREA</td>
<td></td>
</tr>
</tbody>
</table>
### Ground Covers (all nodes)

<table>
<thead>
<tr>
<th>Subcat Number</th>
<th>HSG-A (sq-ft)</th>
<th>HSG-B (sq-ft)</th>
<th>HSG-C (sq-ft)</th>
<th>HSG-D (sq-ft)</th>
<th>Other (sq-ft)</th>
<th>Total (sq-ft)</th>
<th>Ground Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>19,503</td>
<td>0</td>
<td>0</td>
<td>19,503</td>
<td>Concrete Parking Slab</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>78,209</td>
<td>0</td>
<td>0</td>
<td>78,209</td>
<td>Gravel surface</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>93,112</td>
<td>0</td>
<td>0</td>
<td>93,112</td>
<td>Paved parking</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>50,451</td>
<td>0</td>
<td>0</td>
<td>50,451</td>
<td>Roofs</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>17,538</td>
<td>0</td>
<td>0</td>
<td>17,538</td>
<td>Uncovered Slab</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>258,813</td>
<td>0</td>
<td>0</td>
<td>258,813</td>
<td>TOTAL AREA</td>
</tr>
<tr>
<td>Line#</td>
<td>Node</td>
<td>In-Invert (feet)</td>
<td>Out-Invert (feet)</td>
<td>Length (feet)</td>
<td>Slope (ft/ft)</td>
<td>n</td>
<td>Diam/Width (inches)</td>
</tr>
<tr>
<td>-------</td>
<td>---------</td>
<td>------------------</td>
<td>-------------------</td>
<td>--------------</td>
<td>--------------</td>
<td>----</td>
<td>---------------------</td>
</tr>
<tr>
<td>1</td>
<td>COMM- 2</td>
<td>11.12</td>
<td>10.58</td>
<td>182.0</td>
<td>0.0030</td>
<td>0.013</td>
<td>4.0</td>
</tr>
<tr>
<td>2</td>
<td>COMM- 2</td>
<td>14.10</td>
<td>13.10</td>
<td>170.0</td>
<td>0.0059</td>
<td>0.013</td>
<td>18.0</td>
</tr>
<tr>
<td>3</td>
<td>COMM-1</td>
<td>16.29</td>
<td>11.12</td>
<td>85.0</td>
<td>0.0060</td>
<td>0.013</td>
<td>4.0</td>
</tr>
<tr>
<td>4</td>
<td>I1</td>
<td>15.84</td>
<td>13.57</td>
<td>80.0</td>
<td>0.0284</td>
<td>0.013</td>
<td>6.0</td>
</tr>
<tr>
<td>5</td>
<td>I2</td>
<td>12.76</td>
<td>12.29</td>
<td>85.0</td>
<td>0.0055</td>
<td>0.013</td>
<td>12.0</td>
</tr>
<tr>
<td>6</td>
<td>I3</td>
<td>12.25</td>
<td>10.47</td>
<td>80.0</td>
<td>0.0222</td>
<td>0.013</td>
<td>12.0</td>
</tr>
<tr>
<td>7</td>
<td>I4</td>
<td>10.44</td>
<td>8.78</td>
<td>130.0</td>
<td>0.0128</td>
<td>0.013</td>
<td>12.0</td>
</tr>
<tr>
<td>8</td>
<td>I5</td>
<td>15.94</td>
<td>13.49</td>
<td>52.0</td>
<td>0.0471</td>
<td>0.013</td>
<td>6.0</td>
</tr>
<tr>
<td>9</td>
<td>I6</td>
<td>15.71</td>
<td>8.78</td>
<td>215.0</td>
<td>0.0322</td>
<td>0.013</td>
<td>8.0</td>
</tr>
<tr>
<td>10</td>
<td>MH-A1</td>
<td>10.67</td>
<td>10.28</td>
<td>240.0</td>
<td>0.0016</td>
<td>0.013</td>
<td>8.0</td>
</tr>
<tr>
<td>11</td>
<td>MH-A2</td>
<td>10.67</td>
<td>10.28</td>
<td>240.0</td>
<td>0.0016</td>
<td>0.013</td>
<td>8.0</td>
</tr>
<tr>
<td>12</td>
<td>MH-A3</td>
<td>10.67</td>
<td>10.28</td>
<td>240.0</td>
<td>0.0016</td>
<td>0.013</td>
<td>8.0</td>
</tr>
<tr>
<td>13</td>
<td>MH-A4</td>
<td>11.12</td>
<td>10.58</td>
<td>182.0</td>
<td>0.0030</td>
<td>0.013</td>
<td>4.0</td>
</tr>
<tr>
<td>14</td>
<td>MH-A4</td>
<td>14.10</td>
<td>13.10</td>
<td>170.0</td>
<td>0.0059</td>
<td>0.011</td>
<td>18.0</td>
</tr>
<tr>
<td>15</td>
<td>MH-E1</td>
<td>13.00</td>
<td>12.84</td>
<td>175.0</td>
<td>0.0009</td>
<td>0.013</td>
<td>12.0</td>
</tr>
<tr>
<td>16</td>
<td>MH-E2</td>
<td>10.67</td>
<td>8.02</td>
<td>122.0</td>
<td>0.0217</td>
<td>0.013</td>
<td>8.0</td>
</tr>
<tr>
<td>17</td>
<td>MH-E3</td>
<td>8.00</td>
<td>7.90</td>
<td>30.0</td>
<td>0.0033</td>
<td>0.012</td>
<td>12.0</td>
</tr>
<tr>
<td>18</td>
<td>MH-E4</td>
<td>6.90</td>
<td>6.80</td>
<td>100.0</td>
<td>0.0010</td>
<td>0.013</td>
<td>15.0</td>
</tr>
</tbody>
</table>
### SSDC SITE PLAN EXISTING CONDITIONS

**NJ DEP 2-hr 1-NJWQ Rainfall=1.25”**

#### Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points

- Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
  - Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Runoff Area (sf)</th>
<th>Impervious (%)</th>
<th>Runoff Depth (”)</th>
<th>Tc (min)</th>
<th>CN</th>
<th>Runoff (cfs)</th>
<th>2001 Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-1</td>
<td>32,882</td>
<td>100.00</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>1.94</td>
<td>2,835</td>
</tr>
<tr>
<td>E-1R: ROOFS</td>
<td>1,400</td>
<td>100.00</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.08</td>
<td>121</td>
</tr>
<tr>
<td>E-1SLB: Slab Area</td>
<td>19,503</td>
<td>100.00</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>1.15</td>
<td>1,681</td>
</tr>
<tr>
<td>E-2: Parking North/East</td>
<td>20,571</td>
<td>0.00</td>
<td>0.86</td>
<td>10.0</td>
<td>96</td>
<td>0.08</td>
<td>121</td>
</tr>
<tr>
<td>E-2R: Roofs, North/East</td>
<td>4,125</td>
<td>100.00</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.24</td>
<td>356</td>
</tr>
<tr>
<td>E-3: Parking Lot</td>
<td>5,995</td>
<td>0.00</td>
<td>0.86</td>
<td>10.0</td>
<td>96</td>
<td>0.31</td>
<td>429</td>
</tr>
<tr>
<td>E-4: Parking to I-5</td>
<td>7,482</td>
<td>37.82</td>
<td>0.94</td>
<td>10.0</td>
<td>97</td>
<td>0.41</td>
<td>588</td>
</tr>
<tr>
<td>E-4R: Roof to I-5</td>
<td>2,828</td>
<td>100.00</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.17</td>
<td>244</td>
</tr>
<tr>
<td>E-5: EAST CENTER</td>
<td>16,669</td>
<td>0.00</td>
<td>0.86</td>
<td>10.0</td>
<td>96</td>
<td>0.85</td>
<td>1,194</td>
</tr>
<tr>
<td>E-6: East End</td>
<td>1,013</td>
<td>100.00</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.06</td>
<td>87</td>
</tr>
<tr>
<td>E-6R: Roof East End South</td>
<td>8,937</td>
<td>100.00</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.53</td>
<td>770</td>
</tr>
<tr>
<td>E-7: S CORNER W</td>
<td>9,083</td>
<td>0.00</td>
<td>0.86</td>
<td>10.0</td>
<td>96</td>
<td>0.46</td>
<td>651</td>
</tr>
<tr>
<td>E-7R: S CORNER W</td>
<td>6,627</td>
<td>100.00</td>
<td>1.03</td>
<td>10.9</td>
<td>98</td>
<td>0.38</td>
<td>571</td>
</tr>
<tr>
<td>E-8: Alley</td>
<td>3,884</td>
<td>100.00</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.23</td>
<td>335</td>
</tr>
<tr>
<td>E-8R: Building Roof</td>
<td>4,876</td>
<td>100.00</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.29</td>
<td>420</td>
</tr>
<tr>
<td>E-9: Alley</td>
<td>1,384</td>
<td>100.00</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.08</td>
<td>119</td>
</tr>
</tbody>
</table>
Subcatchment E-9R: Small Roofs
Runoff Area=7,745 sf  100.00% Impervious  Runoff Depth=1.03"  
Tc=10.0 min  CN=98  Runoff=0.46 cfs  668 cf

Subcatchment E-9SLB: Slabs, Alley
Runoff Area=17,538 sf  100.00% Impervious  Runoff Depth=1.03"  
Tc=10.0 min  CN=98  Runoff=1.04 cfs  1,512 cf

Subcatchment OS - 5: OFFSITE
Runoff Area=2,266 sf  100.00% Impervious  Runoff Depth=1.03"  
Tc=10.0 min  CN=98  Runoff=0.13 cfs  195 cf

Subcatchment OS-1E: COMM EAST
Runoff Area=20,681 sf  100.00% Impervious  Runoff Depth=1.03"  
Tc=10.0 min  CN=98  Runoff=1.22 cfs  1,783 cf

Subcatchment OS-1R: COMM ROOF
Runoff Area=13,913 sf  100.00% Impervious  Runoff Depth=1.03"  
Tc=10.0 min  CN=98  Runoff=0.82 cfs  1,200 cf

Subcatchment OS-1W: COMM-WEST
Runoff Area=20,681 sf  100.00% Impervious  Runoff Depth=1.03"  
Tc=10.0 min  CN=98  Runoff=1.22 cfs  1,783 cf

Subcatchment OS-2: North Driveway
Runoff Area=7,491 sf  100.00% Impervious  Runoff Depth=1.03"  
Tc=10.0 min  CN=98  Runoff=0.44 cfs  646 cf

Subcatchment OS-3: Existing Offsite NJDOT
Runoff Area=14,192 sf  0.00% Impervious  Runoff Depth=0.86"  
Tc=10.0 min  CN=96  Runoff=0.73 cfs  1,017 cf

Subcatchment OS-4N: Offsite Somet Tire
Runoff Area=2,823 sf  0.00% Impervious  Runoff Depth=0.86"  
Tc=10.0 min  CN=96  Runoff=0.14 cfs  202 cf

Subcatchment OS-4S: Offsite Somet Tire
Runoff Area=4,224 sf  0.00% Impervious  Runoff Depth=0.86"  
Tc=10.0 min  CN=96  Runoff=0.22 cfs  303 cf

Reach 1SF: SURFACE DRAINAGE  
Avg. Flow Depth=0.38'  Max Vel=2.07 fps  Inflow=3.10 cfs  4,516 cf  
n=0.013  L=200.0'  S=0.0030 '/'  Capacity=6.19 cfs  Outflow=2.96 cfs  4,516 cf

Reach ASW1: Overland swale  
Avg. Flow Depth=0.17'  Max Vel=0.82 fps  Inflow=2.35 cfs  1,826 cf  
n=0.016  L=160.0'  S=0.0012 '/'  Capacity=19.21 cfs  Outflow=2.06 cfs  1,826 cf

Reach ASW2: Overland swale  
Avg. Flow Depth=0.15'  Max Vel=0.48 fps  Inflow=1.13 cfs  1,382 cf  
n=0.016  L=120.0'  S=0.0005 '/'  Capacity=12.15 cfs  Outflow=1.01 cfs  1,382 cf

Reach STRT: EXISTING STREET  
Avg. Flow Depth=0.16'  Max Vel=2.42 fps  Inflow=9.68 cfs  19,036 cf  
n=0.016  L=25.0'  S=0.0080 '/'  Capacity=63.73 cfs  Outflow=9.65 cfs  19,036 cf

Reach SW-1: Oveland Swale  
Avg. Flow Depth=0.18'  Max Vel=0.43 fps  Inflow=1.36 cfs  2,128 cf  
n=0.016  L=160.0'  S=0.0003 '/'  Capacity=9.61 cfs  Outflow=1.18 cfs  2,128 cf

Reach SW-2: Overland Swale  
Avg. Flow Depth=0.17'  Max Vel=0.43 fps  Inflow=1.21 cfs  2,233 cf  
n=0.016  L=120.0'  S=0.0003 '/'  Capacity=9.92 cfs  Outflow=1.11 cfs  2,233 cf

Reach SW-3: Overland swale  
Avg. Flow Depth=0.15'  Max Vel=3.06 fps  Inflow=6.74 cfs  10,509 cf  
n=0.016  L=160.0'  S=0.0200 '/'  Capacity=76.85 cfs  Outflow=6.59 cfs  10,509 cf
<table>
<thead>
<tr>
<th>Pond/Location</th>
<th>Peak Elev</th>
<th>Storage</th>
<th>Inflow</th>
<th>Primary</th>
<th>Secondary</th>
<th>Outflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pond COMM-2: Storm Grate East Side</td>
<td>17.40'</td>
<td>234 cf</td>
<td>1.22 cfs</td>
<td>0.35 cfs</td>
<td>0.78 cfs</td>
<td>1.13 cfs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond COMM-1: Grate SW corner Comm Bldg</td>
<td>17.29'</td>
<td>102 cf</td>
<td>2.05 cfs</td>
<td>0.47 cfs</td>
<td>1.61 cfs</td>
<td>2.08 cfs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond I1: I1</td>
<td>17.00'</td>
<td>57 cf</td>
<td>3.03 cfs</td>
<td>0.90 cfs</td>
<td>2.04 cfs</td>
<td>4.06 cfs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond I2: I2</td>
<td>17.78'</td>
<td>0 cf</td>
<td>4.40 cfs</td>
<td>3.04 cfs</td>
<td>2.12 cfs</td>
<td>6.16 cfs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond I3: A Inlet</td>
<td>17.50'</td>
<td>5605 cf</td>
<td>3.58 cfs</td>
<td>3.52 cfs</td>
<td>5.500 cf</td>
<td>9.08 cfs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond I4: A Inlet</td>
<td>17.45'</td>
<td>8678 cf</td>
<td>5.52 cfs</td>
<td>5.46 cfs</td>
<td>2.06 cfs</td>
<td>7.64 cfs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond I5: A Inlet</td>
<td>17.55'</td>
<td>0 cf</td>
<td>1.37 cfs</td>
<td>1.10 cfs</td>
<td>0.27 cfs</td>
<td>1.64 cfs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond I6: Storm Inlet Alley</td>
<td>17.15'</td>
<td>6259 cf</td>
<td>4.07 cfs</td>
<td>2.17 cfs</td>
<td>1.159 cf</td>
<td>6.668 cf</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-A1: Storm Manhole Alley</td>
<td>17.34'</td>
<td>8699 cf</td>
<td>2.74 cfs</td>
<td>0.98 cfs</td>
<td>4.401 cf</td>
<td>7.18 cfs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-A2: Storm Manhole Alley</td>
<td>16.89'</td>
<td>3947 cf</td>
<td>1.31 cfs</td>
<td>0.59 cfs</td>
<td>2.177 cf</td>
<td>3.59 cfs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-A3: Storm Manhole Alley</td>
<td>16.63'</td>
<td>4659 cf</td>
<td>1.99 cfs</td>
<td>0.85 cfs</td>
<td>3.279 cf</td>
<td>5.25 cfs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-A4: Storm MH Comm Site Alley</td>
<td>17.29'</td>
<td>3150 cf</td>
<td>0.96 cfs</td>
<td>0.96 cfs</td>
<td>3.147 cf</td>
<td>4.11 cfs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-E1: Existing MH Storm</td>
<td>17.81'</td>
<td>6471 cf</td>
<td>4.11 cfs</td>
<td>4.11 cfs</td>
<td>6.471 cf</td>
<td>10.62 cf</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-E3: Existing MH7-OFF</td>
<td>9.47'</td>
<td>8527 cf</td>
<td>3.13 cfs</td>
<td>3.13 cfs</td>
<td>0.00 cfs</td>
<td>3.13 cfs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-E4: Woodruff Inlet</td>
<td>8.98'</td>
<td>8527 cf</td>
<td>3.13 cfs</td>
<td>3.13 cfs</td>
<td>0.00 cfs</td>
<td>3.13 cfs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Link 4N: OFFSITE EAST</td>
<td></td>
<td></td>
<td>0.14 cfs</td>
<td>0.14 cfs</td>
<td>0.14 cfs</td>
<td>0.14 cfs</td>
</tr>
</tbody>
</table>
Link 4S: OFFSITE EAST
Inflow=0.22 cfs  303 cf
Primary=0.22 cfs  303 cf

Link DW-N: Driveway
Inflow=0.44 cfs  646 cf
Primary=0.44 cfs  646 cf

Link NJDOT: Offsite NJDOT
Inflow=0.73 cfs  1,017 cf
Primary=0.73 cfs  1,017 cf

Link Offsite Spring: Spring Street
Inflow=0.44 cfs  646 cf
Primary=0.44 cfs  646 cf

Total Runoff Area = 258,813 sf  Runoff Volume = 21,184 cf  Average Runoff Depth = 0.98"
30.22% Pervious = 78,209 sf  69.78% Impervious = 180,604 sf
### SSDC SITE PLAN EXISTING CONDITIONS

**Type III 24-hr 2-YEAR Rainfall=3.39”**

<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Impervious Area</th>
<th>Runoff Area (sf)</th>
<th>Runoff Depth (”)</th>
<th>Tc (min)</th>
<th>CN</th>
<th>Runoff (cfs)</th>
<th>Volume (cf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subcatchment E-1PVT: E-1</td>
<td>100.00%</td>
<td>32,882</td>
<td>3.16</td>
<td>10.0</td>
<td>98</td>
<td>2.15</td>
<td>8,650</td>
</tr>
<tr>
<td>Subcatchment E-1R: ROOFS</td>
<td>100.00%</td>
<td>1,400</td>
<td>3.16</td>
<td>10.0</td>
<td>98</td>
<td>0.09</td>
<td>368</td>
</tr>
<tr>
<td>Subcatchment E-1SLB: Slab Area</td>
<td>100.00%</td>
<td>19,503</td>
<td>3.16</td>
<td>10.0</td>
<td>98</td>
<td>1.28</td>
<td>5,131</td>
</tr>
<tr>
<td>Subcatchment E-2: Parking North/East</td>
<td>0.00%</td>
<td>20,571</td>
<td>2.94</td>
<td>10.0</td>
<td>96</td>
<td>0.30</td>
<td>5,034</td>
</tr>
<tr>
<td>Subcatchment E-2R: Roofs, North/East</td>
<td>100.00%</td>
<td>4,125</td>
<td>3.16</td>
<td>10.0</td>
<td>98</td>
<td>0.27</td>
<td>1,085</td>
</tr>
<tr>
<td>Subcatchment E-3: Parking Lot</td>
<td>0.00%</td>
<td>5,995</td>
<td>2.94</td>
<td>10.0</td>
<td>96</td>
<td>0.38</td>
<td>1,467</td>
</tr>
<tr>
<td>Subcatchment E-4: Parking to I-5</td>
<td>37.82%</td>
<td>7,482</td>
<td>3.05</td>
<td>10.0</td>
<td>97</td>
<td>0.48</td>
<td>1,899</td>
</tr>
<tr>
<td>Subcatchment E-4R: Roof to I-5</td>
<td>100.00%</td>
<td>2,828</td>
<td>3.16</td>
<td>10.0</td>
<td>98</td>
<td>0.19</td>
<td>744</td>
</tr>
<tr>
<td>Subcatchment E-5: EAST CENTER</td>
<td>0.00%</td>
<td>16,669</td>
<td>2.94</td>
<td>10.0</td>
<td>96</td>
<td>1.06</td>
<td>4,079</td>
</tr>
<tr>
<td>Subcatchment E-6: East End</td>
<td>100.00%</td>
<td>1,013</td>
<td>3.16</td>
<td>10.0</td>
<td>98</td>
<td>0.07</td>
<td>266</td>
</tr>
<tr>
<td>Subcatchment E-6R: Roof East End South</td>
<td>100.00%</td>
<td>8,937</td>
<td>3.16</td>
<td>10.0</td>
<td>98</td>
<td>0.59</td>
<td>2,351</td>
</tr>
<tr>
<td>Subcatchment E-7: S CORNER W</td>
<td>0.00%</td>
<td>9,083</td>
<td>2.94</td>
<td>10.0</td>
<td>96</td>
<td>0.58</td>
<td>2,223</td>
</tr>
<tr>
<td>Subcatchment E-7R: S CORNER W</td>
<td>100.00%</td>
<td>6,627</td>
<td>3.16</td>
<td>10.9</td>
<td>98</td>
<td>0.42</td>
<td>1,743</td>
</tr>
<tr>
<td>Subcatchment E-8: Alley</td>
<td>100.00%</td>
<td>3,884</td>
<td>3.16</td>
<td>10.0</td>
<td>98</td>
<td>0.25</td>
<td>1,022</td>
</tr>
<tr>
<td>Subcatchment E-8R: Building Roof</td>
<td>100.00%</td>
<td>4,876</td>
<td>3.16</td>
<td>10.0</td>
<td>98</td>
<td>0.32</td>
<td>1,283</td>
</tr>
<tr>
<td>Subcatchment E-9: Alley</td>
<td>100.00%</td>
<td>1,384</td>
<td>3.16</td>
<td>10.0</td>
<td>98</td>
<td>0.09</td>
<td>364</td>
</tr>
</tbody>
</table>
### SSDC SITE PLAN EXISTING CONDITIONS

**Type III 24-hr 2-YEAR Rainfall=3.39”**

**2020-02-28 SSDC-1699.C EXISTING 8**

**Prepared by Windows User**

**Printed 3/3/2020 Prepared by Windows User**

**HydroCAD® 10.00-25 s/n 06187 © 2019 HydroCAD Software Solutions LLC**

**Page 11**

<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Runoff Area</th>
<th>Impervious</th>
<th>Runoff Depth</th>
<th>TC</th>
<th>CN</th>
<th>Runoff</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-9R: Small Roofs</td>
<td>7,745 sf</td>
<td>100.00%</td>
<td>3.16”</td>
<td>10.0 min</td>
<td>98</td>
<td>0.51 cfs</td>
</tr>
<tr>
<td>E-9SLB: Slabs, Alley</td>
<td>17,538 sf</td>
<td>100.00%</td>
<td>3.16”</td>
<td>10.0 min</td>
<td>98</td>
<td>1.15 cfs</td>
</tr>
<tr>
<td>OS-5: OFFSITE</td>
<td>2,266 sf</td>
<td>100.00%</td>
<td>3.16”</td>
<td>10.0 min</td>
<td>98</td>
<td>0.51 cfs</td>
</tr>
<tr>
<td>OS-1E: COMM EAST</td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>3.16”</td>
<td>10.0 min</td>
<td>98</td>
<td>1.35 cfs</td>
</tr>
<tr>
<td>OS-1R: COMM ROOF</td>
<td>13,913 sf</td>
<td>100.00%</td>
<td>3.16”</td>
<td>10.0 min</td>
<td>98</td>
<td>0.91 cfs</td>
</tr>
<tr>
<td>OS-1W: COMM-WEST</td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>3.16”</td>
<td>10.0 min</td>
<td>98</td>
<td>1.35 cfs</td>
</tr>
<tr>
<td>OS-2: North Driveway</td>
<td>7,491 sf</td>
<td>100.00%</td>
<td>3.16”</td>
<td>10.0 min</td>
<td>98</td>
<td>0.49 cfs</td>
</tr>
<tr>
<td>OS-4N: Offsite Somet Tire</td>
<td>2,823 sf</td>
<td>0.00%</td>
<td>2.94”</td>
<td>10.0 min</td>
<td>96</td>
<td>0.49 cfs</td>
</tr>
<tr>
<td>OS-4S: Offsite Somet Tire</td>
<td>4,224 sf</td>
<td>0.00%</td>
<td>2.94”</td>
<td>10.0 min</td>
<td>96</td>
<td>0.27 cfs</td>
</tr>
</tbody>
</table>

#### Reach 1SF: SURFACE DRAINAGE

- **Avg. Flow Depth=0.40’’**
- **Max Vel=2.13 fps**
- **Inflow=3.43 cfs**
- **Outflow=3.29 cfs**

#### Reach ASW1: Overland swale

- **Avg. Flow Depth=0.19’’**
- **Max Vel=0.87 fps**
- **Inflow=2.71 cfs**
- **Outflow=2.52 cfs**

#### Reach ASW2: Overland swale

- **Avg. Flow Depth=0.16’’**
- **Max Vel=0.50 fps**
- **Inflow=1.26 cfs**
- **Outflow=1.16 cfs**

#### Reach STRT: EXISTING STREET

- **Avg. Flow Depth=0.18’’**
- **Max Vel=2.64 fps**
- **Inflow=12.03 cfs**
- **Outflow=12.00 cfs**

#### Reach SW-1: Overland Swale

- **Avg. Flow Depth=0.20’’**
- **Max Vel=0.45 fps**
- **Inflow=1.55 cfs**
- **Outflow=1.42 cfs**

#### Reach SW-2: Overland Swale

- **Avg. Flow Depth=0.19’’**
- **Max Vel=0.46 fps**
- **Inflow=1.46 cfs**
- **Outflow=1.39 cfs**

#### Reach SW-3: Overland swale

- **Avg. Flow Depth=0.17’’**
- **Max Vel=3.35 fps**
- **Inflow=8.98 cfs**
- **Outflow=8.88 cfs**
<table>
<thead>
<tr>
<th>Pond Name</th>
<th>Peak Elev</th>
<th>Storage</th>
<th>Inflow</th>
<th>Outflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pond COMM-2: Storm Grate East Side</td>
<td>17.42'</td>
<td>256 cf</td>
<td>1.35 cfs  5,441 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.35 cfs  4,451 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.94 cfs  990 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.29 cfs  5,441 cf</td>
<td></td>
</tr>
<tr>
<td>Pond COMM-1: Grate SW corner Comm Bldg</td>
<td>17.30'</td>
<td>105 cf</td>
<td>2.26 cfs  9,101 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.47 cfs  6,935 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.80 cfs  2,167 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.27 cfs  9,102 cf</td>
<td></td>
</tr>
<tr>
<td>Pond I1: I1</td>
<td>17.09'</td>
<td>93 cf</td>
<td>3.37 cfs  14,149 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.94 cfs  9,980 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.33 cfs  4,170 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5.02 cfs  21,736 cf</td>
<td></td>
</tr>
<tr>
<td>Pond I2: I2</td>
<td>17.78'</td>
<td>0 cf</td>
<td>6.24 cfs  27,787 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.47 cfs  15,034 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.55 cfs  6,702 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.27 cfs  9,102 cf</td>
<td></td>
</tr>
<tr>
<td>Pond I3: A Inlet</td>
<td>17.51'</td>
<td>0 cf</td>
<td>5.02 cfs  21,736 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.03 cfs  17,345 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.08 cfs  332 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.11 cfs  17,677 cf</td>
<td></td>
</tr>
<tr>
<td>Pond I4: A Inlet</td>
<td>17.41'</td>
<td>0 cf</td>
<td>6.24 cfs  27,787 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6.17 cfs  27,490 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.07 cfs  297 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.27 cfs  9,102 cf</td>
<td></td>
</tr>
<tr>
<td>Pond I5: A Inlet</td>
<td>17.56'</td>
<td>0 cf</td>
<td>6.24 cfs  27,787 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.11 cfs  6,096 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.48 cfs  221 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.58 cfs  6,317 cf</td>
<td></td>
</tr>
<tr>
<td>Pond I6: Storm Inlet Alley</td>
<td>17.18'</td>
<td>15,247 cf  2.18 cfs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.82 cfs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>17,541 cf</td>
<td></td>
</tr>
<tr>
<td>Pond MH-A1: Storm Manhole Alley</td>
<td>17.34'</td>
<td>7,966 cf  1.00 cfs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.78 cfs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>22,165 cf</td>
<td></td>
</tr>
<tr>
<td>Pond MH-A2: Storm Manhole Alley</td>
<td>16.89'</td>
<td>6,918 cf  0.61 cfs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.36 cfs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15,426 cf</td>
<td></td>
</tr>
<tr>
<td>Pond MH-A3: Storm Manhole Alley</td>
<td>16.65'</td>
<td>13,388 cf  0.85 cfs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.12 cfs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>16,584 cf</td>
<td></td>
</tr>
<tr>
<td>Pond MH-A4: Storm MH Comm Site Alley</td>
<td>17.29'</td>
<td>11,970 cf  0.97 cfs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.97 cfs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11,982 cf</td>
<td></td>
</tr>
<tr>
<td>Pond MH-E1: Existing MH Storm</td>
<td>17.81'</td>
<td>20,269 cf  4.64 cfs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20,269 cf</td>
<td></td>
</tr>
<tr>
<td>Pond MH-E2: Storm MH</td>
<td>18.65'</td>
<td>30,960 cf  3.17 cfs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7.17 cfs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>35,455 cf</td>
<td></td>
</tr>
<tr>
<td>Pond MH-E3: Existing MH7-OFF</td>
<td>9.48'</td>
<td>30,960 cf  3.17 cfs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.17 cfs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>30,960 cf</td>
<td></td>
</tr>
<tr>
<td>Pond MH-E4: Woodruff Inlet</td>
<td>9.00'</td>
<td>30,960 cf  3.17 cfs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.17 cfs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>30,960 cf</td>
<td></td>
</tr>
<tr>
<td>Link 4N: OFFSITE EAST</td>
<td></td>
<td></td>
<td>0.18 cfs  691 cf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.18 cfs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>691 cf</td>
<td></td>
</tr>
</tbody>
</table>
Link 4S: OFFSITE EAST

Inflow=0.27 cfs  1,034 cf
Primary=0.27 cfs  1,034 cf

Link DW-N: Driveway

Inflow=0.49 cfs  1,971 cf
Primary=0.49 cfs  1,971 cf

Link NJDOT: Offsite NJDOT

Inflow=0.90 cfs  3,473 cf
Primary=0.90 cfs  3,473 cf

Link Offsite Spring: Spring Street

Inflow=0.49 cfs  1,971 cf
Primary=0.49 cfs  1,971 cf

Total Runoff Area = 258,813 sf  Runoff Volume = 66,666 cf  Average Runoff Depth = 3.09"
30.22% Pervious = 78,209 sf  69.78% Impervious = 180,604 sf
SSDC SITE PLAN EXISTING CONDITIONS  
Type III 24-hr  10-YEAR Rainfall=5.17”

Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points 
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E-1PVT: E-1  
Runoff Area=32,882 sf  100.00% Impervious  Runoff Depth=4.93” 
Flow Length=200’  Tc=10.0 min  CN=98  Runoff=3.31 cfs  13,517 cf

Subcatchment E-1R: ROOFS  
Runoff Area=1,400 sf  100.00% Impervious  Runoff Depth=4.93”  
Tc=10.0 min  CN=98  Runoff=0.14 cfs  576 cf

Subcatchment E-1SLB: Slab Area  
Runoff Area=19,503 sf  100.00% Impervious  Runoff Depth=4.93” 
Tc=10.0 min  CN=98  Runoff=1.96 cfs  8,017 cf

Subcatchment E-2: Parking North/East  
Runoff Area=20,571 sf  0.00% Impervious  Runoff Depth=4.70” 
Tc=10.0 min  CN=96  Runoff=2.04 cfs  8,060 cf

Subcatchment E-2R: Roofs, North/East  
Runoff Area=4,125 sf  100.00% Impervious  Runoff Depth=4.93”  
Tc=10.0 min  CN=98  Runoff=0.41 cfs  1,696 cf

Subcatchment E-3: Parking Lot  
Runoff Area=5,995 sf  0.00% Impervious  Runoff Depth=4.70”  
Tc=10.0 min  CN=98  Runoff=0.59 cfs  2,349 cf

Subcatchment E-4: Parking to I-5  
Runoff Area=7,482 sf  37.82% Impervious  Runoff Depth=4.82”  
Tc=10.0 min  CN=97  Runoff=0.75 cfs  3,003 cf

Subcatchment E-4R: Roof to I-5  
Runoff Area=2,828 sf  100.00% Impervious  Runoff Depth=4.93”  
Tc=10.0 min  CN=98  Runoff=0.28 cfs  1,163 cf

Subcatchment E-5: EAST CENTER  
Runoff Area=16,669 sf  0.00% Impervious  Runoff Depth=4.70”  
Tc=10.0 min  CN=96  Runoff=1.65 cfs  6,531 cf

Subcatchment E-6: East End  
Runoff Area=1,013 sf  100.00% Impervious  Runoff Depth=4.93”  
Tc=10.0 min  CN=98  Runoff=0.10 cfs  416 cf

Subcatchment E-6R: Roof East End South  
Runoff Area=8,937 sf  100.00% Impervious  Runoff Depth=4.93”  
Tc=10.0 min  CN=98  Runoff=0.90 cfs  3,674 cf

Subcatchment E-7: S CORNER W  
Runoff Area=9,083 sf  0.00% Impervious  Runoff Depth=4.70”  
Tc=10.0 min  CN=96  Runoff=0.90 cfs  3,559 cf

Subcatchment E-7R: S CORNER W  
Runoff Area=6,627 sf  100.00% Impervious  Runoff Depth=4.93”  
Flow Length=50’  Slope=0.0100 '/'  Tc=10.9 min  CN=98  Runoff=0.65 cfs  2,724 cf

Subcatchment E-8: Alley  
Runoff Area=3,884 sf  100.00% Impervious  Runoff Depth=4.93”  
Tc=10.0 min  CN=98  Runoff=0.39 cfs  1,597 cf

Subcatchment E-8R: Building Roof  
Runoff Area=4,876 sf  100.00% Impervious  Runoff Depth=4.93”  
Tc=10.0 min  CN=98  Runoff=0.49 cfs  2,004 cf

Subcatchment E-9: Alley  
Runoff Area=1,384 sf  100.00% Impervious  Runoff Depth=4.93”  
Tc=10.0 min  CN=98  Runoff=0.14 cfs  569 cf
<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Runoff Area</th>
<th>Impervious</th>
<th>Runoff Depth</th>
<th>Tc (min)</th>
<th>CN</th>
<th>Runoff Rate (cfs)</th>
<th>Runoff Volume (cf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-9R: Small Roofs</td>
<td>7,745 sf</td>
<td>100.00%</td>
<td>4.93”</td>
<td>10.0</td>
<td>98</td>
<td>0.78 cfs</td>
<td>3,184 cf</td>
</tr>
<tr>
<td>E-9SLB: Slabs, Alley</td>
<td>17,538 sf</td>
<td>100.00%</td>
<td>4.93”</td>
<td>10.0</td>
<td>98</td>
<td>1.76 cfs</td>
<td>7,209 cf</td>
</tr>
<tr>
<td>OS - 5: OFFSITE</td>
<td>2,266 sf</td>
<td>100.00%</td>
<td>4.93”</td>
<td>10.0</td>
<td>98</td>
<td>0.23 cfs</td>
<td>931 cf</td>
</tr>
<tr>
<td>OS-1E: COMM EAST</td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>4.93”</td>
<td>10.0</td>
<td>98</td>
<td>2.08 cfs</td>
<td>8,501 cf</td>
</tr>
<tr>
<td>OS-1R: COMM ROOF</td>
<td>13,913 sf</td>
<td>100.00%</td>
<td>4.93”</td>
<td>10.0</td>
<td>98</td>
<td>1.40 cfs</td>
<td>5,719 cf</td>
</tr>
<tr>
<td>OS-1W: COMM-WEST</td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>4.93”</td>
<td>10.0</td>
<td>98</td>
<td>2.08 cfs</td>
<td>8,501 cf</td>
</tr>
<tr>
<td>OS-2: North Driveway</td>
<td>7,491 sf</td>
<td>100.00%</td>
<td>4.93”</td>
<td>10.0</td>
<td>98</td>
<td>0.75 cfs</td>
<td>3,079 cf</td>
</tr>
<tr>
<td>OS-3: Existing Offsite NJDOT</td>
<td>14,192 sf</td>
<td>0.00%</td>
<td>4.70”</td>
<td>10.0</td>
<td>96</td>
<td>1.40 cfs</td>
<td>5,560 cf</td>
</tr>
<tr>
<td>OS-4N: Offsite Somet Tire</td>
<td>2,823 sf</td>
<td>0.00%</td>
<td>4.70”</td>
<td>10.0</td>
<td>96</td>
<td>0.28 cfs</td>
<td>1,106 cf</td>
</tr>
<tr>
<td>OS-4S: Offsite Somet Tire</td>
<td>4,224 sf</td>
<td>0.00%</td>
<td>4.70”</td>
<td>10.0</td>
<td>96</td>
<td>0.42 cfs</td>
<td>1,655 cf</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reach</th>
<th>Avg. Flow Depth</th>
<th>Max Vel</th>
<th>Inflow</th>
<th>Outflow</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASW1: Overland swale</td>
<td>0.25’</td>
<td>1.01 fps</td>
<td>4.55 cfs</td>
<td>6,452 cf</td>
<td></td>
</tr>
<tr>
<td>ASW2: Overland swale</td>
<td>0.20’</td>
<td>0.57 fps</td>
<td>1.88 cfs</td>
<td>5,222 cf</td>
<td></td>
</tr>
<tr>
<td>STRT: EXISTING STREET</td>
<td>0.23’</td>
<td>3.10 fps</td>
<td>18.18 cfs</td>
<td>93,609 cf</td>
<td></td>
</tr>
<tr>
<td>SW-1: Overland Swale</td>
<td>0.23’</td>
<td>0.49 fps</td>
<td>2.06 cfs</td>
<td>10,581 cf</td>
<td></td>
</tr>
<tr>
<td>SW-2: Overland Swale</td>
<td>0.23’</td>
<td>0.51 fps</td>
<td>2.06 cfs</td>
<td>11,105 cf</td>
<td></td>
</tr>
<tr>
<td>SW-3: Overland swale</td>
<td>0.23’</td>
<td>3.88 fps</td>
<td>15.06 cfs</td>
<td>49,140 cf</td>
<td></td>
</tr>
<tr>
<td>Pond</td>
<td>Description</td>
<td>Peak Elev.</td>
<td>Storage</td>
<td>Inflow</td>
<td>Outflow</td>
</tr>
<tr>
<td>------------</td>
<td>------------------------------------</td>
<td>------------</td>
<td>---------</td>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>Pond COMM-2: Storm Grate East Side</td>
<td>Peak Elev=17.47' Storage=350 cf Inflow=2.08 cfs 8,501 cf Primary=0.35 cfs 6,328 cf Secondary=1.62 cfs 2,174 cf Outflow=1.98 cfs 8,502 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond COMM-1: Grate SW corner Comm Bldg</td>
<td>Peak Elev=17.35' Storage=138 cf Inflow=3.48 cfs 14,221 cf Primary=0.48 cfs 9,960 cf Secondary=2.94 cfs 4,261 cf Outflow=3.42 cfs 14,221 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond I1: I1</td>
<td>Peak Elev=17.58' Storage=482 cf Inflow=5.19 cfs 22,110 cf Primary=1.05 cfs 14,492 cf Secondary=3.51 cfs 7,619 cf Outflow=4.56 cfs 22,111 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond I2: I2</td>
<td>Peak Elev=17.79' Storage=1 cf Inflow=6.68 cfs 34,309 cf Primary=4.62 cfs 23,736 cf Secondary=2.06 cfs 10,581 cf Outflow=6.67 cfs 34,318 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond I3: A Inlet</td>
<td>Peak Elev=17.51' Storage=0 cf Inflow=5.44 cfs 27,902 cf Primary=5.34 cfs 27,379 cf Secondary=0.10 cfs 524 cf Outflow=5.44 cfs 27,903 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond I4: A Inlet</td>
<td>Peak Elev=17.48' Storage=10 cf Inflow=8.11 cfs 43,298 cf Primary=7.40 cfs 42,624 cf Secondary=0.67 cfs 675 cf Outflow=8.07 cfs 43,299 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond I5: A Inlet</td>
<td>Peak Elev=17.64' Inflow=2.45 cfs 9,957 cf Primary=1.14 cfs 8,972 cf Secondary=1.31 cfs 985 cf Outflow=2.45 cfs 9,957 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond I6: Storm Inlet Alley</td>
<td>Peak Elev=17.26' Inflow=7.65 cfs 28,185 cf Primary=2.19 cfs 21,687 cf Secondary=5.46 cfs 6,498 cf Outflow=7.65 cfs 28,185 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-A1: Storm Manhole Alley</td>
<td>Peak Elev=17.34' Storage=0 cf Inflow=2.92 cfs 31,722 cf Primary=1.05 cfs 11,400 cf Secondary=1.87 cfs 20,322 cf Outflow=2.92 cfs 31,722 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-A2: Storm Manhole Alley</td>
<td>Peak Elev=16.89' Storage=0 cf Inflow=1.64 cfs 22,376 cf Primary=0.73 cfs 10,035 cf Secondary=0.90 cfs 12,341 cf Outflow=1.64 cfs 22,376 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-A3: Storm Manhole Alley</td>
<td>Peak Elev=16.79' Storage=69 cf Inflow=2.82 cfs 24,412 cf Primary=0.86 cfs 19,192 cf Secondary=1.88 cfs 5,222 cf Outflow=2.74 cfs 24,414 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-A4: Storm MH Comm Site Alley</td>
<td>Peak Elev=17.29' Storage=0 cf Inflow=1.06 cfs 17,220 cf Primary=1.06 cfs 17,203 cf Secondary=0.00 cfs 17 cf Outflow=1.06 cfs 17,220 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-E1: Existing MH Storm</td>
<td>Peak Elev=18.04' Storage=436 cf Inflow=6.59 cfs 31,866 cf Primary=4.89 cfs 30,874 cf Secondary=1.37 cfs 1,086 cf Outflow=6.26 cfs 31,960 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-E2: Storm MH</td>
<td>Peak Elev=19.25' Inflow=8.45 cfs 54,024 cf Primary=3.26 cfs 44,469 cf Secondary=5.18 cfs 9,555 cf Outflow=8.45 cfs 54,024 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-E3: Existing MH7-OFF</td>
<td>Peak Elev=9.52' Inflow=3.26 cfs 44,469 cf Primary=3.26 cfs 44,469 cf Secondary=0.00 cfs 0 cf Outflow=3.26 cfs 44,469 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond MH-E4: Woodruff Inlet</td>
<td>Peak Elev=9.05' Inflow=3.26 cfs 44,469 cf Primary=3.26 cfs 44,469 cf Secondary=0.00 cfs 0 cf Outflow=3.26 cfs 44,469 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Link 4N: OFFSITE EAST</td>
<td>Inflow=0.28 cfs 1,106 cf Primary=0.28 cfs 1,106 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Link 4S: OFFSITE EAST
Inflow = 0.42 cfs  1,655 cf
Primary = 0.42 cfs  1,655 cf

Link DW-N: Driveway
Inflow = 0.75 cfs  3,079 cf
Primary = 0.75 cfs  3,079 cf

Link NJDOT: Offsite NJDOT
Inflow = 1.40 cfs  5,560 cf
Primary = 1.40 cfs  5,560 cf

Link Offsite Spring: Spring Street
Inflow = 0.75 cfs  3,079 cf
Primary = 0.75 cfs  3,079 cf

Total Runoff Area = 258,813 sf  Runoff Volume = 104,901 cf  Average Runoff Depth = 4.86"
30.22% Pervious = 78,209 sf  69.78% Impervious = 180,604 sf
### SSDC SITE PLAN EXISTING CONDITIONS

#### Type III 24-hr 25-YEAR Rainfall=6.42”

**Prepared by Windows User**

---

**Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points**

**Runoff by SCS TR-20 method, UH=SCS, Weighted-CN**

**Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method**

<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Runoff Area</th>
<th>Impervious %</th>
<th>Runoff Depth</th>
<th>Flow Length</th>
<th>TC (min)</th>
<th>CN</th>
<th>Runoff (cfs)</th>
<th>1000 (cf)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E-1PVT: E-1</strong></td>
<td>32,882 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td>200’</td>
<td>10.0</td>
<td>98</td>
<td>4.11 cfs</td>
<td>16,938 cf</td>
</tr>
<tr>
<td><strong>E-1R: ROOFS</strong></td>
<td>1,400 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td></td>
<td>10.0</td>
<td>98</td>
<td>0.18 cfs</td>
<td>721 cf</td>
</tr>
<tr>
<td><strong>E-1SLB: Slab Area</strong></td>
<td>19,503 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td></td>
<td>10.0</td>
<td>98</td>
<td>2.44 cfs</td>
<td>10,046 cf</td>
</tr>
<tr>
<td><strong>E-2: Parking North/East</strong></td>
<td>20,571 sf</td>
<td>0.00%</td>
<td>5.95”</td>
<td></td>
<td>10.0</td>
<td>96</td>
<td>2.55 cfs</td>
<td>10,192 cf</td>
</tr>
<tr>
<td><strong>E-2R: Roofs, North/East</strong></td>
<td>4,125 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td></td>
<td>10.0</td>
<td>98</td>
<td>0.52 cfs</td>
<td>2,125 cf</td>
</tr>
<tr>
<td><strong>E-3: Parking Lot</strong></td>
<td>5,995 sf</td>
<td>0.00%</td>
<td>5.95”</td>
<td></td>
<td>10.0</td>
<td>96</td>
<td>0.74 cfs</td>
<td>2,970 cf</td>
</tr>
<tr>
<td><strong>E-4: Parking to I-5</strong></td>
<td>7,482 sf</td>
<td>37.82%</td>
<td>6.06”</td>
<td></td>
<td>10.0</td>
<td>97</td>
<td>0.93 cfs</td>
<td>3,780 cf</td>
</tr>
<tr>
<td><strong>E-4R: Roof to I-5</strong></td>
<td>2,828 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td></td>
<td>10.0</td>
<td>98</td>
<td>0.35 cfs</td>
<td>1,457 cf</td>
</tr>
<tr>
<td><strong>E-5: EAST CENTER</strong></td>
<td>16,669 sf</td>
<td>0.00%</td>
<td>5.95”</td>
<td></td>
<td>10.0</td>
<td>96</td>
<td>2.06 cfs</td>
<td>8,259 cf</td>
</tr>
<tr>
<td><strong>E-6: East End</strong></td>
<td>1,013 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td></td>
<td>10.0</td>
<td>98</td>
<td>0.13 cfs</td>
<td>522 cf</td>
</tr>
<tr>
<td><strong>E-6R: Roof East End South</strong></td>
<td>8,937 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td></td>
<td>10.0</td>
<td>98</td>
<td>1.12 cfs</td>
<td>4,604 cf</td>
</tr>
<tr>
<td><strong>E-7: S CORNER W</strong></td>
<td>9,083 sf</td>
<td>0.00%</td>
<td>5.95”</td>
<td></td>
<td>10.0</td>
<td>96</td>
<td>0.12 cfs</td>
<td>4,500 cf</td>
</tr>
<tr>
<td><strong>E-7R: S CORNER W</strong></td>
<td>6,627 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td>50’</td>
<td>10.9</td>
<td>98</td>
<td>0.81 cfs</td>
<td>3,414 cf</td>
</tr>
<tr>
<td><strong>E-8: Alley</strong></td>
<td>3,884 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td></td>
<td>10.0</td>
<td>98</td>
<td>0.49 cfs</td>
<td>2,001 cf</td>
</tr>
<tr>
<td><strong>E-8R: Building Roof</strong></td>
<td>4,876 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td></td>
<td>10.0</td>
<td>98</td>
<td>0.61 cfs</td>
<td>2,512 cf</td>
</tr>
<tr>
<td><strong>E-9: Alley</strong></td>
<td>1,384 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td></td>
<td>10.0</td>
<td>98</td>
<td>0.17 cfs</td>
<td>713 cf</td>
</tr>
</tbody>
</table>
SSDC SITE PLAN EXISTING CONDITIONS
Type III 24-hr 25-YEAR Rainfall=6.42"

Subcatchment E-9R: Small Roofs
Runoff Area=7,745 sf 100.00% Impervious Runoff Depth=6.18"
Tc=10.0 min CN=98 Runoff=0.97 cfs 3,990 cf

Subcatchment E-9SLB: Slabs, Alley
Runoff Area=17,538 sf 100.00% Impervious Runoff Depth=6.18"
Tc=10.0 min CN=98 Runoff=2.19 cfs 9,034 cf

Subcatchment OS - 5: OFFSITE
Runoff Area=2,266 sf 100.00% Impervious Runoff Depth=6.18"
Tc=10.0 min CN=98 Runoff=0.28 cfs 1,167 cf

Subcatchment OS-1E: COMM EAST
Runoff Area=20,681 sf 100.00% Impervious Runoff Depth=6.18"
Tc=10.0 min CN=98 Runoff=2.59 cfs 10,653 cf

Subcatchment OS-1R: COMM ROOF
Runoff Area=13,913 sf 100.00% Impervious Runoff Depth=6.18"
Tc=10.0 min CN=98 Runoff=1.74 cfs 7,167 cf

Subcatchment OS-1W: COMM-WEST
Runoff Area=20,681 sf 100.00% Impervious Runoff Depth=6.18"
Tc=10.0 min CN=98 Runoff=2.59 cfs 10,653 cf

Subcatchment OS-2: North Driveway
Runoff Area=7,491 sf 100.00% Impervious Runoff Depth=6.18"
Tc=10.0 min CN=98 Runoff=0.94 cfs 3,859 cf

Subcatchment OS-3: Existing Offsite NJDOT
Runoff Area=14,192 sf 0.00% Impervious Runoff Depth=5.95"
Tc=10.0 min CN=96 Runoff=1.76 cfs 7,032 cf

Subcatchment OS-4N: Offsite Somet Tire
Runoff Area=2,823 sf 0.00% Impervious Runoff Depth=5.95"
Tc=10.0 min CN=96 Runoff=0.35 cfs 1,399 cf

Subcatchment OS-4S: Offsite Somet Tire
Runoff Area=4,224 sf 0.00% Impervious Runoff Depth=5.95"
Tc=10.0 min CN=96 Runoff=0.52 cfs 2,093 cf

Reach 1SF: SURFACE DRAINAGE
Avg. Flow Depth=0.51’ Max Vel=2.51 fps Inflow=6.55 cfs 26,985 cf
n=0.013 L=200.0’ S=0.0030 ’/" Capacity=6.19 cfs Outflow=6.30 cfs 26,985 cf

Reach ASW1: Overland swale
Avg. Flow Depth=0.28’ Max Vel=1.08 fps Inflow=5.78 cfs 8,973 cf
n=0.016 L=160.0’ S=0.0012 ’/" Capacity=19.21 cfs Outflow=5.54 cfs 8,973 cf

Reach ASW2: Overland swale
Avg. Flow Depth=0.22’ Max Vel=0.60 fps Inflow=2.26 cfs 6,746 cf
n=0.016 L=120.0’ S=0.0005 ’/" Capacity=12.15 cfs Outflow=2.18 cfs 6,746 cf

Reach STRT: EXISTING STREET
Avg. Flow Depth=0.26’ Max Vel=3.36 fps Inflow=22.22 cfs 117,515 cf
n=0.016 L=25.0’ S=0.0080 ’/" Capacity=63.73 cfs Outflow=22.20 cfs 117,515 cf

Reach SW-1: Overland Swale
Avg. Flow Depth=0.25’ Max Vel=0.52 fps Inflow=2.44 cfs 13,283 cf
n=0.016 L=160.0’ S=0.0003 ’/" Capacity=9.61 cfs Outflow=2.35 cfs 13,283 cf

Reach SW-2: Overland Swale
Avg. Flow Depth=0.25’ Max Vel=0.53 fps Inflow=2.45 cfs 13,941 cf
n=0.016 L=120.0’ S=0.0003 ’/" Capacity=9.92 cfs Outflow=2.41 cfs 13,941 cf

Reach SW-3: Overland swale
Avg. Flow Depth=0.26’ Max Vel=4.14 fps Inflow=19.09 cfs 63,991 cf
n=0.016 L=160.0’ S=0.0200 ’/" Capacity=76.85 cfs Outflow=18.95 cfs 63,991 cf
### HydroCAD® 10.00-25  s/n 06187  © 2019 HydroCAD Software Solutions LLC

**SSDC SITE PLAN EXISTING CONDITIONS**

*Type III 24-hr 25-YEAR Rainfall=6.42*

**Prepared by Windows User**

**Printed 3/3/2020**

<table>
<thead>
<tr>
<th>Pond Name</th>
<th>Peak Elev</th>
<th>Storage</th>
<th>Inflow</th>
<th>Outflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pond COMM-2: Storm Grate East Side</td>
<td>17.51'</td>
<td>428 cf</td>
<td>2.59 cfs</td>
<td>10,653 cf</td>
</tr>
<tr>
<td>Pond COMM-1: Grate SW corner Comm Bldg</td>
<td>17.45'</td>
<td>202 cf</td>
<td>4.33 cfs</td>
<td>17,820 cf</td>
</tr>
<tr>
<td>Pond I1: I1</td>
<td>17.90'</td>
<td>967 cf</td>
<td>6.46 cfs</td>
<td>27,706 cf</td>
</tr>
<tr>
<td>Pond I2: I2</td>
<td>17.90'</td>
<td>967 cf</td>
<td>6.46 cfs</td>
<td>27,706 cf</td>
</tr>
<tr>
<td>Pond I3: A Inlet</td>
<td>17.51'</td>
<td>0 cf</td>
<td>6.54 cfs</td>
<td>35,034 cf</td>
</tr>
<tr>
<td>Pond I4: A Inlet</td>
<td>17.65'</td>
<td>108 cf</td>
<td>9.63 cfs</td>
<td>53,974 cf</td>
</tr>
<tr>
<td>Pond I5: A Inlet</td>
<td>17.77'</td>
<td>305 cf</td>
<td>7.92 cfs</td>
<td>43,070 cf</td>
</tr>
<tr>
<td>Pond I6: Storm Inlet Alley</td>
<td>17.31'</td>
<td>1 cf</td>
<td>3.01 cfs</td>
<td>38,003 cf</td>
</tr>
<tr>
<td>Pond MH-A1: Storm Manhole Alley</td>
<td>17.34'</td>
<td>1 cf</td>
<td>3.01 cfs</td>
<td>38,003 cf</td>
</tr>
<tr>
<td>Pond MH-A2: Storm Manhole Alley</td>
<td>16.89'</td>
<td>0 cf</td>
<td>1.83 cfs</td>
<td>26,946 cf</td>
</tr>
<tr>
<td>Pond MH-A3: Storm Manhole Alley</td>
<td>16.90'</td>
<td>144 cf</td>
<td>3.31 cfs</td>
<td>29,702 cf</td>
</tr>
<tr>
<td>Pond MH-A4: Storm MH Comm Site Alley</td>
<td>17.29'</td>
<td>0 cf</td>
<td>1.12 cfs</td>
<td>20,688 cf</td>
</tr>
<tr>
<td>Pond MH-E1: Existing MH Storm</td>
<td>18.12'</td>
<td>683 cf</td>
<td>7.78 cfs</td>
<td>40,023 cf</td>
</tr>
<tr>
<td>Pond MH-E2: Storm MH</td>
<td>19.30'</td>
<td>0 cf</td>
<td>8.55 cfs</td>
<td>65,723 cf</td>
</tr>
<tr>
<td>Pond MH-E3: Existing MH7-OFF</td>
<td>9.52'</td>
<td>632 cf</td>
<td>3.27 cfs</td>
<td>53,524 cf</td>
</tr>
<tr>
<td>Pond MH-E4: Woodruff Inlet</td>
<td>9.05'</td>
<td>0 cf</td>
<td>7.38 cfs</td>
<td>30,725 cf</td>
</tr>
<tr>
<td>Link 4N: OFFSITE EAST</td>
<td>0.35 cfs</td>
<td>1,399 cf</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Inflow=0.35 cfs 1,399 cf**

**Primary=0.35 cfs 1,399 cf**

---

**Page 20**
Link 4S: OFFSITE EAST
Inflow=0.52 cfs  2,093 cf
Primary=0.52 cfs  2,093 cf

Link DW-N: Driveway
Inflow=0.94 cfs  3,859 cf
Primary=0.94 cfs  3,859 cf

Link NJDOT: Offsite NJDOT
Inflow=1.76 cfs  7,032 cf
Primary=1.76 cfs  7,032 cf

Link Offsite Spring: Spring Street
Inflow=0.94 cfs  3,859 cf
Primary=0.94 cfs  3,859 cf

Total Runoff Area = 258,813 sf  Runoff Volume = 131,801 cf  Average Runoff Depth = 6.11"
30.22% Pervious = 78,209 sf  69.78% Impervious = 180,604 sf
SSDC SITE PLAN EXISTING CONDITIONS

2020-02-28 SSDC-1699.C EXISTING 8
Prepared by Windows User

Type III 24-hr 100-YEAR Rainfall=8.69"


Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E-1PVT: E-1
Runoff Area=32,882 sf  100.00% Impervious  Runoff Depth=8.45"
Flow Length=200'  Tc=10.0 min  CN=98  Runoff=5.58 cfs  23,154 cf

Subcatchment E-1R: ROOFS
Runoff Area=1,400 sf  100.00% Impervious  Runoff Depth=8.45"
Tc=10.0 min  CN=98  Runoff=0.24 cfs  986 cf

Subcatchment E-1SLB: Slab Area
Runoff Area=19,503 sf  100.00% Impervious  Runoff Depth=8.45"
Tc=10.0 min  CN=98  Runoff=3.31 cfs  13,733 cf

Subcatchment E-2: Parking North/East
Runoff Area=20,571 sf  0.00% Impervious  Runoff Depth=8.21"
Tc=10.0 min  CN=96  Runoff=3.47 cfs  14,073 cf

Subcatchment E-2R: Roofs, North/East
Runoff Area=4,125 sf  100.00% Impervious  Runoff Depth=8.45"
Tc=10.0 min  CN=98  Runoff=0.70 cfs  2,905 cf

Subcatchment E-3: Parking Lot
Runoff Area=5,995 sf  0.00% Impervious  Runoff Depth=8.21"
Tc=10.0 min  CN=96  Runoff=1.01 cfs  4,101 cf

Subcatchment E-4: Parking to I-5
Runoff Area=7,482 sf  37.82% Impervious  Runoff Depth=8.33"
Tc=10.0 min  CN=97  Runoff=1.27 cfs  5,193 cf

Subcatchment E-4R: Roof to I-5
Runoff Area=2,828 sf  100.00% Impervious  Runoff Depth=8.45"
Tc=10.0 min  CN=98  Runoff=0.48 cfs  1,991 cf

Subcatchment E-5: EAST CENTER
Runoff Area=16,669 sf  0.00% Impervious  Runoff Depth=8.21"
Tc=10.0 min  CN=96  Runoff=2.81 cfs  11,403 cf

Subcatchment E-6: East End
Runoff Area=1,013 sf  100.00% Impervious  Runoff Depth=8.45"
Tc=10.0 min  CN=98  Runoff=0.17 cfs  713 cf

Subcatchment E-6R: Roof East End South
Runoff Area=8,937 sf  100.00% Impervious  Runoff Depth=8.45"
Tc=10.0 min  CN=98  Runoff=1.52 cfs  6,293 cf

Subcatchment E-7: S CORNER W
Runoff Area=9,083 sf  0.00% Impervious  Runoff Depth=8.21"
Tc=10.0 min  CN=96  Runoff=1.53 cfs  6,214 cf

Subcatchment E-7R: S CORNER W
Runoff Area=6,627 sf  100.00% Impervious  Runoff Depth=8.45"
Flow Length=50'  Slope=0.0100 '/'  Tc=10.9 min  CN=98  Runoff=1.10 cfs  4,666 cf

Subcatchment E-8: Alley
Runoff Area=3,884 sf  100.00% Impervious  Runoff Depth=8.45"
Tc=10.0 min  CN=98  Runoff=0.66 cfs  2,735 cf

Subcatchment E-8R: Building Roof
Runoff Area=4,876 sf  100.00% Impervious  Runoff Depth=8.45"
Tc=10.0 min  CN=98  Runoff=0.83 cfs  3,433 cf

Subcatchment E-9: Alley
Runoff Area=1,384 sf  100.00% Impervious  Runoff Depth=8.45"
Tc=10.0 min  CN=98  Runoff=0.23 cfs  975 cf
SSDC SITE PLAN EXISTING CONDITIONS

Type III 24-hr 100-YEAR Rainfall = 8.69".

Subcatchment E-9R: Small Roofs
Runoff Area = 7,745 sq ft  100.00% Impervious  Runoff Depth = 8.45"
Tc = 10.0 min  CN = 98  Runoff = 1.31 cfs  5,454 cf

Subcatchment E-9SLB: Slabs, Alley
Runoff Area = 17,538 sq ft  100.00% Impervious  Runoff Depth = 8.45"
Tc = 10.0 min  CN = 98  Runoff = 2.97 cfs  12,349 cf

Subcatchment OS - 5: OFFSITE
Runoff Area = 2,266 sq ft  100.00% Impervious  Runoff Depth = 8.45"
Tc = 10.0 min  CN = 98  Runoff = 0.38 cfs  1,596 cf

Subcatchment OS-1E: COMM EAST
Runoff Area = 20,681 sq ft  100.00% Impervious  Runoff Depth = 8.45"
Tc = 10.0 min  CN = 98  Runoff = 3.51 cfs  14,563 cf

Subcatchment OS-1R: COMM ROOF
Runoff Area = 13,913 sq ft  100.00% Impervious  Runoff Depth = 8.45"
Tc = 10.0 min  CN = 98  Runoff = 2.36 cfs  9,797 cf

Subcatchment OS-1W: COMM-WEST
Runoff Area = 20,681 sq ft  100.00% Impervious  Runoff Depth = 8.45"
Tc = 10.0 min  CN = 98  Runoff = 3.51 cfs  14,563 cf

Subcatchment OS-2: North Driveway
Runoff Area = 7,491 sq ft  100.00% Impervious  Runoff Depth = 8.45"
Tc = 10.0 min  CN = 98  Runoff = 0.38 cfs  1,596 cf

Subcatchment OS-3: Existing Offsite NJDOT
Runoff Area = 14,192 sq ft  0.00% Impervious  Runoff Depth = 8.21"
Tc = 10.0 min  CN = 96  Runoff = 2.39 cfs  9,709 cf

Subcatchment OS-4N: Offsite Somet Tire
Runoff Area = 2,823 sq ft  0.00% Impervious  Runoff Depth = 8.21"
Tc = 10.0 min  CN = 96  Runoff = 0.48 cfs  1,931 cf

Subcatchment OS-4S: Offsite Somet Tire
Runoff Area = 4,224 sq ft  0.00% Impervious  Runoff Depth = 8.21"
Tc = 10.0 min  CN = 96  Runoff = 0.71 cfs  2,890 cf

Reach 1SF: SURFACE DRAINAGE
Avg. Flow Depth = 0.58'  Max Vel = 2.67 fps  Inflow = 8.88 cfs  36,887 cf
n = 0.013  L = 200.0'  S = 0.0030 '/'  Capacity = 6.19 cfs  Outflow = 8.57 cfs  36,887 cf

Reach ASW1: Overland swale
Avg. Flow Depth = 0.32'  Max Vel = 1.17 fps  Inflow = 7.54 cfs  14,038 cf
n = 0.016  L = 160.0'  S = 0.0012 '/'  Capacity = 19.21 cfs  Outflow = 7.35 cfs  14,038 cf

Reach ASW2: Overland swale
Avg. Flow Depth = 0.25'  Max Vel = 0.64 fps  Inflow = 2.82 cfs  9,705 cf
n = 0.016  L = 120.0'  S = 0.0005 '/'  Capacity = 12.15 cfs  Outflow = 2.77 cfs  9,705 cf

Reach STRT: EXISTING STREET
Avg. Flow Depth = 0.30'  Max Vel = 3.69 fps  Inflow = 27.91 cfs  161,092 cf
n = 0.016  L = 25.0'  S = 0.0080 '/'  Capacity = 63.73 cfs  Outflow = 27.90 cfs  161,092 cf

Reach SW-1: Overland Swale
Avg. Flow Depth = 0.30'  Max Vel = 0.57 fps  Inflow = 3.49 cfs  18,433 cf
n = 0.016  L = 160.0'  S = 0.0003 '/'  Capacity = 9.61 cfs  Outflow = 3.37 cfs  18,433 cf

Reach SW-2: Overland Swale
Avg. Flow Depth = 0.30'  Max Vel = 0.59 fps  Inflow = 3.48 cfs  19,433 cf
n = 0.016  L = 120.0'  S = 0.0003 '/'  Capacity = 9.92 cfs  Outflow = 3.41 cfs  19,433 cf

Reach SW-3: Overland swale
Avg. Flow Depth = 0.29'  Max Vel = 4.45 fps  Inflow = 24.75 cfs  91,787 cf
n = 0.016  L = 160.0'  S = 0.0200 '/'  Capacity = 76.85 cfs  Outflow = 24.62 cfs  91,787 cf
Pond COMM-2: Storm Grate East Side
Peak Elev=17.64' Storage=705 cf Inflow=3.51 cfs 14,563 cf
Primary=0.36 cfs 9,711 cf Secondary=2.54 cfs 4,852 cf Outflow=2.90 cfs 14,563 cf

Pond COMM-1: Grate SW corner Comm Bldg
Peak Elev=17.65' Storage=388 cf Inflow=5.87 cfs 24,359 cf
Primary=0.49 cfs 15,199 cf Secondary=5.03 cfs 9,160 cf Outflow=5.52 cfs 24,359 cf

Pond I1: I1
Peak Elev=21.51' Storage=1 cf Inflow=8.79 cfs 37,873 cf
Primary=0.54 cfs 19,641 cf Secondary=3.49 cfs 18,433 cf Outflow=10.22 cfs 37,873 cf

Pond I2: I2
Peak Elev=18.05' Storage=335 cf Inflow=5.87 cfs 24,359 cf
Primary=6.37 cfs 40,690 cf Secondary=3.49 cfs 18,433 cf Outflow=10.22 cfs 24,359 cf

Pond I3: A Inlet
Peak Elev=17.54' Storage=1 cf Inflow=8.34 cfs 47,875 cf
Primary=7.75 cfs 46,876 cf Secondary=0.52 cfs 1,000 cf Outflow=8.34 cfs 47,875 cf

Pond I4: A Inlet
Peak Elev=18.09' Storage=794 cf Inflow=12.02 cfs 72,967 cf
Primary=7.69 cfs 67,895 cf Secondary=3.14 cfs 5,101 cf Outflow=10.83 cfs 72,967 cf

Pond I5: A Inlet
Peak Elev=18.09' Inflow=4.14 cfs 17,173 cf
Primary=1.30 cfs 13,975 cf Secondary=2.84 cfs 3,198 cf Outflow=4.14 cfs 17,173 cf

Pond I6: Storm Inlet Alley
Peak Elev=17.37' Inflow=12.26 cfs 49,957 cf
Primary=2.21 cfs 33,419 cf Secondary=10.05 cfs 16,538 cf Outflow=12.26 cfs 49,957 cf

Pond MH-A1: Storm Manhole Alley
Peak Elev=17.34' Storage=1 cf Inflow=3.18 cfs 48,926 cf
Primary=1.14 cfs 17,583 cf Secondary=2.04 cfs 31,343 cf Outflow=3.18 cfs 48,926 cf

Pond MH-A2: Storm Manhole Alley
Peak Elev=16.89' Storage=0 cf Inflow=2.19 cfs 34,578 cf
Primary=0.98 cfs 15,507 cf Secondary=1.21 cfs 19,071 cf Outflow=2.19 cfs 34,578 cf

Pond MH-A3: Storm Manhole Alley
Peak Elev=17.11' Storage=367 cf Inflow=4.20 cfs 38,829 cf
Primary=0.88 cfs 29,125 cf Secondary=2.82 cfs 9,705 cf Outflow=4.20 cfs 38,829 cf

Pond MH-A4: Storm MH Comm Site Alley
Peak Elev=17.29' Storage=0 cf Inflow=1.23 cfs 26,506 cf
Primary=1.23 cfs 26,480 cf Secondary=0.00 cfs 26 cf Outflow=1.23 cfs 26,506 cf

Pond MH-E1: Existing MH Storm
Peak Elev=18.30' Storage=1,281 cf Inflow=12.65 cfs 54,851 cf
Primary=5.03 cfs 48,558 cf Secondary=5.53 cfs 6,422 cf Outflow=10.56 cfs 54,851 cf

Pond MH-E2: Storm MH
Peak Elev=19.43' Inflow=8.79 cfs 85,478 cf
Primary=3.29 cfs 69,304 cf Secondary=5.50 cfs 16,173 cf Outflow=8.79 cfs 85,478 cf

Pond MH-E3: Existing MH7-OFF
Peak Elev=9.53' Inflow=3.29 cfs 69,304 cf
Primary=3.29 cfs 69,304 cf Secondary=0.00 cfs 0 cf Outflow=3.29 cfs 69,304 cf

Pond MH-E4: Woodruff Inlet
Peak Elev=9.06' Inflow=3.29 cfs 69,304 cf
Primary=3.29 cfs 69,304 cf Secondary=0.00 cfs 0 cf Outflow=3.29 cfs 69,304 cf

Link 4N: OFFSITE EAST
Inflow=0.48 cfs 1,931 cf
Primary=0.48 cfs 1,931 cf
Link 4S: OFFSITE EAST

Link DW-N: Driveway

Link NJDOT: Offsite NJDOT

Link Offsite Spring: Spring Street

Total Runoff Area = 258,813 sf  Runoff Volume = 180,694 cf  Average Runoff Depth = 8.38"

30.22% Pervious = 78,209 sf  69.78% Impervious = 180,604 sf
Summary for Subcatchment E-1PVT: E-1

Runoff = 5.58 cfs @ 12.14 hrs, Volume= 23,154 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>32,882</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>32,882</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.7</td>
<td>200</td>
<td>2.00</td>
<td></td>
<td></td>
<td>Direct Entry, Parking Area paved</td>
</tr>
<tr>
<td>1.7</td>
<td>200</td>
<td>2.00</td>
<td></td>
<td></td>
<td>Total, Increased to minimum Tc = 10.0 min</td>
</tr>
</tbody>
</table>

Summary for Subcatchment E-1R: ROOFS

Runoff = 0.24 cfs @ 12.14 hrs, Volume= 986 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,400</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
<tr>
<td>1,400</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Existing Roof/Parking Pvt/Gravel</td>
</tr>
</tbody>
</table>

Summary for Subcatchment E-1SLB: Slab Area

North half of slab

Runoff = 3.31 cfs @ 12.14 hrs, Volume= 13,733 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>* 19,503</td>
<td>98</td>
<td>Concrete Parking Slab, HSG D</td>
</tr>
<tr>
<td>19,503</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Slabs</td>
</tr>
</tbody>
</table>
Summary for Subcatchment E-2: Parking North/East

Runoff = 3.47 cfs @ 12.14 hrs, Volume= 14,073 cf, Depth= 8.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>20,571</td>
<td>96</td>
<td>Gravel surface, HSG D</td>
</tr>
<tr>
<td>20,571</td>
<td>100</td>
<td>100.00% Pervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Old Pavement and Gravel</td>
</tr>
</tbody>
</table>

Summary for Subcatchment E-2R: Roofs, North/East

Runoff = 0.70 cfs @ 12.14 hrs, Volume= 2,905 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,125</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
<tr>
<td>4,125</td>
<td>100</td>
<td>100.00% Impervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Existing Roofs</td>
</tr>
</tbody>
</table>

Summary for Subcatchment E-3: Parking Lot

Existing Parking

Runoff = 1.01 cfs @ 12.14 hrs, Volume= 4,101 cf, Depth= 8.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,995</td>
<td>96</td>
<td>Gravel surface, HSG D</td>
</tr>
<tr>
<td>5,995</td>
<td>100</td>
<td>100.00% Pervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Graveled</td>
</tr>
</tbody>
</table>
Summary for Subcatchment E-4: Parking to I-5

