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

LIST OF FIGURES
Figure 1: Web Soil Survey for SSDC ....................................................................................... 8
Figure 2 South Property Line Existing Grading ........................................................................... 13
Figure 3 South Property Line Existing Drainage ........................................................................ 13
Figure 4 South View of Building - Alley Side ............................................................................. 14
Figure 5 East End of Main Building .......................................................................................... 14

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 Jarrel-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>
<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” clay tile</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.
### 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 for SSDC](image)

**Figure 1: Web Soil Survey for SSDC**

**Table III-1: Soils Information**

<table>
<thead>
<tr>
<th>TABLE VI-1 - SOILS INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union County, New Jersey (NJ039)</td>
</tr>
<tr>
<td>Map Unit Symbol</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>UR</td>
</tr>
<tr>
<td>Totals for Area of Interest</td>
</tr>
<tr>
<td>Hydrologic Soil Group</td>
</tr>
<tr>
<td>Hydrologic Soil Group – based upon underlying soils (CL/CH-ML/MH D°)</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.

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 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>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>3.31</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 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>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>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>NJWQ</td>
<td>Spring St</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>NJDOT</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>Somet Tire Center</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>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>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 (50%)</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 (25%)</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 (20%)</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 VI-7 - PROPOSED CONDITIONS STORMWATER PEAK FLOWS in (CFS) |
| 12” PIPING TO WOODRUFF, 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></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100-YEAR</td>
<td>0.88</td>
<td>0.00</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>

Figure 4 South View of Building - Alley Side

Figure 5 East End of Main Building
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>100-YEAR</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 (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><strong>258,813</strong></td>
<td>97</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>0</td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>258,813</td>
<td>TOTAL AREA</td>
<td></td>
</tr>
<tr>
<td>Subcat Number</td>
<td>HSG-A (sq-ft)</td>
<td>HSG-B (sq-ft)</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------</td>
<td>---------------</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
## Pipe Listing (all nodes)

<table>
<thead>
<tr>
<th>Line#</th>
<th>Node</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>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>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>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>3</td>
<td>COMM-1</td>
<td>16.29</td>
<td>11.12</td>
<td>85.0</td>
<td>0.0608</td>
<td>0.013</td>
<td>4.0</td>
<td>0.0</td>
<td>0.0</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>
<td>0.0</td>
<td>0.0</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>
<td>0.0</td>
<td>0.0</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>
<td>0.0</td>
<td>0.0</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>
<td>0.0</td>
<td>0.0</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>
<td>0.0</td>
<td>0.0</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>
<td>0.0</td>
<td>0.0</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>
<td>0.0</td>
<td>0.0</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>
<td>0.0</td>
<td>0.0</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>6.0</td>
<td>0.0</td>
<td>0.0</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>
<td>0.0</td>
<td>0.0</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>
<td>0.0</td>
<td>0.0</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>
<td>0.0</td>
<td>0.0</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>
<td>0.0</td>
<td>0.0</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>
<td>0.0</td>
<td>0.0</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>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>
SSDC SITE PLAN EXISTING CONDITIONS
NJ DEP 2-hr  1-NJWQ Rainfall=1.25"

2020-02-28 SSDC-1699.C EXISTING 8
Prepared by Windows User
Printed 3/3/2020

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</th>
<th>CN</th>
<th>Runoff</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-1PVT: E-1</td>
<td>32,882 sf</td>
<td>100%</td>
<td>1.03&quot;</td>
<td>200'</td>
<td>10.0 min</td>
<td>98</td>
<td>1.94 cfs 2,835 cf</td>
</tr>
<tr>
<td>E-1R: ROOFS</td>
<td>1,400 sf</td>
<td>100%</td>
<td>1.03&quot;</td>
<td></td>
<td>10.0 min</td>
<td>98</td>
<td>0.08 cfs 121 cf</td>
</tr>
<tr>
<td>E-1SLB: Slab Area</td>
<td>19,503 sf</td>
<td>100%</td>
<td>1.03&quot;</td>
<td></td>
<td>10.0 min</td>
<td>98</td>
<td>1.15 cfs 1,681 cf</td>
</tr>
<tr>
<td>E-2: Parking North/East</td>
<td>20,571 sf</td>
<td>0.00%</td>
<td>0.86&quot;</td>
<td></td>
<td>10.0 min</td>
<td>96</td>
<td>0.08 cfs 121 cf</td>
</tr>
<tr>
<td>E-2R: Roofs, North/East</td>
<td>4,125 sf</td>
<td>100%</td>
<td>1.03&quot;</td>
<td></td>
<td>10.0 min</td>
<td>98</td>
<td>0.24 cfs 356 cf</td>
</tr>
<tr>
<td>E-3: Parking Lot</td>
<td>5,995 sf</td>
<td>0.00%</td>
<td>0.86&quot;</td>
<td></td>
<td>10.0 min</td>
<td>96</td>
<td>0.31 cfs 429 cf</td>
</tr>
<tr>
<td>E-4: Parking to I-5</td>
<td>7,482 sf</td>
<td>37.82%</td>
<td>0.94&quot;</td>
<td></td>
<td>10.0 min</td>
<td>97</td>
<td>0.41 cfs 588 cf</td>
</tr>
<tr>
<td>E-4R: Roof to I-5</td>
<td>2,828 sf</td>
<td>100%</td>
<td>1.03&quot;</td>
<td></td>
<td>10.0 min</td>
<td>98</td>
<td>0.17 cfs 244 cf</td>
</tr>
<tr>
<td>E-5: EAST CENTER</td>
<td>16,669 sf</td>
<td>0.00%</td>
<td>0.86&quot;</td>
<td></td>
<td>10.0 min</td>
<td>96</td>
<td>0.85 cfs 1,194 cf</td>
</tr>
<tr>
<td>E-6: East End</td>
<td>1,013 sf</td>
<td>100%</td>
<td>1.03&quot;</td>
<td></td>
<td>10.0 min</td>
<td>98</td>
<td>0.06 cfs 87 cf</td>
</tr>
<tr>
<td>E-6R: Roof East End South</td>
<td>8,937 sf</td>
<td>100%</td>
<td>1.03&quot;</td>
<td></td>
<td>10.0 min</td>
<td>98</td>
<td>0.53 cfs 770 cf</td>
</tr>
<tr>
<td>E-7: S CORNER W</td>
<td>9,083 sf</td>
<td>0.00%</td>
<td>0.86&quot;</td>
<td></td>
<td>10.0 min</td>
<td>96</td>
<td>0.46 cfs 651 cf</td>
</tr>
<tr>
<td>E-7R: S CORNER W</td>
<td>6,627 sf</td>
<td>100%</td>
<td>1.03&quot;</td>
<td>50'</td>
<td>10.9 min</td>
<td>98</td>
<td>0.38 cfs 571 cf</td>
</tr>
<tr>
<td>E-8: Alley</td>
<td>3,884 sf</td>
<td>100%</td>
<td>1.03&quot;</td>
<td></td>
<td>10.0 min</td>
<td>98</td>
<td>0.23 cfs 335 cf</td>
</tr>
<tr>
<td>E-8R: Building Roof</td>
<td>4,876 sf</td>
<td>100%</td>
<td>1.03&quot;</td>
<td></td>
<td>10.0 min</td>
<td>98</td>
<td>0.29 cfs 420 cf</td>
</tr>
<tr>
<td>E-9: Alley</td>
<td>1,384 sf</td>
<td>100%</td>
<td>1.03&quot;</td>
<td></td>
<td>10.0 min</td>
<td>98</td>
<td>0.08 cfs 119 cf</td>
</tr>
</tbody>
</table>
SSDC SITE PLAN EXISTING CONDITIONS
NJ DEP 2-hr 1-NJWQ Rainfall=1.25"

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: Overland 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 Name</th>
<th>Peak Elev ('')</th>
<th>Storage (cf)</th>
<th>Inflow (cfs)</th>
<th>Outflow (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pond COMM-2: Storm Grate East Side</td>
<td>17.40</td>
<td>234</td>
<td>1.22</td>
<td>1.13</td>
</tr>
<tr>
<td>Pond COMM-1: Grate SW corner Comm Bldg</td>
<td>17.29</td>
<td>102</td>
<td>2.05</td>
<td>2.08</td>
</tr>
<tr>
<td>Pond I1: I1</td>
<td>17.00</td>
<td>57</td>
<td>3.03</td>
<td>2.04</td>
</tr>
<tr>
<td>Pond I2: I2</td>
<td>17.78</td>
<td>0</td>
<td>4.40</td>
<td>4.40</td>
</tr>
<tr>
<td>Pond I3: A Inlet</td>
<td>17.50</td>
<td>56</td>
<td>3.58</td>
<td>3.58</td>
</tr>
<tr>
<td>Pond I4: A Inlet</td>
<td>17.41</td>
<td>1</td>
<td>3.03</td>
<td>3.03</td>
</tr>
<tr>
<td>Pond I5: A Inlet</td>
<td>17.55</td>
<td>1</td>
<td>2.07</td>
<td>2.07</td>
</tr>
<tr>
<td>Pond I6: Storm Inlet Alley</td>
<td>17.15</td>
<td>5</td>
<td>4.07</td>
<td>4.07</td>
</tr>
<tr>
<td>Pond MH-A1: Storm Manhole Alley</td>
<td>17.34</td>
<td>56</td>
<td>2.74</td>
<td>2.74</td>
</tr>
<tr>
<td>Pond MH-A2: Storm Manhole Alley</td>
<td>16.89</td>
<td>9</td>
<td>1.99</td>
<td>1.99</td>
</tr>
<tr>
<td>Pond MH-A3: Storm Manhole Alley</td>
<td>16.63</td>
<td>3</td>
<td>4.65</td>
<td>4.65</td>
</tr>
<tr>
<td>Pond MH-A4: Storm MH Comm Site Alley</td>
<td>17.29</td>
<td>30</td>
<td>0.96</td>
<td>0.96</td>
</tr>
<tr>
<td>Pond MH-E1: Existing MH Storm</td>
<td>17.81</td>
<td>0</td>
<td>6.47</td>
<td>6.47</td>
</tr>
<tr>
<td>Pond MH-E2: Storm MH</td>
<td>18.38</td>
<td>11</td>
<td>6.46</td>
<td>6.46</td>
</tr>
<tr>
<td>Pond MH-E4: Woodruff Inlet</td>
<td>8.98</td>
<td>8.52</td>
<td>3.13</td>
<td>3.13</td>
</tr>
<tr>
<td>Link 4N: OFFSITE EAST</td>
<td>0.14</td>
<td>202</td>
<td>0.14</td>
<td>202</td>
</tr>
<tr>
<td>Link Description</td>
<td>Inflow</td>
<td>Runoff Volume</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----------------</td>
<td>---------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Link 4S: OFFSITE EAST</td>
<td>0.22 cfs</td>
<td>303 cf</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primary 0.22 cfs</td>
<td>303 cf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Link DW-N: Driveway</td>
<td>0.44 cfs</td>
<td>646 cf</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primary 0.44 cfs</td>
<td>646 cf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Link NJDOT: Offsite NJDOT</td>
<td>0.73 cfs</td>
<td>1,017 cf</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primary 0.73 cfs</td>
<td>1,017 cf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Link Offsite Spring: Spring Street</td>
<td>0.44 cfs</td>
<td>646 cf</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primary 0.44 cfs</td>
<td>646 cf</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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
## Subcatchment E-1PVT: E-1
- Runoff Area: 32,882 sf
- 100.00% Impervious
- Runoff Depth: 3.16"
- Flow Length: 200'
- Tc: 10.0 min
- CN: 98
- Runoff: 2.15 cfs
- 8,650 cf

## Subcatchment E-1R: ROOFS
- Runoff Area: 1,400 sf
- 100.00% Impervious
- Runoff Depth: 3.16"
- Tc: 10.0 min
- CN: 98
- Runoff: 0.09 cfs
- 368 cf

## Subcatchment E-1SLB: Slab Area
- Runoff Area: 19,503 sf
- 100.00% Impervious
- Runoff Depth: 3.16"
- Tc: 10.0 min
- CN: 98
- Runoff: 1.28 cfs
- 5,131 cf

## Subcatchment E-2: Parking North/East
- Runoff Area: 20,571 sf
- 0.00% Impervious
- Runoff Depth: 2.94"
- Tc: 10.0 min
- CN: 96
- Runoff: 1.30 cfs
- 5,034 cf

## Subcatchment E-2R: Roofs, North/East
- Runoff Area: 4,125 sf
- 100.00% Impervious
- Runoff Depth: 3.16"
- Tc: 10.0 min
- CN: 98
- Runoff: 0.27 cfs
- 1,085 cf

## Subcatchment E-3: Parking Lot
- Runoff Area: 5,995 sf
- 0.00% Impervious
- Runoff Depth: 2.94"
- Tc: 10.0 min
- CN: 96
- Runoff: 0.38 cfs
- 1,467 cf

## Subcatchment E-4: Parking to I-5
- Runoff Area: 7,482 sf
- 37.82% Impervious
- Runoff Depth: 3.05"
- Tc: 10.0 min
- CN: 97
- Runoff: 0.48 cfs
- 1,899 cf

## Subcatchment E-4R: Roof to I-5
- Runoff Area: 2,828 sf
- 100.00% Impervious
- Runoff Depth: 3.16"
- Tc: 10.0 min
- CN: 98
- Runoff: 0.19 cfs
- 744 cf

## Subcatchment E-5: EAST CENTER
- Runoff Area: 16,669 sf
- 0.00% Impervious
- Runoff Depth: 2.94"
- Tc: 10.0 min
- CN: 96
- Runoff: 1.06 cfs
- 4,079 cf

## Subcatchment E-6: East End
- Runoff Area: 1,013 sf
- 100.00% Impervious
- Runoff Depth: 3.16"
- Tc: 10.0 min
- CN: 98
- Runoff: 0.07 cfs
- 266 cf

## Subcatchment E-6R: Roof East End South
- Runoff Area: 8,937 sf
- 100.00% Impervious
- Runoff Depth: 3.16"
- Tc: 10.0 min
- CN: 98
- Runoff: 0.59 cfs
- 2,351 cf

## Subcatchment E-7: S CORNER W
- Runoff Area: 9,083 sf
- 0.00% Impervious
- Runoff Depth: 2.94"
- Tc: 10.0 min
- CN: 96
- Runoff: 0.58 cfs
- 2,223 cf

## Subcatchment E-7R: S CORNER W
- Runoff Area: 6,627 sf
- 100.00% Impervious
- Runoff Depth: 3.16"
- Flow Length: 50'
- Slope: 0.0100 '/'
- Tc: 10.9 min
- CN: 98
- Runoff: 0.42 cfs
- 1,743 cf

## Subcatchment E-8: Alley
- Runoff Area: 3,884 sf
- 100.00% Impervious
- Runoff Depth: 3.16"
- Tc: 10.0 min
- CN: 98
- Runoff: 0.25 cfs
- 1,022 cf

## Subcatchment E-8R: Building Roof
- Runoff Area: 4,876 sf
- 100.00% Impervious
- Runoff Depth: 3.16"
- Tc: 10.0 min
- CN: 98
- Runoff: 0.32 cfs
- 1,283 cf

## Subcatchment E-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
SSDC SITE PLAN EXISTING CONDITIONS
Type III 24-hr 2-YEAR Rainfall=3.39"

Subcatchment E-9R: Small 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 E-9SLB: Slabs, Alley
Runoff Area=17,538 sf  100.00% Impervious  Runoff Depth=3.16"
Tc=10.0 min   CN=98   Runoff=1.15 cfs  4,614 cf

Subcatchment OS - 5: OFFSITE
Runoff Area=2,266 sf  100.00% Impervious  Runoff Depth=3.16"
Tc=10.0 min   CN=98   Runoff=0.15 cfs  596 cf

Subcatchment OS-1E: COMM EAST
Runoff Area=20,681 sf  100.00% Impervious  Runoff Depth=3.16"
Tc=10.0 min   CN=98   Runoff=1.35 cfs  5,441 cf

Subcatchment OS-1R: COMM ROOF
Runoff Area=13,913 sf  100.00% Impervious  Runoff Depth=3.16"
Tc=10.0 min   CN=98   Runoff=0.91 cfs  3,660 cf

Subcatchment OS-1W: COMM-WEST
Runoff Area=20,681 sf  100.00% Impervious  Runoff Depth=3.16"
Tc=10.0 min   CN=98   Runoff=1.35 cfs  5,441 cf

Subcatchment OS-2: North Driveway
Runoff Area=7,491 sf  100.00% Impervious  Runoff Depth=3.16"
Tc=10.0 min   CN=98   Runoff=0.49 cfs  1,971 cf

Subcatchment OS-3: Existing Offsite NJDOT
Runoff Area=14,192 sf  0.00% Impervious  Runoff Depth=2.94"
Tc=10.0 min   CN=96   Runoff=0.90 cfs  3,473 cf

Subcatchment OS-4N: Offsite Somet Tire
Runoff Area=2,823 sf  0.00% Impervious  Runoff Depth=2.94"
Tc=10.0 min   CN=96   Runoff=0.18 cfs  691 cf

Subcatchment OS-4S: Offsite Somet Tire
Runoff Area=4,224 sf  0.00% Impervious  Runoff Depth=2.94"
Tc=10.0 min   CN=96   Runoff=0.27 cfs  1,034 cf

Reach 1SF: SURFACE DRAINAGE
Avg. Flow Depth=0.40’  Max Vel=2.13 fps  Inflow=3.43 cfs  13,781 cf
n=0.013   L=200.0’   S=0.0030 '/'   Capacity=6.19 cfs   Outflow=3.29 cfs  13,781 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=0.16’  Max Vel=0.50 fps  Inflow=1.26 cfs  3,196 cf
n=0.016   L=120.0’   S=0.0005 '/'   Capacity=12.15 cfs   Outflow=1.16 cfs  3,196 cf

Reach STRT: EXISTING STREET
Avg. Flow Depth=0.18’  Max Vel=2.64 fps  Inflow=12.03 cfs  59,500 cf
n=0.016   L=25.0’   S=0.0080 '/'   Capacity=63.73 cfs   Outflow=12.00 cfs  59,500 cf

Reach SW-1: Overland Swale
Avg. Flow Depth=0.20’  Max Vel=0.45 fps  Inflow=1.55 cfs  6,702 cf
n=0.016   L=160.0’   S=0.0003 '/'   Capacity=9.61 cfs   Outflow=1.42 cfs  6,702 cf

Reach SW-2: Overland Swale
Avg. Flow Depth=0.19’  Max Vel=0.46 fps  Inflow=1.46 cfs  7,034 cf
n=0.016   L=120.0’   S=0.0003 '/'   Capacity=9.92 cfs   Outflow=1.39 cfs  7,034 cf

Reach SW-3: Overland swale
Avg. Flow Depth=0.17’  Max Vel=3.35 fps  Inflow=8.98 cfs  28,540 cf
n=0.016   L=160.0’   S=0.0200 '/'   Capacity=76.85 cfs   Outflow=8.88 cfs  28,540 cf
<table>
<thead>
<tr>
<th>Pond</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pond COMM-2:</td>
<td>Peak Elev=17.42' Storage=256 cf Inflow=1.35 cfs 5,441 cf</td>
</tr>
<tr>
<td>Pond COMM-1:</td>
<td>Peak Elev=17.30' Storage=105 cf Inflow=2.26 cfs 9,101 cf</td>
</tr>
<tr>
<td>Pond I1:</td>
<td>Peak Elev=17.09' Storage=93 cf Inflow=3.37 cfs 14,149 cf</td>
</tr>
<tr>
<td>Pond I2:</td>
<td>Peak Elev=17.78' Storage=0 cf Inflow=5.02 cfs 21,736 cf</td>
</tr>
<tr>
<td>Pond I3:</td>
<td>Peak Elev=17.51' Storage=0 cf Inflow=4.11 cfs 17,677 cf</td>
</tr>
<tr>
<td>Pond I4:</td>
<td>Peak Elev=17.41' Storage=0 cf Inflow=6.24 cfs 27,787 cf</td>
</tr>
<tr>
<td>Pond I5:</td>
<td>Peak Elev=17.56' Inflow=1.58 cfs 6,317 cf</td>
</tr>
<tr>
<td>Pond I6:</td>
<td>Peak Elev=17.18' Inflow=4.82 cfs 17,541 cf</td>
</tr>
<tr>
<td>Pond MH-A1:</td>
<td>Peak Elev=17.34' Storage=0 cf Inflow=2.78 cfs 22,165 cf</td>
</tr>
<tr>
<td>Pond MH-A2:</td>
<td>Peak Elev=16.89' Storage=0 cf Inflow=1.36 cfs 15,426 cf</td>
</tr>
<tr>
<td>Pond MH-A3:</td>
<td>Peak Elev=16.65' Storage=14 cf Inflow=2.12 cfs 16,584 cf</td>
</tr>
<tr>
<td>Pond MH-A4:</td>
<td>Peak Elev=17.29' Storage=0 cf Inflow=0.97 cfs 11,982 cf</td>
</tr>
<tr>
<td>Pond MH-E1:</td>
<td>Peak Elev=17.81' Storage=0 cf Inflow=4.64 cfs 20,269 cf</td>
</tr>
<tr>
<td>Pond MH-E2:</td>
<td>Peak Elev=18.65' Inflow=7.17 cfs 35,455 cf</td>
</tr>
<tr>
<td>Pond MH-E3:</td>
<td>Peak Elev=9.48' Inflow=3.17 cfs 30,960 cf</td>
</tr>
<tr>
<td>Pond MH-E4:</td>
<td>Peak Elev=9.00' Inflow=3.17 cfs 30,960 cf</td>
</tr>
<tr>
<td>Link 4N:</td>
<td>Inflow=0.18 cfs 691 cf</td>
</tr>
</tbody>
</table>

2020-02-28 SSDC-1699.C EXISTING 8
Prepared by Windows User
Printed 3/3/2020
HydroCAD® 10.00-25  s/n 06187  © 2019 HydroCAD Software Solutions LLC
<table>
<thead>
<tr>
<th>Link</th>
<th>Inflow (cfs)</th>
<th>Volume (cf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Link 4S: OFFSITE EAST</td>
<td>0.27</td>
<td>1,034</td>
</tr>
<tr>
<td>Link DW-N: Driveway</td>
<td>0.49</td>
<td>1,971</td>
</tr>
<tr>
<td>Link NJDOT: Offsite NJDOT</td>
<td>0.90</td>
<td>3,473</td>
</tr>
<tr>
<td>Link Offsite Spring: Spring Street</td>
<td>0.49</td>
<td>1,971</td>
</tr>
</tbody>
</table>

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
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=96  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</th>
<th>CN</th>
<th>Runoff Depth</th>
<th>Avg. Flow Depth</th>
<th>Max Vel</th>
<th>Inflow</th>
<th>Outflow</th>
<th>Reach</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-9R: Small Roofs</td>
<td>7,745 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.78 cf</td>
<td>0.47'</td>
<td>2.37 fps</td>
<td>5.27 cf</td>
<td>21,534 cf</td>
<td>1SF</td>
</tr>
<tr>
<td>E-9SLB: Slabs, Alley</td>
<td>17,538 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>1.76 cf</td>
<td>0.25'</td>
<td>1.01 fps</td>
<td>4.55 cf</td>
<td>6,452 cf</td>
<td>ASW1</td>
</tr>
<tr>
<td>OS - 5: OFFSITE</td>
<td>2,266 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.23 cf</td>
<td>0.20'</td>
<td>0.57 fps</td>
<td>1.88 cf</td>
<td>5,222 cf</td>
<td>ASW2</td>
</tr>
<tr>
<td>OS-1E: COMM EAST</td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>2.08 cf</td>
<td>0.23'</td>
<td>3.10 fps</td>
<td>15.06 cf</td>
<td>49,140 cf</td>
<td>SW-1</td>
</tr>
<tr>
<td>OS-1R: COMM ROOF</td>
<td>13,913 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>1.40 cf</td>
<td>0.23'</td>
<td>3.88 fps</td>
<td>15.06 cf</td>
<td>49,140 cf</td>
<td>SW-2</td>
</tr>
<tr>
<td>OS-1W: COMM-WEST</td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>2.08 cf</td>
<td>0.23'</td>
<td>3.10 fps</td>
<td>15.06 cf</td>
<td>49,140 cf</td>
<td>SW-3</td>
</tr>
<tr>
<td>OS-2: North Driveway</td>
<td>7,491 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.75 cf</td>
<td>0.23'</td>
<td>0.49 fps</td>
<td>2.06 cf</td>
<td>10,581 cf</td>
<td>STRT</td>
</tr>
<tr>
<td>OS-3: Existing Offsite NJDOT</td>
<td>14,192 sf</td>
<td>0.00%</td>
<td>4.70&quot;</td>
<td>10.0 min</td>
<td>96</td>
<td>1.40 cf</td>
<td>0.47'</td>
<td>2.37 fps</td>
<td>5.27 cf</td>
<td>21,534 cf</td>
<td>ASW2</td>
</tr>
<tr>
<td>OS-4N: Offsite Somet Tire</td>
<td>2,823 sf</td>
<td>0.00%</td>
<td>4.70&quot;</td>
<td>10.0 min</td>
<td>95</td>
<td>0.28 cf</td>
<td>0.23'</td>
<td>0.57 fps</td>
<td>1.88 cf</td>
<td>5,222 cf</td>
<td>SW-1</td>
</tr>
<tr>
<td>OS-4S: Offsite Somet Tire</td>
<td>4,224 sf</td>
<td>0.00%</td>
<td>4.70&quot;</td>
<td>10.0 min</td>
<td>95</td>
<td>0.42 cf</td>
<td>0.23'</td>
<td>0.57 fps</td>
<td>1.88 cf</td>
<td>5,222 cf</td>
<td>SW-2</td>
</tr>
</tbody>
</table>

**Total Runoff:**

- **Surface Drainage:** 21,534 cf
- **Overland Swale:** 93,609 cf
- **Existing Street:** 93,609 cf

**Capacity:**

- **Surface Drainage:** 6.19 cfs
- **Overland Swale:** 29.47 cfs
- **Existing Street:** 41.26 cfs

**Inflow:**

- **Surface Drainage:** 5.27 cfs
- **Overland Swale:** 18.18 cfs
- **Existing Street:** 18.18 cfs

**Outflow:**

- **Surface Drainage:** 5.06 cfs
- **Overland Swale:** 4.34 cfs
- **Existing Street:** 14.92 cfs
Pond COMM-2: Storm Grate East Side  
- Peak Elev=17.47'  
- Storage=350 cf  
- Inflow=2.08 cfs  
- Outflow=1.98 cfs  
- Primary=0.35 cfs  
- Secondary=1.62 cfs

Pond COMM-1: Grate SW corner Comm Bldg  
- Peak Elev=17.35'  
- Storage=138 cf  
- Inflow=3.48 cfs  
- Outflow=3.42 cfs  
- Primary=0.48 cfs  
- Secondary=2.94 cfs

Pond I1: I1  
- Peak Elev=17.58'  
- Storage=482 cf  
- Inflow=5.19 cfs  
- Outflow=4.56 cfs  
- Primary=1.05 cfs  
- Secondary=3.51 cfs

Pond I2: I2  
- Peak Elev=17.79'  
- Storage=482 cf  
- Inflow=3.48 cfs  
- Outflow=3.42 cfs  
- Primary=0.48 cfs  
- Secondary=2.94 cfs

Pond I3: A Inlet  
- Peak Elev=17.51'  
- Storage=0 cf  
- Inflow=5.44 cfs  
- Outflow=4.44 cfs  
- Primary=0.54 cfs  
- Secondary=5.34 cfs

Pond I4: A Inlet  
- Peak Elev=17.48'  
- Storage=0 cf  
- Inflow=5.44 cfs  
- Outflow=4.44 cfs  
- Primary=0.54 cfs  
- Secondary=5.34 cfs

Pond I5: A Inlet  
- Peak Elev=17.64'  
- Storage=10 cf  
- Inflow=8.11 cfs  
- Outflow=7.65 cfs  
- Primary=1.14 cfs  
- Secondary=1.31 cfs

Pond I6: Storm Inlet Alley  
- Peak Elev=17.26'  
- Storage=28,185 cf  
- Inflow=7.65 cfs  
- Outflow=7.65 cfs  
- Primary=2.19 cfs  
- Secondary=5.46 cfs

Pond MH-A1: Storm Manhole Alley  
- Peak Elev=17.34'  
- Storage=31,722 cf  
- Inflow=2.92 cfs  
- Outflow=2.92 cfs  
- Primary=1.05 cfs  
- Secondary=1.87 cfs

Pond MH-A2: Storm Manhole Alley  
- Peak Elev=16.89'  
- Storage=22,376 cf  
- Inflow=1.64 cfs  
- Outflow=1.64 cfs  
- Primary=0.73 cfs  
- Secondary=0.90 cfs

Pond MH-A3: Storm Manhole Alley  
- Peak Elev=16.79'  
- Storage=24,412 cf  
- Inflow=2.82 cfs  
- Outflow=2.74 cfs  
- Primary=0.86 cfs  
- Secondary=1.88 cfs

Pond MH-A4: Storm MH Comm Site Alley  
- Peak Elev=17.29'  
- Storage=17,220 cf  
- Inflow=1.06 cfs  
- Outflow=1.06 cfs  
- Primary=1.06 cfs  
- Secondary=0.00 cfs

Pond MH-E1: Existing MH Storm  
- Peak Elev=18.04'  
- Storage=31,866 cf  
- Inflow=6.59 cfs  
- Outflow=6.26 cfs  
- Primary=4.89 cfs  
- Secondary=1.37 cfs

Pond MH-E2: Storm MH  
- Peak Elev=19.25'  
- Storage=54,024 cf  
- Inflow=8.45 cfs  
- Outflow=8.45 cfs  
- Primary=3.26 cfs  
- Secondary=5.18 cfs

Pond MH-E3: Existing MH7-OFF  
- Peak Elev=9.52'  
- Storage=44,469 cf  
- Inflow=3.26 cfs  
- Outflow=3.26 cfs  
- Primary=3.26 cfs  
- Secondary=0.00 cfs

Pond MH-E4: Woodruff Inlet  
- Peak Elev=9.05'  
- Storage=44,469 cf  
- Inflow=3.26 cfs  
- Outflow=3.26 cfs  
- Primary=3.26 cfs  
- Secondary=0.00 cfs

Link 4N: OFFSITE EAST  
- Inflow=0.28 cfs  
- Primary=0.28 cfs
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

2020-02-28 SSDC-1699.C EXISTING 8
Prepared by Windows User
Printed 3/3/2020

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

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=6.18"
Flow Length=200’  Tc=10.0 min  CN=98  Runoff=4.11 cfs  16,938 cf

Subcatchment E-1R: ROOFS
Runoff Area=1,400 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.18 cfs  721 cf

Subcatchment E-1SLB: Slab Area
Runoff Area=19,503 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=2.44 cfs  10,046 cf

Subcatchment E-2: Parking North/East
Runoff Area=20,571 sf  0.00% Impervious  Runoff Depth=5.95"
Tc=10.0 min  CN=96  Runoff=2.55 cfs  10,192 cf

Subcatchment E-2R: Roofs, North/East
Runoff Area=4,125 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.52 cfs  2,125 cf

Subcatchment E-3: Parking Lot
Runoff Area=5,995 sf  0.00% Impervious  Runoff Depth=5.95"
Tc=10.0 min  CN=96  Runoff=0.74 cfs  2,970 cf

Subcatchment E-4: Parking to I-5
Runoff Area=7,482 sf  37.82% Impervious  Runoff Depth=6.06"
Tc=10.0 min  CN=97  Runoff=0.93 cfs  3,780 cf

Subcatchment E-4R: Roof to I-5
Runoff Area=2,828 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.35 cfs  1,457 cf

Subcatchment E-5: EAST CENTER
Runoff Area=16,669 sf  0.00% Impervious  Runoff Depth=5.95"
Tc=10.0 min  CN=96  Runoff=2.06 cfs  8,259 cf

Subcatchment E-6: East End
Runoff Area=1,013 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.13 cfs  522 cf

Subcatchment E-6R: Roof East End South
Runoff Area=8,937 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=1.12 cfs  4,604 cf

Subcatchment E-7: S CORNER W
Runoff Area=9,083 sf  0.00% Impervious  Runoff Depth=5.95"
Tc=10.0 min  CN=96  Runoff=1.12 cfs  4,500 cf

Subcatchment E-7R: S CORNER W
Runoff Area=6,627 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.81 cfs  3,414 cf

Subcatchment E-8: Alley
Runoff Area=3,884 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.49 cfs  2,001 cf

Subcatchment E-8R: Building Roof
Runoff Area=4,876 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.61 cfs  2,512 cf

Subcatchment E-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
SSDC SITE PLAN EXISTING CONDITIONS

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

2020-02-28 SSDC-1699.C EXISTING 8
Prepared by Windows User
Page 19

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 cf/s  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 cf/s  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 cf/s  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 cf/s  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 cf/s  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 cf/s  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 cf/s  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 cf/s  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 cf/s  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 cf/s  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
SSDC SITE PLAN EXISTING CONDITIONS
Type III 24-hr 25-YEAR Rainfall=6.42"

2020-02-28 SSDC-1699.C EXISTING 8
HydroCAD® 10.00-25 s/n 06187 © 2019 HydroCAD Software Solutions LLC Page 20

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 I1: I1
Peak Elev=17.90' Storage=967 cf Inflow=6.46 cfs 27,706 cf
Primary=1.10 cfs 17,527 cf Secondary=4.11 cfs 10,179 cf Outflow=5.21 cfs 27,706 cf

Pond I2: I2
Peak Elev=17.79' Storage=1 cf Inflow=7.92 cfs 43,070 cf
Primary=5.48 cfs 29,797 cf Secondary=2.44 cfs 13,283 cf Outflow=7.92 cfs 43,080 cf

Pond I3: A Inlet
Peak Elev=17.51' Storage=0 cf Inflow=6.54 cfs 35,034 cf
Primary=6.41 cfs 34,377 cf Secondary=0.12 cfs 658 cf Outflow=6.54 cfs 35,035 cf

Pond I4: A Inlet
Peak Elev=17.65' Storage=108 cf Inflow=9.63 cfs 53,974 cf
Primary=7.49 cfs 52,065 cf Secondary=1.93 cfs 1,916 cf Outflow=9.41 cfs 53,981 cf

Pond I5: A Inlet
Peak Elev=17.77' Inflow=3.05 cfs 12,518 cf
Primary=1.19 cfs 10,816 cf Secondary=1.86 cfs 1,702 cf Outflow=3.05 cfs 12,518 cf

Pond I6: Storm Inlet Alley
Peak Elev=17.31' Inflow=9.47 cfs 35,806 cf
Primary=2.20 cfs 25,919 cf Secondary=7.27 cfs 9,887 cf Outflow=9.47 cfs 35,806 cf

Pond MH-A1: Storm Manhole Alley
Peak Elev=17.34' Storage=1 cf Inflow=3.01 cfs 38,003 cf
Primary=1.08 cfs 13,658 cf Secondary=1.93 cfs 24,346 cf Outflow=3.01 cfs 38,003 cf

Pond MH-A2: Storm Manhole Alley
Peak Elev=16.89' Storage=0 cf Inflow=1.83 cfs 26,946 cf
Primary=0.82 cfs 12,085 cf Secondary=1.01 cfs 14,862 cf Outflow=1.83 cfs 26,946 cf

Pond MH-A3: Storm Manhole Alley
Peak Elev=16.90' Storage=144 cf Inflow=3.31 cfs 29,702 cf
Primary=0.87 cfs 22,957 cf Secondary=2.26 cfs 6,746 cf Outflow=3.13 cfs 29,702 cf

Pond MH-A4: Storm MH Comm Site Alley
Peak Elev=17.29' Storage=0 cf Inflow=1.12 cfs 20,688 cf
Primary=1.12 cfs 20,668 cf Secondary=0.00 cfs 20 cf Outflow=1.12 cfs 20,688 cf

Pond MH-E1: Existing MH Storm
Peak Elev=18.12' Storage=683 cf Inflow=7.78 cfs 40,023 cf
Primary=4.93 cfs 37,442 cf Secondary=2.46 cfs 2,657 cf Outflow=7.39 cfs 40,100 cf

Pond MH-E2: Storm MH
Peak Elev=19.30' Inflow=8.55 cfs 65,723 cf
Primary=3.27 cfs 53,524 cf Secondary=5.28 cfs 12,199 cf Outflow=8.55 cfs 65,723 cf

Pond MH-E3: Existing MH7-OFF
Peak Elev=9.52' Inflow=3.27 cfs 53,524 cf
Primary=3.27 cfs 53,524 cf Secondary=0.00 cfs 0 cf Outflow=3.27 cfs 53,524 cf

Pond MH-E4: Woodruff Inlet
Peak Elev=9.05' Inflow=3.27 cfs 53,524 cf
Primary=3.27 cfs 53,524 cf Secondary=0.00 cfs 0 cf Outflow=3.27 cfs 53,524 cf

Link 4N: OFFSITE EAST
Inflow=0.35 cfs 1,399 cf
Primary=0.35 cfs 1,399 cf
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
Type III 24-hr 100-YEAR Rainfall=8.69"

2020-02-28 SSDC-1699.C EXISTING 8
Prepared by Windows User
Printed 3/3/2020

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 sf  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 sf  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 sf  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 sf  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 sf  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 sf  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 sf  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 sf  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 sf  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 sf  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
  - Primary: 0.36 cfs
  - Secondary: 2.54 cfs
  - Outflow: 2.90 cfs

### Pond COMM-1: Grate SW corner Comm Bldg
- Peak Elev: 17.65'
- Storage: 388 cf
- Inflow: 5.87 cfs
  - Primary: 0.49 cfs
  - Secondary: 5.03 cfs
  - Outflow: 5.52 cfs

### Pond I1: I1
- Peak Elev: 21.51'
- Storage: 1,775 cf
- Inflow: 8.79 cfs
  - Primary: 0.49 cfs
  - Secondary: 5.16 cfs
  - Outflow: 5.52 cfs

### Pond I2: I2
- Peak Elev: 17.65'
- Storage: 335 cf
- Inflow: 11.15 cfs
  - Primary: 1.54 cfs
  - Secondary: 3.49 cfs
  - Outflow: 3.99 cfs

### Pond I3: A Inlet
- Peak Elev: 17.54'
- Storage: 1 cf
- Inflow: 8.34 cfs
  - Primary: 0.97 cfs
  - Secondary: 7.37 cfs
  - Outflow: 8.34 cfs

### Pond I4: A Inlet
- Peak Elev: 18.09'
- Storage: 794 cf
- Inflow: 12.02 cfs
  - Primary: 6.73 cfs
  - Secondary: 5.29 cfs
  - Outflow: 12.02 cfs

### Pond I5: A Inlet
- Peak Elev: 18.09'
- Storage: 1 cf
- Inflow: 8.34 cfs
  - Primary: 0.97 cfs
  - Secondary: 7.37 cfs
  - Outflow: 8.34 cfs