Parking to I-3

Runoff = 1.27 cfs @ 12.14 hrs, Volume= 5,193 cf, Depth= 8.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,652</td>
<td>96</td>
<td>Gravel surface, HSG D</td>
</tr>
<tr>
<td>2,830</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>7,482</td>
<td>97</td>
<td>Weighted Average</td>
</tr>
<tr>
<td>4,652</td>
<td>62.18% Pervious Area</td>
<td></td>
</tr>
<tr>
<td>2,830</td>
<td>37.82% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

Tc | Length | Slope | Velocity | Capacity |
---|--------|-------|----------|----------|
10.0 | Direct Entry, Existing Parking |

Summary for Subcatchment E-4R: Roof to I-5

Existing Roof to I-3

Runoff = 0.48 cfs @ 12.14 hrs, Volume= 1,991 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,828</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
<tr>
<td>2,828</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

Tc | Length | Slope | Velocity | Capacity |
---|--------|-------|----------|----------|
10.0 | Direct Entry, Existing Roof   |

Summary for Subcatchment E-5: EAST CENTER

Parking to I-4

Runoff = 2.81 cfs @ 12.14 hrs, Volume= 11,403 cf, Depth= 8.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs Type III 24-hr 100-YEAR Rainfall=8.69"
## Summary for Subcatchment E-6: East End

**To I-5**

Runoff = 0.17 cfs @ 12.14 hrs, Volume= 713 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,013</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>1,013</td>
<td></td>
<td>100.00% Impervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Parking</td>
</tr>
</tbody>
</table>

## Summary for Subcatchment E-6R: Roof East End South Side

**Middle Roof East End**

Runoff = 1.52 cfs @ 12.14 hrs, Volume= 6,293 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8,937</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
<tr>
<td>8,937</td>
<td></td>
<td>100.00% Impervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Roof</td>
</tr>
</tbody>
</table>

## Summary for Subcatchment E-7: S CORNER W

Runoff = 1.53 cfs @ 12.14 hrs, Volume= 6,214 cf, Depth= 8.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100-YEAR Rainfall=8.69"
### Summary for Subcatchment E-7R: S CORNER W

**South East Roof**

**Runoff** = 1.10 cfs @ 12.15 hrs, **Volume** = 4,666 cf, **Depth** = 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs, Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,627</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
<tr>
<td>6,627</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.9</td>
<td>50</td>
<td>0.0100</td>
<td>0.93</td>
<td></td>
<td><strong>Sheet Flow, PAVED</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Smooth surfaces n= 0.011 P2= 3.33&quot;</td>
</tr>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Direct Entry, Roof</strong></td>
</tr>
</tbody>
</table>

### Summary for Subcatchment E-8: Alley

**Runoff** = 0.66 cfs @ 12.14 hrs, **Volume** = 2,735 cf, **Depth** = 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs, Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,884</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>3,884</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Direct Entry, Alley Area</strong></td>
</tr>
</tbody>
</table>
### Summary for Subcatchment E-8R: Building Roof

Roof south side (alley)

Runoff = 0.83 cfs @ 12.14 hrs, Volume= 3,433 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,876</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
<tr>
<td>4,876</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td>Direct Entry, Roof</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Summary for Subcatchment E-9: Alley

South half of slabs and alley

Runoff = 0.23 cfs @ 12.14 hrs, Volume= 975 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,384</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>1,384</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td>Direct Entry, Slabs to Alley</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Summary for Subcatchment E-9R: Small Roofs

Roof to alley gutter

Runoff = 1.31 cfs @ 12.14 hrs, Volume= 5,454 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7,745</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
<tr>
<td>7,745</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>
Summary for Subcatchment E-9SLB: Slabs, Alley

South half of slabs and alley

Runoff = 2.97 cfs @ 12.14 hrs, Volume= 12,349 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>17,538</td>
<td>98</td>
<td>Uncovered Slab HSG D</td>
</tr>
</tbody>
</table>

Summary for Subcatchment OS - 5: OFFSITE

South Driveway to Alley drains to Inlet SE of bldg, and back to alley

Runoff = 0.38 cfs @ 12.14 hrs, Volume= 1,596 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,266</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
</tbody>
</table>

Summary for Subcatchment OS-1E: COMM EAST

Commercial Lot East Side to Inlet East side of bldg

Runoff = 3.51 cfs @ 12.14 hrs, Volume= 14,563 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"
Summary for Subcatchment OS-1R: COMM ROOF

Commercial Bldg Roof

Runoff  =  2.36 cfs @ 12.14 hrs, Volume= 9,797 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"

Summary for Subcatchment OS-1W: COMM-WEST

Commerical Lot west side draianage to inlet on SW corner of Comm Bldg

Runoff  =  3.51 cfs @ 12.14 hrs, Volume= 14,563 cf, Depth= 8.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"

Summary for Subcatchment OS-2: North Driveway

Existing driveway condition flows to Spring Street

Runoff  =  1.27 cfs @ 12.14 hrs, Volume= 5,275 cf, Depth= 8.45"
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7,491</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>7,491</td>
<td></td>
<td>100.00% Impervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Driveway - paved</td>
</tr>
</tbody>
</table>

Summary for Subcatchment OS-3: Existing Offsite NJDOT

Flows offsite toward NJDOT

Runoff = 2.39 cfs @ 12.14 hrs, Volume= 9,709 cf, Depth= 8.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>14,192</td>
<td>96</td>
<td>Gravel surface, HSG D</td>
</tr>
<tr>
<td>14,192</td>
<td></td>
<td>100.00% Pervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Gravel Pkng</td>
</tr>
</tbody>
</table>

Summary for Subcatchment OS-4N: Offsite Somet Tire North

Existing conditions parking area flows easterly to adjoining lot on Somet Tire Service Center

Runoff = 0.48 cfs @ 12.14 hrs, Volume= 1,931 cf, Depth= 8.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,823</td>
<td>96</td>
<td>Gravel surface, HSG D</td>
</tr>
<tr>
<td>2,823</td>
<td></td>
<td>100.00% Pervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Graveled Parking</td>
</tr>
</tbody>
</table>
Summary for Subcatchment OS-4S: Offsite Somet Tire South

Existing conditions parking area flows easterly to adjoining lot on Somet Tire Service Center

Runoff = 0.71 cfs @ 12.14 hrs, Volume = 2,890 cf, Depth = 8.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span = 0.00-100.00 hrs, dt = 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.69"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,224</td>
<td>96</td>
<td>Gravel surface, HSG D</td>
</tr>
<tr>
<td>4,224</td>
<td>100.00%</td>
<td>Pervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Graveled Parking</td>
</tr>
</tbody>
</table>

Summary for Reach 1SF: SURFACE DRAINAGE

Surface drainage to I1

Inflow Area = 52,385 sf, 100.00% Impervious, Inflow Depth = 8.45” for 100-YEAR event
Inflow = 8.88 cfs @ 12.14 hrs, Volume = 36,887 cf
Outflow = 8.57 cfs @ 12.17 hrs, Volume = 36,887 cf, Atten = 4%, Lag = 2.3 min

Routing by Stor-Ind+Trans method, Time Span = 0.00-100.00 hrs, dt = 0.05 hrs
Max. Velocity = 2.67 fps, Min. Travel Time = 1.2 min
Avg. Velocity = 1.05 fps, Avg. Travel Time = 3.2 min

Peak Storage = 659 cf @ 12.15 hrs
Average Depth at Peak Storage = 0.58’
Bank-Full Depth = 0.50’ Flow Area = 2.5 sf, Capacity = 6.19 cfs

0.00’ x 0.50’ deep channel, n = 0.013 Asphalt, smooth
Side Slope Z-value = 10.0 ”/” Top Width = 10.00’
Length = 200.0’ Slope = 0.0030 ”/”
Inlet Invert = 17.30’, Outlet Invert = 16.70’

‡
Summary for Reach ASW1: Overland swale

Inflow = 7.54 cfs @ 12.18 hrs, Volume= 14,038 cf
Outflow = 7.35 cfs @ 12.25 hrs, Volume= 14,038 cf, Atten= 3%, Lag= 4.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.17 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 0.14 fps, Avg. Travel Time= 18.5 min

Peak Storage= 1,014 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 0.50' Flow Area= 12.8 sf, Capacity= 19.21 cfs

10.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 31.0 '/' Top Width= 41.00'
Length= 160.0' Slope= 0.0012 '/'
Inlet Invert= 17.30', Outlet Invert= 17.10'

‡

Summary for Reach ASW2: Overland swale

Inflow = 2.82 cfs @ 12.20 hrs, Volume= 9,705 cf
Outflow = 2.77 cfs @ 12.29 hrs, Volume= 9,705 cf, Atten= 2%, Lag= 5.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.64 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 0.15 fps, Avg. Travel Time= 13.1 min

Peak Storage= 519 cf @ 12.24 hrs
Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 0.50' Flow Area= 12.8 sf, Capacity= 12.15 cfs

10.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 31.0 '/' Top Width= 41.00'
Length= 120.0' Slope= 0.0005 '/'
Inlet Invert= 17.10', Outlet Invert= 17.04'

‡
Summary for Reach STRT: EXISTING STREET

Inflow Area = 230,083 sf, 75.24% Impervious, Inflow Depth = 8.40" for 100-YEAR event
Inflow = 27.91 cfs @ 12.24 hrs, Volume= 161,092 cf
Outflow = 27.90 cfs @ 12.25 hrs, Volume= 161,092 cf, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.69 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.87 fps, Avg. Travel Time= 0.5 min

Peak Storage= 189 cf @ 12.24 hrs
Average Depth at Peak Storage= 0.30'
Bank-Full Depth= 0.50' Flow Area= 12.5 sf, Capacity= 63.73 cfs

25.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Length= 25.0' Slope= 0.0080 '/'
Inlet Invert= 14.00', Outlet Invert= 13.80'

Summary for Reach SW-1: Oveland Swale

Inflow = 3.49 cfs @ 12.32 hrs, Volume= 18,433 cf
Outflow = 3.37 cfs @ 12.44 hrs, Volume= 18,433 cf, Atten= 3%, Lag= 7.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.57 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 0.17 fps, Avg. Travel Time= 15.5 min

Peak Storage= 949 cf @ 12.37 hrs
Average Depth at Peak Storage= 0.30'
Bank-Full Depth= 0.50' Flow Area= 12.8 sf, Capacity= 9.61 cfs

10.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 31.0 '/' Top Width= 41.00'
Length= 160.0' Slope= 0.0003 '/'
Inlet Invert= 17.80', Outlet Invert= 17.75'
Summary for Reach SW-2: Overland Swale

Inflow = 3.48 cfs @ 12.43 hrs, Volume= 19,433 cf
Outflow = 3.41 cfs @ 12.53 hrs, Volume= 19,433 cf, Atten= 2%, Lag= 5.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.59 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 0.17 fps, Avg. Travel Time= 11.5 min

Peak Storage= 700 cf @ 12.47 hrs
Average Depth at Peak Storage= 0.30'
Bank-Full Depth= 0.50' Flow Area= 12.8 sf, Capacity= 9.92 cfs

10.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 31.0 '/' Top Width= 41.00'
Length= 120.0' Slope= 0.0003 '/'
Inlet Invert= 17.75', Outlet Invert= 17.71'

‡

Summary for Reach SW-3: Overland swale

Inflow = 24.75 cfs @ 12.22 hrs, Volume= 91,787 cf
Outflow = 24.62 cfs @ 12.24 hrs, Volume= 91,787 cf, Atten= 1%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.45 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.08 fps, Avg. Travel Time= 2.5 min

Peak Storage= 887 cf @ 12.23 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 0.50' Flow Area= 12.8 sf, Capacity= 76.85 cfs

10.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 31.0 '/' Top Width= 41.00'
Length= 160.0' Slope= 0.0200 '/'
Inlet Invert= 17.70', Outlet Invert= 14.50'

‡
Summary for Pond COMM- 2: Storm Grate East Side

Storm Inlet East side of Commercial Bldg

Inflow Area = 20,681 sf, 100.00% Impervious, Inflow Depth = 8.45" for 100-YEAR event
Inflow = 3.51 cfs @ 12.14 hrs, Volume= 14,563 cf
Outflow = 2.90 cfs @ 12.21 hrs, Volume= 14,563 cf, Atten= 17%, Lag= 4.5 min
Primary = 0.36 cfs @ 12.21 hrs, Volume= 9,711 cf
Secondary = 2.54 cfs @ 12.21 hrs, Volume= 4,852 cf

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 17.64' @ 12.21 hrs  Surf.Area= 2,285 sf  Storage= 705 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.9 min (745.8 - 743.9)

Volume Invert Avail.Storage Storage Description
#1 16.90' 3,400 cf Custom Stage Data (Prismatic) Listed below (Recalc)

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Surf.Area</th>
<th>Inc.Store</th>
<th>Cum.Store</th>
</tr>
</thead>
<tbody>
<tr>
<td>(feet)</td>
<td>(sq-ft)</td>
<td>(cubic-feet)</td>
<td>(cubic-feet)</td>
</tr>
<tr>
<td>16.90</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.25</td>
<td>500</td>
<td>88</td>
<td>88</td>
</tr>
<tr>
<td>17.50</td>
<td>2,000</td>
<td>313</td>
<td>400</td>
</tr>
<tr>
<td>17.75</td>
<td>2,500</td>
<td>563</td>
<td>963</td>
</tr>
<tr>
<td>18.00</td>
<td>3,000</td>
<td>688</td>
<td>1,650</td>
</tr>
<tr>
<td>18.50</td>
<td>4,000</td>
<td>1,750</td>
<td>3,400</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices
#1 Primary 11.12' 4.0" Round PVC 4" OUT
L= 182.0' RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 11.12' / 10.58' S= 0.0030 '/' Cc= 0.900
n= 0.013, Flow Area= 0.09 sf

#2 Device 1 14.10' 18.0" Round RCP IN STM
L= 170.0' Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 14.10' / 13.10' S= 0.0059 '/' Cc= 0.900
n= 0.013, Flow Area= 1.77 sf

#3 Secondary 17.29' 1.0" x 4.0" Horiz. MH Lid X 4.00 columns
X 8 rows C= 0.600 in 24.0" Grate (28% open area)
Limited to weir flow at low heads

Primary OutFlow Max=0.36 cfs @ 12.21 hrs HW=17.64' (Free Discharge)
1= PVC 4" OUT (Barrel Controls 0.36 cfs @ 4.09 fps)
2=RCP IN STM (Passes 0.36 cfs of 11.51 cfs potential flow)

Secondary OutFlow Max=2.53 cfs @ 12.21 hrs HW=17.64' (Free Discharge)
3= MH Lid (Orifice Controls 2.53 cfs @ 2.84 fps)
### Summary for Pond COMM-1: Grate SW corner Comm Bldg

Storm Inlet SW corner of Commercial Building

- **Inflow Area**: 34,594 sq ft, 100.00% Impervious, **Inflow Depth**: 8.45" for 100-YEAR event
- **Inflow**: 5.87 cfs @ 12.14 hrs, **Volume**: 24,359 cf
- **Outflow**: 5.52 cfs @ 12.17 hrs, **Volume**: 24,359 cf, **Atten**: 6%, **Lag**: 2.2 min
- **Primary**: 0.49 cfs @ 12.17 hrs, **Volume**: 15,199 cf
- **Secondary**: 5.03 cfs @ 12.17 hrs, **Volume**: 9,160 cf

Routing by Stor-Ind method, **Time Span**: 0.00-100.00 hrs, **dt**: 0.05 hrs

**Peak Elev**: 17.65' @ 12.17 hrs  **Surf.Area**: 1,162 sq ft  **Storage**: 388 cf

**Plug-Flow detention time**: (not calculated: outflow precedes inflow)

**Center-of-Mass det. time**: 0.7 min (744.6 - 743.9)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>16.90'</td>
<td>940 cf</td>
<td>Parking Lot (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16.90</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>800</td>
<td>240</td>
<td>240</td>
</tr>
<tr>
<td>18.00</td>
<td>2,000</td>
<td>700</td>
<td>940</td>
</tr>
</tbody>
</table>

**Device Routing**

- **#1 Primary**: 16.29' **4.0'' Round PVC 4'' OUT**
  - L= 85.0' RCP, groove end w/headwall, Ke= 0.200
  - Inlet / Outlet Invert= 16.29'/11.12'  S= 0.0608 '/'  Cc= 0.900
  - n= 0.013, Flow Area= 0.09 sq ft

- **#2 Secondary**: 17.20' **1.0'' x 4.0'' Horiz. Storm Grate X 4.00 columns**
  - X 14 rows C= 0.600 in 48.0'' x 60.0'' Grate (8% open area)
  - Limited to weir flow at low heads

**Primary OutFlow**

Max=0.49 cfs @ 12.17 hrs  HW=17.64’  (Free Discharge)

**Secondary OutFlow**

Max=4.96 cfs @ 12.17 hrs  HW=17.64’  (Free Discharge)

---

**Summary for Pond I1: I1**

- 3'' PVC in - roof drain
- E type grate
- Drains to MH 1
Inflow Area = 53,785 sf, 100.00% Impervious, Inflow Depth = 8.45” for 100-YEAR event
Inflow = 8.79 cfs @ 12.17 hrs, Volume = 37,873 cf
Outflow = 9.75 cfs @ 12.25 hrs, Volume = 37,874 cf, Attenuation = 0%, Lag = 4.6 min
Primary = 1.54 cfs @ 12.25 hrs, Volume = 19,641 cf
Secondary = 8.21 cfs @ 12.25 hrs, Volume = 18,233 cf

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 21.51' @ 12.25 hrs Surf.Area= 3,000 sf Storage= 1,775 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.1 min (748.4 - 747.3)

Volume

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>16.70'</td>
<td>1,775 cf</td>
<td>parking lot (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

Elevation Surf.Area Inc.Store Cum.Store

<table>
<thead>
<tr>
<th>(feet)</th>
<th>(sq-ft)</th>
<th>(cubic-feet)</th>
<th>(cubic-feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.70</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>1,000</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>18.00</td>
<td>2,000</td>
<td>750</td>
<td>1,150</td>
</tr>
<tr>
<td>18.25</td>
<td>3,000</td>
<td>625</td>
<td>1,775</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices

<table>
<thead>
<tr>
<th>#1</th>
<th>Primary</th>
<th>15.84'</th>
<th>6.0” Round PVC Pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 80.0' Box, headwall w/3 square edges, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 15.84’ / 13.57’  S= 0.0284 '/'  Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.013, Flow Area= 0.20 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Secondary</td>
<td>16.70'</td>
<td>1.0” x 2.0” Horiz. Orifice/Grate X 4.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 14 rows C= 0.600 in 48.0” x 48.0” Grate (5% open area)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

Primary OutFlow Max=1.53 cfs @ 12.25 hrs HW=21.49’ (Free Discharge)
PVC Pipe (Barrel Controls 1.53 cfs @ 7.81 fps)

Secondary OutFlow Max=8.20 cfs @ 12.25 hrs HW=21.49’ (Free Discharge)
Orifice/Grate (Orifice Controls 8.20 cfs @ 10.54 fps)

Summary for Pond I2: I2

Inflow Area = 84,476 sf, 68.55% Impervious, Inflow Depth = 8.39” for 100-YEAR event
Inflow = 11.15 cfs @ 12.27 hrs, Volume = 59,081 cf
Outflow = 10.22 cfs @ 12.32 hrs, Volume = 59,123 cf, Atten= 8%, Lag= 3.0 min
Primary = 6.73 cfs @ 12.32 hrs, Volume = 40,690 cf
Secondary = 3.49 cfs @ 12.32 hrs, Volume = 18,433 cf

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 18.05’ @ 12.32 hrs Surf.Area= 2,291 sf Storage= 335 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.5 min (751.4 - 750.9)
SSDC SITE PLAN EXISTING

Type III 24-hr 100-YEAR Rainfall=8.69"

2020-02-28 SSDC-1699.C EXISTING 8
Prepared by Windows User
HydroCAD® 10.00-25  s/n 06187  © 2019 HydroCAD Software Solutions LLC
Printed 3/4/2020

Volume Invert Avail.Storage Storage Description
--- --- --- --- --- ---
#1 17.78' 1,981 cf Surface (Prismatic) Listed below (Recalc)

Elevation Surf.Area Inc.Store Cum.Store
(feet) (sq-ft) (cubic-feet) (cubic-feet)
17.78 100 0 0
18.00 2,000 231 231
18.50 5,000 1,750 1,981

Device Routing Invert Outlet Devices
--- --- --- --- --- ---
#1 Primary 12.76' 12.0" Round PVC PIPE
L= 85.0' Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 12.76'/12.29' S= 0.0055 '/' Cc= 0.900
n= 0.013, Flow Area= 0.79 sf

#2 Secondary 17.18' 1.0" x 2.0" Horiz. Orifice/Grate X 4.00 columns
X 14 rows C= 0.600 in 24.0" x 24.0" Grate (19% open area)
Limited to weir flow at low heads

Primary OutFlow Max=6.73 cfs @ 12.32 hrs HW=18.04' (Free Discharge)
Secondary OutFlow Max=3.47 cfs @ 12.32 hrs HW=18.04' (Free Discharge)

Summary for Pond I3: A Inlet

A Inlet per survey

Inflow Area = 94,786 sf, 67.06% Impervious, Inflow Depth = 6.06" for 100-YEAR event
Inflow = 8.34 cfs @ 12.17 hrs, Volume= 47,875 cf
Outflow = 8.33 cfs @ 12.17 hrs, Volume= 47,876 cf, Atten= 0%, Lag= 0.1 min
Primary = 7.75 cfs @ 12.15 hrs, Volume= 46,876 cf
Secondary = 0.52 cfs @ 12.16 hrs, Volume= 1,000 cf

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 17.54' @ 12.16 hrs Surf.Area= 73 sf Storage= 1 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (750.9 - 750.9)

Volume Invert Avail.Storage Storage Description
--- --- --- --- --- ---
#1 17.50' 1,000 cf parking lot (Prismatic) Listed below (Recalc)

Elevation Surf.Area Inc.Store Cum.Store
(feet) (sq-ft) (cubic-feet) (cubic-feet)
17.50 0 0 0
18.00 1,000 250 250
18.50 2,000 750 1,000
Device Routing Invert Outlet Devices

#1 Primary 12.25' 12.0" Round PVC PIPE
L= 80.0' Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 12.25' / 10.47' S= 0.0222 '/' Cc= 0.900
n= 0.013, Flow Area= 0.79 sf

#2 Secondary 17.49' 1.0" x 2.0" Horiz. Orifice/Grate X 4.00 columns
X 14 rows C= 0.600 in 48.0" x 48.0" Grate (5% open area)
Limited to weir flow at low heads

Primary OutFlow Max=7.75 cfs @ 12.15 hrs HW=17.54' (Free Discharge)
1=PVC PIPE (Barrel Controls 7.75 cfs @ 9.87 fps)

Secondary OutFlow Max=0.47 cfs @ 12.16 hrs HW=17.53' (Free Discharge)
2=Orifice/Grate (Weir Controls 0.47 cfs @ 0.68 fps)

Summary for Pond I4: A Inlet

A Inlet per survey

Inflow Area = 137,115 sf, 58.45% Impervious, Inflow Depth = 6.39” for 100-YEAR event
Inflow = 12.02 cfs @ 12.15 hrs, Volume= 72,967 cf
Outflow = 10.83 cfs @ 12.27 hrs, Volume= 72,996 cf, Atten= 10%, Lag= 6.6 min
Primary = 7.69 cfs @ 12.27 hrs, Volume= 67,895 cf
Secondary = 3.14 cfs @ 12.27 hrs, Volume= 5,101 cf

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 18.09' @ 12.27 hrs Surf.Area= 2,186 sf Storage= 794 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.4 min (752.1 - 751.7)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>17.40'</td>
<td>1,850 cf</td>
<td>parking lot (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.40</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18.00</td>
<td>2,000</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>18.50</td>
<td>3,000</td>
<td>1,250</td>
<td>1,850</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices

#1 Primary 10.44' 12.0" Round PVC PIPE
L= 130.0' Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 10.44'/ 8.78' S= 0.0128 '/' Cc= 0.900
n= 0.013, Flow Area= 0.79 sf

#2 Secondary 17.39' 1.0" x 2.0" Horiz. Orifice/Grate X 4.00 columns
X 14 rows C= 0.600 in 24.0" x 24.0" Grate (19% open area)
Limited to weir flow at low heads
Primary OutFlow  Max=7.69 cfs @ 12.27 hrs  HW=18.09'  (Free Discharge)
1=PVC PIPE  (Barrel Controls 7.69 cfs @ 9.79 fps)

Secondary OutFlow  Max=3.13 cfs @ 12.27 hrs  HW=18.09'  (Free Discharge)
2=Orifice/Grate  (Orifice Controls 3.13 cfs @ 4.02 fps)

Summary for Pond I5: A Inlet

A Inlet per survey

Device  Routing  Invert  Outlet Devices

#1  Primary  15.94'

6.0" Round PVC PIPE
L= 52.0'  Box, headwall w/3 square edges,  Ke= 0.500
Inlet / Outlet Invert= 15.94' / 13.49'  S= 0.0471 /'  Cc= 0.900
n= 0.013,  Flow Area= 0.20 sf

#2  Secondary  17.52'

1.0" x 2.0" Horiz. Orifice/Grate X 4.00 columns
X 14 rows C= 0.600 in 48.0" x 48.0" Grate (5% open area)
Limited to weir flow at low heads

Primary OutFlow  Max=1.30 cfs @ 12.14 hrs  HW=18.07'  (Free Discharge)
1=PVC PIPE  (Inlet Controls 1.30 cfs @ 6.61 fps)

Secondary OutFlow  Max=2.78 cfs @ 12.14 hrs  HW=18.07'  (Free Discharge)
2=Orifice/Grate  (Orifice Controls 2.78 cfs @ 3.58 fps)

Summary for Pond I6: Storm Inlet Alley

Only Storm Inlet found on south side of building, drains to Storm MH in SE corner of lot

Inflow Area = 10,144 sf, 100.00% Impervious,  Inflow Depth = 59.10"  for 100-YEAR event
Inflow = 12.26 cfs @ 12.24 hrs,  Volume= 49,957 cf
Outflow = 12.26 cfs @ 12.24 hrs,  Volume= 49,957 cf,  Atten= 0%,  Lag= 0.0 min
Primary = 2.21 cfs @ 12.24 hrs,  Volume= 33,419 cf
Secondary = 10.05 cfs @ 12.24 hrs,  Volume= 16,538 cf

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 17.37' @ 12.24 hrs
SSDC SITE PLAN EXISTING

Type III 24-hr 100-YEAR Rainfall=8.69"

2020-02-28 SSDC-1699.C EXISTING 8
Prepared by Windows User

HydroCAD® 10.00-25 s/n 06187 © 2019 HydroCAD Software Solutions LLC

Page 45

Device Routing Invert Outlet Devices
#1 Secondary 17.04' 1.0" x 2.0" Horiz. E TYPE STRM FLOW X 41.00 columns
X 14 rows C= 0.600 in 48.0" x 48.0" Grate (50% open area)
Limited to weir flow at low heads

#2 Primary 15.71' 8.0" Round 8" Clay to SE
L= 215.0' RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 15.71' / 8.78' S= 0.0322 '/' Cc= 0.900
n= 0.013 Clay tile, Flow Area= 0.35 sf

Primary OutFlow Max=2.21 cfs @ 12.24 hrs HW=17.37' (Free Discharge)
2=8" Clay to SE (Barrel Controls 2.21 cfs @ 6.32 fps)

Secondary OutFlow Max=9.97 cfs @ 12.24 hrs HW=17.37' (Free Discharge)
1=E TYPE STRM FLOW (Weir Controls 9.97 cfs @ 1.88 fps)

Summary for Pond MH-A1: Storm Manhole Alley
Inflow Area = 92,968 sf, 100.00% Impervious, Inflow Depth = 6.32" for 100-YEAR event
Inflow = 3.18 cfs @ 12.14 hrs, Volume= 48,926 cf
Outflow = 3.18 cfs @ 12.14 hrs, Volume= 48,926 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.14 cfs @ 12.14 hrs, Volume= 17,583 cf
Secondary = 2.04 cfs @ 12.14 hrs, Volume= 31,343 cf
Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 17.34' @ 12.14 hrs Surf.Area= 419 sf Storage= 1 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (751.5 - 751.5 )

Volume Invert Avail.Storage Storage Description
#1 17.34' 1,695 cf Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation Surf.Area Inc.Store Cum.Store
(feet) (sq-ft) (cubic-feet) (cubic-feet)
17.34 0 0 0
17.35 1,500 8 8
17.50 4,000 412 420
17.80 4,500 1,275 1,695

Device Routing Invert Outlet Devices
#1 Secondary 16.54' 1.0" x 2.0" Horiz. MH Lid X 4.00 columns
X 14 rows C= 0.600 in 48.0" x 48.0" Grate (50% open area)
Limited to weir flow at low heads

#2 Primary 10.67' 8.0" Round PVC
L= 240.0' RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 10.67' / 10.28' S= 0.0016 '/' Cc= 0.900
n= 0.013, Flow Area= 0.35 sf
Primary OutFlow  Max=1.88 cfs @ 12.14 hrs  HW=17.34’  (Free Discharge)
   ↑2=PVC  (Barrel Controls 1.88 cfs @ 5.40 fps)

Secondary OutFlow  Max=3.36 cfs @ 12.14 hrs  HW=17.34’  (Free Discharge)
   ↑1=MH Lid  (Orifice Controls 3.36 cfs @ 4.31 fps)

Summary for Pond MH-A2: Storm Manhole Alley

Inflow Area = 82,824 sf, 100.00% Impervious,  Inflow Depth = 5.01” for 100-YEAR event
Inflow  = 2.19 cfs @ 12.14 hrs,  Volume= 34,578 cf
Outflow = 2.19 cfs @ 12.14 hrs,  Volume= 34,578 cf,  Attenuation= 0%,  Lag= 0.0 min
Primary  = 0.98 cfs @ 12.14 hrs,  Volume= 15,507 cf
Secondary = 1.21 cfs @ 12.14 hrs,  Volume= 19,071 cf
Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 16.89’ @ 12.14 hrs  Surf.Area= 15 sf  Storage= 0 cf
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (751.9 - 751.9)

Volume   Invert     Avail.Storage  Storage Description
--------  --------   ---------------  ---------------------
#1       16.89’     1,402 cf     Custom Stage Data (Prismatic) Listed below (Recalc)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16.89</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.00</td>
<td>500</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>17.10</td>
<td>2,000</td>
<td>125</td>
<td>153</td>
</tr>
<tr>
<td>17.25</td>
<td>3,000</td>
<td>375</td>
<td>527</td>
</tr>
<tr>
<td>17.50</td>
<td>4,000</td>
<td>875</td>
<td>1,402</td>
</tr>
</tbody>
</table>

Device  Routing  Invert     Outlet Devices
--------  --------   ---------------  ---------------------
#1       Secondary  16.54’     1.0” x 2.0” Horiz. MH Lid X 4.00 columns
X 14 rows C= 0.600 in 48.0” x 48.0” Grate (5% open area)
Limited to weir flow at low heads
#2       Primary    10.67’     8.0” Round PVC
L= 240.0’ RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 10.67’ / 10.28’  S= 0.0016 /’  Cc= 0.900
n= 0.013,  Flow Area= 0.35 sf

Primary OutFlow  Max=1.82 cfs @ 12.14 hrs  HW=16.89’  (Free Discharge)
   ↑2=PVC  (Barrel Controls 1.82 cfs @ 5.20 fps)

Secondary OutFlow  Max=2.23 cfs @ 12.14 hrs  HW=16.89’  (Free Discharge)
   ↑1=MH Lid  (Orifice Controls 2.23 cfs @ 2.86 fps)
Summary for Pond MH-A3: Storm Manhole Alley

Inflow Area = 75,079 sf, 100.00% Impervious, Inflow Depth = 6.21" for 100-YEAR event
Inflow = 4.20 cfs @ 12.14 hrs, Volume= 38,829 cf
Outflow = 3.70 cfs @ 12.20 hrs, Volume= 38,830 cf, Attenu= 12%, Lag= 4.0 min
Primary = 0.88 cfs @ 12.20 hrs, Volume= 29,125 cf
Secondary = 2.82 cfs @ 12.20 hrs, Volume= 9,705 cf

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 17.11' @ 12.20 hrs  Surf.Area= 1,526 sf  Storage= 367 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.2 min (749.8 - 749.7)

Volume  Invert  Avail.Storage  Storage Description
#1  16.54'  2,493 cf  Custom Stage Data (Prismatic) Listed below (Recalc)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16.54</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.00</td>
<td>1,000</td>
<td>230</td>
<td>230</td>
</tr>
<tr>
<td>17.10</td>
<td>1,500</td>
<td>125</td>
<td>355</td>
</tr>
<tr>
<td>17.25</td>
<td>2,000</td>
<td>262</td>
<td>617</td>
</tr>
<tr>
<td>18.00</td>
<td>3,000</td>
<td>1,875</td>
<td>2,493</td>
</tr>
</tbody>
</table>

Device  Routing  Invert  Outlet Devices
#1  Secondary  16.54'  **1.0" x 2.0" Horiz. MH Lid X 4.00 columns**  X 14 rows C= 0.600 in 48.0" x 48.0" Grate (5% open area)  Limited to weir flow at low heads
#2  Primary  10.67'  **6.0" Round PVC**  L= 240.0’ RCP, groove end w/headwall, Ke= 0.200  Inlet / Outlet Invert= 10.67’ / 10.28’  S= 0.0016 '/'  Cc= 0.900  n= 0.013, Flow Area= 0.20 sf

Primary OutFlow  Max=0.88 cfs @ 12.20 hrs  HW=17.11' (Free Discharge)
Secondary OutFlow  Max=2.82 cfs @ 12.20 hrs  HW=17.11' (Free Discharge)

Summary for Pond MH-A4: Storm MH Comm Site Alley

Storm Manhole located at SE corner of Commercial Bldg
Provides Drainage for Lot 1699.C to MH2 in SE corner of Lot 1699.D
Flows through 3 storm manholes and piping located in Alley south of main bldg
Inflow Area = 57,541 sf, 100.00% Impervious, Inflow Depth = 5.53" for 100-YEAR event
Inflow = 1.23 cfs @ 12.14 hrs, Volume= 26,506 cf
Outflow = 1.23 cfs @ 12.14 hrs, Volume= 26,506 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.23 cfs @ 12.14 hrs, Volume= 26,480 cf
Secondary = 0.00 cfs @ 12.14 hrs, Volume= 26 cf

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 17.29' @ 12.14 hrs Surf.Area= 5 sf Storage= 0 cf
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (752.4 - 752.4)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>17.29'</td>
<td>1,158 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.29</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>1,500</td>
<td>158</td>
<td>158</td>
</tr>
<tr>
<td>18.00</td>
<td>2,500</td>
<td>1,000</td>
<td>1,158</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices
#1 Primary 11.12' 4.0" Round PVC 4" OUT
L= 182.0' RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 11.12' / 10.58' S= 0.0030 '/' Cc= 0.900
n= 0.013, Flow Area= 0.09 sf

#2 Primary 14.10' 18.0" Round RCP IN STM
L= 170.0' Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 14.10' / 13.10' S= 0.0059 '/' Cc= 0.900
n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

#3 Secondary 17.29' 1.0" x 4.0" Horiz. MH Lid SLOTTED X 4.00 columns
X 8 rows C= 0.600 in 24.0" Grate (28% open area)
Limited to weir flow at low heads

Primary OutFlow Max=12.40 cfs @ 12.14 hrs HW=17.29’ (Free Discharge)
1=PVC 4" OUT (Barrel Controls 0.35 cfs @ 3.98 fps)
2=RCP IN STM (Barrel Controls 12.05 cfs @ 6.82 fps)

Secondary OutFlow Max=0.00 cfs @ 12.14 hrs HW=17.29’ (Free Discharge)
3=MH Lid SLOTTED (Weir Controls 0.00 cfs @ 0.09 fps)

Summary for Pond MH-E1: Existing MH Storm
Inflow Area = 78,481 sf, 73.79% Impervious, Inflow Depth = 8.39" for 100-YEAR event
Inflow = 12.65 cfs @ 12.25 hrs, Volume= 54,851 cf
Outflow = 10.56 cfs @ 12.28 hrs, Volume= 54,979 cf, Atten= 17%, Lag= 1.7 min
Primary = 5.03 cfs @ 12.28 hrs, Volume= 48,558 cf
Secondary = 5.53 cfs @ 12.28 hrs, Volume= 6,422 cf

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 18.30' @ 12.28 hrs  Surf.Area= 3,595 sf  Storage= 1,281 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.9 min (750.6 - 749.7)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>17.80'</td>
<td>2,050 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Surf.Area</th>
<th>Inc.Store</th>
<th>Cum.Store</th>
</tr>
</thead>
<tbody>
<tr>
<td>(feet)</td>
<td>(sq-ft)</td>
<td>(cubic-feet)</td>
<td>(cubic-feet)</td>
</tr>
<tr>
<td>17.80</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18.00</td>
<td>3,000</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>18.50</td>
<td>4,000</td>
<td>1,750</td>
<td>2,050</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.00'</td>
<td>12.0&quot; Round PVC PIPE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 175.0’ RCP, square edge headwall, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.00’ / 12.84’ S= 0.0009 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.013, Flow Area= 0.79 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Secondary</td>
<td>17.88'</td>
<td>24.0&quot; Horiz. Orifice/Grate X 3.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 12 rows C= 0.600 in 24.0&quot; Grate (3,600% open area)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

**Primary OutFlow** Max=5.03 cfs @ 12.28 hrs  HW=18.29’ (Free Discharge)  
↑1=PVC PIPE (Barrel Controls 5.03 cfs @ 6.40 fps)

**Secondary OutFlow** Max=5.33 cfs @ 12.28 hrs  HW=18.29’ (Free Discharge)  
↑2=Orifice/Grate (Weir Controls 5.33 cfs @ 2.09 fps)

**Summary for Pond MH-E2: Storm MH**

Inflow Area = 230,083 sf, 75.24% Impervious, Inflow Depth = 4.46” for 100-YEAR event

<table>
<thead>
<tr>
<th>Inflow</th>
<th>Outflow</th>
<th>Primary</th>
<th>Secondary</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.79 cfs @ 12.20 hrs, Volume= 85,478 cf</td>
<td>8.79 cfs @ 12.20 hrs, Volume= 85,478 cf, Atten= 0%, Lag= 0.0 min</td>
<td>3.29 cfs @ 12.20 hrs, Volume= 69,304 cf</td>
<td>5.50 cfs @ 12.20 hrs, Volume= 16,173 cf</td>
</tr>
</tbody>
</table>

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 19.43' @ 12.20 hrs

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>10.67'</td>
<td>8.0&quot; Round 8&quot; CLAY PIPE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 122.0’ RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 10.67’ / 8.02’ S= 0.0217 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.013, Flow Area= 0.35 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Secondary</td>
<td>17.78'</td>
<td>30.0’ long x 5.0’ breadth Broad-Crested Rectangular Weir</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.50 3.00 3.50 4.00 4.50 5.00 5.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Coef. (English) 2.34 2.50 2.70 2.68 2.66 2.66 2.65 2.65 2.65</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88</td>
</tr>
<tr>
<td>#3</td>
<td>Device 2</td>
<td>17.78'</td>
<td>2.0” x 4.0” Horiz. Orifice/Grate X 4.00 columns</td>
</tr>
</tbody>
</table>
Primary OutFlow  Max=3.29 cfs @ 12.20 hrs  HW=19.43'  (Free Discharge)

1=8” CLAY PIPE  (Barrel Controls 3.29 cfs @ 9.43 fps)

Secondary OutFlow  Max=5.49 cfs @ 12.20 hrs  HW=19.43'  (Free Discharge)

2=Broad-Crested Rectangular Weir (Passes 5.49 cfs of 168.20 cfs potential flow)

3=Orifice/Grate  (Orifice Controls 5.49 cfs @ 6.18 fps)

Summary for Pond MH-E3: Existing MH7-OFF

Inflow Area = 230,083 sf, 75.24% Impervious, Inflow Depth = 3.61” for 100-YEAR event
Inflow = 3.29 cfs @ 12.20 hrs, Volume= 69,304 cf
Outflow = 3.29 cfs @ 12.20 hrs, Volume= 69,304 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.29 cfs @ 12.20 hrs, Volume= 69,304 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 9.53’ @ 12.20 hrs

Device  Routing   Invert        Outlet Devices
#1 Primary  8.00’  12.0” Round 12” PVC
            L= 30.0’  RCP, square edge headwall, Ke= 0.500
            Inlet / Outlet Invert= 8.00’ / 7.90’  S= 0.0033 '/'  Cc= 0.900
            n= 0.012, Flow Area= 0.79 sf
#2 Secondary 12.50’ 2.0” x 4.0” Horiz. Manhole Cover X 4.00 columns
            X 5 rows C= 0.600 in 24.0” Grate (35% open area)
            Limited to weir flow at low heads

Primary OutFlow  Max=3.29 cfs @ 12.20 hrs  HW=9.53’  (Free Discharge)

1=12” PVC  (Barrel Controls 3.29 cfs @ 4.19 fps)

Secondary OutFlow  Max=0.00 cfs @ 0.00 hrs  HW=8.00’  (Free Discharge)

2=Manhole Cover  ( Controls 0.00 cfs)

Summary for Pond MH-E4: Woodruff Inlet

Inflow Area = 230,083 sf, 75.24% Impervious, Inflow Depth = 3.61” for 100-YEAR event
Inflow = 3.29 cfs @ 12.20 hrs, Volume= 69,304 cf
Outflow = 3.29 cfs @ 12.20 hrs, Volume= 69,304 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.29 cfs @ 12.20 hrs, Volume= 69,304 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 9.06’ @ 12.20 hrs

Device  Routing   Invert        Outlet Devices
#1 Device 2  7.80’  12.0” Vert. 12” PVC  C= 0.600
#2 Primary  6.90’  15.0” Round 15” RCP
            L= 100.0’  RCP, sq.cut end projecting, Ke= 0.500
Inlet / Outlet Invert= 6.90’ / 6.80’  S= 0.0010 ’/’  Cc= 0.900  n= 0.013  Concrete pipe, bends & connections, Flow Area= 1.23 sf

#3 Secondary 14.00’  

1.0” x 4.0” Horiz. B INLET Grate X 4.00 columns  
X 5 rows C= 0.600 in 24.0” x 48.0” Grate (7% open area)  
Limited to weir flow at low heads

Primary OutFlow Max=3.29 cfs @ 12.20 hrs  HW=9.06’ (Free Discharge)

2=15” RCP (Passes 3.29 cfs of 5.05 cfs potential flow)  
1=12” PVC (Orifice Controls 3.29 cfs @ 4.19 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs  HW=6.90’ (Free Discharge)

3=B INLET Grate (Controls 0.00 cfs)

Summary for Link 4N: OFFSITE EAST

Inflow Area = 2,823 sf, 0.00% Impervious, Inflow Depth = 8.21” for 100-YEAR event
Inflow = 0.48 cfs @ 12.14 hrs, Volume= 1,931 cf
Primary = 0.48 cfs @ 12.14 hrs, Volume= 1,931 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

Summary for Link 4S: OFFSITE EAST

Inflow Area = 4,224 sf, 0.00% Impervious, Inflow Depth = 8.21” for 100-YEAR event
Inflow = 0.71 cfs @ 12.14 hrs, Volume= 2,890 cf
Primary = 0.71 cfs @ 12.14 hrs, Volume= 2,890 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

Summary for Link DW-N: Driveway

Inflow Area = 7,491 sf, 100.00% Impervious, Inflow Depth = 8.45” for 100-YEAR event
Inflow = 1.27 cfs @ 12.14 hrs, Volume= 5,275 cf
Primary = 1.27 cfs @ 12.14 hrs, Volume= 5,275 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

Summary for Link NJDOT: Offsite NJDOT

Inflow Area = 14,192 sf, 0.00% Impervious, Inflow Depth = 8.21” for 100-YEAR event
Inflow = 2.39 cfs @ 12.14 hrs, Volume= 9,709 cf
Primary = 2.39 cfs @ 12.14 hrs, Volume= 9,709 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Summary for Link Offsite Spring: Spring Street

Dirvways flowing to Spring Street

- Inflow Area = 7,491 sf, 100.00% Impervious, Inflow Depth = 8.45" for 100-YEAR event
- Inflow = 1.27 cfs @ 12.14 hrs, Volume= 5,275 cf
- Primary = 1.27 cfs @ 12.14 hrs, Volume= 5,275 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Reach 1SF: SURFACE DRAINAGE

Inflow Area=52,385 sf
Avg. Flow Depth=0.38'
Max Vel=2.07 fps
n=0.013
L=200.0'
S=0.0030 '/'
Capacity=6.19 cfs

Reach ASW1: Overland swale

Avg. Flow Depth=0.17'
Max Vel=0.82 fps
n=0.016
L=160.0'
S=0.0012 '/'
Capacity=19.21 cfs
Reach ASW2: Overland swale

Avg. Flow Depth = 0.15'
Max Vel = 0.48 fps
n = 0.016
L = 120.0'
S = 0.0005 '/'
Capacity = 12.15 cfs

Reach STRT: EXISTING STREET

Inflow Area = 230,083 sf
Avg. Flow Depth = 0.16'
Max Vel = 2.42 fps
n = 0.016
L = 25.0'
S = 0.0080 '/'
Capacity = 63.73 cfs
Pond I1: I1

Inflow Area=53,785 sf
Peak Elev=17.00'
Storage=57 cf

Pond I2: I2

Inflow Area=84,476 sf
Peak Elev=17.78'
Storage=0 cf
Pond I3: A Inlet

Inflow Area=94,786 sf
Peak Elev=17.50'
Storage=0 cf

Pond I4: A Inlet

Inflow Area=137,115 sf
Peak Elev=17.41'
Storage=0 cf
Pond I5: A Inlet

Hydrograph

Inflow Area=24,647 sf
Peak Elev=17.55'

Pond MH-A1: Storm Manhole Alley

Hydrograph

Inflow Area=92,968 sf
Peak Elev=17.34'
Storage=0 cf
Pond MH-A2: Storm Manhole Alley

Inflow Area=82,824 sf
Peak Elev=16.89'
Storage=0 cf

Pond MH-A3: Storm Manhole Alley

Inflow Area=75,079 sf
Peak Elev=16.63'
Storage=9 cf
Pond MH-A4: Storm MH Comm Site Alley

Inflow Area=57,541 sf
Peak Elev=17.29'
Storage=0 cf

Pond MH-E1: Existing MH Storm

Inflow Area=78,481 sf
Peak Elev=17.81'
Storage=0 cf
Pond MH-E2: Storm MH

Inflow Area=230,083 sf
Peak Elev=18.38'

Pond MH-E3: Existing MH7-OFF

Inflow Area=230,083 sf
Peak Elev=9.47'
Pond MH-E4: Woodruff Inlet

Inflow Area=230,083 sf
Peak Elev=8.98'

Link 4N: OFFSITE EAST

Inflow Area=2,823 sf
**Link 4S: OFFSITE EAST**

Inflow Area = 4,224 sf

**Link DW-N: Driveway**

Inflow Area = 7,491 sf
Reach 1SF: SURFACE DRAINAGE

Inflow Area=52,385 sf
Avg. Flow Depth=0.40'
Max Vel=2.13 fps
n=0.013
L=200.0'
S=0.0030 '/'
Capacity=6.19 cfs

Reach ASW1: Overland swale

Avg. Flow Depth=0.19'
Max Vel=0.87 fps
n=0.016
L=160.0'
S=0.0012 '/'
Capacity=19.21 cfs
Reach ASW2: Overland swale

Avg. Flow Depth=0.16'
Max Vel=0.50 fps
n=0.016
L=120.0'
S=0.0005 '/'
Capacity=12.15 cfs

Reach STRT: EXISTING STREET

Inflow Area=230,083 sf
Avg. Flow Depth=0.18'
Max Vel=2.64 fps
n=0.016
L=25.0'
S=0.0080 '/'
Capacity=63.73 cfs
Pond I1: I1

Inflow Area = 53,785 sf
Peak Elev = 17.09'
Storage = 93 cf

Pond I2: I2

Inflow Area = 84,476 sf
Peak Elev = 17.78'
Storage = 0 cf
Pond I3: A Inlet

Inflow Area=94,786 sf
Peak Elev=17.51'
Storage=0 cf

Pond I4: A Inlet

Inflow Area=137,115 sf
Peak Elev=17.41'
Storage=0 cf
Pond I5: A Inlet

Hydrograph

Inflow Area=24,647 sf
Peak Elev=17.56'

Pond MH-A1: Storm Manhole Alley

Hydrograph

Inflow Area=92,968 sf
Peak Elev=17.34'
Storage=0 cf
Pond MH-A2: Storm Manhole Alley

Inflow Area=82,824 sf
Peak Elev=16.89'
Storage=0 cf

Pond MH-A3: Storm Manhole Alley

Inflow Area=75,079 sf
Peak Elev=16.65'
Storage=14 cf
Pond MH-A4: Storm MH Comm Site Alley

Inflow Area=57,541 sf
Peak Elev=17.29'
Storage=0 cf

Pond MH-E1: Existing MH Storm

Inflow Area=78,481 sf
Peak Elev=17.81'
Storage=0 cf
Pond MH-E2: Storm MH

Hydrograph

Inflow Area=230,083 sf
Peak Elev=18.65'

Pond MH-E3: Existing MH7-OFF

Hydrograph

Inflow Area=230,083 sf
Peak Elev=9.48'
Link 4S: OFFSITE EAST

Hydrograph

Inflow Area = 4,224 sf

Inflow Area = 7,491 sf

Link DW-N: Driveway
Reach 1SF: SURFACE DRAINAGE

Inflow Area=52,385 sf
Avg. Flow Depth=0.47'
Max Vel=2.37 fps
n=0.013
L=200.0'
S=0.0030 '/'
Capacity=6.19 cfs

Reach ASW1: Overland swale

Avg. Flow Depth=0.25'
Max Vel=1.01 fps
n=0.016
L=160.0'
S=0.0012 '/'
Capacity=19.21 cfs
Reach ASW2: Overland swale

Avg. Flow Depth=0.20'
Max Vel=0.57 fps
n=0.016
L=120.0'
S=0.0005 '/'
Capacity=12.15 cfs

Reach STRT: EXISTING STREET

Inflow Area=230,083 sf
Avg. Flow Depth=0.23'
Max Vel=3.10 fps
n=0.016
L=25.0'
S=0.0080 '/'
Capacity=63.73 cfs
Pond I1: I1

Inflow Area=53,785 sf
Peak Elev=17.58'
Storage=482 cf

Pond I2: I2

Inflow Area=84,476 sf
Peak Elev=17.79'
Storage=1 cf
Pond I3: A Inlet

**Hydrograph**

- **Inflow Area**: 94,786 sf
- **Peak Elev**: 17.51'
- **Storage**: 0 cf

Pond I4: A Inlet

**Hydrograph**

- **Inflow Area**: 137,115 sf
- **Peak Elev**: 17.48'
- **Storage**: 10 cf
Pond I5: A Inlet

Inflow Area=24,647 sf
Peak Elev=17.64'

Pond MH-A1: Storm Manhole Alley

Inflow Area=92,968 sf
Peak Elev=17.34'
Storage=0 cf
Pond MH-A2: Storm Manhole Alley

Inflow Area=82,824 sf
Peak Elev=16.89'
Storage=0 cf

Pond MH-A3: Storm Manhole Alley

Inflow Area=75,079 sf
Peak Elev=16.79'
Storage=69 cf
Pond MH-A4: Storm MH Comm Site Alley

Inflow Area = 57,541 sf
Peak Elev = 17.29'
Storage = 0 cf

Pond MH-E1: Existing MH Storm

Inflow Area = 78,481 sf
Peak Elev = 18.04'
Storage = 436 cf
**Pond MH-E2: Storm MH**

- **Inflow Area:** 230,083 sf
- **Peak Elev:** 19.25'

**Pond MH-E3: Existing MH7-OFF**

- **Inflow Area:** 230,083 sf
- **Peak Elev:** 9.52'
Pond MH-E4: Woodruff Inlet

Inflow Area=230,083 sf
Peak Elev=9.05'

Inflow Area=2,823 sf

Link 4N: OFFSITE EAST
Link 4S: OFFSITE EAST

Hydrograph

Inflow Area = 4,224 sf

Link DW-N: Driveway

Hydrograph

Inflow Area = 7,491 sf
Inflow Area = 14,192 sf
Reach 1SF: SURFACE DRAINAGE

Flow Rate

Time (hours)

Inflow Area=52,385 sf
Avg. Flow Depth=0.51' 
Max Vel=2.51 fps 
n=0.013
L=200.0' 
S=0.0030 '/' 
Capacity=6.19 cfs

Reach ASW1: Overland swale

Flow Rate

Time (hours)

Avg. Flow Depth=0.28' 
Max Vel=1.08 fps 
n=0.016
L=160.0' 
S=0.0012 '/' 
Capacity=19.21 cfs
Reach ASW2: Overland swale

Avg. Flow Depth=0.22'
Max Vel=0.60 fps
n=0.016
L=120.0'
S=0.0005 '/'
Capacity=12.15 cfs

Reach STRT: EXISTING STREET

Inflow Area=230,083 sf
Avg. Flow Depth=0.26'
Max Vel=3.36 fps
n=0.016
L=25.0'
S=0.0080 '/'
Capacity=63.73 cfs
Pond I1: I1

Hydrograph

- Inflow Area = 53,785 sf
- Peak Elev = 17.90'
- Storage = 967 cf

Pond I2: I2

Hydrograph

- Inflow Area = 84,476 sf
- Peak Elev = 17.79'
- Storage = 1 cf
Pond I5: A Inlet

Inflow Area=24,647 sf
Peak Elev=17.77'

Pond MH-A1: Storm Manhole Alley

Inflow Area=92,968 sf
Peak Elev=17.34'
Storage=1 cf
Pond MH-A2: Storm Manhole Alley

Inflow Area=82,824 sf
Peak Elev=16.89'
Storage=0 cf

Pond MH-A3: Storm Manhole Alley

Inflow Area=75,079 sf
Peak Elev=16.90'
Storage=144 cf
Pond MH-A4: Storm MH Comm Site Alley

Inflow Area=57,541 sf
Peak Elev=17.29'
Storage=0 cf

Pond MH-E1: Existing MH Storm

Inflow Area=78,481 sf
Peak Elev=18.12'
Storage=683 cf
Pond MH-E2: Storm MH

Inflow Area = 230,083 sf
Peak Elev = 19.30'

Pond MH-E3: Existing MH7-OFF

Inflow Area = 230,083 sf
Peak Elev = 9.52'
Pond MH-E4: Woodruff Inlet

Inflow Area = 230,083 sf
Peak Elev = 9.05'

Link 4N: OFFSITE EAST

Inflow Area = 2,823 sf
Link 4S: OFFSITE EAST

Inflow Area = 4,224 sf

Link DW-N: Driveway

Inflow Area = 7,491 sf
Link NJDOT: Offsite NJDOT

Inflow Area = 14,192 sf

Inflow Area = 14,192 sf
Reach 1SF: SURFACE DRAINAGE

Inflow Area=52,385 sf
Avg. Flow Depth=0.58'
Max Vel=2.67 fps
n=0.013
L=200.0'
S=0.0030 '/'
Capacity=6.19 cfs

Reach ASW1: Overland swale

Avg. Flow Depth=0.32'
Max Vel=1.17 fps
n=0.016
L=160.0'
S=0.0012 '/'
Capacity=19.21 cfs
Reach ASW2: Overland swale

- Avg. Flow Depth = 0.25'
- Max Vel = 0.64 fps
- n = 0.016
- L = 120.0'
- S = 0.0005 '/'
- Capacity = 12.15 cfs

Reach STRT: EXISTING STREET

- Inflow Area = 230,083 sf
- Avg. Flow Depth = 0.30'
- Max Vel = 3.69 fps
- n = 0.016
- L = 25.0'
- S = 0.0080 '/'
- Capacity = 63.73 cfs
Pond I1: I1

Inflow Area=53,785 sf
Peak Elev=21.51'
Storage=1,775 cf

Pond I2: I2

Inflow Area=84,476 sf
Peak Elev=18.05'
Storage=335 cf
Pond I3: A Inlet

Hydrograph

Inflow Area = 94,786 sf
Peak Elev = 17.54'
Storage = 1 cf

Pond I4: A Inlet

Hydrograph

Inflow Area = 137,115 sf
Peak Elev = 18.09'
Storage = 794 cf
Pond I5: A Inlet

Inflow Area=24,647 sf
Peak Elev=18.09'

Pond MH-A1: Storm Manhole Alley

Inflow Area=92,968 sf
Peak Elev=17.34'
Storage=1 cf
Pond MH-A2: Storm Manhole Alley

Inflow Area=82,824 sf
Peak Elev=16.89'
Storage=0 cf

Pond MH-A3: Storm Manhole Alley

Inflow Area=75,079 sf
Peak Elev=17.11'
Storage=367 cf
Pond MH-A4: Storm MH Comm Site Alley

Inflow Area=57,541 sf
Peak Elev=17.29'
Storage=0 cf

Inflow Area=78,481 sf
Peak Elev=18.30'
Storage=1,281 cf
Pond MH-E2: Storm MH

Inflow Area=230,083 sf
Peak Elev=19.43'

Pond MH-E3: Existing MH7-OFF

Inflow Area=230,083 sf
Peak Elev=9.53'
Pond MH-E4: Woodruff Inlet

Inflow Area=230,083 sf
Peak Elev=9.06'

Inflow Area=2,823 sf
Link 4S: OFFSITE EAST

Hydrograph

Inflow Area = 4,224 sf

Inflow Area = 7,491 sf

Link DW-N: Driveway

Hydrograph
Inflow Area = 14,192 sf
APPENDIX B
RUNOFF COMPUTATIONS FOR PROPOSED SITE PLAN CONDITIONS

SECTIONS

1. PROPOSED SITE PLAN – ROOFS TO RETAINITS™
2. PROPOSED SITE PLAN – ROOFS TO GEOPAVE™
3. PROPOSED SITE PLAN – BLOCKED OUTLET CONDITIONS
SECTION 1 - PROPOSED SITE PLAN – ROOFS TO RETAINITS™
## Area Listing (all nodes)

<table>
<thead>
<tr>
<th>Area (sq-ft)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,548</td>
<td>76</td>
<td>Geopave Infiltration 4PGP2 (P-4S)</td>
</tr>
<tr>
<td>2,268</td>
<td>76</td>
<td>Geopave Infiltration Area (P3N)</td>
</tr>
<tr>
<td>1,014</td>
<td>76</td>
<td>Geopave Infiltration Area 2pgp3 (P-2NE)</td>
</tr>
<tr>
<td>4,560</td>
<td>76</td>
<td>Geopave Infiltration Area 2pgps (P-2M)</td>
</tr>
<tr>
<td>292</td>
<td>76</td>
<td>Geopave Infiltration area 2pgp1 (P-2S)</td>
</tr>
<tr>
<td>1,502</td>
<td>76</td>
<td>Geopave Infiltration3GPGPE (B-4)</td>
</tr>
<tr>
<td>3,462</td>
<td>76</td>
<td>Geopave infiltration area (P-1)</td>
</tr>
<tr>
<td>2,160</td>
<td>76</td>
<td>Geopave Infiltration 4PGP1 (B-5)</td>
</tr>
<tr>
<td>3,700</td>
<td>76</td>
<td>Geopave Infiltration 5PGP1 (B-6, B7)</td>
</tr>
<tr>
<td>930</td>
<td>76</td>
<td>Landscape Buffer (B-1)</td>
</tr>
<tr>
<td>1,432</td>
<td>80</td>
<td>Landscape Buffer Good, HSG D (B-2)</td>
</tr>
<tr>
<td>5,281</td>
<td>98</td>
<td>North Driveway Paved HSG D (OS1)</td>
</tr>
<tr>
<td>149,136</td>
<td>98</td>
<td>Paved parking, HSG D (OS - 5, OS-6E, OS-6W, P-1, P-10A, P-2M, P-2NE, P-3E, P-4S, P-7A, P-7B, P-8, P-9, P-9R, P3N, P4-N, P4W)</td>
</tr>
<tr>
<td>30,112</td>
<td>98</td>
<td>Paved parking, and slab HSG D (P-7)</td>
</tr>
<tr>
<td>1,494</td>
<td>91</td>
<td>River Stone HSG D (B-6)</td>
</tr>
<tr>
<td>1,073</td>
<td>91</td>
<td>River Stone HSG D (B-4)</td>
</tr>
<tr>
<td>1,224</td>
<td>76</td>
<td>River Stone Island (ISL 4, ISL-1, ISL-2, ISL-3)</td>
</tr>
<tr>
<td>3,919</td>
<td>91</td>
<td>River Stone, HSG D (B-3, B-5, B7)</td>
</tr>
<tr>
<td>1,000</td>
<td>98</td>
<td>Sidewalk and pavers (P-2S)</td>
</tr>
</tbody>
</table>
## Soil Listing (all nodes)

<table>
<thead>
<tr>
<th>Area (sq-ft)</th>
<th>Soil Group</th>
<th>Subcatchment Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>HSG A</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>HSG B</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>HSG C</td>
<td></td>
</tr>
<tr>
<td>235,153</td>
<td>HSG D</td>
<td>B-2, B-3, B-4, B-5, B-6, B-7, OS-5, OS-6E, OS-6R, OS-6W, OS1, P-1, P-10A, P-1R, P-2M, P-2NE, P-2R, P-3E, P-4R, P-4S, P-6R, P-7, P-7A, P-7B, P-7R, P-8, P-8R, P-9, P-9R, P3N, P4-N, P4W</td>
</tr>
<tr>
<td>23,660</td>
<td>Other</td>
<td>B-1, B-4, B-5, B-6, B-7, ISL 4, ISL-1, ISL-2, ISL-3, P-1, P-2M, P-2NE, P-2S, P-4S, P3N</td>
</tr>
<tr>
<td>HSG-A (sq-ft)</td>
<td>HSG-B (sq-ft)</td>
<td>HSG-C (sq-ft)</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------</td>
<td>---------------</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Line#</td>
<td>Node Number</td>
<td>In-Invert (feet)</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>1</td>
<td>1P</td>
<td>13.40</td>
</tr>
<tr>
<td>2</td>
<td>1PGP</td>
<td>13.70</td>
</tr>
<tr>
<td>3</td>
<td>1PGP</td>
<td>13.80</td>
</tr>
<tr>
<td>4</td>
<td>2P</td>
<td>13.50</td>
</tr>
<tr>
<td>5</td>
<td>2PGP1</td>
<td>13.80</td>
</tr>
<tr>
<td>6</td>
<td>2PGP1</td>
<td>13.80</td>
</tr>
<tr>
<td>7</td>
<td>2PGP2</td>
<td>13.65</td>
</tr>
<tr>
<td>8</td>
<td>2PGP2</td>
<td>13.80</td>
</tr>
<tr>
<td>9</td>
<td>2PGP3</td>
<td>15.00</td>
</tr>
<tr>
<td>10</td>
<td>2PGP3</td>
<td>15.10</td>
</tr>
<tr>
<td>11</td>
<td>3P</td>
<td>13.30</td>
</tr>
<tr>
<td>12</td>
<td>3PGPE</td>
<td>13.90</td>
</tr>
<tr>
<td>13</td>
<td>3PGPE</td>
<td>14.00</td>
</tr>
<tr>
<td>14</td>
<td>3PGPN</td>
<td>13.60</td>
</tr>
<tr>
<td>15</td>
<td>3PGPN</td>
<td>13.80</td>
</tr>
<tr>
<td>16</td>
<td>4P</td>
<td>13.30</td>
</tr>
<tr>
<td>17</td>
<td>4PGP1</td>
<td>13.70</td>
</tr>
<tr>
<td>18</td>
<td>4PGP1</td>
<td>13.90</td>
</tr>
<tr>
<td>19</td>
<td>4PGP2</td>
<td>13.50</td>
</tr>
<tr>
<td>20</td>
<td>4PGP2</td>
<td>13.80</td>
</tr>
<tr>
<td>21</td>
<td>5P</td>
<td>13.50</td>
</tr>
<tr>
<td>22</td>
<td>5PGPN</td>
<td>13.70</td>
</tr>
<tr>
<td>23</td>
<td>5PGPN</td>
<td>13.80</td>
</tr>
<tr>
<td>24</td>
<td>5PGPS</td>
<td>13.70</td>
</tr>
<tr>
<td>25</td>
<td>5PGPS</td>
<td>13.70</td>
</tr>
<tr>
<td>26</td>
<td>COMM-2</td>
<td>11.12</td>
</tr>
<tr>
<td>27</td>
<td>COMM-2</td>
<td>14.10</td>
</tr>
<tr>
<td>28</td>
<td>COMM-1</td>
<td>16.29</td>
</tr>
<tr>
<td>29</td>
<td>I-5</td>
<td>15.94</td>
</tr>
<tr>
<td>30</td>
<td>I-6</td>
<td>15.71</td>
</tr>
<tr>
<td>31</td>
<td>MH-A1</td>
<td>10.67</td>
</tr>
<tr>
<td>32</td>
<td>MH-A2</td>
<td>10.67</td>
</tr>
<tr>
<td>33</td>
<td>MH-A3</td>
<td>10.67</td>
</tr>
<tr>
<td>34</td>
<td>MH-A4</td>
<td>11.12</td>
</tr>
<tr>
<td>35</td>
<td>MH-A4</td>
<td>14.10</td>
</tr>
<tr>
<td>36</td>
<td>MH-E2</td>
<td>8.74</td>
</tr>
<tr>
<td>37</td>
<td>MH-E3</td>
<td>8.00</td>
</tr>
<tr>
<td>38</td>
<td>MH-E4</td>
<td>6.90</td>
</tr>
<tr>
<td>39</td>
<td>PMH1</td>
<td>12.60</td>
</tr>
<tr>
<td>40</td>
<td>PMH2</td>
<td>11.70</td>
</tr>
<tr>
<td>41</td>
<td>PMH3</td>
<td>11.10</td>
</tr>
</tbody>
</table>
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment B-1: Landscape Buffer North
- Runoff Area = 930 sf, 0.00% Impervious
- Runoff Depth = 0.10`
- Tc = 10.0 min, CN = 76
- Runoff = 0.00 cfs, 8 cf

Subcatchment B-2: Riverstone Buffer North
- Runoff Area = 1,432 sf, 0.00% Impervious
- Runoff Depth = 0.17`
- Tc = 10.0 min, CN = 80
- Runoff = 0.01 cfs, 21 cf

Subcatchment B-3: Riverstone Buffer North
- Runoff Area = 1,354 sf, 0.00% Impervious
- Runoff Depth = 0.54`
- Tc = 10.0 min, CN = 91
- Runoff = 0.04 cfs, 61 cf

Subcatchment B-4: Riverstone and Geopave
- Runoff Area = 2,575 sf, 0.00% Impervious
- Runoff Depth = 0.22`
- Tc = 10.0 min, CN = 82
- Runoff = 0.03 cfs, 47 cf

Subcatchment B-5: River Stone and
- Runoff Area = 3,703 sf, 0.00% Impervious
- Runoff Depth = 0.22`
- Tc = 10.0 min, CN = 82
- Runoff = 0.04 cfs, 68 cf

Subcatchment B-6: Riverstone Buffer and
- Runoff Area = 3,261 sf, 0.00% Impervious
- Runoff Depth = 0.24`
- Tc = 10.0 min, CN = 83
- Runoff = 0.04 cfs, 66 cf

Subcatchment B7: Riverstone and Geopave
- Runoff Area = 2,955 sf, 0.00% Impervious
- Runoff Depth = 0.20`
- Tc = 10.0 min, CN = 81
- Runoff = 0.03 cfs, 48 cf

Subcatchment ISL 4: River Stone Island
- Runoff Area = 306 sf, 0.00% Impervious
- Runoff Depth = 0.10`
- Tc = 10.0 min, CN = 76
- Runoff = 0.00 cfs, 3 cf

Subcatchment ISL-1: River Stone Island
- Runoff Area = 306 sf, 0.00% Impervious
- Runoff Depth = 0.10`
- Tc = 10.0 min, CN = 76
- Runoff = 0.00 cfs, 3 cf

Subcatchment ISL-2: River Stone Island
- Runoff Area = 306 sf, 0.00% Impervious
- Runoff Depth = 0.10`
- Tc = 10.0 min, CN = 76
- Runoff = 0.00 cfs, 3 cf

Subcatchment ISL-3: River Stone Island
- Runoff Area = 306 sf, 0.00% Impervious
- Runoff Depth = 0.10`
- Tc = 10.0 min, CN = 76
- Runoff = 0.00 cfs, 3 cf

Subcatchment OS - 5: OFFSITE
- Runoff Area = 2,249 sf, 100.00% Impervious
- Runoff Depth = 1.03`
- Tc = 10.0 min, CN = 98
- Runoff = 0.13 cfs, 194 cf

Subcatchment OS-6E: COMM EAST
- Runoff Area = 20,681 sf, 100.00% Impervious
- Runoff Depth = 1.03`
- Tc = 10.0 min, CN = 98
- Runoff = 1.22 cfs, 1,783 cf

Subcatchment OS-6R: COMM ROOF
- Runoff Area = 13,913 sf, 100.00% Impervious
- Runoff Depth = 1.03`
- Tc = 10.0 min, CN = 98
- Runoff = 0.82 cfs, 1,200 cf

Subcatchment OS-6W: COMM-WEST
- Runoff Area = 20,681 sf, 100.00% Impervious
- Runoff Depth = 1.03`
- Tc = 10.0 min, CN = 98
- Runoff = 1.22 cfs, 1,783 cf

Subcatchment OS1: North Driveway
- Runoff Area = 5,281 sf, 100.00% Impervious
- Runoff Depth = 1.03`
- Flow Length = 175’
- Tc = 10.8 min, CN = 98
- Runoff = 0.31 cfs, 455 cf
<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Runoff Area</th>
<th>Impervious</th>
<th>Runoff Depth</th>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-1: Northwest</td>
<td>30,547 sf</td>
<td>88.67%</td>
<td>0.86&quot;</td>
<td>10.0 min</td>
<td>96</td>
<td>1.56 cfs 2,188 cf</td>
</tr>
<tr>
<td>P-10A: Alley</td>
<td>4,612 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.27 cfs 398 cf</td>
</tr>
<tr>
<td>P-1R: ROOFS</td>
<td>1,400 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.08 cfs 121 cf</td>
</tr>
<tr>
<td>P-2M: North Central</td>
<td>18,201 sf</td>
<td>74.95%</td>
<td>0.60&quot;</td>
<td>10.0 min</td>
<td>92</td>
<td>0.66 cfs 903 cf</td>
</tr>
<tr>
<td>P-2NE: North Central</td>
<td>8,999 sf</td>
<td>88.73%</td>
<td>0.86&quot;</td>
<td>10.0 min</td>
<td>96</td>
<td>0.46 cfs 645 cf</td>
</tr>
<tr>
<td>P-2R: Roofs, warehouse</td>
<td>4,125 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.24 cfs 356 cf</td>
</tr>
<tr>
<td>P-2S: Between Buildings</td>
<td>1,292 sf</td>
<td>77.40%</td>
<td>0.65&quot;</td>
<td>10.0 min</td>
<td>93</td>
<td>0.05 cfs 70 cf</td>
</tr>
<tr>
<td>P-3E: Northeast Corner</td>
<td>5,025 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.30 cfs 433 cf</td>
</tr>
<tr>
<td>P-4R: Roof to 4P</td>
<td>2,828 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.17 cfs 244 cf</td>
</tr>
<tr>
<td>P-4S: Paved Parking</td>
<td>7,833 sf</td>
<td>80.24%</td>
<td>0.72&quot;</td>
<td>10.0 min</td>
<td>94</td>
<td>0.34 cfs 467 cf</td>
</tr>
<tr>
<td>P-6R: Roof</td>
<td>8,937 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.53 cfs 770 cf</td>
</tr>
<tr>
<td>P-7: Slab Area - Repaved</td>
<td>30,112 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>1.78 cfs 2,596 cf</td>
</tr>
<tr>
<td>P-7A: S CORNER ALLEY</td>
<td>2,831 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.17 cfs 244 cf</td>
</tr>
<tr>
<td>P-7B: Paved Parking</td>
<td>6,605 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.39 cfs 569 cf</td>
</tr>
<tr>
<td>P-7R: Roof</td>
<td>6,627 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.39 cfs 571 cf</td>
</tr>
<tr>
<td>P-8: Alley</td>
<td>3,884 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.23 cfs 335 cf</td>
</tr>
<tr>
<td>P-8R: Roof</td>
<td>4,876 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.29 cfs 420 cf</td>
</tr>
<tr>
<td>Subcatchment P-9: Alley</td>
<td>Runoff Area=1,384 sf 100.00% Impervious Runoff Depth=1.03” Tc=10.0 min CN=98 Runoff=0.08 cfs 119 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subcatchment P-9R: West End Roofs</td>
<td>Runoff Area=7,745 sf 100.00% Impervious Runoff Depth=1.03” Tc=10.0 min CN=98 Runoff=0.46 cfs 668 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subcatchment P3N: Northeast Corner</td>
<td>Runoff Area=8,017 sf 71.71% Impervious Runoff Depth=0.60” Tc=10.0 min CN=92 Runoff=0.29 cfs 398 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subcatchment P4-N: Paved Parking</td>
<td>Runoff Area=6,257 sf 100.00% Impervious Runoff Depth=1.03” Flow Length=260’ Tc=10.0 min CN=98 Runoff=0.37 cfs 539 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subcatchment P4W: Paved Parking</td>
<td>Runoff Area=6,437 sf 100.00% Impervious Runoff Depth=1.03” Flow Length=260’ Tc=10.0 min CN=98 Runoff=0.38 cfs 555 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reach ASW1: Overland swale</td>
<td>Avg. Flow Depth=0.17” Max Vel=0.82 fps Inflow=2.35 cfs 1,826 cf n=0.016 L=160.0’ S=0.0012 '/' Capacity=19.21 cfs Outflow=2.06 cfs 1,826 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reach ASW2: Overland swale</td>
<td>Avg. Flow Depth=0.21” Max Vel=0.59 fps Inflow=2.23 cfs 2,223 cf n=0.016 L=120.0’ S=0.0005 '/' Capacity=12.15 cfs Outflow=2.01 cfs 2,223 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reach ASW3: Overland swale</td>
<td>Avg. Flow Depth=0.12” Max Vel=0.47 fps Inflow=0.81 cfs 2,122 cf n=0.016 L=160.0’ S=0.0006 '/' Capacity=13.58 cfs Outflow=0.75 cfs 2,122 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reach STRT: EXISTING STREET</td>
<td>Avg. Flow Depth=0.09” Max Vel=1.71 fps Inflow=4.05 cfs 17,658 cf n=0.016 L=25.0’ S=0.0080 '/' Capacity=63.73 cfs Outflow=4.01 cfs 17,658 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reach SW-3: Overland swale</td>
<td>Avg. Flow Depth=0.04” Max Vel=1.51 fps Inflow=0.75 cfs 2,122 cf n=0.016 L=160.0’ S=0.0200 '/' Capacity=76.85 cfs Outflow=0.74 cfs 2,122 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reach TD1: Drain for slab to Geopave</td>
<td>Avg. Flow Depth=0.37” Max Vel=2.38 fps Inflow=1.78 cfs 2,596 cf n=0.013 L=200.0’ S=0.0025 '/' Capacity=6.25 cfs Outflow=1.71 cfs 2,596 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reach TD2: East End of Buildings</td>
<td>Avg. Flow Depth=0.17” Max Vel=2.26 fps Inflow=0.39 cfs 571 cf n=0.015 L=50.0’ S=0.0080 '/' Capacity=4.26 cfs Outflow=0.39 cfs 571 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond 1P: RetainIt</td>
<td>Peak Elev=13.86’ Storage=1,047 cf Inflow=0.95 cfs 4,798 cf Primary=0.50 cfs 4,798 cf Secondary=0.00 cfs 0 cf Outflow=0.50 cfs 4,798 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond 1PGP: Geopave Area</td>
<td>Peak Elev=16.65’ Storage=2,573 cf Inflow=3.23 cfs 4,790 cf Outflow=0.95 cfs 4,790 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond 2P: RetainIts</td>
<td>Peak Elev=14.03’ Storage=1,774 cf Inflow=1.08 cfs 2,783 cf Primary=0.27 cfs 2,117 cf Secondary=0.00 cfs 0 cf Outflow=0.27 cfs 2,117 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond 2PGP1: Geopave</td>
<td>Peak Elev=14.36’ Storage=22 cf Inflow=0.05 cfs 70 cf Outflow=0.02 cfs 70 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond 2PGP2: Geopave</td>
<td>Peak Elev=14.81’ Storage=341 cf Inflow=0.68 cfs 973 cf Outflow=0.22 cfs 973 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond</td>
<td>Description</td>
<td>Peak Elev (ft)</td>
<td>Storage (af)</td>
<td>Inflow (cfs)</td>
<td>Outflow (cfs)</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>---------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
<td></td>
</tr>
<tr>
<td>2PGP3</td>
<td>Geopave</td>
<td>16.57</td>
<td>0.009</td>
<td>0.47</td>
<td>0.07</td>
<td></td>
</tr>
<tr>
<td>3P</td>
<td>RetainIt</td>
<td>13.89</td>
<td>671</td>
<td>0.34</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>3PGPE</td>
<td>Geopave</td>
<td>14.21</td>
<td>2</td>
<td>0.03</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>3PGPN</td>
<td>Geopave</td>
<td>14.35</td>
<td>238</td>
<td>0.63</td>
<td>0.32</td>
<td></td>
</tr>
<tr>
<td>4P</td>
<td>RetainIt</td>
<td>13.94</td>
<td>1,044</td>
<td>0.67</td>
<td>0.24</td>
<td></td>
</tr>
<tr>
<td>4PGP1</td>
<td>Geopave</td>
<td>14.23</td>
<td>86</td>
<td>0.41</td>
<td>0.30</td>
<td></td>
</tr>
<tr>
<td>4PGP2</td>
<td>Geopave</td>
<td>14.86</td>
<td>400</td>
<td>0.72</td>
<td>0.22</td>
<td></td>
</tr>
<tr>
<td>5P</td>
<td>RetainIt</td>
<td>14.17</td>
<td>1,896</td>
<td>1.54</td>
<td>0.32</td>
<td></td>
</tr>
<tr>
<td>5PGPN</td>
<td>Geopave</td>
<td>14.34</td>
<td>154</td>
<td>0.43</td>
<td>0.21</td>
<td></td>
</tr>
<tr>
<td>5PGPS</td>
<td>Geopave</td>
<td>14.25</td>
<td>40</td>
<td>0.19</td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td>COMM-2</td>
<td>Storm Grate East Side</td>
<td>17.40</td>
<td>234</td>
<td>1.22</td>
<td>1.13</td>
<td></td>
</tr>
<tr>
<td>COMM-1</td>
<td>Grate SW corner Comm Bldg</td>
<td>17.29</td>
<td>102</td>
<td>2.05</td>
<td>2.08</td>
<td></td>
</tr>
<tr>
<td>I-5</td>
<td>MH5</td>
<td>16.51</td>
<td>1</td>
<td>1.20</td>
<td>1.20</td>
<td></td>
</tr>
<tr>
<td>I-6</td>
<td>Alley Inlet</td>
<td>16.40</td>
<td>2</td>
<td>2.03</td>
<td>2.03</td>
<td></td>
</tr>
<tr>
<td>MH-A1</td>
<td>Storm Manhole Alley</td>
<td>17.34</td>
<td>0</td>
<td>2.41</td>
<td>2.41</td>
<td></td>
</tr>
<tr>
<td>MH-A2</td>
<td>Storm Manhole Alley</td>
<td>16.89</td>
<td>0</td>
<td>0.84</td>
<td>0.84</td>
<td></td>
</tr>
<tr>
<td>MH-A3</td>
<td>Storm Manhole Alley</td>
<td>16.56</td>
<td>0</td>
<td>0.96</td>
<td>0.96</td>
<td></td>
</tr>
</tbody>
</table>
Peak Elev=17.29'  Storage=0 cf   Inflow=0.96 cfs  3,149 cf
Primary=0.96 cfs  3,146 cf   Secondary=0.00 cfs  3 cf   Outflow=0.96 cfs  3,149 cf

Peak Elev=10.71'  Inflow=3.31 cfs  15,536 cf
Primary=3.31 cfs  15,536 cf   Secondary=0.00 cfs  0 cf   Outflow=3.31 cfs  15,536 cf

Peak Elev=9.54'   Inflow=3.31 cfs  15,536 cf
Primary=3.31 cfs  15,536 cf   Secondary=0.00 cfs  0 cf   Outflow=3.31 cfs  15,536 cf

Peak Elev=9.07'   Inflow=3.31 cfs  15,536 cf
Primary=3.31 cfs  15,536 cf   Secondary=0.00 cfs  0 cf   Outflow=3.31 cfs  15,536 cf

Peak Elev=13.00'   Inflow=0.75 cfs  6,915 cf
Primary=0.75 cfs  6,915 cf   Secondary=0.00 cfs  0 cf   Outflow=0.75 cfs  6,915 cf

Peak Elev=12.17'   Inflow=1.08 cfs  9,635 cf
Primary=1.08 cfs  9,635 cf   Secondary=0.00 cfs  0 cf   Outflow=1.08 cfs  9,635 cf

Peak Elev=11.52'   Inflow=1.08 cfs  9,635 cf
Primary=1.08 cfs  9,635 cf   Secondary=0.00 cfs  0 cf   Outflow=1.08 cfs  9,635 cf

Inflow=0.31 cfs  455 cf
Primary=0.31 cfs  455 cf

Primary=0.00 cfs  0 cf

Total Runoff Area = 258,813 sf   Runoff Volume = 19,353 cf   Average Runoff Depth = 0.90''
11.81% Pervious = 30,578 sf   88.19% Impervious = 228,235 sf
<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Runoff Area (sf)</th>
<th>Impervious (%)</th>
<th>Runoff Depth (in)</th>
<th>Tc (min)</th>
<th>CN</th>
<th>Runoff (cfs)</th>
<th>Runoff (cf)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subcatchment B-1: Landscape Buffer North</strong></td>
<td>930</td>
<td>0.00</td>
<td>1.29</td>
<td>10.0</td>
<td>76</td>
<td>0.03</td>
<td>100</td>
</tr>
<tr>
<td><strong>Subcatchment B-2: Riverstone Buffer North</strong></td>
<td>1,432</td>
<td>0.00</td>
<td>1.55</td>
<td>10.0</td>
<td>80</td>
<td>0.05</td>
<td>185</td>
</tr>
<tr>
<td><strong>Subcatchment B-3: Riverstone Buffer North</strong></td>
<td>1,354</td>
<td>0.00</td>
<td>2.44</td>
<td>10.0</td>
<td>91</td>
<td>0.08</td>
<td>275</td>
</tr>
<tr>
<td><strong>Subcatchment B-4: Riverstone and Geopave</strong></td>
<td>2,575</td>
<td>0.00</td>
<td>1.69</td>
<td>10.0</td>
<td>82</td>
<td>0.10</td>
<td>363</td>
</tr>
<tr>
<td><strong>Subcatchment B-5: River Stone and</strong></td>
<td>3,703</td>
<td>0.00</td>
<td>1.69</td>
<td>10.0</td>
<td>82</td>
<td>0.15</td>
<td>522</td>
</tr>
<tr>
<td><strong>Subcatchment B-6: Riverstone Buffer and</strong></td>
<td>3,261</td>
<td>0.00</td>
<td>1.77</td>
<td>10.0</td>
<td>83</td>
<td>0.13</td>
<td>480</td>
</tr>
<tr>
<td><strong>Subcatchment B7: Riverstone and Geopave</strong></td>
<td>2,955</td>
<td>0.00</td>
<td>1.62</td>
<td>10.0</td>
<td>81</td>
<td>0.11</td>
<td>399</td>
</tr>
<tr>
<td><strong>Subcatchment ISL 4: River Stone Island</strong></td>
<td>306</td>
<td>0.00</td>
<td>1.29</td>
<td>10.0</td>
<td>76</td>
<td>0.01</td>
<td>33</td>
</tr>
<tr>
<td><strong>Subcatchment ISL-1: River Stone Island</strong></td>
<td>306</td>
<td>0.00</td>
<td>1.29</td>
<td>10.0</td>
<td>76</td>
<td>0.01</td>
<td>33</td>
</tr>
<tr>
<td><strong>Subcatchment ISL-2: River Stone Island</strong></td>
<td>306</td>
<td>0.00</td>
<td>1.29</td>
<td>10.0</td>
<td>76</td>
<td>0.01</td>
<td>33</td>
</tr>
<tr>
<td><strong>Subcatchment ISL-3: River Stone Island</strong></td>
<td>306</td>
<td>0.00</td>
<td>1.29</td>
<td>10.0</td>
<td>76</td>
<td>0.01</td>
<td>33</td>
</tr>
<tr>
<td><strong>Subcatchment OS - 5: OFFSITE</strong></td>
<td>2,249</td>
<td>100.00</td>
<td>3.16</td>
<td>10.0</td>
<td>98</td>
<td>0.15</td>
<td>592</td>
</tr>
<tr>
<td><strong>Subcatchment OS-6E: COMM EAST</strong></td>
<td>20,681</td>
<td>100.00</td>
<td>3.16</td>
<td>10.0</td>
<td>98</td>
<td>1.35</td>
<td>5,441</td>
</tr>
<tr>
<td><strong>Subcatchment OS-6R: COMM ROOF</strong></td>
<td>13,913</td>
<td>100.00</td>
<td>3.16</td>
<td>10.0</td>
<td>98</td>
<td>0.91</td>
<td>3,660</td>
</tr>
<tr>
<td><strong>Subcatchment OS-6W: COMM-WEST</strong></td>
<td>20,681</td>
<td>100.00</td>
<td>3.16</td>
<td>10.0</td>
<td>98</td>
<td>1.35</td>
<td>5,441</td>
</tr>
<tr>
<td><strong>Subcatchment OS1: North Driveway</strong></td>
<td>5,281</td>
<td>100.00</td>
<td>3.16</td>
<td>10.8</td>
<td>98</td>
<td>0.34</td>
<td>1,389</td>
</tr>
</tbody>
</table>

Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method
<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Runoff Area</th>
<th>Impervious</th>
<th>Runoff Depth</th>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
<th>2-YEAR Rainfall=3.39&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-1: Northwest</td>
<td>30,547 sf</td>
<td>88.67%</td>
<td>2.94&quot;</td>
<td>10.0 min</td>
<td>96</td>
<td>1.94 cfs</td>
<td></td>
</tr>
<tr>
<td>P-10A: Alley</td>
<td>4,612 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.30 cfs</td>
<td></td>
</tr>
<tr>
<td>P-1R: ROOFS</td>
<td>1,400 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.09 cfs</td>
<td></td>
</tr>
<tr>
<td>P-2M: North Central</td>
<td>18,201 sf</td>
<td>74.95%</td>
<td>2.53&quot;</td>
<td>10.0 min</td>
<td>92</td>
<td>1.04 cfs</td>
<td></td>
</tr>
<tr>
<td>P-2NE: North Central</td>
<td>8,999 sf</td>
<td>88.73%</td>
<td>2.94&quot;</td>
<td>10.0 min</td>
<td>96</td>
<td>0.57 cfs</td>
<td></td>
</tr>
<tr>
<td>P-2R: Roofs, warehouse</td>
<td>4,125 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.27 cfs</td>
<td></td>
</tr>
<tr>
<td>P-2S: Between Buildings</td>
<td>1,292 sf</td>
<td>77.40%</td>
<td>2.63&quot;</td>
<td>10.0 min</td>
<td>93</td>
<td>0.08 cfs</td>
<td></td>
</tr>
<tr>
<td>P-3E: Northeast Corner</td>
<td>5,025 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.33 cfs</td>
<td></td>
</tr>
<tr>
<td>P-4R: Roof to 4P</td>
<td>2,828 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.19 cfs</td>
<td></td>
</tr>
<tr>
<td>P-4S: Paved Parking</td>
<td>7,833 sf</td>
<td>80.24%</td>
<td>2.73&quot;</td>
<td>10.0 min</td>
<td>94</td>
<td>0.47 cfs</td>
<td></td>
</tr>
<tr>
<td>P-6R: Roof</td>
<td>8,937 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.59 cfs</td>
<td></td>
</tr>
<tr>
<td>P-7: Slab Area - Repaved</td>
<td>30,112 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>1.97 cfs</td>
<td></td>
</tr>
<tr>
<td>P-7A: S CORNER ALLEY</td>
<td>2,831 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.19 cfs</td>
<td></td>
</tr>
<tr>
<td>P-7B: Paved Parking</td>
<td>6,605 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.43 cfs</td>
<td></td>
</tr>
<tr>
<td>P-7R: Roof</td>
<td>6,627 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.43 cfs</td>
<td></td>
</tr>
<tr>
<td>P-8: Alley</td>
<td>3,884 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.25 cfs</td>
<td></td>
</tr>
<tr>
<td>P-8R: Roof</td>
<td>4,876 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.32 cfs</td>
<td></td>
</tr>
</tbody>
</table>
Subcatchment P-9: Alley
Runoff Area=1,384 sf   100.00% Impervious   Runoff Depth=3.16"
  Tc=10.0 min   CN=98   Runoff=0.09 cfs  364 cf

Subcatchment P-9R: West End Roofs
Runoff Area=7,745 sf   100.00% Impervious   Runoff Depth=3.16"
  Tc=10.0 min   CN=98   Runoff=0.51 cfs  2,037 cf

Subcatchment P3N: Northeast Corner
Runoff Area=8,017 sf   71.71% Impervious   Runoff Depth=2.53"
  Tc=10.0 min   CN=92   Runoff=0.46 cfs  1,691 cf

Subcatchment P4-N: Paved Parking
Flow Length=260’   Tc=10.0 min   CN=98   Runoff=0.41 cfs  1,646 cf

Subcatchment P4W: Paved Parking
Flow Length=260’   Tc=10.0 min   CN=98   Runoff=0.42 cfs  1,693 cf

Reach ASW1: Overland swale
  Avg. Flow Depth=0.19’   Max Vel=0.87 fps   Inflow=2.71 cfs  3,168 cf
  n=0.016   L=160.0’   S=0.0012 '/'   Capacity=19.21 cfs   Outflow=2.52 cfs  3,168 cf

Reach ASW2: Overland swale
  Avg. Flow Depth=0.24’   Max Vel=0.63 fps   Inflow=2.74 cfs  4,382 cf
  n=0.016   L=120.0’   S=0.0005 '/'   Capacity=12.15 cfs   Outflow=2.57 cfs  4,382 cf

Reach ASW3: Overland swale
  Avg. Flow Depth=0.12’   Max Vel=0.48 fps   Inflow=0.85 cfs  7,752 cf
  n=0.016   L=160.0’   S=0.0006 '/'   Capacity=13.58 cfs   Outflow=0.80 cfs  7,752 cf

Reach STRT: EXISTING STREET
  Avg. Flow Depth=0.12’   Max Vel=2.04 fps   Inflow=6.28 cfs  60,885 cf
  n=0.016   L=25.0’   S=0.0080 '/'   Capacity=63.73 cfs   Outflow=6.26 cfs  60,885 cf

Reach SW-3: Overland swale
  Avg. Flow Depth=0.05’   Max Vel=1.54 fps   Inflow=0.80 cfs  7,752 cf
  n=0.016   L=160.0’   S=0.0200 '/'   Capacity=76.85 cfs   Outflow=0.79 cfs  7,752 cf

Reach TD1: Drain for slab to Geopave
  Avg. Flow Depth=0.40’   Max Vel=2.47 fps   Inflow=1.97 cfs  7,922 cf
  n=0.013   L=200.0’   S=0.0025 '/'   Capacity=6.25 cfs   Outflow=1.90 cfs  7,922 cf

Reach TD2: East End of Buildings
  Avg. Flow Depth=0.19’   Max Vel=2.34 fps   Inflow=0.43 cfs  1,743 cf
  n=0.015   L=50.0’   S=0.0080 '/'   Capacity=4.26 cfs   Outflow=0.43 cfs  1,743 cf

Pond 1P: RetainIt
  Peak Elev=14.15’  Storage=1,881 cf   Inflow=2.47 cfs  15,562 cf
  Primary=1.39 cfs  15,562 cf   Secondary=0.00 cfs  0 cf   Outflow=1.39 cfs  15,562 cf

Pond 1PGP: Geopave Area
  Peak Elev=17.49’  Storage=3,351 cf   Inflow=3.81 cfs  15,463 cf
  Outflow=2.45 cfs  15,463 cf

Pond 2P: RetainIts
  Peak Elev=14.29’  Storage=2,615 cf   Inflow=1.16 cfs  10,001 cf
  Primary=0.55 cfs  9,335 cf   Secondary=0.00 cfs  0 cf   Outflow=0.55 cfs  9,335 cf

Pond 2PGP1: Geopave
  Peak Elev=14.83’  Storage=63 cf   Inflow=0.08 cfs  283 cf
  Outflow=0.02 cfs  283 cf

Pond 2PGP2: Geopave
  Peak Elev=16.31’  Storage=1,059 cf   Inflow=1.06 cfs  4,123 cf
  Outflow=0.22 cfs  4,123 cf
<table>
<thead>
<tr>
<th>Pond</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2PGP3: Geopave</td>
<td>Peak Elev=17.90’ Storage=0.018 af  Inflow=0.62 cfs 2,387 cf  Outflow=0.15 cfs 2,387 cf</td>
</tr>
<tr>
<td>3: RetainIt</td>
<td>Peak Elev=14.49’ Storage=1,497 cf  Inflow=0.41 cfs 3,684 cf  Primary=0.16 cfs 3,684 cf  Secondary=0.00 cfs 0 cf  Outflow=0.16 cfs 3,684 cf</td>
</tr>
<tr>
<td>3PGPE: Geopave</td>
<td>Peak Elev=14.22’ Storage=8 cf  Inflow=0.10 cfs 363 cf  Outflow=0.10 cfs 363 cf</td>
</tr>
<tr>
<td>3PGPN: Geopave</td>
<td>Peak Elev=14.85’ Storage=578 cf  Inflow=0.87 cfs 3,321 cf  Outflow=0.32 cfs 3,321 cf</td>
</tr>
<tr>
<td>4: RetainIt</td>
<td>Peak Elev=14.29’ Storage=1,721 cf  Inflow=0.70 cfs 6,419 cf  Primary=0.34 cfs 6,323 cf  Secondary=0.00 cfs 0 cf  Outflow=0.34 cfs 6,323 cf</td>
</tr>
<tr>
<td>4PGP1: Geopave</td>
<td>Peak Elev=14.42’ Storage=205 cf  Inflow=0.55 cfs 2,168 cf  Outflow=0.30 cfs 2,168 cf</td>
</tr>
<tr>
<td>4PGP2: Geopave</td>
<td>Peak Elev=15.77’ Storage=820 cf  Inflow=0.90 cfs 3,507 cf  Outflow=0.22 cfs 3,507 cf</td>
</tr>
<tr>
<td>5: RetainIt</td>
<td>Peak Elev=14.74’ Storage=3,299 cf  Inflow=1.67 cfs 8,738 cf  Primary=0.50 cfs 8,247 cf  Secondary=0.00 cfs 0 cf  Outflow=0.50 cfs 8,247 cf</td>
</tr>
<tr>
<td>5PGPN: Geopave</td>
<td>Peak Elev=14.76’ Storage=340 cf  Inflow=0.57 cfs 2,218 cf  Outflow=0.21 cfs 2,218 cf</td>
</tr>
<tr>
<td>5PGPS: Geopave</td>
<td>Peak Elev=14.63’ Storage=142 cf  Inflow=0.30 cfs 1,144 cf  Outflow=0.13 cfs 1,144 cf</td>
</tr>
<tr>
<td>COMM-2: Storm Grate East Side</td>
<td>Peak Elev=17.42’ Storage=256 cf  Inflow=1.35 cfs 5,441 cf  Primary=0.35 cfs 4,451 cf  Secondary=0.94 cfs 990 cf  Outflow=1.29 cfs 5,441 cf</td>
</tr>
<tr>
<td>COMM-1: Grate SW corner Comm Bldg</td>
<td>Peak Elev=17.30’ Storage=105 cf  Inflow=2.26 cfs 9,101 cf  Primary=0.47 cfs 6,935 cf  Secondary=1.80 cfs 2,167 cf  Outflow=2.27 cfs 9,102 cf</td>
</tr>
<tr>
<td>I-5: MH5</td>
<td>Peak Elev=16.55’ Inflow=1.33 cfs 5,377 cf  Primary=1.33 cfs 5,377 cf  Secondary=0.00 cfs 0 cf  Outflow=1.33 cfs 5,377 cf</td>
</tr>
<tr>
<td>I-6: Alley Inlet</td>
<td>Peak Elev=16.52’ Inflow=2.62 cfs 4,746 cf  Primary=2.62 cfs 4,746 cf  Secondary=0.00 cfs 0 cf  Outflow=2.62 cfs 4,746 cf</td>
</tr>
<tr>
<td>MH-A1: Storm Manhole Alley</td>
<td>Peak Elev=17.34’ Storage=0 cf  Inflow=3.00 cfs 9,981 cf  Primary=1.08 cfs 3,591 cf  Secondary=1.92 cfs 6,391 cf  Outflow=3.00 cfs 9,981 cf</td>
</tr>
<tr>
<td>MH-A2: Storm Manhole Alley</td>
<td>Peak Elev=16.89’ Storage=0 cf  Inflow=0.84 cfs 11,632 cf  Primary=0.38 cfs 5,236 cf  Secondary=0.46 cfs 6,396 cf  Outflow=0.84 cfs 11,632 cf</td>
</tr>
<tr>
<td>MH-A3: Storm Manhole Alley</td>
<td>Peak Elev=16.56’ Storage=0 cf  Inflow=0.97 cfs 11,966 cf  Primary=0.84 cfs 11,632 cf  Secondary=0.13 cfs 334 cf  Outflow=0.97 cfs 11,966 cf</td>
</tr>
</tbody>
</table>
Pond MH-A4: Storm MH Comm Site Alley
Peak Elev=17.29' Storage=0 cf Inflow=0.97 cfs 11,978 cf
Primary=0.97 cfs 11,966 cf Secondary=0.00 cfs 12 cf Outflow=0.97 cfs 11,978 cf

Pond MH-E2: Existing MH-E2
Peak Elev=13.66' Inflow=5.49 cfs 53,133 cf
Primary=5.49 cfs 53,133 cf Secondary=0.00 cfs 0 cf Outflow=5.49 cfs 53,133 cf

Pond MH-E3: Existing MH7-OFF
Peak Elev=10.65' Inflow=5.49 cfs 53,133 cf
Primary=5.49 cfs 53,133 cf Secondary=0.00 cfs 0 cf Outflow=5.49 cfs 53,133 cf

Pond MH-E4: Woodruff Inlet
Peak Elev=10.41' Inflow=5.49 cfs 53,133 cf
Primary=5.49 cfs 53,133 cf Secondary=0.00 cfs 0 cf Outflow=5.49 cfs 53,133 cf

Pond PMH1: Proposed MH 1
Peak Elev=13.25' Inflow=1.93 cfs 24,897 cf
Primary=1.93 cfs 24,897 cf Secondary=0.00 cfs 0 cf Outflow=1.93 cfs 24,897 cf

Pond PMH2: Proposed MH2
Peak Elev=12.41' Inflow=2.40 cfs 34,904 cf
Primary=2.40 cfs 34,904 cf Secondary=0.00 cfs 0 cf Outflow=2.40 cfs 34,904 cf

Pond PMH3: Proposed MH 3
Peak Elev=11.75' Inflow=2.40 cfs 34,904 cf
Primary=2.40 cfs 34,904 cf Secondary=0.00 cfs 0 cf Outflow=2.40 cfs 34,904 cf

Link Drive N: North Driveway
Inflow=0.34 cfs 1,389 cf
Primary=0.34 cfs 1,389 cf

Link SSpring ST: Spring Street
Primary=0.00 cfs 0 cf

Total Runoff Area = 258,813 sf  Runoff Volume = 63,526 cf  Average Runoff Depth = 2.95"
11.81% Pervious = 30,578 sf  88.19% Impervious = 228,235 sf
### Subcatchment B-1: Landscape Buffer North
- **Runoff Area**: 930 sf
- **Impervious Coverage**: 0.00%
- **Runoff Depth**: 2.68"
- **Tc**: 10.0 min
- **CN**: 76
- **Runoff**: 0.06 cfs
- **Volume**: 207 cf

### Subcatchment B-2: Riverstone Buffer North
- **Runoff Area**: 1,432 sf
- **Impervious Coverage**: 0.00%
- **Runoff Depth**: 3.04"
- **Tc**: 10.0 min
- **CN**: 80
- **Runoff**: 0.10 cfs
- **Volume**: 363 cf

### Subcatchment B-3: Riverstone Buffer North
- **Runoff Area**: 1,354 sf
- **Impervious Coverage**: 0.00%
- **Runoff Depth**: 4.15"
- **Tc**: 10.0 min
- **CN**: 91
- **Runoff**: 0.12 cfs
- **Volume**: 468 cf

### Subcatchment B-4: Riverstone and Geopave
- **Runoff Area**: 2,575 sf
- **Impervious Coverage**: 0.00%
- **Runoff Depth**: 3.23"
- **Tc**: 10.0 min
- **CN**: 82
- **Runoff**: 0.19 cfs
- **Volume**: 693 cf

### Subcatchment B-5: River Stone and
- **Runoff Area**: 3,703 sf
- **Impervious Coverage**: 0.00%
- **Runoff Depth**: 3.23"
- **Tc**: 10.0 min
- **CN**: 82
- **Runoff**: 0.28 cfs
- **Volume**: 997 cf

### Subcatchment B-6: Riverstone Buffer and
- **Runoff Area**: 3,261 sf
- **Impervious Coverage**: 0.00%
- **Runoff Depth**: 3.14"
- **Tc**: 10.0 min
- **CN**: 83
- **Runoff**: 0.25 cfs
- **Volume**: 904 cf

### Subcatchment B7: Riverstone and Geopave
- **Runoff Area**: 2,955 sf
- **Impervious Coverage**: 0.00%
- **Runoff Depth**: 3.14"
- **Tc**: 10.0 min
- **CN**: 81
- **Runoff**: 0.21 cfs
- **Volume**: 772 cf

### Subcatchment ISL 4: River Stone Island
- **Runoff Area**: 306 sf
- **Impervious Coverage**: 0.00%
- **Runoff Depth**: 2.68"
- **Tc**: 10.0 min
- **CN**: 76
- **Runoff**: 0.02 cfs
- **Volume**: 68 cf

### Subcatchment ISL-1: River Stone Island
- **Runoff Area**: 306 sf
- **Impervious Coverage**: 0.00%
- **Runoff Depth**: 2.68"
- **Tc**: 10.0 min
- **CN**: 76
- **Runoff**: 0.02 cfs
- **Volume**: 68 cf

### Subcatchment ISL-2: River Stone Island
- **Runoff Area**: 306 sf
- **Impervious Coverage**: 0.00%
- **Runoff Depth**: 2.68"
- **Tc**: 10.0 min
- **CN**: 76
- **Runoff**: 0.02 cfs
- **Volume**: 68 cf

### Subcatchment ISL-3: River Stone Island
- **Runoff Area**: 2,249 sf
- **Impervious Coverage**: 100.00%
- **Runoff Depth**: 4.93"
- **Tc**: 10.0 min
- **CN**: 98
- **Runoff**: 0.23 cfs
- **Volume**: 925 cf

### Subcatchment OS - 5: OFFSITE
- **Runoff Area**: 2,249 sf
- **Impervious Coverage**: 100.00%
- **Runoff Depth**: 4.93"
- **Tc**: 10.0 min
- **CN**: 98
- **Runoff**: 0.23 cfs
- **Volume**: 925 cf

### Subcatchment OS-6E: COMM EAST
- **Runoff Area**: 20,681 sf
- **Impervious Coverage**: 100.00%
- **Runoff Depth**: 4.93"
- **Tc**: 10.0 min
- **CN**: 98
- **Runoff**: 2.08 cfs
- **Volume**: 8,501 cf

### Subcatchment OS-6R: COMM ROOF
- **Runoff Area**: 13,913 sf
- **Impervious Coverage**: 100.00%
- **Runoff Depth**: 4.93"
- **Tc**: 10.0 min
- **CN**: 98
- **Runoff**: 1.40 cfs
- **Volume**: 5,719 cf

### Subcatchment OS-6W: COMM-WEST
- **Runoff Area**: 20,681 sf
- **Impervious Coverage**: 100.00%
- **Runoff Depth**: 4.93"
- **Tc**: 10.0 min
- **CN**: 98
- **Runoff**: 2.08 cfs
- **Volume**: 8,501 cf

### Subcatchment OS1: North Driveway
- **Runoff Area**: 5,281 sf
- **Impervious Coverage**: 100.00%
- **Runoff Depth**: 4.93"
- **Flow Length**: 175’
- **Tc**: 10.8 min
- **CN**: 98
- **Runoff**: 0.52 cfs
- **Volume**: 2,171 cf
<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Description</th>
<th>Runoff Area (sf)</th>
<th>Impervious (%)</th>
<th>Runoff Depth (&quot;')</th>
<th>Tc (min)</th>
<th>CN</th>
<th>Runoff (cfs)</th>
<th>Runoff (cf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-1: Northwest</td>
<td>Runoff Area=30,547 sf 88.67% Impervious Runoff Depth=4.70&quot;</td>
<td>Tc=10.0 min CN=96 Runoff=3.02 cfs 11,968 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-10A: Alley</td>
<td>Runoff Area=4,612 sf 100.00% Impervious Runoff Depth=4.93&quot;</td>
<td>Tc=10.0 min CN=98 Runoff=0.46 cfs 1,896 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-1R: ROOFS</td>
<td>Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=4.93&quot;</td>
<td>Tc=10.0 min CN=98 Runoff=0.14 cfs 576 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-2M: North Central</td>
<td>Runoff Area=18,201 sf 74.95% Impervious Runoff Depth=4.26&quot;</td>
<td>Flow Length=180’ Tc=10.0 min CN=92 Runoff=1.71 cfs 6,454 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-2NE: North Central</td>
<td>Runoff Area=8,999 sf 88.73% Impervious Runoff Depth=4.70&quot;</td>
<td>Tc=10.0 min CN=96 Runoff=0.89 cfs 3,526 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-2R: Roofs, warehouse</td>
<td>Runoff Area=4,125 sf 100.00% Impervious Runoff Depth=4.93&quot;</td>
<td>Tc=10.0 min CN=98 Runoff=0.41 cfs 1,696 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-2S: Between Buildings</td>
<td>Runoff Area=1,292 sf 77.40% Impervious Runoff Depth=4.36&quot;</td>
<td>Flow Length=180’ Tc=10.0 min CN=93 Runoff=0.12 cfs 470 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-3E: Northeast Corner</td>
<td>Runoff Area=5,025 sf 100.00% Impervious Runoff Depth=4.93&quot;</td>
<td>Tc=10.0 min CN=98 Runoff=0.51 cfs 2,066 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-4R: Roof to 4P</td>
<td>Runoff Area=2,828 sf 100.00% Impervious Runoff Depth=4.93&quot;</td>
<td>Tc=10.0 min CN=98 Runoff=0.28 cfs 1,163 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-4S: Paved Parking</td>
<td>Runoff Area=7,833 sf 80.24% Impervious Runoff Depth=4.48&quot;</td>
<td>Flow Length=260’ Tc=10.0 min CN=94 Runoff=0.76 cfs 2,922 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-6R: Roof</td>
<td>Runoff Area=8,937 sf 100.00% Impervious Runoff Depth=4.93&quot;</td>
<td>Tc=10.0 min CN=98 Runoff=0.90 cfs 3,674 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-7: Slab Area - Repaved</td>
<td>Runoff Area=30,112 sf 100.00% Impervious Runoff Depth=4.93&quot;</td>
<td>Tc=10.0 min CN=98 Runoff=3.03 cfs 12,378 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-7A: S CORNER ALLEY</td>
<td>Runoff Area=2,831 sf 100.00% Impervious Runoff Depth=4.93&quot;</td>
<td>Flow Length=160’ Tc=10.0 min CN=98 Runoff=0.28 cfs 1,164 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-7B: Paved Parking</td>
<td>Runoff Area=6,605 sf 100.00% Impervious Runoff Depth=4.93&quot;</td>
<td>Flow Length=260’ Tc=10.0 min CN=98 Runoff=0.66 cfs 2,715 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-7R: Roof</td>
<td>Runoff Area=6,627 sf 100.00% Impervious Runoff Depth=4.93&quot;</td>
<td>Tc=10.0 min CN=98 Runoff=0.67 cfs 2,724 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-8: Alley</td>
<td>Runoff Area=3,884 sf 100.00% Impervious Runoff Depth=4.93&quot;</td>
<td>Tc=10.0 min CN=98 Runoff=0.39 cfs 1,597 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-8R: Roof</td>
<td>Runoff Area=4,876 sf 100.00% Impervious Runoff Depth=4.93&quot;</td>
<td>Tc=10.0 min CN=98 Runoff=0.49 cfs 2,004 cf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Subcatchment P-9: Alley
Runoff Area=1,384 sf   100.00% Impervious   Runoff Depth=4.93"
Tc=10.0 min   CN=98   Runoff=0.14 cfs  569 cf

Subcatchment P-9R: West End Roofs
Runoff Area=7,745 sf   100.00% Impervious   Runoff Depth=4.93"
Tc=10.0 min   CN=98   Runoff=0.78 cfs  3,184 cf

Subcatchment P3N: Northeast Corner
Runoff Area=8,017 sf   71.71% Impervious   Runoff Depth=4.26"
Tc=10.0 min   CN=92   Runoff=0.75 cfs  2,843 cf

Subcatchment P4-N: Paved Parking
Flow Length=260’   Tc=10.0 min   CN=98   Runoff=0.63 cfs  2,572 cf

Subcatchment P4W: Paved Parking
Flow Length=260’   Tc=10.0 min   CN=98   Runoff=0.65 cfs  2,646 cf

Reach ASW1: Overland swale
Avg. Flow Depth=0.25’   Max Vel=1.01 fps   Inflow=4.55 cfs  6,452 cf
n=0.016   L=160.0’   S=0.0012 '/'   Capacity=19.21 cfs   Outflow=4.34 cfs  6,452 cf

Reach ASW2: Overland swale
Avg. Flow Depth=0.31’   Max Vel=0.73 fps   Inflow=4.69 cfs  8,348 cf
n=0.016   L=120.0’   S=0.0005 '/'   Capacity=12.15 cfs   Outflow=4.51 cfs  8,348 cf

Reach ASW3: Overland swale
Avg. Flow Depth=0.14’   Max Vel=0.52 fps   Inflow=1.06 cfs  11,351 cf
n=0.016   L=160.0’   S=0.0006 '/'   Capacity=13.58 cfs   Outflow=0.99 cfs  11,351 cf

Reach STRT: EXISTING STREET
Avg. Flow Depth=0.15’   Max Vel=2.32 fps   Inflow=8.63 cfs  96,656 cf
n=0.016   L=25.0’   S=0.0080 '/'   Capacity=63.73 cfs   Outflow=8.65 cfs  96,656 cf

Reach SW-3: Overland swale
Avg. Flow Depth=0.05’   Max Vel=1.67 fps   Inflow=0.99 cfs  11,351 cf
n=0.016   L=160.0’   S=0.0200 '/'   Capacity=76.85 cfs   Outflow=0.98 cfs  11,351 cf

Reach TD1: Drain for slab to Geopave
Avg. Flow Depth=0.25’   Max Vel=2.83 fps   Inflow=3.03 cfs  12,378 cf
n=0.013   L=200.0’   S=0.0025 '/'   Capacity=6.25 cfs   Outflow=2.93 cfs  12,378 cf

Reach TD2: East End of Buildings
Avg. Flow Depth=0.25’   Max Vel=2.68 fps   Inflow=0.67 cfs  2,724 cf
n=0.015   L=50.0’   S=0.0080 '/'   Capacity=4.26 cfs   Outflow=0.66 cfs  2,724 cf

Pond 1P: RetainIt
Peak Elev=14.80’ Storage=3,746 cf   Inflow=5.54 cfs  24,690 cf
Primary=2.92 cfs  24,690 cf   Secondary=0.00 cfs  0 cf   Outflow=2.92 cfs  24,690 cf

Pond 1PGP: Geopave Area
Peak Elev=17.60’ Storage=3,778 cf   Inflow=5.94 cfs  24,483 cf
Outflow=5.49 cfs  24,483 cf

Pond 2P: RetainIts
Peak Elev=14.87’ Storage=4,546 cf   Inflow=2.70 cfs  16,268 cf
Primary=0.90 cfs  15,602 cf   Secondary=0.00 cfs  0 cf   Outflow=0.90 cfs  15,602 cf

Pond 2PGP1: Geopave
Peak Elev=15.70’ Storage=140 cf   Inflow=0.12 cfs  470 cf
Outflow=0.02 cfs  470 cf

Pond 2PGP2: Geopave
Peak Elev=17.02’ Storage=1,481 cf   Inflow=1.73 cfs  6,924 cf
Outflow=1.02 cfs  6,924 cf
<table>
<thead>
<tr>
<th>Pond</th>
<th>Type</th>
<th>Elev</th>
<th>Storage</th>
<th>Inflow</th>
<th>Outflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>2PGP3</td>
<td>Geopave</td>
<td>17.95'</td>
<td>0.020 af</td>
<td>0.99 cfs</td>
<td>0.88 cfs</td>
</tr>
<tr>
<td>3P</td>
<td>RetainIt</td>
<td>15.15'</td>
<td>2,410 cf</td>
<td>0.50 cfs</td>
<td>0.21 cfs</td>
</tr>
<tr>
<td>3PGPE</td>
<td>Geopave</td>
<td>14.24'</td>
<td>16 cf</td>
<td>0.19 cfs</td>
<td>0.19 cfs</td>
</tr>
<tr>
<td>3PGPN</td>
<td>Geopave</td>
<td>16.00'</td>
<td>1,359 cf</td>
<td>1.40 cfs</td>
<td>0.32 cfs</td>
</tr>
<tr>
<td>4P</td>
<td>RetainIt</td>
<td>14.69'</td>
<td>2,500 cf</td>
<td>0.92 cfs</td>
<td>0.44 cfs</td>
</tr>
<tr>
<td>4PGP1</td>
<td>Geopave</td>
<td>15.06'</td>
<td>623 cf</td>
<td>0.91 cfs</td>
<td>0.30 cfs</td>
</tr>
<tr>
<td>4PGP2</td>
<td>Geopave</td>
<td>17.31'</td>
<td>1,548 cf</td>
<td>1.42 cfs</td>
<td>0.52 cfs</td>
</tr>
<tr>
<td>5P</td>
<td>RetainIt</td>
<td>15.27'</td>
<td>4,588 cf</td>
<td>1.98 cfs</td>
<td>1.98 cfs</td>
</tr>
<tr>
<td>5PGPN</td>
<td>Geopave</td>
<td>15.89'</td>
<td>852 cf</td>
<td>0.91 cfs</td>
<td>0.21 cfs</td>
</tr>
<tr>
<td>5PGPS</td>
<td>Geopave</td>
<td>15.67'</td>
<td>425 cf</td>
<td>0.50 cfs</td>
<td>0.13 cfs</td>
</tr>
<tr>
<td>COMM-2</td>
<td>Storm Grate East Side</td>
<td>17.47'</td>
<td>350 cf</td>
<td>0.35 cfs</td>
<td>0.35 cfs</td>
</tr>
<tr>
<td>COMM-1</td>
<td>Grate SW corner Comm Bldg</td>
<td>17.35'</td>
<td>138 cf</td>
<td>2.94 cfs</td>
<td>0.48 cfs</td>
</tr>
<tr>
<td>I-5</td>
<td>MH5</td>
<td>16.74'</td>
<td>0.00 cfs</td>
<td>2.05 cfs</td>
<td>2.05 cfs</td>
</tr>
<tr>
<td>I-6</td>
<td>Alley Inlet</td>
<td>17.07'</td>
<td>8501 cf</td>
<td>0.84 cfs</td>
<td>1.05 cfs</td>
</tr>
<tr>
<td>MH-A1</td>
<td>Storm Manhole Alley</td>
<td>17.34'</td>
<td>0.00 cfs</td>
<td>4.76 cfs</td>
<td>4.76 cfs</td>
</tr>
<tr>
<td>MH-A2</td>
<td>Storm Manhole Alley</td>
<td>16.89'</td>
<td>0.00 cfs</td>
<td>1.05 cfs</td>
<td>1.05 cfs</td>
</tr>
<tr>
<td>MH-A3</td>
<td>Storm Manhole Alley</td>
<td>16.57'</td>
<td>0.00 cfs</td>
<td>1.05 cfs</td>
<td>1.05 cfs</td>
</tr>
</tbody>
</table>
Pond MH-A4: Storm MH Comm Site Alley
- Peak Elev: 17.29'
- Storage: 0 cf
- Inflow: 1.05 cfs
- Primary: 1.05 cfs, 17,213 cf
- Secondary: 0.00 cfs, 17 cf
- Outflow: 1.05 cfs, 17,213 cf

Pond MH-E2: Existing MH-E2
- Peak Elev: 18.02'
- Inflow: 9.49 cfs
- Primary: 7.65 cfs, 85,305 cf
- Secondary: 1.85 cfs, 1,223 cf
- Outflow: 9.49 cfs, 86,527 cf

Pond MH-E3: Existing MH7-OFF
- Peak Elev: 12.52'
- Inflow: 7.65 cfs
- Primary: 7.58 cfs, 85,265 cf
- Secondary: 0.07 cfs, 39 cf
- Outflow: 7.65 cfs, 85,305 cf

Pond MH-E4: Woodruff Inlet
- Peak Elev: 12.39'
- Inflow: 7.65 cfs
- Primary: 7.65 cfs, 85,305 cf
- Secondary: 0.00 cfs, 0 cf
- Outflow: 7.65 cfs, 85,305 cf

Pond PMH1: Proposed MH 1
- Peak Elev: 13.53'
- Inflow: 3.77 cfs
- Primary: 3.77 cfs, 40,293 cf
- Secondary: 0.00 cfs, 0 cf
- Outflow: 3.77 cfs, 40,293 cf

Pond PMH2: Proposed MH2
- Peak Elev: 12.67'
- Inflow: 4.28 cfs
- Primary: 4.28 cfs, 56,702 cf
- Secondary: 0.00 cfs, 0 cf
- Outflow: 4.28 cfs, 56,702 cf

Pond PMH3: Proposed MH 3
- Peak Elev: 11.98'
- Inflow: 4.28 cfs
- Primary: 4.28 cfs, 56,702 cf
- Secondary: 0.00 cfs, 0 cf
- Outflow: 4.28 cfs, 56,702 cf

Link Drive N: North Driveway
- Inflow: 0.52 cfs
- Primary: 0.52 cfs, 2,171 cf

Link SSPRING ST: Spring Street
- Primary: 0.00 cfs, 0 cf

Total Runoff Area = 258,813 sf
Runoff Volume = 101,302 cf
Average Runoff Depth = 4.70"
11.81% Pervious = 30,578 sf
88.19% Impervious = 228,235 sf
Subcatchment B-1: Landscape Buffer North
- Runoff Area: 930 sf
- Impervious: 0.00%
- Runoff Depth: 3.75"
- Tc: 10.0 min
- CN: 76
- Runoff: 0.08 cfs
- Pond Volume: 290 cf

Subcatchment B-2: Riverstone Buffer North
- Runoff Area: 1,432 sf
- Impervious: 0.00%
- Runoff Depth: 4.16"
- Tc: 10.0 min
- CN: 80
- Runoff: 0.14 cfs
- Pond Volume: 497 cf

Subcatchment B-3: Riverstone Buffer North
- Runoff Area: 1,354 sf
- Impervious: 0.00%
- Runoff Depth: 5.37"
- Tc: 10.0 min
- CN: 91
- Runoff: 0.16 cfs
- Pond Volume: 606 cf

Subcatchment B-4: Riverstone and Geopave
- Runoff Area: 2,575 sf
- Impervious: 0.00%
- Runoff Depth: 4.38"
- Tc: 10.0 min
- CN: 82
- Runoff: 0.26 cfs
- Pond Volume: 939 cf

Subcatchment B-5: River Stone and
- Runoff Area: 3,703 sf
- Impervious: 0.00%
- Runoff Depth: 4.38"
- Tc: 10.0 min
- CN: 82
- Runoff: 0.37 cfs
- Pond Volume: 1,350 cf

Subcatchment B-6: Riverstone Buffer and
- Runoff Area: 3,261 sf
- Impervious: 0.00%
- Runoff Depth: 4.48"
- Tc: 10.0 min
- CN: 83
- Runoff: 0.33 cfs
- Pond Volume: 1,218 cf

Subcatchment B7: Riverstone and Geopave
- Runoff Area: 2,955 sf
- Impervious: 0.00%
- Runoff Depth: 4.27"
- Tc: 10.0 min
- CN: 81
- Runoff: 0.29 cfs
- Pond Volume: 1,051 cf

Subcatchment ISL 4: River Stone Island
- Runoff Area: 306 sf
- Impervious: 0.00%
- Runoff Depth: 3.75"
- Tc: 10.0 min
- CN: 76
- Runoff: 0.03 cfs
- Pond Volume: 96 cf

Subcatchment ISL-1: River Stone Island
- Runoff Area: 306 sf
- Impervious: 0.00%
- Runoff Depth: 3.75"
- Tc: 10.0 min
- CN: 76
- Runoff: 0.03 cfs
- Pond Volume: 96 cf

Subcatchment ISL-2: River Stone Island
- Runoff Area: 306 sf
- Impervious: 0.00%
- Runoff Depth: 3.75"
- Tc: 10.0 min
- CN: 76
- Runoff: 0.03 cfs
- Pond Volume: 96 cf

Subcatchment ISL-3: River Stone Island
- Runoff Area: 306 sf
- Impervious: 0.00%
- Runoff Depth: 3.75"
- Tc: 10.0 min
- CN: 76
- Runoff: 0.03 cfs
- Pond Volume: 96 cf

Subcatchment OS - 5: OFFSITE
- Runoff Area: 2,249 sf
- Impervious: 100.00%
- Runoff Depth: 6.18"
- Tc: 10.0 min
- CN: 98
- Runoff: 0.28 cfs
- Pond Volume: 1,159 cf

Subcatchment OS-6E: COMM EAST
- Runoff Area: 20,681 sf
- Impervious: 100.00%
- Runoff Depth: 6.18"
- Tc: 10.0 min
- CN: 98
- Runoff: 2.59 cfs
- Pond Volume: 10,653 cf

Subcatchment OS-6R: COMM ROOF
- Runoff Area: 13,913 sf
- Impervious: 100.00%
- Runoff Depth: 6.18"
- Tc: 10.0 min
- CN: 98
- Runoff: 1.74 cfs
- Pond Volume: 7,167 cf

Subcatchment OS-6W: COMM-WEST
- Runoff Area: 20,681 sf
- Impervious: 100.00%
- Runoff Depth: 6.18"
- Tc: 10.0 min
- CN: 98
- Runoff: 2.59 cfs
- Pond Volume: 10,653 cf

Subcatchment OS1: North Driveway
- Runoff Area: 5,281 sf
- Impervious: 100.00%
- Runoff Depth: 6.18"
- Flow Length: 175'
- Tc: 10.8 min
- CN: 98
- Runoff: 0.65 cfs
- Pond Volume: 2,720 cf
### Subcatchment P-1: Northwest
- Runoff Area: 30,547 sf
- Impervious: 88.67%
- Runoff Depth: 5.95""}

<table>
<thead>
<tr>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 min</td>
<td>96</td>
<td>3.78 cfs</td>
<td>15,135 cf</td>
</tr>
</tbody>
</table>

### Subcatchment P-10A: Alley
- Runoff Area: 4,612 sf
- Impervious: 100.00%
- Runoff Depth: 6.18""}

<table>
<thead>
<tr>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 min</td>
<td>98</td>
<td>0.58 cfs</td>
<td>2,376 cf</td>
</tr>
</tbody>
</table>

### Subcatchment P-1R: ROOFS
- Runoff Area: 1,400 sf
- Impervious: 100.00%
- Runoff Depth: 6.18""}

<table>
<thead>
<tr>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 min</td>
<td>98</td>
<td>0.18 cfs</td>
<td>721 cf</td>
</tr>
</tbody>
</table>

### Subcatchment P-2M: North Central
- Runoff Area: 4,125 sf
- Impervious: 100.00%
- Runoff Depth: 6.18""}

<table>
<thead>
<tr>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 min</td>
<td>98</td>
<td>0.52 cfs</td>
<td>2,125 cf</td>
</tr>
</tbody>
</table>

### Subcatchment P-2NE: North Central
- Runoff Area: 1,400 sf
- Impervious: 100.00%
- Runoff Depth: 6.18""}

<table>
<thead>
<tr>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 min</td>
<td>98</td>
<td>0.11 cfs</td>
<td>4,459 cf</td>
</tr>
</tbody>
</table>

### Subcatchment P-2R: Roofs, warehouse
- Runoff Area: 1,400 sf
- Impervious: 100.00%
- Runoff Depth: 6.18""}

<table>
<thead>
<tr>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 min</td>
<td>98</td>
<td>0.63 cfs</td>
<td>2,588 cf</td>
</tr>
</tbody>
</table>

### Subcatchment P-3E: Northeast Corner
- Runoff Area: 2,828 sf
- Impervious: 100.00%
- Runoff Depth: 6.18""}

<table>
<thead>
<tr>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 min</td>
<td>98</td>
<td>0.35 cfs</td>
<td>1,457 cf</td>
</tr>
</tbody>
</table>

### Subcatchment P-4S: Paved Parking
- Runoff Area: 7,833 sf
- Impervious: 80.24%
- Runoff Depth: 5.71""}

<table>
<thead>
<tr>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 min</td>
<td>94</td>
<td>0.95 cfs</td>
<td>3,729 cf</td>
</tr>
</tbody>
</table>

### Subcatchment P-6R: Roof
- Runoff Area: 8,937 sf
- Impervious: 100.00%
- Runoff Depth: 6.18""}

<table>
<thead>
<tr>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 min</td>
<td>98</td>
<td>1.12 cfs</td>
<td>4,604 cf</td>
</tr>
</tbody>
</table>

### Subcatchment P-7: Slab Area - Repaved
- Runoff Area: 30,112 sf
- Impervious: 100.00%
- Runoff Depth: 6.18""}

<table>
<thead>
<tr>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 min</td>
<td>98</td>
<td>3.77 cfs</td>
<td>15,511 cf</td>
</tr>
</tbody>
</table>

### Subcatchment P-7A: S CORNER ALLEY
- Runoff Area: 2,831 sf
- Impervious: 100.00%
- Runoff Depth: 6.18""}

<table>
<thead>
<tr>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 min</td>
<td>98</td>
<td>0.35 cfs</td>
<td>1,458 cf</td>
</tr>
</tbody>
</table>

### Subcatchment P-8: Paved Parking
- Runoff Area: 6,605 sf
- Impervious: 100.00%
- Runoff Depth: 6.18""}

<table>
<thead>
<tr>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 min</td>
<td>98</td>
<td>0.83 cfs</td>
<td>3,402 cf</td>
</tr>
</tbody>
</table>

### Subcatchment P-8R: Roof
- Runoff Area: 4,876 sf
- Impervious: 100.00%
- Runoff Depth: 6.18""}

<table>
<thead>
<tr>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 min</td>
<td>98</td>
<td>0.61 cfs</td>
<td>2,512 cf</td>
</tr>
</tbody>
</table>
Subcatchment P-9: Alley
Runoff Area=1,384 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.17 cfs  713 cf

Subcatchment P-9R: West End Roofs
Runoff Area=7,745 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.97 cfs  3,990 cf

Subcatchment P3N: Northeast Corner
Runoff Area=8,017 sf  71.71% Impervious  Runoff Depth=5.48"
Tc=10.0 min  CN=92  Runoff=0.96 cfs  3,663 cf

Subcatchment P4-N: Paved Parking
Runoff Area=6,257 sf  100.00% Impervious  Runoff Depth=6.18"
Flow Length=260'  Tc=10.0 min  CN=98  Runoff=0.78 cfs  3,223 cf

Subcatchment P4W: Paved Parking
Runoff Area=6,437 sf  100.00% Impervious  Runoff Depth=6.18"
Flow Length=260'  Tc=10.0 min  CN=98  Runoff=0.81 cfs  3,316 cf

Reach ASW1: Overland swale
Avg. Flow Depth=0.28'  Max Vel=1.08 fps  Inflow=5.78 cfs  8,973 cf
n=0.016  L=160.0'  S=0.0012 '/'  Capacity=19.21 cfs  Outflow=5.54 cfs  8,973 cf

Reach ASW2: Overland swale
Avg. Flow Depth=0.35'  Max Vel=0.78 fps  Inflow=5.97 cfs  11,349 cf
n=0.016  L=120.0'  S=0.0005 '/'  Capacity=12.15 cfs  Outflow=5.77 cfs  11,349 cf

Reach ASW3: Overland swale
Avg. Flow Depth=0.20'  Max Vel=0.63 fps  Inflow=2.23 cfs  14,401 cf
n=0.016  L=160.0'  S=0.0006 '/'  Capacity=13.58 cfs  Outflow=1.95 cfs  14,401 cf

Reach STRT: EXISTING STREET
Avg. Flow Depth=0.16'  Max Vel=2.42 fps  Inflow=9.65 cfs  120,430 cf
n=0.016  L=25.0'  S=0.0080 '/'  Capacity=63.73 cfs  Outflow=9.63 cfs  120,430 cf

Reach SW-3: Overland swale
Avg. Flow Depth=0.07'  Max Vel=2.07 fps  Inflow=1.95 cfs  14,401 cf
n=0.016  L=160.0'  S=0.0200 '/'  Capacity=76.85 cfs  Outflow=1.88 cfs  14,401 cf

Reach TD1: Drain for slab to Geopave
Avg. Flow Depth=0.29'  Max Vel=2.86 fps  Inflow=0.83 cfs  3,414 cf
n=0.015  L=50.0'  S=0.0080 '/'  Capacity=4.26 cfs  Outflow=0.82 cfs  3,414 cf

Pond 1P: RetainIt
Peak Elev=15.34'  Storage=5,290 cf  Inflow=6.25 cfs  31,128 cf
Primary=3.73 cfs  Secondary=0.00 cfs  0 cf  Outflow=3.73 cfs  31,128 cf

Pond 1PGP: Geopave Area
Peak Elev=17.67'  Storage=4,176 cf  Inflow=7.43 cfs  30,838 cf
Outflow=6.19 cfs  30,838 cf

Pond 2P: RetainIts
Peak Elev=15.36'  Storage=6,175 cf  Inflow=3.98 cfs  20,710 cf
Primary=1.12 cfs  Secondary=0.00 cfs  0 cf  Outflow=1.12 cfs  20,710 cf

Pond 2PGP1: Geopave
Peak Elev=16.37'  Storage=197 cf  Inflow=0.16 cfs  603 cf
Outflow=0.02 cfs  603 cf

Pond 2PGP2: Geopave
Peak Elev=17.06'  Storage=1,648 cf  Inflow=2.19 cfs  8,919 cf
Outflow=1.55 cfs  8,919 cf
Pond 2PGP3: Geopave

Peak Elev=17.97' Storage=0.021 af Inflow=1.25 cfs 4,955 cf Outflow=1.16 cfs 4,955 cf

Pond 3P: RetainIt

Peak Elev=15.56' Storage=2,982 cf Inflow=0.52 cfs 7,892 cf Primary=0.24 cfs 7,892 cf Secondary=0.00 cfs 0 cf Outflow=0.24 cfs 7,892 cf

Pond 3PGPE: Geopave

Peak Elev=14.29' Storage=37 cf Inflow=0.26 cfs 939 cf Outflow=0.20 cfs 939 cf

Pond 3PGPN: Geopave

Peak Elev=16.89' Storage=1,969 cf Inflow=1.77 cfs 6,953 cf Outflow=0.32 cfs 6,953 cf

Pond 4P: RetainIt

Peak Elev=15.07' Storage=3,330 cf Inflow=1.57 cfs 13,170 cf Primary=0.51 cfs 13,074 cf Secondary=0.00 cfs 0 cf Outflow=0.51 cfs 13,074 cf

Pond 4PGP1: Geopave

Peak Elev=15.62' Storage=986 cf Inflow=1.15 cfs 4,573 cf Outflow=0.30 cfs 4,573 cf

Pond 4PGP2: Geopave

Peak Elev=17.35' Storage=1,638 cf Inflow=1.79 cfs 7,140 cf Outflow=1.08 cfs 7,140 cf

Pond 5P: RetainIt

Peak Elev=15.65' Storage=5,532 cf Inflow=2.88 cfs 17,659 cf Primary=0.70 cfs 17,168 cf Secondary=0.00 cfs 0 cf Outflow=0.70 cfs 17,168 cf

Pond 5PGPN: Geopave

Peak Elev=16.79' Storage=1,255 cf Inflow=1.16 cfs 4,621 cf Outflow=0.21 cfs 4,621 cf

Pond 5PGPS: Geopave

Peak Elev=16.53' Storage=657 cf Inflow=0.64 cfs 2,509 cf Outflow=0.13 cfs 2,509 cf

Pond COMM-2: Storm Grate East Side

Peak Elev=17.51' Storage=428 cf Inflow=2.59 cfs 10,653 cf Primary=0.35 cfs 7,585 cf Secondary=2.04 cfs 3,068 cf Outflow=2.39 cfs 10,653 cf

Pond COMM-1: Grate SW corner Comm Bldg

Peak Elev=17.45' Storage=202 cf Inflow=4.33 cfs 17,820 cf Primary=0.48 cfs 11,936 cf Secondary=3.75 cfs 5,885 cf Outflow=4.23 cfs 17,820 cf

Pond I-5: MH5

Peak Elev=16.89' Inflow=2.55 cfs 10,529 cf Primary=2.55 cfs 10,529 cf Secondary=0.00 cfs 0 cf Outflow=2.55 cfs 10,529 cf

Pond I-6: Alley Inlet

Peak Elev=17.13' Inflow=5.87 cfs 12,062 cf Primary=4.53 cfs 11,350 cf Secondary=1.34 cfs 711 cf Outflow=5.87 cfs 12,062 cf

Pond MH-A1: Storm Manhole Alley

Peak Elev=17.34' Storage=0 cf Inflow=4.91 cfs 20,321 cf Primary=1.76 cfs 7,310 cf Secondary=3.14 cfs 13,010 cf Outflow=4.91 cfs 20,321 cf

Pond MH-A2: Storm Manhole Alley

Peak Elev=16.89' Storage=0 cf Inflow=0.84 cfs 19,929 cf Primary=0.38 cfs 8,970 cf Secondary=0.46 cfs 10,958 cf Outflow=0.84 cfs 19,929 cf

Pond MH-A3: Storm Manhole Alley

Peak Elev=16.57' Storage=0 cf Inflow=1.11 cfs 20,659 cf Primary=0.84 cfs 19,929 cf Secondary=0.27 cfs 730 cf Outflow=1.11 cfs 20,659 cf
Pond MH-A4: Storm MH Comm Site Alley
Peak Elev=17.29’ Storage=0 cf Inflow=1.11 cfs 20,679 cf
Primary=1.11 cfs 20,659 cf Secondary=0.00 cfs 20 cf Outflow=1.11 cfs 20,679 cf

Pond MH-E2: Existing MH-E2
Peak Elev=18.42’ Inflow=10.83 cfs 109,626 cf
Primary=7.82 cfs 106,030 cf Secondary=3.01 cfs 3,596 cf Outflow=10.83 cfs 109,626 cf

Pond MH-E3: Existing MH7-OFF
Peak Elev=12.55’ Inflow=7.82 cfs 106,030 cf
Primary=7.61 cfs 105,841 cf Secondary=0.21 cfs 189 cf Outflow=7.82 cfs 106,030 cf

Pond MH-E4: Woodruff Inlet
Peak Elev=12.57’ Inflow=7.82 cfs 106,030 cf
Primary=7.82 cfs 106,030 cf Secondary=0.00 cfs 0 cf Outflow=7.82 cfs 106,030 cf

Pond PMH1: Proposed MH 1
Peak Elev=13.67’ Inflow=4.81 cfs 51,172 cf
Primary=4.81 cfs 51,172 cf Secondary=0.00 cfs 0 cf Outflow=4.81 cfs 51,172 cf

Pond PMH2: Proposed MH2
Peak Elev=12.81’ Inflow=5.43 cfs 72,137 cf
Primary=5.43 cfs 72,137 cf Secondary=0.00 cfs 0 cf Outflow=5.43 cfs 72,137 cf

Pond PMH3: Proposed MH 3
Peak Elev=12.11’ Inflow=5.43 cfs 72,137 cf
Primary=5.43 cfs 72,137 cf Secondary=0.00 cfs 0 cf Outflow=5.43 cfs 72,137 cf

Link Drive N: North Driveway
Inflow=0.65 cfs 2,720 cf
Primary=0.65 cfs 2,720 cf

Link SSPRING ST: Spring Street
Primary=0.00 cfs 0 cf

Total Runoff Area = 258,813 sf  Runoff Volume = 128,000 cf  Average Runoff Depth = 5.93"
11.81% Pervious = 30,578 sf  88.19% Impervious = 228,235 sf
Subcatchment B-1: Landscape Buffer North  
Runoff Area=930 sf  0.00% Impervious  Runoff Depth=5.79”  
Tc=10.0 min  CN=76  Runoff=0.12 cfs  449 cf

Subcatchment B-2: Riverstone Buffer North  
Runoff Area=1,432 sf  0.00% Impervious  Runoff Depth=6.27”  
Tc=10.0 min  CN=80  Runoff=0.20 cfs  749 cf

Subcatchment B-3: Riverstone Buffer North  
Runoff Area=1,354 sf  0.00% Impervious  Runoff Depth=7.61”  
Tc=10.0 min  CN=91  Runoff=0.22 cfs  858 cf

Subcatchment B-4: Riverstone and Geopave  
Runoff Area=2,575 sf  0.00% Impervious  Runoff Depth=6.52”  
Tc=10.0 min  CN=82  Runoff=0.38 cfs  1,398 cf

Subcatchment B-5: River Stone and  
Runoff Area=3,703 sf  0.00% Impervious  Runoff Depth=6.52”  
Tc=10.0 min  CN=82  Runoff=0.55 cfs  2,011 cf

Subcatchment B-6: Riverstone Buffer and  
Runoff Area=3,261 sf  0.00% Impervious  Runoff Depth=6.64”  
Tc=10.0 min  CN=83  Runoff=0.49 cfs  1,804 cf

Subcatchment B7: Riverstone and Geopave  
Runoff Area=2,955 sf  0.00% Impervious  Runoff Depth=6.40”  
Tc=10.0 min  CN=81  Runoff=0.43 cfs  1,575 cf

Subcatchment ISL 4: River Stone Island  
Runoff Area=306 sf  0.00% Impervious  Runoff Depth=5.79”  
Tc=10.0 min  CN=76  Runoff=0.04 cfs  148 cf

Subcatchment ISL-1: River Stone Island  
Runoff Area=306 sf  0.00% Impervious  Runoff Depth=5.79”  
Tc=10.0 min  CN=76  Runoff=0.04 cfs  148 cf

Subcatchment ISL-2: River Stone Island  
Runoff Area=306 sf  0.00% Impervious  Runoff Depth=5.79”  
Tc=10.0 min  CN=76  Runoff=0.04 cfs  148 cf

Subcatchment ISL-3: River Stone Island  
Runoff Area=2,249 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=0.38 cfs  1,584 cf

Subcatchment OS - 5: OFFSITE  
Runoff Area=20,681 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=3.51 cfs  14,563 cf

Subcatchment OS-6E: COMM EAST  
Runoff Area=13,913 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=2.36 cfs  9,797 cf

Subcatchment OS-6R: COMM ROOF  
Runoff Area=20,681 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=3.51 cfs  14,563 cf

Subcatchment OS-6W: COMM WEST  
Runoff Area=20,681 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=3.51 cfs  14,563 cf

Subcatchment OS1: North Driveway  
Runoff Area=5,281 sf  100.00% Impervious  Runoff Depth=8.45”  
Flow Length=175’  Tc=10.8 min  CN=98  Runoff=0.88 cfs  3,719 cf
Subcatchment P-1: Northwest
Runoff Area=30,547 sf  88.67% Impervious  Runoff Depth=8.21"
   Tc=10.0 min  CN=96  Runoff=5.15 cfs  20,897 cf

Subcatchment P-10A: Alley
Runoff Area=4,612 sf  100.00% Impervious  Runoff Depth=8.45"
   Tc=10.0 min  CN=98  Runoff=0.78 cfs  3,248 cf

Subcatchment P-1R: ROOFS
Runoff Area=1,400 sf  100.00% Impervious  Runoff Depth=8.45"
   Tc=10.0 min  CN=98  Runoff=0.24 cfs  986 cf

Subcatchment P-2M: North Central
Runoff Area=18,201 sf  74.95% Impervious  Runoff Depth=7.73"
   Flow Length=180'  Tc=10.0 min  CN=92  Runoff=3.00 cfs  11,720 cf

Subcatchment P-2NE: North Central
Runoff Area=8,999 sf  88.73% Impervious  Runoff Depth=8.21"
   Tc=10.0 min  CN=96  Runoff=1.52 cfs  6,156 cf

Subcatchment P-2R: Roofs, warehouse
Runoff Area=4,125 sf  100.00% Impervious  Runoff Depth=8.45"
   Tc=10.0 min  CN=98  Runoff=0.70 cfs  2,905 cf

Subcatchment P-2S: Between Buildings
Runoff Area=1,292 sf  77.40% Impervious  Runoff Depth=7.85"
   Flow Length=180'  Tc=10.0 min  CN=93  Runoff=0.21 cfs  845 cf

Subcatchment P-3E: Northeast Corner
Runoff Area=5,025 sf  100.00% Impervious  Runoff Depth=8.45"
   Tc=10.0 min  CN=98  Runoff=0.85 cfs  3,538 cf

Subcatchment P-4R: Roof to 4P
Runoff Area=2,828 sf  100.00% Impervious  Runoff Depth=8.45"
   Tc=10.0 min  CN=98  Runoff=0.48 cfs  1,991 cf

Subcatchment P-4S: Paved Parking
Runoff Area=7,833 sf  80.24% Impervious  Runoff Depth=7.97"
   Flow Length=260'  Tc=10.0 min  CN=94  Runoff=1.31 cfs  5,201 cf

Subcatchment P-6R: Roof
Runoff Area=8,937 sf  100.00% Impervious  Runoff Depth=8.45"
   Tc=10.0 min  CN=98  Runoff=1.52 cfs  6,293 cf

Subcatchment P-7: Slab Area - Repaved
Runoff Area=30,112 sf  100.00% Impervious  Runoff Depth=8.45"
   Tc=10.0 min  CN=98  Runoff=5.11 cfs  21,203 cf

Subcatchment P-7A: S CORNER ALLEY
Runoff Area=2,831 sf  100.00% Impervious  Runoff Depth=8.45"
   Flow Length=160'  Tc=10.0 min  CN=98  Runoff=0.48 cfs  1,993 cf

Subcatchment P-7B: Paved Parking
Runoff Area=6,605 sf  100.00% Impervious  Runoff Depth=8.45"
   Flow Length=260'  Tc=10.0 min  CN=98  Runoff=1.12 cfs  4,651 cf

Subcatchment P-7R: Roof
Runoff Area=6,627 sf  100.00% Impervious  Runoff Depth=8.45"
   Tc=10.0 min  CN=98  Runoff=1.12 cfs  4,666 cf

Subcatchment P-8: Alley
Runoff Area=3,884 sf  100.00% Impervious  Runoff Depth=8.45"
   Tc=10.0 min  CN=98  Runoff=0.66 cfs  2,735 cf

Subcatchment P-8R: Roof
Runoff Area=4,876 sf  100.00% Impervious  Runoff Depth=8.45"
   Tc=10.0 min  CN=98  Runoff=0.83 cfs  3,433 cf
Subcatchment P-9: Alley  
Runoff Area=1,384 sf  
100.00% Impervious  
Runoff Depth=8.45"  
Tc=10.0 min  
CN=98  
Runoff=0.23 cfs  
975 cf

Subcatchment P-9R: West End Roofs  
Runoff Area=7,745 sf  
100.00% Impervious  
Runoff Depth=8.45"  
Tc=10.0 min  
CN=98  
Runoff=1.31 cfs  
5,454 cf