### Pond I6: Storm Inlet Alley
- Peak Elev: 17.37'
- Storage: 33,419 cf
- Inflow: 8.79 cfs
  - Primary: 2.21 cfs
  - Secondary: 6.58 cfs
  - Outflow: 8.79 cfs

### Pond MH-A1: Storm Manhole Alley
- Peak Elev: 17.34'
- Storage: 1 cf
- Inflow: 3.18 cfs
  - Primary: 1.14 cfs
  - Secondary: 2.04 cfs
  - Outflow: 3.18 cfs

### Pond MH-A2: Storm Manhole Alley
- Peak Elev: 16.89'
- Storage: 1,753 cf
- Inflow: 2.19 cfs
  - Primary: 0.98 cfs
  - Secondary: 1.21 cfs
  - Outflow: 2.19 cfs

### Pond MH-A3: Storm Manhole Alley
- Peak Elev: 17.11'
- Storage: 367 cf
- Inflow: 4.20 cfs
  - Primary: 0.88 cfs
  - Secondary: 3.32 cfs
  - Outflow: 4.20 cfs

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

### Pond MH-E1: Existing MH Storm
- Peak Elev: 18.30'
- Storage: 1,281 cf
- Inflow: 12.65 cfs
  - Primary: 5.03 cfs
  - Secondary: 7.62 cfs
  - Outflow: 12.65 cfs

### Pond MH-E2: Storm MH
- Peak Elev: 19.43'
- Storage: 1,931 cf
  - Inflow: 8.79 cfs
  - Secondary: 5.50 cfs
  - Outflow: 8.79 cfs

### Pond MH-E3: Existing MH7-OFF
- Peak Elev: 9.53'
- Storage: 0 cf
  - Inflow: 3.29 cfs
  - Secondary: 0.0 cfs
  - Outflow: 3.29 cfs

### Pond MH-E4: Woodruff Inlet
- Peak Elev: 9.06'
- Storage: 0 cf
  - Inflow: 3.29 cfs
  - Secondary: 0.0 cfs
  - Outflow: 3.29 cfs

### Link 4N: OFFSITE EAST
- Inflow: 0.48 cfs
  - Primary: 0.48 cfs
Link 4S: OFFSITE EAST
Inflow = 0.71 cfs  2,890 cf
Primary = 0.71 cfs  2,890 cf

Link DW-N: Driveway
Inflow = 1.27 cfs  5,275 cf
Primary = 1.27 cfs  5,275 cf

Link NJDOT: Offsite NJDOT
Inflow = 2.39 cfs  9,709 cf
Primary = 2.39 cfs  9,709 cf

Link Offsite Spring: Spring Street
Inflow = 1.27 cfs  5,275 cf
Primary = 1.27 cfs  5,275 cf

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></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>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></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, ExistingRoof/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></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, 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>100.00%</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, 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>100.00%</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, 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>100.00%</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</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%</td>
<td>Pervious Area</td>
</tr>
<tr>
<td>2,830</td>
<td>37.82%</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, Existing Parking</td>
</tr>
</tbody>
</table>

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%</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, Existing Roof</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>16,669</td>
<td>96</td>
<td>Gravel surface, HSG D</td>
</tr>
<tr>
<td>16,669</td>
<td>100.00%</td>
<td>Pervious Area</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></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Parking</td>
</tr>
</tbody>
</table>

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

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

#### Middle Roof East End

<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>100.00%</td>
<td>Impervious Area</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></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Parking</td>
</tr>
</tbody>
</table>

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

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

#### Middle Roof East End

<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>100.00%</td>
<td>Impervious Area</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></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Roof</td>
</tr>
</tbody>
</table>

Runoff = 1.53 cfs @ 12.14 hrs, Volume= 6,214 cf, Depth= 8.21"
### Summary for Subcatchment E-7R: S CORNER W

**South East Roof**

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9,083</td>
<td>96</td>
<td>Gravel surface, HSG D</td>
</tr>
<tr>
<td>9,083</td>
<td></td>
<td>100.00% Pervious Area</td>
</tr>
</tbody>
</table>

**Runoff**

\[
\text{Runoff} = 1.10 \text{ cfs} \at \ 12.15 \text{ hrs}, \quad \text{Volume} = 4,666 \text{ cf}, \quad \text{Depth} = 8.45" \]

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></td>
<td>100.00% Impervious Area</td>
</tr>
</tbody>
</table>

**Tc** **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></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.9</td>
<td>50</td>
<td>0.0100</td>
<td>0.93</td>
<td></td>
<td>Sheet Flow, PAVED</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>Direct Entry, Roof</td>
</tr>
</tbody>
</table>

**Total**

*10.9 50 Total*

### Summary for Subcatchment E-8: Alley

**Runoff**

\[
\text{Runoff} = 0.66 \text{ cfs} \at \ 12.14 \text{ hrs}, \quad \text{Volume} = 2,735 \text{ cf}, \quad \text{Depth} = 8.45" \]

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></td>
<td>100.00% Impervious Area</td>
</tr>
</tbody>
</table>

**Tc** **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></th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Alley Area</td>
</tr>
</tbody>
</table>

**Direct Entry, Alley Area**
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 (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-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 (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 Alley</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>
<tr>
<td>17,538</td>
<td></td>
<td>100.00% Impervious Area</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>
<tr>
<td>2,266</td>
<td></td>
<td>100.00% Impervious Area</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"
### SSDC SITE PLAN EXISTING

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

Prepared by Windows User

Printed 3/4/2020

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

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>20,681</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>20,681</td>
<td></td>
<td>100.00% Impervious Area</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></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Paved driveway alley</td>
</tr>
</tbody>
</table>

#### 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"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>13,913</td>
<td>98</td>
<td>Roofs, HSG D</td>
</tr>
<tr>
<td>13,913</td>
<td></td>
<td>100.00% Impervious Area</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></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Paved driveway alley</td>
</tr>
</tbody>
</table>

#### Summary for Subcatchment OS-1W: COMM-WEST

Commercial Lot west side drainage 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"

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>20,681</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>20,681</td>
<td></td>
<td>100.00% Impervious Area</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></td>
<td></td>
<td></td>
<td></td>
<td>Direct Entry, Paved driveway alley</td>
</tr>
</tbody>
</table>

#### 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 Soment Tire South

Existing conditions parking area flows easterly to adjoining lot on Soment 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)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>16.90' 3,400 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>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 sf, 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 sf Storage= 388 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.7 min (744.6 - 743.9)

Volume Invert Avail.Storage Storage Description
#1 16.90' 940 cf Parking Lot (Prismatic) Listed below (Recalc)

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=0.49 cfs @ 12.17 hrs HW=17.64' (Free Discharge)
1= PVC 4'' OUT (Barrel Controls 0.49 cfs @ 5.59 fps)

Secondary OutFlow Max=4.96 cfs @ 12.17 hrs HW=17.64' (Free Discharge)
2= Storm Grate (Orifice Controls 4.96 cfs @ 3.19 fps)

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, Atten= 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 Invert Avail.Storage Storage Description
#1 16.70’ 1,775 cf parking lot (Prismatic) Listed below (Recalc)

Elevation Surf.Area Inc.Store Cum.Store
(feet) (sq-ft) (cubic-feet) (cubic-feet)
16.70 0 0 0
17.50 1,000 400 400
18.00 2,000 750 1,150
18.25 3,000 625 1,775

Device Routing Invert Outlet Devices
#1 Primary 15.84’ 6.0” Round PVC Pipe
L= 80.0’ Box, headwall w/3 square edges, Ke= 0.500
Inlet / Outlet Invert= 15.84’ / 13.57’ S= 0.0284 '/' Cc= 0.900
n= 0.013, Flow Area= 0.20 sf
#2 Secondary 16.70’ 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=1.53 cfs @ 12.25 hrs HW=21.49’ (Free Discharge)
↑1=PVC Pipe (Barrel Controls 1.53 cfs @ 7.81 fps)

Secondary OutFlow Max=8.20 cfs @ 12.25 hrs HW=21.49’ (Free Discharge)
↑2=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)
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)  

**Secondary OutFlow** Max = 0.47 cfs @ 12.16 hrs HW = 17.53' (Free Discharge)  

**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>

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
</table>
| #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 |
2020-02-28 SSDC-1699.C EXISTING

SSDC SITE PLAN EXISTING

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

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

<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>15.94'</td>
<td>6.0” Round PVC PIPE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 52.0'  Box, headwall w/3 square edges, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 15.94' / 13.49' S= 0.0471 '/' 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>17.52'</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>

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

Peak Elev= 18.09’ @ 12.14 hrs

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

<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>15.94'</td>
<td>1.0” Round PVC PIPE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 52.0’  Box, headwall w/3 square edges, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 15.94’ / 13.49’ S= 0.0471 '/' 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>17.52'</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>

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

Peak Elev= 17.37’ @ 12.24 hrs
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)

<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>17.35</td>
<td>1,500</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>17.50</td>
<td>4,000</td>
<td>412</td>
<td>420</td>
</tr>
<tr>
<td>17.80</td>
<td>4,500</td>
<td>1,275</td>
<td>1,695</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 (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,  Atten= 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)

Elevation Surf.Area Inc.Store Cum.Store
--- --- --- --- ---
( feet) (sq-ft) (cubic-feet) (cubic-feet)
16.89 0 0 0 0
17.00 500 27 27
17.10 2,000 125 153
17.25 3,000 375 527
17.50 4,000 875 1,402

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflow</td>
<td>4.20 cfs @ 12.14 hrs</td>
<td>Volume = 38,829 cf</td>
</tr>
<tr>
<td>Outflow</td>
<td>3.70 cfs @ 12.20 hrs</td>
<td>Volume = 38,830 cf, Atten= 12%, Lag= 4.0 min</td>
</tr>
<tr>
<td>Primary</td>
<td>0.88 cfs @ 12.20 hrs</td>
<td>Volume = 29,125 cf</td>
</tr>
<tr>
<td>Secondary</td>
<td>2.82 cfs @ 12.20 hrs</td>
<td>Volume = 9,705 cf</td>
</tr>
</tbody>
</table>

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)

<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>16.54'</td>
<td>2,493 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>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>

<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><strong>1.0” x 2.0” Horiz. MH Lid X 4.00 columns</strong> X 14 rows C= 0.600 in 48.0” x 48.0” Grate (5% open area) Limited to weir flow at low heads</td>
</tr>
<tr>
<td>#2</td>
<td>Primary</td>
<td>10.67'</td>
<td><strong>6.0” Round PVC</strong> 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</td>
</tr>
</tbody>
</table>

**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)</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>

<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” Round PVC 4” 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” 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” x 4.0” 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” 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 @ 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)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<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>

Device Routing Invert Outlet Devices

<table>
<thead>
<tr>
<th>#1</th>
<th>Primary</th>
<th>13.00'</th>
<th>12.0&quot; Round PVC PIPE</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>#2</th>
<th>Secondary</th>
<th>17.88'</th>
<th>24.0&quot; Horiz. Orifice/Grate X 3.00 columns</th>
</tr>
</thead>
<tbody>
<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)

**Secondary OutFlow** Max= 5.33 cfs @ 12.28 hrs  HW= 18.29' (Free Discharge)

**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, Attent= 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 Routing Invert Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Primary 10.67' 8.0&quot; Round 8&quot; CLAY PIPE</td>
</tr>
<tr>
<td>L= 122.0' RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td>Inlet / Outlet Invert= 10.67' / 8.02' S= 0.0217 '/' Cc= 0.900</td>
</tr>
<tr>
<td>n= 0.013, Flow Area= 0.35 sf</td>
</tr>
</tbody>
</table>

| #2 Secondary 17.78' 30.0 long x 5.0 breadth Broad-Crested Rectangular Weir |
| Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 |
| 2.50 3.00 3.50 4.00 4.50 5.00 5.50 |
| Coef. (English) 2.34 2.50 2.70 2.68 2.66 2.65 2.65 2.65 2.65 2.65 |
| 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88 |

| #3 Device 2 17.78' 2.0" x 4.0" Horiz. Orifice/Grate X 4.00 columns |
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  
---|---
#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)

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

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  
---|---
#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

Limited to weir flow at low heads
SSDC SITE PLAN EXISTING
Type III 24-hr 100-YEAR Rainfall=8.69"

2020-02-28 SSDC-1699.C EXISTING
Prepared by Windows User
Printed 3/4/2020

Printed 3/4/2020
Prepared by Windows User

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, Attenu= 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, Attenu= 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, Attenu= 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, Attenu= 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

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
- Flow: 0.22 cfs

**Hydrograph**

**Link DW-N: Driveway**

- **Inflow Area**: 7,491 sf
- Flow: 0.44 cfs

**Hydrograph**
Inflow Area = 14,192 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

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=17.41'
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

**Hydrograph**

**Pond MH-E1: Existing MH Storm**

- **Inflow Area**: 78,481 sf
- **Peak Elev**: 17.81'
- **Storage**: 0 cf

**Hydrograph**
Pond MH-E2: Storm MH

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

Pond MH-E3: Existing MH7-OFF

Inflow Area=230,083 sf
Peak Elev=9.48'
2020-02-28 SSDC-1699.C EXISTING 8
Prepared by Windows User
SSDC SITE PLAN EXISTING
Type III 24-hr 2-YEAR Rainfall=3.39"
Printed 3/4/2020
Page 73

Link 4S: OFFSITE EAST

Inflow Area=4,224 sf

Link DW-N: Driveway

Inflow Area=7,491 sf
Inflow Area = 14,192 sf
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

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

Hydrograph

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

Pond I2: I2

Hydrograph

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

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

Hydrograph:

Pond I4: A Inlet

- Inflow Area: 137,115 sf
- Peak Elev: 17.48'
- Storage: 10 cf

Hydrograph:
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'

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

Hydrograph

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

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

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

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

Pond I2: I2

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

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

Hydrograph

Time (hours)

Flow (cfs)

6.54 cfs
6.54 cfs
6.41 cfs
0.12 cfs

Pond I4: A Inlet

Inflow Area=137,115 sf
Peak Elev=17.65'
Storage=108 cf

Hydrograph

Time (hours)

Flow (cfs)

10.00 cfs
9.63 cfs
9.41 cfs
7.49 cfs
1.93 cfs
Pond I5: A Inlet

```
<table>
<thead>
<tr>
<th>Time (hours)</th>
<th>Flow (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>40</td>
<td>0</td>
</tr>
<tr>
<td>45</td>
<td>0</td>
</tr>
<tr>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>55</td>
<td>0</td>
</tr>
<tr>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>65</td>
<td>0</td>
</tr>
<tr>
<td>70</td>
<td>0</td>
</tr>
<tr>
<td>75</td>
<td>0</td>
</tr>
<tr>
<td>80</td>
<td>0</td>
</tr>
<tr>
<td>85</td>
<td>0</td>
</tr>
<tr>
<td>90</td>
<td>0</td>
</tr>
<tr>
<td>95</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>
```

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

Pond MH-A1: Storm Manhole Alley

```
<table>
<thead>
<tr>
<th>Time (hours)</th>
<th>Flow (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>40</td>
<td>0</td>
</tr>
<tr>
<td>45</td>
<td>0</td>
</tr>
<tr>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>55</td>
<td>0</td>
</tr>
<tr>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>65</td>
<td>0</td>
</tr>
<tr>
<td>70</td>
<td>0</td>
</tr>
<tr>
<td>75</td>
<td>0</td>
</tr>
<tr>
<td>80</td>
<td>0</td>
</tr>
<tr>
<td>85</td>
<td>0</td>
</tr>
<tr>
<td>90</td>
<td>0</td>
</tr>
<tr>
<td>95</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>
```

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

Hydrograph

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

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

Pond I4: A Inlet

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

Pond MH-E1: Existing MH Storm

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'

Hydrograph

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

Hydrograph

Inflow Area = 14,192 sf

Time (hours)

Flow (cfs)