Subcatchment P3N: Northeast Corner  
Runoff Area=8,017 sf  
71.71% Impervious  
Runoff Depth=7.73"  
Tc=10.0 min  
CN=92  
Runoff=1.32 cfs  
5,162 cf

Subcatchment P4-N: Paved Parking  
Flow Length=260'  
Tc=10.0 min  
CN=98  
Runoff=1.06 cfs  
4,406 cf

Subcatchment P4W: Paved Parking  
Flow Length=260'  
Tc=10.0 min  
CN=98  
Runoff=1.09 cfs  
4,533 cf

Reach ASW1: Overland swale  
Avg. Flow Depth=0.32'  
Max Vel=1.17 fps  
Inflow=7.54 cfs  
14,038 cf

Reach ASW2: Overland swale  
Avg. Flow Depth=0.41'  
Max Vel=0.85 fps  
Inflow=7.90 cfs  
17,285 cf

Reach ASW3: Overland swale  
Avg. Flow Depth=0.28'  
Max Vel=0.77 fps  
Inflow=4.21 cfs  
20,519 cf

Reach STRT: EXISTING STREET  
Avg. Flow Depth=0.18'  
Max Vel=2.66 fps  
Inflow=12.26 cfs  
162,027 cf

Reach SW-3: Overland swale  
Avg. Flow Depth=0.11'  
Max Vel=2.62 fps  
Inflow=3.97 cfs  
20,687 cf

Reach TD1: Drain for slab to Geopave  
Avg. Flow Depth=0.36'  
Max Vel=3.12 fps  
Inflow=1.12 cfs  
4,666 cf

Pond 1P: RetainIt  
Peak Elev=17.18'  
Storage=7,551 cf  
Inflow=7.57 cfs  
42,845 cf

Pond 1PGP: Geopave Area  
Peak Elev=17.82'  
Storage=5,378 cf  
Inflow=10.13 cfs  
42,396 cf

Pond 2P: RetainIts  
Peak Elev=16.82'  
Storage=9,194 cf  
Inflow=6.38 cfs  
28,814 cf

Pond 2PGP1: Geopave  
Peak Elev=17.02'  
Storage=254 cf  
Inflow=0.21 cfs  
845 cf

Pond 2PGP2: Geopave  
Peak Elev=17.11'  
Storage=1,881 cf  
Inflow=3.02 cfs  
12,565 cf
<table>
<thead>
<tr>
<th>Pond Name</th>
<th>Type</th>
<th>Peak Elev</th>
<th>Storage</th>
<th>Inflow</th>
<th>Outflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pond 2PGP3: Geopave</td>
<td></td>
<td>17.99'</td>
<td>0.023 af</td>
<td>1.72 cfs</td>
<td>1.63 cfs</td>
</tr>
<tr>
<td>Pond 3P: Retainit</td>
<td></td>
<td>17.04'</td>
<td>3.778 cf</td>
<td>1.42 cfs</td>
<td>1.105 cf</td>
</tr>
<tr>
<td>Pond 3PGPE: Geopave</td>
<td></td>
<td>14.50'</td>
<td>1.30 cf</td>
<td>0.38 cfs</td>
<td>0.398 cf</td>
</tr>
<tr>
<td>Pond 3PGPN: Geopave</td>
<td></td>
<td>17.44'</td>
<td>2.434 cf</td>
<td>0.24 cfs</td>
<td>9.707 cf</td>
</tr>
<tr>
<td>Pond 4P: Retainit</td>
<td></td>
<td>15.75'</td>
<td>4.547 cf</td>
<td>2.97 cfs</td>
<td>18.290 cf</td>
</tr>
<tr>
<td>Pond 4PGP1: Geopave</td>
<td></td>
<td>16.74'</td>
<td>1.711 cf</td>
<td>1.61 cfs</td>
<td>6.417 cf</td>
</tr>
<tr>
<td>Pond 4PGP2: Geopave</td>
<td></td>
<td>17.41'</td>
<td>1.755 cf</td>
<td>2.44 cfs</td>
<td>9.882 cf</td>
</tr>
<tr>
<td>Pond 5P: Retainit</td>
<td></td>
<td>17.68'</td>
<td>7.842 cf</td>
<td>3.79 cfs</td>
<td>14.563 cf</td>
</tr>
<tr>
<td>Pond 5PGPN: Geopave</td>
<td></td>
<td>17.42'</td>
<td>1.576 cf</td>
<td>1.61 cfs</td>
<td>6.455 cf</td>
</tr>
<tr>
<td>Pond 5PGPS: Geopave</td>
<td></td>
<td>17.23'</td>
<td>0.879 cf</td>
<td>0.91 cfs</td>
<td>3.568 cf</td>
</tr>
<tr>
<td>Pond COMM-2: Storm Grate East Side</td>
<td></td>
<td>17.64'</td>
<td>7.05 cf</td>
<td>3.51 cfs</td>
<td>14.563 cf</td>
</tr>
<tr>
<td>Pond COMM-1: Grate SW corner Comm Bldg</td>
<td></td>
<td>17.65'</td>
<td>3.88 cf</td>
<td>5.87 cfs</td>
<td>24.359 cf</td>
</tr>
<tr>
<td>Pond I-5: MH5</td>
<td></td>
<td>17.28'</td>
<td>3.46 cf</td>
<td>14.393 cf</td>
<td></td>
</tr>
<tr>
<td>Pond I-6: Alley Inlet</td>
<td></td>
<td>17.19'</td>
<td>4.69 cf</td>
<td>15.495 cf</td>
<td></td>
</tr>
<tr>
<td>Pond MH-A1: Storm Manhole Alley</td>
<td></td>
<td>17.34'</td>
<td>0.2 cf</td>
<td>5.07 cfs</td>
<td>26.943 cf</td>
</tr>
<tr>
<td>Pond MH-A2: Storm Manhole Alley</td>
<td></td>
<td>16.89'</td>
<td>0.84 cf</td>
<td>13.986 cf</td>
<td></td>
</tr>
<tr>
<td>Pond MH-A3: Storm Manhole Alley</td>
<td></td>
<td>16.58'</td>
<td>1.22 cf</td>
<td>26.468 cf</td>
<td></td>
</tr>
</tbody>
</table>
SSDC PROPOSED SITE PLAN

Type III 24-hr  100-YEAR Rainfall=8.69"

Pond MH-A4: Storm MH Comm Site Alley
Peak Elev=17.29' Storage=0 cf  Inflow=1.22 cfs 26,494 cf
Primary=1.22 cfs 26,468 cf  Secondary=0.00 cfs 26 cf  Outflow=1.22 cfs 26,494 cf

Pond MH-E2: Existing MH-E2
Peak Elev=19.91' Inflow=13.88 cfs 150,993 cf
Primary=8.41 cfs 141,340 cf  Secondary=5.47 cfs 9,653 cf  Outflow=13.88 cfs 150,993 cf

Pond MH-E3: Existing MH7-OFF
Peak Elev=12.61’ Inflow=8.41 cfs 141,340 cf
Primary=7.67 cfs 140,425 cf  Secondary=0.75 cfs 915 cf  Outflow=8.41 cfs 141,340 cf

Pond MH-E4: Woodruff Inlet
Peak Elev=13.25’ Inflow=8.41 cfs 141,340 cf
Primary=8.41 cfs 141,340 cf  Secondary=0.00 cfs 0 cf  Outflow=8.41 cfs 141,340 cf

Pond PMH1: Proposed MH 1
Peak Elev=13.96’ Inflow=7.28 cfs 70,993 cf
Primary=7.28 cfs 70,993 cf  Secondary=0.00 cfs 0 cf  Outflow=7.28 cfs 70,993 cf

Pond PMH2: Proposed MH2
Peak Elev=13.11’ Inflow=8.09 cfs 100,291 cf
Primary=8.09 cfs 100,291 cf  Secondary=0.00 cfs 0 cf  Outflow=8.09 cfs 100,291 cf

Pond PMH3: Proposed MH 3
Peak Elev=12.37’ Inflow=8.09 cfs 100,291 cf
Primary=8.09 cfs 100,291 cf  Secondary=0.00 cfs 0 cf  Outflow=8.09 cfs 100,291 cf

Link Drive N: North Driveway
Inflow=0.88 cfs 3,719 cf
Primary=0.88 cfs 3,719 cf

Link SPRING ST: Spring Street
Primary=0.00 cfs 0 cf

Total Runoff Area = 258,813 sf  Runoff Volume = 176,651 cf  Average Runoff Depth = 8.19"
11.81% Pervious = 30,578 sf  88.19% Impervious = 228,235 sf
Summary for Subcatchment B-1: Landscape Buffer North

Landscape Buffer Infiltrate to Geopave
Buffer is about 10 wide along north side, drains to 1PGP

Runoff = 0.00 cfs @ 1.24 hrs, Volume= 8 cf, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>930</td>
<td>76</td>
<td>Landscape Buffer</td>
</tr>
<tr>
<td>930</td>
<td>100.00%</td>
<td>Pervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc</th>
<th>Length</th>
<th>Slope</th>
<th>Velocity</th>
<th>Capacity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Landscape Buffer</td>
</tr>
</tbody>
</table>

Summary for Subcatchment B-2: Riverstone Buffer North

Riverstone Buffer Infiltrate to Geopave
Buffer is about 10 wide along north side, drain to 2PGP3

Runoff = 0.01 cfs @ 1.21 hrs, Volume= 21 cf, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,432</td>
<td>80</td>
<td>Landscape Buffer Good, HSG D</td>
</tr>
<tr>
<td>1,432</td>
<td>100.00%</td>
<td>Pervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc</th>
<th>Length</th>
<th>Slope</th>
<th>Velocity</th>
<th>Capacity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, River Stone Buffer</td>
</tr>
</tbody>
</table>

Summary for Subcatchment B-3: Riverstone Buffer North

Riverstone Buffer Infiltrate to Geopave
Buffer is about 10 wide along north side, drain to 3PGPN

Runoff = 0.04 cfs @ 1.17 hrs, Volume= 61 cf, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"
### Summary for Subcatchment B-4: Riverstone and Geopave

Riverstone Buffer Infiltrate to Geopave
Buffer is about 10 wide along east side, drain to 3PGPE

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,354</td>
<td>91</td>
<td>River Stone, HSG D</td>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, River Stone Buffer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,073</td>
<td>91</td>
<td>River Stone HSG D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,502</td>
<td>76</td>
<td>Geopave Infiltration 3GPGPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Runoff = 0.03 cfs @ 1.20 hrs, Volume= 47 cf, Depth= 0.22" Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

### Summary for Subcatchment B-5: River Stone and GeoPave East/Mid

Riverstone Buffer east along Property line Drain to GeoPave 4PGP1

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,543</td>
<td>91</td>
<td>River Stone, HSG D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, River Stone Buffer-Geopave</td>
</tr>
<tr>
<td>2,160</td>
<td>76</td>
<td>Geopave Infiltration 4PGP1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,543</td>
<td>91</td>
<td>River Stone, HSG D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,160</td>
<td>76</td>
<td>Geopave Infiltration 4PGP1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3,703 82 Weighted Average 3,703 100.00% Pervious Area

Runoff = 0.04 cfs @ 1.20 hrs, Volume= 68 cf, Depth= 0.22" Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs NJ DEP 2-hr 1 NJWQ Rainfall=1.25"
Summary for Subcatchment B-6: Riverstone Buffer and Geopave East/South

Riverstone Buffer Area drain to Geopave 5PGPN

Runoff = 0.04 cfs @ 1.20 hrs, Volume= 66 cf, Depth= 0.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>* 1,494</td>
<td>91</td>
<td>River Stone HSG D</td>
</tr>
<tr>
<td>* 1,767</td>
<td>76</td>
<td>Geopave Infiltration 5PGP1</td>
</tr>
<tr>
<td>3,261</td>
<td>83</td>
<td>Weighted Average</td>
</tr>
<tr>
<td>3,261</td>
<td>100</td>
<td>100.00% Pervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, River Stone Buffer - Geopave</td>
</tr>
</tbody>
</table>

Summary for Subcatchment B7: Riverstone and Geopave South

Riverston Buffer Area drain to 5PGPS

Runoff = 0.03 cfs @ 1.21 hrs, Volume= 48 cf, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>* 1,022</td>
<td>91</td>
<td>River Stone, HSG D</td>
</tr>
<tr>
<td>* 1,933</td>
<td>76</td>
<td>Geopave Infiltration 5PGP1</td>
</tr>
<tr>
<td>2,955</td>
<td>81</td>
<td>Weighted Average</td>
</tr>
<tr>
<td>2,955</td>
<td>100</td>
<td>100.00% Pervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, River Stone Buffer - Geopave</td>
</tr>
</tbody>
</table>

Summary for Subcatchment ISL 4: River Stone Island

Landscape Buffer draining to east along Property line
About 8’ wide
GeoPave 18’ wides

Runoff = 0.00 cfs @ 1.24 hrs, Volume= 3 cf, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"
Summary for Subcatchment ISL-1: River Stone Island

Landscape Buffer draining to east along Property line
About 8’ wide
GeoPave 18’ wides

Runoff = 0.00 cfs @ 1.24 hrs, Volume= 3 cf, Depth= 0.10”

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25”

Summary for Subcatchment ISL-2: River Stone Island

Landscape Buffer draining to east along Property line
About 8’ wide
GeoPave 18’ wides

Runoff = 0.00 cfs @ 1.24 hrs, Volume= 3 cf, Depth= 0.10”

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25”
Summary for Subcatchment ISL-3: River Stone Island

Landscape Buffer draining to east along Property line
About 8' wide
GeoPave 18' widen

Runoff = 0.00 cfs @ 1.24 hrs, Volume= 3 cf, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>306</td>
<td>76</td>
<td>River Stone Island</td>
</tr>
<tr>
<td>306</td>
<td>100.00%</td>
<td>Pervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, River Stone Island</td>
</tr>
</tbody>
</table>

Summary for Subcatchment OS - 5: OFFSITE

South Drvieway to Alley drains to Spring Street, paved

Runoff = 0.13 cfs @ 1.15 hrs, Volume= 194 cf, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,249</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>2,249</td>
<td>100.00%</td>
<td>Impervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Paved driveway alley</td>
</tr>
</tbody>
</table>

Summary for Subcatchment OS-6E: COMM EAST

Commercial Lot East Side to Inlet East side of bldg

Runoff = 1.22 cfs @ 1.15 hrs, Volume= 1,783 cf, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"
### Summary for Subcatchment OS-6R: COMM ROOF

**Commercial Bldg Roof**

Runoff = 0.82 cfs @ 1.15 hrs, Volume = 1,200 cf, Depth = 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span = 0.00-200.00 hrs, dt = 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall = 1.25"

### Summary for Subcatchment OS-6W: COMM-WEST

**Commercial Lot west side drainage to inlet on SW corner of Comm Bldg**

Runoff = 1.22 cfs @ 1.15 hrs, Volume = 1,783 cf, Depth = 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span = 0.00-200.00 hrs, dt = 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall = 1.25"

### Summary for Subcatchment OS1: North Driveway

Surface flow to Spring St. no known inlets

Runoff = 0.31 cfs @ 1.15 hrs, Volume = 455 cf, Depth = 1.03"
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,281</td>
<td>98</td>
<td>North Driveway Paved HSG D</td>
</tr>
<tr>
<td>5,281</td>
<td></td>
<td>100.00% Impervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.9</td>
<td>100</td>
<td>0.0001</td>
<td>0.17</td>
<td></td>
<td><strong>Sheet Flow, Paved</strong> Smooth surfaces n= 0.011 P2= 3.33&quot;</td>
</tr>
<tr>
<td>0.9</td>
<td>75</td>
<td>0.0050</td>
<td>1.44</td>
<td></td>
<td><strong>Shallow Concentrated Flow, Paved</strong> Paved Kv= 20.3 fps</td>
</tr>
</tbody>
</table>

10.8 175 Total

**Summary for Subcatchment P-1: Northwest**

Slab drains to Pavement surface

Runoff = 1.56 cfs @ 1.15 hrs, Volume= 2,188 cf, Depth= 0.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>27,085</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>3,462</td>
<td>76</td>
<td>Geopave infiltration area</td>
</tr>
<tr>
<td>30,547</td>
<td>96</td>
<td>Weighted Average</td>
</tr>
<tr>
<td>3,462</td>
<td></td>
<td>11.33% Pervious Area</td>
</tr>
<tr>
<td>27,085</td>
<td></td>
<td>88.67% Impervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Direct Entry, Pavement area and Geopave</strong></td>
</tr>
</tbody>
</table>

**Summary for Subcatchment P-10A: Alley**

Alley flows to 5PGPS

Runoff = 0.27 cfs @ 1.15 hrs, Volume= 398 cf, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,612</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>4,612</td>
<td></td>
<td>100.00% Impervious Area</td>
</tr>
</tbody>
</table>
**Summary for Subcatchment P-1R: ROOFS**

Runoff $= 0.08$ cfs @ 1.15 hrs, Volume$= 121$ cf, Depth$= 1.03"$

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,400</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
<tr>
<td>1,400</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

**Summary for Subcatchment P-2M: North Central**

Parking lot west central, and Geopave area 2PGPS

Runoff $= 0.66$ cfs @ 1.16 hrs, Volume$= 903$ cf, Depth$= 0.60"$

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>13,641</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>4,560</td>
<td>76</td>
<td>Geopave Infiltration Area 2pgps</td>
</tr>
<tr>
<td>* 18,201</td>
<td>92</td>
<td>Weighted Average</td>
</tr>
<tr>
<td>4,560</td>
<td>25.05% Pervious Area</td>
<td></td>
</tr>
<tr>
<td>13,641</td>
<td>74.95% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

**Tc Length Slope Velocity Capacity Description**

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.4</td>
<td>100</td>
<td>0.0003</td>
<td>0.26</td>
<td></td>
<td><strong>Sheet Flow, Slab</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Smooth surfaces n= 0.011 P2= 3.33&quot;</td>
</tr>
<tr>
<td>1.9</td>
<td>40</td>
<td>0.0003</td>
<td>0.35</td>
<td></td>
<td><strong>Shallow Concentrated Flow, Slab</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paved Kv= 20.3 fps</td>
</tr>
<tr>
<td>0.4</td>
<td>40</td>
<td>0.0080</td>
<td>1.82</td>
<td></td>
<td><strong>Shallow Concentrated Flow, Pavement</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paved Kv= 20.3 fps</td>
</tr>
<tr>
<td>8.7</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
<td>Total, Increased to minimum Tc = 10.0 min</td>
</tr>
</tbody>
</table>
### Summary for Subcatchment P-2NE: North Central

North Central Parking and Geopave area

Runoff = 0.46 cfs @ 1.15 hrs, Volume = 645 cf, Depth = 0.86"  

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs  
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7,985</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>1,014</td>
<td>76</td>
<td>Geopave Infiltration Area 2pgp3</td>
</tr>
<tr>
<td>8,999</td>
<td>96</td>
<td>Weighted Average</td>
</tr>
<tr>
<td>1,014</td>
<td></td>
<td>11.27% Pervious Area</td>
</tr>
<tr>
<td>7,985</td>
<td></td>
<td>88.73% Impervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc</th>
<th>Length</th>
<th>Slope</th>
<th>Velocity</th>
<th>Capacity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Paved Parking</td>
</tr>
</tbody>
</table>

### Summary for Subcatchment P-2R: Roofs, warehouse

Runoff = 0.24 cfs @ 1.15 hrs, Volume = 356 cf, Depth = 1.03"  

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs  
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,125</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
<tr>
<td>4,125</td>
<td></td>
<td>100.00% Impervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc</th>
<th>Length</th>
<th>Slope</th>
<th>Velocity</th>
<th>Capacity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Existing Roofs</td>
</tr>
</tbody>
</table>

### Summary for Subcatchment P-2S: Between Buildings

Parking lot west central, and Geopave area 2PGPS

Runoff = 0.05 cfs @ 1.16 hrs, Volume = 70 cf, Depth = 0.65"  

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs  
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"
**Summary for Subcatchment P-3E: Northeast Corner**

Runoff = 0.30 cfs @ 1.15 hrs, Volume = 433 cf, Depth = 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

**Summary for Subcatchment P-4R: Roof to 4P**

Runoff = 0.17 cfs @ 1.15 hrs, Volume = 244 cf, Depth = 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Summary for Subcatchment P-4S: Paved Parking

Combination of slabs and pavement

Runoff = 0.34 cfs @ 1.16 hrs, Volume = 467 cf, Depth = 0.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span = 0.00-200.00 hrs, dt = 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>* 6,285</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>+ 1,548</td>
<td>76</td>
<td>Geopave Infiltration 4PGP2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
<td>100</td>
<td>0.0030</td>
<td>0.66</td>
<td></td>
<td>Sheet Flow, Slab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Smooth surfaces n = 0.011 P2 = 3.33&quot;</td>
</tr>
<tr>
<td>1.6</td>
<td>110</td>
<td>0.0030</td>
<td>1.11</td>
<td></td>
<td>Shallow Concentrated Flow, Slab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paved Kv = 20.3 fps</td>
</tr>
<tr>
<td>0.5</td>
<td>50</td>
<td>0.0070</td>
<td>1.70</td>
<td></td>
<td>Shallow Concentrated Flow, Paved</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paved Kv = 20.3 fps</td>
</tr>
<tr>
<td>4.6</td>
<td>260</td>
<td></td>
<td></td>
<td></td>
<td>Total, Increased to minimum Tc = 10.0 min</td>
</tr>
</tbody>
</table>

Summary for Subcatchment P-6R: Roof

Roof to 5P

Runoff = 0.53 cfs @ 1.15 hrs, Volume = 770 cf, Depth = 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span = 0.00-200.00 hrs, dt = 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8,937</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Roof</td>
</tr>
</tbody>
</table>
Summary for Subcatchment P-7: Slab Area - Repaved

Reggrade paving of slabs to drain to 1P area

Runoff = 1.78 cfs @ 1.15 hrs, Volume= 2,596 cf, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>* 30,112</td>
<td>98</td>
<td>Paved parking, and slab HSG D</td>
</tr>
<tr>
<td>30,112</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Slabs to GeoPave north</td>
</tr>
</tbody>
</table>

Summary for Subcatchment P-7A: S CORNER ALLEY

Alley East to 5PGPS

Runoff = 0.17 cfs @ 1.15 hrs, Volume= 244 cf, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,831</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>2,831</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
<td>100</td>
<td>0.0030</td>
<td>0.66</td>
<td></td>
<td>Sheet Flow, Slab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Smooth surfaces n= 0.011 P2= 3.33&quot;</td>
</tr>
<tr>
<td>0.4</td>
<td>30</td>
<td>0.0030</td>
<td>1.11</td>
<td></td>
<td>Shallow Concentrated Flow, Slab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paved Kv= 20.3 fps</td>
</tr>
<tr>
<td>0.2</td>
<td>30</td>
<td>0.0100</td>
<td>2.03</td>
<td></td>
<td>Shallow Concentrated Flow, Paved</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paved Kv= 20.3 fps</td>
</tr>
<tr>
<td>3.1</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
<td>Total, Increased to minimum Tc = 10.0 min</td>
</tr>
</tbody>
</table>

Summary for Subcatchment P-7B: Paved Parking

Combination of slabs and pavement

Runoff = 0.39 cfs @ 1.15 hrs, Volume= 569 cf, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"
### Summary for Subcatchment P-7R: Roof

Roof to 5P

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,627</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
</tbody>
</table>

**Runoff**

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

NJ DEP 2-hr  1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,627</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
</tbody>
</table>

**Runoff**

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,627</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
</tbody>
</table>

**Runoff**

<table>
<thead>
<tr>
<th>Tc</th>
<th>Length</th>
<th>Slope</th>
<th>Velocity</th>
<th>Capacity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Roof</td>
</tr>
</tbody>
</table>

### Summary for Subcatchment P-8: Alley

Alley flows to 5PGPS

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,884</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
</tbody>
</table>

**Runoff**

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

NJ DEP 2-hr  1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,884</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
</tbody>
</table>

**Runoff**

<table>
<thead>
<tr>
<th>Tc</th>
<th>Length</th>
<th>Slope</th>
<th>Velocity</th>
<th>Capacity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Alley Mid</td>
</tr>
</tbody>
</table>
Summary for Subcatchment P-8R: Roof

Roof to 5P

Runoff = 0.29 cfs @ 1.15 hrs, Volume= 420 cf, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,876</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
<tr>
<td>4,876</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

Tc Length Slope Velocity Capacity Description
<table>
<thead>
<tr>
<th>(min)</th>
<th>(feet)</th>
<th>(ft/ft)</th>
<th>(ft/sec)</th>
<th>(cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Roof</td>
</tr>
</tbody>
</table>

Summary for Subcatchment P-9: Alley

Alley flows to 5PGPS

Runoff = 0.08 cfs @ 1.15 hrs, Volume= 119 cf, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,384</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>1,384</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

Tc Length Slope Velocity Capacity Description
<table>
<thead>
<tr>
<th>(min)</th>
<th>(feet)</th>
<th>(ft/ft)</th>
<th>(ft/sec)</th>
<th>(cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Alley Mid</td>
</tr>
</tbody>
</table>

Summary for Subcatchment P-9R: West End Roofs

West end of existing roofs, drain to 2P

Runoff = 0.46 cfs @ 1.15 hrs, Volume= 668 cf, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7,745</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>7,745</td>
<td>100.00% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>
Summary for Subcatchment P3N: Northeast Corner

Runoff = 0.29 cfs @ 1.16 hrs, Volume= 398 cf, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>5,749</td>
<td>98 Paved parking, HSG D</td>
</tr>
<tr>
<td>*</td>
<td>2,268</td>
<td>76 Geopave Infiltration Area</td>
</tr>
<tr>
<td></td>
<td>8,017</td>
<td>92 Weighted Average</td>
</tr>
<tr>
<td></td>
<td>2,268</td>
<td>28.29% Pervious Area</td>
</tr>
<tr>
<td></td>
<td>5,749</td>
<td>71.71% Impervious Area</td>
</tr>
</tbody>
</table>

Summary for Subcatchment P4-N: Paved Parking

Combination of slabs and pavement

Runoff = 0.37 cfs @ 1.15 hrs, Volume= 539 cf, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>6,257</td>
<td>98 Paved parking, HSG D</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc (min)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>Velocity (ft/sec)</th>
<th>Capacity (cfs)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
<td>100</td>
<td>0.0030</td>
<td>0.66</td>
<td></td>
<td>Sheet Flow, Slab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Smooth surfaces n= 0.011</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>P2= 3.33&quot;</td>
</tr>
<tr>
<td>1.6</td>
<td>110</td>
<td>0.0030</td>
<td>1.11</td>
<td></td>
<td>Shallow Concentrated Flow, Slab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paved Kv= 20.3 fps</td>
</tr>
<tr>
<td>0.5</td>
<td>50</td>
<td>0.0070</td>
<td>1.70</td>
<td></td>
<td>Shallow Concentrated Flow, Paved</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paved Kv= 20.3 fps</td>
</tr>
<tr>
<td>4.6</td>
<td>260</td>
<td></td>
<td></td>
<td></td>
<td>Total, Increased to minimum Tc = 10.0 min</td>
</tr>
</tbody>
</table>
Summary for Subcatchment P4W: Paved Parking

Combination of slabs and pavement

Runoff = 0.38 cfs @ 1.15 hrs, Volume = 555 cf, Depth = 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span = 0.00-200.00 hrs, dt = 0.05 hrs
NJ DEP 2-hr 1 NJWQ Rainfall = 1.25"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,437</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100.00% Impervious Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tc</th>
<th>Length</th>
<th>Slope</th>
<th>Velocity</th>
<th>Capacity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
<td>100</td>
<td>0.0030</td>
<td>0.66</td>
<td></td>
<td>Sheet Flow, Slab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Smooth surfaces n = 0.011 P2 = 3.33&quot;</td>
</tr>
<tr>
<td>1.6</td>
<td>110</td>
<td>0.0030</td>
<td>1.11</td>
<td></td>
<td>Shallow Concentrated Flow, Slab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paved Kv = 20.3 fps</td>
</tr>
<tr>
<td>0.5</td>
<td>50</td>
<td>0.0070</td>
<td>1.70</td>
<td></td>
<td>Shallow Concentrated Flow, Paved</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paved Kv = 20.3 fps</td>
</tr>
</tbody>
</table>

4.6 260 Total, Increased to minimum Tc = 10.0 min

Summary for Reach ASW1: Overland swale

Inflow = 2.35 cfs @ 1.17 hrs, Volume = 1,826 cf
Outflow = 2.06 cfs @ 1.27 hrs, Volume = 1,826 cf, Atten = 12%, Lag = 6.0 min

Routing by Stor-Ind+Trans method, Time Span = 0.00-200.00 hrs, dt = 0.05 hrs
Max. Velocity = 0.82 fps, Min. Travel Time = 3.3 min
Avg. Velocity = 0.16 fps, Avg. Travel Time = 16.6 min

Peak Storage = 408 cf @ 1.21 hrs
Average Depth at Peak Storage = 0.17"
Bank-Full Depth = 0.50' Flow Area = 12.8 sf, Capacity = 19.21 cfs

10.00' x 0.50' deep channel, n = 0.016 Asphalt, rough
Side Slope Z-value = 31.0 '/' Top Width = 41.00'
Length = 160.0' Slope = 0.0012 '/'
Inlet Invert = 17.30', Outlet Invert = 17.10'
Summary for Reach ASW2: Overland swale

Inflow Area = 4,612 sf, 100.00% Impervious, Inflow Depth = 5.78" for 1 NJWQ event
Inflow = 2.23 cfs @ 1.26 hrs, Volume= 2,223 cf
Outflow = 2.01 cfs @ 1.36 hrs, Volume= 2,223 cf, Atten= 10%, Lag= 6.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.59 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 0.11 fps, Avg. Travel Time= 17.7 min

Peak Storage= 416 cf @ 1.31 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 0.50’ Flow Area= 12.8 sf, Capacity= 12.15 cfs

10.00’ x 0.50’ deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 31.0 '/' Top Width= 41.00'
Length= 120.0’ Slope= 0.0005 '/'
Inlet Invert= 17.10’, Outlet Invert= 17.04'

‡

Summary for Reach ASW3: Overland swale

Inflow Area = 3,884 sf, 100.00% Impervious, Inflow Depth = 6.55” for 1 NJWQ event
Inflow = 0.81 cfs @ 1.15 hrs, Volume= 2,122 cf
Outflow = 0.75 cfs @ 1.30 hrs, Volume= 2,122 cf, Atten= 7%, Lag= 9.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.47 fps, Min. Travel Time= 5.6 min
Avg. Velocity = 0.14 fps, Avg. Travel Time= 18.9 min

Peak Storage= 255 cf @ 1.21 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 0.50’ Flow Area= 12.8 sf, Capacity= 13.58 cfs

10.00’ x 0.50’ deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 31.0 '/' Top Width= 41.00'
Length= 160.0’ Slope= 0.0006 '/'
Inlet Invert= 17.70’, Outlet Invert= 17.60'

‡
Summary for Reach STRT: EXISTING STREET

Inflow Area = 253,532 sf, 87.94% Impervious, Inflow Depth = 0.84" for 1 NJWQ event
Inflow = 4.05 cfs @ 1.37 hrs, Volume = 17,658 cf
Outflow = 4.01 cfs @ 1.38 hrs, Volume = 17,658 cf, Atten = 1%, Lag = 0.5 min

Routing by Stor-Ind+Trans method, Time Span = 0.00-200.00 hrs, dt = 0.05 hrs
Max. Velocity = 1.71 fps, Min. Travel Time = 0.2 min
Avg. Velocity = 0.29 fps, Avg. Travel Time = 1.4 min

Peak Storage = 59 cf @ 1.37 hrs
Average Depth at Peak Storage = 0.09'
Bank-Full Depth = 0.50' Flow Area = 12.5 sf, Capacity = 63.73 cfs

25.00' x 0.50' deep channel, n = 0.016 Asphalt, rough
Length = 25.0' Slope = 0.0080 '/'
Inlet Invert = 14.00', Outlet Invert = 13.80'

---

Summary for Reach SW-3: Overland swale

Existing surface swale along south property line

Inflow Area = 3,884 sf, 100.00% Impervious, Inflow Depth = 6.55" for 1 NJWQ event
Inflow = 0.75 cfs @ 1.30 hrs, Volume = 2,122 cf
Outflow = 0.74 cfs @ 1.36 hrs, Volume = 2,122 cf, Atten = 1%, Lag = 3.1 min

Routing by Stor-Ind+Trans method, Time Span = 0.00-200.00 hrs, dt = 0.05 hrs
Max. Velocity = 1.51 fps, Min. Travel Time = 1.8 min
Avg. Velocity = 0.59 fps, Avg. Travel Time = 4.5 min

Peak Storage = 79 cf @ 1.32 hrs
Average Depth at Peak Storage = 0.04'
Bank-Full Depth = 0.50' Flow Area = 12.8 sf, Capacity = 76.85 cfs

10.00' x 0.50' deep channel, n = 0.016 Asphalt, rough
Side Slope Z-value = 31.0 '/' Top Width = 41.00'
Length = 160.0' Slope = 0.0200 '/'
Inlet Invert = 17.70', Outlet Invert = 14.50'
Summary for Reach TD1: Drain for slab to Geopave

Inflow Area = 30,112 sf, 100.00% Impervious, Inflow Depth = 1.03" for 1 NJWQ event  
Inflow = 1.78 cfs @ 1.15 hrs, Volume= 2,596 cf  
Outflow = 1.71 cfs @ 1.19 hrs, Volume= 2,596 cf, Atten= 4%, Lag= 2.5 min  

Routing by Stor-Ind+Trans method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs  
Max. Velocity= 2.38 fps, Min. Travel Time= 1.4 min  
Avg. Velocity = 0.78 fps, Avg. Travel Time= 4.3 min  

Peak Storage= 148 cf @ 1.16 hrs  
Average Depth at Peak Storage= 0.37'  
Bank-Full Depth= 0.90' Flow Area= 1.8 sf, Capacity= 6.25 cfs  

2.00' x 0.90' deep channel, n= 0.013 Concrete, trowel finish  
Length= 200.0' Slope= 0.0025 '/'  
Inlet Invert= 16.50', Outlet Invert= 16.00'

Summary for Reach TD2: East End of Buildings

Drain to I-5  

Inflow Area = 6,627 sf, 100.00% Impervious, Inflow Depth = 1.03" for 1 NJWQ event  
Inflow = 0.39 cfs @ 1.15 hrs, Volume= 571 cf  
Outflow = 0.39 cfs @ 1.16 hrs, Volume= 571 cf, Atten= 1%, Lag= 0.6 min  

Routing by Stor-Ind+Trans method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs  
Max. Velocity= 2.26 fps, Min. Travel Time= 0.4 min  
Avg. Velocity = 1.02 fps, Avg. Travel Time= 0.8 min  

Peak Storage= 9 cf @ 1.15 hrs  
Average Depth at Peak Storage= 0.17'  
Bank-Full Depth= 1.00' Flow Area= 1.0 sf, Capacity= 4.26 cfs
1.00' x 1.00' deep channel, n= 0.015  Concrete, trowel finish
Length= 50.0'  Slope= 0.0080 '/'
Inlet Invert= 16.80', Outlet Invert= 16.40'

Summary for Pond 1P: RetainIt

Inflow Area = 62,201 sf, 91.96% Impervious, Inflow Depth = 0.93” for 1 NJWQ event
Inflow = 0.95 cfs @ 1.40 hrs, Volume= 4,798 cf
Outflow = 0.50 cfs @ 1.65 hrs, Volume= 4,798 cf, Atten= 47%, Lag= 14.8 min
Primary = 0.50 cfs @ 1.65 hrs, Volume= 4,798 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 13.86' @ 1.65 hrs  Surf.Area= 3,328 sf  Storage= 1,047 cf

Plug-Flow detention time= 49.3 min calculated for 4,797 cf (100% of inflow)
Center-of-Mass det. time= 49.6 min ( 175.6 - 126.0 )

Volume Invert Avail.Storage Storage Description
#1A 13.50' 0 cf 32.00'W x 104.00'L x 3.17'H Field A
#2A 13.50' 7,191 cf retain_it retain_it 2.5' x 52 Inside #1
Inside= 84.0"W x 30.0"H => 17.56 sf x 8.00' = 140.4 cf
Outside= 96.0"W x 38.0"H => 25.33 sf x 8.00' = 202.7 cf
4 Rows adjusted for 112.2 cf perimeter wall
#3 16.67' 1,117 cf 30.00'D x 1.58'H Riser
#4 18.25' 1,500 cf Custom Stage Data (Prismatic) Listed below (Recalc)

9,808 cf Total Available Storage

Storage Group A created with Chamber Wizard

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>18.25</td>
<td>4,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18.50</td>
<td>8,000</td>
<td>1,500</td>
<td>1,500</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices
#1 Primary 13.40' 24.0" Round HDPE
L= 248.0' Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 13.40' / 12.70'  S= 0.0028 '/'  Cc= 0.900
n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf

#2 Device 1 13.50' 11.0" Vert. Orifice/Grate C= 0.600

#3 Secondary 18.25' 1.0" x 4.0" Horiz. E TYPE STRM FLW X 4.00 columns
X 14 rows C= 0.600 in 48.0" x 48.0" Grate (10% open area)
**Summary for Pond 1PGP: Geopave Area**

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>17.20'</td>
<td>208 cf</td>
<td>Geopave units (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td>#2</td>
<td>16.60'</td>
<td>623 cf</td>
<td>Crushed gravel 3/8&quot;-1&quot; (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td>#3</td>
<td>14.10'</td>
<td>2,520 cf</td>
<td>32.00'W x 105.00'L x 2.50'H TSS basin unit</td>
</tr>
<tr>
<td>#4</td>
<td>17.50'</td>
<td>3,683 cf</td>
<td>Parking Area (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Surf.Area</th>
<th>Inc.Store</th>
<th>Cum.Store</th>
</tr>
</thead>
<tbody>
<tr>
<td>(feet)</td>
<td>(sq-ft)</td>
<td>(cubic-feet)</td>
<td>(cubic-feet)</td>
</tr>
<tr>
<td>17.20</td>
<td>3,462</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.40</td>
<td>3,462</td>
<td>692</td>
<td>692</td>
</tr>
<tr>
<td>16.60</td>
<td>3,462</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.20</td>
<td>3,460</td>
<td>2,077</td>
<td>2,077</td>
</tr>
<tr>
<td>17.50</td>
<td>3,462</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.75</td>
<td>8,000</td>
<td>1,433</td>
<td>1,433</td>
</tr>
<tr>
<td>18.00</td>
<td>10,000</td>
<td>2,250</td>
<td>3,683</td>
</tr>
</tbody>
</table>
Device Routing Invert Outlet Devices

#1 Primary 13.70' 12.0" Round 12" PVC
   L= 10.0' RCP, groove end w/headwall, Ke= 0.200
   Inlet / Outlet Invert= 13.70' / 13.60'  S= 0.0100 '/'  Cc= 0.900
   n= 0.012, Flow Area= 0.79 sf

#2 Device 1 13.80' 4.0" Round 4" PVC drains X 4.00
   L= 20.0' RCP, sq.cut end projecting, Ke= 0.500
   Inlet / Outlet Invert= 13.80' / 13.70'  S= 0.0050 '/'  Cc= 0.900
   n= 0.012, Flow Area= 0.09 sf

#3 Device 2 14.10' 6.000 in/hr Exfiltration over Surface area

#4 Device 1 17.40' 1.0" x 4.0" Horiz. E-Type Grate X 4.00 columns
   X 14 rows C= 0.600 in 48.0" x 48.0" Grate (10% open area)
   Limited to weir flow at low heads

Primary OutFlow Max=0.95 cfs @ 1.43 hrs  HW=16.64'  (Free Discharge)
   1=12" PVC (Passes 0.95 cfs of 7.38 cfs potential flow)
   2=4" PVC drains (Passes 0.95 cfs of 2.32 cfs potential flow)
   3=Exfiltration (Exfiltration Controls 0.95 cfs)
   4=E-Type Grate (Controls 0.00 cfs)

Summary for Pond 2P: RetainIts

Inflow Area = 43,194 sf, 83.10% Impervious, Inflow Depth = 0.77" for 1 NJWQ event

Inflow = 1.08 cfs @ 1.15 hrs, Volume= 2,783 cf
Outflow = 0.27 cfs @ 2.15 hrs, Volume= 2,117 cf, Atten= 75%, Lag= 60.5 min
Primary = 0.27 cfs @ 2.15 hrs, Volume= 2,117 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 14.03' @ 2.15 hrs Surf.Area= 3,840 sf Storage= 1,774 cf

Plug-Flow detention time= 153.7 min calculated for 2,117 cf (76% of inflow)
Center-of-Mass det. time= 138.3 min (233.1 - 94.8 )

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>16.50'</td>
<td>1,250 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td>#2A</td>
<td>13.50'</td>
<td>0 cf</td>
<td>80.00'W x 48.00'L x 3.17'H Field A</td>
</tr>
<tr>
<td>#3A</td>
<td>13.50'</td>
<td>8,321 cf</td>
<td>12,160 cf Overall - 12,160 cf Embedded = 0 cf x 0.0% Voids</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>retain_it retain_it 2.5' x 60 Inside #2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inside= 84.0&quot;W x 30.0&quot;H =&gt; 17.56 sf x 8.00'L = 140.4 cf</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 Rows adjusted for 105.6 cf perimeter wall</td>
</tr>
<tr>
<td>#4</td>
<td>16.20'</td>
<td>353 cf</td>
<td>30.00'D x 0.50'H Riser</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9,924 cf Total Available Storage</td>
</tr>
</tbody>
</table>

Storage Group A created with Chamber Wizard
Device Routing Invert Outlet Devices

#1 Primary 13.50' 12.0" Round HDPE DUAL WALL
L= 10.0’ Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 13.50’ / 13.12’ S= 0.0380 ‘/ Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

#2 Device 1 13.70' 6.0" Vert. Orifice/Grate C= 0.600

#3 Secondary 17.50' 1.0" x 4.0" Horiz. MANHOLE GRATE X 4.00 columns
X 8 rows C= 0.600 in 24.0" Grate (28% open area)
Limited to weir flow at low heads

Primary OutFlow Max=0.27 cfs @ 2.15 hrs HW=14.03’ (Free Discharge)
1=HDPE DUAL WALL (Passes 0.27 cfs of 1.06 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.27 cfs @ 1.96 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.50’ (Free Discharge)
3=MANHOLE GRATE ( Controls 0.00 cfs)

Summary for Pond 2PGP1: Geopave

2PGP1 outlets to 2PGP2

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>14.10'</td>
<td>270 cf</td>
<td>14.50'W x 20.00’L x 3.10’H Geopave Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>899 cf Overall x 30.0% Voids</td>
</tr>
<tr>
<td>#2</td>
<td>17.20'</td>
<td>104 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>373 cf Total Available Storage</td>
</tr>
</tbody>
</table>

Elevation Surf.Area Inc.Store Cum.Store
(feet) (sq-ft) (cubic-feet) (cubic-feet)
17.20 290 0 0
17.50 400 104 104

Device Routing Invert Outlet Devices

#1 Primary 13.80' 6.0" Round 6" PVC X 4.00
L= 65.0’ RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 13.80’ / 13.70’ S= 0.0015 ‘/ Cc= 0.900
n= 0.012, Flow Area= 0.20 sf

#2 Device 1 13.80' 4.0" Round 4" PVC drains X 2.00
L = 10.0’ RCP, sq.cut end projecting, Ke = 0.500
Inlet / Outlet Invert = 13.80’ / 13.70’ S = 0.0100 ’/’ Cc = 0.900
n = 0.012 Corrugated PP, smooth interior, Flow Area = 0.09 sf

#3 Device 2 14.10’ 3.000 in/hr Exfiltration over Surface area
#4 Device 1 17.00’ 1.0” x 4.0” Horiz. E-Type Grate X 4.00 columns
X 14 rows C = 0.600 in 48.0” x 48.0” Grate (10% open area)
Limited to weir flow at low heads

Summary for Pond 2PGP2: Geopave

Geopave area receives pavement DA P-2
Discharges to 2P

Inflow Area = 19,493 sf, 75.11% Impervious, Inflow Depth = 0.60” for 1 NJWQ event
Inflow = 0.68 cfs @ 1.16 hrs, Volume= 973 cf
Outflow = 0.22 cfs @ 1.05 hrs, Volume= 973 cf, Atten= 67%, Lag= 0.0 min
Primary = 0.22 cfs @ 1.05 hrs, Volume= 973 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 14.81’ @ 1.41 hrs  Surf.Area= 1,600 sf  Storage= 341 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 15.4 min (95.4 - 80.0)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>17.00’</td>
<td>2,384 cf</td>
<td>Custom Stage Data (Prismatic) listed below (Recalc)</td>
</tr>
<tr>
<td>#2</td>
<td>14.10’</td>
<td>1,392 cf</td>
<td>40.00’W x 40.00’L x 2.90’H TSS Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4,640 cf Overall x 30.0% Voids</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3,776 cf</td>
<td>Total Available Storage</td>
</tr>
</tbody>
</table>

Elevation Surf.Area Inc.Store Cum.Store
<table>
<thead>
<tr>
<th>(feet)</th>
<th>(sq-ft)</th>
<th>(cubic-feet)</th>
<th>(cubic-feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.00</td>
<td>4,630</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.40</td>
<td>4,630</td>
<td>1,852</td>
<td>1,852</td>
</tr>
<tr>
<td>17.50</td>
<td>6,000</td>
<td>532</td>
<td>2,384</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.65’</td>
<td>12.0” Round 12” PVC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L = 18.0’ RCP, groove end w/headwall, Ke = 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert = 13.65’ / 13.60’ S = 0.0028 ’/’ Cc = 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n = 0.012, Flow Area= 0.79 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Device 1</td>
<td>13.80’</td>
<td>4.0” Round 4” PVC drains X 6.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L = 20.0” RCP, sq.cut end projecting, Ke = 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert = 13.80’ / 13.65’ S = 0.0075 ’/’ Cc = 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n = 0.012, Flow Area= 0.09 sf</td>
</tr>
</tbody>
</table>
**Summary for Pond 2PGP3: Geopave**

Receives DA B-1 North edge of lot, including river rock edge

---

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>15.00'</td>
<td>12.0&quot; Round 12&quot; PVC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 78.0’ RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 15.00’ / 14.60’ S= 0.0051 ’/’ Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.79 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Device 1</td>
<td>15.10'</td>
<td>4.0&quot; Round 4&quot; PVC drains X 2.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 20.0’ RCP, sq.cut end projecting, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 15.10’ / 13.70’ S= 0.0700 ’/’ Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.09 sf</td>
</tr>
<tr>
<td>#3</td>
<td>Device 2</td>
<td>15.30'</td>
<td>3.000 in/hr Exfiltration over Surface area</td>
</tr>
<tr>
<td>#4</td>
<td>Device 1</td>
<td>17.90'</td>
<td>1.0&quot; x 4.0&quot; Horiz. E-Type Grate X 4.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 12 rows C= 0.600 in 48.0&quot; x 48.0&quot; Grate (8% open area)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>
Primary OutFlow Max=0.07 cfs @ 1.00 hrs HW=15.36’ (Free Discharge)
1=12” PVC (Passes 0.07 cfs of 0.42 cfs potential flow)
2=4” PVC drains (Passes 0.07 cfs of 0.25 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.07 cfs)
4=E-Type Grate (Controls 0.00 cfs)

Summary for Pond 3P: Retainit

Inflow Area = 17,277 sf, 62.36% Impervious, Inflow Depth = 0.65” for 1 NJWQ event
Inflow = 0.34 cfs @ 1.23 hrs, Volume= 942 cf
Outflow = 0.10 cfs @ 1.85 hrs, Volume= 942 cf, Atten= 71%, Lag= 37.4 min
Primary = 0.10 cfs @ 1.85 hrs, Volume= 942 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 13.89’ @ 1.85 hrs Surf.Area= 1,600 sf Storage= 671 cf

Plug-Flow detention time= 118.7 min calculated for 942 cf (100% of inflow)
Center-of-Mass det. time= 117.9 min ( 202.1 - 84.2 )

Volume Invert Avail.Storage Storage Description
#1B 13.40’ 0 cf 40.00’W x 40.00’L x 3.17’H Field B
5,067 cf Overall - 5,067 cf Embedded = 0 cf x 0.0% Voids
#2B 13.40’ 3,445 cf retain_it retain_it 2.5’ x 25 Inside #1
Inside= 84.0”W x 30.0”H => 17.56 sf x 8.00’L = 140.4 cf
Outside= 96.0”W x 38.0”H => 25.33 sf x 8.00’L = 202.7 cf
5 Rows adjusted for 66.0 cf perimeter wall
#3 16.57’ 636 cf 30.00’D x 0.90’H Riser
#4 17.50’ 1,550 cf Custom Stage Data (Prismatic) Listed below (Recalc)

5,631 cf Total Available Storage

Storage Group B created with Chamber Wizard

Device Routing Invert Outlet Devices
#1 Primary 13.30’ 12.0” Round HDPE DUAL WALL
L= 46.0’ Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 13.30’ / 12.70’ S= 0.0130”’ Cc= 0.900
n= 0.012, Flow Area= 0.79 sf
#2 Device 1 13.40’ 2.5” Vert. Orifice/Grate C= 0.600
#3 Secondary 17.50’ 1.0” x 4.0” Horiz. MANHOLE GRATE X 4.00 columns
X 10 rows C= 0.600 in 24.0” Grate (35% open area)
Limited to weir flow at low heads
**Summary for Pond 3PGPE: Geopave**

Inflow Area = 2,575 sf, 0.00% Impervious, Inflow Depth = 0.22” for 1 NJWQ event

- **Inflow** = 0.03 cfs @ 1.20 hrs, Volume= 47 cf
- **Outflow** = 0.03 cfs @ 1.23 hrs, Volume= 47 cf, Att= 4%, Lag= 1.4 min
- **Primary** = 0.03 cfs @ 1.23 hrs, Volume= 47 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 14.21’ @ 1.23 hrs Surf.Area= 1,440 sf Storage= 2 cf
Plug-Flow detention time= 1.4 min calculated for 47 cf (100% of inflow)
Center-of-Mass det. time= 1.4 min (86.5 - 85.1 )

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 14.20’</td>
<td>1,426 cf</td>
<td><strong>18.00’W x 80.00’L x 3.30’H Geopave Unit</strong></td>
<td>4,752 cf Overall x 30.0% Voids</td>
</tr>
<tr>
<td>#2 17.50’</td>
<td>900 cf</td>
<td><strong>Custom Stage Data (Prismatic)</strong> Listed below (Recalc)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Surf.Area</th>
<th>Inc.Store</th>
<th>Cum.Store</th>
</tr>
</thead>
<tbody>
<tr>
<td>(feet)</td>
<td>(sq-ft)</td>
<td>(cubic-feet)</td>
<td>(cubic-feet)</td>
</tr>
<tr>
<td>17.50</td>
<td>1,600</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18.00</td>
<td>2,000</td>
<td>900</td>
<td>900</td>
</tr>
</tbody>
</table>

**Device Routing Invert Outlet Devices**

- **#1** Primary 13.90’ **8.0” Round 8” PVC**
  - L= 70.0’ RCP, groove end w/headwall, Ke= 0.200
  - Inlet / Outlet Invert= 13.90’ / 13.70’ S= 0.0029 '/' Cc= 0.900
  - n= 0.012, Flow Area= 0.35 sf

- **#2** Device 1 14.00’ **4.0” Round 4” PVC drains X 2.00**
  - L= 20.0’ RCP, sq.cut end projecting, Ke= 0.500
  - Inlet / Outlet Invert= 14.00’ / 13.70’ S= 0.0150 '/' Cc= 0.900
  - n= 0.012, Flow Area= 0.09 sf

- **#3** Device 2 14.20’ **6.000 in/hr Exfiltration over Surface area**

- **#4** Device 1 17.40’ **48.0” x 48.0” Horiz. E-Type Grate** C= 0.600
  - Limited to weir flow at low heads

**Primary OutFlow** Max=0.17 cfs @ 1.23 hrs HW=14.21’ (Free Discharge)
1=8” PVC (Passes 0.17 cfs of 0.19 cfs potential flow)
2=4” PVC drains (Inlet Controls 0.17 cfs @ 1.54 fps)
3=Exfiltration (Passes 0.17 cfs of 0.20 cfs potential flow)
4=E-Type Grate (Controls 0.17 cfs)
Summary for Pond 3PGPN: Geopave

Inflow Area = 14,702 sf, 73.28% Impervious, Inflow Depth = 0.73” for 1 NJWQ event
Inflow = 0.63 cfs @ 1.16 hrs, Volume= 895 cf
Outflow = 0.32 cfs @ 1.20 hrs, Volume= 895 cf, Atten= 50%, Lag= 2.6 min
Primary = 0.32 cfs @ 1.20 hrs, Volume= 895 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 14.35' @ 1.31 hrs Surf.Area= 2,268 sf Storage= 238 cf

Plug-Flow detention time= 7.3 min calculated for 894 cf (100% of inflow)
Center-of-Mass det. time= 7.3 min (84.1 - 76.8)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>14.00'</td>
<td>2,313 cf</td>
<td>36.00’W x 63.00’L x 3.40’H Geopave Unit</td>
</tr>
<tr>
<td>#2</td>
<td>17.40'</td>
<td>305 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Surf.Area</th>
<th>Inc.Store</th>
<th>Cum.Store</th>
</tr>
</thead>
<tbody>
<tr>
<td>(feet)</td>
<td>(sq-ft)</td>
<td>(cubic-feet)</td>
<td>(cubic-feet)</td>
</tr>
<tr>
<td>17.40</td>
<td>2,600</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>3,500</td>
<td>305</td>
<td>305</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.60'</td>
<td>8.0” Round 8” PVC X 4.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 30.0’ RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.60’ / 13.40’ S= 0.0067 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.35 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Device 1</td>
<td>13.80'</td>
<td>4.0” Round 4” PVC drains X 2.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 20.0’ RCP, sq.cut end projecting, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.80’ / 13.70’ S= 0.0050 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.09 sf</td>
</tr>
<tr>
<td>#3</td>
<td>Device 2</td>
<td>14.00'</td>
<td>6.000 in/hr Exfiltration over Surface area</td>
</tr>
<tr>
<td>#4</td>
<td>Device 1</td>
<td>17.40'</td>
<td>1.0” x 4.0” Horiz. E-Type Grate X 4.00 columns</td>
</tr>
</tbody>
</table>

Primary OutFlow Max=0.32 cfs @ 1.20 hrs HW=14.28’ (Free Discharge)

Summary for Pond 4P: RetainIt
Inflow Area = 27,364 sf, 79.69% Impervious, Inflow Depth = 0.82” for 1 NJWQ event

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 13.94’ @ 2.09 hrs Surf.Area= 2,240 sf Storage= 1,044 cf

Plug-Flow detention time= 92.5 min calculated for 1,778 cf (95% of inflow)
Center-of-Mass det. time= 90.6 min (176.6 - 86.0)

Volume Invert Avail.Storage Storage Description
#1B 13.40’ 0 cf 56.00’W x 40.00’L x 3.17’H Field B
7,093 cf Overall - 7,093 cf Embedded = 0 cf x 0.0% Voids

#2B 13.40’ 4,836 cf retain_it retain_it 2.5’ x 35 Inside #1
Inside= 84.0’W x 30.0’H => 17.56 sf x 8.00’L = 140.4 cf
Outside= 96.0’W x 38.0’H => 25.33 sf x 8.00’L = 202.7 cf
7 Rows adjusted for 79.2 cf perimeter wall

#3 17.45’ 495 cf Custom Stage Data (Prismatic) Listed below (Recalc)

5,331 cf Total Available Storage

Storage Group B created with Chamber Wizard

Elevation Surf.Area Inc.Store Cum.Store
<table>
<thead>
<tr>
<th>(feet)</th>
<th>(sq-ft)</th>
<th>(cubic-feet)</th>
<th>(cubic-feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.45</td>
<td>200</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.90</td>
<td>2,000</td>
<td>495</td>
<td>495</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices
#1 Primary 13.30’ 8.0” Round HDPE DUAL WALL
L= 25.0’ Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 13.30’ / 12.00’ S= 0.0520 ’’ Cc= 0.900
n= 0.012, Flow Area= 0.35 sf

#2 Device 1 13.45’ 4.0” Vert. Orifice/Grate C= 0.600

#3 Secondary 17.45’ 1.0” x 4.0” Horiz. MANHOLE GRATE X 4.00 columns
X 14 rows C= 0.600 in 24.0” Grate (50% open area)
Limited to weir flow at low heads

Primary OutFlow Max=0.24 cfs @ 2.09 hrs HW=13.94’ (Free Discharge)
1=HDPE DUAL WALL (Passes 0.24 cfs of 0.94 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.24 cfs @ 2.74 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.40’ (Free Discharge)
3=MANHOLE GRATE (Controls 0.00 cfs)
Summary for Pond 4PGP1: Geopave

Inflow Area = 9,960 sf, 62.82% Impervious, Inflow Depth = 0.73” for 1 NJWQ event
Inflow = 0.41 cfs @ 1.15 hrs, Volume= 607 cf
Outflow = 0.30 cfs @ 1.20 hrs, Volume= 607 cf, Attenuation= 27%, Lag= 2.8 min
Primary = 0.30 cfs @ 1.20 hrs, Volume= 607 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 14.23’ @ 1.24 hrs Surf.Area= 2,160 sf Storage= 86 cf

Plug-Flow detention time= 3.1 min calculated for 607 cf (100% of inflow)
Center-of-Mass det. time= 3.1 min (78.3 - 75.2)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>14.10’</td>
<td>2,203 cf</td>
<td>18.00’W x 120.00’L x 3.40’H Geopave Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7,344 cf Overall x 30.0% Voids</td>
</tr>
<tr>
<td>#2</td>
<td>17.40’</td>
<td>1,548 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

Elevation Surf.Area Inc.Store Cum.Store

<table>
<thead>
<tr>
<th>(feet)</th>
<th>(sq-ft)</th>
<th>(cubic-feet)</th>
<th>(cubic-feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.40</td>
<td>2,160</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18.00</td>
<td>3,000</td>
<td>1,548</td>
<td>1,548</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices

| #1 | Primary | 13.70’ | 12.0” Round 12” PVC |
|    |         |        | L= 42.0’ RCP, groove end w/headwall, Ke= 0.200 |
|    |         |        | Inlet / Outlet Invert= 13.70’ / 13.50’ S= 0.0048 '/' Cc= 0.900 |
|    |         |        | n= 0.012, Flow Area= 0.79 sf |
| #2 | Device 1 | 13.90’ | 4.0” Round 4” PVC drains X 2.00 |
|    |         |        | L= 20.0’ RCP, sq.cut end projecting, Ke= 0.500 |
|    |         |        | Inlet / Outlet Invert= 13.90’ / 13.70’ S= 0.0100 '/' Cc= 0.900 |
|    |         |        | n= 0.012, Flow Area= 0.09 sf |
| #3 | Device 2 | 14.10’ | 6.000 in/hr Exfiltration over Surface area |
| #4 | Device 1 | 17.40’ | 1.0” x 4.0” Horiz. E-Type Grate X 4.00 columns |
|    |         |        | X 14 rows C= 0.600 in 48.0” x 48.0” Grate (10% open area) |
|    |         |        | Limited to weir flow at low heads |

Primary OutFlow Max=0.30 cfs @ 1.20 hrs HW=14.23’ (Free Discharge)

Summary for Pond 4PGP2: Geopave

Inflow Area = 14,576 sf, 87.28% Impervious, Inflow Depth = 0.84” for 1 NJWQ event
Inflow = 0.72 cfs @ 1.15 hrs, Volume= 1,025 cf
Outflow = 0.22 cfs @ 1.10 hrs, Volume= 1,025 cf, Attenuation= 70%, Lag= 0.0 min
Primary = 0.22 cfs @ 1.10 hrs, Volume= 1,025 cf
Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 14.86' @ 1.39 hrs  Surf.Area= 1,548 sf  Storage= 400 cf

Plug-Flow detention time= 17.5 min calculated for 1,024 cf (100% of inflow)
Center-of-Mass det. time= 17.5 min ( 93.4 - 75.8 )

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>17.30'</td>
<td>2,005 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td>#2</td>
<td>14.00'</td>
<td>1,579 cf</td>
<td>18.00'W x 86.00'L x 3.40'H Geopave Unit</td>
</tr>
</tbody>
</table>

5,263 cf Overall x 30.0% Voids

3,584 cf Total Available Storage

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.30</td>
<td>1,548</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>2,000</td>
<td>355</td>
<td>355</td>
</tr>
<tr>
<td>17.60</td>
<td>3,000</td>
<td>250</td>
<td>605</td>
</tr>
<tr>
<td>18.00</td>
<td>4,000</td>
<td>1,400</td>
<td>2,005</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.50'</td>
<td>12.0&quot; Round 12&quot; PVC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 20.0' RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.50' / 13.40' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Device 1</td>
<td>13.80'</td>
<td>4.0&quot; Round 4&quot; PVC drains X 2.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 20.0' RCP, sq.cut end projecting, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.80' / 13.70' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf</td>
</tr>
<tr>
<td>#3</td>
<td>Device 2</td>
<td>14.00'</td>
<td>6,000 in/hr Exfiltration over Surface area</td>
</tr>
<tr>
<td>#4</td>
<td>Device 1</td>
<td>17.30'</td>
<td>1.0&quot; x 4.0&quot; Horiz. E-Type Grate X 4.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 14 rows C= 0.600 in 48.0&quot; x 48.0&quot; Grate (10% open area)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

Primary OutFlow Max= 0.22 cfs @ 1.10 hrs HW=14.24’ (Free Discharge)

1=12" PVC (Passes 0.22 cfs of 1.46 cfs potential flow)

2=4" PVC drains (Passes 0.22 cfs of 0.34 cfs potential flow)

3=Exfiltration (Exfiltration Controls 0.22 cfs)

4=E-Type Grate ( Controls 0.00 cfs)

Summary for Pond 5P: RetainIt

Inflow Area = 36,092 sf, 82.78% Impervious, Inflow Depth = 0.89” for 1 NJWQ event
Inflow = 1.54 cfs @ 1.15 hrs, Volume= 2,690 cf
Outflow = 0.32 cfs @ 1.69 hrs, Volume= 2,199 cf, Atten= 79%, Lag= 32.4 min
Primary = 0.32 cfs @ 1.69 hrs, Volume= 2,199 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 14.17' @ 1.69 hrs  Surf.Area= 2,816 sf  Storage= 1,896 cf

Plug-Flow detention time= 122.3 min calculated for 2,199 cf (82% of inflow)  
Center-of-Mass det. time= 117.3 min ( 193.7 - 76.4 )

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1B</td>
<td>13.40'</td>
<td>0 cf</td>
<td>32.00'W x 88.00'L x 3.67'H Field B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10,325 cf Overall - 10,325 cf Embedded = 0 cf x 0.0% Voids</td>
</tr>
<tr>
<td>#2B</td>
<td>13.40'</td>
<td>7,365 cf</td>
<td>retain_it retain_it 3.0' x 44 Inside #1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inside= 84.0&quot;W x 36.0&quot;H =&gt; 21.33 sf x 8.00'L = 170.6 cf</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Outside= 96.0&quot;W x 44.0&quot;H =&gt; 29.33 sf x 8.00'L = 234.7 cf</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 Rows adjusted for 141.6 cf perimeter wall</td>
</tr>
<tr>
<td>#3</td>
<td>16.87'</td>
<td>353 cf</td>
<td>30.00'D x 0.50'H Riser</td>
</tr>
<tr>
<td>#4</td>
<td>17.50'</td>
<td>188 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

7,906 cf Total Available Storage

Storage Group B created with Chamber Wizard

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Surf.Area</th>
<th>Inc.Store</th>
<th>Cum.Store</th>
</tr>
</thead>
<tbody>
<tr>
<td>(feet)</td>
<td>(sq-ft)</td>
<td>(cubic-feet)</td>
<td>(cubic-feet)</td>
</tr>
<tr>
<td>17.50</td>
<td>500</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.75</td>
<td>1,000</td>
<td>188</td>
<td>188</td>
</tr>
</tbody>
</table>

Device Routing Invert 10.0" Round HDPE DUAL WALL

1. Primary 13.50' Invert 10.0" Round HDPE DUAL WALL
   L= 10.0' Box, headwall w/3 square edges, Ke= 0.500
   Inlet / Outlet Invert= 13.50'/ 10.0' S= 0.3500 '/' Cc= 0.900
   n= 0.012, Flow Area= 0.55 sf

2. Device 1 13.60' 4.4" Vert. Orifice/Grate C= 0.600
3. Secondary 17.60' 1.0" x 4.0" Horiz. MANHOLE GRATE X 4.00 columns
   X 10 rows C= 0.600 in 24.0" Grate (35% open area)
   Limited to weir flow at low heads

Primary OutFlow Max=0.32 cfs @ 1.69 hrs HW=14.17' (Free Discharge)
2=Orifice/Grate (Passes 0.32 cfs of 1.31 cfs potential flow)
3=MANHOLE GRATE ( Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.40' (Free Discharge)

Summary for Pond 5PGPN: Geopave

Inflow Area = 9,866 sf, 66.95% Impervious, Inflow Depth = 0.77” for 1 NJWQ event
Inflow = 0.43 cfs @ 1.15 hrs, Volume= 636 cf
Outflow = 0.21 cfs @ 1.15 hrs, Volume= 636 cf, Atten= 52%, Lag= 0.0 min
Primary = 0.21 cfs @ 1.15 hrs, Volume= 636 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 14.34’ @ 1.31 hrs  Surf.Area= 1,500 sf  Storage= 154 cf

Plug-Flow detention time= 6.3 min calculated for 636 cf (100% of inflow)
Center-of-Mass det. time= 6.3 min (81.4 - 75.1)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>14.00'</td>
<td>1,530 cf</td>
<td>10.00'W x 150.00'L x 3.40'H Geopave Unit</td>
</tr>
<tr>
<td>#2</td>
<td>17.40'</td>
<td>1,680 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

Total Available Storage 3,210 cf

Elevation Surf.Area Inc.Store Cum.Store
(feet) (sq-ft) (cubic-feet) (cubic-feet)
17.40 2,600 0 0
18.00 3,000 1,680 1,680

Device Routing Invert Outlet Devices
#1 Primary 13.70' 6.0' Round 6'' PVC X 4.00
L= 10.0’ RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 13.70' / 13.60' S= 0.0100 ' /' Cc= 0.900
n= 0.012, Flow Area= 0.20 sf

#2 Device 1 13.80' 4.0' Round 4'' PVC drains X 2.00
L= 20.0’ RCP, sq.cut end projecting, Ke= 0.500
Inlet / Outlet Invert= 13.80' / 13.70' S= 0.0050 ' /' Cc= 0.900
n= 0.012, Flow Area= 0.09 sf

#3 Device 2 14.00' 6.000 in/hr Exfiltration over Surface area
#4 Device 1 17.40' 1.0' x 4.0' Horiz. E-Type Grate X 4.00 columns
X 11 rows C= 0.600 in 48.0'' x 48.0'' Grate (8% open area)
Limited to weir flow at low heads

Primary OutFlow Max=0.21 cfs @ 1.15 hrs HW=14.19’ (Free Discharge)
1=6'' PVC (Passes 0.21 cfs of 1.77 cfs potential flow)
2=4'' PVC drains (Passes 0.21 cfs of 0.32 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.21 cfs)
4=E-Type Grate (Controls 0.00 cfs)

Summary for Pond 5PGPS: Geopave

Inflow Area = 5,786 sf, 48.93% Impervious, Inflow Depth = 0.61” for 1 NJWQ event
Inflow = 0.19 cfs @ 1.16 hrs, Volume= 292 cf
Outflow = 0.13 cfs @ 1.10 hrs, Volume= 292 cf, Atten= 35%, Lag= 0.0 min
Primary = 0.13 cfs @ 1.10 hrs, Volume= 292 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 14.25' @ 1.27 hrs Surf.Area= 900 sf Storage= 40 cf

Plug-Flow detention time= 2.6 min calculated for 292 cf (100% of inflow)
Center-of-Mass det. time= 2.6 min (78.5 - 75.9)
SSDC PROPOSED SITE PLAN
NJ DEP 2-hr  1 NJWQ Rainfall=1.25"
**2020-02-23 SSDC-1699.C PROPOSED**

**SSDC PROPOSED SITE PLAN**

NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

Prepared by Windows User

HydroCAD® 10.00-25 s/n 06187 © 2019 HydroCAD Software Solutions LLC

Page 65

### Elevation, Surf. Area, Inc.Store, Cum.Store

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16.90</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.25</td>
<td>500</td>
<td>88</td>
<td>88</td>
</tr>
<tr>
<td>17.50</td>
<td>2,000</td>
<td>313</td>
<td>400</td>
</tr>
<tr>
<td>17.75</td>
<td>2,500</td>
<td>563</td>
<td>963</td>
</tr>
<tr>
<td>18.00</td>
<td>3,000</td>
<td>688</td>
<td>1,650</td>
</tr>
<tr>
<td>18.50</td>
<td>4,000</td>
<td>1,750</td>
<td>3,400</td>
</tr>
</tbody>
</table>

### Device Routing, Invert, Outlet Devices

**#1 Primary 11.12'**

- **4.0" Round PVC 4" OUT**
  - L= 182.0' RCP, groove end w/headwall, Ke= 0.200
  - Inlet / Outlet Invert= 11.12' / 10.58' S= 0.0030 '/' Cc= 0.900
  - n= 0.013, Flow Area= 0.09 sf

**#2 Device 1 14.10'**

- **18.0" Round RCP IN STM**
  - L= 170.0' Box, headwall w/3 square edges, Ke= 0.500
  - Inlet / Outlet Invert= 14.10' / 13.10' S= 0.0059 '/' Cc= 0.900
  - n= 0.013, Flow Area= 1.77 sf

**#3 Secondary 17.29'**

- **1.0" x 4.0" Horiz. MH Lid X 4.00 columns**
  - X 8 rows C= 0.600 in 24.0" Grate (28% open area)
  - Limited to weir flow at low heads

### Primary OutFlow

- Max=0.35 cfs @ 1.19 hrs HW=17.40' (Free Discharge)
- 1=PVC 4" OUT (Barrel Controls 0.35 cfs @ 4.02 fps)
- 2=RCP IN STM (Passes 0.35 cfs of 11.06 cfs potential flow)

### Secondary OutFlow

- Max=0.76 cfs @ 1.19 hrs HW=17.40' (Free Discharge)
- 3=MH Lid (Weir Controls 0.76 cfs @ 1.09 fps)

### Summary for Pond COMM-1: Grate SW corner Comm Bldg

Storm Inlet SW corner of Commercial Building

<table>
<thead>
<tr>
<th>Inflow Area = 34,594 sf, 100.00% Impervious, Inflow Depth = 1.03&quot; for 1 NJWQ event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflow = 2.05 cfs @ 1.15 hrs, Volume= 2,982 cf</td>
</tr>
<tr>
<td>Outflow = 2.08 cfs @ 1.15 hrs, Volume= 2,987 cf, Atten= 0%, Lag= 0.4 min</td>
</tr>
<tr>
<td>Primary = 0.47 cfs @ 1.15 hrs, Volume= 1,716 cf</td>
</tr>
<tr>
<td>Secondary = 1.61 cfs @ 1.15 hrs, Volume= 1,270 cf</td>
</tr>
</tbody>
</table>

Routting by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 17.29' @ 1.15 hrs Surf.Area= 521 sf Storage= 102 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.0 min (75.0 - 74.0)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>16.90'</td>
<td>940 cf</td>
<td>Parking Lot (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>
Elevation Surf.Area Inc.Store Cum.Store
(feet) (sq-ft) (cubic-feet) (cubic-feet)
16.90 0 0 0
17.50 800 240 240
18.00 2,000 700 940

Device Routing Invert Outlet Devices
#1 Primary 16.29' 4.0" Round PVC 4" OUT
L= 85.0' RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 16.29' / 11.12' S= 0.0608 '/' Cc= 0.900
n= 0.013, Flow Area= 0.09 sf

#2 Secondary 17.20' 1.0" x 4.0" Horiz. Storm Grate X 4.00 columns
X 14 rows C= 0.600 in 48.0" x 60.0" Grate (8% open area)
Limited to weir flow at low heads

Primary OutFlow Max=0.47 cfs @ 1.15 hrs HW=17.29’ (Free Discharge)
#1 PVC 4" OUT (Barrel Controls 0.47 cfs @ 5.43 fps)

Secondary OutFlow Max=1.59 cfs @ 1.15 hrs HW=17.29’ (Free Discharge)
#2 Storm Grate (Weir Controls 1.59 cfs @ 0.98 fps)

Summary for Pond I-5: MH5
Inflow Area = 20,440 sf, 100.00% Impervious, Inflow Depth = 1.03” for 1 NJWQ event
Inflow = 1.20 cfs @ 1.15 hrs, Volume= 1,762 cf
Outflow = 1.20 cfs @ 1.15 hrs, Volume= 1,762 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.20 cfs @ 1.15 hrs, Volume= 1,762 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 16.51’ @ 1.15 hrs

Device Routing Invert Outlet Devices
#1 Primary 15.94' 12.0" Round PVC
L= 86.0’ Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 15.94' / 14.10’ S= 0.0214 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

#2 Secondary 17.39' 1.0" x 2.0" Horiz. E-Type Grate X 4.00 columns
X 14 rows C= 0.600 in 48.0" x 48.0" Grate (5% open area)
Limited to weir flow at low heads

Primary OutFlow Max=1.20 cfs @ 1.15 hrs HW=16.51’ (Free Discharge)
#1 PVC (Inlet Controls 1.20 cfs @ 2.58 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=15.94’ (Free Discharge)
#2 E-Type Grate (Controls 0.00 cfs)
Summary for Pond I-6: Alley Inlet

Inflow Area = 5,996 sf, 100.00% Impervious, Inflow Depth = 4.69" for 1 NJWQ event
Inflow = 2.03 cfs @ 1.36 hrs, Volume= 2,342 cf
Outflow = 2.03 cfs @ 1.36 hrs, Volume= 2,342 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.03 cfs @ 1.36 hrs, Volume= 2,342 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 16.40' @ 1.36 hrs

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Secondary</td>
<td>17.04'</td>
<td>1.0” x 2.0” Horiz. E TYPE STRM FLOW X 41.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 14 rows C= 0.600 in 48.0” x 48.0” Grate (50% open area)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
<tr>
<td>#2</td>
<td>Primary</td>
<td>15.71'</td>
<td>12.0” Round Culvert</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 30.0’ RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 15.71’ / 10.30’ S= 0.1803 '/’ Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.79 sf</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

Primary OutFlow Max=1.99 cfs @ 1.36 hrs HW=16.39’ (Free Discharge)
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=15.71’ (Free Discharge)

Summary for Pond MH-A1: Storm Manhole Alley

Inflow Area = 63,520 sf, 100.00% Impervious, Inflow Depth = 0.70” for 1 NJWQ event
Inflow = 2.41 cfs @ 1.36 hrs, Volume= 3,701 cf
Outflow = 2.41 cfs @ 1.36 hrs, Volume= 3,701 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 1.36 hrs, Volume= 1,332 cf
Secondary = 1.54 cfs @ 1.36 hrs, Volume= 2,370 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 17.34’ @ 1.36 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (82.9 - 82.9)

Volume Invert Avail.Storage Storage Description
#1 17.34’ 8 cf Custom Stage Data (Prismatic) Listed below (Recalc)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.34</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>100</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>
Summary for Pond MH-A2: Storm Manhole Alley

Inflow Area = 57,524 sf, 100.00% Impervious, Inflow Depth = 0.63" for 1 NJWQ event
Inflow = 0.84 cfs @ 1.15 hrs, Volume= 3,019 cf
Outflow = 0.84 cfs @ 1.15 hrs, Volume= 3,019 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.38 cfs @ 1.15 hrs, Volume= 1,359 cf
Secondary = 0.46 cfs @ 1.15 hrs, Volume= 1,660 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 16.89' @ 1.15 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (78.5 - 78.5)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>16.89'</td>
<td>5 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td>16.89</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.00</td>
<td>100</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Secondary</td>
<td>16.54'</td>
<td>1.0&quot; x 2.0&quot; Horiz. MH Lid X 4.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 14 rows C= 0.600 in 48.0&quot; x 48.0&quot; Grate (5% open area)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
<tr>
<td>#2</td>
<td>Primary</td>
<td>10.67'</td>
<td>8.0&quot; Round PVC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 240.0' RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 10.67' / 10.28' S= 0.0016 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.013, Flow Area= 0.35 sf</td>
</tr>
</tbody>
</table>

**Primary OutFlow** Max=1.82 cfs @ 1.15 hrs HW=16.89' (Free Discharge)

**Secondary OutFlow** Max=2.22 cfs @ 1.15 hrs HW=16.89' (Free Discharge)
Summary for Pond MH-A3: Storm Manhole Alley

Inflow Area = 57,524 sf, 100.00% Impervious, Inflow Depth = 0.66" for 1 NJWQ event
Inflow = 0.96 cfs @ 1.15 hrs, Volume = 3,146 cf
Outflow = 0.96 cfs @ 1.15 hrs, Volume = 3,146 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.84 cfs @ 1.15 hrs, Volume = 3,019 cf
Secondary = 0.11 cfs @ 1.15 hrs, Volume = 127 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 16.56' @ 1.15 hrs Surf.Area= 18 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (78.3 - 78.3)

Volume Invert Avail.Storage Storage Description
#1 16.54' 115 cf Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation Surf.Area Inc.Store Cum.Store
(feet) (sq-ft) (cubic-feet) (cubic-feet)
16.54 0 0 0
17.00 500 115 115

Device Routing Invert Outlet Devices
#1 Secondary 16.54' 1.0" x 2.0" Horiz. MH Lid X 4.00 columns
X 14 rows C= 0.600 in 48.0" x 48.0" Grate (5% open area)
Limited to weir flow at low heads

#2 Primary 10.67' 6.0" Round PVC
L= 240.0' RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 10.67' / 10.28' S= 0.0016 '/' Cc= 0.900
n= 0.013, Flow Area= 0.20 sf

Primary OutFlow Max= 0.84 cfs @ 1.15 hrs HW= 16.56' (Free Discharge)
Secondary OutFlow Max= 0.11 cfs @ 1.15 hrs HW= 16.56' (Free Discharge)

Summary for Pond MH-A4: Storm MH Comm Site Alley

Storm Manhole located at SE corner of Commercial Bldg
Provides Drainage for Lot 1699.C to MH2 in SE corner of Lot 1699.D
Flows through 3 storm manholes and piping located in Alley south of main bldg

Inflow Area = 57,524 sf, 100.00% Impervious, Inflow Depth = 0.66" for 1 NJWQ event
Inflow = 0.96 cfs @ 1.15 hrs, Volume = 3,149 cf
Outflow = 0.96 cfs @ 1.15 hrs, Volume = 3,149 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.96 cfs @ 1.15 hrs, Volume = 3,146 cf
Secondary = 0.00 cfs @ 1.15 hrs, Volume = 3 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 17.29' @ 1.15 hrs  Surf.Area= 4 sf  Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (78.3 - 78.3)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>17.29'</td>
<td>1,158 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>17.29'</td>
<td>1,158 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

**Table:**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.29</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>1,500</td>
<td>158</td>
<td>158</td>
</tr>
<tr>
<td>18.00</td>
<td>2,500</td>
<td>1,000</td>
<td>1,158</td>
</tr>
</tbody>
</table>

**Device Routing:**

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>11.12'</td>
<td>4.0&quot; Round PVC 4&quot; OUT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 182.0' RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 11.12' / 10.58' S= 0.0030 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.013, Flow Area= 0.09 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Primary</td>
<td>14.10'</td>
<td>18.0&quot; Round RCP IN STM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 170.0' Box, headwall w/3 square edges, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 14.10' / 13.10' S= 0.0059 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.011 Concrete pipe, straight &amp; clean, Flow Area= 1.77 sf</td>
</tr>
<tr>
<td>#3</td>
<td>Secondary</td>
<td>17.29'</td>
<td>1.0&quot; x 4.0&quot; Horiz. MH Lid SLOTTED X 4.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 8 rows C= 0.600 in 24.0&quot; Grate (28% open area)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

**Primary OutFlow:**

Max=12.40 cfs @ 1.15 hrs HW=17.29' (Free Discharge)

1= PVC 4" OUT (Barrel Controls 0.35 cfs @ 3.98 fps)
2=RCP IN STM (Barrel Controls 12.05 cfs @ 6.82 fps)

**Secondary OutFlow:**

Max=0.00 cfs @ 1.15 hrs HW=17.29' (Free Discharge)

3=MH Lid SLOTTED (Weir Controls 0.00 cfs @ 0.08 fps)

**Summary for Pond MH-E2:**

Inflow Area = 249,648 sf, 87.75% Impervious, Inflow Depth = 0.75" for 1 NJWQ event

Inflow = 3.31 cfs @ 1.37 hrs, Volume= 15,536 cf
Outflow = 3.31 cfs @ 1.37 hrs, Volume= 15,536 cf, Attenuation= 0%, Lag= 0.0 min
Primary = 3.31 cfs @ 1.37 hrs, Volume= 15,536 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 10.71' @ 1.37 hrs

**Device Routing:**

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>8.74'</td>
<td>12.0&quot; Round PVC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 165.0' Box, 0° wingwalls, square crown edge, Ke= 0.700</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 8.74' / 8.02&quot; S= 0.0044 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.79 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Secondary</td>
<td>17.78'</td>
<td>1.0&quot; x 2.0&quot; Horiz. E-TYPE GRATE X 4.00 columns</td>
</tr>
</tbody>
</table>
X 14 rows C= 0.600 in 24.0" Grate (25% open area)
Limited to weir flow at low heads

**Primary OutFlow** Max=3.26 cfs @ 1.37 hrs HW=10.65’ (Free Discharge)
\[\text{1=PVC} \quad \text{(Barrel Controls 3.26 cfs @ 4.15 fps)}\]

**Secondary OutFlow** Max=0.00 cf @ 0.00 hrs HW=8.74’ (Free Discharge)
\[\text{2=E-TYPE GRATE} \quad \text{(Controls 0.00 cfs)}\]

**Summary for Pond MH-E3: Existing MH7-OFF**

| Inflow Area = 249,648 sf, 87.75% Impervious, Inflow Depth = 0.75” for 1 NJWQ event |
| Inflow = 3.31 cf @ 1.37 hrs, Volume= 15,536 cf |
| Outflow = 3.31 cf @ 1.37 hrs, Volume= 15,536 cf, Atten= 0%, Lag= 0.0 min |
| Primary = 3.31 cf @ 1.37 hrs, Volume= 15,536 cf |
| Secondary = 0.00 cf @ 0.00 hrs, Volume= 0 cf |

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 9.54’ @ 1.37 hrs

**Device Routing**  Invert Outlet Devices

| #1 Primary 8.00’ 12.0” Round PVC |
| Inlet / Outlet Invert= 8.00’ / 7.90’ |
| Flow Area= 0.79 sf |
| Ke= 0.500 |
| n= 0.012 |

| #2 Secondary 12.50’ 1.0” x 4.0” Horiz. Orifice/Grate X 4.00 columns |
| X 8 rows C= 0.600 in 24.0” Grate (28% open area) |
| Limited to weir flow at low heads |

**Primary OutFlow** Max=3.26 cfs @ 1.37 hrs HW=9.52’ (Free Discharge)
\[\text{1=PVC} \quad \text{(Barrel Controls 3.26 cfs @ 4.15 fps)}\]

**Secondary OutFlow** Max=0.00 cf @ 0.00 hrs HW=8.00’ (Free Discharge)
\[\text{2=Orifice/Grate} \quad \text{(Controls 0.00 cfs)}\]

**Summary for Pond MH-E4: Woodruff Inlet**

| Inflow Area = 249,648 sf, 87.75% Impervious, Inflow Depth = 0.75” for 1 NJWQ event |
| Inflow = 3.31 cf @ 1.37 hrs, Volume= 15,536 cf |
| Outflow = 3.31 cf @ 1.37 hrs, Volume= 15,536 cf, Atten= 0%, Lag= 0.0 min |
| Primary = 3.31 cf @ 1.37 hrs, Volume= 15,536 cf |
| Secondary = 0.00 cf @ 0.00 hrs, Volume= 0 cf |

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 9.07’ @ 1.37 hrs

**Device Routing**  Invert Outlet Devices

| #1 Primary 6.90’ 15.0” Round 15” RCP |
| L= 100.0’ RCP, sq.cut end projecting, Ke= 0.500 |
| Inlet / Outlet Invert= 6.90’ / 6.80’ |
| n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf |
Primary OutFlow Max=3.26 cfs @ 1.37 hrs HW=9.04’ (Free Discharge)  
1=15” RCP (Passes 3.26 cfs of 5.01 cfs potential flow)  
2=Orifice/Grate (Orifice Controls 3.26 cfs @ 4.15 fps)  

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=6.90’ (Free Discharge)  
3=Orifice/Grate (Controls 0.00 cfs)  

Summary for Pond PMH1: Proposed MH 1

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs  
Peak Elev= 13.00’ @ 2.14 hrs

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Primary</td>
<td>12.60'</td>
<td>24.0” Round HDPE</td>
<td></td>
</tr>
</tbody>
</table>
L= 200.0’ RCP, square edge headwall, Ke= 0.500  
Inlet / Outlet Invert= 12.60’ / 11.80’ \( S = 0.0040 \) ’/” \( Cc = 0.900 \)  
n= 0.012, Flow Area= 3.14 sf  

| #2 Secondary | 18.00’ | 1.0” x 2.0” Horiz. Manhole Cover X 4.00 columns |  
X 8 rows C= 0.600 in 24.0” Grate (14% open area)  
Limited to weir flow at low heads  

Primary OutFlow Max=0.74 cfs @ 2.14 hrs HW=13.00’ (Free Discharge)  
1=HDPE (Barrel Controls 0.74 cfs @ 2.49 fps)  

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=12.60’ (Free Discharge)  
2=Manhole Cover (Controls 0.00 cfs)  

Summary for Pond PMH2: Proposed MH2

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs  
Peak Elev= 12.17’ @ 2.15 hrs

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Primary</td>
<td>12.60’</td>
<td>24.0” Round HDPE</td>
<td></td>
</tr>
</tbody>
</table>
L= 200.0’ RCP, square edge headwall, Ke= 0.500  
Inlet / Outlet Invert= 12.60’ / 11.80’ \( S = 0.0040 \) ’/” \( Cc = 0.900 \)  
n= 0.012, Flow Area= 3.14 sf  

| #2 Secondary | 18.00’ | 1.0” x 2.0” Horiz. Manhole Cover X 4.00 columns |  
X 8 rows C= 0.600 in 24.0” Grate (14% open area)  
Limited to weir flow at low heads  

Primary OutFlow Max=0.74 cfs @ 2.14 hrs HW=13.00’ (Free Discharge)  
1=HDPE (Barrel Controls 0.74 cfs @ 2.49 fps)  

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=12.60’ (Free Discharge)  
2=Manhole Cover (Controls 0.00 cfs)
SSDC PROPOSED SITE PLAN
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

2020-02-23 SSDC-1699.C PROPOSED
Prepared by Windows User
Printed 3/4/2020
HydroCAD® 10.00-25 s/n 06187 © 2019 HydroCAD Software Solutions LLC

Device | Routing | Invert | Outlet Devices |
---|---|---|---|
#1 | Primary | 11.70' | 24.0" Round HDPE |
| | | | L= 118.0’ Box, headwall w/3 square edges, Ke= 0.500 |
| | | | Inlet / Outlet Invert= 11.70' / 11.10' |
| | | | S= 0.0051 '/' |
| | | | Cc= 0.900 |
| | | | n= 0.012, Flow Area= 3.14 sf |

#2 | Secondary | 18.00' | 1.0" x 2.0" Horiz. Manhole Cover X 4.00 columns |
| | | | X 6 rows C= 0.600 in 24.0" Grate (11% open area) |
| | | | Limited to weir flow at low heads |

**Primary OutFlow** Max=1.08 cfs @ 2.15 hrs HW=12.17’ (Free Discharge)

1=HDPE (Barrel Controls 1.08 cfs @ 2.93 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=11.70’ (Free Discharge)

2=Manhole Cover (Controls 0.00 cfs)

**Summary for Pond PMH3: Proposed MH 3**

Inflow Area = 150,036 sf, 83.76% Impervious, Inflow Depth = 0.77” for 1 NJWQ event

| Inflow | 1.08 cfs @ 2.15 hrs, Volume= 9,635 cf |
| Outflow | 1.08 cfs @ 2.15 hrs, Volume= 9,635 cf, Atten= 0%, Lag= 0.0 min |
| Primary | 1.08 cfs @ 2.15 hrs, Volume= 9,635 cf |
| Secondary | 0.00 cfs @ 0.00 hrs, Volume= 0 cf |

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 11.52’ @ 2.15 hrs

Device | Routing | Invert | Outlet Devices |
---|---|---|---|
#1 | Primary | 11.10' | 24.0" Round HDPE |
| | | | L= 90.0’ Box, headwall w/3 square edges, Ke= 0.500 |
| | | | Inlet / Outlet Invert= 11.10' / 9.37’ |
| | | | S= 0.0192 '/' |
| | | | Cc= 0.900 |
| | | | n= 0.012, Flow Area= 3.14 sf |

#2 | Secondary | 18.00' | 1.0" x 2.0" Horiz. E Type Grate X 4.00 columns |
| | | | X 14 rows C= 0.600 in 48.0" x 48.0" Grate (5% open area) |
| | | | Limited to weir flow at low heads |

**Primary OutFlow** Max=1.08 cfs @ 2.15 hrs HW=11.52’ (Free Discharge)

1=HDPE (Inlet Controls 1.08 cfs @ 2.22 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=11.10’ (Free Discharge)

2=E Type Grate (Controls 0.00 cfs)

**Summary for Link Drive N: North Driveway**

Inflow Area = 5,281 sf, 100.00% Impervious, Inflow Depth = 1.03” for 1 NJWQ event

| Inflow | 0.31 cfs @ 1.15 hrs, Volume= 455 cf |
| Primary | 0.31 cfs @ 1.15 hrs, Volume= 455 cf, Atten= 0%, Lag= 0.0 min |

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Summary for Link SSPRING ST: Spring Street

Primary = 0.00 cfs @ 0.00 hrs, Volume = 0 cf

Primary outflow = Inflow, Time Span = 0.00-200.00 hrs, dt = 0.05 hrs
Subcatchment B-2: Riverstone Buffer North

Type III 24-hr
100-YEAR Rainfall=8.69"
Runoff Area=1,432 sf
Runoff Volume=749 cf
Runoff Depth=6.27"
Tc=10.0 min
CN=80

Subcatchment B-3: Riverstone Buffer North

Type III 24-hr
100-YEAR Rainfall=8.69"
Runoff Area=1,354 sf
Runoff Volume=858 cf
Runoff Depth=7.61"
Tc=10.0 min
CN=91
Subcatchment B-4: Riverstone and Geopave

Type III 24-hr 100-YEAR Rainfall=8.69"  
Runoff Area=2,575 sf  
Runoff Volume=1,398 cf  
Runoff Depth=6.52"  
Tc=10.0 min  
CN=82

Subcatchment B-5: River Stone and GeoPave East/Mid

Type III 24-hr 100-YEAR Rainfall=8.69"  
Runoff Area=3,703 sf  
Runoff Volume=2,011 cf  
Runoff Depth=6.52"  
Tc=10.0 min  
CN=82
Subcatchment B-6: Riverstone Buffer and Geopave East/South

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=3,261 sf
Runoff Volume=1,804 cf
Runoff Depth=6.64"
Tc=10.0 min
CN=83

Subcatchment B7: Riverstone and Geopave South

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=2,955 sf
Runoff Volume=1,575 cf
Runoff Depth=6.40"
Tc=10.0 min
CN=81
Subcatchment ISL-1: River Stone Island

Type III 24-hr
100-YEAR Rainfall=8.69"  
Runoff Area=306 sf  
Runoff Volume=148 cf  
Runoff Depth=5.79"  
Tc=10.0 min  
CN=76

Subcatchment OS-6E: COMM EAST

Type III 24-hr
100-YEAR Rainfall=8.69"  
Runoff Area=20,681 sf  
Runoff Volume=14,563 cf  
Runoff Depth=8.45"  
Tc=10.0 min  
CN=98
Subcatchment OS-6R: COMM ROOF

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=13,913 sf
Runoff Volume=9,797 cf
Runoff Depth=8.45"
Tc=10.0 min
CN=98

Subcatchment OS-6W: COMM-WEST

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=20,681 sf
Runoff Volume=14,563 cf
Runoff Depth=8.45"
Tc=10.0 min
CN=98
Subcatchment OS1: North Driveway

Type III 24-hr
100-YEAR Rainfall=8.69"
Runoff Area=5,281 sf
Runoff Volume=3,719 cf
Runoff Depth=8.45"
Flow Length=175'
Tc=10.8 min
CN=98

Subcatchment P-1: Northwest

Type III 24-hr
100-YEAR Rainfall=8.69"
Runoff Area=30,547 sf
Runoff Volume=20,897 cf
Runoff Depth=8.21"
Tc=10.0 min
CN=96
**Subcatchment P-10A: Alley**

Type III 24-hr 100-YEAR Rainfall=8.69"

- Runoff Area=4,612 sf
- Runoff Volume=3,248 cf
- Runoff Depth=8.45"
- $T_c=10.0\text{ min}$
- CN=98

**Subcatchment P-1R: ROOFS**

Type III 24-hr 100-YEAR Rainfall=8.69"

- Runoff Area=1,400 sf
- Runoff Volume=986 cf
- Runoff Depth=8.45"
- $T_c=10.0\text{ min}$
- CN=98
Subcatchment P-2M: North Central

Type III 24-hr 100-YEAR Rainfall=8.69''
Runoff Area=18,201 sf
Runoff Volume=11,720 cf
Runoff Depth=7.73''
Flow Length=180'
Tc=10.0 min
CN=92

Subcatchment P-2R: Roofs, warehouse

Type III 24-hr 100-YEAR Rainfall=8.69''
Runoff Area=4,125 sf
Runoff Volume=2,905 cf
Runoff Depth=8.45''
Tc=10.0 min
CN=98
Subcatchment P-2S: Between Buildings

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=1,292 sf
Runoff Volume=845 cf
Runoff Depth=7.85"
Flow Length=180'
Tc=10.0 min
CN=93

Subcatchment P-3E: Northeast Corner

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=5,025 sf
Runoff Volume=3,538 cf
Runoff Depth=8.45"
Tc=10.0 min
CN=98
Subcatchment P-4R: Roof to 4P

Type III 24-hr 100-YEAR Rainfall=8.69"  
Runoff Area=2,828 sf  
Runoff Volume=1,991 cf  
Runoff Depth=8.45"  
Tc=10.0 min  
CN=98

Subcatchment P-4S: Paved Parking

Type III 24-hr 100-YEAR Rainfall=8.69"  
Runoff Area=7,833 sf  
Runoff Volume=5,201 cf  
Runoff Depth=7.97"  
Flow Length=260'  
Tc=10.0 min  
CN=94
Subcatchment P-6R: Roof

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=8,937 sf
Runoff Volume=6,293 cf
Runoff Depth=8.45"
Tc=10.0 min
CN=98

Subcatchment P-7: Slab Area - Repaved

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=30,112 sf
Runoff Volume=21,203 cf
Runoff Depth=8.45"
Tc=10.0 min
CN=98
Subcatchment P-7A: S CORNER ALLEY

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=2,831 sf
Runoff Volume=1,993 cf
Runoff Depth=8.45"
Flow Length=160'
Tc=10.0 min
CN=98

Subcatchment P-7B: Paved Parking

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=6,605 sf
Runoff Volume=4,651 cf
Runoff Depth=8.45"
Flow Length=260'
Tc=10.0 min
CN=98
Subcatchment P-7R: Roof

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=6,627 sf
Runoff Volume=4,666 cf
Runoff Depth=8.45"
Tc=10.0 min
CN=98

Subcatchment P-8: Alley

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=3,884 sf
Runoff Volume=2,735 cf
Runoff Depth=8.45"
Tc=10.0 min
CN=98
Subcatchment P-8R: Roof

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=4,876 sf
Runoff Volume=3,433 cf
Runoff Depth=8.45"
Tc=10.0 min
CN=98

Subcatchment P-9: Alley

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=1,384 sf
Runoff Volume=975 cf
Runoff Depth=8.45"
Tc=10.0 min
CN=98
Subcatchment P-9R: West End Roofs

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=7,745 sf
Runoff Volume=5,454 cf
Runoff Depth=8.45"
Tc=10.0 min
CN=98

Subcatchment P3N: Northeast Corner

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=8,017 sf
Runoff Volume=5,162 cf
Runoff Depth=7.73"
Tc=10.0 min
CN=92
Subcatchment P4-N: Paved Parking

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=6,257 sf
Runoff Volume=4,406 cf
Runoff Depth=8.45"
Flow Length=260'
Tc=10.0 min
CN=98

Subcatchment P4W: Paved Parking

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=6,437 sf
Runoff Volume=4,533 cf
Runoff Depth=8.45"
Flow Length=260'
Tc=10.0 min
CN=98
Reach ASW1: Overland swale

Avg. Flow Depth=0.17'
Max Vel=0.82 fps
n=0.016
L=160.0'
S=0.0012 '/'
Capacity=19.21 cfs

Reach ASW2: Overland swale

Inflow Area=4,612 sf
Avg. Flow Depth=0.21'
Max Vel=0.59 fps
n=0.016
L=120.0'
S=0.0005 '/'
Capacity=12.15 cfs
**Reach ASW3: Overland swale**

- Inflow Area = 3,884 sq ft
- Avg. Flow Depth = 0.12'
- Max Vel = 0.47 fps
- n = 0.016
- L = 160.0'
- S = 0.0006'/'
- Capacity = 13.58 cfs

**Reach STRT: EXISTING STREET**

- Inflow Area = 253,532 sq ft
- Avg. Flow Depth = 0.09'
- Max Vel = 1.71 fps
- n = 0.016
- L = 25.0'
- S = 0.0080 '/'
- Capacity = 63.73 cfs
**Reach SW-3: Overland swale**

Inflow Area=3,884 sf  
Avg. Flow Depth=0.04'  
Max Vel=1.51 fps  
n=0.016  
L=160.0'  
S=0.0200 '/'  
Capacity=76.85 cfs

**Reach TD1: Drain for slab to Geopave**

Inflow Area=30,112 sf  
Avg. Flow Depth=0.37'  
Max Vel=2.38 fps  
n=0.013  
L=200.0'  
S=0.0025 '/'  
Capacity=6.25 cfs
Storage = 1,047 CF
Peak Elevation = 13.86'
Inflow Area = 62,201 SF

Pond 1 P: RetainIt

Capacity = 4.26 CFS
S = 0.0080
L = 0.0
n = 0.15
Max Vel = 2.26 IPS
Avg Flow Depth = 0.17'
Inflow Area = 6,627 SF

Reach TD2: East End of Buildings

Hydrograph
Pond 1PGP: Geopave Area

Inflow Area=61,271 sf
Peak Elev=16.65'
Storage=2,573 cf

Pond 2P: Retainits

Inflow Area=43,194 sf
Peak Elev=14.03'
Storage=1,774 cf
Pond 2PGP1: Geopave

Inflow Area=1,292 sf
Peak Elev=14.36'
Storage=22 cf

Pond 2PGP2: Geopave

Inflow Area=19,493 sf
Peak Elev=14.81'
Storage=341 cf
Pond 2PGP3: Geopave

Inflow Area = 10,431 sf
Peak Elev = 16.57'
Storage = 0.009 af

Pond 3P: Retainit

Inflow Area = 17,277 sf
Peak Elev = 13.89'
Storage = 671 cf
### Pond 3PGPE: Geopave

- **Inflow Area**: 2,575 sf
- **Peak Elev**: 14.21'
- **Storage**: 2 cf

### Pond 3PGPN: Geopave

- **Inflow Area**: 14,702 sf
- **Peak Elev**: 14.35'
- **Storage**: 238 cf
Pond 4P: RetainIt

- Inflow Area: 27,364 sf
- Peak Elev: 13.94'
- Storage: 1,044 cf

Pond 4PGP1: Geopave

- Inflow Area: 9,960 sf
- Peak Elev: 14.23'
- Storage: 86 cf
**Pond 4PGP2: Geopave**

- Inflow Area: 14,576 sf
- Peak Elev: 14.86'
- Storage: 400 cf

**Pond 5P: RetainIt**

- Inflow Area: 36,092 sf
- Peak Elev: 14.17'
- Storage: 1,896 cf
Pond 5PGPN: Geopave

Inflow Area=9,866 sf
Peak Elev=14.34'
Storage=154 cf

Pond 5PGPS: Geopave

Inflow Area=5,786 sf
Peak Elev=14.25'
Storage=40 cf
Pond I-5: MH5

Inflow Area=20,440 sf
Peak Elev=16.51'

Pond MH-A1: Storm Manhole Alley

Inflow Area=63,520 sf
Peak Elev=17.34'
Storage=0 cf
Pond MH-A2: Storm Manhole Alley

Inflow Area=57,524 sf
Peak Elev=16.89'
Storage=0 cf

Pond MH-A3: Storm Manhole Alley

Inflow Area=57,524 sf
Peak Elev=16.56'
Storage=0 cf
Pond MH-A4: Storm MH Comm Site Alley

Inflow Area=57,524 sf
Peak Elev=17.29'
Storage=0 cf

Pond MH-E2: Existing MH-E2

Inflow Area=249,648 sf
Peak Elev=10.71'
Pond MH-E3: Existing MH-E-3-OFF

Inflow Area=249,648 sf
Peak Elev=9.54'

Pond MH-E4: Woodruff Inlet E-4

Inflow Area=249,648 sf
Peak Elev=9.07'
**Pond PMH1: Proposed MH1**

**Inflow Area**: 105,395 sf

**Peak Elev**: 12.17'

**Inflow Area**: 150,036 sf

**Peak Elev**: 13.00'

---

**Pond PMH2: Proposed MH2**

---

*Inflow Area = 150,036 sf*

*Peak Elev = 13.00'*
Pond PMH3: Proposed MH 3

Inflow Area = 150,036 sf
Peak Elev = 11.52'

Link Drive N: North Driveway

Inflow Area = 5,281 sf
Reach ASW1: Overland swale

Hydrograph

Avg. Flow Depth=0.19'
Max Vel=0.87 fps
n=0.016
L=160.0'
S=0.0012 '
Capacity=19.21 cfs

Reach ASW2: Overland swale

Hydrograph

Inflow Area=4,612 sf
Avg. Flow Depth=0.24'
Max Vel=0.63 fps
n=0.016
L=120.0'
S=0.0005 '
Capacity=12.15 cfs
Reach ASW3: Overland swale

Inflow Area=3,884 sf
Avg. Flow Depth=0.12'
Max Vel=0.48 fps
n=0.016
L=160.0'
S=0.0006 '/'
Capacity=13.58 cfs

Reach STRT: EXISTING STREET

Inflow Area=253,532 sf
Avg. Flow Depth=0.12'
Max Vel=2.04 fps
n=0.016
L=25.0'
S=0.0080 '/'
Capacity=63.73 cfs
Reach SW-3: Overland swale

- Inflow Area = 3,884 sq ft
- Avg. Flow Depth = 0.05'
- Max Vel = 1.54 fps
- n = 0.016
- L = 160.0'
- S = 0.0200 '/'
- Capacity = 76.85 cfs

Reach TD1: Drain for slab to Geopave

- Inflow Area = 30,112 sq ft
- Avg. Flow Depth = 0.40'
- Max Vel = 2.47 fps
- n = 0.013
- L = 200.0'
- S = 0.0025 '/'
- Capacity = 6.25 cfs
Reach TD2: East End of Buildings

Inflow Area=6,627 sf  
Avg. Flow Depth=0.19'  
Max Vel=2.34 fps  
n=0.015  
L=50.0'  
S=0.0080 '/'  
Capacity=4.26 cfs

Pond 1P: RetainIt

Inflow Area=62,201 sf  
Peak Elev=14.15'  
Storage=1,881 cf
Pond 1 PGP: Geopave Area

- Inflow Area: 61,271 sf
- Peak Elev: 17.49'
- Storage: 3,351 cf

Pond 2P: RetainIts

- Inflow Area: 43,194 sf
- Peak Elev: 14.29'
- Storage: 2,615 cf
Pond 2PGP1: Geopave

Hydrograph

Inflow Area=1,292 sf
Peak Elev=14.83'
Storage=63 cf

Pond 2PGP2: Geopave

Hydrograph

Inflow Area=19,493 sf
Peak Elev=16.31'
Storage=1,059 cf
Pond 2PGP3: Geopave

Inflow Area=10,431 sf
Peak Elev=17.90'
Storage=0.018 af

Inflow Area=17,277 sf
Peak Elev=14.49'
Storage=1,497 cf
Pond 3PGPE: Geopave

Inflow Area=2,575 sf
Peak Elev=14.22'
Storage=8 cf

Pond 3PGPN: Geopave

Inflow Area=14,702 sf
Peak Elev=14.85'
Storage=578 cf
Pond 4P: RetainIt

Inflow Area=27,364 sf
Peak Elev=14.29'
Storage=1,721 cf

Pond 4PGP1: Geopave

Inflow Area=9,960 sf
Peak Elev=14.42'
Storage=205 cf
Pond 4PGP2: Geopave

Inflow Area=14,576 sf
Peak Elev=15.77'
Storage=820 cf

Pond 5P: RetainIt

Inflow Area=36,092 sf
Peak Elev=14.74'
Storage=3,299 cf
Pond 5PGPN: Geopave

Inflow Area=9,866 sf
Peak Elev=14.76'
Storage=340 cf

Pond 5PGPS: Geopave

Inflow Area=5,786 sf
Peak Elev=14.63'
Storage=142 cf
**Pond I-5: MH5**

- **Inflow Area:** 20,440 sf
- **Peak Elev:** 16.55'

**Hydrograph**

- **Inflow:** 1.33 cfs
- **Outflow:** 0.00 cfs

**Pond MH-A1: Storm Manhole Alley**

- **Inflow Area:** 63,520 sf
- **Peak Elev:** 17.34'
- **Storage:** 0 cf

**Hydrograph**

- **Inflow:** 3.00 cfs
- **Outflow:** 1.04 cfs
  - **Primary:** 1.92 cfs
  - **Secondary:** 0.00 cfs
Pond MH-A2: Storm Manhole Alley

- Inflow Area: 57,524 sf
- Peak Elev: 16.89'
- Storage: 0 cfs
- Hydrograph:

Pond MH-A3: Storm Manhole Alley

- Inflow Area: 57,524 sf
- Peak Elev: 16.56'
- Storage: 0 cfs
- Hydrograph:
Pond MH-A4: Storm MH Comm Site Alley

- Inflow Area: 57,524 sf
- Peak Elev: 17.29'
- Storage: 0 cf

Pond MH-E2: Existing MH-E2

- Inflow Area: 249,648 sf
- Peak Elev: 13.66'
Pond MH-E3: Existing MH-E-3-OFF

Inflow Area = 249,648 sf
Peak Elev = 10.65'

Pond MH-E4: Woodruff Inlet E-4

Inflow Area = 249,648 sf
Peak Elev = 10.41'
Pond PMH1: Proposed MH 1

Inflow Area = 105,395 sf
Peak Elev = 13.25'

Pond PMH2: Proposed MH2

Inflow Area = 150,036 sf
Peak Elev = 12.41'
Pond PMH3: Proposed MH 3

Inflow Area=150,036 sf
Peak Elev=11.75'

Link Drive N: North Driveway

Inflow Area=5,281 sf
Reach ASW1: Overland swale

Avg. Flow Depth = 0.25'
Max Vel = 1.01 fps
n = 0.016
L = 160.0'
S = 0.0012 '/'
Capacity = 19.21 cfs

Reach ASW2: Overland swale

Inflow Area = 4,612 sf
Avg. Flow Depth = 0.31'
Max Vel = 0.73 fps
n = 0.016
L = 120.0'
S = 0.0005 '/'
Capacity = 12.15 cfs
Reach ASW3: Overland swale

- Inflow Area = 3,884 sf
- Avg. Flow Depth = 0.14'
- Max Vel = 0.52 fps
- n = 0.016
- L = 160.0'
- S = 0.0006 '/'
- Capacity = 13.58 cfs

Reach STRT: EXISTING STREET

- Inflow Area = 253,532 sf
- Avg. Flow Depth = 0.17'
- Max Vel = 2.49 fps
- n = 0.016
- L = 25.0'
- S = 0.0080 '/'
- Capacity = 63.73 cfs
Reach SW-3: Overland swale

Inflow Area=3,884 sf
Avg. Flow Depth=0.09'
Max Vel=2.36 fps
n=0.016
L=160.0'
S=0.0200 '/'
Capacity=76.85 cfs

Reach TD1: Drain for slab to Geopave

Inflow Area=30,112 sf
Avg. Flow Depth=0.53'
Max Vel=2.83 fps
n=0.013
L=200.0'
S=0.0025 '/'
Capacity=6.25 cfs
SSDC PROPOSED SITE PLAN - STRUCTURES
Type III 24-hr 10-YEAR Rainfall=5.17"

Reach TD2: East End of Buildings

Hydrograph

- Inflow Area=6,627 sf
- Avg. Flow Depth=0.25'
- Max Vel=2.68 fps
- n=0.015
- L=50.0'
- S=0.0080 '/'
- Capacity=4.26 cfs

Pond 1P: RetainIt

Hydrograph

- Inflow Area=62,201 sf
- Peak Elev=14.80'
- Storage=3,746 cf
Pond 1: Gepave Area

- Inflow Area: 61,271 sf
- Peak Elevation: 17.60'
- Storage: 3,778 cf

Pond 2: Retainits

- Inflow Area: 43,194 sf
- Peak Elevation: 14.87'
- Storage: 4,546 cf
Pond 2PGP1: Geopave

Inflow Area=1,292 sf
Peak Elev=15.70'
Storage=140 cf

Pond 2PGP2: Geopave

Inflow Area=19,493 sf
Peak Elev=17.02'
Storage=1,481 cf
Pond 2PGP3: Geopave

Inflow Area=10,431 sf
Peak Elev=17.95'
Storage=0.020 af

Pond 3P: Retainit

Inflow Area=17,277 sf
Peak Elev=15.15'
Storage=2,410 cf
Pond 3PGPE: Geopave

- Inflow Area = 2,575 sf
- Peak Elev = 14.24'
- Storage = 16 cf

Pond 3PGPN: Geopave

- Inflow Area = 14,702 sf
- Peak Elev = 16.00'
- Storage = 1,359 cf
Pond 4P: RetainIt

Inflow Area=27,364 sf
Peak Elev=14.69'
Storage=2,500 cf

Pond 4PGP1: Geopave

Inflow Area=9,960 sf
Peak Elev=15.06'
Storage=623 cf
Pond 4PGP2: Geopave

Inflow Area=14,576 sf
Peak Elev=17.31'
Storage=1,548 cf

Pond 5P: RetainIt

Inflow Area=36,092 sf
Peak Elev=15.27'
Storage=4,588 cf
Pond 5PGPN: Geopave

Inflow Area = 9,866 sf
Peak Elev = 15.89'
Storage = 852 cf

Pond 5PGPS: Geopave

Inflow Area = 5,786 sf
Peak Elev = 15.67'
Storage = 425 cf
Pond I-5: MH5

Hydrograph

Inflow Area=20,440 sf
Peak Elev=16.74'

Pond MH-A1: Storm Manhole Alley

Hydrograph

Inflow Area=63,520 sf
Peak Elev=17.34'
Storage=0 cf
Pond MH-A2: Storm Manhole Alley

Inflow Area = 57,524 sf
Peak Elev = 16.89'
Storage = 0 cf

Pond MH-A3: Storm Manhole Alley

Inflow Area = 57,524 sf
Peak Elev = 16.57'
Storage = 0 cf

Hydrograph

Time (hours)
Flow (cfs)
Pond MH-A4: Storm MH Comm Site Alley

**Hydrograph**

- **Inflow Area:** 57,524 sf
- **Peak Elev:** 17.29'
- **Storage:** 0 cf

Pond MH-E2: Existing MH-E2

**Hydrograph**

- **Inflow Area:** 249,648 sf
- **Peak Elev:** 17.88'

---

**Type III 24-hr 10-YEAR Rainfall=5.17”**
Pond MH-E3: Existing MH-E-3-OFF

Inflow Area=249,648 sf
Peak Elev=12.50'

Pond MH-E4: Woodruff Inlet E-4

Inflow Area=249,648 sf
Peak Elev=12.32'
Pond PMH1: Proposed MH 1

Inflow Area=105,395 sf
Peak Elev=13.53'

Pond PMH2: Proposed MH2

Inflow Area=150,036 sf
Peak Elev=12.67'
Pond PMH3: Proposed MH 3

Hydrograph

Inflow Area=150,036 sf
Peak Elev=11.98'

Link Drive N: North Driveway

Hydrograph

Inflow Area=5,281 sf
Reach ASW1: Overland swale

Hydrograph

Avg. Flow Depth=0.28'
Max Vel=1.08 fps
n=0.016
L=160.0'
S=0.0012 '/'
Capacity=19.21 cfs

Reach ASW2: Overland swale

Hydrograph

Inflow Area=4,612 sf
Avg. Flow Depth=0.35'
Max Vel=0.78 fps
n=0.016
L=120.0'
S=0.0005 '/'
Capacity=12.15 cfs
Reach ASW3: Overland swale

Inflow Area = 3,884 sf
Avg. Flow Depth = 0.20'
Max Vel = 0.63 fps
n = 0.016
L = 160.0'
S = 0.0006 '/'
Capacity = 13.58 cfs

Reach STRT: EXISTING STREET

Inflow Area = 253,532 sf
Avg. Flow Depth = 0.19'
Max Vel = 2.69 fps
n = 0.016
L = 25.0'
S = 0.0080 '/'
Capacity = 63.73 cfs
Reach SW-3: Overland swale

Inflow Area=3,884 sf
Avg. Flow Depth=0.13'
Max Vel=2.83 fps
n=0.016
L=160.0'
S=0.0200 '
Capacity=76.85 cfs

Reach TD1: Drain for slab to Geopave

Inflow Area=30,112 sf
Avg. Flow Depth=0.62'
Max Vel=3.02 fps
n=0.013
L=200.0'
S=0.0025 '
Capacity=6.25 cfs
Reach TD2: East End of Buildings

Inflow Area=6,627 sf
Avg. Flow Depth=0.29'
Max Vel=2.86 fps
n=0.015
L=50.0'
S=0.0080 '/'
Capacity=4.26 cfs

Pond 1P: RetainIt

Inflow Area=62,201 sf
Peak Elev=15.34'
Storage=5,290 cf
Pond 1PGP: Geopave Area

Hydrograph

Inflow Area=61,271 sf
Peak Elev=17.67'
Storage=4,176 cf

Pond 2P: RetainIt's

Hydrograph

Inflow Area=43,194 sf
Peak Elev=15.36'
Storage=6,175 cf
Pond 2PGP1: Geopave

Inflow Area=1,292 sf
Peak Elev=16.37'
Storage=197 cf

Pond 2PGP2: Geopave

Inflow Area=19,493 sf
Peak Elev=17.06'
Storage=1,648 cf
Pond 2PGP3: Geopave

Inflow Area=10,431 sf
Peak Elev=17.97'
Storage=0.021 af

Pond 3P: Retainit

Inflow Area=17,277 sf
Peak Elev=15.56'
Storage=2,982 cf
Pond 3PGPE: Geopave

Inflow Area=2,575 sf
Peak Elev=14.29'
Storage=37 cf

Pond 3PGPN: Geopave

Inflow Area=14,702 sf
Peak Elev=16.89'
Storage=1,969 cf
Pond 4P: RetainIt

Inflow Area = 27,364 sf
Peak Elev = 15.07'
Storage = 3,230 cf

Pond 4PGP1: Geopave

Inflow Area = 9,960 sf
Peak Elev = 15.62'
Storage = 986 cf
Pond 4PGP2: Geopave

Hydrograph

Inflow Area=14,576 sf
Peak Elev=17.35'
Storage=1,638 cf

Pond 5P: RetainIt

Hydrograph

Inflow Area=36,092 sf
Peak Elev=15.65'
Storage=5,532 cf
Pond 5PGPN: Geopave

Inflow Area=9,866 sf
Peak Elev=16.79'
Storage=1,255 cf

Pond 5PGPS: Geopave

Inflow Area=5,786 sf
Peak Elev=16.53'
Storage=657 cf
Pond I-5: MH5

Inflow Area=20,440 sf
Peak Elev=16.89'

Pond MH-A1: Storm Manhole Alley

Inflow Area=63,520 sf
Peak Elev=17.34'
Storage=0 cf
Pond MH-A2: Storm Manhole Alley

Inflow Area=57,524 sf
Peak Elev=16.89'
Storage=0 cf

Pond MH-A3: Storm Manhole Alley

Inflow Area=57,524 sf
Peak Elev=16.57'
Storage=0 cf
Pond MH-A4: Storm MH Comm Site Alley

Inflow Area=57,524 sf
Peak Elev=17.29'
Storage=0 cf

Pond MH-E2: Existing MH-E2

Inflow Area=249,648 sf
Peak Elev=17.92'
Pond MH-E3: Existing MH-E-3-OFF

Inflow Area=249,648 sf
Peak Elev=12.51'

Pond MH-E4: Woodruff Inlet E-4

Inflow Area=249,648 sf
Peak Elev=12.34'
Pond PMH1: Proposed MH 1

Inflow Area=105,395 sf
Peak Elev=13.67'

Pond PMH2: Proposed MH2

Inflow Area=150,036 sf
Peak Elev=12.81'
Pond PMH3: Proposed MH 3

**Inflow Area=150,036 sf**

**Peak Elev=12.11'**

Link Drive N: North Driveway

**Inflow Area=5,281 sf**
Reach ASW1: Overland swale

Hydrograph

- Avg. Flow Depth = 0.32'
- Max Vel = 1.17 fps
- n = 0.016
- L = 160.0'
- S = 0.0012 '/'
- Capacity = 19.21 cfs

Reach ASW2: Overland swale

Hydrograph

- Inflow Area = 4,612 sf
- Avg. Flow Depth = 0.41'
- Max Vel = 0.85 fps
- n = 0.016
- L = 120.0'
- S = 0.0005 '/'
- Capacity = 12.15 cfs
Reach ASW3: Overland swale

- **Inflow Area:** 3,884 sf
- **Avg. Flow Depth:** 0.28'
- **Max Vel:** 0.77 fps
- **n:** 0.016
- **L:** 160.0'
- **S:** 0.0006 '/'
- **Capacity:** 13.58 cfs

Reach STRT: EXISTING STREET

- **Inflow Area:** 253,532 sf
- **Avg. Flow Depth:** 0.23'
- **Max Vel:** 3.06 fps
- **n:** 0.016
- **L:** 25.0'
- **S:** 0.0080 '/'
- **Capacity:** 63.73 cfs
Reach SW-3: Overland swale

Inflow Area=3,884 sf
Avg. Flow Depth=0.18'
Max Vel=3.45 fps
n=0.016
L=160.0'
S=0.0200 '/'
Capacity=76.85 cfs

Reach TD1: Drain for slab to Geopave

Inflow Area=30,112 sf
Avg. Flow Depth=0.77'
Max Vel=3.29 fps
n=0.013
L=200.0'
S=0.0025 '/'
Capacity=6.25 cfs
**Reach TD2: East End of Buildings**

- **Inflow Area**: 6,627 sf
- **Avg. Flow Depth**: 0.36'
- **Max Vel**: 3.12 fps
- **n**: 0.015
- **L**: 50.0'
- **S**: 0.0080 '/'
- **Capacity**: 4.26 cfs

**Pond 1P: RetainIt**

- **Inflow Area**: 62,201 sf
- **Peak Elev**: 17.18'
- **Storage**: 7,551 cf
Pond 1PGP: Geopave Area

Inflow Area = 61,271 sf
Peak Elev = 17.82'
Storage = 5,378 cf

Pond 2P: RetainIts

Inflow Area = 43,194 sf
Peak Elev = 16.82'
Storage = 9,194 cf
Pond 2PGP1: Geopave

Inflow Area=1,292 sf
Peak Elev=17.02'
Storage=254 cf

Pond 2PGP2: Geopave

Inflow Area=19,493 sf
Peak Elev=17.11'
Storage=1,881 cf
Pond 2PGP3: Geopave

- Inflow Area = 10,431 sf
- Peak Elev = 17.99'
- Storage = 0.023 af

Pond 3P: Retainit

- Inflow Area = 17,277 sf
- Peak Elev = 17.04'
- Storage = 3,778 cf
Pond 3PGPE: Geopave

Inflow Area=2,575 sf
Peak Elev=14.50'
Storage=130 cf

Pond 3PGPN: Geopave

Inflow Area=14,702 sf
Peak Elev=17.44'
Storage=2,434 cf
**Pond 4P: RetainIt**

- **Inflow Area**: 27,364 sf
- **Peak Elev**: 15.75'
- **Storage**: 4,547 cf

**Hydrograph**

**Pond 4PGP1: Geopave**

- **Inflow Area**: 9,960 sf
- **Peak Elev**: 16.74'
- **Storage**: 1,711 cf

**Hydrograph**
### Pond 4PGP2: Geopave

**Inflow Area** = 14,576 sf  
**Peak Elev** = 17.41'  
**Storage** = 1,755 cf

### Pond 5P: RetainIt

**Inflow Area** = 36,092 sf  
**Peak Elev** = 17.68'  
**Storage** = 7,842 cf
Pond 5PGPN: Geopave

Hydrograph

Inflow Area=9,866 sf  
Peak Elev=17.42'  
Storage=1,576 cf

Pond 5PGPS: Geopave

Hydrograph

Inflow Area=5,786 sf  
Peak Elev=17.23'  
Storage=879 cf
Pond I-5: MH5

**Inflow Area**= 20,440 sf
**Peak Elev**= 17.28'

Pond MH-A1: Storm Manhole Alley

**Inflow Area**= 63,520 sf
**Peak Elev**= 17.34'
**Storage**= 0 cf
Pond MH-A2: Storm Manhole Alley

Inflow Area=57,524 sf
Peak Elev=16.89'
Storage=0 cf

Pond MH-A3: Storm Manhole Alley

Inflow Area=57,524 sf
Peak Elev=16.58'
Storage=1 cf
Pond MH-A4: Storm MH Comm Site Alley

Inflow Area = 57,524 sf
Peak Elev = 17.29'
Storage = 0 cf

Pond MH-E2: Existing MH-E2

Inflow Area = 249,648 sf
Peak Elev = 17.99'

Type III 24-hr 100-YEAR Rainfall = 8.69"
Pond MH-E3: Existing MH-E-3-OFF

Inflow Area = 249,648 sf
Peak Elev = 12.51'

Pond MH-E4: Woodruff Inlet E-4

Inflow Area = 249,648 sf
Peak Elev = 12.38'
Pond PMH1: Proposed MH 1

Inflow Area = 105,395 sf
Peak Elev = 13.96'

Hydrograph

Pond PMH2: Proposed MH2

Inflow Area = 150,036 sf
Peak Elev = 13.11'

Hydrograph
Pond PMH3: Proposed MH 3

Inflow Area = 150,036 sf
Peak Elev = 12.37'

Link Drive N: North Driveway

Inflow Area = 5,281 sf
SECTION 2 - PROPOSED SITE PLAN – ROOFS TO GEOPAVE™
## Area Listing (all nodes)

<table>
<thead>
<tr>
<th>Area (sq-ft)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,548</td>
<td>76</td>
<td>Geopave Infiltration 4PGP2 (P-4S)</td>
</tr>
<tr>
<td>2,268</td>
<td>76</td>
<td>Geopave Infiltration Area (P3N)</td>
</tr>
<tr>
<td>1,014</td>
<td>76</td>
<td>Geopave Infiltration Area 2pgp3 (P-2NE)</td>
</tr>
<tr>
<td>4,560</td>
<td>76</td>
<td>Geopave Infiltration Area 2pgps (P-2M)</td>
</tr>
<tr>
<td>292</td>
<td>76</td>
<td>Geopave Infiltration area 2pgp1 (P-2S)</td>
</tr>
<tr>
<td>1,502</td>
<td>76</td>
<td>Geopave Infiltration3GPGPE (B-4)</td>
</tr>
<tr>
<td>3,462</td>
<td>76</td>
<td>Geopave infiltration area (P-1)</td>
</tr>
<tr>
<td>2,160</td>
<td>76</td>
<td>Gepave Infiltration 4PGP1 (B-5)</td>
</tr>
<tr>
<td>3,700</td>
<td>76</td>
<td>Gepave Infiltration 5PGP1 (B-6, B-7)</td>
</tr>
<tr>
<td>930</td>
<td>76</td>
<td>Landscape Buffer (B-1)</td>
</tr>
<tr>
<td>1,432</td>
<td>80</td>
<td>Landscape Buffer Good, HSG D (B-2)</td>
</tr>
<tr>
<td>5,281</td>
<td>98</td>
<td>North Driveway Paved HSG D (OS1)</td>
</tr>
<tr>
<td>149,154</td>
<td>98</td>
<td>Paved parking, HSG D (OS - 5, OS-6E, OS-6W, P-1, P-10A, P-2M, P-2NE, P-3E, P-4S, P-7A, P-7B, P-8, P-9, P-9R, P3N, P4-N, P4W)</td>
</tr>
<tr>
<td>30,112</td>
<td>98</td>
<td>Paved parking, and slab HSG D (P-7)</td>
</tr>
<tr>
<td>1,494</td>
<td>91</td>
<td>River Stone HSG D (B-6)</td>
</tr>
<tr>
<td>1,073</td>
<td>91</td>
<td>River Stone HSG D (B-4)</td>
</tr>
<tr>
<td>1,224</td>
<td>76</td>
<td>River Stone Island (ISL 4, ISL-1, ISL-2, ISL-3)</td>
</tr>
<tr>
<td>3,919</td>
<td>91</td>
<td>River Stone, HSG D (B-3, B-5, B-7)</td>
</tr>
<tr>
<td>1,000</td>
<td>98</td>
<td>Sidewalk and pavers (P-2S)</td>
</tr>
<tr>
<td>6,627</td>
<td>98</td>
<td>Unconnected roofs, HSG D (P-7R)</td>
</tr>
<tr>
<td><strong>258,831</strong></td>
<td><strong>96</strong></td>
<td><strong>TOTAL AREA</strong></td>
</tr>
</tbody>
</table>
## Soil Listing (all nodes)

<table>
<thead>
<tr>
<th>Area (sq-ft)</th>
<th>Soil Group</th>
<th>Subcatchment Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>HSG A</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>HSG B</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>HSG C</td>
<td></td>
</tr>
<tr>
<td>235,171</td>
<td>HSG D</td>
<td>B-2, B-3, B-4, B-5, B-6, B-7, OS - 5, OS-6E, OS-6R, OS-6W, OS1, P-1, P-10A, P-1R, P-2M, P-2NE, P-2R, P-3E, P-4R, P-4S, P-6R, P-7, P-7A, P-7B, P-7R, P-8, P-8R, P-9, P-9R, P3N, P4-N, P4W</td>
</tr>
<tr>
<td>23,660</td>
<td>Other</td>
<td>B-1, B-4, B-5, B-6, B-7, ISL 4, ISL-1, ISL-2, ISL-3, P-1, P-2M, P-2NE, P-2S, P-4S, P3N</td>
</tr>
<tr>
<td>258,831</td>
<td>TOTAL AREA</td>
<td></td>
</tr>
</tbody>
</table>
### Ground Covers (all nodes)

<table>
<thead>
<tr>
<th>HSG-A (sq-ft)</th>
<th>HSG-B (sq-ft)</th>
<th>HSG-C (sq-ft)</th>
<th>HSG-D (sq-ft)</th>
<th>Other (sq-ft)</th>
<th>Total (sq-ft)</th>
<th>Ground Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,548</td>
<td>1,548</td>
<td>Geopave Infiltration 4PGP2</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2,268</td>
<td>2,268</td>
<td>Geopave Infiltration Area</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,014</td>
<td>1,014</td>
<td>Geopave Infiltration Area</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4,560</td>
<td>4,560</td>
<td>Geopave Infiltration Area</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>292</td>
<td>292</td>
<td>Geopave Infiltration area</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,502</td>
<td>1,502</td>
<td>Geopave Infiltration3GPGP</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3,462</td>
<td>3,462</td>
<td>Geopave infiltration area</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2,160</td>
<td>2,160</td>
<td>Gepave Infiltration 4PGP1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3,700</td>
<td>3,700</td>
<td>Gepave Infiltration 5PGP1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>930</td>
<td>930</td>
<td>Landscape Buffer Good</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,432</td>
<td>0</td>
<td>1,432</td>
<td>Landscape Buffer</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5,281</td>
<td>0</td>
<td>5,281</td>
<td>North Driveway Paved</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>149,154</td>
<td>0</td>
<td>149,154</td>
<td>Paved parking</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>30,112</td>
<td>0</td>
<td>30,112</td>
<td>Paved parking, and slab</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6,486</td>
<td>0</td>
<td>6,486</td>
<td>River Stone</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,224</td>
<td>1,224</td>
<td>River Stone Island</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>36,079</td>
<td>0</td>
<td>36,079</td>
<td>Roofs</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,000</td>
<td>1,000</td>
<td>Sidewalk and pavers</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6,627</td>
<td>0</td>
<td>6,627</td>
<td>Unconnected roofs</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>235,171</td>
<td>23,660</td>
<td>258,831</td>
<td>TOTAL AREA</td>
</tr>
</tbody>
</table>
### Pipe Listing (all nodes)

<table>
<thead>
<tr>
<th>Line#</th>
<th>Node Number</th>
<th>In-Invert</th>
<th>Out-Invert</th>
<th>Length</th>
<th>Slope</th>
<th>n</th>
<th>Diam/Width</th>
<th>Height</th>
<th>Inside-Fill</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1P</td>
<td>13.40</td>
<td>12.70</td>
<td>248.0</td>
<td>0.0028</td>
<td>0.012</td>
<td>24.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2</td>
<td>1PGP</td>
<td>13.70</td>
<td>13.60</td>
<td>10.0</td>
<td>0.0100</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>3</td>
<td>1PGP</td>
<td>13.80</td>
<td>13.70</td>
<td>20.0</td>
<td>0.0050</td>
<td>0.012</td>
<td>6.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>4</td>
<td>2P</td>
<td>13.50</td>
<td>13.12</td>
<td>10.0</td>
<td>0.0380</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>5</td>
<td>2PGP1</td>
<td>13.80</td>
<td>13.70</td>
<td>65.0</td>
<td>0.0015</td>
<td>0.012</td>
<td>6.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>6</td>
<td>2PGP1</td>
<td>13.80</td>
<td>13.70</td>
<td>10.0</td>
<td>0.0100</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>7</td>
<td>2PGP2</td>
<td>13.65</td>
<td>13.60</td>
<td>18.0</td>
<td>0.0028</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>8</td>
<td>2PGP2</td>
<td>13.80</td>
<td>13.65</td>
<td>20.0</td>
<td>0.0075</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>9</td>
<td>2PGP3</td>
<td>15.00</td>
<td>14.60</td>
<td>78.0</td>
<td>0.0051</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>10</td>
<td>2PGP3</td>
<td>15.10</td>
<td>13.70</td>
<td>20.0</td>
<td>0.0700</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>11</td>
<td>3P</td>
<td>13.30</td>
<td>12.70</td>
<td>46.0</td>
<td>0.0130</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>12</td>
<td>3PGPE</td>
<td>13.90</td>
<td>13.70</td>
<td>70.0</td>
<td>0.0029</td>
<td>0.012</td>
<td>8.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>13</td>
<td>3PGPE</td>
<td>14.00</td>
<td>13.70</td>
<td>20.0</td>
<td>0.0150</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>14</td>
<td>3PGPN</td>
<td>13.60</td>
<td>13.40</td>
<td>30.0</td>
<td>0.0067</td>
<td>0.012</td>
<td>8.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>15</td>
<td>3PGPN</td>
<td>13.80</td>
<td>13.70</td>
<td>20.0</td>
<td>0.0050</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>16</td>
<td>4P</td>
<td>13.30</td>
<td>12.00</td>
<td>25.0</td>
<td>0.0520</td>
<td>0.012</td>
<td>8.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>17</td>
<td>4PGP1</td>
<td>13.70</td>
<td>13.50</td>
<td>42.0</td>
<td>0.0048</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>18</td>
<td>4PGP1</td>
<td>13.90</td>
<td>13.70</td>
<td>20.0</td>
<td>0.0100</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>19</td>
<td>4PGP2</td>
<td>13.50</td>
<td>13.40</td>
<td>20.0</td>
<td>0.0050</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>20</td>
<td>4PGP2</td>
<td>13.80</td>
<td>13.70</td>
<td>20.0</td>
<td>0.0050</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>21</td>
<td>5P</td>
<td>13.50</td>
<td>10.00</td>
<td>10.0</td>
<td>0.3500</td>
<td>0.012</td>
<td>10.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>22</td>
<td>5PGPN</td>
<td>13.70</td>
<td>13.60</td>
<td>10.0</td>
<td>0.0100</td>
<td>0.012</td>
<td>6.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>23</td>
<td>5PGPN</td>
<td>13.80</td>
<td>13.70</td>
<td>20.0</td>
<td>0.0050</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>24</td>
<td>5PGPS</td>
<td>13.70</td>
<td>13.60</td>
<td>2.0</td>
<td>0.0500</td>
<td>0.012</td>
<td>6.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>25</td>
<td>5PGPS</td>
<td>13.70</td>
<td>13.60</td>
<td>2.0</td>
<td>0.0500</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>26</td>
<td>COMM-2</td>
<td>11.12</td>
<td>10.58</td>
<td>182.0</td>
<td>0.0030</td>
<td>0.013</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>27</td>
<td>COMM-2</td>
<td>14.10</td>
<td>13.10</td>
<td>170.0</td>
<td>0.0059</td>
<td>0.013</td>
<td>18.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>28</td>
<td>COMM-1</td>
<td>16.29</td>
<td>11.12</td>
<td>85.0</td>
<td>0.0608</td>
<td>0.013</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>29</td>
<td>I-5</td>
<td>15.94</td>
<td>14.10</td>
<td>86.0</td>
<td>0.0214</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>30</td>
<td>I-6</td>
<td>15.71</td>
<td>10.30</td>
<td>30.0</td>
<td>0.1803</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>31</td>
<td>MH-A1</td>
<td>10.67</td>
<td>10.28</td>
<td>240.0</td>
<td>0.0016</td>
<td>0.013</td>
<td>8.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>32</td>
<td>MH-A2</td>
<td>10.67</td>
<td>10.28</td>
<td>240.0</td>
<td>0.0016</td>
<td>0.013</td>
<td>8.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>33</td>
<td>MH-A3</td>
<td>10.67</td>
<td>10.28</td>
<td>240.0</td>
<td>0.0016</td>
<td>0.013</td>
<td>6.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>34</td>
<td>MH-A4</td>
<td>11.12</td>
<td>10.58</td>
<td>182.0</td>
<td>0.0030</td>
<td>0.013</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>35</td>
<td>MH-A4</td>
<td>14.10</td>
<td>13.10</td>
<td>170.0</td>
<td>0.0059</td>
<td>0.011</td>
<td>18.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>36</td>
<td>MH-E2</td>
<td>8.74</td>
<td>8.02</td>
<td>165.0</td>
<td>0.0044</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>37</td>
<td>MH-E3</td>
<td>8.00</td>
<td>7.90</td>
<td>30.0</td>
<td>0.0033</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>38</td>
<td>MH-E4</td>
<td>6.90</td>
<td>6.80</td>
<td>100.0</td>
<td>0.0010</td>
<td>0.013</td>
<td>15.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>39</td>
<td>PMH1</td>
<td>12.60</td>
<td>11.80</td>
<td>200.0</td>
<td>0.0040</td>
<td>0.012</td>
<td>24.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>40</td>
<td>PMH2</td>
<td>11.70</td>
<td>11.10</td>
<td>118.0</td>
<td>0.0051</td>
<td>0.012</td>
<td>24.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>41</td>
<td>PMH3</td>
<td>11.10</td>
<td>9.37</td>
<td>90.0</td>
<td>0.0192</td>
<td>0.012</td>
<td>24.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>
SSDC SITE PLAN PROPOSED - ROOFS INCLUDED

2020-02-28 SSDC-1699.C PROPOSED incl roofs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

Prepared by Windows User
Printed 3/4/2020
Page 5

Time span=0.00-60.00 hrs, dt=0.05 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Runoff Area</th>
<th>Impervious (%)</th>
<th>Runoff Depth</th>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subcatchment B-1: Landscape Buffer North</td>
<td>930 sf</td>
<td>0.00% Impervious</td>
<td>0.10”</td>
<td>10.0 min</td>
<td>76</td>
<td>8 cf</td>
</tr>
<tr>
<td>Subcatchment B-2: Riverstone Buffer North</td>
<td>1,432 sf</td>
<td>0.00% Impervious</td>
<td>0.17”</td>
<td>10.0 min</td>
<td>80</td>
<td>21 cf</td>
</tr>
<tr>
<td>Subcatchment B-3: Riverstone Buffer North</td>
<td>1,354 sf</td>
<td>0.00% Impervious</td>
<td>0.54”</td>
<td>10.0 min</td>
<td>91</td>
<td>61 cf</td>
</tr>
<tr>
<td>Subcatchment B-4: Riverstone and Geopave</td>
<td>2,575 sf</td>
<td>0.00% Impervious</td>
<td>0.22”</td>
<td>10.0 min</td>
<td>82</td>
<td>47 cf</td>
</tr>
<tr>
<td>Subcatchment B-5: River Stone and</td>
<td>3,703 sf</td>
<td>0.00% Impervious</td>
<td>0.22”</td>
<td>10.0 min</td>
<td>82</td>
<td>68 cf</td>
</tr>
<tr>
<td>Subcatchment B-6: Riverstone Buffer and</td>
<td>3,261 sf</td>
<td>0.00% Impervious</td>
<td>0.24”</td>
<td>10.0 min</td>
<td>83</td>
<td>66 cf</td>
</tr>
<tr>
<td>Subcatchment B-7: Riverstone and Geopave</td>
<td>2,955 sf</td>
<td>0.00% Impervious</td>
<td>0.20”</td>
<td>10.0 min</td>
<td>81</td>
<td>48 cf</td>
</tr>
<tr>
<td>Subcatchment ISL 4: River Stone Island</td>
<td>306 sf</td>
<td>0.00% Impervious</td>
<td>0.10”</td>
<td>10.0 min</td>
<td>76</td>
<td>3 cf</td>
</tr>
<tr>
<td>Subcatchment ISL-1: River Stone Island</td>
<td>306 sf</td>
<td>0.00% Impervious</td>
<td>0.10”</td>
<td>10.0 min</td>
<td>76</td>
<td>3 cf</td>
</tr>
<tr>
<td>Subcatchment ISL-2: River Stone Island</td>
<td>306 sf</td>
<td>0.00% Impervious</td>
<td>0.10”</td>
<td>10.0 min</td>
<td>76</td>
<td>3 cf</td>
</tr>
<tr>
<td>Subcatchment ISL-3: River Stone Island</td>
<td>306 sf</td>
<td>0.00% Impervious</td>
<td>0.10”</td>
<td>10.0 min</td>
<td>76</td>
<td>3 cf</td>
</tr>
<tr>
<td>Subcatchment OS - 5: OFFSITE</td>
<td>2,249 sf</td>
<td>100.00% Impervious</td>
<td>1.03”</td>
<td>10.0 min</td>
<td>98</td>
<td>194 cf</td>
</tr>
<tr>
<td>Subcatchment OS-6E: COMM EAST</td>
<td>20,681 sf</td>
<td>100.00% Impervious</td>
<td>1.03”</td>
<td>10.0 min</td>
<td>98</td>
<td>1,783 cf</td>
</tr>
<tr>
<td>Subcatchment OS-6R: COMM ROOF</td>
<td>13,913 sf</td>
<td>100.00% Impervious</td>
<td>1.03”</td>
<td>10.0 min</td>
<td>98</td>
<td>1,200 cf</td>
</tr>
<tr>
<td>Subcatchment OS-6W: COMM-WEST</td>
<td>20,681 sf</td>
<td>100.00% Impervious</td>
<td>1.03”</td>
<td>10.0 min</td>
<td>98</td>
<td>1,783 cf</td>
</tr>
<tr>
<td>Subcatchment OS1: North Driveway</td>
<td>5,281 sf</td>
<td>100.00% Impervious</td>
<td>1.03”</td>
<td>10.8 min</td>
<td>98</td>
<td>455 cf</td>
</tr>
<tr>
<td>Subcatchment</td>
<td>Runoff Area</td>
<td>Impervious%</td>
<td>Runoff Depth</td>
<td>Tc (min)</td>
<td>CN</td>
<td>Runoff Rate</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
<td>-------------</td>
<td>--------------</td>
<td>----------</td>
<td>-----</td>
<td>-------------</td>
</tr>
<tr>
<td>P-1: Northwest</td>
<td>30,556 sf</td>
<td>88.67%</td>
<td>0.86”</td>
<td>10.0</td>
<td>96</td>
<td>1.56 cfs</td>
</tr>
<tr>
<td>P-10A: Alley</td>
<td>4,612 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.27 cfs</td>
</tr>
<tr>
<td>P-1R: ROOFS</td>
<td>1,400 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.08 cfs</td>
</tr>
<tr>
<td>P-2M: North Central</td>
<td>18,201 sf</td>
<td>74.95%</td>
<td>0.60”</td>
<td>10.0</td>
<td>92</td>
<td>0.66 cfs</td>
</tr>
<tr>
<td>P-2NE: North Central</td>
<td>8,999 sf</td>
<td>88.73%</td>
<td>0.86”</td>
<td>10.0</td>
<td>96</td>
<td>0.46 cfs</td>
</tr>
<tr>
<td>P-2R: Roofs, warehouse</td>
<td>4,125 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.24 cfs</td>
</tr>
<tr>
<td>P-2S: Between Buildings</td>
<td>1,292 sf</td>
<td>77.40%</td>
<td>0.65”</td>
<td>10.0</td>
<td>93</td>
<td>0.05 cfs</td>
</tr>
<tr>
<td>P-3E: Northeast Corner</td>
<td>5,025 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.30 cfs</td>
</tr>
<tr>
<td>P-4R: Roof to 4P</td>
<td>2,828 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.17 cfs</td>
</tr>
<tr>
<td>P-4S: Paved Parking</td>
<td>7,833 sf</td>
<td>80.24%</td>
<td>0.72”</td>
<td>10.0</td>
<td>94</td>
<td>0.34 cfs</td>
</tr>
<tr>
<td>P-6R: Roof</td>
<td>8,937 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.53 cfs</td>
</tr>
<tr>
<td>P-7: Slab Area - Repaved</td>
<td>30,112 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>1.78 cfs</td>
</tr>
<tr>
<td>P-7A: S CORNER ALLEY</td>
<td>2,831 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.17 cfs</td>
</tr>
<tr>
<td>P-7B: Paved Parking</td>
<td>6,605 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.39 cfs</td>
</tr>
<tr>
<td>P-7R: Roof</td>
<td>6,627 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.39 cfs</td>
</tr>
<tr>
<td>P-8: Alley</td>
<td>3,884 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.23 cfs</td>
</tr>
<tr>
<td>P-8R: Roof</td>
<td>4,876 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.29 cfs</td>
</tr>
</tbody>
</table>
### SSDC SITE PLAN PROPOSED - ROOFS INCLUDED

**2020-02-28 SSDC-1699.C PROPOSED incl roofs**

**NJ DEP 2-hr 1 NJWQ Rainfall=1.25”**

Prepared by Windows User  
Printed 3/4/2020  
Prepared by Windows User  
Page 7

**HydroCAD® 10.00-25**  
s/n 06187  
© 2019 HydroCAD Software Solutions LLC

<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Runoff Area</th>
<th>Impervious</th>
<th>Runoff Depth</th>
<th>Tc (min)</th>
<th>CN</th>
<th>Runoff (cfs)</th>
<th>Storage (cf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alley</td>
<td>1,384 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.08 cfs</td>
<td>119</td>
</tr>
<tr>
<td>West End Roofs</td>
<td>7,745 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.46 cfs</td>
<td>668</td>
</tr>
<tr>
<td>Northeast Corner</td>
<td>8,026 sf</td>
<td>71.74%</td>
<td>0.60”</td>
<td>10.0</td>
<td>92</td>
<td>0.29 cfs</td>
<td>398</td>
</tr>
<tr>
<td>Paved Parking</td>
<td>6,257 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.37 cfs</td>
<td>539</td>
</tr>
<tr>
<td>North Parking</td>
<td>6,437 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.38 cfs</td>
<td>555</td>
</tr>
<tr>
<td>South Parking</td>
<td>6,437 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.46 cfs</td>
<td>668</td>
</tr>
<tr>
<td>Southwest Parking</td>
<td>6,437 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.46 cfs</td>
<td>668</td>
</tr>
<tr>
<td>Existing Street</td>
<td>6,437 sf</td>
<td>100.00%</td>
<td>1.03”</td>
<td>10.0</td>
<td>98</td>
<td>0.46 cfs</td>
<td>668</td>
</tr>
</tbody>
</table>