Inflow 2.39 cfs
Primary

Row (cfs)
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>Gepave Infiltration 4PGP1 (B-5)</td>
</tr>
<tr>
<td>3,700</td>
<td>76</td>
<td>Gepave 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>
<tr>
<td>Area (sq-ft)</td>
<td>Soil Group</td>
<td>Subcatchment Numbers</td>
</tr>
<tr>
<td>-------------</td>
<td>------------</td>
<td>----------------------</td>
</tr>
<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, B7, 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, P4W</td>
</tr>
<tr>
<td>23,660</td>
<td>Other</td>
<td>B-1, B-4, B-5, B-6, B7, ISL 4, ISL-1, ISL-2, ISL-3, 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 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 Good</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>149,136</td>
<td>0</td>
<td>149,136</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>42,706</td>
<td>0</td>
<td>42,706</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>
</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>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>4.0</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>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>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>12.0</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>3PGP</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>3PGP</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>5GPS</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>5GPS</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>
<tr>
<td>Subcatchment</td>
<td>Description</td>
<td>Runoff Area</td>
<td>Impervious (%)</td>
<td>Runoff Depth</td>
<td>Tc (min)</td>
<td>CN</td>
<td>Runoff (cfs)</td>
<td>Runoff (cf)</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------</td>
<td>-------------</td>
<td>----------------</td>
<td>--------------</td>
<td>----------</td>
<td>-----</td>
<td>--------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>B-1</td>
<td>Landscape Buffer North</td>
<td>930 sf</td>
<td>0.00</td>
<td>0.10</td>
<td>10.0</td>
<td>76</td>
<td>0.00 cfs</td>
<td>8 cf</td>
<td></td>
</tr>
<tr>
<td>B-2</td>
<td>Riverstone Buffer North</td>
<td>1,432 sf</td>
<td>0.00</td>
<td>0.17</td>
<td>10.0</td>
<td>80</td>
<td>0.01 cfs</td>
<td>21 cf</td>
<td></td>
</tr>
<tr>
<td>B-3</td>
<td>Riverstone Buffer North</td>
<td>1,354 sf</td>
<td>0.00</td>
<td>0.54</td>
<td>10.0</td>
<td>91</td>
<td>0.04 cfs</td>
<td>61 cf</td>
<td></td>
</tr>
<tr>
<td>B-4</td>
<td>Riverstone and Geopave</td>
<td>2,575 sf</td>
<td>0.00</td>
<td>0.22</td>
<td>10.0</td>
<td>82</td>
<td>0.03 cfs</td>
<td>47 cf</td>
<td></td>
</tr>
<tr>
<td>B-5</td>
<td>River Stone and</td>
<td>3,703 sf</td>
<td>0.00</td>
<td>0.22</td>
<td>10.0</td>
<td>82</td>
<td>0.04 cfs</td>
<td>66 cf</td>
<td></td>
</tr>
<tr>
<td>B-6</td>
<td>Riverstone Buffer and</td>
<td>3,261 sf</td>
<td>0.00</td>
<td>0.24</td>
<td>10.0</td>
<td>83</td>
<td>0.04 cfs</td>
<td>66 cf</td>
<td></td>
</tr>
<tr>
<td>B-7</td>
<td>Riverstone and Geopave</td>
<td>2,955 sf</td>
<td>0.00</td>
<td>0.20</td>
<td>10.0</td>
<td>81</td>
<td>0.03 cfs</td>
<td>48 cf</td>
<td></td>
</tr>
<tr>
<td>ISL 4</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00</td>
<td>0.10</td>
<td>10.0</td>
<td>76</td>
<td>0.00 cfs</td>
<td>3 cf</td>
<td></td>
</tr>
<tr>
<td>ISL-1</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00</td>
<td>0.10</td>
<td>10.0</td>
<td>76</td>
<td>0.00 cfs</td>
<td>3 cf</td>
<td></td>
</tr>
<tr>
<td>ISL-2</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00</td>
<td>0.10</td>
<td>10.0</td>
<td>76</td>
<td>0.00 cfs</td>
<td>3 cf</td>
<td></td>
</tr>
<tr>
<td>ISL-3</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00</td>
<td>0.10</td>
<td>10.0</td>
<td>76</td>
<td>0.00 cfs</td>
<td>3 cf</td>
<td></td>
</tr>
<tr>
<td>OS - 5</td>
<td>OFFSITE</td>
<td>2,249 sf</td>
<td>100.00</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.13 cfs</td>
<td>194 cf</td>
<td></td>
</tr>
<tr>
<td>OS-6E</td>
<td>COMM EAST</td>
<td>20,681 sf</td>
<td>100.00</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>1.22 cfs</td>
<td>1,783 cf</td>
<td></td>
</tr>
<tr>
<td>OS-6R</td>
<td>COMM ROOF</td>
<td>13,913 sf</td>
<td>100.00</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.82 cfs</td>
<td>1,200 cf</td>
<td></td>
</tr>
<tr>
<td>OS-6W</td>
<td>COMM-WEST</td>
<td>20,681 sf</td>
<td>100.00</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>1.22 cfs</td>
<td>1,783 cf</td>
<td></td>
</tr>
<tr>
<td>OS1</td>
<td>North Driveway</td>
<td>5,281 sf</td>
<td>100.00</td>
<td>1.03</td>
<td>10.8</td>
<td>98</td>
<td>0.31 cfs</td>
<td>455 cf</td>
<td></td>
</tr>
<tr>
<td>Subcatchment</td>
<td>Area</td>
<td>Impervious</td>
<td>Runoff Depth</td>
<td>Tc (min)</td>
<td>CN</td>
<td>Runoff</td>
<td>Volume (cf)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>------</td>
<td>------------</td>
<td>--------------</td>
<td>---------</td>
<td>----</td>
<td>--------</td>
<td>-------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-1: Northwest</td>
<td>30,547</td>
<td>88.67%</td>
<td>0.86</td>
<td>10.0</td>
<td>96</td>
<td>1.56</td>
<td>2,188</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-10A: Alley</td>
<td>4,612</td>
<td>100.00%</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.27</td>
<td>398</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-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>
<td></td>
<td></td>
</tr>
<tr>
<td>P-2M: North Central</td>
<td>18,201</td>
<td>74.95%</td>
<td>0.60</td>
<td>10.0</td>
<td>92</td>
<td>0.66</td>
<td>903</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-2NE: North Central</td>
<td>8,999</td>
<td>88.73%</td>
<td>0.86</td>
<td>10.0</td>
<td>96</td>
<td>0.46</td>
<td>645</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-2R: Roofs, warehouse</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>
<td></td>
<td></td>
</tr>
<tr>
<td>P-2S: Between Buildings</td>
<td>1,292</td>
<td>77.40%</td>
<td>0.65</td>
<td>10.0</td>
<td>93</td>
<td>0.05</td>
<td>70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-3E: Northeast Corner</td>
<td>5,025</td>
<td>100.00%</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.30</td>
<td>433</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-4R: Roof to 4P</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>
<td></td>
<td></td>
</tr>
<tr>
<td>P-4S: Paved Parking</td>
<td>7,833</td>
<td>80.24%</td>
<td>0.72</td>
<td>10.0</td>
<td>94</td>
<td>0.34</td>
<td>467</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-6R: Roof</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>
<td></td>
<td></td>
</tr>
<tr>
<td>P-7: Slab Area - Repaved</td>
<td>30,112</td>
<td>100.00%</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>1.78</td>
<td>2,596</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-7A: S CORNER ALLEY</td>
<td>2,831</td>
<td>100.00%</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.17</td>
<td>244</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-7B: Paved Parking</td>
<td>6,605</td>
<td>100.00%</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.39</td>
<td>569</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-7R: Roof</td>
<td>6,627</td>
<td>100.00%</td>
<td>1.03</td>
<td>10.0</td>
<td>98</td>
<td>0.39</td>
<td>571</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-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>
<td></td>
<td></td>
</tr>
<tr>
<td>P-8R: 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>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Subcatchment P-9: Alley

- Runoff Area: 1,384 sf
- Impervious: 100.00%
- Runoff Depth: 1.03”
- Tc: 10.0 min
- CN: 98
- Runoff: 0.08 cfs

### Subcatchment P-9R: West End Roofs

- Runoff Area: 7,745 sf
- Impervious: 100.00%
- Runoff Depth: 1.03”
- Tc: 10.0 min
- CN: 98
- Runoff: 0.46 cfs

### Subcatchment P3N: Northeast Corner

- Runoff Area: 8,017 sf
- Impervious: 71.71%
- Runoff Depth: 0.60”
- Tc: 10.0 min
- CN: 92
- Runoff: 0.37 cfs

### Subcatchment P4-N: Paved Parking

- Runoff Area: 6,257 sf
- Impervious: 100.00%
- Runoff Depth: 1.03”
- Flow Length: 260’
- Tc: 10.0 min
- CN: 98
- Runoff: 0.37 cfs

### Subcatchment P4W: Paved Parking

- Runoff Area: 6,437 sf
- Impervious: 100.00%
- Runoff Depth: 1.03”
- Flow Length: 260’
- Tc: 10.0 min
- CN: 98
- Runoff: 0.38 cfs

### 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: 0.21”
- 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

### Reach ASW3: Overland swale

- 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

### Reach STRT: EXISTING STREET

- 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

### Reach SW-3: Overland swale

- 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

### Reach TD1: Drain for slab to Geopave

- 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

### Reach TD2: East End of Buildings

- 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

### Pond 1P: RetainIt

- Peak Elev: 13.86’
- Storage: 1,047 cf
- Inflow: 0.95 cfs
- 4,798 cf
- Primary: 0.50 cfs
- Secondary: 0.00 cfs
- Outlet: 0.50 cfs
- 4,798 cf

### Pond 1PGP: Geopave Area

- Peak Elev: 16.65’
- Storage: 2,573 cf
- Inflow: 3.23 cfs
- 4,790 cf
- Outlet: 0.95 cfs
- 4,790 cf

### Pond 2P: RetainIts

- Peak Elev: 14.03’
- Storage: 1,774 cf
- Inflow: 1.08 cfs
- 2,783 cf
- Primary: 0.27 cfs
- Secondary: 0.00 cfs
- Outlet: 0.27 cfs
- 2,117 cf

### Pond 2PGP1: Geopave

- Peak Elev: 14.36’
- Storage: 22 cf
- Inflow: 0.05 cfs
- 70 cf
- Outlet: 0.02 cfs
- 70 cf

### Pond 2PGP2: Geopave

- Peak Elev: 14.81’
- Storage: 341 cf
- Inflow: 0.68 cfs
- 973 cf
- Outlet: 0.22 cfs
- 973 cf
2020-02-23 SSDC-1699.C PROPOSED
NJ DEP 2-hr 1 NJWQ Rainfall=1.25"
Prepared by Windows User
Printed 3/4/2020

Pond 2PGP3: Geopave
Peak Elev=16.57' Storage=0.009 af Inflow=0.47 cfs 665 cf
Outflow=0.07 cfs 665 cf

Pond 3P: RetainIt
Peak Elev=13.89' Storage=671 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=2 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=13.94' Storage=1,044 cf Inflow=0.67 cfs 1,875 cf
Primary=0.24 cfs 1,779 cf Secondary=0.00 cfs 0 cf Outflow=0.24 cfs 1,779 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=14.86' Storage=400 cf Inflow=0.72 cfs 1,025 cf
Outflow=0.22 cfs 1,025 cf

Pond 5P: RetainIt
Peak Elev=14.17' Storage=1,896 cf Inflow=1.54 cfs 2,690 cf
Primary=0.32 cfs 2,199 cf Secondary=0.00 cfs 0 cf Outflow=0.32 cfs 2,199 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=14.25' Storage=40 cf Inflow=0.19 cfs 292 cf
Outflow=0.13 cfs 292 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=16.51' Inflow=1.20 cfs 1,762 cf
Primary=1.20 cfs 1,762 cf Secondary=0.00 cfs 0 cf Outflow=1.20 cfs 1,762 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
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  3,149 cf  Secondary=0.00 cfs  3 cf  Outflow=0.96 cfs  3,149 cf

Pond MH-E2: Existing MH-E2  
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

Pond MH-E3: Existing MH7-OFF  
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

Pond MH-E4: Woodruff Inlet  
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

Pond PMH1: Proposed MH 1  
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

Pond PMH2: Proposed MH2  
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

Pond PMH3: Proposed MH 3  
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

Link Drive N: North Driveway  
Inflow=0.31 cfs  455 cf  
Primary=0.31 cfs  455 cf

Link SSPRING ST: Spring Street  
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>Description</th>
<th>Runoff Area</th>
<th>Impervious (%)</th>
<th>Runoff</th>
<th>Runoff Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-1</td>
<td>Landscape Buffer North</td>
<td>930 sf</td>
<td>0.00%</td>
<td>0.03 cfs</td>
<td>1.29”</td>
</tr>
<tr>
<td>B-2</td>
<td>Riverstone Buffer North</td>
<td>1,432 sf</td>
<td>0.00%</td>
<td>0.05 cfs</td>
<td>1.55”</td>
</tr>
<tr>
<td>B-3</td>
<td>Riverstone Buffer North</td>
<td>1,354 sf</td>
<td>0.00%</td>
<td>0.08 cfs</td>
<td>2.44”</td>
</tr>
<tr>
<td>B-4</td>
<td>Riverstone and Geopave</td>
<td>2,575 sf</td>
<td>0.00%</td>
<td>0.10 cfs</td>
<td>1.69”</td>
</tr>
<tr>
<td>B-5</td>
<td>River Stone and</td>
<td>3,703 sf</td>
<td>0.00%</td>
<td>0.15 cfs</td>
<td>1.69”</td>
</tr>
<tr>
<td>B-6</td>
<td>Riverstone Buffer and</td>
<td>3,261 sf</td>
<td>0.00%</td>
<td>0.13 cfs</td>
<td>1.77”</td>
</tr>
<tr>
<td>B-7</td>
<td>Riverstone and Geopave</td>
<td>2,955 sf</td>
<td>0.00%</td>
<td>0.11 cfs</td>
<td>1.62”</td>
</tr>
<tr>
<td>ISL 4</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00%</td>
<td>0.01 cfs</td>
<td>1.29”</td>
</tr>
<tr>
<td>ISL-1</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00%</td>
<td>0.01 cfs</td>
<td>1.29”</td>
</tr>
<tr>
<td>ISL-2</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00%</td>
<td>0.01 cfs</td>
<td>1.29”</td>
</tr>
<tr>
<td>ISL-3</td>
<td>River Stone Island</td>
<td>5,281 sf</td>
<td>100.00%</td>
<td>0.34 cfs</td>
<td>3.16”</td>
</tr>
<tr>
<td>OS-5</td>
<td>OFFSITE</td>
<td>2,249 sf</td>
<td>100.00%</td>
<td>0.15 cfs</td>
<td>3.16”</td>
</tr>
<tr>
<td>OS-6E</td>
<td>COMM EAST</td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>1.35 cfs</td>
<td>3.16”</td>
</tr>
<tr>
<td>OS-6R</td>
<td>COMM ROOF</td>
<td>13,913 sf</td>
<td>100.00%</td>
<td>0.91 cfs</td>
<td>3.16”</td>
</tr>
<tr>
<td>OS-6W</td>
<td>COMM-WEST</td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>1.35 cfs</td>
<td>3.16”</td>
</tr>
<tr>
<td>OS1</td>
<td>North Driveway</td>
<td>5,281 sf</td>
<td>100.00%</td>
<td>0.34 cfs</td>
<td>3.16”</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
<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Type</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>Runoff</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, 7,475 cf</td>
</tr>
<tr>
<td>P-10A: Alley</td>
<td>Runoff</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, 1,213 cf</td>
</tr>
<tr>
<td>P-1R: ROOFS</td>
<td>Runoff</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, 368 cf</td>
</tr>
<tr>
<td>P-2M: North Central</td>
<td>Runoff</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, 3,840 cf</td>
</tr>
<tr>
<td>P-2NE: North Central</td>
<td>Runoff</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, 2,202 cf</td>
</tr>
<tr>
<td>P-2R: Roofs, warehouse</td>
<td>Runoff</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, 1,085 cf</td>
</tr>
<tr>
<td>P-2S: Between Buildings</td>
<td>Runoff</td>
<td>1,292 sf</td>
<td>77.40%</td>
<td>2.69&quot;</td>
<td>10.0 min</td>
<td>93</td>
<td>0.08 cfs, 283 cf</td>
</tr>
<tr>
<td>P-3E: Northeast Corner</td>
<td>Runoff</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, 1,322 cf</td>
</tr>
<tr>
<td>P-4R: Roof to 4P</td>
<td>Runoff</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, 744 cf</td>
</tr>
<tr>
<td>P-4S: Paved Parking</td>
<td>Runoff</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, 1,781 cf</td>
</tr>
<tr>
<td>P-6R: Roof</td>
<td>Runoff</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, 2,351 cf</td>
</tr>
<tr>
<td>P-7: Slab Area - Repaved</td>
<td>Runoff</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, 7,922 cf</td>
</tr>
<tr>
<td>P-7A: S CORNER ALLEY</td>
<td>Runoff</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, 745 cf</td>
</tr>
<tr>
<td>P-7B: Paved Parking</td>
<td>Runoff</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, 1,738 cf</td>
</tr>
<tr>
<td>P-7R: Roof</td>
<td>Runoff</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, 1,743 cf</td>
</tr>
<tr>
<td>P-8: Alley</td>
<td>Runoff</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, 1,022 cf</td>
</tr>
<tr>
<td>P-8R: Roof</td>
<td>Runoff</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, 1,283 cf</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
Pond 2PGP3: Geopave
Peak Elev=17.90’ Storage=0.018 af Inflow=0.62 cfs 2,387 cf
Outflow=0.15 cfs 2,387 cf

Pond 3P: RetainIt
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

Pond 3PGPE: Geopave
Peak Elev=14.22’ Storage=8 cf Inflow=0.10 cfs 363 cf
Outflow=0.10 cfs 363 cf

Pond 3PGPN: Geopave
Peak Elev=14.85’ Storage=578 cf Inflow=0.87 cfs 3,321 cf
Outflow=0.32 cfs 3,321 cf

Pond 4P: RetainIt
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

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=15.77’ Storage=820 cf Inflow=0.90 cfs 3,507 cf
Outflow=0.22 cfs 3,507 cf

Pond 5P: RetainIt
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

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=14.63’ Storage=142 cf Inflow=0.30 cfs 1,144 cf
Outflow=0.13 cfs 1,144 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=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

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
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  
Primary=0.34 cfs  1,389 cf

Link SPRING 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
<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Description</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>B-1</td>
<td>Landscape Buffer North</td>
<td>930 sf</td>
<td>0.00</td>
<td>2.68&quot;</td>
<td>10.0</td>
<td>76</td>
<td>0.06</td>
<td>207 cf</td>
</tr>
<tr>
<td>B-2</td>
<td>Riverstone Buffer North</td>
<td>1,432 sf</td>
<td>0.00</td>
<td>3.04&quot;</td>
<td>10.0</td>
<td>80</td>
<td>0.10</td>
<td>363 cf</td>
</tr>
<tr>
<td>B-3</td>
<td>Riverstone Buffer North</td>
<td>1,354 sf</td>
<td>0.00</td>
<td>4.15&quot;</td>
<td>10.0</td>
<td>91</td>
<td>0.12</td>
<td>468 cf</td>
</tr>
<tr>
<td>B-4</td>
<td>Riverstone and Geopave</td>
<td>2,575 sf</td>
<td>0.00</td>
<td>3.23&quot;</td>
<td>10.0</td>
<td>82</td>
<td>0.19</td>
<td>693 cf</td>
</tr>
<tr>
<td>B-5</td>
<td>River Stone and</td>
<td>3,703 sf</td>
<td>0.00</td>
<td>3.23&quot;</td>
<td>10.0</td>
<td>82</td>
<td>0.28</td>
<td>997 cf</td>
</tr>
<tr>
<td>B-6</td>
<td>Riverstone Buffer and</td>
<td>3,261 sf</td>
<td>0.00</td>
<td>3.33&quot;</td>
<td>10.0</td>
<td>83</td>
<td>0.25</td>
<td>904 cf</td>
</tr>
<tr>
<td>B-7</td>
<td>Riverstone and Geopave</td>
<td>2,955 sf</td>
<td>0.00</td>
<td>3.14&quot;</td>
<td>10.0</td>
<td>81</td>
<td>0.21</td>
<td>772 cf</td>
</tr>
<tr>
<td>ISL 4</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00</td>
<td>2.68&quot;</td>
<td>10.0</td>
<td>76</td>
<td>0.02</td>
<td>68 cf</td>
</tr>
<tr>
<td>ISL-1</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00</td>
<td>2.68&quot;</td>
<td>10.0</td>
<td>76</td>
<td>0.02</td>
<td>68 cf</td>
</tr>
<tr>
<td>ISL-2</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00</td>
<td>2.68&quot;</td>
<td>10.0</td>
<td>76</td>
<td>0.02</td>
<td>68 cf</td>
</tr>
<tr>
<td>ISL-3</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00</td>
<td>2.68&quot;</td>
<td>10.0</td>
<td>76</td>
<td>0.02</td>
<td>68 cf</td>
</tr>
<tr>
<td>OS - 5</td>
<td>OFFSITE</td>
<td>2,249 sf</td>
<td>100.00</td>
<td>4.93&quot;</td>
<td>10.0</td>
<td>98</td>
<td>0.23</td>
<td>925 cf</td>
</tr>
<tr>
<td>OS-6E</td>
<td>COMM EAST</td>
<td>20,681 sf</td>
<td>100.00</td>
<td>4.93&quot;</td>
<td>10.0</td>
<td>98</td>
<td>2.08</td>
<td>8,501 cf</td>
</tr>
<tr>
<td>OS-6R</td>
<td>COMM ROOF</td>
<td>13,913 sf</td>
<td>100.00</td>
<td>4.93&quot;</td>
<td>10.0</td>
<td>98</td>
<td>1.40</td>
<td>5,719 cf</td>
</tr>
<tr>
<td>OS-6W</td>
<td>COMM-WEST</td>
<td>20,681 sf</td>
<td>100.00</td>
<td>4.93&quot;</td>
<td>10.0</td>
<td>98</td>
<td>2.08</td>
<td>8,501 cf</td>
</tr>
<tr>
<td>OS1</td>
<td>North Driveway</td>
<td>5,281 sf</td>
<td>100.00</td>
<td>4.93&quot;</td>
<td>10.0</td>
<td>98</td>
<td>0.52</td>
<td>2,171 cf</td>
</tr>
<tr>
<td>Subcatchment</td>
<td>Area</td>
<td>Impervious</td>
<td>Depth</td>
<td>Tc</td>
<td>CN</td>
<td>Runoff</td>
<td>Flow Length</td>
<td>Details</td>
</tr>
<tr>
<td>--------------</td>
<td>------</td>
<td>------------</td>
<td>-------</td>
<td>----</td>
<td>----</td>
<td>--------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>P-1: Northwest</td>
<td>30,547 sf</td>
<td>88.67%</td>
<td>4.70&quot;</td>
<td>10.0 min</td>
<td>96</td>
<td>3.02 cfs</td>
<td>11,968 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-10A: Alley</td>
<td>4,612 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.46 cfs</td>
<td>1,896 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-1R: ROOFS</td>
<td>1,400 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>99</td>
<td>0.14 cfs</td>
<td>576 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-2M: North Central</td>
<td>18,201 sf</td>
<td>74.95%</td>
<td>4.26&quot;</td>
<td>10.0 min</td>
<td>92</td>
<td>1.71 cfs</td>
<td>6,454 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-2NE: North Central</td>
<td>8,999 sf</td>
<td>88.73%</td>
<td>4.70&quot;</td>
<td>10.0 min</td>
<td>96</td>
<td>0.89 cfs</td>
<td>3,526 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-2R: Roofs, warehouse</td>
<td>4,125 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.41 cfs</td>
<td>1,696 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-2S: Between Buildings</td>
<td>1,292 sf</td>
<td>77.40%</td>
<td>4.36&quot;</td>
<td>10.0 min</td>
<td>93</td>
<td>0.12 cfs</td>
<td>470 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-3E: Northeast Corner</td>
<td>5,025 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.51 cfs</td>
<td>2,066 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-4R: Roof to 4P</td>
<td>2,828 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.28 cfs</td>
<td>1,163 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-4S: Paved Parking</td>
<td>7,833 sf</td>
<td>80.24%</td>
<td>4.48&quot;</td>
<td>10.0 min</td>
<td>94</td>
<td>0.76 cfs</td>
<td>2,922 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-6R: Roof</td>
<td>8,937 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.90 cfs</td>
<td>3,674 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-7: Slab Area - Repaved</td>
<td>30,112 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>3.03 cfs</td>
<td>12,378 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-7A: S CORNER ALLEY</td>
<td>2,831 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.28 cfs</td>
<td>1,164 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-7B: Paved Parking</td>
<td>6,605 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.66 cfs</td>
<td>2,715 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-7R: Roof</td>
<td>6,627 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.67 cfs</td>
<td>2,724 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-8: Alley</td>
<td>3,884 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.39 cfs</td>
<td>1,597 cf</td>
<td>Runoff Area</td>
</tr>
<tr>
<td>P-8R: Roof</td>
<td>4,876 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.49 cfs</td>
<td>2,004 cf</td>
<td>Runoff Area</td>
</tr>
</tbody>
</table>
### SSDC Proposed Site Plan