**Reach ASW1: Overland swale**  
Avg. Flow Depth=0.17”  
Max Vel=0.82 fps  
Inflow=2.35 cfs  
Capacity=19.21 cfs  
Outflow=2.06 cfs  
Storage=119 cf

**Reach ASW2: Overland swale**  
Avg. Flow Depth=0.21”  
Max Vel=0.59 fps  
Inflow=2.23 cfs  
Capacity=12.15 cfs  
Outflow=2.01 cfs  
Storage=223 cf

**Reach ASW3: Overland swale**  
Avg. Flow Depth=0.12”  
Max Vel=0.47 fps  
Inflow=0.81 cfs  
Capacity=13.58 cfs  
Outflow=0.75 cfs  
Storage=212 cf

**Reach STRT: EXISTING STREET**  
Avg. Flow Depth=0.09”  
Max Vel=1.66 fps  
Inflow=3.79 cfs  
Capacity=63.73 cfs  
Outflow=3.74 cfs  
Storage=17671 cf

**Reach SW-3: Overland swale**  
Avg. Flow Depth=0.04”  
Max Vel=2.59 fps  
Inflow=2.32 cfs  
Capacity=6.25 cfs  
Outflow=2.23 cfs  
Storage=3385 cf

**Reach TD1: Drain for slab to Geopave**  
Avg. Flow Depth=0.44”  
Max Vel=2.59 fps  
Inflow=2.32 cfs  
Capacity=6.25 cfs  
Outflow=2.23 cfs  
Storage=3385 cf

**Reach TD2: East End of Buildings**  
Avg. Flow Depth=0.00”  
Max Vel=0.00 fps  
Capacity=4.26 cfs  
Outflow=0.00 cfs  
Storage=0 cf

**Pond 1P: Retainlt**  
Peak Elev=13.97’  
Storage=1,341 cf  
Inflow=0.95 cfs  
Capacity=5,598 cf  
Outflow=0.95 cfs  
Storage=5,598 cf

**Pond 1PGP: Geopave Area**  
Peak Elev=17.02’  
Storage=2,955 cf  
Inflow=3.76 cfs  
Capacity=5,579 cf  
Outflow=0.95 cfs  
Storage=5,590 cf

**Pond 2P: Retainlts**  
Peak Elev=13.96’  
Storage=1,518 cf  
Inflow=0.36 cfs  
Capacity=1,996 cf  
Outflow=0.17 cfs  
Storage=1,330 cf

**Pond 2PGP1: Geopave**  
Peak Elev=16.96’  
Storage=249 cf  
Inflow=0.29 cfs  
Capacity=426 cf  
Outflow=0.40 cfs  
Storage=426 cf

**Pond 2PGP2: Geopave**  
Peak Elev=14.87’  
Storage=372 cf  
Inflow=0.70 cfs  
Capacity=1,329 cf  
Outflow=0.22 cfs  
Storage=1,329 cf
Pond 2PGP3: Geopave
Peak Elev=16.14’ Storage=0.006 af  Inflow=0.47 cfs 665 cf
Outflow=0.14 cfs 667 cf

Pond 3P: RetainIt
Peak Elev=13.89’ Storage=672 cf Inflow=0.34 cfs 942 cf
Primary=0.10 cfs 942 cf  Secondary=0.00 cfs 0 cf  Outflow=0.10 cfs 942 cf

Pond 3PGPE: Geopave
Peak Elev=14.21’ Storage=5 cf Inflow=0.03 cfs 47 cf
Outflow=0.03 cfs 47 cf

Pond 3PGPN: Geopave
Peak Elev=14.35’ Storage=238 cf Inflow=0.63 cfs 895 cf
Outflow=0.32 cfs 895 cf

Pond 4P: RetainIt
Peak Elev=13.90’ Storage=959 cf Inflow=0.52 cfs 2,646 cf
Primary=0.22 cfs 2,549 cf  Secondary=0.00 cfs 0 cf  Outflow=0.22 cfs 2,549 cf

Pond 4PGP1: Geopave
Peak Elev=14.23’ Storage=86 cf Inflow=0.41 cfs 607 cf
Outflow=0.30 cfs 607 cf

Pond 4PGP2: Geopave
Peak Elev=16.48’ Storage=1,150 cf Inflow=1.41 cfs 2,039 cf
Outflow=0.22 cfs 2,039 cf

Pond 5P: RetainIt
Peak Elev=13.84’ Storage=1,084 cf Inflow=0.33 cfs 1,922 cf
Primary=0.12 cfs 1,429 cf  Secondary=0.00 cfs 0 cf  Outflow=0.12 cfs 1,429 cf

Pond 5PGPN: Geopave
Peak Elev=14.34’ Storage=154 cf Inflow=0.43 cfs 636 cf
Outflow=0.21 cfs 636 cf

Pond 5PGPS: Geopave
Peak Elev=16.81’ Storage=731 cf Inflow=0.87 cfs 1,284 cf
Outflow=0.13 cfs 1,286 cf

Pond COMM- 2: Storm Grate East Side
Peak Elev=17.40’ Storage=234 cf Inflow=1.22 cfs 1,783 cf
Primary=0.35 cfs 1,238 cf  Secondary=0.78 cfs 552 cf  Outflow=1.13 cfs 1,790 cf

Pond COMM-1: Grate SW corner Comm Bldg
Peak Elev=17.29’ Storage=102 cf Inflow=2.05 cfs 2,982 cf
Primary=0.47 cfs 1,716 cf  Secondary=1.61 cfs 1,270 cf  Outflow=2.08 cfs 2,987 cf

Pond I-5: MH5
Peak Elev=15.94’ Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf  Secondary=0.00 cfs 0 cf  Outflow=0.00 cfs 0 cf

Pond I-6: Alley Inlet
Peak Elev=16.40’ Inflow=2.03 cfs 2,342 cf
Primary=2.03 cfs 2,342 cf  Secondary=0.00 cfs 0 cf  Outflow=2.03 cfs 2,342 cf

Pond MH-A1: Storm Manhole Alley
Peak Elev=17.34’ Storage=0 cf Inflow=2.41 cfs 3,701 cf
Primary=0.87 cfs 1,332 cf  Secondary=1.54 cfs 2,370 cf  Outflow=2.41 cfs 3,701 cf

Pond MH-A2: Storm Manhole Alley
Peak Elev=16.89’ Storage=0 cf Inflow=0.84 cfs 3,019 cf
Primary=0.38 cfs 1,359 cf  Secondary=0.46 cfs 1,660 cf  Outflow=0.84 cfs 3,019 cf

Pond MH-A3: Storm Manhole Alley
Peak Elev=16.56’ Storage=0 cf Inflow=0.96 cfs 3,146 cf
Primary=0.84 cfs 3,019 cf  Secondary=0.11 cfs 127 cf  Outflow=0.96 cfs 3,146 cf
SSDC SITE PLAN PROPOSED - ROOFS INCLUDED

2020-02-28 SSDC-1699.C PROPOSED incl roofs
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"

Pond MH-A4: Storm MH Comm Site Alley
Peak Elev=17.29’ Storage=0 cf Inflow=0.96 cfs 3,149 cf
Primary=0.96 cfs 3,146 cf Secondary=0.00 cfs 3 cf Outflow=0.96 cfs 3,149 cf

Pond MH-E2: Existing MH-E2
Peak Elev=10.46’ Inflow=3.05 cfs 15,550 cf
Primary=3.05 cfs 15,550 cf Tertiary=0.00 cfs 0 cf Outflow=3.05 cfs 15,550 cf

Pond MH-E3: Existing MH-E3-OFF
Peak Elev=9.45’ Inflow=3.05 cfs 15,550 cf
Primary=3.05 cfs 15,550 cf Secondary=0.00 cfs 0 cf Outflow=3.05 cfs 15,550 cf

Pond MH-E4: Woodruff Inlet E-4
Peak Elev=8.11’ Inflow=3.05 cfs 15,550 cf
Primary=3.05 cfs 15,550 cf Secondary=0.00 cfs 0 cf Outflow=3.05 cfs 15,550 cf

Pond PMH1: Proposed MH 1
Peak Elev=13.04’ Inflow=0.89 cfs 6,928 cf
Primary=0.89 cfs 6,928 cf Secondary=0.00 cfs 0 cf Outflow=0.89 cfs 6,928 cf

Pond PMH2: Proposed MH2
Peak Elev=12.19’ Inflow=1.21 cfs 10,419 cf
Primary=1.21 cfs 10,419 cf Secondary=0.00 cfs 0 cf Outflow=1.21 cfs 10,419 cf

Pond PMH3: Proposed MH 3
Peak Elev=11.55’ Inflow=1.21 cfs 10,419 cf
Primary=1.21 cfs 10,419 cf Secondary=0.00 cfs 0 cf Outflow=1.21 cfs 10,419 cf

Link Drive N: North Driveway
Inflow=0.31 cfs 455 cf
Primary=0.31 cfs 455 cf

Link SSPRING ST: Spring Street
Inflow=0.31 cfs 455 cf
Primary=0.31 cfs 455 cf

Total Runoff Area = 258,831 sf
Runoff Volume = 19,354 cf
Average Runoff Depth = 0.90"
11.81% Pervious = 30,578 sf
88.19% Impervious = 228,253 sf
SSDC SITE PLAN PROPOSED - ROOFS INCLUDED

2020-02-28 SSDC-1699.C PROPOSED incl roofs  Type III 24-hr  2-YEAR Rainfall=3.39”


HydroCAD® 10.00-25  s/n 06187 © 2019 HydroCAD Software Solutions LLC

Page 10

<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Runoff Area</th>
<th>Impervious</th>
<th>Runoff Depth</th>
<th>Tc (min)</th>
<th>CN</th>
<th>Runoff</th>
<th>100 cf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subcatchment B-1: Landscape Buffer North</td>
<td>930 sf</td>
<td>0.00%</td>
<td>1.29”</td>
<td>10.0</td>
<td>76</td>
<td>0.03 cfs</td>
<td>100 cf</td>
</tr>
<tr>
<td>Subcatchment B-2: Riverstone Buffer North</td>
<td>1,432 sf</td>
<td>0.00%</td>
<td>1.55”</td>
<td>10.0</td>
<td>80</td>
<td>0.05 cfs</td>
<td>185 cf</td>
</tr>
<tr>
<td>Subcatchment B-3: Riverstone Buffer North</td>
<td>1,354 sf</td>
<td>0.00%</td>
<td>2.44”</td>
<td>10.0</td>
<td>91</td>
<td>0.08 cfs</td>
<td>275 cf</td>
</tr>
<tr>
<td>Subcatchment B-4: Riverstone and Geopave</td>
<td>2,575 sf</td>
<td>0.00%</td>
<td>1.69”</td>
<td>10.0</td>
<td>82</td>
<td>0.10 cfs</td>
<td>363 cf</td>
</tr>
<tr>
<td>Subcatchment B-5: River Stone and</td>
<td>3,703 sf</td>
<td>0.00%</td>
<td>1.69”</td>
<td>10.0</td>
<td>82</td>
<td>0.15 cfs</td>
<td>522 cf</td>
</tr>
<tr>
<td>Subcatchment B-6: Riverstone Buffer and</td>
<td>3,261 sf</td>
<td>0.00%</td>
<td>1.77”</td>
<td>10.0</td>
<td>83</td>
<td>0.13 cfs</td>
<td>480 cf</td>
</tr>
<tr>
<td>Subcatchment B-7: Riverstone and Geopave</td>
<td>2,955 sf</td>
<td>0.00%</td>
<td>1.62”</td>
<td>10.0</td>
<td>81</td>
<td>0.11 cfs</td>
<td>399 cf</td>
</tr>
<tr>
<td>Subcatchment ISL 4: River Stone Island</td>
<td>306 sf</td>
<td>0.00%</td>
<td>1.29”</td>
<td>10.0</td>
<td>76</td>
<td>0.01 cfs</td>
<td>33 cf</td>
</tr>
<tr>
<td>Subcatchment ISL-1: River Stone Island</td>
<td>306 sf</td>
<td>0.00%</td>
<td>1.29”</td>
<td>10.0</td>
<td>76</td>
<td>0.01 cfs</td>
<td>33 cf</td>
</tr>
<tr>
<td>Subcatchment ISL-2: River Stone Island</td>
<td>306 sf</td>
<td>0.00%</td>
<td>1.29”</td>
<td>10.0</td>
<td>76</td>
<td>0.01 cfs</td>
<td>33 cf</td>
</tr>
<tr>
<td>Subcatchment ISL-3: River Stone Island</td>
<td>306 sf</td>
<td>0.00%</td>
<td>1.29”</td>
<td>10.0</td>
<td>76</td>
<td>0.01 cfs</td>
<td>33 cf</td>
</tr>
<tr>
<td>Subcatchment OS-5: OFFSITE</td>
<td>2,249 sf</td>
<td>100.00%</td>
<td>3.16”</td>
<td>10.0</td>
<td>98</td>
<td>0.15 cfs</td>
<td>592 cf</td>
</tr>
<tr>
<td>Subcatchment OS-6E: COMM EAST</td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>3.16”</td>
<td>10.0</td>
<td>98</td>
<td>1.35 cfs</td>
<td>5,441 cf</td>
</tr>
<tr>
<td>Subcatchment OS-6R: COMM ROOF</td>
<td>13,913 sf</td>
<td>100.00%</td>
<td>3.16”</td>
<td>10.0</td>
<td>98</td>
<td>0.91 cfs</td>
<td>3,660 cf</td>
</tr>
<tr>
<td>Subcatchment OS-6W: COMM WEST</td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>3.16”</td>
<td>10.0</td>
<td>98</td>
<td>1.35 cfs</td>
<td>5,441 cf</td>
</tr>
<tr>
<td>Subcatchment OS1: North Driveway</td>
<td>5,281 sf</td>
<td>100.00%</td>
<td>3.16”</td>
<td>10.0</td>
<td>98</td>
<td>0.34 cfs</td>
<td>1,389 cf</td>
</tr>
</tbody>
</table>

Flow Length=175’  
Time span=0.00-60.00 hrs, dt=0.05 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method
<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Runoff Area</th>
<th>Impervious</th>
<th>Runoff Depth</th>
<th>Tc (min)</th>
<th>CN</th>
<th>Runoff (cfs)</th>
<th>Runoff (cf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-1: Northwest</td>
<td>30,556 sf</td>
<td>88.67%</td>
<td>2.94&quot;</td>
<td>10</td>
<td>96</td>
<td>1.94 cfs</td>
<td>7,478 cf</td>
</tr>
<tr>
<td>P-10A: Alley</td>
<td>4,612 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10</td>
<td>98</td>
<td>0.30 cfs</td>
<td>1,213 cf</td>
</tr>
<tr>
<td>P-1R: ROOFS</td>
<td>1,400 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10</td>
<td>98</td>
<td>0.09 cfs</td>
<td>368 cf</td>
</tr>
<tr>
<td>P-2M: North Central</td>
<td>18,201 sf</td>
<td>74.95%</td>
<td>2.53&quot;</td>
<td>10</td>
<td>92</td>
<td>1.04 cfs</td>
<td>3,840 cf</td>
</tr>
<tr>
<td>P-2NE: North Central</td>
<td>8,999 sf</td>
<td>88.73%</td>
<td>2.94&quot;</td>
<td>10</td>
<td>96</td>
<td>0.57 cfs</td>
<td>2,202 cf</td>
</tr>
<tr>
<td>P-2R: Roofs, warehouse</td>
<td>4,125 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10</td>
<td>98</td>
<td>0.27 cfs</td>
<td>1,085 cf</td>
</tr>
<tr>
<td>P-2S: Between Buildings</td>
<td>1,292 sf</td>
<td>77.40%</td>
<td>2.63&quot;</td>
<td>10</td>
<td>98</td>
<td>0.27 cfs</td>
<td>1,085 cf</td>
</tr>
<tr>
<td>P-3E: Northeast Corner</td>
<td>5,025 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10</td>
<td>98</td>
<td>0.33 cfs</td>
<td>1,322 cf</td>
</tr>
<tr>
<td>P-4R: Roof to 4P</td>
<td>2,828 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10</td>
<td>98</td>
<td>0.19 cfs</td>
<td>744 cf</td>
</tr>
<tr>
<td>P-4S: Paved Parking</td>
<td>7,833 sf</td>
<td>80.24%</td>
<td>2.73&quot;</td>
<td>10</td>
<td>94</td>
<td>0.47 cfs</td>
<td>1,781 cf</td>
</tr>
<tr>
<td>P-6R: Roof</td>
<td>8,937 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10</td>
<td>98</td>
<td>0.59 cfs</td>
<td>2,351 cf</td>
</tr>
<tr>
<td>P-7: Slab Area - Repaved</td>
<td>30,112 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10</td>
<td>98</td>
<td>1.97 cfs</td>
<td>7,922 cf</td>
</tr>
<tr>
<td>P-7A: S CORNER ALLEY</td>
<td>2,831 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10</td>
<td>98</td>
<td>0.19 cfs</td>
<td>745 cf</td>
</tr>
<tr>
<td>P-7B: Paved Parking</td>
<td>6,605 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10</td>
<td>98</td>
<td>0.43 cfs</td>
<td>1,738 cf</td>
</tr>
<tr>
<td>P-7R: Roof</td>
<td>6,627 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10</td>
<td>98</td>
<td>0.43 cfs</td>
<td>1,743 cf</td>
</tr>
<tr>
<td>P-8: Alley</td>
<td>3,884 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10</td>
<td>98</td>
<td>0.25 cfs</td>
<td>1,022 cf</td>
</tr>
<tr>
<td>P-8R: Roof</td>
<td>4,876 sf</td>
<td>100.00%</td>
<td>3.16&quot;</td>
<td>10</td>
<td>98</td>
<td>0.32 cfs</td>
<td>1,283 cf</td>
</tr>
</tbody>
</table>
SSDC SITE PLAN PROPOSED - ROOFS INCLUDED

Type III 24-hr 2-YEAR Rainfall=3.39"

2020-02-28 SSDC-1699.C PROPOSED incl roofs

Prepared by Windows User
Printed 3/4/2020

Subcatchment P-9: Alley
Runoff Area=1,384 sf  100.00% Impervious  Runoff Depth=3.16"
Tc=10.0 min  CN=98  Runoff=0.09 cfs  364 cf

Subcatchment P-9R: West End Roofs
Runoff Area=7,745 sf  100.00% Impervious  Runoff Depth=3.16"
Tc=10.0 min  CN=98  Runoff=0.51 cfs  2,037 cf

Subcatchment P3N: Northeast Corner
Runoff Area=8,026 sf  71.74% Impervious  Runoff Depth=2.53"
Tc=10.0 min  CN=92  Runoff=0.46 cfs  1,693 cf

Subcatchment P4-N: Paved Parking
Flow Length=260'  Tc=10.0 min  CN=98  Runoff=0.41 cfs  1,646 cf

Subcatchment P4W: Paved Parking
Flow Length=260'  Tc=10.0 min  CN=98  Runoff=0.42 cfs  1,693 cf

Reach ASW1: Overland swale
Avg. Flow Depth=0.19'  Max Vel=0.87 fps  Inflow=2.71 cfs  3,168 cf
n=0.016  L=160.0'  S=0.0012 '/'  Capacity=19.21 cfs  Outflow=2.52 cfs  3,168 cf

Reach ASW2: Overland swale
Avg. Flow Depth=0.24'  Max Vel=0.63 fps  Inflow=2.74 cfs  4,382 cf
n=0.016  L=120.0'  S=0.0005 '/'  Capacity=12.15 cfs  Outflow=2.57 cfs  4,382 cf

Reach ASW3: Overland swale
Avg. Flow Depth=0.12'  Max Vel=0.48 fps  Inflow=0.85 cfs  7,752 cf
n=0.016  L=160.0'  S=0.0006 '/'  Capacity=13.58 cfs  Outflow=0.80 cfs  7,752 cf

Reach STRT: EXISTING STREET
Avg. Flow Depth=0.12'  Max Vel=1.54 fps  Inflow=6.44 cfs  60,811 cf
n=0.016  L=25.0'  S=0.0080 '/'  Capacity=63.73 cfs  Outflow=0.79 cfs  7,752 cf

Reach SW-3: Overland swale
Avg. Flow Depth=0.05'  Max Vel=1.54 fps  Inflow=0.80 cfs  7,752 cf
n=0.016  L=160.0'  S=0.0200 '/'  Capacity=76.85 cfs  Outflow=0.79 cfs  7,752 cf

Reach TD1: Drain for slab to Geopave
Avg. Flow Depth=0.48'  Max Vel=2.69 fps  Inflow=2.57 cfs  10,327 cf
n=0.013  L=200.0'  S=0.0025 '/'  Capacity=6.25 cfs  Outflow=2.49 cfs  10,327 cf

Reach TD2: East End of Buildings
Avg. Flow Depth=0.00'  Max Vel=0.00 fps
n=0.015  L=50.0'  S=0.0080 '/'  Capacity=4.26 cfs  Outflow=0.00 cfs  0 cf

Pond 1P: RetainIt
Peak Elev=14.26'  Storage=2,181 cf  Inflow=3.87 cfs  17,901 cf
Primary=1.89 cfs  17,901 cf  Secondary=0.00 cfs  0 cf  Outflow=1.89 cfs  17,901 cf

Pond 1PGP: Geopave Area
Peak Elev=17.52’  Storage=3,411 cf  Inflow=4.40 cfs  17,871 cf
Outflow=3.85 cfs  17,802 cf

Pond 2P: RetainIts
Peak Elev=14.10’  Storage=1,983 cf  Inflow=0.36 cfs  7,595 cf
Primary=0.36 cfs  6,928 cf  Secondary=0.00 cfs  0 cf  Outflow=0.36 cfs  6,928 cf

Pond 2PGP1: Geopave
Peak Elev=17.03’  Storage=255 cf  Inflow=0.35 cfs  1,368 cf
Outflow=0.30 cfs  1,368 cf

Pond 2PGP2: Geopave
Peak Elev=16.87’  Storage=1,329 cf  Inflow=1.19 cfs  5,208 cf
Outflow=0.22 cfs  5,208 cf
SSDC SITE PLAN PROPOSED - ROOFS INCLUDED

SSDC-1699.C PROPOSED incl roofs Type III 24-hr 2-YEAR Rainfall=3.39"

Prepared by Windows User
Printed 3/4/2020

HydroCAD® 10.00-25  s/n 06187 © 2019 HydroCAD Software Solutions LLC
Page 13

Pond 2PGP3: Geopave
Peak Elev=17.19' Storage=0.013 af Inflow=0.62 cfs 2,387 cf
Outflow=0.14 cfs 2,387 cf

Pond 3P: Retainit
Peak Elev=14.49' Storage=1,498 cf Inflow=0.41 cfs 3,686 cf
Primary=0.16 cfs 3,686 cf Secondary=0.00 cfs 0 cf Outflow=0.16 cfs 3,686 cf

Pond 3PGPE: Geopave
Peak Elev=14.24' Storage=15 cf Inflow=0.10 cfs 363 cf
Outflow=0.09 cfs 363 cf

Pond 3PGPN: Geopave
Peak Elev=14.85' Storage=579 cf Inflow=0.87 cfs 3,323 cf
Outflow=0.32 cfs 3,323 cf

Pond 4P: Retainlt
Peak Elev=14.48' Storage=2,080 cf Inflow=1.18 cfs 8,770 cf
Primary=0.39 cfs 8,674 cf Secondary=0.00 cfs 0 cf Outflow=0.39 cfs 8,674 cf

Pond 4PGP1: Geopave
Peak Elev=14.42' Storage=205 cf Inflow=0.55 cfs 2,168 cf
Outflow=0.30 cfs 2,168 cf

Pond 4PGP2: Geopave
Peak Elev=17.34' Storage=1,612 cf Inflow=1.68 cfs 6,602 cf
Outflow=0.88 cfs 6,602 cf

Pond 5P: Retainlt
Peak Elev=14.20' Storage=1,971 cf Inflow=0.96 cfs 6,387 cf
Primary=0.33 cfs 5,889 cf Secondary=0.00 cfs 0 cf Outflow=0.33 cfs 5,889 cf

Pond 5PGPN: Geopave
Peak Elev=14.76' Storage=340 cf Inflow=0.57 cfs 2,218 cf
Outflow=0.21 cfs 2,218 cf

Pond 5PGPS: Geopave
Peak Elev=17.26' Storage=939 cf Inflow=1.05 cfs 4,170 cf
Outflow=0.75 cfs 4,170 cf

Pond COMM- 2: Storm Grate East Side
Peak Elev=17.42' Storage=256 cf Inflow=1.35 cfs 5,441 cf
Primary=0.35 cfs 4,451 cf Secondary=0.94 cfs 990 cf Outflow=1.29 cfs 5,441 cf

Pond COMM-1: Grate SW corner Comm Bldg
Peak Elev=17.30' Storage=105 cf Inflow=2.26 cfs 9,101 cf
Primary=0.47 cfs 6,935 cf Secondary=1.80 cfs 2,167 cf Outflow=2.27 cfs 9,102 cf

Pond I-5: MH5
Peak Elev=15.94' Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Pond I-6: Alley Inlet
Peak Elev=16.52' Inflow=2.62 cfs 4,746 cf
Primary=2.62 cfs 4,746 cf Secondary=0.00 cfs 0 cf Outflow=2.62 cfs 4,746 cf

Pond MH-A1: Storm Manhole Alley
Peak Elev=17.34' Storage=0 cf Inflow=3.00 cfs 9,981 cf
Primary=1.08 cfs 3,591 cf Secondary=1.92 cfs 6,391 cf Outflow=3.00 cfs 9,981 cf

Pond MH-A2: Storm Manhole Alley
Peak Elev=16.89' Storage=0 cf Inflow=0.84 cfs 11,632 cf
Primary=0.38 cfs 5,236 cf Secondary=0.46 cfs 6,396 cf Outflow=0.84 cfs 11,632 cf

Pond MH-A3: Storm Manhole Alley
Peak Elev=16.56' Storage=0 cf Inflow=0.97 cfs 11,966 cf
Primary=0.84 cfs 11,632 cf Secondary=0.13 cfs 334 cf Outflow=0.97 cfs 11,966 cf
SSDC SITE PLAN PROPOSED - ROOFS INCLUDED

2020-02-28 SSDC-1699.C PROPOSED incl roofs

Type III 24-hr 2-YEAR Rainfall=3.39"  
Prepared by Windows User  
Printed 3/4/2020  
Page 14

Pond MH-A4: Storm MH Comm Site Alley  
Peak Elev=17.29’  Storage=0 cf  
Inflow=0.97 cfs  11,978 cf  
Primary=0.97 cfs  11,966 cf  Secondary=0.00 cfs  12 cf  Outflow=0.97 cfs  11,978 cf

Pond MH-E2: Existing MH-E2  
Peak Elev=13.94’  Inflow=5.65 cfs  53,059 cf  
Primary=5.65 cfs  53,059 cf  Tertiary=0.00 cfs  0 cf  Outflow=5.65 cfs  53,059 cf

Pond MH-E3: Existing MH-E3-OFF  
Peak Elev=10.75’  Inflow=5.65 cfs  53,059 cf  
Primary=5.65 cfs  53,059 cf  Secondary=0.00 cfs  0 cf  Outflow=5.65 cfs  53,059 cf

Pond MH-E4: Woodruff Inlet E-4  
Peak Elev=8.57’  Inflow=5.65 cfs  53,059 cf  
Primary=5.65 cfs  53,059 cf  Secondary=0.00 cfs  0 cf  Outflow=5.65 cfs  53,059 cf

Pond PMH1: Proposed MH 1  
Peak Elev=13.29’  Inflow=2.16 cfs  24,829 cf  
Primary=2.16 cfs  24,829 cf  Secondary=0.00 cfs  0 cf  Outflow=2.16 cfs  24,829 cf

Pond PMH2: Proposed MH2  
Peak Elev=12.44’  Inflow=2.63 cfs  37,189 cf  
Primary=2.63 cfs  37,189 cf  Secondary=0.00 cfs  0 cf  Outflow=2.63 cfs  37,189 cf

Pond PMH3: Proposed MH 3  
Peak Elev=11.78’  Inflow=2.63 cfs  37,189 cf  
Primary=2.63 cfs  37,189 cf  Secondary=0.00 cfs  0 cf  Outflow=2.63 cfs  37,189 cf

Link Drive N: North Driveway  
Inflow=0.34 cfs  1,389 cf  
Primary=0.34 cfs  1,389 cf

Link SSPRING ST: Spring Street  
Inflow=0.34 cfs  1,389 cf  
Primary=0.34 cfs  1,389 cf

Total Runoff Area = 258,831 sf  
Runoff Volume = 63,530 cf  
Average Runoff Depth = 2.95’

11.81% Pervious = 30,578 sf  
88.19% Impervious = 228,253 sf
### Subcatchment B-1: Landscape Buffer North
- Runoff Area: 930 sf
- Impervious: 0.00%
- Runoff Depth: 2.68"
- Tc: 10.0 min
- CN: 76
- Runoff: 0.06 cfs 207 cf

### Subcatchment B-2: Riverstone Buffer North
- Runoff Area: 1,432 sf
- Impervious: 0.00%
- Runoff Depth: 3.04"
- Tc: 10.0 min
- CN: 80
- Runoff: 0.10 cfs 363 cf

### Subcatchment B-3: Riverstone Buffer North
- Runoff Area: 1,354 sf
- Impervious: 0.00%
- Runoff Depth: 4.15"
- Tc: 10.0 min
- CN: 91
- Runoff: 0.12 cfs 468 cf

### Subcatchment B-4: Riverstone and Geopave
- Runoff Area: 2,575 sf
- Impervious: 0.00%
- Runoff Depth: 3.32"
- Tc: 10.0 min
- CN: 82
- Runoff: 0.19 cfs 693 cf

### Subcatchment B-5: River Stone and
- Runoff Area: 3,703 sf
- Impervious: 0.00%
- Runoff Depth: 3.23"
- Tc: 10.0 min
- CN: 82
- Runoff: 0.28 cfs 997 cf

### Subcatchment B-6: Riverstone Buffer and
- Runoff Area: 3,261 sf
- Impervious: 0.00%
- Runoff Depth: 3.33"
- Tc: 10.0 min
- CN: 83
- Runoff: 0.25 cfs 904 cf

### Subcatchment B-7: Riverstone and Geopave
- Runoff Area: 2,955 sf
- Impervious: 0.00%
- Runoff Depth: 3.14"
- Tc: 10.0 min
- CN: 81
- Runoff: 0.21 cfs 772 cf

### Subcatchment ISL 4: River Stone Island
- Runoff Area: 306 sf
- Impervious: 0.00%
- Runoff Depth: 2.68"
- Tc: 10.0 min
- CN: 76
- Runoff: 0.02 cfs 68 cf

### Subcatchment ISL-1: River Stone Island
- Runoff Area: 306 sf
- Impervious: 0.00%
- Runoff Depth: 2.68"
- Tc: 10.0 min
- CN: 76
- Runoff: 0.02 cfs 68 cf

### Subcatchment ISL-2: River Stone Island
- Runoff Area: 306 sf
- Impervious: 0.00%
- Runoff Depth: 2.68"
- Tc: 10.0 min
- CN: 76
- Runoff: 0.02 cfs 68 cf

### Subcatchment ISL-3: River Stone Island
- Runoff Area: 306 sf
- Impervious: 0.00%
- Runoff Depth: 2.68"
- Tc: 10.0 min
- CN: 76
- Runoff: 0.02 cfs 68 cf

### Subcatchment OS - 5: OFFSITE
- Runoff Area: 2,249 sf
- Impervious: 100.00%
- Runoff Depth: 4.93"
- Tc: 10.0 min
- CN: 98
- Runoff: 0.23 cfs 925 cf

### Subcatchment OS-6E: COMM EAST
- Runoff Area: 20,681 sf
- Impervious: 100.00%
- Runoff Depth: 4.93"
- Tc: 10.0 min
- CN: 98
- Runoff: 2.08 cfs 8,501 cf

### Subcatchment OS-6R: COMM ROOF
- Runoff Area: 13,913 sf
- Impervious: 100.00%
- Runoff Depth: 4.93"
- Tc: 10.0 min
- CN: 98
- Runoff: 1.40 cfs 5,719 cf

### Subcatchment OS-6W: COMM-WEST
- Runoff Area: 20,681 sf
- Impervious: 100.00%
- Runoff Depth: 4.93"
- Tc: 10.0 min
- CN: 98
- Runoff: 2.08 cfs 8,501 cf

### Subcatchment OS1: North Driveway
- Runoff Area: 5,281 sf
- Impervious: 100.00%
- Runoff Depth: 4.93"
- Flow Length: 175’
- Tc: 10.8 min
- CN: 98
- Runoff: 0.52 cfs 2,171 cf
<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Area (sq ft)</th>
<th>Impervious (%)</th>
<th>Runoff (cfs)</th>
<th>Runoff Depth (&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-1: Northwest</td>
<td>30,556</td>
<td>88.67</td>
<td>3.02</td>
<td>4.70</td>
</tr>
<tr>
<td>P-10A: Alley</td>
<td>4,612</td>
<td>100.00</td>
<td>0.46</td>
<td>1.98</td>
</tr>
<tr>
<td>P-1R: ROOFS</td>
<td>1,400</td>
<td>100.00</td>
<td>0.14</td>
<td>0.57</td>
</tr>
<tr>
<td>P-2M: North Central</td>
<td>18,201</td>
<td>74.95</td>
<td>1.71</td>
<td>4.26</td>
</tr>
<tr>
<td>P-2NE: North Central</td>
<td>8,999</td>
<td>88.73</td>
<td>0.89</td>
<td>3.52</td>
</tr>
<tr>
<td>P-2R: Roofs, warehouse</td>
<td>4,125</td>
<td>100.00</td>
<td>0.41</td>
<td>1.69</td>
</tr>
<tr>
<td>P-2S: Between Buildings</td>
<td>1,292</td>
<td>100.00</td>
<td>0.40</td>
<td>1.62</td>
</tr>
<tr>
<td>P-3E: Northeast Corner</td>
<td>5,025</td>
<td>100.00</td>
<td>0.12</td>
<td>0.72</td>
</tr>
<tr>
<td>P-4R: Roof to 4P</td>
<td>2,828</td>
<td>100.00</td>
<td>0.28</td>
<td>1.17</td>
</tr>
<tr>
<td>P-4S: Paved Parking</td>
<td>7,833</td>
<td>80.24</td>
<td>0.76</td>
<td>2.92</td>
</tr>
<tr>
<td>P-6R: Roof</td>
<td>8,937</td>
<td>100.00</td>
<td>0.90</td>
<td>3.67</td>
</tr>
<tr>
<td>P-7: Slab Area - Repaved</td>
<td>30,112</td>
<td>100.00</td>
<td>3.03</td>
<td>12.38</td>
</tr>
<tr>
<td>P-7A: S CORNER ALLEY</td>
<td>2,831</td>
<td>100.00</td>
<td>0.28</td>
<td>1.16</td>
</tr>
<tr>
<td>P-7B: Paved Parking</td>
<td>6,605</td>
<td>100.00</td>
<td>0.66</td>
<td>2.71</td>
</tr>
<tr>
<td>P-7R: Roof</td>
<td>6,627</td>
<td>100.00</td>
<td>0.67</td>
<td>2.72</td>
</tr>
<tr>
<td>P-8: Alley</td>
<td>3,884</td>
<td>100.00</td>
<td>0.39</td>
<td>1.59</td>
</tr>
<tr>
<td>P-8R: Roof</td>
<td>4,876</td>
<td>100.00</td>
<td>0.49</td>
<td>2.00</td>
</tr>
</tbody>
</table>
Subcatchment P-9: Alley
Runoff Area=1,384 sf  100.00% Impervious  Runoff Depth=4.93"
Tc=10.0 min  CN=98  Runoff=0.14 cfs  569 cf

Subcatchment P-9R: West End Roofs
Runoff Area=7,745 sf  100.00% Impervious  Runoff Depth=4.93"
Tc=10.0 min  CN=98  Runoff=0.78 cfs  3,184 cf

Subcatchment P3N: Northeast Corner
Runoff Area=8,026 sf  71.74% Impervious  Runoff Depth=4.26"
Tc=10.0 min  CN=92  Runoff=0.75 cfs  2,846 cf

Subcatchment P4-N: Paved Parking
Runoff Area=6,257 sf  100.00% Impervious  Runoff Depth=4.93"
Flow Length=260'  Tc=10.0 min  CN=98  Runoff=0.63 cfs  2,572 cf

Subcatchment P4W: Paved Parking
Runoff Area=6,437 sf  100.00% Impervious  Runoff Depth=4.93"
Flow Length=260'  Tc=10.0 min  CN=98  Runoff=0.65 cfs  2,646 cf

Reach ASW1: Overland swale
Avg. Flow Depth=0.25'  Max Vel=1.01 fps  Inflow=4.55 cfs  6,452 cf
n=0.016  L=160.0'  S=0.0012 '/'  Capacity=19.21 cfs  Outflow=4.34 cfs  6,452 cf

Reach ASW2: Overland swale
Avg. Flow Depth=0.31'  Max Vel=0.73 fps  Inflow=4.69 cfs  8,348 cf
n=0.016  L=120.0'  S=0.0005 '/'  Capacity=12.15 cfs  Outflow=4.51 cfs  8,348 cf

Reach ASW3: Overland swale
Avg. Flow Depth=0.14'  Max Vel=0.52 fps  Inflow=1.06 cfs  11,351 cf
n=0.016  L=160.0'  S=0.0006 '/'  Capacity=13.58 cfs  Outflow=0.99 cfs  11,351 cf

Reach STRT: EXISTING STREET
Avg. Flow Depth=0.17'  Max Vel=2.54 fps  Inflow=10.86 cfs  97,588 cf
n=0.016  L=25.0'  S=0.0080 '/'  Capacity=63.73 cfs  Outflow=10.86 cfs  97,588 cf

Reach SW-3: Overland swale
Avg. Flow Depth=0.10'  Max Vel=2.45 fps  Inflow=3.24 cfs  13,076 cf
n=0.016  L=160.0'  S=0.0200 '/'  Capacity=76.85 cfs  Outflow=3.16 cfs  13,076 cf

Reach TD1: Drain for slab to Geopave
Avg. Flow Depth=0.64'  Max Vel=3.06 fps  Inflow=3.95 cfs  16,138 cf
n=0.013  L=200.0'  S=0.0025 '/'  Capacity=6.25 cfs  Outflow=3.83 cfs  16,138 cf

Reach TD2: East End of Buildings
Avg. Flow Depth=0.00'  Max Vel=0.00 fps
n=0.015  L=50.0'  S=0.0000 '/'  Capacity=4.26 cfs  Outflow=0.00 cfs  0 cf

Pond 1P: RetainIt
Peak Elev=14.97'  Storage=4,235 cf  Inflow=5.88 cfs  28,166 cf
Primary=3.73 cfs  28,166 cf  Secondary=0.00 cfs  0 cf  Outflow=3.73 cfs  28,166 cf

Pond 1PGP: Geopave Area
Peak Elev=17.64'  Storage=3,965 cf  Inflow=6.84 cfs  28,246 cf
Outflow=5.84 cfs  27,958 cf

Pond 2P: RetainIt
Peak Elev=14.49'  Storage=3,305 cf  Inflow=3.04 cfs  12,509 cf
Primary=0.70 cfs  11,841 cf  Secondary=0.00 cfs  0 cf  Outflow=0.70 cfs  11,841 cf

Pond 2PGP1: Geopave
Peak Elev=17.05'  Storage=257 cf  Inflow=0.54 cfs  2,166 cf
Outflow=0.71 cfs  2,166 cf

Pond 2PGP2: Geopave
Peak Elev=17.14'  Storage=1,392 cf  Inflow=2.37 cfs  8,620 cf
Outflow=2.88 cfs  8,620 cf
Pond 2PGP3: Geopave

Peak Elev=17.93'  Storage=0.019 af  Inflow=0.99 cfs  3,889 cf
Outflow=0.62 cfs  3,889 cf

Pond 3P: Retainit

Peak Elev=15.15'  Storage=2,416 cf  Inflow=0.42 cfs  6,141 cf
Primary=0.21 cfs  6,141 cf  Secondary=0.00 cfs  0 cf  Outflow=0.21 cfs  6,141 cf

Pond 3PGPE: Geopave

Peak Elev=14.37'  Storage=75 cf  Inflow=0.19 cfs  693 cf
Outflow=0.10 cfs  693 cf

Pond 3PGPN: Geopave

Peak Elev=16.00'  Storage=1,360 cf  Inflow=1.40 cfs  5,448 cf
Outflow=0.32 cfs  5,448 cf

Pond 4P: RetainIt

Peak Elev=15.39'  Storage=3,852 cf  Inflow=0.42 cfs  6,141 cf
Primary=0.56 cfs  13,945 cf  Secondary=0.00 cfs  0 cf  Outflow=0.56 cfs  13,945 cf

Pond 4PGP1: Geopave

Peak Elev=15.06'  Storage=623 cf  Inflow=0.91 cfs  3,569 cf
Outflow=0.30 cfs  3,569 cf

Pond 4PGP2: Geopave

Peak Elev=17.41'  Storage=1,767 cf  Inflow=1.40 cfs  5,448 cf
Outflow=2.45 cfs  10,472 cf

Pond 5P: RetainIt

Peak Elev=14.60'  Storage=2,953 cf  Inflow=0.42 cfs  6,141 cf
Primary=0.46 cfs  9,786 cf  Secondary=0.00 cfs  0 cf  Outflow=0.46 cfs  9,786 cf

Pond 5PGPN: Geopave

Peak Elev=15.89'  Storage=852 cf  Inflow=0.91 cfs  3,620 cf
Outflow=0.21 cfs  3,620 cf

Pond 5PGPS: Geopave

Peak Elev=17.28'  Storage=967 cf  Inflow=1.66 cfs  6,665 cf
Outflow=2.01 cfs  6,665 cf

Pond COMM- 2: Storm Grate East Side

Peak Elev=17.47'  Storage=350 cf  Inflow=2.08 cfs  8,501 cf
Primary=0.35 cfs  6,328 cf  Secondary=1.62 cfs  2,174 cf  Outflow=1.98 cfs  8,502 cf

Pond COMM-1: Grate SW corner Comm Bldg

Peak Elev=17.35'  Storage=138 cf  Inflow=3.48 cfs  14,221 cf
Primary=0.48 cfs  9,960 cf  Secondary=2.94 cfs  4,261 cf  Outflow=3.42 cfs  14,221 cf

Pond I-5: MH5

Peak Elev=15.94'  Inflow=0.00 cfs  0 cf
Primary=0.00 cfs  0 cf  Secondary=0.00 cfs  0 cf  Outflow=0.00 cfs  0 cf

Pond I-6: Alley Inlet

Peak Elev=17.07'  Inflow=4.59 cfs  8,917 cf
Primary=4.38 cfs  8,872 cf  Secondary=0.21 cfs  45 cf  Outflow=4.59 cfs  8,917 cf

Pond MH-A1: Storm Manhole Alley

Peak Elev=17.34'  Storage=0 cf  Inflow=4.76 cfs  16,358 cf
Primary=1.71 cfs  5,885 cf  Secondary=3.05 cfs  10,473 cf  Outflow=4.76 cfs  16,358 cf

Pond MH-A2: Storm Manhole Alley

Peak Elev=16.89'  Storage=0 cf  Inflow=0.84 cfs  16,631 cf
Primary=0.38 cfs  7,486 cf  Secondary=0.46 cfs  9,145 cf  Outflow=0.84 cfs  16,631 cf

Pond MH-A3: Storm Manhole Alley

Peak Elev=16.57'  Storage=0 cf  Inflow=1.05 cfs  17,196 cf
Primary=0.84 cfs  16,631 cf  Secondary=0.21 cfs  565 cf  Outflow=1.05 cfs  17,196 cf
Pond MH-A4: Storm MH Comm Site Alley
    Peak Elev=17.29' Storage=0 cf  Inflow=1.05 cfs  17,213 cf
    Primary=1.05 cfs  17,196 cf  Secondary=0.00 cfs  17 cf  Outflow=1.05 cfs  17,213 cf

Pond MH-E2: Existing MH-E2
    Peak Elev=18.15' Inflow=9.99 cfs  86,237 cf
    Primary=7.70 cfs  84,513 cf  Tertiary=2.29 cfs  1,724 cf  Outflow=9.99 cfs  86,237 cf

Pond MH-E3: Existing MH-E3-OFF
    Peak Elev=12.51' Inflow=7.70 cfs  84,513 cf
    Primary=7.57 cfs  84,437 cf  Secondary=0.13 cfs  76 cf  Outflow=7.70 cfs  84,513 cf

Pond MH-E4: Woodruff Inlet E-4
    Peak Elev=8.93' Inflow=7.70 cfs  84,513 cf
    Primary=7.70 cfs  84,513 cf  Secondary=0.00 cfs  0 cf  Outflow=7.70 cfs  84,513 cf

Pond PMH1: Proposed MH 1
    Peak Elev=13.61' Inflow=4.38 cfs  40,007 cf
    Primary=4.38 cfs  40,007 cf  Secondary=0.00 cfs  0 cf  Outflow=4.38 cfs  40,007 cf

Pond PMH2: Proposed MH2
    Peak Elev=12.77' Inflow=5.03 cfs  60,093 cf
    Primary=5.03 cfs  60,093 cf  Secondary=0.00 cfs  0 cf  Outflow=5.03 cfs  60,093 cf

Pond PMH3: Proposed MH 3
    Peak Elev=12.07' Inflow=5.03 cfs  60,093 cf
    Primary=5.03 cfs  60,093 cf  Secondary=0.00 cfs  0 cf  Outflow=5.03 cfs  60,093 cf

Link Drive N: North Driveway
    Inflow=0.52 cfs  2,171 cf
    Primary=0.52 cfs  2,171 cf

Link SSPRING ST: Spring Street
    Inflow=0.52 cfs  2,171 cf
    Primary=0.52 cfs  2,171 cf

Total Runoff Area = 258,831 sf  Runoff Volume = 101,308 cf  Average Runoff Depth = 4.70''
11.81% Pervious = 30,578 sf  88.19% Impervious = 228,253 sf
SSDC SITE PLAN PROPOSED - ROOFS INCLUDED

2020-02-28 SSDC-1699.C PROPOSED incl roofs Type III 24-hr 25-YEAR Rainfall=6.42"
HydroCAD® 10.00-25 s/n 06187 © 2019 HydroCAD Software Solutions LLC Page 20

Time span=0.00-60.00 hrs, dt=0.05 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment B-1: Landscape Buffer North
Runoff Area=930 sf 0.00% Impervious Runoff Depth=3.75"
  Tc=10.0 min CN=76 Runoff=0.08 cfs 290 cf

Subcatchment B-2: Riverstone Buffer North
Runoff Area=1,432 sf 0.00% Impervious Runoff Depth=4.16"
  Tc=10.0 min CN=80 Runoff=0.14 cfs 497 cf

Subcatchment B-3: Riverstone Buffer North
Runoff Area=1,354 sf 0.00% Impervious Runoff Depth=5.37"
  Tc=10.0 min CN=91 Runoff=0.16 cfs 606 cf

Subcatchment B-4: Riverstone and Geopave
Runoff Area=2,575 sf 0.00% Impervious Runoff Depth=4.38"
  Tc=10.0 min CN=82 Runoff=0.26 cfs 939 cf

Subcatchment B-5: River Stone and
Runoff Area=3,703 sf 0.00% Impervious Runoff Depth=4.38"
  Tc=10.0 min CN=82 Runoff=0.37 cfs 1,350 cf

Subcatchment B-6: Riverstone Buffer and
Runoff Area=3,261 sf 0.00% Impervious Runoff Depth=4.48"
  Tc=10.0 min CN=83 Runoff=0.33 cfs 1,218 cf

Subcatchment B-7: Riverstone and Geopave
Runoff Area=2,955 sf 0.00% Impervious Runoff Depth=4.27"
  Tc=10.0 min CN=81 Runoff=0.29 cfs 1,051 cf

Subcatchment ISL 4: River Stone Island
Runoff Area=306 sf 0.00% Impervious Runoff Depth=3.75"
  Tc=10.0 min CN=76 Runoff=0.03 cfs 96 cf

Subcatchment ISL-1: River Stone Island
Runoff Area=306 sf 0.00% Impervious Runoff Depth=3.75"
  Tc=10.0 min CN=76 Runoff=0.03 cfs 96 cf

Subcatchment ISL-2: River Stone Island
Runoff Area=306 sf 0.00% Impervious Runoff Depth=3.75"
  Tc=10.0 min CN=76 Runoff=0.03 cfs 96 cf

Subcatchment ISL-3: River Stone Island
Runoff Area=306 sf 0.00% Impervious Runoff Depth=3.75"
  Tc=10.0 min CN=76 Runoff=0.03 cfs 96 cf

Subcatchment OS - 5: OFFSITE
Runoff Area=2,249 sf 100.00% Impervious Runoff Depth=6.18"
  Tc=10.0 min CN=98 Runoff=0.28 cfs 1,159 cf

Subcatchment OS-6E: COMM EAST
Runoff Area=20,681 sf 100.00% Impervious Runoff Depth=6.18"
  Tc=10.0 min CN=98 Runoff=2.59 cfs 10,653 cf

Subcatchment OS-6R: COMM ROOF
Runoff Area=13,913 sf 100.00% Impervious Runoff Depth=6.18"
  Tc=10.0 min CN=98 Runoff=1.74 cfs 7,167 cf

Subcatchment OS-6W: COMM-WEST
Runoff Area=20,681 sf 100.00% Impervious Runoff Depth=6.18"
  Tc=10.0 min CN=98 Runoff=2.59 cfs 10,653 cf

Subcatchment OS1: North Driveway
Runoff Area=5,281 sf 100.00% Impervious Runoff Depth=6.18"
  Flow Length=175’ Tc=10.8 min CN=98 Runoff=0.65 cfs 2,720 cf
<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Runoff Area (sf)</th>
<th>Impervious %</th>
<th>Runoff Depth (&quot;')</th>
<th>Tc (min)</th>
<th>CN</th>
<th>Runoff (cfs)</th>
<th>Runoff (cf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-1: Northwest</td>
<td>30,556</td>
<td>88.67</td>
<td>5.95</td>
<td>10.0</td>
<td>96</td>
<td>3.78 cfs</td>
<td>15,140 cf</td>
</tr>
<tr>
<td>P-10A: Alley</td>
<td>4,612</td>
<td>100.00</td>
<td>6.18</td>
<td>10.0</td>
<td>98</td>
<td>0.58 cfs</td>
<td>2,376 cf</td>
</tr>
<tr>
<td>P-1R: ROOFS</td>
<td>1,400</td>
<td>100.00</td>
<td>6.18</td>
<td>10.0</td>
<td>98</td>
<td>0.18 cfs</td>
<td>721 cf</td>
</tr>
<tr>
<td>P-2M: North Central</td>
<td>18,201</td>
<td>74.95</td>
<td>5.48</td>
<td>10.0</td>
<td>94</td>
<td>2.17 cfs</td>
<td>8,316 cf</td>
</tr>
<tr>
<td>P-2NE: North Central</td>
<td>8,999</td>
<td>88.73</td>
<td>5.95</td>
<td>10.0</td>
<td>96</td>
<td>1.11 cfs</td>
<td>4,459 cf</td>
</tr>
<tr>
<td>P-2R: Roofs, warehouse</td>
<td>4,125</td>
<td>100.00</td>
<td>6.18</td>
<td>10.0</td>
<td>98</td>
<td>0.52 cfs</td>
<td>2,125 cf</td>
</tr>
<tr>
<td>P-2S: Between Buildings</td>
<td>1,292</td>
<td>77.40</td>
<td>5.60</td>
<td>10.0</td>
<td>98</td>
<td>0.52 cfs</td>
<td>2,125 cf</td>
</tr>
<tr>
<td>P-3E: Northeast Corner</td>
<td>5,025</td>
<td>100.00</td>
<td>6.18</td>
<td>10.0</td>
<td>98</td>
<td>0.63 cfs</td>
<td>2,588 cf</td>
</tr>
<tr>
<td>P-4R: Roof to 4P</td>
<td>2,828</td>
<td>100.00</td>
<td>6.18</td>
<td>10.0</td>
<td>98</td>
<td>0.35 cfs</td>
<td>1,457 cf</td>
</tr>
<tr>
<td>P-4S: Paved Parking</td>
<td>7,833</td>
<td>80.24</td>
<td>5.71</td>
<td>10.0</td>
<td>94</td>
<td>0.95 cfs</td>
<td>3,729 cf</td>
</tr>
<tr>
<td>P-6R: Roof</td>
<td>8,937</td>
<td>100.00</td>
<td>6.18</td>
<td>10.0</td>
<td>98</td>
<td>1.12 cfs</td>
<td>4,604 cf</td>
</tr>
<tr>
<td>P-7: Slab Area - Repaved</td>
<td>30,112</td>
<td>100.00</td>
<td>6.18</td>
<td>10.0</td>
<td>98</td>
<td>3.77 cfs</td>
<td>15,511 cf</td>
</tr>
<tr>
<td>P-7A: S CORNER ALLEY</td>
<td>2,831</td>
<td>100.00</td>
<td>6.18</td>
<td>10.0</td>
<td>98</td>
<td>0.35 cfs</td>
<td>1,458 cf</td>
</tr>
<tr>
<td>P-7B: Paved Parking</td>
<td>6,605</td>
<td>100.00</td>
<td>6.18</td>
<td>10.0</td>
<td>98</td>
<td>0.83 cfs</td>
<td>3,402 cf</td>
</tr>
<tr>
<td>P-7R: Roof</td>
<td>6,627</td>
<td>100.00</td>
<td>6.18</td>
<td>10.0</td>
<td>98</td>
<td>0.83 cfs</td>
<td>3,414 cf</td>
</tr>
<tr>
<td>P-8: Alley</td>
<td>3,884</td>
<td>100.00</td>
<td>6.18</td>
<td>10.0</td>
<td>98</td>
<td>0.49 cfs</td>
<td>2,001 cf</td>
</tr>
<tr>
<td>P-8R: Roof</td>
<td>4,876</td>
<td>100.00</td>
<td>6.18</td>
<td>10.0</td>
<td>98</td>
<td>0.61 cfs</td>
<td>2,512 cf</td>
</tr>
</tbody>
</table>
Subcatchment P-9: Alley
Runoff Area=1,384 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.17 cfs  713 cf

Subcatchment P-9R: West End Roofs
Runoff Area=7,745 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.97 cfs  3,990 cf

Subcatchment P3N: Northeast Corner
Runoff Area=8,026 sf  71.74% Impervious  Runoff Depth=5.48"
Tc=10.0 min  CN=92  Runoff=0.96 cfs  3,667 cf

Subcatchment P4-N: Paved Parking
Runoff Area=6,257 sf  100.00% Impervious  Runoff Depth=6.18"
Flow Length=260'  Tc=10.0 min  CN=98  Runoff=0.78 cfs  3,223 cf

Subcatchment P4W: Paved Parking
Runoff Area=6,437 sf  100.00% Impervious  Runoff Depth=6.18"
Flow Length=260'  Tc=10.0 min  CN=98  Runoff=0.81 cfs  3,316 cf

Reach ASW1: Overland swale
Avg. Flow Depth=0.28'  Max Vel=1.08 fps  Inflow=5.78 cfs  8,973 cf
n=0.016  L=160.0'  S=0.0012 '/'  Capacity=19.21 cfs  Outflow=5.54 cfs  8,973 cf

Reach ASW2: Overland swale
Avg. Flow Depth=0.35'  Max Vel=0.78 fps  Inflow=5.97 cfs  11,349 cf
n=0.016  L=120.0'  S=0.0005 '/'  Capacity=12.15 cfs  Outflow=5.77 cfs  11,349 cf

Reach ASW3: Overland swale
Avg. Flow Depth=0.20'  Max Vel=0.63 fps  Inflow=2.23 cfs  14,401 cf
n=0.016  L=160.0'  S=0.0006 '/'  Capacity=13.58 cfs  Outflow=1.95 cfs  14,401 cf

Reach STRT: EXISTING STREET
Avg. Flow Depth=0.19'  Max Vel=2.74 fps  Inflow=13.24 cfs  124,038 cf
n=0.016  L=25.0'  S=0.0080 '/'  Capacity=63.73 cfs  Outflow=13.22 cfs  124,038 cf

Reach SW-3: Overland swale
Avg. Flow Depth=0.13'  Max Vel=2.88 fps  Inflow=5.47 cfs  19,295 cf
n=0.016  L=160.0'  S=0.0200 '/'  Capacity=76.85 cfs  Outflow=5.33 cfs  19,295 cf

Reach TD1: Drain for slab to Geopave
Avg. Flow Depth=0.75'  Max Vel=3.25 fps  Inflow=4.91 cfs  20,222 cf
n=0.013  L=200.0'  S=0.0025 '/'  Capacity=6.25 cfs  Outflow=4.78 cfs  20,222 cf

Reach TD2: East End of Buildings
Avg. Flow Depth=0.00'  Max Vel=0.00 fps
n=0.015  L=50.0'  S=0.0080 '/'  Capacity=4.26 cfs  Outflow=0.00 cfs  0 cf

Pond 1P: RetainIt
Peak Elev=15.49'  Storage=5,738 cf  Inflow=6.85 cfs  35,856 cf
Primary=4.62 cfs  35,856 cf  Secondary=0.00 cfs  0 cf  Outflow=4.62 cfs  35,856 cf

Pond 1PGP: Geopave Area
Peak Elev=17.74'  Storage=4,620 cf  Inflow=8.55 cfs  35,553 cf
Outflow=6.79 cf  35,565 cf

Pond 2P: RetainItS
Peak Elev=14.87'  Storage=4,570 cf  Inflow=4.85 cfs  15,999 cf
Primary=0.91 cfs  15,331 cf  Secondary=0.00 cfs  0 cf  Outflow=0.91 cfs  15,331 cf

Pond 2PGP1: Geopave
Peak Elev=17.06'  Storage=257 cf  Inflow=0.67 cfs  2,728 cf
Outflow=0.75 cf  2,728 cf

Pond 2PGP2: Geopave
Peak Elev=17.19'  Storage=1,392 cf  Inflow=2.88 cfs  11,044 cf
Outflow=4.42 cf  11,044 cf
Pond 2PGP3: Geopave
- Peak Elev: 17.95’
- Storage: 0.020 af
- Inflow: 1.25 cfs
- Outflow: 1.13 cfs

Pond 3P: RetainIt
- Peak Elev: 15.57’
- Storage: 2,995 cf
- Inflow: 0.42 cfs
- Outflow: 0.24 cfs

Pond 3PGPE: Geopave
- Peak Elev: 14.54’
- Storage: 149 cf
- Inflow: 0.26 cfs
- Outflow: 0.10 cfs

Pond 3PGPN: Geopave
- Peak Elev: 16.90’
- Storage: 1,971 cf
- Inflow: 0.17 cfs
- Outflow: 0.32 cfs

Pond 4P: RetainIt
- Peak Elev: 17.51’
- Storage: 4,854 cf
- Inflow: 3.52 cfs
- Outflow: 1.14 cfs

Pond 4PGP1: Geopave
- Peak Elev: 15.62’
- Storage: 986 cf
- Inflow: 1.15 cfs
- Outflow: 0.30 cfs

Pond 4PGP2: Geopave
- Peak Elev: 17.44’
- Storage: 1,819 cf
- Inflow: 0.30 cfs
- Outflow: 3.22 cfs

Pond 5P: RetainIt
- Peak Elev: 14.90’
- Storage: 3,680 cf
- Inflow: 2.41 cfs
- Outflow: 0.54 cfs

Pond 5PGPN: Geopave
- Peak Elev: 16.79’
- Storage: 1,255 cf
- Inflow: 1.16 cfs
- Outflow: 0.21 cfs

Pond 5PGPS: Geopave
- Peak Elev: 17.28’
- Storage: 972 cf
- Inflow: 2.08 cfs
- Outflow: 2.20 cfs

Pond COMM-2: Storm Grate East Side
- Peak Elev: 17.51’
- Storage: 428 cf
- Inflow: 2.59 cfs
- Outflow: 2.39 cfs

Pond COMM-1: Grate SW corner Comm Bldg
- Peak Elev: 17.45’
- Storage: 202 cf
- Inflow: 4.33 cfs
- Outflow: 4.23 cfs

Pond I-5: MH5
- Peak Elev: 15.94’
- Inflow: 0.00 cfs
- Primary: 0.00 cfs
- Secondary: 0.00 cfs

Pond I-6: Alley Inlet
- Peak Elev: 17.13’
- Inflow: 5.87 cfs
- Primary: 4.53 cfs
- Secondary: 3.14 cfs

Pond MH-A1: Storm Manhole Alley
- Peak Elev: 17.34’
- Storage: 0 cf
- Inflow: 4.91 cfs
- Outflow: 4.91 cfs

Pond MH-A2: Storm Manhole Alley
- Peak Elev: 16.89’
- Storage: 0 cf
- Inflow: 0.84 cfs
- Outflow: 0.84 cfs

Pond MH-A3: Storm Manhole Alley
- Peak Elev: 16.57’
- Storage: 0 cf
- Inflow: 1.11 cfs
- Outflow: 1.11 cfs
SSDC SITE PLAN PROPOSED - ROOFS INCLUDED

2020-02-28 SSDC-1699.C PROPOSED incl roofs

Type III 24-hr 25-YEAR Rainfall=6.42”

HydroCAD® 10.00-25 s/n 06187 © 2019 HydroCAD Software Solutions LLC

Page 24

Pond MH-A4: Storm MH Comm Site Alley
Peak Elev=17.29’ Storage=0 cf Inflow=1.11 cfs 20,679 cf
Primary=1.11 cfs 20,659 cf Secondary=0.00 cfs 20 cf Outflow=1.11 cfs 20,679 cf

Pond MH-E2: Existing MH-E2
Peak Elev=18.67’ Inflow=11.46 cfs 109,543 cf
Primary=7.92 cfs 104,743 cf Tertiary=3.54 cfs 4,800 cf Outflow=11.46 cfs 109,543 cf

Pond MH-E3: Existing MH-E3-OFF
Peak Elev=12.53’ Inflow=7.92 cfs 104,743 cf
Primary=7.59 cfs 104,408 cf Secondary=0.33 cfs 335 cf Outflow=7.92 cfs 104,743 cf

Pond MH-E4: Woodruff Inlet E-4
Peak Elev=8.97’ Inflow=7.92 cfs 104,743 cf
Primary=7.92 cfs 104,743 cf Secondary=0.00 cfs 0 cf Outflow=7.92 cfs 104,743 cf

Pond PMH1: Proposed MH 1
Peak Elev=13.75’ Inflow=5.51 cfs 51,187 cf
Primary=5.51 cfs 51,187 cf Secondary=0.00 cfs 0 cf Outflow=5.51 cfs 51,187 cf

Pond PMH2: Proposed MH2
Peak Elev=12.92’ Inflow=6.29 cfs 76,665 cf
Primary=6.29 cfs 76,665 cf Secondary=0.00 cfs 0 cf Outflow=6.29 cfs 76,665 cf

Pond PMH3: Proposed MH 3
Peak Elev=12.20’ Inflow=6.29 cfs 76,665 cf
Primary=6.29 cfs 76,665 cf Secondary=0.00 cfs 0 cf Outflow=6.29 cfs 76,665 cf

Link Drive N: North Driveway
Inflow=0.65 cfs 2,720 cf
Primary=0.65 cfs 2,720 cf

Link SSPRING ST: Spring Street
Inflow=0.65 cfs 2,720 cf
Primary=0.65 cfs 2,720 cf

Total Runoff Area = 258,831 sf Runoff Volume = 128,008 cf Average Runoff Depth = 5.93”
11.81% Pervious = 30,578 sf 88.19% Impervious = 228,253 sf
**SSDC SITE PLAN PROPOSED - ROOFS INCLUDED**

- **Type III 24-hr 100-YEAR Rainfall=8.69"**


HydroCAD® 10.00-25  s/n 06187  © 2019 HydroCAD Software Solutions LLC  | Page 25

---

**Runoff Area**

<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Runoff Area (sf)</th>
<th>Impervious (%)</th>
<th>Runoff Depth (&quot;), Tc (min), CN (100), Runoff (cfs), Volume (cf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-1: Landscape Buffer North</td>
<td>930</td>
<td>0.00</td>
<td>5.79, 10.0, 76, 0.12, 449</td>
</tr>
<tr>
<td>B-2: Riverstone Buffer North</td>
<td>1,432</td>
<td>0.00</td>
<td>6.27, 10.0, 80, 0.20, 749</td>
</tr>
<tr>
<td>B-3: Riverstone Buffer North</td>
<td>1,354</td>
<td>0.00</td>
<td>7.61, 10.0, 91, 0.22, 858</td>
</tr>
<tr>
<td>B-4: Riverstone and Geopave</td>
<td>2,575</td>
<td>0.00</td>
<td>6.52, 10.0, 82, 0.38, 1,398</td>
</tr>
<tr>
<td>B-5: River Stone and</td>
<td>3,703</td>
<td>0.00</td>
<td>6.52, 10.0, 82, 0.55, 2,011</td>
</tr>
<tr>
<td>B-6: Riverstone Buffer and</td>
<td>3,261</td>
<td>0.00</td>
<td>6.64, 10.0, 83, 0.49, 1,804</td>
</tr>
<tr>
<td>B-7: Riverstone and Geopave</td>
<td>2,955</td>
<td>0.00</td>
<td>6.40, 10.0, 81, 0.43, 1,575</td>
</tr>
<tr>
<td>ISL 4: River Stone Island</td>
<td>306</td>
<td>0.00</td>
<td>5.79, 10.0, 76, 0.04, 148</td>
</tr>
<tr>
<td>ISL-1: River Stone Island</td>
<td>306</td>
<td>0.00</td>
<td>5.79, 10.0, 76, 0.04, 148</td>
</tr>
<tr>
<td>ISL-2: River Stone Island</td>
<td>306</td>
<td>0.00</td>
<td>5.79, 10.0, 76, 0.04, 148</td>
</tr>
<tr>
<td>ISL-3: River Stone Island</td>
<td>306</td>
<td>0.00</td>
<td>5.79, 10.0, 76, 0.04, 148</td>
</tr>
<tr>
<td>OS - 5: OFFSITE</td>
<td>2,249</td>
<td>100.00</td>
<td>8.45, 10.0, 98, 0.38, 1,584</td>
</tr>
<tr>
<td>OS-6E: COMM EAST</td>
<td>20,681</td>
<td>100.00</td>
<td>8.45, 10.0, 98, 3.51, 14,563</td>
</tr>
<tr>
<td>OS-6R: COMM ROOF</td>
<td>13,913</td>
<td>100.00</td>
<td>8.45, 10.0, 98, 2.36, 9,797</td>
</tr>
<tr>
<td>OS-6W: COMM-WEST</td>
<td>20,681</td>
<td>100.00</td>
<td>8.45, 10.0, 98, 3.51, 14,563</td>
</tr>
<tr>
<td>OS1: North Driveway</td>
<td>5,281</td>
<td>100.00</td>
<td>8.45, 10.8, 98, 0.88, 3,719</td>
</tr>
</tbody>
</table>

**Flow Length**

- OS-6E: COMM EAST: 175’

---

**Runoff Area**

- Runoff Area: 2,249 sf
- Impervious: 100.00%
- Runoff Depth: 8.45"
- Tc: 10.0 min
- CN: 98
- Runoff: 0.38 cfs
- Volume: 1,584 cf

---

**Runoff Area**

- Runoff Area: 20,681 sf
- Impervious: 100.00%
- Runoff Depth: 8.45"
- Tc: 10.0 min
- CN: 98
- Runoff: 3.51 cfs
- Volume: 14,563 cf

---

**Runoff Area**

- Runoff Area: 13,913 sf
- Impervious: 100.00%
- Runoff Depth: 8.45"
- Tc: 10.0 min
- CN: 98
- Runoff: 2.36 cfs
- Volume: 9,797 cf

---

**Runoff Area**

- Runoff Area: 20,681 sf
- Impervious: 100.00%
- Runoff Depth: 8.45"
- Tc: 10.0 min
- CN: 98
- Runoff: 3.51 cfs
- Volume: 14,563 cf

---

**Runoff Area**

- Runoff Area: 5,281 sf
- Impervious: 100.00%
- Runoff Depth: 8.45"
- Flow Length: 175’
- Tc: 10.8 min
- CN: 98
- Runoff: 0.88 cfs
- Volume: 3,719 cf
### SSDDC SITE PLAN PROPOSED - ROOFS INCLUDED

**Type III 24-hr 100-YEAR Rainfall=8.69”**

*Prepared by Windows User*  
*Printed 3/4/2020*

**SSDC-1699.C PROPOSED incl roofs**

---

#### Subcatchment P-1: Northwest
- **Runoff Area**: 30,556 sf  
  - **Impervious**: 88.67%  
  - **Runoff Depth**: 8.21”  
  - **Tc**: 10.0 min  
  - **CN**: 96  
  - **Runoff**: 5.15 cfs  
  - **20,903 cf**

#### Subcatchment P-10A: Alley
- **Runoff Area**: 4,612 sf  
  - **Impervious**: 100.00%  
  - **Runoff Depth**: 8.45”  
  - **Tc**: 10.0 min  
  - **CN**: 98  
  - **Runoff**: 0.78 cfs  
  - **3,248 cf**

#### Subcatchment P-1R: ROOFS
- **Runoff Area**: 1,400 sf  
  - **Impervious**: 100.00%  
  - **Runoff Depth**: 8.45”  
  - **Tc**: 10.0 min  
  - **CN**: 98  
  - **Runoff**: 0.24 cfs  
  - **986 cf**

#### Subcatchment P-2M: North Central
- **Runoff Area**: 18,201 sf  
  - **Impervious**: 74.95%  
  - **Runoff Depth**: 7.73”  
  - **Flow Length**: 180’  
  - **Tc**: 10.0 min  
  - **CN**: 92  
  - **Runoff**: 3.00 cfs  
  - **11,720 cf**

#### Subcatchment P-2NE: North Central
- **Runoff Area**: 8,999 sf  
  - **Impervious**: 88.73%  
  - **Runoff Depth**: 8.21”  
  - **Tc**: 10.0 min  
  - **CN**: 96  
  - **Runoff**: 1.52 cfs  
  - **6,156 cf**

#### Subcatchment P-2R: Roofs, warehouse
- **Runoff Area**: 4,125 sf  
  - **Impervious**: 100.00%  
  - **Runoff Depth**: 8.45”  
  - **Tc**: 10.0 min  
  - **CN**: 98  
  - **Runoff**: 0.70 cfs  
  - **2,905 cf**

#### Subcatchment P-2S: Between Buildings
- **Runoff Area**: 1,292 sf  
  - **Impervious**: 77.40%  
  - **Runoff Depth**: 7.85”  
  - **Flow Length**: 180’  
  - **Tc**: 10.0 min  
  - **CN**: 93  
  - **Runoff**: 0.21 cfs  
  - **845 cf**

#### Subcatchment P-3E: Northeast Corner
- **Runoff Area**: 5,025 sf  
  - **Impervious**: 100.00%  
  - **Runoff Depth**: 8.45”  
  - **Tc**: 10.0 min  
  - **CN**: 98  
  - **Runoff**: 0.85 cfs  
  - **3,538 cf**

#### Subcatchment P-4R: Roof to 4P
- **Runoff Area**: 2,828 sf  
  - **Impervious**: 100.00%  
  - **Runoff Depth**: 8.45”  
  - **Tc**: 10.0 min  
  - **CN**: 98  
  - **Runoff**: 0.48 cfs  
  - **1,991 cf**

#### Subcatchment P-4S: Paved Parking
- **Runoff Area**: 7,833 sf  
  - **Impervious**: 80.24%  
  - **Runoff Depth**: 7.97”  
  - **Flow Length**: 260’  
  - **Tc**: 10.0 min  
  - **CN**: 94  
  - **Runoff**: 1.31 cfs  
  - **5,201 cf**

#### Subcatchment P-6R: Roof
- **Runoff Area**: 8,937 sf  
  - **Impervious**: 100.00%  
  - **Runoff Depth**: 8.45”  
  - **Tc**: 10.0 min  
  - **CN**: 98  
  - **Runoff**: 1.52 cfs  
  - **6,293 cf**

#### Subcatchment P-7: Slab Area - Repaved
- **Runoff Area**: 30,112 sf  
  - **Impervious**: 100.00%  
  - **Runoff Depth**: 8.45”  
  - **Tc**: 10.0 min  
  - **CN**: 98  
  - **Runoff**: 5.11 cfs  
  - **21,203 cf**

#### Subcatchment P-7A: S CORNER ALLEY
- **Runoff Area**: 2,831 sf  
  - **Impervious**: 100.00%  
  - **Runoff Depth**: 8.45”  
  - **Flow Length**: 160’  
  - **Tc**: 10.0 min  
  - **CN**: 98  
  - **Runoff**: 0.48 cfs  
  - **1,993 cf**

#### Subcatchment P-7B: Paved Parking
- **Runoff Area**: 6,605 sf  
  - **Impervious**: 100.00%  
  - **Runoff Depth**: 8.45”  
  - **Flow Length**: 260’  
  - **Tc**: 10.0 min  
  - **CN**: 98  
  - **Runoff**: 1.12 cfs  
  - **4,651 cf**

#### Subcatchment P-7R: Roof
- **Runoff Area**: 6,627 sf  
  - **Impervious**: 100.00%  
  - **Runoff Depth**: 8.45”  
  - **Tc**: 10.0 min  
  - **CN**: 98  
  - **Runoff**: 1.12 cfs  
  - **4,666 cf**

#### Subcatchment P-8: Alley
- **Runoff Area**: 3,884 sf  
  - **Impervious**: 100.00%  
  - **Runoff Depth**: 8.45”  
  - **Tc**: 10.0 min  
  - **CN**: 98  
  - **Runoff**: 0.66 cfs  
  - **2,735 cf**

#### Subcatchment P-8R: Roof
- **Runoff Area**: 4,876 sf  
  - **Impervious**: 100.00%  
  - **Runoff Depth**: 8.45”  
  - **Tc**: 10.0 min  
  - **CN**: 98  
  - **Runoff**: 0.83 cfs  
  - **3,433 cf**
<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Runoff Area</th>
<th>Impervious (%)</th>
<th>Runoff Depth</th>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-9: Alley</td>
<td>1,384 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.23 cfs, 975 cf</td>
</tr>
<tr>
<td>P-9R: West End Roofs</td>
<td>7,745 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>1.31 cfs, 5,454 cf</td>
</tr>
<tr>
<td>P3N: Northeast Corner</td>
<td>8,026 sf</td>
<td>71.74%</td>
<td>7.73&quot;</td>
<td>10.0 min</td>
<td>92</td>
<td>0.23 cfs, 975 cf</td>
</tr>
<tr>
<td>P4-N: Paved Parking</td>
<td>6,257 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>1.06 cfs, 4,406 cf</td>
</tr>
<tr>
<td>P4W: Paved Parking</td>
<td>6,437 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>1.09 cfs, 4,533 cf</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Flow Length</th>
<th>Impervious (%)</th>
<th>Runoff Depth</th>
<th>Tc</th>
<th>CN</th>
<th>Runoff</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3N: Northeast Corner</td>
<td>260'</td>
<td>100.00%</td>
<td>7.73&quot;</td>
<td>10.0 min</td>
<td>92</td>
<td>1.32 cfs, 5,168 cf</td>
</tr>
<tr>
<td>P4-N: Paved Parking</td>
<td>260'</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>1.06 cfs, 4,406 cf</td>
</tr>
<tr>
<td>Reach ASW1: Overland swale</td>
<td>160.0'</td>
<td>0.0012 '/'</td>
<td>19.21 cfs</td>
<td>7.35 cfs, 14,038 cf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reach ASW2: Overland swale</td>
<td>120.0'</td>
<td>0.0005 '/'</td>
<td>12.15 cfs</td>
<td>7.72 cfs, 17,285 cf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reach ASW3: Overland swale</td>
<td>160.0'</td>
<td>0.0006 '/'</td>
<td>13.58 cfs</td>
<td>3.97 cfs, 20,519 cf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reach STRT: EXISTING STREET</td>
<td>25.0'</td>
<td>0.0080 '/'</td>
<td>63.73 cfs</td>
<td>19.80 cfs, 171,181 cf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reach SW-3: Overland swale</td>
<td>200.0'</td>
<td>0.0200 '/'</td>
<td>76.85 cfs</td>
<td>11.23 cfs, 34,155 cf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reach TD1: Drain for slab to Geopave</td>
<td>200.0'</td>
<td>0.0025 '/'</td>
<td>6.25 cfs, 26,643 cf</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reach TD2: East End of Buildings</td>
<td>50.0'</td>
<td>0.0080 '/'</td>
<td>4.26 cfs, 0.00 cfs</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Pond 1P: RetainIt    | Peak Elev=17.26' | Storage=7,610 cf | Inflow=8.21 cfs | 48,790 cf |
| Pond 1PGP: Geopave Area | Peak Elev=17.96' | Storage=6,219 cf | Inflow=11.65 cfs | 48,842 cf |
| Pond 2P: RetainIts   | Peak Elev=15.61' | Storage=7,016 cf | Inflow=5.73 cfs | 22,375 cf |
| Pond 2PGP1: Geopave  | Peak Elev=17.07' | Storage=258 cf  | Inflow=0.91 cfs | 3,750 cf |
| Pond 2PGP2: Geopave  | Peak Elev=17.19' | Storage=1,392 cf | Inflow=3.92 cfs | 15,470 cf |
Pond 2PGP3: Geopave
Peak Elev=17.97’ Storage=0.022 af Inflow=1.72 cfs 6,905 cf
Outflow=1.65 cfs 6,905 cf

Pond 3P: RetainIt
Peak Elev=17.08’ Storage=3,808 cf Inflow=1.33 cfs 11,111 cf
Primary=0.31 cfs 11,111 cf Secondary=0.00 cfs 0 cf Outflow=0.31 cfs 11,111 cf

Pond 3PGPE: Geopave
Peak Elev=14.93’ Storage=317 cf Inflow=0.38 cfs 1,398 cf
Outflow=0.10 cfs 1,398 cf

Pond 3PGPN: Geopave
Peak Elev=17.44’ Storage=2,434 cf Inflow=2.44 cfs 9,712 cf
Outflow=1.23 cfs 9,712 cf

Pond 4P: RetainIt
Peak Elev=17.72’ Storage=5,037 cf Inflow=4.40 cfs 24,583 cf
Primary=0.85 cfs 21,964 cf Secondary=3.22 cfs 2,522 cf Outflow=4.10 cfs 24,486 cf

Pond 4PGP1: Geopave
Peak Elev=16.74’ Storage=1,711 cf Inflow=1.61 cfs 6,417 cf
Outflow=0.30 cfs 6,417 cf

Pond 4PGP2: Geopave
Peak Elev=17.53’ Storage=1,992 cf Inflow=4.44 cfs 18,166 cf
Outflow=4.10 cfs 18,166 cf

Pond 5P: RetainIt
Peak Elev=15.69’ Storage=5,625 cf Inflow=3.08 cfs 18,123 cf
Primary=0.70 cfs 17,625 cf Secondary=0.00 cfs 0 cf Outflow=0.70 cfs 17,625 cf

Pond 5PGPN: Geopave
Peak Elev=17.42’ Storage=1,576 cf Inflow=1.61 cfs 6,455 cf
Outflow=0.77 cfs 6,455 cf

Pond 5PGPS: Geopave
Peak Elev=17.29’ Storage=987 cf Inflow=2.86 cfs 11,668 cf
Outflow=2.87 cfs 11,668 cf

Pond COMM- 2: Storm Grate East Side
Peak Elev=17.64’ Storage=705 cf Inflow=3.51 cfs 14,563 cf
Primary=0.36 cfs 9,711 cf Secondary=2.54 cfs 4,852 cf Outflow=2.90 cfs 14,563 cf

Pond COMM-1: Grate SW corner Comm Bldg
Peak Elev=17.65’ Storage=388 cf Inflow=5.87 cfs 24,359 cf
Primary=0.49 cfs 15,199 cf Secondary=5.03 cfs 9,160 cf Outflow=5.52 cfs 24,359 cf

Pond I-5: MH5
Peak Elev=15.94’ Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Pond I-6: Alley Inlet
Peak Elev=17.19’ Inflow=7.85 cfs 18,260 cf
Primary=4.69 cfs 15,495 cf Secondary=3.17 cfs 2,765 cf Outflow=7.85 cfs 18,260 cf

Pond MH-A1: Storm Manhole Alley
Peak Elev=17.34’ Storage=0 cf Inflow=5.07 cfs 26,943 cf
Primary=1.82 cfs 9,693 cf Secondary=3.25 cfs 17,250 cf Outflow=5.07 cfs 26,943 cf

Pond MH-A2: Storm Manhole Alley
Peak Elev=16.89’ Storage=0 cf Inflow=0.84 cfs 25,435 cf
Primary=0.38 cfs 11,449 cf Secondary=0.46 cfs 13,986 cf Outflow=0.84 cfs 25,435 cf

Pond MH-A3: Storm Manhole Alley
Peak Elev=16.58’ Storage=1 cf Inflow=1.22 cfs 26,468 cf
Primary=0.84 cfs 25,435 cf Secondary=0.38 cfs 1,033 cf Outflow=1.22 cfs 26,468 cf
**SSDC SITE PLAN PROPOSED - ROOFS INCLUDED**

**2020-02-28 SSDC-1699.C PROPOSED incl roofs**  
*Type III 24-hr 100-YEAR Rainfall=8.69”*

Prepared by Windows User  
Printed 3/4/2020

HydroCAD® 10.00-25 s/n 06187 © 2019 HydroCAD Software Solutions LLC

---

**Pond MH-A4: Storm MH Comm Site Alley**  
Peak Elev=17.29’ Storage=0 cf  
Inflow=1.22 cfs 26,494 cf  
Primary=1.22 cfs 26,468 cf  
Secondary=0.00 cfs 26 cf  
Outflow=1.22 cfs 26,494 cf

**Pond MH-E2: Existing MH-E2**  
Peak Elev=20.35’  
Inflow=14.59 cfs 148,139 cf  
Primary=8.58 cfs 137,026 cf  
Tertiary=6.01 cfs 11,113 cf  
Outflow=14.59 cfs 148,139 cf

**Pond MH-E3: Existing MH-E3-OFF**  
Peak Elev=12.57’  
Inflow=8.58 cfs 137,026 cf  
Primary=7.63 cfs 135,726 cf  
Secondary=0.95 cfs 1,300 cf  
Outflow=8.58 cfs 137,026 cf

**Pond MH-E4: Woodruff Inlet E-4**  
Peak Elev=9.11’  
Inflow=8.58 cfs 137,026 cf  
Primary=8.58 cfs 137,026 cf  
Secondary=0.00 cfs 0 cf  
Outflow=8.58 cfs 137,026 cf

**Pond PMH1: Proposed MH 1**  
Peak Elev=14.04’  
Inflow=8.04 cfs 70,496 cf  
Primary=8.04 cfs 70,496 cf  
Secondary=0.00 cfs 0 cf  
Outflow=8.04 cfs 70,496 cf

**Pond PMH2: Proposed MH2**  
Peak Elev=13.22’  
Inflow=9.08 cfs 103,571 cf  
Primary=9.08 cfs 103,571 cf  
Secondary=0.00 cfs 0 cf  
Outflow=9.08 cfs 103,571 cf

**Pond PMH3: Proposed MH 3**  
Peak Elev=12.46’  
Inflow=9.08 cfs 103,571 cf  
Primary=9.08 cfs 103,571 cf  
Secondary=0.00 cfs 0 cf  
Outflow=9.08 cfs 103,571 cf

**Link Drive N: North Driveway**  
Inflow=0.88 cfs 3,719 cf  
Primary=0.88 cfs 3,719 cf

**Link SPRING ST: Spring Street**  
Inflow=0.88 cfs 3,719 cf  
Primary=0.88 cfs 3,719 cf

---

**Total Runoff Area = 258,831 sf**  
**Runoff Volume = 176,663 cf**  
**Average Runoff Depth = 8.19”**  
**11.81% Pervious = 30,578 sf**  
**88.19% Impervious = 228,253 sf**
Summary for Reach STRT: EXISTING STREET

Inflow Area = 253,550 sf, 87.94% Impervious, Inflow Depth = 0.84" for 1 NJWQ event
Inflow = 3.79 cfs @ 1.37 hrs, Volume= 17,671 cf
Outflow = 3.74 cfs @ 1.38 hrs, Volume= 17,671 cf, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.66 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 0.30 fps, Avg. Travel Time= 1.4 min

Peak Storage= 57 cf @ 1.37 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 0.50' Flow Area= 12.5 sf, Capacity= 63.73 cfs

25.00’ x 0.50’ deep channel, n= 0.016 Asphalt, rough
Length= 25.0’ Slope= 0.0080 ‘/
Inlet Invert= 14.00’, Outlet Invert= 13.80’

Inflow Area=253,550 sf
Avg. Flow Depth=0.09'
Max Vel=1.66 fps
n=0.016
L=25.0'
S=0.0080 '/'
Capacity=63.73 cfs
Summary for Reach SW-3: Overland swale

Existing surface swale along south property line

Inflow Area = 3,884 sf, 100.00% Impervious, Inflow Depth = 6.55" for 1 NJWQ event
Inflow = 0.75 cfs @ 1.30 hrs, Volume= 2,122 cf
Outflow = 0.74 cfs @ 1.36 hrs, Volume= 2,122 cf, Atten= 1%, Lag= 3.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.51 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 0.59 fps, Avg. Travel Time= 4.5 min

Peak Storage= 79 cf @ 1.32 hrs
Average Depth at Peak Storage= 0.04'
Bank-Full Depth= 0.50' Flow Area= 12.8 sf, Capacity= 76.85 cfs

10.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 31.0 '/' Top Width= 41.00'
Length= 160.0' Slope= 0.0200 '/'
Inlet Invert= 17.70', Outlet Invert= 14.50'
Reach SW-3: Overland swale

Inflow Area=3,884 sf
Avg. Flow Depth=0.04'
Max Vel=1.51 fps
n=0.016
L=160.0'
S=0.0200 '/'
Capacity=76.85 cfs
## Summary for Pond 1P: RetainIt

Inflow Area = 71,355 sf, 92.99% Impervious, Inflow Depth = 0.94" for 1 NJWQ event

Inflow = 0.95 cfs @ 1.30 hrs, Volume= 5,598 cf
Outflow = 0.84 cfs @ 1.80 hrs, Volume= 5,598 cf, Atten= 12%, Lag= 30.1 min
Primary = 0.84 cfs @ 1.80 hrs, Volume= 5,598 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 13.97" @ 1.80 hrs  Surf.Area= 3,328 sf  Storage= 1,341 cf

Plug-Flow detention time= 42.9 min calculated for 5,593 cf (100% of inflow)
Center-of-Mass det. time= 43.8 min ( 166.5 - 122.8 )

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1A</td>
<td>13.50'</td>
<td>0 cf</td>
<td>32.00'W x 104.00'L x 3.17'H Field A 10.539 cf Overall - 10.539 cf Embedded = 0 cf x 35.0% Voids</td>
</tr>
<tr>
<td>#2A</td>
<td>13.50'</td>
<td>7,191 cf</td>
<td><strong>retain it retain it 2.5'</strong> x 52 Inside #1 Inside= 84.0&quot;W x 30.0&quot;H =&gt; 17.56 sf x 8.00'L = 140.4 cf Outside= 96.0&quot;W x 38.0&quot;H =&gt; 25.33 sf x 8.00'L = 202.7 cf 4 Rows adjusted for 112.2 cf perimeter wall</td>
</tr>
<tr>
<td>#3</td>
<td>16.67'</td>
<td>1,117 cf</td>
<td>30.00'D x 1.58'H Riser</td>
</tr>
<tr>
<td>#4</td>
<td>18.25'</td>
<td>1,125 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

9,433 cf Total Available Storage

Storage Group A created with Chamber Wizard

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>18.25</td>
<td>4,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18.50</td>
<td>5,000</td>
<td>1,125</td>
<td>1,125</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.40'</td>
<td>24.0&quot; Round HDPE  L= 248.0&quot; Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 13.40' / 12.70' S= 0.0028 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Device 1</td>
<td>13.50'</td>
<td>12.0&quot; Vert. Orifice/Grate C= 0.600</td>
</tr>
<tr>
<td>#3</td>
<td>Secondary</td>
<td>18.25'</td>
<td>1.0&quot; x 4.0&quot; Horiz. E TYPE STRM FLW X 4.00 columns X 14 rows C= 0.600 in 48.0&quot; x 48.0&quot; Grate (10% open area) Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

**Primary OutFlow** Max=0.83 cfs @ 1.80 hrs HW=13.97" (Free Discharge)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=13.50" (Free Discharge)
Pond 1P: RetainIt

Inflow Area=71,355 sf
Peak Elev=13.97'
Storage=1,341 cf
Summary for Pond 1PGP: Geopave Area

Inflow Area = 70,425 sf, 94.22% Impervious, Inflow Depth = 0.95" for 1 NJWQ event

Inflow = 3.76 cfs @ 1.17 hrs, Volume= 5,579 cf
Outflow = 0.95 cfs @ 1.80 hrs, Volume= 5,590 cf, Atten = 75%, Lag = 37.9 min
Primary = 0.95 cfs @ 1.80 hrs, Volume= 5,590 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs / 4
Peak Elev= 17.02' @ 1.45 hrs Surf.Area= 6,821 sq ft Storage= 2,955 cf

Plug-Flow detention time= 45.8 min calculated for 5,576 cf (100% of inflow)
Center-of-Mass det. time= 46.0 min (122.8 - 76.8 )

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>17.50'</td>
<td>3,183 cf</td>
<td>Parking Area (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td>#2</td>
<td>17.20'</td>
<td>208 cf</td>
<td>Geopave units (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td>#3</td>
<td>16.60'</td>
<td>623 cf</td>
<td>Crushed gravel 3/8&quot;-1&quot; (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td>#4</td>
<td>14.10'</td>
<td>2,520 cf</td>
<td>32.00'W x 105.00'L x 2.50'H TSS basin unit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.50</td>
<td>3,462</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.75</td>
<td>7,000</td>
<td>1,308</td>
<td>1,308</td>
</tr>
<tr>
<td>18.00</td>
<td>8,000</td>
<td>1,875</td>
<td>3,183</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.20</td>
<td>3,462</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.40</td>
<td>3,462</td>
<td>692</td>
<td>692</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16.60</td>
<td>3,462</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.20</td>
<td>3,460</td>
<td>2,077</td>
<td>2,077</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices

#1 Primary 13.70' **12.0" Round 12" PVC**
L= 10.0’ RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert = 13.70’ / 13.60’ S= 0.0100 ’/’ Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

#2 Device 1 13.80' **4.0" Round 4" PVC drains X 4.00**
L= 20.0’ RCP, sq.cut end projecting, Ke= 0.500
Inlet / Outlet Invert = 13.80’ / 13.70’ S= 0.0050 ’/’ Cc= 0.900
n= 0.012, Flow Area= 0.09 sf

#3 Device 2 14.10' **6.000 in/hr Exfiltration over Surface area**

#4 Device 1 17.40' **1.0" x 4.0" Horiz. E-Type Grate X 4.00 columns**
Primary OutFlow: Max = 0.95 cfs @ 1.80 hrs, HW = 16.63' (Free Discharge)
1 = 12" PVC (Passes 0.95 cfs of 7.36 cfs potential flow)
2 = 4" PVC drains (Passes 0.95 cfs of 2.31 cfs potential flow)
3 = Exfiltration (Exfiltration Controls 0.95 cfs)
4 = E-Type Grate (Controls 0.00 cfs)

Pond 1PGP: Geopave Area

Inflow Area = 70,425 sf
Peak Elev = 17.02'
Storage = 2,955 cf
Summary for Pond 2P: RetainIts

Inflow Area = 34,049 sf, 78.57% Impervious, Inflow Depth = 0.70" for 1 NJWQ event
Inflow = 0.36 cfs @ 1.05 hrs, Volume= 1,996 cf
Outflow = 0.17 cfs @ 2.33 hrs, Volume= 1,330 cf, Atten= 52%, Lag= 77.0 min
Primary = 0.17 cfs @ 2.33 hrs, Volume= 1,330 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 13.96' @ 2.33 hrs Surf.Area= 3,840 sf Storage= 1,518 cf
Plug-Flow detention time= 201.6 min calculated for 1,330 cf (67% of inflow)
Center-of-Mass det. time= 182.2 min (287.1 - 104.9)

Volume Invert Avail.Storage Storage Description
#1 16.50' 1,250 cf Custom Stage Data (Prismatic) Listed below (Recalc)
#2A 13.50' 0 cf 80.00'W x 48.00'L x 3.17'H Field A
12,160 cf Overall - 12,160 cf Embedded = 0 cf x 0.0% Voids
#3A 13.50' 8,321 cf retain it retain it 2.5' x 60 Inside #2
Inside= 84.0'W x 30.0'H => 17.56 sf x 8.00'L = 140.4 cf
Outside= 96.0'W x 38.0'H => 25.33 sf x 8.00'L = 202.7 cf
10 Rows adjusted for 105.6 cf perimeter wall
#4 16.20' 353 cf 30.00'D x 0.50'H Riser
9,924 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation Surf.Area Inc.Store Cum.Store
(Feet) (sq-ft) (Cubic-ft) (Cubic-ft)
16.50 0 0 0
17.00 5,000 1,250 1,250

Device Routing Invert Outlet Devices
#1 Primary 13.50' 12.0" Round HDPE DUAL WALL
L= 10.0' Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 13.50' / 13.12' S= 0.0380 '/" Cc= 0.900
n= 0.012, Flow Area= 0.79 sf
#2 Device 1 13.70' 6.0" Vert. Orifice/Grate C= 0.600
#3 Secondary 17.50' 1.0" x 4.0" Horiz. MANHOLE GRATE X 4.00 columns
X 8 rows C= 0.600 in 24." Grate (28% open area)
Limited to weir flow at low heads

Primary OutFlow Max=0.17 cfs @ 2.33 hrs HW=13.96’ (Free Discharge)
1=HDPE DUAL WALL (Passes 0.17 cfs of 0.80 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.17 cfs @ 1.72 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.50’ (Free Discharge)
3=MANHOLE GRATE (Controls 0.00 cfs)
Pond 2P: RetainIts

Inflow Area=34,049 sf
Peak Elev=13.96'
Storage=1,518 cf
Summary for Pond 2PGP1: Geopave

2PGP1 outlets to 2PGP2

Inflow Area = 5,417 sf, 94.61% Impervious, Inflow Depth = 0.94” for 1 NJWQ event
Inflow = 0.29 cfs @ 1.15 hrs, Volume= 426 cf
Outflow = 0.04 cfs @ 0.95 hrs, Volume= 426 cf, Atten= 86%, Lag= 0.0 min
Primary = 0.04 cfs @ 0.95 hrs, Volume= 426 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 16.96’ @ 1.66 hrs Surf.Area= 290 sf Storage= 249 cf

Plug-Flow detention time= 57.3 min calculated for 426 cf (100% of inflow)
Center-of-Mass det. time= 57.3 min (132.1 - 74.8)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>14.10’</td>
<td>270 cf</td>
<td>14.50’W x 20.00’L x 3.10’H Geopave Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>899 cf Overall x 30.0% Voids</td>
</tr>
<tr>
<td>#2</td>
<td>17.20’</td>
<td>104 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>373 cf Total Available Storage</td>
</tr>
</tbody>
</table>

Elevation Surf.Area Inc.Store Cum.Store
(feet) (sq-ft) (cubic-feet) (cubic-feet)
17.20 290 0 0
17.50 400 104 104

Device Routing Invert Outlet Devices
#1 Primary 13.80’ 6.0” Round 6” PVC X 4.00
L= 65.0’ RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 13.80’ / 13.70’ S= 0.0015 '/’ Cc= 0.900
n= 0.012, Flow Area= 0.20 sf

#2 Device 1 13.80’ 4.0” Round 4” PVC drains X 2.00
L= 10.0’ RCP, sq.cut end projecting, Ke= 0.500
Inlet / Outlet Invert= 13.80’ / 13.70’ S= 0.0100 '/’ Cc= 0.900
n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

#3 Device 2 14.10’ 6,000 in/hr Exfiltration over Surface area

#4 Device 1 17.00’ 1.0” x 4.0” Horiz. E-Type Grate X 4.00 columns
X 14 rows C= 0.600 in 48.0” x 48.0” Grate (10% open area)
Limited to weir flow at low heads

Primary OutFlow Max= 0.04 cfs @ 0.95 hrs HW= 14.16’ (Free Discharge)
1=6” PVC (Passes 0.04 cfs of 0.67 cfs potential flow)
2=4” PVC drains (Passes 0.04 cfs of 0.35 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.04 cfs)
4=E-Type Grate (Controls 0.00 cfs)
Pond 2PGP1: Geopave

Storage=249 ci
Peak Elev=16.96'
Inflow Area=5,417 sf

Inflow
Primary

Flow (cfs)

Time (hours)

0.32
0.3
0.28
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0

Inflow Area=5,417 sf
Peak Elev=16.96'
Storage=249 ci
Summary for Pond 2PGP2: Geopave

Geopave area receives pavement DA P-2
Discharges to 2P

Inflow Area = 23,618 sf, 79.46% Impervious, Inflow Depth = 0.68" for 1 NJWQ event
Inflow = 0.70 cfs @ 1.16 hrs, Volume= 1,329 cf
Outflow = 0.22 cfs @ 1.05 hrs, Volume= 1,329 cf, Attn= 68%, Lag= 0.0 min
Primary = 0.22 cfs @ 1.05 hrs, Volume= 1,329 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 14.87' @ 1.43 hrs  Surf.Area= 1,600 sf  Storage= 372 cf

Plug-Flow detention time= 14.3 min calculated for 1,328 cf (100% of inflow)
Center-of-Mass det. time= 14.4 min (110.6 - 96.2)

Volume Invert Avail.Storage Storage Description
#1 17.40' 532 cf Custom Stage Data (Prismatic) Listed below (Recalc)
#2 14.10' 1,392 cf 40.00' W x 40.00' L x 2.90'H TSS Unit 4,640 cf Overall x 30.0% Voids

Volume Invert Outlet Devices

Device Routing Invert Outlet Devices
#1 Primary 13.65' 12.0" Round 12" PVC
L= 18.0' RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 13.65'/13.60' S= 0.0028 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf
#2 Device 1 13.80' 4.0" Round 4" PVC drains X 6.00
L= 20.0' RCP, sq.cut end projecting, Ke= 0.500
Inlet / Outlet Invert= 13.80'/13.65' S= 0.0075 '/' Cc= 0.900
n= 0.012, Flow Area= 0.09 sf
#3 Device 2 14.10' 6,000 in/hr Exfiltration over Surface area
#4 Device 1 17.00' 48.0" x 48.0" Horiz. E-Type Grate C= 0.600
Limited to weir flow at low heads

Primary OutFlow Max=0.22 cfs @ 1.05 hrs HW=14.16’ (Free Discharge)
1=12" PVC (Passes 0.22 cfs of 0.69 cfs potential flow)
2=4" PVC drains (Passes 0.22 cfs of 0.98 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.22 cfs)
4=E-Type Grate (Controls 0.00 cfs)
Pond 2PGP2: Geopave

Inflow Area=23,618 sf
Peak Elev=14.87'
Storage=372 cf
Summary for Pond 3P: RetainIt

Inflow Area = 17,286 sf, 62.38% Impervious, Inflow Depth = 0.65" for 1 NJWQ event
Inflow = 0.34 cfs @ 1.25 hrs, Volume = 942 cf
Outflow = 0.10 cfs @ 1.85 hrs, Volume = 942 cf, Atten = 70%, Lag = 35.8 min
Primary = 0.10 cfs @ 1.85 hrs, Volume = 942 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume = 0 cf

Routing by Stor-Ind method, Time Span = 0.00-60.00 hrs, dt = 0.05 hrs
Peak Elev = 13.89' @ 1.85 hrs Surv.Area = 1,600 sf Storage = 672 cf

Plug-Flow detention time = 118.6 min calculated for 942 cf (100% of inflow)
Center-of-Mass det. time = 117.9 min (202.2 - 84.3)

Volume Invert Avail.Storage Storage Description
#1B 13.40' 0 cf 40.00'W x 40.00'L x 3.17'H Field B
5,067 cf Overall - 5,067 cf Embedded = 0 cf x 0.0% Voids
#2B 13.40' 3,445 cf retain it retain it 2.5' x 25 Inside #1
Inside= 84.0"W x 30.0"H => 17.56 sf x 8.00'L = 140.4 cf
Outside= 96.0"W x 38.0"H => 25.33 sf x 8.00'L = 202.7 cf
5 Rows adjusted for 66.0 cf perimeter wall
#3 16.57' 636 cf 30.00'D x 0.90'H Riser
#4 17.50' 1,550 cf Custom Stage Data (Prismatic) Listed below (Recalc)

5,631 cf Total Available Storage

Storage Group B created with Chamber Wizard

17.50 2,200 0 0
18.00 4,000 1,550 1,550

Device Routing Invert Outlet Devices
#1 Primary 13.30' 12.0" Round HDPE DUAL WALL
L= 46.0" Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 13.30' / 12.70' S= 0.0130 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf
#2 Device 1 13.40' 2.5" Vert. Orifice/Grate C= 0.600
#3 Secondary 17.50' 1.0" x 4.0" Horiz. MANHOLE GRATE X 4.00 columns
X 10 rows C= 0.600 in 24.0" Grate (35% open area)
Limited to weir flow at low heads

Primary OutFlow Max=0.10 cfs @ 1.85 hrs HW=13.89' (Free Discharge)
1=HDPE DUAL WALL (Passes 0.10 cfs of 1.25 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.10 cfs @ 2.98 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.40' (Free Discharge)
3=MANHOLE GRATE (Controls 0.00 cfs)
Pond 3P: Retainit

Inflow Area=17,286 sf
Peak Elev=13.89'
Storage=672 cf
Summary for Pond 3PGPN: Geopave

Inflow Area = 14,711 sf, 73.30% Impervious, Inflow Depth = 0.73" for 1 NJWQ event
Inflow = 0.63 cfs @ 1.16 hrs, Volume= 895 cf
Outflow = 0.32 cfs @ 1.20 hrs, Volume= 895 cf, Attenuation= 50%, Lag= 2.6 min
Primary = 0.32 cfs @ 1.20 hrs, Volume= 895 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 14.35' @ 1.31 hrs Surf.Area= 2,268 sf Storage= 238 cf

Plug-Flow detention time= 7.3 min calculated for 894 cf (100% of inflow)
Center-of-Mass det. time= 7.3 min (84.1 - 76.8)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>14.00'</td>
<td>2,313 cf</td>
<td><strong>36.00'W x 63.00'L x 3.40'H Geopave Unit</strong> 7,711 cf Overall x 30.0% Voids</td>
</tr>
<tr>
<td>#2</td>
<td>17.40'</td>
<td>305 cf</td>
<td><strong>Custom Stage Data (Prismatic)</strong> Listed below (Recalc)</td>
</tr>
</tbody>
</table>

Total Available Storage = 2,618 cf

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.40</td>
<td>2,600</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>3,500</td>
<td>305</td>
<td>305</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.60'</td>
<td><strong>8.0&quot; Round 8&quot; PVC X 4.00</strong> L= 30.0' RCP, groove end w/headwall, Ke= 0.200 Inlet / Outlet Invert= 13.60' / 13.40' S= 0.0067 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Device 1</td>
<td>13.80'</td>
<td><strong>4.0&quot; Round 4&quot; PVC drains X 2.00</strong> L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 13.80' / 13.70' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf</td>
</tr>
<tr>
<td>#3</td>
<td>Device 2</td>
<td>14.00'</td>
<td><strong>6.000 in/hr Exfiltration over Surface area</strong></td>
</tr>
<tr>
<td>#4</td>
<td>Device 1</td>
<td>17.40'</td>
<td><strong>1.0&quot; x 4.0&quot; Horiz. E-Type Grate X 4.00 columns</strong> X 14 rows C= 0.600 in 48.0&quot; x 48.0&quot; Grate (10% open area) Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

Primary OutFlow Max=0.32 cfs @ 1.20 hrs HW=14.28' (Free Discharge)

1=8" PVC (Passes 0.32 cfs of 3.70 cfs potential flow)
2=4" PVC drains (Passes 0.32 cfs of 0.36 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.32 cfs)
4=E-Type Grate (Controls 0.00 cfs)
Pond 3PGPN: Geopave

Inflow Area=14,711 sf
Peak Elev=14.35'
Storage=238 cf
Summary for Pond 4P: RetainIt

Inflow Area = 36,301 sf, 84.69% Impervious, Inflow Depth = 0.87" for 1 NJWQ event

Inflow = 0.52 cfs @ 1.20 hrs, Volume= 2,646 cf
Outflow = 0.22 cfs @ 2.21 hrs, Volume= 2,549 cf, Atten= 57%, Lag= 60.5 min
Primary = 0.22 cfs @ 2.21 hrs, Volume= 2,549 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 13.90' @ 2.21 hrs Surf.Area= 2,240 sf Storage= 959 cf

Plug-Flow detention time= 87.6 min calculated for 2,549 cf (96% of inflow)
Center-of-Mass det. time= 83.8 min (198.4 - 114.6)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
</table>
| #1B    | 13.40'   | 0 cf          | **56.00'W x 40.00'L x 3.17'H Field B**
           |           |               | 7,093 cf Overall - 7,093 cf Embedded = 0 cf x 0.0% Voids |
| #2B    | 13.40'   | 4,836 cf      | **retain_it retain_it 2.5' x 35** Inside #1 |
           |           |               | Inside= 84.0"W x 30.0"H => 17.56 sf x 8.00'L = 140.4 cf |
           |           |               | Outside= 96.0"W x 38.0"H => 25.33 sf x 8.00'L = 202.7 cf |
           |           |               | 7 Rows adjusted for 79.2 cf perimeter wall |
| #3     | 17.45'   | 495 cf        | **Custom Stage Data (Prismatic)** Listed below (Recalc) |
|        |          |               | 5,331 cf Total Available Storage |

Storage Group B created with Chamber Wizard

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.45</td>
<td>200</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.90</td>
<td>2,000</td>
<td>495</td>
<td>495</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.30'</td>
<td><strong>8.0&quot; Round HDPE DUAL WALL</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 25.0' Box, headwall w/3 square edges, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.30' / 12.00' S= 0.0520 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.35 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Device 1</td>
<td>13.45'</td>
<td><strong>4.0&quot; Vert. Orifice/Grate</strong> C= 0.600</td>
</tr>
<tr>
<td>#3</td>
<td>Secondary</td>
<td>17.45'</td>
<td><strong>1.0&quot; x 4.0&quot; Horiz. MANHOLE GRATE X 4.00 columns</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 14 rows C= 0.600 in 24.0&quot; Grate (50% open area)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

Primary OutFlow Max=0.22 cfs @ 2.21 hrs HW=13.90' (Free Discharge)
1=HDPE DUAL WALL (Passes 0.22 cfs of 0.87 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.22 cfs @ 2.54 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.40' (Free Discharge)
3=MANHOLE GRATE (Controls 0.00 cfs)
Pond 4P: Retainlt

Inflow Area=36,301 sf  
Peak Elev=13.90'  
Storage=959 cf
Summary for Pond 4PGP1: Geopave

Inflow Area = 9,960 sf, 62.82% Impervious, Inflow Depth = 0.73” for 1 NJWQ event
Inflow = 0.41 cfs @ 1.15 hrs, Volume= 607 cf
Outflow = 0.30 cfs @ 1.20 hrs, Volume= 607 cf, Atten= 27%, Lag= 2.8 min
Primary = 0.30 cfs @ 1.20 hrs, Volume= 607 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 14.23’ @ 1.24 hrs  Surf.Area= 2,160 sf  Storage= 86 cf

Plug-Flow detention time= 3.1 min calculated for 606 cf (100% of inflow)
Center-of-Mass det. time= 3.1 min (78.3 - 75.2)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>14.10’</td>
<td>2,203 cf</td>
<td><strong>18.00’W x 120.00’L x 3.40’H Geopave Unit</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7,344 cf Overall x 30.0% Voids</td>
</tr>
<tr>
<td>#2</td>
<td>17.40’</td>
<td>1,548 cf</td>
<td><strong>Custom Stage Data (Prismatic)</strong> Listed below (Recalc)</td>
</tr>
</tbody>
</table>

3,751 cf Total Available Storage

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.40</td>
<td>2,160</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18.00</td>
<td>3,000</td>
<td>1,548</td>
<td>1,548</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices

#1 Primary 13.70’ **12.0” Round 12” PVC**
L= 42.0’ RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 13.70’ / 13.50’ S= 0.0048 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

#2 Device 1 13.90’ **4.0” Round 4” PVC drains X 2.00**
L= 20.0’ RCP, sq.cut end projecting, Ke= 0.500
Inlet / Outlet Invert= 13.90’ / 13.70’ S= 0.0100 '/' Cc= 0.900
n= 0.012, Flow Area= 0.09 sf

#3 Device 2 14.10’ **6.000 in/hr Exfiltration over Surface area**

#4 Device 1 17.40’ **1.0” x 4.0” Horiz. E-Type Grate X 4.00 columns**
X 14 rows C= 0.600 in 48.0” x 48.0” Grate (10% open area)
Limited to weir flow at low heads

Primary OutFlow Max=0.30 cfs @ 1.20 hrs HW=14.23’ (Free Discharge)

1=12” PVC (Passes 0.30 cfs of 0.82 cfs potential flow)
2=4” PVC drains (Passes 0.30 cfs of 0.32 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.30 cfs)
4=E-Type Grate ( Controls 0.00 cfs)
Pond 4PGP1: Geopave

Inflow Area=9,960 sf
Peak Elev=14.23'
Storage=86 cf
Summary for Pond 4PGP2: Geopave

Inflow Area = 26,341 sf, 92.96% Impervious, Inflow Depth = 0.93" for 1 NJWQ event

Inflow = 1.41 cfs @ 1.15 hrs, Volume= 2,039 cf
Outflow = 0.22 cfs @ 1.00 hrs, Volume= 2,039 cf, Atten= 85%, Lag= 0.0 min
Primary = 0.22 cfs @ 1.00 hrs, Volume= 2,039 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 16.48' @ 1.61 hrs Surf.Area= 1,548 sf Storage= 1,150 cf

Plug-Flow detention time= 50.5 min calculated for 2,037 cf (100% of inflow)
Center-of-Mass det. time= 50.5 min (125.4 - 74.9)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>17.30'</td>
<td>2,005 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td>#2</td>
<td>14.00'</td>
<td>1,579 cf</td>
<td>18.00'W x 86.00'L x 3.40'H Geopave Unit 5,263 cf Overall x 30.0% Voids</td>
</tr>
</tbody>
</table>

3,584 cf Total Available Storage

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.30</td>
<td>1,548</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>2,000</td>
<td>355</td>
<td>355</td>
</tr>
<tr>
<td>17.60</td>
<td>3,000</td>
<td>250</td>
<td>605</td>
</tr>
<tr>
<td>18.00</td>
<td>4,000</td>
<td>1,400</td>
<td>2,005</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices

- #1 Primary 13.50' 12.0" Round 12" PVC
  L= 20.0’ RCP, groove end w/headwall, Ke= 0.200
  Inlet / Outlet Invert= 13.50' / 13.40' S= 0.0050 '/' Cc= 0.900
  n= 0.012, Flow Area= 0.79 sf

- #2 Device 1 13.80' 4.0" Round 4" PVC drains X 2.00
  L= 20.0’ RCP, sq.cut end projecting, Ke= 0.500
  Inlet / Outlet Invert= 13.80' / 13.70' S= 0.0050 '/' Cc= 0.900
  n= 0.012, Flow Area= 0.09 sf

- #3 Device 2 14.00' 6.000 in/hr Exfiltration over Surface area
- #4 Device 1 17.30' 1.0" x 4.0" Horiz. E-Type Grate X 4.00 columns
  X 14 rows C= 0.600 in 48.0" x 48.0" Grate (10% open area)
  Limited to weir flow at low heads

Primary OutFlow Max=0.22 cfs @ 1.00 hrs HW=14.16’ (Free Discharge)
1=12" PVC (Passes 0.22 cfs of 1.21 cfs potential flow)
2=4" PVC drains (Passes 0.22 cfs of 0.29 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.22 cfs)
4=E-Type Grate (Controls 0.00 cfs)
Pond 4PGP2: Geopave

Inflow Area=26,341 sf
Peak Elev=16.48'
Storage=1,150 cf
Summary for Pond 5P: RetainIt

Inflow Area = 27,155 sf, 77.11% Impervious, Inflow Depth = 0.85" for 1 NJWQ event
Inflow = 0.33 cfs @ 1.15 hrs, Volume= 1,922 cf
Outflow = 0.12 cfs @ 3.55 hrs, Volume= 1,429 cf, Atten= 63%, Lag= 144.0 min
Primary = 0.12 cfs @ 3.55 hrs, Volume= 1,429 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 13.84' @ 3.55 hrs Surf.Area= 2,816 sf Storage= 1,084 cf

Plug-Flow detention time= 177.0 min calculated for 1,429 cf (74% of inflow)
Center-of-Mass det. time= 153.3 min (266.3 - 113.0)

Volume Invert Avail.Storage Storage Description
#1B 13.40' 0 cf 32.00’W x 88.00’L x 3.67’H Field B
10,325 cf Overall - 10,325 cf Embedded = 0 cf x 0.0% Voids
#2B 13.40' 7,365 cf retain_it retain_it 3.0’ x 44 Inside #1
Inside= 84.0”W x 36.0”H => 21.33 sf x 8.00’L = 170.6 cf
Outside= 96.0”W x 44.0”H => 29.33 sf x 8.00’L = 234.7 cf
4 Rows adjusted for 141.6 cf perimeter wall
#3 16.87' 353 cf 30.00’D x 0.50’H Riser
#4 17.50' 188 cf Custom Stage Data (Prismatic) Listed below (Recalc)

7,906 cf Total Available Storage

Storage Group B created with Chamber Wizard

17.50 500 0 0
17.75 1,000 188 188

Device Routing Invert Outlet Devices
#1 Primary 13.50' 10.0’ Round HDPE DUAL WALL
L= 10.0’ Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 13.50’/ 10.00’ S= 0.3500 '/' Cc= 0.900
n= 0.012, Flow Area= 0.55 sf
#2 Device 1 13.60' 4.4” Vert. Orifice/Grate C= 0.600
#3 Secondary 17.60' 1.0” x 4.0” Horiz. MANHOLE GRATE X 4.00 columns
X 10 rows C= 0.600 in 24.0” Grate (35% open area)
Limited to weir flow at low heads

Primary OutFlow Max=0.12 cfs @ 3.55 hrs HW=13.84’ (Free Discharge)
1=HDPE DUAL WALL (Passes 0.12 cfs of 0.42 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.12 cfs @ 1.67 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.40’ (Free Discharge)
3=MANHOLE GRATE (Controls 0.00 cfs)
Pond 5P: RetainIt

Inflow Area=27,155 sf
Peak Elev=13.84'
Storage=1,084 cf
Summary for Pond 5PGPN: Geopave

Inflow Area = 9,866 sf, 66.95% Impervious, Inflow Depth = 0.77" for 1 NJWQ event
Inflow = 0.43 cfs @ 1.15 hrs, Volume= 636 cf
Outflow = 0.21 cfs @ 1.15 hrs, Volume= 636 cf, Attenuation= 52%, Lag= 0.0 min
Primary = 0.21 cfs @ 1.15 hrs, Volume= 636 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 14.34' @ 1.31 hrs Surf.Area= 1,500 sf Storage= 154 cf

Plug-Flow detention time= 6.3 min calculated for 636 cf (100% of inflow)
Center-of-Mass det. time= 6.3 min (81.4 - 75.1)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>14.00'</td>
<td>1,530 cf</td>
<td>10.00'W x 150.00'L x 3.40'H Geopave Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5,100 cf Overall x 30.0% Voids</td>
</tr>
<tr>
<td>#2</td>
<td>17.40'</td>
<td>1,680 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3,210 cf Total Available Storage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Surf.Area</th>
<th>Inc.Store</th>
<th>Cum.Store</th>
</tr>
</thead>
<tbody>
<tr>
<td>(feet)</td>
<td>(sq-ft)</td>
<td>(cubic-feet)</td>
<td>(cubic-feet)</td>
</tr>
<tr>
<td>17.40</td>
<td>2,600</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18.00</td>
<td>3,000</td>
<td>1,680</td>
<td>1,680</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>6.0&quot; Round 6&quot; PVC X 4.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.70'</td>
<td>L= 10.0' RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.70' / 13.60' S= 0.0100 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.20 sf</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>4.0&quot; Round 4&quot; PVC drains X 2.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>#2</td>
<td>Device 1</td>
<td>13.80'</td>
<td>L= 20.0' RCP, sq.cut end projecting, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.80' / 13.70' S= 0.0050 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.09 sf</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>6.000 in/hr Exfiltration over Surface area</th>
</tr>
</thead>
<tbody>
<tr>
<td>#3</td>
<td>Device 2</td>
<td>14.00'</td>
<td>1.0&quot; x 4.0&quot; Horiz. E-Type Grate X 4.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 11 rows C= 0.600 in 48.0&quot; x 48.0&quot; Grate (8% open area)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

Primary OutFlow Max=0.21 cfs @ 1.15 hrs HW=14.19’ (Free Discharge)

1=6" PVC (Passes 0.21 cfs of 1.77 cfs potential flow)
2=4" PVC drains (Passes 0.21 cfs of 0.32 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.21 cfs)
4=E-Type Grate (Controls 0.00 cfs)
Pond 5PGPN: Geopave

Inflow Area=9,866 sf
Peak Elev=14.34'
Storage=154 cf
Summary for Pond 5PGPS: Geopave

Inflow Area = 17,289 sf, 82.91% Impervious, Inflow Depth = 0.89" for 1 NJWQ event

Inflow = 0.87 cfs @ 1.15 hrs, Volume= 1,284 cf
Outflow = 0.13 cfs @ 0.95 hrs, Volume= 1,286 cf, Atten= 86%, Lag= 0.0 min
Primary = 0.13 cfs @ 0.95 hrs, Volume= 1,286 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 16.81' @ 1.64 hrs  Surf.Area= 900 sf  Storage= 731 cf

Plug-Flow detention time= 54.0 min calculated for 1,284 cf (100% of inflow)
Center-of-Mass det. time= 54.1 min (128.6 - 74.4)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>14.10'</td>
<td>837 cf</td>
<td>10.00'W x 90.00'L x 3.10'H Geopave Unit</td>
</tr>
<tr>
<td>#2</td>
<td>17.20'</td>
<td>543 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

1,380 cf Total Available Storage

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.20</td>
<td>1,620</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>2,000</td>
<td>543</td>
<td>543</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices

- #1 Primary 13.70' 6.0" Round 6" PVC X 4.00
  - L= 2.0’ RCP, groove end w/headwall, Ke= 0.200
  - Inlet / Outlet Invert= 13.70’ / 13.60’ S= 0.0500 ’’ Cc= 0.900
  - n= 0.012, Flow Area= 0.20 sf

- #2 Device 1 13.70’ 4.0” Round 4” PVC drains X 2.00
  - L= 2.0’ RCP, sq.cut end projecting, Ke= 0.500
  - Inlet / Outlet Invert= 13.70’ / 13.60’ S= 0.0500 ’’ Cc= 0.900
  - n= 0.012, Flow Area= 0.09 sf

- #3 Device 2 14.10’ 6.000 in/hr Exfiltration over Surface area

- #4 Device 1 17.25’ 1.0” x 9.0” Horiz. E-Type Grate X 4.00 columns X 14 rows C= 0.600
  Limited to weir flow at low heads

Primary OutFlow Max=0.13 cfs @ 0.95 hrs HW=14.17’ (Free Discharge)

1=6” PVC (Passes 0.13 cfs of 1.92 cfs potential flow)
2=4” PVC drains (Passes 0.13 cfs of 0.46 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.13 cfs)
4=E-Type Grate (Controls 0.00 cfs)
Inflow Area=17,289 sf
Peak Elev=16.81'
Storage=731 cf
Summary for Pond MH-E2: Existing MH-E2

Inflow Area = 249,666 sf, 87.75% Impervious, Inflow Depth = 0.75" for 1 NJWQ event

Inflow = 3.05 cfs @ 1.37 hrs, Volume= 15,550 cf
Outflow = 3.05 cfs @ 1.37 hrs, Volume= 15,550 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.05 cfs @ 1.37 hrs, Volume= 15,550 cf
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 10.46' @ 1.37 hrs

Device | Routing | Invert | Outlet Devices
--- | --- | --- | ---
#1 Primary | 8.74' | 12.0" Round PVC
L= 165.0’ Box, 0° wingwalls, square crown edge, Ke= 0.700
Inlet / Outlet Invert= 8.74' / 8.02’ S= 0.0044 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

#2 Tertiary | 17.78' | 1.0’ x 2.0’ Horiz. E-TYPE GRATE X 4.00 columns
X 14 rows C= 0.600 in 24.0” Grate (25% open area)
Limited to weir flow at low heads

Primary OutFlow Max=2.99 cfs @ 1.37 hrs HW=10.40’ (Free Discharge)
Barrel Controls 2.99 cfs @ 3.81 fps

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=8.74’ (Free Discharge)
Controls 0.00 cfs

Pond MH-E2: Existing MH-E2

Inflow Area=249,666 sf
Peak Elev=10.46'

Hydrograph
Summary for Pond MH-E3: Existing MH-E3-OFF

Inflow Area = 249,666 sf, 87.75% Impervious, Inflow Depth = 0.75” for 1 NJWQ event

<table>
<thead>
<tr>
<th>Inflow</th>
<th>Outflow</th>
<th>Primary</th>
<th>Secondary</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.05 cfs @ 1.37 hrs, Volume= 15,550 cf</td>
<td>3.05 cfs @ 1.37 hrs, Volume= 15,550 cf, Atten= 0%, Lag= 0.0 min</td>
<td>3.05 cfs @ 1.37 hrs, Volume= 15,550 cf</td>
<td>0.00 cfs @ 0.00 hrs, Volume= 0 cf</td>
</tr>
</tbody>
</table>

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 9.45’ @ 1.37 hrs

Device

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>8.00’</td>
<td>12.0” Round PVC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 30.0’ RCP, square edge headwall, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 8.00’ / 7.90’ S= 0.0033 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.79 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Secondary</td>
<td>12.50’</td>
<td>48.0” x 42.0” Horiz. Orifice/Grate C= 0.600</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

Primary OutFlow
Max=2.99 cfs @ 1.37 hrs HW=9.42’ (Free Discharge)
1=PVC (Barrel Controls 2.99 cfs @ 3.81 fps)

Secondary OutFlow
Max=0.00 cfs @ 0.00 hrs HW=8.00’ (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond MH-E3: Existing MH-E3-OFF

Hydrograph

Inflow Area=249,666 sf
Peak Elev=9.45’
Summary for Pond MH-E4: Woodruff Inlet E-4

Inflow Area = 249,666 sf, 87.75% Impervious, Inflow Depth = 0.75" for 1 NJWQ event
Inflow = 3.05 cfs @ 1.37 hrs, Volume= 15,550 cf
Outflow = 3.05 cfs @ 1.37 hrs, Volume= 15,550 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.05 cfs @ 1.37 hrs, Volume= 15,550 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 8.11' @ 1.37 hrs

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>7.80'</td>
<td>12.0&quot; Vert. Orifice/Grate C= 0.600</td>
</tr>
</tbody>
</table>
| #2     | Primary | 6.90'  | 15.0" Round 15" RCP  
|        |         |        | L= 100.0’ RCP, sq.cut end projecting, Ke= 0.500  
|        |         |        | Inlet / Outlet Invert= 6.90’ / 6.80’ S= 0.0010 '/' Cc= 0.900  
|        |         |        | n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf  |
| #3     | Secondary| 14.00' | 1.0" x 4.0" Horiz. Orifice/Grate X 4.00 columns  
|        |         |        | X 5 rows C= 0.600 in 24.0" x 48.0" Grate (7% open area)  
|        |         |        | Limited to weir flow at low heads  |

**Primary OutFlow** Max=2.99 cfs @ 1.37 hrs HW=8.10’ (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.37 cfs @ 1.86 fps)
2=15" RCP (Barrel Controls 2.62 cfs @ 2.78 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=6.90’ (Free Discharge)
3=Orifice/Grate (Controls 0.00 cfs)
Pond MH-E4: Woodruff Inlet E-4

Inflow Area = 249,666 sf
Peak Elev = 8.11'

Hydrograph
Summary for Pond PMH1: Proposed MH 1

Inflow Area = 105,404 sf, 88.33% Impervious, Inflow Depth = 0.79" for 1 NJWQ event
Inflow = 0.89 cfs @ 1.81 hrs, Volume= 6,928 cf
Outflow = 0.89 cfs @ 1.81 hrs, Volume= 6,928 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.89 cfs @ 1.81 hrs, Volume= 6,928 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 13.04' @ 1.81 hrs

Device  Routing  Invert  Outlet Devices
#1 Primary  12.60'  24.0" Round HDPE
L= 200.0' RCP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 12.60' / 11.80' S= 0.0040 '/' Cc= 0.900
n= 0.012, Flow Area= 3.14 sf

#2 Secondary  18.00'  1.0" x 2.0" Horiz. Manhole Cover X 4.00 columns
X 8 rows C= 0.600 in 24.0" Grate (14% open area)
Limited to weir flow at low heads

Primary OutFlow Max=0.89 cfs @ 1.81 hrs HW=13.04' (Free Discharge)
1=HDPE (Barrel Controls 0.89 cfs @ 2.61 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=12.60' (Free Discharge)
2=Manhole Cover ( Controls 0.00 cfs)

Pond PMH1: Proposed MH 1

Hydrograph

Inflow Area=105,404 sf
Peak Elev=13.04'

Flow (cfs)
0.00 cfs
0.05 cfs
0.10 cfs
0.15 cfs
0.20 cfs
0.25 cfs
0.30 cfs
0.35 cfs
0.40 cfs
0.45 cfs
0.50 cfs
0.55 cfs
0.65 cfs
0.70 cfs
0.75 cfs
0.80 cfs
0.85 cfs
0.90 cfs
0.95 cfs
1.00 cfs

Time (hours)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60

Inflow
Outflow
Primary
Secondary

SSDC PROPOSED SITE PLANS - ROOFS INCLUDED

2020-02-28 SSDC-1699.C PROPOSED incl roofs  NJ DEP 2-hr 1 NJWQ Rainfall=1.25"
Prepared by Windows User
Printed 3/4/2020
Page 58
Summary for Pond PMH2: Proposed MH2

Inflow Area = 158,991 sf, 84.68% Impervious, Inflow Depth = 0.79" for 1 NJWQ event

Inflow = 1.21 cfs @ 1.82 hrs, Volume= 10,419 cf
Outflow = 1.21 cfs @ 1.82 hrs, Volume= 10,419 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.21 cfs @ 1.82 hrs, Volume= 10,419 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 12.19' @ 1.82 hrs

Device Routing Invert Outlet Devices
#1 Primary 11.70' 24.0" Round HDPE
L= 118.0' Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 11.70' / 11.10' S= 0.0051 '/' Cc= 0.900
n= 0.012, Flow Area= 3.14 sf

#2 Secondary 18.00' 1.0" x 2.0" Horiz. Manhole Cover X 4.00 columns
X 6 rows C= 0.600 in 24.0" Grate (11% open area)
Limited to weir flow at low heads

Primary OutFlow Max= 1.20 cfs @ 1.82 hrs HW=12.19' (Free Discharge)
1=HDPE (Barrel Controls 1.20 cfs @ 3.01 fps)

Secondary OutFlow Max= 0.00 cfs @ 0.00 hrs HW=11.70' (Free Discharge)
2=Manhole Cover ( Controls 0.00 cfs)

Pond PMH2: Proposed MH2

Inflow Area=158,991 sf
Peak Elev=12.19'

Hydrograph

Flow (cfs)

Time (hours)
Summary for Reach STRT: EXISTING STREET

Inflow Area = 253,550 sf, 87.94% Impervious, Inflow Depth = 8.10" for 100-YEAR event
Inflow = 19.79 cfs @ 12.43 hrs, Volume= 171,181 cf
Outflow = 19.80 cfs @ 12.44 hrs, Volume= 171,181 cf, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.22 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.59 fps, Avg. Travel Time= 0.7 min

Peak Storage= 154 cf @ 12.44 hrs
Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 0.50' Flow Area= 12.5 sf, Capacity= 63.73 cfs

25.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Length= 25.0' Slope= 0.0080 '/'
Inlet Invert= 14.00', Outlet Invert= 13.80'

Reach STRT: EXISTING STREET

Hydrograph

Inflow Area=253,550 sf
Avg. Flow Depth=0.25'
Max Vel=3.22 fps
n=0.016
L=25.0'
S=0.0080 '/'
Capacity=63.73 cfs
Summary for Reach SW-3: Overland swale

Existing surface swale along south property line

Inflow Area = 3,884 sf, 100.00% Impervious, Inflow Depth = 105.52" for 100-YEAR event
Inflow = 11.38 cfs @ 12.41 hrs, Volume = 34,155 cf
Outflow = 11.23 cfs @ 12.43 hrs, Volume = 34,155 cf, Atten = 1%, Lag = 1.4 min

Routing by Stor-Ind+Trans method, Time Span = 0.00-60.00 hrs, dt = 0.05 hrs
Max. Velocity = 3.58 fps, Min. Travel Time = 0.7 min
Avg. Velocity = 0.84 fps, Avg. Travel Time = 3.2 min

Peak Storage = 505 cf @ 12.42 hrs
Average Depth at Peak Storage = 0.20'
Bank-Full Depth = 0.50' Flow Area = 12.8 sf, Capacity = 76.85 cfs

10.00' x 0.50' deep channel, n = 0.016 Asphalt, rough
Side Slope Z-value = 31.0 '/' Top Width = 41.00'
Length = 160.0' Slope = 0.0200 '/'
Inlet Invert = 17.70', Outlet Invert = 14.50'
Reach SW-3: Overland swale

- **Inflow Area**: 3,884 sf
- **Avg. Flow Depth**: 0.20'
- **Max Vel**: 3.58 fps
- **n**: 0.016
- **L**: 160.0'
- **S**: 0.0200 '/'
- **Capacity**: 76.85 cfs
Summary for Pond 1P: RetainIt

Inflow Area = 71,355 sf, 92.99% Impervious, Inflow Depth = 8.21" for 100-YEAR event
Inflow = 8.21 cfs @ 12.27 hrs, Volume= 48,790 cf
Outflow = 6.83 cfs @ 12.50 hrs, Volume= 48,790 cf, Atten= 17%, Lag= 13.5 min
Primary = 6.83 cfs @ 12.50 hrs, Volume= 48,790 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 17.26' @ 12.50 hrs Surf.Area= 4,035 sf Storage= 7,610 cf
Plug-Flow detention time= 29.9 min calculated for 48,749 cf (100% of inflow)
Center-of-Mass det. time= 30.4 min ( 807.8 - 777.4 )

Volume Invert Avail.Storage Storage Description
#1A 13.50' 0 cf 32.00'W x 104.00'L x 3.17'H Field A
#2A 13.50' 7,191 cf retain_it retain_it 2.5' x 52 Inside #1
#3 16.67' 1,117 cf 30.00'D x 1.58'H Riser
#4 18.25' 1,125 cf Custom Stage Data (Prismatic) Listed below (Recalc)

Storage Group A created with Chamber Wizard

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>18.25</td>
<td>4,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18.50</td>
<td>5,000</td>
<td>1,125</td>
<td>1,125</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices
#1 Primary 13.40' 24.0" Round HDPE
L= 248.0’ Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 13.40’ / 12.70’ S= 0.0028 ‘/ Cc= 0.900
n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf

#2 Device 1 13.50' 12.0" Vert. Orifice/Grate C= 0.600

#3 Secondary 18.25' 1.0" x 4.0" Horiz. E TYPE STRM FLW X 4.00 columns
X 14 rows C= 0.600 in 48.0" x 48.0" Grate (10% open area)
Limited to weir flow at low heads

Primary OutFlow Max=6.83 cfs @ 12.50 hrs HW=17.26’ (Free Discharge)
1=HDPE (Passes 6.83 cfs of 19.83 cfs potential flow)
2=Orifice/Grate (Orifice Controls 6.83 cfs @ 8.69 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.50’ (Free Discharge)
3=E TYPE STRM FLW (Controls 0.00 cfs)
Pond 1P: RetainIt

Inflow Area=71,355 sf
Peak Elev=17.26'
Storage=7,610 cf
Summary for Pond 1PGP: Geopave Area

Inflow Area = 70,425 sf, 94.22% Impervious, Inflow Depth = 8.32" for 100-YEAR event
Inflow = 11.65 cfs @ 12.15 hrs, Volume= 48,842 cf
Outflow = 8.12 cfs @ 12.27 hrs, Volume= 48,341 cf, Atten= 30%, Lag= 7.3 min
Primary = 8.12 cfs @ 12.27 hrs, Volume= 48,341 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs / 4
Peak Elev= 17.96' @ 12.27 hrs Surf.Area= 18,123 sf Storage= 6,219 cf

Plug-Flow detention time= 33.6 min calculated for 48,341 cf (99% of inflow)
Center-of-Mass det. time= 26.5 min ( 777.1 - 750.6 )

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>17.50'</td>
<td>3,183 cf</td>
<td>Parking Area (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td>#2</td>
<td>17.20'</td>
<td>208 cf</td>
<td>Geopave units (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td>#3</td>
<td>16.60'</td>
<td>623 cf</td>
<td>Crushed gravel 3/8&quot;-1&quot; (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td>#4</td>
<td>14.10'</td>
<td>2,520 cf</td>
<td>32.00'W x 105.00'L x 2.50'H TSS basin unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8,400 cf Overall x 30.0% Voids</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6,533 cf Total Available Storage</td>
</tr>
</tbody>
</table>

Elevation Surf.Area Inc.Store Cum.Store
(feet) (sq-ft) (cubic-feet) (cubic-feet)
17.50 3,462 0 0
17.75 7,000 1,308 1,308
18.00 8,000 1,875 3,183

Elevation Surf.Area Inc.Store Cum.Store
(feet) (sq-ft) (cubic-feet) (cubic-feet)
17.20 3,462 0 0
17.40 3,462 692 692

Elevation Surf.Area Inc.Store Cum.Store
(feet) (sq-ft) (cubic-feet) (cubic-feet)
16.60 3,462 0 0
17.20 3,460 2,077 2,077

Device Routing Invert Outlet Devices
#1 Primary 13.70' 12.0" Round 12" PVC
L= 10.0' RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 13.70' / 13.60' S= 0.0100 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

#2 Device 1 13.80' 4.0" Round 4" PVC drains X 4.00
L= 20.0' RCP, sq.cut end projecting, Ke= 0.500
Inlet / Outlet Invert= 13.80' / 13.70' S= 0.0050 '/' Cc= 0.900
n= 0.012, Flow Area= 0.09 sf

#3 Device 2 14.10' 6,000 in/hr Exfiltration over Surface area

#4 Device 1 17.40' 1.0" x 4.0" Horiz. E-Type Grate X 4.00 columns
Primary Outflow: Max = 8.09 cfs @ 12.27 hrs, HW = 17.96' (Free Discharge)
- 1 = 12" PVC (Passes 8.09 cfs of 9.16 cfs potential flow)
- 2 = 4" PVC drains (Passes 2.51 cfs of 2.84 cfs potential flow)
- 3 = Exfiltration (Exfiltration Controls 2.51 cfs)
- 4 = E-Type Grate (Orifice Controls 5.58 cfs @ 3.59 fps)

Pond 1 PGP: Geopave Area

Inflow Area = 70,425 sf
Peak Elev = 17.96'
Storage = 6,219 cf
Summary for Pond 2P: RetainIt

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>16.50'</td>
<td>1,250 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td>#2A</td>
<td>13.50'</td>
<td>0 cf</td>
<td>80.00'W x 48.00'L x 3.17'H Field A 12,160 cf Overall - 12,160 cf Embedded = 0 cf x 0.0% Voids</td>
</tr>
<tr>
<td>#3A</td>
<td>13.50'</td>
<td>8,321 cf</td>
<td>retain_it retain_it 2.5' x 60 Inside #2 Inside= 84.0'W x 30.0'H =&gt; 17.56 sf x 8.00'L = 140.4 cf Outside= 96.0'W x 38.0'H =&gt; 25.33 sf x 8.00'L = 202.7 cf 10 Rows adjusted for 105.6 cf perimeter wall</td>
</tr>
<tr>
<td>#4</td>
<td>16.20'</td>
<td>353 cf</td>
<td>30.00'D x 0.50'H Riser 9,924 cf Total Available Storage</td>
</tr>
</tbody>
</table>

Storage Group A created with Chamber Wizard

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Surf.Area</th>
<th>Inc.Store</th>
<th>Cum.Store</th>
</tr>
</thead>
<tbody>
<tr>
<td>(feet)</td>
<td>(sq-ft)</td>
<td>(cubic-feet)</td>
<td>(cubic-feet)</td>
</tr>
<tr>
<td>16.50</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.00</td>
<td>5,000</td>
<td>1,250</td>
<td>1,250</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.50'</td>
<td>12.0&quot; Round HDPE DUAL WALL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 10.0' Box, headwall w/3 square edges, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.50' / 13.12' S= 0.0380 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.79 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Device 1</td>
<td>13.70'</td>
<td>6.0&quot; Vert. Orifice/Grate C= 0.600</td>
</tr>
<tr>
<td>#3</td>
<td>Secondary</td>
<td>17.50'</td>
<td>1.0&quot; x 4.0&quot; Horiz. MANHOLE GRATE X 4.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 8 rows C= 0.600 in 24.0&quot; Grate (28% open area)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

Primary OutFlow Max=1.22 cfs @ 12.63 hrs HW=15.61' (Free Discharge) |

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.50' (Free Discharge)
Pond 2P: Retainits

Storage=7,016 ct
Peak Elev=15.61'
Inflow Area=34,049 sf

5.73 cfs
1.22 cfs
1.22 cfs
0.00 cfs

Time (hours)
60 58 56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0

Flow (cfs)
6 5 4 3 2 1

Inflow
Outflow
Primary
Secondary
Summary for Pond 2PGP1: Geopave

2PGP1 outlets to 2PGP2

Inflow Area = 5,417 sf, 94.61% Impervious, Inflow Depth = 8.31” for 100-YEAR event
Inflow = 0.91 cfs @ 12.14 hrs, Volume= 3,750 cf
Outflow = 0.93 cfs @ 12.14 hrs, Volume= 3,750 cf, Atten= 0%, Lag= 0.3 min
Primary = 0.93 cfs @ 12.14 hrs, Volume= 3,750 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 17.07’ @ 12.14 hrs  Surf.Area= 290 sf  Storage= 258 cf

Plug-Flow detention time= 27.3 min calculated for 3,746 cf (100% of inflow)
Center-of-Mass det. time= 27.3 min ( 776.4 - 749.1 )

Volume Invert Avail.Storage Storage Description
--- --- --- --- ---
#1 14.10’ 270 cf 14.50’W x 20.00’L x 3.10’H Geopave Unit
899 cf Overall x 30.0% Voids
#2 17.20’ 104 cf Custom Stage Data (Prismatic) Listed below (Recalc)

373 cf Total Available Storage

Elevation Surf.Area Inc.Store Cum.Store
--- --- --- ---
(feet) (sq-ft) (cubic-feet) (cubic-feet)
17.20 290 0 0
17.50 400 104 104

Device Routing Invert Outlet Devices
--- --- --- ---
#1 Primary 13.80’ 6.00” Round 6” PVC X 4.00
L= 65.0’ RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 13.80’ / 13.70’ S= 0.0015 ’/’ Cc= 0.900
n= 0.012, Flow Area= 0.20 sf
#2 Device 1 13.80’ 4.00” Round 4” PVC drains X 2.00
L= 10.0’ RCP, sq.cut end projecting, Ke= 0.500
Inlet / Outlet Invert= 13.80’ / 13.70’ S= 0.0100 ’/’ Cc= 0.900
n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf
#3 Device 2 14.10’ 6.000 in/hr Exfiltration over Surface area
#4 Device 1 17.00’ 1.0” x 4.0” Horiz. E-Type Grate X 4.00 columns
X 14 rows C= 0.600 in 48.0” x 48.0” Grate (10% open area)
Limited to weir flow at low heads

Primary OutFlow Max=0.90 cfs @ 12.14 hrs HW=17.06’ (Free Discharge)
1=6” PVC (Passes 0.90 cfs of 4.52 cfs potential flow)
2=4” PVC drains (Passes 0.04 cfs of 1.48 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.04 cfs)
4=E-Type Grate (Weir Controls 0.86 cfs @ 0.83 fps)
Pond 2PGP1: Geopave

Inflow Area=5,417 sf
Peak Elev=17.07'
Storage=258 cf
Summary for Pond 2PGP2: Geopave

Geopave area receives pavement DA P-2
Discharges to 2P

Inflow Area = 23,618 sf, 79.46% Impervious, Inflow Depth = 7.86" for 100-YEAR event
Inflow = 3.92 cfs @ 12.14 hrs, Volume= 15,470 cf
Outflow = 4.43 cfs @ 12.11 hrs, Volume= 15,470 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.43 cfs @ 12.11 hrs, Volume= 15,470 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 17.19' @ 12.11 hrs  Surf.Area= 1,600 sf  Storage= 1,392 cf

Plug-Flow detention time= 29.6 min calculated for 15,457 cf (100% of inflow)
Center-of-Mass det. time= 29.5 min ( 801.6 - 772.0 )

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>17.40'</td>
<td>532 cf</td>
<td>Custom Stage Data (Prismatic) listed below (Recalc)</td>
</tr>
<tr>
<td>#2</td>
<td>14.10'</td>
<td>1,392 cf</td>
<td>40.00'W x 40.00'L x 2.90'H TSS Unit</td>
</tr>
</tbody>
</table>

1,924 cf Total Available Storage

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.40</td>
<td>4,630</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>6,000</td>
<td>532</td>
<td>532</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices

#1 Primary 13.65' 12.0" Round 12" PVC
L= 18.0' RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 13.65 / 13.60' S= 0.0028 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

#2 Device 1 13.80' 4.0" Round 4" PVC drains X 6.00
L= 20.0' RCP, sq.cut end projecting, Ke= 0.500
Inlet / Outlet Invert= 13.80' / 13.65' S= 0.0075 '/' Cc= 0.900
n= 0.012, Flow Area= 0.09 sf

#3 Device 2 14.10' 6,000 in/hr Exfiltration over Surface area

#4 Device 1 17.00' 48.0" x 48.0" Horiz. E-Type Grate C= 0.600
Limited to weir flow at low heads

Primary OutFlow Max=4.20 cfs @ 12.11 hrs HW=17.18' (Free Discharge)
1=12" PVC (Passes 4.20 cfs of 7.81 cfs potential flow)
2=4" PVC drains (Passes 0.22 cfs of 3.85 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.22 cfs)
4=E-Type Grate (Weir Controls 3.98 cfs @ 1.39 fps)
Pond 2PGP2: Geopave

Inflow Area = 23,618 sf
Peak Elev = 17.19'
Storage = 1,392 cf
Summary for Pond 3P: Retainit

Inflow Area = 17,286 sf, 62.38% Impervious, Inflow Depth = 7.71" for 100-YEAR event
Inflow = 1.33 cfs @ 12.36 hrs, Volume = 11,111 cf
Outflow = 0.31 cfs @ 16.33 hrs, Volume = 11,111 cf, Atten= 77%, Lag= 238.3 min
Primary = 0.31 cfs @ 16.33 hrs, Volume = 11,111 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume = 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 17.08' @ 16.33 hrs Surf.Area= 2,307 sf Storage= 3,808 cf
Plug-Flow detention time= 173.9 min calculated for 11,111 cf (100% of inflow)
Center-of-Mass det. time= 173.5 min (979.6 - 806.1)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1B</td>
<td>13.40'</td>
<td>0 cf</td>
<td>40.00'W x 40.00'L x 3.17'H Field B</td>
</tr>
<tr>
<td>#2B</td>
<td>13.40'</td>
<td>3,445 cf</td>
<td>retain it retain it 2.5' x 25 Inside #1</td>
</tr>
<tr>
<td>#3</td>
<td>16.57'</td>
<td>636 cf</td>
<td>30.00'D x 0.90'H Riser</td>
</tr>
<tr>
<td>#4</td>
<td>17.50'</td>
<td>1,550 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