**Type III 24-hr 10-YEAR Rainfall = 5.17"**

<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>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.14 cfs</td>
</tr>
<tr>
<td>P-9R: West End Roofs</td>
<td>7,745 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.78 cfs</td>
</tr>
<tr>
<td>P3N: Northeast Corner</td>
<td>8,017 sf</td>
<td>71.71%</td>
<td>4.26&quot;</td>
<td>10.0 min</td>
<td>92</td>
<td>0.75 cfs</td>
</tr>
<tr>
<td>P4-N: Paved Parking</td>
<td>6,257 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.63 cfs</td>
</tr>
<tr>
<td>P4W: Paved Parking</td>
<td>6,437 sf</td>
<td>100.00%</td>
<td>4.93&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.65 cfs</td>
</tr>
</tbody>
</table>

#### Reach ASW1: Overland swale
- **Flow Length:** 260'
- Avg. Flow Depth: 0.25'  Max Vel: 1.01 fps
- Inflow: 4.55 cfs
- Capacity: 19.21 cfs
- Outflow: 4.34 cfs
- Storage: 6,452 cf

#### Reach ASW2: Overland swale
- **Flow Length:** 120.0'
- Avg. Flow Depth: 0.31'  Max Vel: 0.73 fps
- Inflow: 4.69 cfs
- Capacity: 12.15 cfs
- Outflow: 4.51 cfs
- Storage: 8,348 cf

#### Reach ASW3: Overland swale
- **Flow Length:** 160.0'
- Avg. Flow Depth: 0.14'  Max Vel: 0.52 fps
- Inflow: 1.06 cfs
- Capacity: 13.58 cfs
- Outflow: 0.99 cfs
- Storage: 11,351 cf

#### Reach STRT: EXISTING STREET
- **Flow Length:** 25.0'
- Avg. Flow Depth: 0.15'  Max Vel: 2.32 fps
- Inflow: 8.63 cfs
- Capacity: 63.73 cfs
- Outflow: 8.65 cfs
- Storage: 96,656 cf

#### Reach SW-3: Overland swale
- **Flow Length:** 160.0'
- Avg. Flow Depth: 0.05'  Max Vel: 1.67 fps
- Inflow: 0.99 cfs
- Capacity: 76.85 cfs
- Outflow: 0.98 cfs
- Storage: 11,351 cf

#### Reach TD1: Drain for slab to Geopave
- **Flow Length:** 200.0'
- Avg. Flow Depth: 0.53'  Max Vel: 2.83 fps
- Inflow: 3.03 cfs
- Capacity: 13.25 cfs
- Outflow: 2.93 cfs
- Storage: 12,378 cf

#### Reach TD2: East End of Buildings
- **Flow Length:** 50.0'
- Avg. Flow Depth: 0.25'  Max Vel: 2.68 fps
- Inflow: 0.67 cfs
- Capacity: 4.26 cfs
- Outflow: 0.66 cfs
- Storage: 2,724 cf

#### Pond 1P: RetainIt
- Peak Elev: 14.80'
- Storage: 3,746 cf
- Inflow: 5.54 cfs
- Primary: 2.92 cfs
- Outflow: 2.92 cfs

#### Pond 1PGP: Geopave Area
- Peak Elev: 17.60'
- Storage: 3,778 cf
- Inflow: 5.94 cfs
- Outflow: 5.49 cfs

#### Pond 2P: RetainIts
- Peak Elev: 14.87'
- Storage: 4,546 cf
- Inflow: 2.70 cfs
- Primary: 0.90 cfs
- Outflow: 0.90 cfs

#### Pond 2PGP1: Geopave
- Peak Elev: 15.70'
- Storage: 140 cf
- Inflow: 0.12 cfs
- Outflow: 0.02 cfs

#### Pond 2PGP2: Geopave
- Peak Elev: 17.02'
- Storage: 1,481 cf
- Inflow: 1.73 cfs
- Outflow: 1.02 cfs
Pond 2PGP3: Geopave
  Peak Elev=17.95'  Storage=0.020 af  Inflow=0.99 cfs  3,889 cf
  Outflow=0.88 cfs  3,889 cf

Pond 3P: RetainIt
  Peak Elev=15.15'  Storage=2,410 cf  Inflow=0.50 cfs  6,138 cf
  Primary=0.21 cfs  6,138 cf  Secondary=0.00 cfs  0 cf  Outflow=0.21 cfs  6,138 cf

Pond 3PGPE: Geopave
  Peak Elev=14.24'  Storage=16 cf  Inflow=0.19 cfs  693 cf
  Outflow=0.19 cfs  693 cf

Pond 3PGPN: Geopave
  Peak Elev=16.00'  Storage=1,359 cf  Inflow=1.40 cfs  5,445 cf
  Outflow=0.32 cfs  5,445 cf

Pond 4P: RetainIt
  Peak Elev=14.69'  Storage=2,500 cf  Inflow=0.92 cfs  10,368 cf
  Primary=0.44 cfs  10,271 cf  Secondary=0.00 cfs  0 cf  Outflow=0.44 cfs  10,271 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=17.31'  Storage=1,548 cf  Inflow=1.42 cfs  5,636 cf
  Outflow=0.52 cfs  5,636 cf

Pond 5P: RetainIt
  Peak Elev=15.27'  Storage=4,588 cf  Inflow=2.38 cfs  13,958 cf
  Primary=0.62 cfs  13,467 cf  Secondary=0.00 cfs  0 cf  Outflow=0.62 cfs  13,467 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=15.67'  Storage=425 cf  Inflow=0.91 cfs  3,620 cf
  Outflow=0.13 cfs  3,620 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=16.74'  Inflow=2.05 cfs  8,402 cf
  Primary=2.05 cfs  8,402 cf  Secondary=0.00 cfs  0 cf  Outflow=2.05 cfs  8,402 cf

Pond I-6: Alley Inlet
  Peak Elev=17.07'  Inflow=4.38 cfs  8,872 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=18.02’ Inflow=9.49 cfs 86,527 cf
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 85,305 cf
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 85,305 cf
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 40,293 cf
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 56,702 cf
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 56,702 cf
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 2,171 cf
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
- 0.00% Impervious
- Runoff Depth: 3.75"
- $T_c=10.0$ 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"
- $T_c=10.0$ 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"
- $T_c=10.0$ 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"
- $T_c=10.0$ 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"
- $T_c=10.0$ min
- $CN=82$
- $Runoff=0.37$ cfs
- $1,350$ cf

**Subcatchment B-6: Riverstone Buffer and**
- Runoff Area: 2,621 sf
- 0.00% Impervious
- Runoff Depth: 4.48"
- $T_c=10.0$ min
- $CN=83$
- $Runoff=0.33$ cfs
- $1,218$ cf

**Subcatchment B7: Riverstone and Geopave**
- Runoff Area: 2,955 sf
- 0.00% Impervious
- Runoff Depth: 4.27"
- $T_c=10.0$ 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"
- $T_c=10.0$ 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"
- $T_c=10.0$ 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"
- $T_c=10.0$ 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"
- $T_c=10.0$ 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"
- $T_c=10.0$ 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"
- $T_c=10.0$ 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"
- $T_c=10.0$ 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"
- $T_c=10.0$ 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’
- $T_c=10.8$ min
- $CN=98$
- $Runoff=0.65$ cfs
- $2,720$ cf
SSDC PROPOSED SITE PLAN

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

Subcatchment P-1: Northwest
Runoff Area=30,547 sf  88.67% Impervious  Runoff Depth=5.95"
  Tc=10.0 min  CN=96  Runoff=3.78 cfs  15,135 cf

Subcatchment P-10A: Alley
Runoff Area=4,612 sf  100.00% Impervious  Runoff Depth=6.18"
  Tc=10.0 min  CN=98  Runoff=0.58 cfs  2,376 cf

Subcatchment P-1R: ROOFS
Runoff Area=1,400 sf  100.00% Impervious  Runoff Depth=6.18"
  Tc=10.0 min  CN=98  Runoff=0.18 cfs  721 cf

Subcatchment P-2M: North Central
Runoff Area=18,201 sf  74.95% Impervious  Runoff Depth=5.48"
  Flow Length=180’  Tc=10.0 min  CN=92  Runoff=2.17 cfs  8,316 cf

Subcatchment P-2NE: North Central
Runoff Area=8,999 sf  88.73% Impervious  Runoff Depth=5.95"
  Tc=10.0 min  CN=96  Runoff=1.11 cfs  4,459 cf

Subcatchment P-2R: Roofs, warehouse
Runoff Area=4,125 sf  100.00% Impervious  Runoff Depth=6.18"
  Tc=10.0 min  CN=98  Runoff=0.52 cfs  2,125 cf

Subcatchment P-2S: Between Buildings
Runoff Area=1,292 sf  77.40% Impervious  Runoff Depth=5.60"
  Flow Length=180’  Tc=10.0 min  CN=93  Runoff=0.16 cfs  603 cf

Subcatchment P-3E: Northeast Corner
Runoff Area=5,025 sf  100.00% Impervious  Runoff Depth=6.18"
  Tc=10.0 min  CN=98  Runoff=0.63 cfs  2,588 cf

Subcatchment P-4R: Roof to 4P
Runoff Area=2,828 sf  100.00% Impervious  Runoff Depth=6.18"
  Tc=10.0 min  CN=98  Runoff=0.35 cfs  1,457 cf

Subcatchment P-4S: Paved Parking
Runoff Area=7,833 sf  80.24% Impervious  Runoff Depth=5.71"
  Flow Length=260’  Tc=10.0 min  CN=94  Runoff=0.95 cfs  3,729 cf

Subcatchment P-6R: Roof
Runoff Area=8,937 sf  100.00% Impervious  Runoff Depth=6.18"
  Tc=10.0 min  CN=98  Runoff=1.12 cfs  4,604 cf

Subcatchment P-7: Slab Area - Repaved
Runoff Area=30,112 sf  100.00% Impervious  Runoff Depth=6.18"
  Tc=10.0 min  CN=98  Runoff=3.77 cfs  15,511 cf

Subcatchment P-7A: S CORNER ALLEY
Runoff Area=2,831 sf  100.00% Impervious  Runoff Depth=6.18"
  Flow Length=160’  Tc=10.0 min  CN=98  Runoff=0.35 cfs  1,458 cf

Subcatchment P-7B: Paved Parking
Runoff Area=6,605 sf  100.00% Impervious  Runoff Depth=6.18"
  Flow Length=260’  Tc=10.0 min  CN=98  Runoff=0.83 cfs  3,402 cf

Subcatchment P-7R: Roof
Runoff Area=6,627 sf  100.00% Impervious  Runoff Depth=6.18"
  Tc=10.0 min  CN=98  Runoff=0.83 cfs  3,414 cf

Subcatchment P-8: Alley
Runoff Area=3,884 sf  100.00% Impervious  Runoff Depth=6.18"
  Tc=10.0 min  CN=98  Runoff=0.49 cfs  2,001 cf

Subcatchment P-8R: Roof
Runoff Area=4,876 sf  100.00% Impervious  Runoff Depth=6.18"
  Tc=10.0 min  CN=98  Runoff=0.61 cfs  2,512 cf
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
- 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
- 20,044 cf
- Primary: 1.12 cfs
- Secondary: 0.00 cfs
- Outflow: 1.12 cfs
- 20,044 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
<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 2PGP3: Geopave</td>
<td>17.97'</td>
<td>0.021 af</td>
<td>1.25 cfs</td>
<td>1.16 cfs</td>
</tr>
<tr>
<td>Pond 3P: RetainIt</td>
<td>15.56'</td>
<td>2,982 cf</td>
<td>0.52 cfs</td>
<td>0.24 cfs</td>
</tr>
<tr>
<td>Pond 3PGPE: Geopave</td>
<td>14.29'</td>
<td>37 cf</td>
<td>0.26 cfs</td>
<td>0.20 cfs</td>
</tr>
<tr>
<td>Pond 3PGPN: Geopave</td>
<td>16.89'</td>
<td>1,969 cf</td>
<td>1.77 cfs</td>
<td>0.32 cfs</td>
</tr>
<tr>
<td>Pond 4P: RetainIt</td>
<td>15.07'</td>
<td>3,230 cf</td>
<td>1.57 cfs</td>
<td>0.51 cfs</td>
</tr>
<tr>
<td>Pond 4PGP1: Geopave</td>
<td>15.62'</td>
<td>986 cf</td>
<td>1.15 cfs</td>
<td>0.30 cfs</td>
</tr>
<tr>
<td>Pond 4PGP2: Geopave</td>
<td>17.35'</td>
<td>1,638 cf</td>
<td>1.79 cfs</td>
<td>1.08 cfs</td>
</tr>
<tr>
<td>Pond 5P: RetainIt</td>
<td>15.65'</td>
<td>5,532 cf</td>
<td>2.88 cfs</td>
<td>0.70 cfs</td>
</tr>
<tr>
<td>Pond 5PGPN: Geopave</td>
<td>16.79'</td>
<td>1,255 cf</td>
<td>1.16 cfs</td>
<td>0.21 cfs</td>
</tr>
<tr>
<td>Pond 5PGPS: Geopave</td>
<td>16.53'</td>
<td>657 cf</td>
<td>0.64 cfs</td>
<td>0.13 cfs</td>
</tr>
<tr>
<td>Pond COMM-2: Storm Grate East Side</td>
<td>17.51'</td>
<td>428 cf</td>
<td>2.59 cfs</td>
<td>2.39 cfs</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>4.23 cfs</td>
</tr>
<tr>
<td>Pond I-5: MH5</td>
<td>16.89'</td>
<td>10,529 cf</td>
<td>2.55 cfs</td>
<td>10,529 cf</td>
</tr>
<tr>
<td>Pond I-6: Alley Inlet</td>
<td>17.13'</td>
<td>12,062 cf</td>
<td>5.87 cfs</td>
<td>12,062 cf</td>
</tr>
<tr>
<td>Pond MH-A1: Storm Manhole Alley</td>
<td>17.34'</td>
<td>20,321 cf</td>
<td>4.91 cfs</td>
<td>20,321 cf</td>
</tr>
<tr>
<td>Pond MH-A2: Storm Manhole Alley</td>
<td>16.89'</td>
<td>19,929 cf</td>
<td>0.84 cfs</td>
<td>19,929 cf</td>
</tr>
<tr>
<td>Pond MH-A3: Storm Manhole Alley</td>
<td>16.57'</td>
<td>20,659 cf</td>
<td>1.11 cfs</td>
<td>20,659 cf</td>
</tr>
</tbody>
</table>
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
<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>B-1: Landscape Buffer</td>
<td>930 sf</td>
<td>0.00%</td>
<td>5.79”</td>
<td>10.0</td>
<td>76</td>
<td>0.12 cfs</td>
<td>449 cf</td>
</tr>
<tr>
<td>B-2: Riverstone</td>
<td>1,432 sf</td>
<td>0.00%</td>
<td>6.27”</td>
<td>10.0</td>
<td>80</td>
<td>0.20 cfs</td>
<td>749 cf</td>
</tr>
<tr>
<td>B-3: Riverstone</td>
<td>1,354 sf</td>
<td>0.00%</td>
<td>7.61”</td>
<td>10.0</td>
<td>91</td>
<td>0.22 cfs</td>
<td>858 cf</td>
</tr>
<tr>
<td>B-4: Riverstone and Geopave</td>
<td>2,575 sf</td>
<td>0.00%</td>
<td>6.52”</td>
<td>10.0</td>
<td>82</td>
<td>0.38 cfs</td>
<td>1,398 cf</td>
</tr>
<tr>
<td>B-5: River Stone</td>
<td>3,703 sf</td>
<td>0.00%</td>
<td>6.52”</td>
<td>10.0</td>
<td>82</td>
<td>0.55 cfs</td>
<td>2,011 cf</td>
</tr>
<tr>
<td>B-6: Riverstone</td>
<td>3,261 sf</td>
<td>0.00%</td>
<td>6.64”</td>
<td>10.0</td>
<td>83</td>
<td>0.49 cfs</td>
<td>1,804 cf</td>
</tr>
<tr>
<td>B7: Riverstone and Geopave</td>
<td>2,955 sf</td>
<td>0.00%</td>
<td>6.40”</td>
<td>10.0</td>
<td>81</td>
<td>0.43 cfs</td>
<td>1,575 cf</td>
</tr>
<tr>
<td>ISL 4: River Stone</td>
<td>306 sf</td>
<td>0.00%</td>
<td>5.79”</td>
<td>10.0</td>
<td>76</td>
<td>0.04 cfs</td>
<td>148 cf</td>
</tr>
<tr>
<td>ISL-1: River Stone</td>
<td>306 sf</td>
<td>0.00%</td>
<td>5.79”</td>
<td>10.0</td>
<td>76</td>
<td>0.04 cfs</td>
<td>148 cf</td>
</tr>
<tr>
<td>ISL-2: River Stone</td>
<td>306 sf</td>
<td>0.00%</td>
<td>5.79”</td>
<td>10.0</td>
<td>76</td>
<td>0.04 cfs</td>
<td>148 cf</td>
</tr>
<tr>
<td>ISL-3: River Stone</td>
<td>306 sf</td>
<td>0.00%</td>
<td>5.79”</td>
<td>10.0</td>
<td>76</td>
<td>0.04 cfs</td>
<td>148 cf</td>
</tr>
<tr>
<td>OS - 5: OFFSITE</td>
<td>2,249 sf</td>
<td>100.00%</td>
<td>8.45”</td>
<td>10.0</td>
<td>98</td>
<td>0.38 cfs</td>
<td>1,584 cf</td>
</tr>
<tr>
<td>OS-6E: COMM EAST</td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>8.45”</td>
<td>10.0</td>
<td>98</td>
<td>3.51 cfs</td>
<td>14,563 cf</td>
</tr>
<tr>
<td>OS-6R: COMM ROOF</td>
<td>13,913 sf</td>
<td>100.00%</td>
<td>8.45”</td>
<td>10.0</td>
<td>98</td>
<td>2.36 cfs</td>
<td>9,797 cf</td>
</tr>
<tr>
<td>OS-6W: COMM-WEST</td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>8.45”</td>
<td>10.0</td>
<td>98</td>
<td>3.51 cfs</td>
<td>14,563 cf</td>
</tr>
<tr>
<td>OS1: North Driveway</td>
<td>5,281 sf</td>
<td>100.00%</td>
<td>8.45”</td>
<td>10.8</td>
<td>98</td>
<td>0.88 cfs</td>
<td>3,719 cf</td>
</tr>
<tr>
<td>Subcatchment</td>
<td>Area</td>
<td>Impervious</td>
<td>Depth</td>
<td>Tc</td>
<td>CN</td>
<td>Runoff</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>------</td>
<td>------------</td>
<td>-------</td>
<td>----</td>
<td>----</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>P-1: Northwest</td>
<td>30,547 sf</td>
<td>88.67%</td>
<td>8.21&quot;</td>
<td>10.0 min</td>
<td>96</td>
<td>5.15 cfs 20,897 cf</td>
<td></td>
</tr>
<tr>
<td>P-10A: Alley</td>
<td>4,612 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.78 cfs 3,248 cf</td>
<td></td>
</tr>
<tr>
<td>P-1R: ROOFS</td>
<td>1,400 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.24 cfs 986 cf</td>
<td></td>
</tr>
<tr>
<td>P-2M: North Central</td>
<td>18,201 sf</td>
<td>74.95%</td>
<td>7.73&quot;</td>
<td>10.0 min</td>
<td>92</td>
<td>3.00 cfs 11,720 cf</td>
<td></td>
</tr>
<tr>
<td>P-2NE: North Central</td>
<td>8,999 sf</td>
<td>88.73%</td>
<td>8.21&quot;</td>
<td>10.0 min</td>
<td>96</td>
<td>1.52 cfs 6,156 cf</td>
<td></td>
</tr>
<tr>
<td>P-2R: Roofs, warehouse</td>
<td>4,125 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.70 cfs 2,905 cf</td>
<td></td>
</tr>
<tr>
<td>P-2S: Between Buildings</td>
<td>1,292 sf</td>
<td>77.40%</td>
<td>7.85&quot;</td>
<td>10.0 min</td>
<td>93</td>
<td>0.21 cfs 845 cf</td>
<td></td>
</tr>
<tr>
<td>P-3E: Northeast Corner</td>
<td>5,025 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.85 cfs 3,538 cf</td>
<td></td>
</tr>
<tr>
<td>P-4R: Roof to 4P</td>
<td>2,828 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.48 cfs 1,991 cf</td>
<td></td>
</tr>
<tr>
<td>P-4S: Paved Parking</td>
<td>7,833 sf</td>
<td>80.24%</td>
<td>7.97&quot;</td>
<td>10.0 min</td>
<td>94</td>
<td>1.31 cfs 5,201 cf</td>
<td></td>
</tr>
<tr>
<td>P-6R: Roof</td>
<td>8,937 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>1.52 cfs 6,293 cf</td>
<td></td>
</tr>
<tr>
<td>P-7: Slab Area - Repaved</td>
<td>30,112 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>5.11 cfs 21,203 cf</td>
<td></td>
</tr>
<tr>
<td>P-7A: S CORNER ALLEY</td>
<td>2,831 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.48 cfs 1,993 cf</td>
<td></td>
</tr>
<tr>
<td>P-7B: Paved Parking</td>
<td>6,605 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>1.12 cfs 4,651 cf</td>
<td></td>
</tr>
<tr>
<td>P-7R: Roof</td>
<td>6,627 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>1.12 cfs 4,666 cf</td>
<td></td>
</tr>
<tr>
<td>P-8: Alley</td>
<td>3,884 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.66 cfs 2,735 cf</td>
<td></td>
</tr>
<tr>
<td>P-8R: Roof</td>
<td>4,876 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.83 cfs 3,433 cf</td>
<td></td>
</tr>
</tbody>
</table>
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 P4-W: 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  
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=0.41'  Max Vel=0.85 fps  Inflow=7.90 cfs  17,285 cf  
n=0.016  L=120.0'  S=0.0005 '/'  Capacity=12.15 cfs  Outflow=7.72 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  
n=0.016  L=160.0'  S=0.0006 '/'  Capacity=13.58 cfs  Outflow=3.97 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  
n=0.016  L=25.0'  S=0.0080 '/'  Capacity=63.73 cfs  Outflow=12.25 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  
n=0.016  L=160.0'  S=0.0200 '/'  Capacity=76.85 cfs  Outflow=3.89 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  
n=0.015  L=200.0'  S=0.0025 '/'  Capacity=12.25 cfs  Outflow=4.97 cfs  21,203 cf

Reach TD2: East End of Buildings
Avg. Flow Depth=0.30'  Max Vel=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=17.18'  Storage=7,551 cf  Inflow=7.57 cfs  42,845 cf  
Primary=5.70 cfs  42,845 cf  Secondary=0.00 cfs  0 cf  Outflow=5.70 cfs  42,845 cf

Pond 1PGP: Geopave Area
Peak Elev=17.82'  Storage=5,378 cf  Inflow=10.13 cfs  42,396 cf  
Outflow=4.97 cfs  21,203 cf

Pond 2P: RetainIts
Peak Elev=16.82'  Storage=9,194 cf  Inflow=6.38 cfs  28,814 cf  
Primary=1.60 cfs  28,148 cf  Secondary=0.00 cfs  0 cf  Outflow=1.60 cfs  28,148 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=17.11'  Storage=1,881 cf  Inflow=3.02 cfs  12,565 cf  
Outflow=2.68 cfs  12,565 cf
SSDC PROPOSED SITE PLAN
Type III 24-hr 100-YEAR Rainfall=8.69"

2020-02-23 SSDC-1699.C PROPOSED
Prepared by Windows User
Printed 3/4/2020

Pond 2PGP3: Geopave
Peak Elev=17.99' Storage=0.023 af Inflow=1.72 cfs 6,905 cf
Outflow=1.63 cfs 6,905 cf

Pond 3P: Retainit
Peak Elev=17.04' Storage=3,778 cf Inflow=1.42 cfs 11,105 cf
Primary=0.31 cfs 11,105 cf Secondary=0.00 cfs 0 cf Outflow=0.31 cfs 11,105 cf

Pond 3PGPE: Geopave
Peak Elev=14.50' Storage=130 cf Inflow=0.38 cfs 1,398 cf
Outflow=0.20 cfs 1,398 cf

Pond 3PGPN: Geopave
Peak Elev=17.44' Storage=2,434 cf Inflow=2.43 cfs 9,707 cf
Outflow=1.22 cfs 9,707 cf

Pond 4P: Retainlt
Peak Elev=17.68' Storage=7,842 cf Inflow=2.44 cfs 9,882 cf
Primary=0.61 cfs 18,193 cf Secondary=0.00 cfs 0 cf Outflow=0.61 cfs 18,193 cf

Pond 5P: Retainlt
Peak Elev=17.68' Storage=7,842 cf Inflow=3.79 cfs 24,416 cf
Primary=1.00 cfs 23,758 cf Secondary=0.49 cfs 167 cf Outflow=1.49 cfs 23,925 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=17.28' Inflow=3.46 cfs 14,393 cf
Primary=3.46 cfs 14,393 cf Secondary=0.00 cfs 0 cf Outflow=3.46 cfs 14,393 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
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

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% Pervious Area</td>
<td></td>
</tr>
</tbody>
</table>

Tc Length Slope Velocity Capacity Description
(min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, Landscape Buffer

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% Pervious Area</td>
<td></td>
</tr>
</tbody>
</table>

Tc Length Slope Velocity Capacity Description
(min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, River Stone Buffer

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

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

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></td>
<td>100.00% 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 - 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></td>
<td>100.00% 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 - 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’ wide

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"

<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></td>
<td>100.00% Pervious Area</td>
</tr>
</tbody>
</table>

### 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"

<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></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 Island</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 ISL-3: River Stone Island

Landscape Buffer draining to east along Property line
About 8' wide
GeoPave 18' wide

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% Pervious Area</td>
<td></td>
</tr>
</tbody>
</table>

Tc | Length | Slope | Velocity | Capacity |
---|--------|-------|----------|----------|
   | (min)  | (feet) | (ft/ft)  | (ft/sec) |
10.0 | Direct Entry, River Stone Island |

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% Impervious Area</td>
<td></td>
</tr>
</tbody>
</table>

Tc | Length | Slope | Velocity | Capacity |
---|--------|-------|----------|----------|
   | (min)  | (feet) | (ft/ft)  | (ft/sec) |
10.0 | Direct Entry, Paved driveway alley |

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 draianage 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</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>9.9</td>
<td>100</td>
<td>0.0001</td>
<td>0.17</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>0.9</td>
<td>75</td>
<td>0.0050</td>
<td>1.44</td>
<td></td>
<td><strong>Shallow Concentrated Flow, Paved</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paved  Kv = 20.3 fps</td>
</tr>
</tbody>
</table>

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>
</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>Direct Entry, Pavement area and Geopave</td>
<td></td>
<td></td>
<td></td>
<td></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>

---

<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</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>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>
</tbody>
</table>

8.7 180  Total, Increased to minimum Tc = 10.0 min
### Summary for Subcatchment P-2NE: North Central

North Central Parking and Geopave area

Runoff = \( 0.46 \text{ cfs @ 1.15 hrs, Volume=} \ 645 \text{ cf, Depth=} \ 0.86" \)

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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8,999</td>
<td>96</td>
<td>Weighted Average</td>
</tr>
<tr>
<td>1,014</td>
<td>11.27%</td>
<td>Pervious Area</td>
</tr>
<tr>
<td>7,985</td>
<td>88.73%</td>
<td>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 = \( 0.24 \text{ cfs @ 1.15 hrs, Volume=} \ 356 \text{ cf, Depth=} \ 1.03" \)

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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area (sf)</th>
<th>CN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,125</td>
<td>100.00%</td>
<td>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 = \( 0.05 \text{ cfs @ 1.16 hrs, Volume=} \ 70 \text{ cf, Depth=} \ 0.65" \)

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"
Area (sf) | CN | Description
---|---|---
1,000 | 98 | Sidewalk and pavers
* 292 | 76 | Geopave Infiltration area 2pgp1
1,292 | 93 | Weighted Average
292 | 22.60% | Pervious Area
1,000 | 77.40% | Impervious Area

<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>
</table>
| 6.4 | 100 | 0.0003 | 0.26 | Sheet Flow, Slab
| 1.9 | 40 | 0.0003 | 0.35 | Shallow Concentrated Flow, Slab
| 0.4 | 40 | 0.0080 | 1.82 | Shallow Concentrated Flow, Pavement

8.7 | 180 | Total, Increased to minimum Tc = 10.0 min

Summary for Subcatchment P-3E: Northeast Corner

Runoff = 0.30 cfs @ 1.15 hrs, Volume= 433 cf, Depth= 1.03"

Summary for Subcatchment P-4R: Roof to 4P

Runoff = 0.17 cfs @ 1.15 hrs, Volume= 244 cf, Depth= 1.03"
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"

Area (sf) CN Description
* 6,285 98 Paved parking, HSG D
* 1,548 76 Geopave Infiltration 4PGP2

<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></td>
<td>0.66</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>1.6</td>
<td>110</td>
<td>0.0030</td>
<td></td>
<td>1.11</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>0.5</td>
<td>50</td>
<td>0.0070</td>
<td></td>
<td>1.70</td>
<td><strong>Shallow Concentrated Flow, Paved</strong></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"

Area (sf) CN Description
<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><strong>Direct Entry, Roof</strong></td>
</tr>
</tbody>
</table>
Summary for Subcatchment P-7: Slab Area - Repaved

Regrade 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

Runoff = 0.39 cfs @ 1.15 hrs, Volume= 571 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

<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>

<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-8: Alley

Alley flows to 5PGPS

Runoff = 0.23 cfs @ 1.15 hrs, Volume= 335 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

<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>

<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, 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 (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
---|---------------|--------------|------------------|----------------|-------------|
10.0 |                |              |                  |                | Direct Entry, Roof |

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 (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
---|---------------|--------------|------------------|----------------|-------------|
10.0 |                |              |                  |                | Direct Entry, Alley Mid |

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>*</td>
<td>7,745</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>* 5,749</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>* 2,268</td>
<td>76</td>
<td>Geopave Infiltration Area</td>
</tr>
<tr>
<td>8,017</td>
<td>92</td>
<td>Weighted Average</td>
</tr>
<tr>
<td>2,268</td>
<td>28.29% Pervious Area</td>
<td></td>
</tr>
<tr>
<td>5,749</td>
<td>71.71% Impervious Area</td>
<td></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>* 6,257</td>
<td>98</td>
<td>Paved parking, HSG D</td>
</tr>
<tr>
<td>6,257</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><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>1.6</td>
<td>110</td>
<td>0.0030</td>
<td>1.11</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>0.5</td>
<td>50</td>
<td>0.0070</td>
<td>1.70</td>
<td></td>
<td><strong>Shallow Concentrated Flow, Paved</strong></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>6,437</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>2.5</td>
<td>100</td>
<td>0.0030</td>
<td>0.66</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>1.6</td>
<td>110</td>
<td>0.0030</td>
<td>1.11</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>0.5</td>
<td>50</td>
<td>0.0070</td>
<td>1.70</td>
<td></td>
<td><strong>Shallow Concentrated Flow, Paved</strong></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, Attenu= 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

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1A 13.50'</td>
<td>0 cf</td>
<td>32.00'W x 104.00'L x 3.17'H Field A</td>
<td></td>
</tr>
<tr>
<td>#2A 13.50'</td>
<td>7,191 cf</td>
<td>retain_it retain_it 2.5' x 52 Inside #1</td>
<td></td>
</tr>
<tr>
<td>#3 16.67'</td>
<td>1,117 cf</td>
<td>30.00'D x 1.58'H Riser</td>
<td></td>
</tr>
<tr>
<td>#4 18.25'</td>
<td>1,500 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
<td></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>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

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Primary 13.40'</td>
<td>24.0'' Round HDPE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#2 Device 1 13.50'</td>
<td>11.0'' Vert. Orifice/Grate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#3 Secondary 18.25'</td>
<td>1.0'' x 4.0'' Horiz. E TYPE STRM FLW X 4.00 columns</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Limited to weir flow at low heads

**Primary OutFlow** Max=0.50 cfs @ 1.65 hrs HW=13.86' (Free Discharge)

1=HDPE (Passes 0.50 cfs of 0.85 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.50 cfs @ 2.05 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=13.50' (Free Discharge)
3=E TYPE STRM FLW (Controls 0.00 cfs)

**Summary for Pond 1PGP: Geopave Area**

<table>
<thead>
<tr>
<th>Inflow Area</th>
<th>61,271 sf, 93.35% Impervious, Inflow Depth = 0.94&quot; for 1 NJWQ event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflow</td>
<td>3.23 cfs @ 1.17 hrs, Volume= 4,790 cf</td>
</tr>
<tr>
<td>Outflow</td>
<td>0.95 cfs @ 1.43 hrs, Volume= 4,790 cf, Atten= 71%, Lag= 15.4 min</td>
</tr>
<tr>
<td>Primary</td>
<td>0.95 cfs @ 1.43 hrs, Volume= 4,790 cf</td>
</tr>
</tbody>
</table>

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 16.65' @ 1.42 hrs Surf.Area= 6,822 sf Storage= 2,573 cf

Plug-Flow detention time= 49.1 min calculated for 4,789 cf (100% of inflow)
Center-of-Mass det. time= 49.1 min (126.0 - 76.9)

**Volume Invert Avail.Storage Storage Description**

| #1 | Invert 17.20' | Avail.Storage = 208 cf | Geopave units (Prismatic) Listed below (Recalc) 692 cf Overall x 30.0% Voids |
| #2 | Invert 16.60' | Avail.Storage = 623 cf | Crushed gravel 3/8"-1" (Prismatic) Listed below (Recalc) 2,077 cf Overall x 30.0% Voids |
| #3 | Invert 14.10' | Avail.Storage = 2,520 cf | 32.00'W x 105.00'L x 2.50'H TSS basin unit 8,400 cf Overall x 30.0% Voids |
| #4 | Invert 17.50' | Avail.Storage = 3,683 cf | Parking Area (Prismatic) Listed below (Recalc) 7,033 cf Total Available Storage |

**Elevation Surf.Area Inc.Store Cum.Store**

<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>

<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>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

<table>
<thead>
<tr>
<th>#</th>
<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><strong>12.0&quot; Round 12&quot; PVC</strong></td>
<td></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 4.00</strong></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Device 2</td>
<td>14.10'</td>
<td><strong>6.000 in/hr Exfiltration over Surface area</strong></td>
<td></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></td>
<td></td>
</tr>
</tbody>
</table>

#### Summary for Pond 2P: RetainIts

Inflow Area = 43,194 sf, 83.10% Impervious, Inflow Depth = 0.77" for 1 NJWQ event

<table>
<thead>
<tr>
<th>Inflow</th>
<th>1.08 cfs @ 1.15 hrs, Volume= 2,783 cf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outflow</td>
<td>0.27 cfs @ 2.15 hrs, Volume= 2,117 cf, Atten= 75%, Lag= 60.5 min</td>
</tr>
<tr>
<td>Primary</td>
<td>0.27 cfs @ 2.15 hrs, Volume= 2,117 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= 0.00-200.00 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) 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>#2A</td>
<td>13.50'</td>
<td>0 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>#3A</td>
<td>13.50'</td>
<td>8,321 cf</td>
<td>30.00′D x 0.50′H Riser</td>
</tr>
<tr>
<td>#4</td>
<td>16.20'</td>
<td>353 cf</td>
<td>9,924 cf Total Available Storage</td>
</tr>
</tbody>
</table>

Storage Group A created with Chamber Wizard

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<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
#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

| Inflow Area = 1,292 sf, 77.40% Impervious, Inflow Depth = 0.65'' for 1 NJWQ event |
| Inflow = 0.05 cfs @ 1.16 hrs, Volume= 70 cf |
| Outflow = 0.02 cfs @ 1.10 hrs, Volume= 70 cf, Atten= 61%, Lag= 0.0 min |
| Primary = 0.02 cfs @ 1.10 hrs, Volume= 70 cf |

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs  
Peak Elev= 14.36' @ 1.36 hrs  
Surf.Area= 290 sf  
Storage= 22 cf

Plug-Flow detention time= 10.4 min calculated for 70 cf (100% of inflow)  
Center-of-Mass det. time= 10.4 min ( 89.0 - 78.6 )

<table>
<thead>
<tr>
<th>Volume</th>
<th>Invert</th>
<th>Avail.Storage</th>
<th>Storage Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 14.10'</td>
<td>270 cf</td>
<td><strong>14.50'W x 20.00'L x 3.10'H Geopave Unit</strong> 899 cf Overall x 30.0% Voids</td>
<td></td>
</tr>
<tr>
<td>#2 17.20'</td>
<td>104 cf</td>
<td><strong>Custom Stage Data (Prismatic) Listed below (Recalc)</strong> 373 cf Total Available Storage</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.20</td>
<td>290</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>400</td>
<td>104</td>
<td>104</td>
</tr>
</tbody>
</table>