5,631 cf Total Available Storage

Storage Group B created with Chamber Wizard

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.50</td>
<td>2,200</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18.00</td>
<td>4,000</td>
<td>1,550</td>
<td>1,550</td>
</tr>
</tbody>
</table>

Device | Routing | Invert | Outlet Devices |
-------|---------|--------|----------------|
#1     | Primary | 13.30' | 12.0" Round HDPE DUAL WALL |
|       |         |       | L= 46.0" Box, headwall w/3 square edges, Ke= 0.500 |
|       |         |       | Inlet / Outlet Invert= 13.30' / 12.70' S= 0.0130 '/' Cc= 0.900 |
|       |         |       | n= 0.012, Flow Area= 0.79 sf |
#2     | Device 1| 13.40' | 2.5" Vert. Orifice/Grate C= 0.600 |
#3     | Secondary| 17.50' | 1.0" x 4.0" Horiz. MANHOLE GRATE X 4.00 columns |
|       |         |       | X 10 rows C= 0.600 in 24.0" Grate (35% open area) |
|       |         |       | Limited to weir flow at low heads |

Primary OutFlow Max=0.31 cfs @ 16.33 hrs HW=17.08' (Free Discharge)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.40' (Free Discharge)
Pond 3P: Retainit

Inflow Area=17,286 sf
Peak Elev=17.08'
Storage=3,808 cf
Summary for Pond 3PGPN: Geopave

Inflow Area = 14,711 sf, 73.30% Impervious, Inflow Depth = 7.92" for 100-YEAR event
Inflow = 2.44 cfs @ 12.14 hrs, Volume= 9,712 cf
Outflow = 1.23 cfs @ 12.36 hrs, Volume= 9,712 cf, Atten= 50%, Lag= 13.5 min
Primary = 1.23 cfs @ 12.36 hrs, Volume= 9,712 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 17.44' @ 12.36 hrs  Surf.Area= 5,257 sf  Storage= 2,434 cf

Plug-Flow detention time= 42.8 min calculated for 9,712 cf (100% of inflow)
Center-of-Mass det. time= 42.8 min (804.6 - 761.8 )

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>14.00'</td>
<td>2,313 cf</td>
<td><strong>36.00'W x 63.00'L x 3.40'H Geopave Unit</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7,711 cf Overall x 30.0% Voids</td>
</tr>
<tr>
<td>#2</td>
<td>17.40'</td>
<td>305 cf</td>
<td><strong>Custom Stage Data (Prismatic)</strong> Listed below (Recalc)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2,618 cf Total Available Storage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Surf.Area</th>
<th>Inc.Store</th>
<th>Cum.Store</th>
</tr>
</thead>
<tbody>
<tr>
<td>(feet)</td>
<td>(sq-ft)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.40</td>
<td>2,600</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>3,500</td>
<td>305</td>
<td>305</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices
#1 Primary 13.60' **8.0" Round 8" PVC X 4.00**
L= 30.0’ RCP, groove end w/headwall, Ke= 0.200
Inlet / Outlet Invert= 13.60’ / 13.40’  S= 0.0067 '/'  Cc= 0.900
n= 0.012, Flow Area= 0.35 sf

#2 Device 1 13.80' **4.0" Round 4" PVC drains X 2.00**
L= 20.0’ RCP, sq.cut end projecting, Ke= 0.500
Inlet / Outlet Invert= 13.80’ / 13.70’  S= 0.0050 '/'  Cc= 0.900
n= 0.012, Flow Area= 0.09 sf

#3 Device 2 14.00' **6.000 in/hr Exfiltration over Surface area**

#4 Device 1 17.40' **1.0" x 4.0" Horiz. E-Type Grate X 4.00 columns**
X 14 rows C= 0.600 in 48.0" x 48.0" Grate (10% open area)
Limited to weir flow at low heads

Primary OutFlow Max=1.18 cfs @ 12.36 hrs HW=17.44’ (Free Discharge)
1=8" PVC (Passes 1.18 cfs of 12.82 cfs potential flow)
2=4" PVC drains (Passes 0.73 cfs of 1.32 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.73 cfs)
4=E-Type Grate (Weir Controls 0.45 cfs @ 0.67 fps)
Pond 3PGPN: Geopave

**Hydrograph**

- **Inflow Area**: 14,711 sf
- **Peak Elev**: 17.44'
- **Storage**: 2,434 cf

**Inflow**
- 2.44 cfs

**Primary**
- 1.23 cfs
Summary for Pond 4P: RetainIt

Inflow Area = 36,301 sf, 84.69% Impervious, Inflow Depth = 8.13” for 100-YEAR event
Inflow = 4.40 cfs @ 12.18 hrs, Volume= 24,583 cf
Outflow = 4.10 cfs @ 12.27 hrs, Volume= 24,486 cf, Atten= 7%, Lag= 5.6 min
Primary = 0.85 cfs @ 12.25 hrs, Volume= 21,964 cf
Secondary = 3.22 cfs @ 12.27 hrs, Volume= 2,522 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 17.72' @ 12.25 hrs Surf.Area= 3,524 sf Storage= 5,037 cf

Plug-Flow detention time= 90.3 min calculated for 24,466 cf (100% of inflow)
Center-of-Mass det. time= 88.5 min (784.3 - 785.8)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1B</td>
<td>13.40'</td>
<td>0 cf</td>
<td>56.00'W x 40.00'L x 3.17'H Field B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7,093 cf Overall - 7,093 cf Embedded = 0 cf x 0.0% Voids</td>
</tr>
<tr>
<td>#2B</td>
<td>13.40'</td>
<td>4,836 cf</td>
<td>retain_it retain_it 2.5' x 35 Inside #1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inside= 84.0&quot;W x 30.0&quot;H =&gt; 17.56 sf x 8.00'L = 140.4 cf</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Outside= 96.0&quot;W x 38.0&quot;H =&gt; 25.33 sf x 8.00'L = 202.7 cf</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7 Rows adjusted for 79.2 cf perimeter wall</td>
</tr>
<tr>
<td>#3</td>
<td>17.45'</td>
<td>495 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5,331 cf</td>
<td>Total Available Storage</td>
</tr>
</tbody>
</table>

Storage Group B created with Chamber Wizard

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.45</td>
<td>200</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.90</td>
<td>2,000</td>
<td>495</td>
<td>495</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices

| #1 | Primary | 13.30' | 8.0" Round HDPE DUAL WALL |
|    |         |        | L= 25.0’ Box, headwall w/3 square edges, Ke= 0.500 |
|    |         |        | Inlet / Outlet Invert= 13.30’ / 12.00’ S= 0.0520 '/' Cc= 0.900 |
|    |         |        | n= 0.012, Flow Area= 0.35 sf |
| #2 | Device 1 | 13.45' | 4.0" Vert. Orifice/Grate C= 0.600 |
| #3 | Secondary | 17.45' | 1.0" x 4.0" Horiz. MANHOLE GRATE X 4.00 columns |
|    |         |        | X 14 rows C= 0.600 in 24.0" Grate (50% open area) |
|    |         |        | Limited to weir flow at low heads |

Primary OutFlow Max=0.85 cfs @ 12.25 hrs HW=17.72’ (Free Discharge)

Secondary OutFlow Max=2.85 cfs @ 12.27 hrs HW=17.72’ (Free Discharge)
Pond 4P: RetainIt

Inflow Area = 36,301 sf
Peak Elev = 17.72'
Storage = 5,037 cf

Hydrograph

- Inflow
- Outflow
- Primary
- Secondary
Summary for Pond 4PGP1: Geopave

Inflow Area = 9,960 sf, 62.82% Impervious, Inflow Depth = 7.73" for 100-YEAR event
Inflow = 1.61 cfs @ 12.14 hrs, Volume= 6,417 cf
Outflow = 0.30 cfs @ 11.80 hrs, Volume= 6,417 cf, Atten= 81%, Lag= 0.0 min
Primary = 0.30 cfs @ 11.80 hrs, Volume= 6,417 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 16.74' @ 12.63 hrs Surf.Area= 2,160 sf Storage= 1,711 cf

Plug-Flow detention time= 32.5 min calculated for 6,412 cf (100% of inflow)
Center-of-Mass det. time= 32.5 min ( 793.7 - 761.1 )

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>14.10'</td>
<td>2,203 cf</td>
<td>18.00'W x 120.00'L x 3.40'H Geopave Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7,344 cf Overall x 30.0% Voids</td>
</tr>
<tr>
<td>#2</td>
<td>17.40'</td>
<td>1,548 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3,751 cf Total Available Storage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.40</td>
<td>2,160</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18.00</td>
<td>3,000</td>
<td>1,548</td>
<td>1,548</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.70'</td>
<td>12.0&quot; Round 12&quot; PVC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 42.0'' RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.70' / 13.50' S= 0.0048 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.79 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Device 1</td>
<td>13.90'</td>
<td>4.0&quot; Round 4&quot; PVC drains X 2.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 20.0'' RCP, sq.cut end projecting, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.90' / 13.70' S= 0.0100 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.09 sf</td>
</tr>
<tr>
<td>#3</td>
<td>Device 2</td>
<td>14.10'</td>
<td>6.000 in/hr Exfiltration over Surface area</td>
</tr>
<tr>
<td>#4</td>
<td>Device 1</td>
<td>17.40'</td>
<td>1.0&quot; x 4.0&quot; Horiz. E-Type Grate X 4.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 14 rows C= 0.600 in 48.0&quot; x 48.0&quot; Grate (10% open area)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

Primary OutFlow Max=0.30 cfs @ 11.80 hrs HW=14.22’ (Free Discharge)
1=12" PVC (Passes 0.30 cfs of 0.82 cfs potential flow)
2=4" PVC drains (Passes 0.30 cfs of 0.32 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.30 cfs)
4=E-Type Grate (Controls 0.00 cfs)
Pond 4PGP1: Geopave

Inflow Area = 9,960 sf
Peak Elev = 16.74'
Storage = 1,711 cf
### Summary for Pond 4PGP2: Geopave

Inflow Area = 26,341 sf, 92.96% Impervious,  Inflow Depth = 8.28" for 100-YEAR event

<table>
<thead>
<tr>
<th>Inflow</th>
<th>Outflow</th>
<th>Primary</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.44 cfs @ 12.14 hrs, Volume= 18,166 cf</td>
<td>4.10 cfs @ 12.18 hrs, Volume= 18,166 cf, Atten= 8%, Lag= 2.6 min</td>
<td>4.10 cfs @ 12.18 hrs, Volume= 18,166 cf</td>
</tr>
</tbody>
</table>

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 17.53' @ 12.18 hrs  Surf.Area= 3,820 sf  Storage= 1,992 cf

Plug-Flow detention time= 33.0 min calculated for 18,166 cf (100% of inflow)
Center-of-Mass det. time= 33.0 min ( 783.0 - 750.0 )

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>17.30'</td>
<td>2,005 cf</td>
<td>Custom Stage Data (Prismatic)]listed below (Recalc)</td>
</tr>
<tr>
<td>#2</td>
<td>14.00'</td>
<td>1,579 cf</td>
<td>18.00'W x 86.00'L x 3.40'H Geopave Unit</td>
</tr>
</tbody>
</table>

5,263 cf Overall x 30.0% Voids

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Surf.Area</th>
<th>Inc.Store</th>
<th>Cum.Store</th>
</tr>
</thead>
<tbody>
<tr>
<td>(feet)</td>
<td>(sq-ft)</td>
<td>(cubic-feet)</td>
<td>(cubic-feet)</td>
</tr>
<tr>
<td>17.30</td>
<td>1,548</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>2,000</td>
<td>355</td>
<td>355</td>
</tr>
<tr>
<td>17.60</td>
<td>3,000</td>
<td>250</td>
<td>605</td>
</tr>
<tr>
<td>18.00</td>
<td>4,000</td>
<td>1,400</td>
<td>2,005</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.50'</td>
<td>12.0&quot; Round 12&quot; PVC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 20.0’ RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.50’ / 13.40’ S= 0.0050 ’’ Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.79 sf</td>
</tr>
</tbody>
</table>

| #2     | Device 1| 13.80' | 4.0" Round 4" PVC drains X 2.00 |
|        |         |        | L= 20.0’ RCP, sq.cut end projecting, Ke= 0.500 |
|        |         |        | Inlet / Outlet Invert= 13.80’ / 13.70’ S= 0.0050 ’’ Cc= 0.900 |
|        |         |        | n= 0.012, Flow Area= 0.09 sf |

| #3     | Device 2| 14.00' | 6.000 in/hr Exfiltration over Surface area |
| #4     | Device 1| 17.30' | 1.0" x 4.0" Horiz. E-Type Grate X 4.00 columns |
|        |         |        | X 14 rows C= 0.600 in 48.0" x 48.0" Grate (10% open area) |
|        |         |        | Limited to weir flow at low heads |

**Primary OutFlow** Max=4.05 cfs @ 12.18 hrs  HW=17.52’ (Free Discharge)

1=12" PVC (Passes 4.05 cfs of 8.45 cfs potential flow)

2=4" PVC drains (Passes 0.52 cfs of 1.34 cfs potential flow)

3=Exfiltration (Exfiltration Controls 0.52 cfs)

4=E-Type Grate (Orifice Controls 3.53 cfs @ 2.27 fps)
Pond 4PGP2: Geopave

Inflow Area=26,341 sf
Peak Elev=17.53'
Storage=1,992 cf
Summary for Pond 5P: RetainIt

Inflow Area = 27,155 sf, 77.11% Impervious, Inflow Depth = 8.01" for 100-YEAR event
Inflow = 3.08 cfs @ 12.14 hrs, Volume= 18,123 cf
Outflow = 0.70 cfs @ 12.70 hrs, Volume= 17,625 cf, Atten= 77%, Lag= 33.6 min
Primary = 0.70 cfs @ 12.70 hrs, Volume= 17,625 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 15.69' @ 12.70 hrs Surf.Area= 2,816 sf Storage= 5,625 cf
Plug-Flow detention time= 129.7 min calculated for 17,610 cf (97% of inflow)
Center-of-Mass det. time= 114.7 min ( 902.9 - 788.2 )

Volume Invert Avail.Storage Storage Description
#1B 13.40' 0 cf 32.00'W x 88.00'L x 3.67'H Field B
#2B 13.40' 7,365 cf retain it retain it 3.0' x 44 Inside #1
  retains overall -10,325 cf Embedded = 0 cf x 0.0% Voids
  Inside= 84.0"W x 36.0"H => 21.33 sf x 8.00'L = 170.6 cf
  Outside= 96.0"W x 44.0"H => 29.33 sf x 8.00'L = 234.7 cf
  4 Rows adjusted for 141.6 cf perimeter wall
#3 16.87' 353 cf 30.00'D x 0.50'H Riser
#4 17.50' 188 cf Custom Stage Data (Prismatic) Listed below (Recalc)

7,906 cf Total Available Storage

Storage Group B created with Chamber Wizard

Elevation Surf.Area Inc.Store Cum.Store
(beat) (sq-ft) (cubic-feet) (cubic-feet)
17.50 500 0 0
17.75 1,000 188 188

Device Routing Invert Outlet Devices
#1 Primary 13.50' 10.0" Round HDPE DUAL WALL
  L= 10.0' Box, headwall w/3 square edges, Ke= 0.500
  Inlet / Outlet Invert= 13.50' / 10.00' S= 0.3500 '/' Cc= 0.900
  n= 0.012, Flow Area= 0.55 sf
#2 Device 1 13.60' 4.4" Vert. Orifice/Grate C= 0.600
#3 Secondary 17.60' 1.0" x 4.0" Horiz. MANHOLE GRATE X 4.00 columns
  X 10 rows C= 0.600 in 24.0" Grate (35% open area)
  Limited to weir flow at low heads

Primary OutFlow Max=0.70 cfs @ 12.70 hrs HW=15.69' (Free Discharge)
1=HDPE DUAL WALL (Passes 0.70 cfs of 3.50 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.70 cfs @ 6.65 fps)
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.40' (Free Discharge)
3=MANHOLE GRATE (Controls 0.00 cfs)
Pond 5P: RetainIt

Storage=5,625 cf
Peak Elev=15.69'
Inflow Area=27,155 sf

Hydrograph

Time (hours)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60

Flow (cfs)
0.00 cfs
0.00 cfs
0.70 cfs
0.70 cfs
3.08 cfs
Summary for Pond 5PGPN: Geopave

Inflow Area = 9,866 sf, 66.95% Impervious, Inflow Depth = 7.85" for 100-YEAR event
Inflow = 1.61 cfs @ 12.14 hrs, Volume= 6,455 cf
Outflow = 0.77 cfs @ 12.37 hrs, Volume= 6,455 cf, Atten= 52%, Lag= 14.1 min
Primary = 0.77 cfs @ 12.37 hrs, Volume= 6,455 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 17.42' @ 12.35 hrs Surf.Area= 4,112 sf Storage= 1,576 cf

Plug-Flow detention time= 41.4 min calculated for 6,455 cf (100% of inflow)
Center-of-Mass det. time= 41.4 min ( 800.0 - 758.6 )

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>14.00'</td>
<td>1,530 cf</td>
<td>10.00'W x 150.00'L x 3.40'H Geopave Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5,100 cf Overall x 30.0% Voids</td>
</tr>
<tr>
<td>#2</td>
<td>17.40'</td>
<td>1,680 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

Elevation Surf.Area Inc.Store Cum.Store
(Feet) (sq-ft) (Cubic-feet) (Cubic-feet)
17.40 2,600 0 0
18.00 3,000 1,680 1,680

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.70'</td>
<td>6.0&quot; Round 6&quot; PVC X 4.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 10.0' RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.70' / 13.60' S= 0.0100 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.20 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Device 1</td>
<td>13.80'</td>
<td>4.0&quot; Round 4&quot; PVC drains X 2.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 20.0' RCP, sq.cut end projecting, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.80' / 13.70' S= 0.0050 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.09 sf</td>
</tr>
<tr>
<td>#3</td>
<td>Device 2</td>
<td>14.00'</td>
<td>6.000 in/hr Exfiltration over Surface area</td>
</tr>
<tr>
<td>#4</td>
<td>Device 1</td>
<td>17.40'</td>
<td>1.0&quot; x 4.0&quot; Horiz. E-Type Grate X 4.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 11 rows C= 0.600 in 48.0&quot; x 48.0&quot; Grate (8% open area)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

Primary OutFlow Max=0.69 cfs @ 12.37 hrs HW=17.42’ (Free Discharge)
1=6" PVC (Passes 0.69 cfs of 8.39 cfs potential flow)
2=4" PVC drains (Passes 0.57 cfs of 1.32 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.57 cfs)
4=E-Type Grate (Weir Controls 0.12 cfs @ 0.43 fps)
Pond 5PGPN: Geopave

Inflow Area=9,866 sf
Peak Elev=17.42'
Storage=1,576 cf
Summary for Pond 5PGPS: Geopave

Inflow Area = 17,289 sf, 82.91% Impervious, Inflow Depth = 8.10" for 100-YEAR event
Inflow = 2.86 cfs @ 12.14 hrs, Volume = 11,668 cf
Outflow = 2.87 cfs @ 12.14 hrs, Volume = 11,668 cf, Attenuation 0%, Lag 0.5 min
Primary = 2.87 cfs @ 12.14 hrs, Volume = 11,668 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 17.29' @ 12.14 hrs Surf.Area= 2,633 sf Storage= 987 cf

Plug-Flow detention time= 30.0 min calculated for 11,659 cf (100% of inflow)
Center-of-Mass det. time= 30.0 min (781.7 - 751.7)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>14.10'</td>
<td>837 cf</td>
<td>10.00'W x 90.00'L x 3.10'H Geopave Unit</td>
</tr>
<tr>
<td>#2</td>
<td>17.20'</td>
<td>543 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.20</td>
<td>1,620</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>2,000</td>
<td>543</td>
<td>543</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.70'</td>
<td>6.0&quot; Round 6&quot; PVC X 4.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 2.0' RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.70' / 13.60' S= 0.0500 '/'</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cc= 0.900 n= 0.012, Flow Area= 0.20 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Device  1</td>
<td>13.70'</td>
<td>4.0&quot; Round 4&quot; PVC drains X 2.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 2.0’ RCP, sq.cut end projecting, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.70' / 13.60' S= 0.0500 '/'</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cc= 0.900 n= 0.012, Flow Area= 0.09 sf</td>
</tr>
<tr>
<td>#3</td>
<td>Device  2</td>
<td>14.10'</td>
<td>6,000 in/hr Exfiltration over Surface area</td>
</tr>
<tr>
<td>#4</td>
<td>Device  1</td>
<td>17.25'</td>
<td>1.0&quot; x 9.0&quot; Horiz. E-Type Grate X 4.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>14 columns C= 0.600</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

Primary Outflow Max=2.72 cfs @ 12.14 hrs HW=17.29' (Free Discharge)
1=6" PVC (Passes 2.72 cfs of 8.64 cfs potential flow)
2=4" PVC drains (Passes 0.37 cfs of 1.55 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.37 cfs)
4=E-Type Grate (Weir Controls 2.35 cfs @ 0.65 fps)
Pond 5PGPS: Geopave

Hydrograph

Inflow Area=17,289 sf
Peak Elev=17.29'
Storage=987 cf
Summary for Pond MH-E2: Existing MH-E2

Inflow Area = 249,666 sf, 87.75% Impervious, Inflow Depth = 7.12" for 100-YEAR event

Inflow = 14.59 cfs @ 12.47 hrs, Volume = 148,139 cf

Outflow = 14.59 cfs @ 12.47 hrs, Volume = 148,139 cf, Atten = 0%, Lag = 0.0 min

Primary = 8.58 cfs @ 12.47 hrs, Volume = 137,026 cf

Tertiary = 6.01 cfs @ 12.47 hrs, Volume = 11,113 cf

Routing by Stor-Ind method, Time Span = 0.00-60.00 hrs, dt = 0.05 hrs

Peak Elev = 20.35' @ 12.47 hrs

Device Routing

#1 Primary 8.74'
12.0' Round PVC
L = 165.0', Box 0° wingwalls, square crown edge, Ke = 0.700
Inlet / Outlet Invert = 8.74' / 8.02', S = 0.0044 '/' Cc = 0.900
n = 0.012, Flow Area = 0.79 sf

#2 Tertiary 17.78'
1.0' x 2.0' Horiz. E-TYPE GRATE X 4.00 columns, Limited to weir flow at low heads
X 14 Rows C = 0.600 in 2.4' Orifice (25% open area)
1.0' X 2.0' Horiz. E-TYPE GRATE X 4.00 columns, Initial / Outlet Invert = 8.74' / 8.02', S = 0.0044 '/' Ke = 0.900
L = 165.0', Box 0° wingwalls, square crown edge, Ke = 0.700
Inlet / Outlet Invert = 8.74' / 8.02', S = 0.0044 '/' Cc = 0.900
n = 0.012, Flow Area = 0.79 sf
Summary for Pond MH-E3: Existing MH-E3-OFF

Inflow Area = 249,666 sf, 87.75% Impervious, Inflow Depth = 6.59" for 100-YEAR event

Inflow = 8.58 cfs @ 12.47 hrs, Volume= 137,026 cf
Outflow = 8.58 cfs @ 12.47 hrs, Volume= 137,026 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.63 cfs @ 12.47 hrs, Volume= 135,726 cf
Secondary = 0.95 cfs @ 12.47 hrs, Volume= 1,300 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 12.57' @ 12.47 hrs

Device  Routing  Invert  Outlet Devices

#1 Primary  8.00'  12.0" Round PVC
L= 30.0' RCP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 8.00' / 7.90'  S= 0.0033 '/'  Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

#2 Secondary  12.50'  48.0" x 42.0" Horiz. Orifice/Grate  C= 0.600
Limited to weir flow at low heads

Primary OutFlow Max=7.63 cfs @ 12.47 hrs  HW=12.57'  (Free Discharge)
1=PVC  (Inlet Controls 7.63 cfs @ 9.71 fps)

Secondary OutFlow Max=0.91 cfs @ 12.47 hrs  HW=12.57'  (Free Discharge)
2=Orifice/Grate  (Weir Controls 0.91 cfs @ 0.87 fps)

Pond MH-E3: Existing MH-E3-OFF

Hydrograph

Inflow Area=249,666 sf
Peak Elev=12.57'
## Summary for Pond MH-E4: Woodruff Inlet E-4

Inflow Area = 249,666 sf, 87.75% Impervious, Inflow Depth = 6.59" for 100-YEAR event

<table>
<thead>
<tr>
<th>Inflow</th>
<th>8.58 cfs @ 12.47 hrs, Volume= 137,026 cf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outflow</td>
<td>8.58 cfs @ 12.47 hrs, Volume= 137,026 cf, Atten= 0%, Lag= 0.0 min</td>
</tr>
<tr>
<td>Primary</td>
<td>8.58 cfs @ 12.47 hrs, Volume= 137,026 cf</td>
</tr>
<tr>
<td>Secondary</td>
<td>0.00 cfs @ 0.00 hrs, Volume= 0 cf</td>
</tr>
</tbody>
</table>

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Peak Elev= 9.11' @ 12.47 hrs

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>7.80'</td>
<td>12.0&quot; Vert. Orifice/Grate C= 0.600</td>
</tr>
<tr>
<td>#2</td>
<td>Primary</td>
<td>6.90'</td>
<td>15.0&quot; Round 15&quot; RCP L= 100.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 6.90' / 6.80' S= 0.0010 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends &amp; connections, Flow Area= 1.23 sf</td>
</tr>
<tr>
<td>#3</td>
<td>Secondary</td>
<td>14.00'</td>
<td>1.0&quot; x 4.0&quot; Horiz. Orifice/Grate X 4.00 columns X 5 rows C= 0.600 in 24.0&quot; x 48.0&quot; Grate (7% open area) Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

**Primary OutFlow**
Max=8.57 cfs @ 12.47 hrs HW=9.11’ (Free Discharge)
1=Orifice/Grate (Orifice Controls 3.40 cfs @ 4.33 fps)
2=15" RCP (Barrel Controls 5.18 cfs @ 4.22 fps)

**Secondary OutFlow**
Max=0.00 cfs @ 0.00 hrs HW=6.90’ (Free Discharge)
3=Orifice/Grate (Controls 0.00 cfs)
Pond MH-E4: Woodruff Inlet E-4

Inflow Area=249,666 sf
Peak Elev=9.11'

Hydrograph
Summary for Pond PMH1: Proposed MH 1

Inflow Area = 105,404 sf, 88.33% Impervious, Inflow Depth = 8.03" for 100-Year event

Inflow = 8.04 cfs @ 12.50 hrs, Volume = 70,496 cf
Outflow = 8.04 cfs @ 12.50 hrs, Volume = 70,496 cf, Atten = 0%, Lag = 0.0 min
Primary = 8.04 cfs @ 12.50 hrs, Volume = 70,496 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume = 0 cf

Routing by Stor-Ind method, Time Span = 0.00-60.00 hrs, dt = 0.05 hrs

Peak Elev = 14.04'

Device Routing

Outlet Devices

1. Primary
   1.0% Round HDPE
   L = 200.0', RCP, square edge headwall, Ke = 0.500
   Inlet / Outlet Invert = 12.60' / 11.80' S = 0.0040 '/' Cc = 0.900
   n = 0.012, Flow Area = 3.14 sf

2. Secondary
   1.0" x 2.0" Horiz. Manhole Cover X 4.00 columns
   X 8 rows C = 0.600 in 24.0" Grate (14% open area)
   L = 200.0', RCP, square edge headwall, Ke = 0.500
   Initial / Outlet Invert = 12.60' / 11.80' S = 0.0040 '/' Cc = 0.900

Routing by Stor-Ind method. Time Span = 0.00-60.00 hrs, dt = 0.05 hrs

Primary Outlet

Max = 8.03 cfs @ 12.50 hrs  HW = 14.04' (Free Discharge)
1 = HDPE (Barrel Controls 8.03 cfs @ 48.3 fps)

Secondary Outlet

Max = 0.00 cfs @ 0.00 hrs  HW = 12.60' (Free Discharge)
2 = Manhole Cover (Controls 0.00 cfs)

Limited to weir flow at low heads

18.00' 12.60' 12.00' 2.00' Round HDPE

8 8 8 8 Row = 0.012, Flow Area = 3.14 sf

Inflow

Outflow

Primary

Secondary

Flow

Time (hours)

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60

0 1 2 3 4 5 6 7 8
Summary for Pond PMH2: Proposed MH2

Inflow Area = 158,991 sf, 84.68% Impervious, Inflow Depth = 7.82" for 100-YEAR event
Inflow = 9.08 cfs @ 12.50 hrs, Volume= 103,571 cf
Outflow = 9.08 cfs @ 12.50 hrs, Volume= 103,571 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.08 cfs @ 12.50 hrs, Volume= 103,571 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 13.22' @ 12.50 hrs

Device | Routing | Invert | Outlet Devices
---|---|---|---
#1 | Primary | 11.70' | 24.0" Round HDPE
| | | L= 118.0’ Box, headwall w/3 square edges, Ke= 0.500
| | | Inlet / Outlet Invert= 11.70’ / 11.10’ S= 0.0051 '/' Cc= 0.900
| | | n= 0.012, Flow Area= 3.14 sf
#2 | Secondary | 18.00' | 1.0” x 2.0” Horiz. Manhole Cover X 4.00 columns
| | | X 6 rows C= 0.600 in 24.0” Grate (11% open area)
| | | Limited to weir flow at low heads

Primary OutFlow Max=9.08 cfs @ 12.50 hrs HW=13.22’ (Free Discharge)
1=HDPE (Barrel Controls 9.08 cfs @ 4.90 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=11.70’ (Free Discharge)
2=Manhole Cover ( Controls 0.00 cfs)

Pond PMH2: Proposed MH2

Hydrograph

Inflow Area=158,991 sf
Peak Elev=13.22'
SECTION 3 - PROPOSED SITE PLAN – BLOCKED OUTLET CONDITIONS
## Area Listing (all nodes)

<table>
<thead>
<tr>
<th>Area (sq-ft)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,548</td>
<td>76</td>
<td>Geopave Infiltration 4PGP2 (P-4S)</td>
</tr>
<tr>
<td>2,268</td>
<td>76</td>
<td>Geopave Infiltration Area (P3N)</td>
</tr>
<tr>
<td>1,014</td>
<td>76</td>
<td>Geopave Infiltration Area 2pgp3 (P-2NE)</td>
</tr>
<tr>
<td>4,560</td>
<td>76</td>
<td>Geopave Infiltration Area 2pgps (P-2M)</td>
</tr>
<tr>
<td>292</td>
<td>76</td>
<td>Geopave Infiltration area 2pgp1 (P-2S)</td>
</tr>
<tr>
<td>1,502</td>
<td>76</td>
<td>Geopave Infiltration3GPGPE (B-4)</td>
</tr>
<tr>
<td>3,462</td>
<td>76</td>
<td>Geopave infiltration area (P-1)</td>
</tr>
<tr>
<td>2,160</td>
<td>76</td>
<td>Gepave Infiltration 4PGP1 (B-5)</td>
</tr>
<tr>
<td>3,700</td>
<td>76</td>
<td>Gepave Infiltration 5PGP1 (B-6, B-7)</td>
</tr>
<tr>
<td>930</td>
<td>76</td>
<td>Landscape Buffer (B-1)</td>
</tr>
<tr>
<td>1,432</td>
<td>80</td>
<td>Landscape Buffer Good, HSG D (B-2)</td>
</tr>
<tr>
<td>154,435</td>
<td>98</td>
<td>Paved parking, HSG D (OS - 5, OS-6E, OS-6W, OS1, P-1, P-10A, P-2M, P-2NE, P-3E, P-4S, P-7A, P-7B, P-8, P-9, P-9R, P3N, P4-N, P4W)</td>
</tr>
<tr>
<td>30,112</td>
<td>98</td>
<td>Paved parking, and slab HSG D (P-7)</td>
</tr>
<tr>
<td>1,494</td>
<td>91</td>
<td>River Stone HSG D (B-6)</td>
</tr>
<tr>
<td>1,073</td>
<td>91</td>
<td>River Stone HSG D (B-4)</td>
</tr>
<tr>
<td>1,224</td>
<td>91</td>
<td>River Stone Island (ISL-1, ISL-2, ISL-3, ISL-4)</td>
</tr>
<tr>
<td>3,919</td>
<td>91</td>
<td>River Stone, HSG D (B-3, B-5, B-7)</td>
</tr>
<tr>
<td>1,000</td>
<td>98</td>
<td>Sidewalk and pavers (P-2S)</td>
</tr>
<tr>
<td>6,627</td>
<td>98</td>
<td>Unconnected roofs, HSG D (P-7R)</td>
</tr>
</tbody>
</table>
### Soil Listing (all nodes)

<table>
<thead>
<tr>
<th>Area (sq-ft)</th>
<th>Soil Group</th>
<th>Subcatchment Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>HSG A</td>
<td>B-2, B-3, B-4, B-5, B-6, B-7, OS-5, OS-6E, OS-6R, OS-6W, OS1, P-1, P-10A, P-1R, P-2M, P-2NE, P-2R, P-3E, P-4R, P-4S, P-6R, P-7, P-7A, P-7B, P-7R, P-8, P-8R, P-9, P-9R, P3N, P4-N, P4W</td>
</tr>
<tr>
<td>0</td>
<td>HSG B</td>
<td>B-1, B-4, B-5, B-6, B-7, ISL-1, ISL-2, ISL-3, ISL-4, P-1, P-2M, P-2NE, P-2S, P-4S, P3N</td>
</tr>
<tr>
<td>0</td>
<td>HSG C</td>
<td></td>
</tr>
<tr>
<td>235,171</td>
<td>HSG D</td>
<td>B-2, B-3, B-4, B-5, B-6, B-7, OS-5, OS-6E, OS-6R, OS-6W, OS1, P-1, P-10A, P-1R, P-2M, P-2NE, P-2R, P-3E, P-4R, P-4S, P-6R, P-7, P-7A, P-7B, P-7R, P-8, P-8R, P-9, P-9R, P3N, P4-N, P4W</td>
</tr>
<tr>
<td>23,660</td>
<td>Other</td>
<td>B-1, B-4, B-5, B-6, B-7, ISL-1, ISL-2, ISL-3, ISL-4, P-1, P-2M, P-2NE, P-2S, P-4S, P3N</td>
</tr>
</tbody>
</table>
## Ground Covers (all nodes)

<table>
<thead>
<tr>
<th>HSG-A (sq-ft)</th>
<th>HSG-B (sq-ft)</th>
<th>HSG-C (sq-ft)</th>
<th>HSG-D (sq-ft)</th>
<th>Other (sq-ft)</th>
<th>Total (sq-ft)</th>
<th>Ground Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,548</td>
<td>1,548</td>
<td>Geopave</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2,268</td>
<td>2,268</td>
<td>Geopave</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,014</td>
<td>1,014</td>
<td>Geopave</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4,560</td>
<td>4,560</td>
<td>Geopave</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>292</td>
<td>292</td>
<td>Geopave</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,502</td>
<td>1,502</td>
<td>Geopave</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3,462</td>
<td>3,462</td>
<td>Geopave</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2,160</td>
<td>2,160</td>
<td>Geopave</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3,700</td>
<td>3,700</td>
<td>Geopave</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>930</td>
<td>930</td>
<td>Landscape Buffer</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,432</td>
<td>0</td>
<td>1,432</td>
<td>Landscape Buffer</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>154,435</td>
<td>0</td>
<td>154,435</td>
<td>Paved parking</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>30,112</td>
<td>0</td>
<td>30,112</td>
<td>Paved parking, and slab</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6,486</td>
<td>0</td>
<td>6,486</td>
<td>River Stone</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,224</td>
<td>0</td>
<td>1,224</td>
<td>River Stone Island</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>36,079</td>
<td>0</td>
<td>36,079</td>
<td>Roofs</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,000</td>
<td>0</td>
<td>1,000</td>
<td>Sidewalk and pavers</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6,627</td>
<td>0</td>
<td>6,627</td>
<td>Unconnected roofs</td>
</tr>
</tbody>
</table>
# Pipe Listing (all nodes)

<table>
<thead>
<tr>
<th>Line#</th>
<th>Node Number</th>
<th>In-Invert (feet)</th>
<th>Out-Invert (feet)</th>
<th>Length (feet)</th>
<th>Slope (ft/ft)</th>
<th>n</th>
<th>Diam/Width (inches)</th>
<th>Height (inches)</th>
<th>Inside-Fill (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1PGP</td>
<td>13.70</td>
<td>13.60</td>
<td>10.0</td>
<td>0.0100</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2</td>
<td>1PGP</td>
<td>13.80</td>
<td>13.70</td>
<td>20.0</td>
<td>0.0050</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>3</td>
<td>2PGP1</td>
<td>13.80</td>
<td>13.70</td>
<td>65.0</td>
<td>0.0015</td>
<td>0.012</td>
<td>6.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>4</td>
<td>2PGP1</td>
<td>13.80</td>
<td>13.70</td>
<td>10.0</td>
<td>0.0100</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>5</td>
<td>2PGP2</td>
<td>13.65</td>
<td>13.60</td>
<td>18.0</td>
<td>0.0028</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>6</td>
<td>2PGP2</td>
<td>13.80</td>
<td>13.65</td>
<td>20.0</td>
<td>0.0075</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>7</td>
<td>2PGP3</td>
<td>15.00</td>
<td>14.60</td>
<td>78.0</td>
<td>0.0051</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>8</td>
<td>2PGP3</td>
<td>15.10</td>
<td>13.70</td>
<td>20.0</td>
<td>0.0070</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>9</td>
<td>3PGP1</td>
<td>13.90</td>
<td>13.70</td>
<td>70.0</td>
<td>0.0029</td>
<td>0.012</td>
<td>8.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>10</td>
<td>3PGP1</td>
<td>13.90</td>
<td>13.70</td>
<td>20.0</td>
<td>0.0050</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>11</td>
<td>3PGP2</td>
<td>13.60</td>
<td>13.40</td>
<td>30.0</td>
<td>0.0067</td>
<td>0.012</td>
<td>8.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>12</td>
<td>3PGP2</td>
<td>13.80</td>
<td>13.70</td>
<td>20.0</td>
<td>0.0050</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>13</td>
<td>4PGP1</td>
<td>13.70</td>
<td>13.50</td>
<td>42.0</td>
<td>0.0048</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>14</td>
<td>4PGP1</td>
<td>13.90</td>
<td>13.70</td>
<td>20.0</td>
<td>0.0010</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>15</td>
<td>4PGP2</td>
<td>13.50</td>
<td>13.40</td>
<td>20.0</td>
<td>0.0050</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>16</td>
<td>4PGP2</td>
<td>13.80</td>
<td>13.70</td>
<td>20.0</td>
<td>0.0050</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>17</td>
<td>5PGPN</td>
<td>13.70</td>
<td>13.60</td>
<td>10.0</td>
<td>0.0100</td>
<td>0.012</td>
<td>6.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>18</td>
<td>5PGPN</td>
<td>13.80</td>
<td>13.70</td>
<td>20.0</td>
<td>0.0050</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>19</td>
<td>5PGPN</td>
<td>13.70</td>
<td>13.60</td>
<td>2.0</td>
<td>0.0500</td>
<td>0.012</td>
<td>6.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>20</td>
<td>5PGPS</td>
<td>13.70</td>
<td>13.60</td>
<td>2.0</td>
<td>0.0500</td>
<td>0.012</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>21</td>
<td>COMM-1</td>
<td>16.29</td>
<td>11.12</td>
<td>85.0</td>
<td>0.0608</td>
<td>0.013</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>22</td>
<td>COMM-2</td>
<td>11.12</td>
<td>10.58</td>
<td>182.0</td>
<td>0.0030</td>
<td>0.013</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>23</td>
<td>COMM-2</td>
<td>14.10</td>
<td>13.10</td>
<td>170.0</td>
<td>0.0059</td>
<td>0.013</td>
<td>18.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>24</td>
<td>I-5</td>
<td>15.94</td>
<td>14.10</td>
<td>86.0</td>
<td>0.0214</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>25</td>
<td>I-6</td>
<td>15.71</td>
<td>10.30</td>
<td>30.0</td>
<td>0.1803</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>26</td>
<td>MH-A1</td>
<td>10.67</td>
<td>10.28</td>
<td>240.0</td>
<td>0.0016</td>
<td>0.012</td>
<td>8.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>27</td>
<td>MH-A2</td>
<td>10.67</td>
<td>10.28</td>
<td>240.0</td>
<td>0.0016</td>
<td>0.012</td>
<td>8.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>28</td>
<td>MH-A3</td>
<td>10.67</td>
<td>10.28</td>
<td>240.0</td>
<td>0.0016</td>
<td>0.012</td>
<td>6.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>29</td>
<td>MH-A4</td>
<td>11.12</td>
<td>10.58</td>
<td>182.0</td>
<td>0.0030</td>
<td>0.013</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>30</td>
<td>MH-A4</td>
<td>14.10</td>
<td>13.10</td>
<td>170.0</td>
<td>0.0059</td>
<td>0.011</td>
<td>18.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>31</td>
<td>MH-E3</td>
<td>8.00</td>
<td>7.90</td>
<td>30.0</td>
<td>0.0033</td>
<td>0.012</td>
<td>12.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>32</td>
<td>MH-E4</td>
<td>6.90</td>
<td>6.80</td>
<td>100.0</td>
<td>0.0010</td>
<td>0.013</td>
<td>15.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>33</td>
<td>PMH1</td>
<td>12.60</td>
<td>11.80</td>
<td>200.0</td>
<td>0.0040</td>
<td>0.012</td>
<td>24.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>34</td>
<td>PMH2</td>
<td>11.70</td>
<td>11.10</td>
<td>118.0</td>
<td>0.0051</td>
<td>0.012</td>
<td>24.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>35</td>
<td>PMH3</td>
<td>11.10</td>
<td>9.37</td>
<td>90.0</td>
<td>0.0192</td>
<td>0.012</td>
<td>24.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>
### SSDC PROPOSED SITE PLAN - BLOCKED CONDITION

**2020-02-28 SSDC-1699.C PROPOSED blocked**  
*Type III 24-hr 100-YEAR Rainfall=8.69”*

Prepared by Windows User  
Printed 3/4/2020

HydroCAD® 10.00-25  s/n 06187  © 2019 HydroCAD Software Solutions LLC

---

**Runoff Area**  
- **Subcatchment B-1:** Landscape Buffer North
  - Runoff Area: 930 sf  
  - Impervious: 0.00%  
  - Runoff Depth: 5.79”  
  - $Tc=10.0\ min$; $CN=76$; Runoff: 0.12 cfs; 449 cf

- **Subcatchment B-2:** Riverstone Buffer North
  - Runoff Area: 1,432 sf  
  - Impervious: 0.00%  
  - Runoff Depth: 6.27”  
  - $Tc=10.0\ min$; $CN=80$; Runoff: 0.20 cfs; 749 cf

- **Subcatchment B-3:** Riverstone Buffer North
  - Runoff Area: 1,354 sf  
  - Impervious: 0.00%  
  - Runoff Depth: 7.61”  
  - $Tc=10.0\ min$; $CN=91$; Runoff: 0.22 cfs; 858 cf

- **Subcatchment B-4:** Riverstone and Geopave
  - Runoff Area: 2,575 sf  
  - Impervious: 0.00%  
  - Runoff Depth: 6.52”  
  - $Tc=10.0\ min$; $CN=82$; Runoff: 0.38 cfs; 1,398 cf

- **Subcatchment B-5:** River Stone and
  - Runoff Area: 3,703 sf  
  - Impervious: 0.00%  
  - Runoff Depth: 6.52”  
  - $Tc=10.0\ min$; $CN=82$; Runoff: 0.55 cfs; 2,011 cf

- **Subcatchment B-6:** Riverstone Buffer and
  - Runoff Area: 3,261 sf  
  - Impervious: 0.00%  
  - Runoff Depth: 6.44”  
  - $Tc=10.0\ min$; $CN=83$; Runoff: 0.49 cfs; 1,804 cf

- **Subcatchment B-7:** Riverstone and Geopave
  - Runoff Area: 2,955 sf  
  - Impervious: 0.00%  
  - Runoff Depth: 6.40”  
  - $Tc=10.0\ min$; $CN=81$; Runoff: 0.43 cfs; 1,575 cf

- **Subcatchment ISL-1:** River Stone Island
  - Runoff Area: 306 sf  
  - Impervious: 0.00%  
  - Runoff Depth: 5.79”  
  - $Tc=10.0\ min$; $CN=76$; Runoff: 0.04 cfs; 148 cf

- **Subcatchment ISL-2:** River Stone Island
  - Runoff Area: 306 sf  
  - Impervious: 0.00%  
  - Runoff Depth: 5.79”  
  - $Tc=10.0\ min$; $CN=76$; Runoff: 0.04 cfs; 148 cf

- **Subcatchment ISL-3:** River Stone Island
  - Runoff Area: 306 sf  
  - Impervious: 0.00%  
  - Runoff Depth: 5.79”  
  - $Tc=10.0\ min$; $CN=76$; Runoff: 0.04 cfs; 148 cf

- **Subcatchment ISL-4:** River Stone Island
  - Runoff Area: 306 sf  
  - Impervious: 0.00%  
  - Runoff Depth: 5.79”  
  - $Tc=10.0\ min$; $CN=76$; Runoff: 0.04 cfs; 148 cf

- **Subcatchment OS - 5:** OFFSITE
  - Runoff Area: 2,249 sf  
  - Impervious: 100.00%  
  - Runoff Depth: 8.45”  
  - $Tc=10.0\ min$; $CN=98$; Runoff: 0.38 cfs; 1,584 cf

- **Subcatchment OS-6E:** COMM EAST
  - Runoff Area: 20,681 sf  
  - Impervious: 100.00%  
  - Runoff Depth: 8.45”  
  - $Tc=10.0\ min$; $CN=98$; Runoff: 3.51 cfs; 14,563 cf

- **Subcatchment OS-6R:** COMM ROOF
  - Runoff Area: 13,913 sf  
  - Impervious: 100.00%  
  - Runoff Depth: 8.45”  
  - $Tc=10.0\ min$; $CN=98$; Runoff: 2.36 cfs; 9,797 cf

- **Subcatchment OS-6W:** COMM-WEST
  - Runoff Area: 20,681 sf  
  - Impervious: 100.00%  
  - Runoff Depth: 8.45”  
  - $Tc=10.0\ min$; $CN=98$; Runoff: 3.51 cfs; 14,563 cf

- **Subcatchment OS1:** North Driveway
  - Runoff Area: 5,281 sf  
  - Impervious: 100.00%  
  - Runoff Depth: 8.45”  
  - Flow Length: 175’  
  - $Tc=10.8\ min$; $CN=98$; Runoff: 0.88 cfs; 3,719 cf
Subcatchment P-1: Northwest  
Runoff Area=30,556 sf  88.67% Impervious  Runoff Depth=8.21”  
Tc=10.0 min  CN=96  Runoff=5.15 cfs  20,903 cf

Subcatchment P-10A: Alley  
Runoff Area=4,612 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=0.78 cfs  3,248 cf

Subcatchment P-1R: ROOFS  
Runoff Area=1,400 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=0.24 cfs  986 cf

Subcatchment P-2M: North Central  
Flow Length=180’  
Runoff Area=18,201 sf  74.95% Impervious  Runoff Depth=7.73”  
Tc=10.0 min  CN=92  Runoff=3.00 cfs  11,720 cf

Subcatchment P-2NE: North Central  
Runoff Area=8,999 sf  88.73% Impervious  Runoff Depth=8.21”  
Tc=10.0 min  CN=96  Runoff=1.52 cfs  6,156 cf

Subcatchment P-2R: Roofs, warehouse  
Runoff Area=4,125 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=0.70 cfs  2,905 cf

Subcatchment P-2S: Between Buildings  
Runoff Area=1,292 sf  77.40% Impervious  Runoff Depth=7.85”  
Flow Length=180’  Tc=10.0 min  CN=93  Runoff=0.21 cfs  845 cf

Subcatchment P-3E: Northeast Corner  
Runoff Area=5,025 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=0.85 cfs  3,538 cf

Subcatchment P-4R: Roof to 4P  
Runoff Area=2,828 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=0.48 cfs  1,991 cf

Subcatchment P-4S: Paved Parking  
Runoff Area=7,833 sf  80.24% Impervious  Runoff Depth=7.97”  
Flow Length=260’  Tc=10.0 min  CN=94  Runoff=1.31 cfs  5,201 cf

Subcatchment P-6R: Roof  
Runoff Area=8,937 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=1.52 cfs  6,293 cf

Subcatchment P-7: Slab Area - Repaved  
Runoff Area=30,112 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=5.11 cfs  21,203 cf

Subcatchment P-7A: S CORNER ALLEY  
Runoff Area=2,831 sf  100.00% Impervious  Runoff Depth=8.45”  
Flow Length=160’  Tc=10.0 min  CN=98  Runoff=0.48 cfs  1,993 cf

Subcatchment P-7B: Paved Parking  
Runoff Area=6,605 sf  100.00% Impervious  Runoff Depth=8.45”  
Flow Length=260’  Tc=10.0 min  CN=98  Runoff=1.12 cfs  4,651 cf

Subcatchment P-7R: Roof  
Runoff Area=6,627 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=1.12 cfs  4,666 cf

Subcatchment P-8: Alley  
Runoff Area=3,884 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=0.66 cfs  2,735 cf

Subcatchment P-8R: Roof  
Runoff Area=4,876 sf  100.00% Impervious  Runoff Depth=8.45”  
Tc=10.0 min  CN=98  Runoff=0.83 cfs  3,433 cf
SSDC PROPOSED SITE PLAN - BLOCKED CONDITION

2020-02-28 SSDC-1699.C PROPOSED blocked  Type III 24-hr  100-YEAR Rainfall=8.69"
HydroCAD® 10.00-25  s/n 06187  © 2019 HydroCAD Software Solutions LLC  Page 8

Subcatchment P-9: Alley
Runoff Area=1,384 sf  100.00% Impervious  Runoff Depth=8.45"
Tc=10.0 min  CN=98  Runoff=0.23 cfs  975 cf

Subcatchment P-9R: West End Roofs
Runoff Area=7,745 sf  100.00% Impervious  Runoff Depth=8.45"
Tc=10.0 min  CN=98  Runoff=1.31 cfs  5,454 cf

Subcatchment P3N: Northeast Corner
Runoff Area=8,026 sf  71.74% Impervious  Runoff Depth=7.73"
Tc=10.0 min  CN=92  Runoff=1.32 cfs  5,168 cf

Subcatchment P4-N: Paved Parking
Flow Length=260’  Tc=10.0 min  CN=98  Runoff=1.06 cfs  4,406 cf

Subcatchment P4W: Paved Parking
Flow Length=260’  Tc=10.0 min  CN=98  Runoff=1.09 cfs  4,533 cf

Reach ASW1: Overland swale
Avg. Flow Depth=0.26’  Max Vel=1.05 fps  Inflow=5.03 cfs  9,177 cf
n=0.016  L=160.0’  S=0.0012 '/'  Capacity=19.21 cfs  Outflow=4.88 cfs  9,177 cf

Reach ASW2: Overland swale
Avg. Flow Depth=0.34’  Max Vel=0.76 fps  Inflow=5.44 cfs  12,424 cf
n=0.016  L=120.0’  S=0.0005 '/'  Capacity=12.15 cfs  Outflow=5.30 cfs  12,424 cf

Reach ASW3: Overland swale
Avg. Flow Depth=0.17’  Max Vel=0.59 fps  Inflow=1.69 cfs  12,267 cf
n=0.016  L=160.0’  S=0.0006 '/'  Capacity=13.58 cfs  Outflow=1.48 cfs  12,267 cf

Reach EMSPY 2: Blocked Outlet Spwy
Avg. Flow Depth=0.20’  Max Vel=1.02 fps  Inflow=8.37 cfs  29,338 cf
n=0.016  L=200.0’  S=0.0013 '/'  Capacity=38.41 cfs  Outflow=7.51 cfs  29,338 cf

Reach EMSPY 3: Blocked Outlet Spwy
Avg. Flow Depth=0.21’  Max Vel=0.97 fps  Inflow=7.51 cfs  47,565 cf
n=0.016  L=140.0’  S=0.0011 '/'  Capacity=35.56 cfs  Outflow=7.40 cfs  47,565 cf

Reach EMSPY 4: Overland swale
Avg. Flow Depth=0.21’  Max Vel=1.12 fps  Inflow=8.35 cfs  58,838 cf
n=0.016  L=100.0’  S=0.0015 '/'  Capacity=42.08 cfs  Outflow=8.30 cfs  58,838 cf

Reach STRT: EXISTING STREET
Avg. Flow Depth=0.21’  Max Vel=2.92 fps  Inflow=15.68 cfs  107,936 cf
n=0.016  L=25.0’  S=0.0080 '/'  Capacity=63.73 cfs  Outflow=15.59 cfs  107,936 cf

Reach SW-3: Overland swale
Avg. Flow Depth=0.15’  Max Vel=3.62 fps  Inflow=17.01 cfs  107,936 cf
n=0.016  L=160.0’  S=0.0200 '/'  Capacity=121.43 cfs  Outflow=15.68 cfs  107,936 cf

Reach TD1: Drain for slab to Geopave
Avg. Flow Depth=0.77’  Max Vel=3.29 fps  Inflow=5.11 cfs  21,203 cf
n=0.013  L=200.0’  S=0.0025 '/'  Capacity=6.25 cfs  Outflow=4.97 cfs  21,203 cf

Reach TD2: East End of Buildings
Avg. Flow Depth=0.36’  Max Vel=3.12 fps  Inflow=1.12 cfs  4,666 cf
n=0.015  L=50.0’  S=0.0080 '/'  Capacity=4.26 cfs  Outflow=1.12 cfs  4,666 cf

Pond 1P: RetainIt
Peak Elev=20.85’  Storage=14,433 cf  Inflow=7.63 cfs  42,851 cf
Outflow=8.37 cfs  29,338 cf

Pond 1PGP: Geopave Area
Peak Elev=17.84’  Storage=5,365 cf  Inflow=10.13 cfs  42,402 cf
Primary=7.54 cfs  42,402 cf  Secondary=0.00 cfs  0 cf  Outflow=7.54 cfs  42,402 cf
<table>
<thead>
<tr>
<th>Pond</th>
<th>Designation</th>
<th>Peak Elev</th>
<th>Storage</th>
<th>Inflow</th>
<th>Outflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>2P</td>
<td>RetainIts</td>
<td>17.96'</td>
<td>17,013 cf</td>
<td>7.24 cfs</td>
<td>0.90 cfs</td>
</tr>
<tr>
<td>2PGP1</td>
<td>Geopave</td>
<td>17.02'</td>
<td>254 cf</td>
<td>0.21 cfs</td>
<td>0.15 cfs</td>
</tr>
<tr>
<td>2PGP2</td>
<td>Geopave</td>
<td>17.17'</td>
<td>1,392 cf</td>
<td>3.02 cfs</td>
<td>3.62 cfs</td>
</tr>
<tr>
<td>2PGP3</td>
<td>Geopave</td>
<td>17.99'</td>
<td>981 cf</td>
<td>1.72 cfs</td>
<td>1.63 cfs</td>
</tr>
<tr>
<td>3P</td>
<td>RetainIt</td>
<td>17.93'</td>
<td>5,355 cf</td>
<td>1.65 cfs</td>
<td>0.31 cfs</td>
</tr>
<tr>
<td>3PGPE</td>
<td>Geopave</td>
<td>14.93'</td>
<td>317 cf</td>
<td>0.38 cfs</td>
<td>0.10 cfs</td>
</tr>
<tr>
<td>3PGPN</td>
<td>Geopave</td>
<td>17.48'</td>
<td>2,545 cf</td>
<td>2.44 cfs</td>
<td>1.55 cfs</td>
</tr>
<tr>
<td>4P</td>
<td>RetainIt</td>
<td>17.88'</td>
<td>7,619 cf</td>
<td>3.06 cfs</td>
<td>1.04 cfs</td>
</tr>
<tr>
<td>4PGP1</td>
<td>Geopave</td>
<td>17.41'</td>
<td>2,165 cf</td>
<td>1.61 cfs</td>
<td>0.36 cfs</td>
</tr>
<tr>
<td>4PGP2</td>
<td>Geopave</td>
<td>17.42'</td>
<td>1,782 cf</td>
<td>2.44 cfs</td>
<td>2.44 cfs</td>
</tr>
<tr>
<td>5P</td>
<td>RetainIt</td>
<td>17.90'</td>
<td>8,594 cf</td>
<td>3.72 cfs</td>
<td>4.94 cfs</td>
</tr>
<tr>
<td>5PGPN</td>
<td>Geopave</td>
<td>17.46'</td>
<td>1,676 cf</td>
<td>1.61 cfs</td>
<td>1.01 cfs</td>
</tr>
<tr>
<td>5PGPS</td>
<td>Geopave</td>
<td>17.26'</td>
<td>942 cf</td>
<td>0.91 cfs</td>
<td>0.66 cfs</td>
</tr>
<tr>
<td>COMM-1</td>
<td>Grate SW corner Comm Bldg</td>
<td>17.65'</td>
<td>338 cf</td>
<td>5.87 cfs</td>
<td>5.52 cfs</td>
</tr>
<tr>
<td>COMM-2</td>
<td>Storm Grate East Side</td>
<td>17.11'</td>
<td>5.42 cfs</td>
<td>4.28 cfs</td>
<td>4.48 cfs</td>
</tr>
<tr>
<td>I-5</td>
<td>MH5</td>
<td>17.28'</td>
<td>3.46 cfs</td>
<td>3.46 cfs</td>
<td>14,393 cf</td>
</tr>
<tr>
<td>I-6</td>
<td>Alley Inlet</td>
<td>17.11'</td>
<td>5.42 cfs</td>
<td>4.28 cfs</td>
<td>4.48 cfs</td>
</tr>
</tbody>
</table>

**Type III 24-hr 100-YEAR Rainfall=8.69"**
Pond MH-A1: Storm Manhole Alley
Peak Elev=17.34' Storage=0 cf Inflow=4.80 cfs 20,633 cf
Primary=1.81 cfs 7,772 cf Secondary=2.99 cfs 12,861 cf Outflow=4.80 cfs 20,633 cf

Pond MH-A2: Storm Manhole Alley
Peak Elev=16.89' Storage=0 cf Inflow=0.85 cfs 16,470 cf
Primary=0.40 cfs 7,711 cf Secondary=0.45 cfs 8,759 cf Outflow=0.85 cfs 16,470 cf

Pond MH-A3: Storm Manhole Alley
Peak Elev=16.54' Storage=0 cf Inflow=0.87 cfs 16,766 cf
Primary=0.85 cfs 16,470 cf Secondary=0.02 cfs 296 cf Outflow=0.87 cfs 16,766 cf

Pond MH-A4: Storm MH Comm Site Alley
Peak Elev=17.29' Storage=0 cf Inflow=0.87 cfs 16,783 cf
Primary=0.87 cfs 16,766 cf Secondary=0.00 cfs 17 cf Outflow=0.87 cfs 16,783 cf

Pond MH-E2: Existing MH-E2
Peak Elev=19.42' Inflow=4.80 cfs 20,633 cf
Outflow=4.80 cfs 20,633 cf

Pond MH-E3: Existing MH-E3 OFF
Peak Elev=0.00'
Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf

Pond MH-E4: Woodruff Inlet E-4
Peak Elev=6.90' Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Pond PMH1: Proposed MH 1
Peak Elev=0.00'
Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf

Pond PMH2: Proposed MH2
Peak Elev=11.70' Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Pond PMH3: Proposed MH 3
Peak Elev=11.10' Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Link Drive N: North Driveway
Inflow=0.88 cfs 3,719 cf
Primary=0.88 cfs 3,719 cf

Link SSPRING ST: Spring Street
Inflow=0.88 cfs 3,719 cf
Primary=0.88 cfs 3,719 cf

Total Runoff Area = 258,831 sf  Runoff Volume = 176,663 cf  Average Runoff Depth = 8.19"
11.81% Pervious = 30,578 sf  88.19% Impervious = 228,253 sf
**SSDC PROPOSED SITE PLAN - BLOCKED CONDITIONS**

**2020-02-28 SSDC-1699.C PROPOSED blocked**  
*Type III 24-hr 100-YEAR Rainfall=8.69”*

Prepared by Windows User  
Printed 3/4/2020  
HydroCAD® 10.00-25 s/n 06187 © 2019 HydroCAD Software Solutions LLC  
Page 11

---

Time span=0.00-60.00 hrs, dt=0.05 hrs, 1201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment B-7: Riverstone and Geopave**  
Runoff Area=2,955 sf  0.00% Impervious  
Runoff Depth=6.40”  
Tc=10.0 min  CN=81  Runoff=0.43 cfs 1,575 cf

**Reach EMSPY 2: Blocked Outlet Spwy**  
Avg. Flow Depth=0.20’  Max Vel=1.02 fps  Inflow=8.37 cfs 29,338 cf  
n=0.016  L=200.0’  S=0.0013 ’/’  Capacity=38.41 cfs  Outflow=7.51 cfs 29,338 cf

**Reach EMSPY 3: Blocked Outlet Spwy**  
Avg. Flow Depth=0.21’  Max Vel=0.97 fps  Inflow=7.51 cfs 47,565 cf  
n=0.016  L=140.0’  S=0.0011 ’/’  Capacity=35.56 cfs  Outflow=7.40 cfs 47,565 cf

**Reach EMSPY 4: Overland swale**  
Avg. Flow Depth=0.21’  Max Vel=1.12 fps  Inflow=8.35 cfs 58,838 cf  
n=0.016  L=100.0’  S=0.0008 ’/’  Capacity=42.08 cfs  Outflow=8.30 cfs 58,838 cf

**Reach STRT: EXISTING STREET**  
Avg. Flow Depth=0.19’  Max Vel=2.72 fps  Inflow=12.90 cfs 97,522 cf  
n=0.016  L=25.0’  S=0.0080 ’/’  Capacity=63.73 cfs  Outflow=12.90 cfs 97,522 cf

**Reach SW-3: Overland swale**  
Avg. Flow Depth=0.13’  Max Vel=3.34 fps  Inflow=14.22 cfs 97,522 cf  
n=0.016  L=160.0’  S=0.0200 ’/’  Capacity=121.43 cfs  Outflow=12.90 cfs 97,522 cf

**Reach TD1: Drain for slab to Geopave**  
Avg. Flow Depth=0.77’  Max Vel=3.29 fps  Inflow=5.11 cfs 21,203 cf  
n=0.013  L=200.0’  S=0.0025 ’/’  Capacity=6.25 cfs  Outflow=4.97 cfs 21,203 cf

**Reach TD2: East End of Buildings**  
Avg. Flow Depth=0.36’  Max Vel=3.12 fps  Inflow=1.12 cfs 4,666 cf  
n=0.015  L=50.0’  S=0.0080 ’/’  Capacity=4.26 cfs  Outflow=1.12 cfs 4,666 cf

**Pond 1P: RetainIt**  
Peak Elev=20.85’  Storage=14,433 cf  Inflow=7.63 cfs 42,851 cf  
Outflow=8.37 cfs 29,338 cf

**Pond 1PGP: Geopave Area**  
Peak Elev=17.84’  Storage=5,365 cf  Inflow=10.13 cfs 42,402 cf  
Primary=7.54 cfs 42,402 cf  Secondary=0.00 cfs 0 cf  Outflow=7.54 cfs 42,402 cf

**Pond 2P: RetainIts**  
Peak Elev=17.96’  Storage=17,013 cf  Inflow=7.24 cfs 28,814 cf  
Outflow=9.00 cfs 12,365 cf

**Pond 2PGP1: Geopave**  
Peak Elev=17.02’  Storage=254 cf  Inflow=0.21 cfs 845 cf  
Outflow=0.15 cfs 845 cf

**Pond 2PGP2: Geopave**  
Peak Elev=17.17’  Storage=1,392 cf  Inflow=3.02 cfs 12,565 cf  
Outflow=3.62 cfs 12,565 cf

**Pond 2PGP3: Geopave**  
Peak Elev=17.99’  Storage=981 cf  Inflow=1.72 cfs 6,905 cf  
Outflow=1.63 cfs 6,905 cf

**Pond 3P: Retainit**  
Peak Elev=17.93’  Storage=5,355 cf  Inflow=1.65 cfs 11,111 cf  
Outflow=0.31 cfs 5,862 cf

**Pond 3PGPE: Geopave**  
Peak Elev=14.93’  Storage=317 cf  Inflow=0.38 cfs 1,398 cf  
Outflow=0.10 cfs 1,398 cf
SSDC PROPOSED SITE PLAN - BLOCKED CONDITIONS

Type III 24-hr 100-YEAR Rainfall=8.69”

Pond 3PGPN: Geopave
Peak Elev=17.48’ Storage=2,545 cf Inflow=2.44 cfs 9,712 cf
Outflow=1.55 cfs 9,712 cf

Pond 4P: RetainIt
Peak Elev=17.88’ Storage=7,619 cf Inflow=3.06 cfs 18,290 cf
Outflow=1.04 cfs 11,274 cf

Pond 4PGP1: Geopave
Peak Elev=17.41’ Storage=2,165 cf Inflow=1.61 cfs 6,417 cf
Outflow=0.36 cfs 6,417 cf

Pond 4PGP2: Geopave
Peak Elev=17.42’ Storage=1,782 cf Inflow=2.44 cfs 9,882 cf
Outflow=2.44 cfs 9,882 cf

Pond 5P: RetainIt
Peak Elev=17.90’ Storage=8,594 cf Inflow=3.72 cfs 24,416 cf
Secondary=2.34 cfs 14,420 cf Tertiary=2.59 cfs 1,778 cf Outflow=4.94 cfs 16,197 cf

Pond 5PGPN: Geopave
Peak Elev=17.46’ Storage=1,676 cf Inflow=1.61 cfs 6,455 cf
Outflow=1.01 cfs 6,455 cf

Pond 5PGPS: Geopave
Peak Elev=17.26’ Storage=942 cf Inflow=0.91 cfs 3,568 cf
Outflow=0.66 cfs 3,568 cf

Pond MH-E2: Existing MH-E2
Peak Elev=17.96’ Inflow=4.80 cfs 20,633 cf
Secondary=1.51 cfs 10,219 cf Tertiary=3.29 cfs 10,414 cf Outflow=4.80 cfs 20,633 cf

Pond MH-E3: Existing MH-E3 OFF
Peak Elev=0.00’
Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf

Pond MH-E4: Woodruff Inlet E-4
Peak Elev=6.90’ Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Pond PMH1: Proposed MH 1
Peak Elev=0.00’
Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf

Pond PMH2: Proposed MH2
Peak Elev=11.70’ Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf
Subcatchment B-7: Riverstone and Geopave South

Type III 24-hr 100-YEAR Rainfall=8.69"
Runoff Area=2,955 sf
Runoff Volume=1,575 cf
Runoff Depth=6.40"
Tc=10.0 min
CN=81

Reach EMSPY 2: Blocked Outlet Spwy

Inflow Area=62,210 sf
Avg. Flow Depth=0.20'
Max Vel=1.02 fps
n=0.016
L=200.0'
S=0.0013 '/'
Capacity=38.41 cfs
Reach EMSPY 3: Blocked Outlet Spwy

**Inflow Area** = 122,690 sf  
**Avg. Flow Depth** = 0.21'  
**Max Vel** = 0.97 fps  
**n** = 0.016  
**L** = 140.0'  
**S** = 0.0011 '/'  
**Capacity** = 35.56 cfs

Reach EMSPY 4: Overland swale

**Inflow Area** = 150,054 sf  
**Avg. Flow Depth** = 0.21'  
**Max Vel** = 1.12 fps  
**n** = 0.016  
**L** = 100.0'  
**S** = 0.0015 '/'  
**Capacity** = 42.08 cfs
Reach STRT: EXISTING STREET

Reach SW-3: Overland swale

Flow (cfs)

Time (hours)

Reach SW-3: Overland swale

Flow (cfs)

Time (hours)

Capacity = 121.43 cfs
S = 0.020
L = 160.0
n = 0.016
Max Vel = 3.34 fps
Avg. Flow Depth = 0.13
Inflow Area = 232.869 sf

Capacity = 63.73 cfs
S = 0.008
L = 25.0
n = 0.016
Max Vel = 2.72 fps
Avg. Flow Depth = 0.19
Inflow Area = 232.869 sf

Inflow Area = 232,869 sf
Avg. Flow Depth = 0.19'
Max Vel = 2.72 fps
n = 0.016
L = 160.0'
S = 0.020
Capacity = 121.43 cfs
14.22 cfs
12.90 cfs
12.90 cfs
Reach TD1: Drain for slab to Geopave

Inflow Area=30,112 sf
Avg. Flow Depth=0.77'
Max Vel=3.29 fps
n=0.013
L=200.0'
S=0.0025 '/'
Capacity=6.25 cfs

Reach TD2: East End of Buildings

Inflow Area=6,627 sf
Avg. Flow Depth=0.36'
Max Vel=3.12 fps
n=0.015
L=50.0'
S=0.0080 '/'
Capacity=4.26 cfs
Pond 1P: RetainIt

Hydrograph

Inflow Area=62,210 sf
Peak Elev=20.85'
Storage=14,433 cf

Pond 1PGP: Geopave Area

Hydrograph

Inflow Area=61,280 sf
Peak Elev=17.84'
Storage=5,365 cf
SSDC PROPOSED SITE PLAN - BLOCKED CONDITIONS

2020-02-28 SSDC-1699.C PROPOSED blocked  Type III 24-hr 100-YEAR Rainfall=8.69"
Prepared by Windows User
Printed 3/4/2020

Pond 2P: RetainIts

- Inflow Area=43,194 sf
- Peak Elev=17.96'
- Storage=17,013 cf

Pond 2PGP1: Geopave

- Inflow Area=1,292 sf
- Peak Elev=17.02'
- Storage=254 cf
Pond 2PGP2: Geopave

Hydrograph

Inflow Area = 19,493 sf
Peak Elev = 17.17'
Storage = 1,392 cf

Inflow Area = 10,431 sf
Peak Elev = 17.99'
Storage = 981 cf
**Pond 3P: Retainit**

- **Inflow Area:** 17,286 sf
- **Peak Elev:** 17.93'
- **Storage:** 5,355 cf

**Hydrograph**

1.65 cfs
0.31 cfs

**Pond 3PGPE: Geopave**

- **Inflow Area:** 2,575 sf
- **Peak Elev:** 14.93'
- **Storage:** 317 cf

**Hydrograph**

0.38 cfs
0.10 cfs
Pond 3PGPN: Geopave

- Inflow Area: 14,711 sf
- Peak Elev: 17.48'
- Storage: 2,545 cf
- 2.44 cfs
- 1.55 cfs

Pond 4P: RetainIt

- Inflow Area: 27,364 sf
- Peak Elev: 17.88'
- Storage: 7,619 cf
- 3.06 cfs
- 1.04 cfs
**Pond 4PGP1: Geopave**

- Inflow Area: 9,960 sf
- Peak Elev: 17.41'
- Storage: 2,165 cf
- Flow: 1.61 cfs
- Flow: 0.36 cfs

**Pond 4PGP2: Geopave**

- Inflow Area: 14,576 sf
- Peak Elev: 17.42'
- Storage: 1,782 cf
- Flow: 2.44 cfs
- Flow: 2.44 cfs
Pond 5P: RetainIt

Inflow Area=36,092 sf
Peak Elev=17.90'
Storage=8,594 cf

Pond 5PGPN: Geopave

Inflow Area=9,866 sf
Peak Elev=17.46'
Storage=1,676 cf
Pond 5PGBP: Geopave

Inflow Area = 5,786 sf
Peak Elev = 17.26'
Storage = 942 cf

Pond MH-E2: Existing MH-E2

Inflow Area = 42,839 sf
Peak Elev = 17.96'
Pond MH-E3: Existing MH-E3 OFF

Peak Elev=0.00'

Pond MH-E4: Woodruff Inlet E-4

Peak Elev=6.90'
Pond PMH1: Proposed MH 1

Peak Elev=0.00'

Pond PMH2: Proposed MH2

Peak Elev=11.70'