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

L = 14.10'  
#3 Device 2

L = 17.00'  
#4 Device 1

3,000 in/hr Exfiltration over Surface area

Inlet / Outlet Invert = 13.80' / 13.70'  S = 0.0100 '/'  Cc = 0.900  
n = 0.012, Flow Area = 0.09 sf

Exfiltration

Primary OutFlow Max = 0.02 cfs @ 1.10 hrs  HW = 14.16' (Free Discharge)

1 = 6" PVC (Passes 0.02 cfs of 0.66 cfs potential flow)

2 = 4" PVC drains (Passes 0.02 cfs of 0.34 cfs potential flow)

3 = Exfiltration (Exfiltration Controls 0.02 cfs)

4 = E-Type Grate (Controls 0.00 cfs)

Summary for Pond 2PGP2: Geopave

Geopave area receives pavement DA P-2  
Discharges to 2P

<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 4,640 cf Overall × 30.0% Voids</td>
</tr>
</tbody>
</table>

3,776 cf Total Available Storage

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></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>
</table>
| #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=14.15’ (Free Discharge)
1=12" PVC (Passes 0.22 cfs of 0.66 cfs potential flow)
2=4" PVC drains (Passes 0.22 cfs of 0.95 cfs potential flow)
3=Exfiltration (Exfiltration Controls 0.22 cfs)
4=E-Type Grate (Controls 0.00 cfs)

**Summary for Pond 2PGP3: Geopave**

Receives DA B-1 North edge of lot, including river rock edge

Inflow Area = 10,431 sf, 76.55% Impervious,  Inflow Depth = 0.77” for 1 NJWQ event

- Inflow = 0.47 cfs @ 1.15 hrs, Volume= 665 cf
- Outflow = 0.07 cfs @ 1.00 hrs, Volume= 665 cf, Atten= 85%, Lag= 0.0 min
- Primary = 0.07 cfs @ 1.00 hrs, Volume= 665 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 16.57’ @ 1.66 hrs  Surf.Area= 0.023 ac  Storage= 0.009 af

Plug-Flow detention time= 53.0 min calculated for 665 cf (100% of inflow)
Center-of-Mass det. time= 53.0 min (129.6 - 76.6 )

<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>15.30'</td>
<td>0.018 af</td>
<td>28.00’W x 36.00’L x 2.60’H Geopave Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.060 af Overall x 30.0% Voids</td>
</tr>
<tr>
<td>#2</td>
<td>17.90'</td>
<td>0.006 af</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.024 af 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>(acres)</td>
<td>(acre-feet)</td>
<td>(acre-feet)</td>
</tr>
<tr>
<td>17.90</td>
<td>0.023</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>18.00</td>
<td>0.092</td>
<td>0.006</td>
<td>0.006</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>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: Retain it

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,  Attenu= 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 )

Service Area

Volume Invert Avail.Storage Storage Description
#1B 13.40’ 0 cf 40.00’W x 40.00’L x 3.17’H Field B
#2B 13.40’ 3,445 cf retain it retain it 2.5’ x 25 Inside #1
#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, Atten= 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</td>
<td>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>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4,752 cf Overall x 30.0% Voids</td>
</tr>
<tr>
<td>#2</td>
<td>17.50'</td>
<td>900 cf</td>
<td><strong>Custom Stage Data (Prismatic)</strong> Listed below (Recalc)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2,326 cf Total Available Storage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.50</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>

<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>13.90'</td>
<td><strong>8.0'' Round 8'' PVC</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 70.0' RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.90' / 13.70' S= 0.0029 '/' 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>14.00'</td>
<td><strong>4.0'' Round 4'' PVC drains X 2.00</strong></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= 14.00' / 13.70' S= 0.0150 '/' 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>14.20'</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>48.0'' x 48.0'' Horiz. E-Type Grate</strong> 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=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 0.00 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 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>
<td>7,711 cf Overall x 30.0% Voids</td>
</tr>
<tr>
<td>#2 17.40'</td>
<td>305 cf</td>
<td><strong>Custom Stage Data (Prismatic)</strong> Listed below (Recalc)</td>
<td></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>

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=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 0.35 cfs potential flow)
- **3=Exfiltration** (Exfiltration Controls 0.32 cfs)
- **4=E-Type Grate** (Controls 0.00 cfs)

Summary for Pond 4P: RetainIt
Inflow Area = 27,364 sf, 79.69% Impervious, Inflow Depth = 0.82'' for 1 NJWQ event
Inflow = 0.67 cfs @ 1.18 hrs, Volume= 1,875 cf
Outflow = 0.24 cfs @ 2.09 hrs, Volume= 1,779 cf, Atten= 64%, Lag= 54.8 min
Primary = 0.24 cfs @ 2.09 hrs, Volume= 1,779 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= 13.94' @ 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
#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
( feet ) (sq-ft) (cubic-feet) (cubic-feet)
17.45 200 0 0
17.90 2,000 495 495

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 GRADE X 4.00 columns
X 14 rows C= 0.600 in 24.0'' Grade (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 GRADE (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, Atten= 27%, Lag= 2.8 min
Primary = 0.30 cfs @ 1.20 hrs, Volume= 607 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 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>
<tr>
<td></td>
<td></td>
<td></td>
<td>3,751 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>2,160</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)

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, Atten= 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)

### Volume

<table>
<thead>
<tr>
<th>#</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

### 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>17.30</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

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>Outflow 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>#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>#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) Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

### 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”W x 36.0”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”W x 44.0”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>

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-ft)</td>
<td>(cubic-ft)</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 Outlet Devices

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>10.0” Round HDPE DUAL WALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.50’</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’ / 10.00’ S= 0.3500 ’/” Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.55 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Device 1</td>
<td>13.60’</td>
<td>4.4” Vert. Orifice/Grate C= 0.600</td>
</tr>
<tr>
<td>#3</td>
<td>Secondary</td>
<td>17.60’</td>
<td>1.0” x 4.0” Horiz. MANHOLE GRATE X 4.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 10 rows C= 0.600 in 24.0” Grate (35% 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=0.32 cfs @ 1.69 hrs HW=14.17’ (Free Discharge)
1=HDPE DUAL WALL (Passes 0.32 cfs of 1.31 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.32 cfs @ 3.00 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 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>

3,210 cf Total Available Storage

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.40</td>
<td>2,600</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
#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”**

**Prepared by Windows User**

**Printed 3/4/2020**

---

**Volume Invert Avail.Storage Storage Description**

<table>
<thead>
<tr>
<th>#1</th>
<th>14.10'</th>
<th>837 cf</th>
<th><strong>10.00’W x 90.00’L x 3.10’H Geopave Unit</strong> 2,790 cf Overall x 30.0% Voids</th>
</tr>
</thead>
<tbody>
<tr>
<td>#2</td>
<td>17.20'</td>
<td>543 cf</td>
<td><strong>Custom Stage Data (Prismatic) Listed below (Recalc)</strong> 1,380 cf 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>17.20</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**

<table>
<thead>
<tr>
<th>#1</th>
<th>Primary</th>
<th>13.70'</th>
<th><strong>6.0” Round 6” PVC X 4.00</strong>  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</th>
</tr>
</thead>
<tbody>
<tr>
<td>#2</td>
<td>Device 1</td>
<td>13.70'</td>
<td><strong>4.0” Round 4” PVC drains X 2.00</strong>  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</td>
</tr>
<tr>
<td>#3</td>
<td>Device 2</td>
<td>14.10'</td>
<td><strong>6.000 in/hr Exfiltration over Surface area</strong></td>
</tr>
<tr>
<td>#4</td>
<td>Device 1</td>
<td>17.25'</td>
<td><strong>1.0” x 9.0” Horiz. E-Type Grate X 4.00 columns X 14 rows C= 0.600</strong>  Limited to weir flow at low heads</td>
</tr>
</tbody>
</table>

**Primary OutFlow**

- **Max=0.13 cfs @ 1.10 hrs HW=14.15’ (Free Discharge)**
- **1=6” PVC**  (Passes 0.13 cfs of 1.80 cfs potential flow)
- **2=4” PVC drains**  (Passes 0.13 cfs of 0.44 cfs potential flow)
- **3=Exfiltration**  (Exfiltration Controls 0.13 cfs)
- **4=E-Type Grate**  (Controls 0.00 cfs)

**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 = 1.03” for 1 NJWQ event**

**Inflow = 1.22 cfs @ 1.15 hrs, Volume= 1,783 cf**

**Outflow = 1.13 cfs @ 1.19 hrs, Volume= 1,790 cf, Atten= 8%, Lag= 2.8 min**

**Primary = 0.35 cfs @ 1.19 hrs, Volume= 1,238 cf**

**Secondary = 0.78 cfs @ 1.19 hrs, Volume= 552 cf**

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

**Peak Elev= 17.40’ @ 1.19 hrs Surf.Area= 1,416 sf Storage= 234 cf**

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

Center-of-Mass det. time= 3.1 min (77.1 - 74.0)

**Volume Invert Avail.Storage Storage Description**

<table>
<thead>
<tr>
<th>#1</th>
<th>16.90'</th>
<th>3,400 cf</th>
<th><strong>Custom Stage Data (Prismatic) Listed below (Recalc)</strong></th>
</tr>
</thead>
</table>

---

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

**Page 64**
**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

---

### 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

<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><strong>4.0” Round PVC 4” OUT</strong></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>Device 1</td>
<td>14.10’</td>
<td><strong>18.0” Round RCP IN STM</strong></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= 0.013, Flow Area= 1.77 sf</td>
</tr>
<tr>
<td>#3</td>
<td>Secondary</td>
<td>17.29’</td>
<td><strong>1.0” x 4.0” Horiz. MH Lid X 4.00 columns</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 8 rows C= 0.600 in 24.0” 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=0.35 cfs @ 1.19 hrs HW=17.40’ (Free Discharge)

**Secondary OutFlow** Max=0.76 cfs @ 1.19 hrs HW=17.40’ (Free Discharge)

---

**Summary for Pond COMM-1: Grate SW corner Comm Bldg**

Storm Inlet SW corner of Commercial Building

- Inflow Area = 34,594 sf, 100.00% Impervious, Inflow Depth = 1.03” for 1 NJWQ event
- Inflow = 2.05 cfs @ 1.15 hrs, Volume= 2,982 cf
- Outflow = 2.08 cfs @ 1.15 hrs, Volume= 2,987 cf, Atten= 0%, Lag= 0.4 min
- Primary = 0.47 cfs @ 1.15 hrs, Volume= 1,716 cf
- Secondary = 1.61 cfs @ 1.15 hrs, Volume= 1,270 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= 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 )

### Volume Invert Avail.Storage Storage Description

| #1   | 16.90’ | 940 cf | Parking Lot (Prismatic) | Listed below (Recalc) |
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

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' 12.0" Round Culvert
  L= 30.0' RCP, groove end w/headwall, Ke= 0.200
  Inlet / Outlet Invert= 15.71' / 10.30' S= 0.1803 '/' Cc= 0.900
  n= 0.012, Flow Area= 0.79 sf

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)

17.34 0 0 0
17.50 100 8 8
### SSDC PROPOSED SITE PLAN

**NJ DEP 2-hr 1 NJWQ Rainfall = 1.25"**

**2020-02-23 SSDC-1699.C PROPOSED**

Prepared by Windows User

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

Page 68

---

**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= 1.88 cfs @ 1.36 hrs HW= 17.34' (Free Discharge)

**Secondary OutFlow**

- Max= 3.35 cfs @ 1.36 hrs HW= 17.34' (Free Discharge)

---

**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 )

**Volume Invert Avail.Storage Storage Description**

<table>
<thead>
<tr>
<th>#1</th>
<th>16.89'</th>
<th>5 cf</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Custom Stage Data (Prismatic) 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>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>

**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 @ 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)

<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>16.54'</td>
<td>115 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>16.54</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.00</td>
<td>500</td>
<td>115</td>
<td>115</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= 0.84 cfs @ 1.15 hrs HW=16.56’ (Free Discharge)
↑2=PVC (Barrel Controls 0.84 cfs @ 4.29 fps)

Secondary OutFlow Max= 0.11 cfs @ 1.15 hrs HW=16.56’ (Free Discharge)
↑1=MH Lid (Weir Controls 0.11 cfs @ 0.42 fps)

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
Peaked 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>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>17.29</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>

<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>11.12’</td>
<td>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</td>
<td></td>
</tr>
<tr>
<td>#2 Primary</td>
<td>14.10’</td>
<td>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 &amp; clean, Flow Area= 1.77 sf</td>
<td></td>
</tr>
<tr>
<td>#3 Secondary</td>
<td>17.29’</td>
<td>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</td>
<td></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: Existing 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

<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>8.74’</td>
<td>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</td>
<td></td>
</tr>
<tr>
<td>#2 Secondary</td>
<td>17.78’</td>
<td>1.0” x 2.0” Horiz. E-TYPE GRATE X 4.00 columns</td>
<td></td>
</tr>
</tbody>
</table>
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, Atten= 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= 9.54' @ 1.37 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' 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=10.65’ (Free Discharge)
↑1=PVC (Barrel Controls 3.26 cfs @ 4.15 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=8.74’ (Free Discharge)
↑2=E-TYPE GRADE ( Controls 0.00 cfs)

Summary for Pond MH-E3: Existing MH7-OFF
Summary for Pond PMH1: Proposed MH 1

Inflow Area = 105,395 sf, 88.33% Impervious, Inflow Depth = 0.79" for 1 NJWQ event
Inflow = 0.75 cfs @ 2.14 hrs, Volume= 6,915 cf
Outflow = 0.75 cfs @ 2.14 hrs, Volume= 6,915 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.75 cfs @ 2.14 hrs, Volume= 6,915 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= 13.00' @ 2.14 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=0.74 cfs @ 2.14 hrs HW=13.00’ (Free Discharge)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=12.60’ (Free Discharge)

Summary for Pond PMH2: Proposed MH2

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= 12.17' @ 2.15 hrs
**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

**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
SSDC PROPOSED SITE PLAN - DRAINAGE AREAS

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

Subcatchment OS-6R: COMM ROOF

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

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"
Tc=10.0 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"
Tc=10.0 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 sf
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 sf
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
Reach TD2: East End of Buildings

Storage=1,047 cft
Peak Elev=13.86'
Inflow Area=62,201 sq ft

Pond TP: RetainIt

Capacity=4.26 cfs
S=0.0080
L=50.0'
α=0.15
Max Vel=2.26 fps
Avg Flow Depth=0.17'
Inflow Area=6,627 sq ft

Inflow Area=62,201 sq ft
Peak Elev=13.86'
Storage=1,047 cft

Capacity=0.00 cfs

Hydrograph

Time (hours)
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0
Flow (cfs)
0.42
0.40
0.38
0.36
0.34
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.04
0.02
0.00

Inflow
Outflow

Secondary
Primary
Inflow
Outlet

Hydrograph

Time (hours)
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0
Flow (cfs)
1
0
0.95 cfs
0.50 cfs
0.50 cfs
0.00 cfs

Inflow Area=6,627 sq ft
Avg Flow Depth=0.17'
Storage=1,047 cft

Capacity=4.26 cfs
S=0.0080
L=50.0'
α=0.15
Max Vel=2.26 fps
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

Hydrograph

Inflow Area=1,292 sf
Peak Elev=14.36'
Storage=22 cf

Pond 2PGP2: Geopave

Hydrograph

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: 105,036 sf

**Pond PMH2: Proposed MH2**

- Inflow Area: 150,036 sf
- Peak Elev: 12.17'
- Inflow Area: 105,395 sf
Pond PMH3: Proposed MH 3

Hydrograph

Inflow Area = 150,036 sf
Peak Elev = 11.52'

Link Drive N: North Driveway

Hydrograph

Inflow Area = 5,281 sf
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

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 sf
- 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 sf
- 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 1PGP: 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

Hydrograph

- Inflow Area = 10,431 sq ft
- Peak Elev = 17.90'
- Storage = 0.018 ac

Pond 3P: Retainit

Hydrograph

- Inflow Area = 17,277 sq ft
- Peak Elev = 14.49'
- Storage = 1,497 cubic ft
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'

Pond MH-A1: Storm Manhole Alley

Inflow Area=63,520 sf
Peak Elev=17.34'
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=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

Hydrograph

Inflow Area=105,395 sf
Peak Elev=13.25'

Pond PMH2: Proposed MH2

Hydrograph

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

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
Reach TD2: East End of Buildings

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

Inflow Area=62,201 sf
Peak Elev=14.80'
Storage=3,746 cf
Pond 1PGP: Geopave Area

Inflow Area=61,271 sf
Peak Elev=17.60'
Storage=3,778 cf

Pond 2P: RetainIts

Inflow Area=43,194 sf
Peak Elev=14.87'
Storage=4,546 cf
Pond 2PGP1: Geopave

Hydrograph

Inflow Area = 1,292 sf
Peak Elev = 15.70'
Storage = 140 cf

Pond 2PGP2: Geopave

Hydrograph

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

Hydrograph

Inflow Area=9,866 sf
Peak Elev=15.89'
Storage=852 cf

Pond 5PGPS: Geopave

Hydrograph

Inflow Area=5,786 sf
Peak Elev=15.67'
Storage=425 cf
Pond I-5: MH5

Inflow Area = 20,440 sf  
Peak Elev = 16.74'

Pond MH-A1: Storm Manhole Alley

Inflow Area = 63,520 sf  
Peak Elev = 17.34'  
Storage = 0 cf
Pond MH-A2: Storm Manhole Alley

Hydrograph

<table>
<thead>
<tr>
<th>Time (hours)</th>
<th>Inflow Area=57,524 sf</th>
<th>Peak Elev=16.89'</th>
<th>Storage=0 cf</th>
<th>Flow (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>0.9</td>
<td></td>
<td></td>
<td>0.84 cfs</td>
</tr>
<tr>
<td>190</td>
<td>0.85</td>
<td></td>
<td></td>
<td>0.84 cfs</td>
</tr>
<tr>
<td>180</td>
<td>0.8</td>
<td></td>
<td></td>
<td>0.38 cfs</td>
</tr>
<tr>
<td>170</td>
<td>0.75</td>
<td></td>
<td></td>
<td>0.46 cfs</td>
</tr>
<tr>
<td>160</td>
<td>0.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>0.65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>140</td>
<td>0.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>130</td>
<td>0.55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>0.45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>0.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>0.35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>0.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>0.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>0.15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>0.05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pond MH-A3: Storm Manhole Alley

Hydrograph

<table>
<thead>
<tr>
<th>Time (hours)</th>
<th>Inflow Area=57,524 sf</th>
<th>Peak Elev=16.57'</th>
<th>Storage=0 cf</th>
<th>Flow (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>1.05</td>
<td></td>
<td></td>
<td>1.05 cfs</td>
</tr>
<tr>
<td>190</td>
<td>1.05</td>
<td></td>
<td></td>
<td>1.05 cfs</td>
</tr>
<tr>
<td>180</td>
<td>0.84</td>
<td></td>
<td></td>
<td>0.21 cfs</td>
</tr>
<tr>
<td>170</td>
<td>0.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>160</td>
<td>0.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>0.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>140</td>
<td>0.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>130</td>
<td>0.65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>0.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>0.55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>0.45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>0.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>0.35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>0.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>0.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>0.15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>0.05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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**: 17.88'
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 MH1

- 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

Inflow Area = 150,036 sf
Peak Elev = 11.98'

Link Drive N: North Driveway

Inflow Area = 5,281 sf
Reach ASW1: Overland swale

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

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

Inflow Area = 61,271 sf
Peak Elev = 17.67'
Storage = 4,176 cf

Pond 2P: RetainIts

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

Inflow Area=14,576 sf
Peak Elev=17.35'
Storage=1,638 cf

Pond 5P: RetainIt

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

Hydrograph

Inflow Area=105,395 sf
Peak Elev=13.67'

Pond PMH2: Proposed MH2

Hydrograph

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

- Average Flow Depth: 0.32'
- Maximum Velocity: 1.17 fps
- Manning's n: 0.016
- Length: 160.0'
- Slope: 0.0012 '/'
- Capacity: 19.21 cfs

Reach ASW2: Overland swale

- Inflow Area: 4,612 sf
- Average Flow Depth: 0.41'
- Maximum Velocity: 0.85 fps
- Manning's n: 0.016
- Length: 120.0'
- Slope: 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

Hydrograph

Inflow Area=61,271 sf
Peak Elev=17.82'
Storage=5,378 cf

Pond 2P: RetainIts

Hydrograph

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

Pond 4PGP1: Geopave

Inflow Area=9,960 sf
Peak Elev=16.74'
Storage=1,711 cf
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

Inflow Area=9,866 sf
Peak Elev=17.42'
Storage=1,576 cf

Pond 5PGPS: Geopave

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'

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'
Pond MH-E3: Existing MH-E-3-OFF

Hydrograph

Inflow Area=249,648 sf
Peak Elev=12.51'

Inflow
Outflow
Primary
Secondary

0.06 cfs
7.58 cfs

7.63 cfs

Pond MH-E4: Woodruff Inlet E-4

Hydrograph

Inflow Area=249,648 sf
Peak Elev=12.38'

Inflow
Outflow
Primary
Secondary

0.00 cfs
7.63 cfs
Pond PMH1: Proposed MH 1

- Inflow Area = 105,395 sq ft
- Peak Elev = 13.96'

Pond PMH2: Proposed MH 2

- Inflow Area = 150,036 sq ft
- Peak Elev = 13.11'
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>Geopave Infiltration 4PGP1 (B-5)</td>
</tr>
<tr>
<td>3,700</td>
<td>76</td>
<td>Geopave 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>0</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>0</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>0</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>0</td>
<td>4,560</td>
<td>Geopave Infiltration Area 2pgp3</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>292</td>
<td>Geopave Infiltration area 2pgp1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,502</td>
<td>Geopave Infiltration area 3GPGPE</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</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>0</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>0</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>0</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 Good</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</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 (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>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>4.0</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>3PGP</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>3PGP</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>3PGP</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>3PGP</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>5PGP</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>5PGP</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>5PGP</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>5PGP</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>8.0</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"

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=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 B-7: 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>Type</th>
<th>Runoff Area</th>
<th>Impervious</th>
<th>Runoff Depth</th>
<th>Tc (min)</th>
<th>CN</th>
<th>Runoff Rate</th>
<th>Volume (cf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-1: NW</td>
<td></td>
<td>30,556 sf</td>
<td>88.67%</td>
<td>0.86&quot;</td>
<td>10.0</td>
<td>96</td>
<td>1.56 cfs</td>
<td>2,189</td>
</tr>
<tr>
<td>P-10A: Alley</td>
<td></td>
<td>4,612 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0</td>
<td>98</td>
<td>0.27 cfs</td>
<td>398</td>
</tr>
<tr>
<td>P-1R: ROOFS</td>
<td></td>
<td>1,400 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0</td>
<td>98</td>
<td>0.08 cfs</td>
<td>121</td>
</tr>
<tr>
<td>P-2M: NC</td>
<td></td>
<td>18,201 sf</td>
<td>74.95%</td>
<td>0.60&quot;</td>
<td>10.0</td>
<td>92</td>
<td>0.66 cfs</td>
<td>903</td>
</tr>
<tr>
<td>P-2NE: NC</td>
<td></td>
<td>8,999 sf</td>
<td>88.73%</td>
<td>0.86&quot;</td>
<td>10.0</td>
<td>96</td>
<td>0.46 cfs</td>
<td>645</td>
</tr>
<tr>
<td>P-2R: Roofs, warehouse</td>
<td></td>
<td>4,125 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0</td>
<td>98</td>
<td>0.24 cfs</td>
<td>356</td>
</tr>
<tr>
<td>P-2S: BB</td>
<td></td>
<td>1,292 sf</td>
<td>77.40%</td>
<td>0.65&quot;</td>
<td>10.0</td>
<td>93</td>
<td>0.05 cfs</td>
<td>70</td>
</tr>
<tr>
<td>P-3E: NEC</td>
<td></td>
<td>5,025 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0</td>
<td>96</td>
<td>0.30 cfs</td>
<td>433</td>
</tr>
<tr>
<td>P-4R: Roof to 4P</td>
<td></td>
<td>2,828 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0</td>
<td>98</td>
<td>0.17 cfs</td>
<td>244</td>
</tr>
<tr>
<td>P-4S: Paved Parking</td>
<td></td>
<td>7,833 sf</td>
<td>80.24%</td>
<td>0.72&quot;</td>
<td>10.0</td>
<td>94</td>
<td>0.34 cfs</td>
<td>467</td>
</tr>
<tr>
<td>P-6R: Roof</td>
<td></td>
<td>8,937 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0</td>
<td>98</td>
<td>0.53 cfs</td>
<td>770</td>
</tr>
<tr>
<td>P-7: Slab Area - Repaved</td>
<td></td>
<td>30,112 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0</td>
<td>98</td>
<td>1.78 cfs</td>
<td>2,596</td>
</tr>
<tr>
<td>P-7A: S Corner Alley</td>
<td></td>
<td>2,831 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0</td>
<td>98</td>
<td>0.17 cfs</td>
<td>244</td>
</tr>
<tr>
<td>P-7B: Paved Parking</td>
<td></td>
<td>6,605 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0</td>
<td>98</td>
<td>0.39 cfs</td>
<td>569</td>
</tr>
<tr>
<td>P-7R: Roof</td>
<td></td>
<td>6,627 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0</td>
<td>98</td>
<td>0.39 cfs</td>
<td>571</td>
</tr>
<tr>
<td>P-8: Alley</td>
<td></td>
<td>3,884 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0</td>
<td>98</td>
<td>0.23 cfs</td>
<td>335</td>
</tr>
<tr>
<td>P-8R: Roof</td>
<td></td>
<td>4,876 sf</td>
<td>100.00%</td>
<td>1.03&quot;</td>
<td>10.0</td>
<td>98</td>
<td>0.29 cfs</td>
<td>420</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

Subcatchment P-9: Alley
Runoff Area=1,384 sf  100.00% Impervious  Runoff Depth=1.03"
Tc=10.0 min  CN=98  Runoff=0.08 cfs  119 cf

Subcatchment P-9R: West End 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 P3N: Northeast Corner
Runoff Area=8,026 sf  71.74% Impervious  Runoff Depth=0.60"
Tc=10.0 min  CN=92  Runoff=0.29 cfs  398 cf

Subcatchment P4-N: Paved Parking
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

Subcatchment P4W: Paved Parking
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

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=0.21’  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

Reach ASW3: Overland swale
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

Reach STRT: EXISTING STREET
Avg. Flow Depth=0.09’  Max Vel=1.66 fps  Inflow=3.79 cfs  17,671 cf
n=0.016  L=25.0’  S=0.0080 '/'  Capacity=63.73 cfs  Outflow=3.74 cfs  17,671 cf

Reach SW-3: Overland swale
Avg. Flow Depth=0.04’  Max Vel=1.51 fps  Inflow=0.75 cfs  2,122 cf
n=0.016  L=200.0’  S=0.0200 '/'  Capacity=6.25 cfs  Outflow=2.23 cfs  3,385 cf

Reach TD1: Drain for slab to Geopave
Avg. Flow Depth=0.44’  Max Vel=2.59 fps  Inflow=2.32 cfs  3,385 cf
n=0.013  L=200.0’  S=0.0025 '/'  Capacity=6.25 cfs  Outflow=2.23 cfs  3,385 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=13.97’ Storage=1,341 cf  Inflow=0.95 cfs  5,598 cf
Primary=0.84 cfs  5,598 cf  Secondary=0.00 cfs  0 cf  Outflow=0.84 cfs  5,598 cf

Pond 1PGP: Geopave Area
Peak Elev=17.02’ Storage=2,955 cf  Inflow=3.76 cfs  5,579 cf
Outflow=0.95 cfs  5,590 cf

Pond 2P: RetainIts
Peak Elev=13.96’ Storage=1,518 cf  Inflow=0.36 cfs  1,996 cf
Primary=0.17 cfs  1,330 cf  Secondary=0.00 cfs  0 cf  Outflow=0.17 cfs  1,330 cf

Pond 2PGP1: Geopave
Peak Elev=16.96’ Storage=249 cf  Inflow=0.29 cfs  426 cf
Outflow=0.04 cfs  426 cf

Pond 2PGP2: Geopave
Peak Elev=14.87’ Storage=372 cf  Inflow=0.70 cfs  1,329 cf
Outflow=0.22 cfs  1,329 cf
<table>
<thead>
<tr>
<th>Pond 2PGP3: Geopave</th>
<th>Peak Elev=16.14’ Storage=0.006 af  Inflow=0.47 cfs 665 cf  Outflow=0.14 cfs 667 cf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pond 3P: Retainit</td>
<td>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</td>
</tr>
<tr>
<td>Pond 3PGPE: Geopave</td>
<td>Peak Elev=14.21’ Storage=5 cf Inflow=0.03 cfs 47 cf  Outflow=0.03 cfs 47 cf</td>
</tr>
<tr>
<td>Pond 3PGPN: Geopave</td>
<td>Peak Elev=14.35’ Storage=238 cf Inflow=0.63 cfs 895 cf  Outflow=0.32 cfs 895 cf</td>
</tr>
<tr>
<td>Pond 4P: RetainIt</td>
<td>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</td>
</tr>
<tr>
<td>Pond 4PGP1: Geopave</td>
<td>Peak Elev=14.23’ Storage=86 cf Inflow=0.41 cfs 607 cf  Outflow=0.30 cfs 607 cf</td>
</tr>
<tr>
<td>Pond 4PGP2: Geopave</td>
<td>Peak Elev=16.48’ Storage=1,150 cf Inflow=1.41 cfs 2,039 cf  Outflow=0.22 cfs 2,039 cf</td>
</tr>
<tr>
<td>Pond 5P: RetainIt</td>
<td>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</td>
</tr>
<tr>
<td>Pond 5PGPN: Geopave</td>
<td>Peak Elev=14.34’ Storage=154 cf Inflow=0.43 cfs 636 cf  Outflow=0.21 cfs 636 cf</td>
</tr>
<tr>
<td>Pond 5PGPS: Geopave</td>
<td>Peak Elev=16.81’ Storage=731 cf Inflow=0.87 cfs 1,284 cf  Outflow=0.13 cfs 1,286 cf</td>
</tr>
<tr>
<td>Pond COMM-2: Storm Grate East Side</td>
<td>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</td>
</tr>
<tr>
<td>Pond COMM-1: Grate SW corner Comm Bldg</td>
<td>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</td>
</tr>
<tr>
<td>Pond I-5: MH5</td>
<td>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</td>
</tr>
<tr>
<td>Pond I-6: Alley Inlet</td>
<td>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</td>
</tr>
<tr>
<td>Pond MH-A1: Storm Manhole Alley</td>
<td>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</td>
</tr>
<tr>
<td>Pond MH-A2: Storm Manhole Alley</td>
<td>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</td>
</tr>
<tr>
<td>Pond MH-A3: Storm Manhole Alley</td>
<td>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</td>
</tr>
</tbody>
</table>
Pond MH-A4: Storm MH Comm Site Alley
- Peak Elev=17.29'
- Storage=0 cf
- Inflow=0.96 cfs
- Primary=0.96 cfs
- Secondary=0.00 cfs
- Outflow=0.96 cfs

Pond MH-E2: Existing MH-E2
- Peak Elev=10.46'
- Inflow=3.05 cfs
- Primary=3.05 cfs
- Secondary=0.00 cfs
- Outflow=3.05 cfs

Pond MH-E3: Existing MH-E3-OFF
- Peak Elev=9.45'
- Inflow=3.05 cfs
- Primary=3.05 cfs
- Secondary=0.00 cfs
- Outflow=3.05 cfs

Pond MH-E4: Woodruff Inlet E-4
- Peak Elev=8.11'
- Inflow=3.05 cfs
- Primary=3.05 cfs
- Secondary=0.00 cfs
- Outflow=3.05 cfs

Pond PMH1: Proposed MH 1
- Peak Elev=13.04'
- Inflow=0.89 cfs
- Primary=0.89 cfs
- Secondary=0.00 cfs
- Outflow=0.89 cfs

Pond PMH2: Proposed MH2
- Peak Elev=12.19'
- Inflow=1.21 cfs
- Primary=1.21 cfs
- Secondary=0.00 cfs
- Outflow=1.21 cfs

Pond PMH3: Proposed MH 3
- Peak Elev=11.55'
- Inflow=1.21 cfs
- Primary=1.21 cfs
- Secondary=0.00 cfs
- Outflow=1.21 cfs

Link Drive N: North Driveway
- Inflow=0.31 cfs
- Primary=0.31 cfs

Link SSPRING ST: Spring Street
- Inflow=0.31 cfs
- Primary=0.31 cfs

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
<table>
<thead>
<tr>
<th>Subcatchment Name</th>
<th>Runoff Area (sf)</th>
<th>Percent Impervious</th>
<th>Tc (min)</th>
<th>CN</th>
<th>Runoff Depth (in)</th>
<th>Runoff (cfs)</th>
<th>100 cf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subcatchment B-1: Landscape Buffer North</td>
<td>930</td>
<td>0.00%</td>
<td>10.0</td>
<td>76</td>
<td>1.29</td>
<td>0.03</td>
<td>100</td>
</tr>
<tr>
<td>Subcatchment B-2: Riverstone Buffer North</td>
<td>1,432</td>
<td>0.00%</td>
<td>10.0</td>
<td>80</td>
<td>1.55</td>
<td>0.05</td>
<td>185</td>
</tr>
<tr>
<td>Subcatchment B-3: Riverstone Buffer North</td>
<td>1,354</td>
<td>0.00%</td>
<td>10.0</td>
<td>91</td>
<td>2.44</td>
<td>0.08</td>
<td>275</td>
</tr>
<tr>
<td>Subcatchment B-4: Riverstone and Geopave</td>
<td>2,575</td>
<td>0.00%</td>
<td>10.0</td>
<td>82</td>
<td>1.69</td>
<td>0.10</td>
<td>363</td>
</tr>
<tr>
<td>Subcatchment B-5: River Stone and</td>
<td>3,703</td>
<td>0.00%</td>
<td>10.0</td>
<td>82</td>
<td>1.69</td>
<td>0.15</td>
<td>522</td>
</tr>
<tr>
<td>Subcatchment B-6: Riverstone Buffer and</td>
<td>3,261</td>
<td>0.00%</td>
<td>10.0</td>
<td>83</td>
<td>1.77</td>
<td>0.13</td>
<td>480</td>
</tr>
<tr>
<td>Subcatchment B-7: Riverstone and Geopave</td>
<td>2,955</td>
<td>0.00%</td>
<td>10.0</td>
<td>81</td>
<td>1.62</td>
<td>0.11</td>
<td>399</td>
</tr>
<tr>
<td>Subcatchment ISL 4: River Stone Island</td>
<td>306</td>
<td>0.00%</td>
<td>10.0</td>
<td>76</td>
<td>1.29</td>
<td>0.01</td>
<td>33</td>
</tr>
<tr>
<td>Subcatchment ISL-1: River Stone Island</td>
<td>306</td>
<td>0.00%</td>
<td>10.0</td>
<td>76</td>
<td>1.29</td>
<td>0.01</td>
<td>33</td>
</tr>
<tr>
<td>Subcatchment ISL-2: River Stone Island</td>
<td>306</td>
<td>0.00%</td>
<td>10.0</td>
<td>76</td>
<td>1.29</td>
<td>0.01</td>
<td>33</td>
</tr>
<tr>
<td>Subcatchment ISL-3: River Stone Island</td>
<td>306</td>
<td>0.00%</td>
<td>10.0</td>
<td>76</td>
<td>1.29</td>
<td>0.01</td>
<td>33</td>
</tr>
<tr>
<td>Subcatchment OS - 5: OFFSITE</td>
<td>2,249</td>
<td>100.00%</td>
<td>10.0</td>
<td>98</td>
<td>3.16</td>
<td>0.15</td>
<td>592</td>
</tr>
<tr>
<td>Subcatchment OS-6E: COMM EAST</td>
<td>20,681</td>
<td>100.00%</td>
<td>10.0</td>
<td>98</td>
<td>3.16</td>
<td>1.35</td>
<td>5,441</td>
</tr>
<tr>
<td>Subcatchment OS-6R: COMM ROOF</td>
<td>13,913</td>
<td>100.00%</td>
<td>10.0</td>
<td>98</td>
<td>3.16</td>
<td>0.91</td>
<td>3,660</td>
</tr>
<tr>
<td>Subcatchment OS-W: COMM-WEST</td>
<td>20,681</td>
<td>100.00%</td>
<td>10.0</td>
<td>98</td>
<td>3.16</td>
<td>1.35</td>
<td>5,441</td>
</tr>
<tr>
<td>Subcatchment OS1: North Driveway</td>
<td>5,281</td>
<td>100.00%</td>
<td>10.8</td>
<td>98</td>
<td>3.16</td>
<td>0.34</td>
<td>1,389</td>
</tr>
</tbody>
</table>
### Subcatchment P-1: Northwest
- Runoff Area: 30,556 sf
- Impervious: 88.67%
- Runoff Depth: 2.94"  
  - Tc=10.0 min  
  - CN=96  
  - Runoff: 1.94 cfs  
  - 7,478 cf

### Subcatchment P-10A: Alley
- Runoff Area: 4,612 sf
- Impervious: 100.00%
- Runoff Depth: 3.16"  
  - Tc=10.0 min  
  - CN=98  
  - Runoff: 0.30 cfs  
  - 1,213 cf

### Subcatchment P-1R: ROOFS
- Runoff Area: 1,400 sf
- Impervious: 100.00%
- Runoff Depth: 3.16"  
  - Tc=10.0 min  
  - CN=98  
  - Runoff: 0.09 cfs  
  - 368 cf

### Subcatchment P-2M: North Central
- Runoff Area: 18,201 sf
- Impervious: 74.95%
- Runoff Depth: 2.53"  
  - Tc=10.0 min  
  - CN=96  
  - Runoff: 1.04 cfs  
  - 3,840 cf

### Subcatchment P-2NE: North Central
- Runoff Area: 8,999 sf
- Impervious: 100.00%
- Runoff Depth: 3.16"  
  - Tc=10.0 min  
  - CN=96  
  - Runoff: 0.57 cfs  
  - 2,202 cf

### Subcatchment P-2R: Roofs, warehouse
- Runoff Area: 4,125 sf
- Impervious: 100.00%
- Runoff Depth: 3.16"  
  - Tc=10.0 min  
  - CN=96  
  - Runoff: 0.27 cfs  
  - 1,085 cf

### Subcatchment P-2S: Between Buildings
- Runoff Area: 4,125 sf
- Impervious: 100.00%
- Runoff Depth: 3.16"  
  - Tc=10.0 min  
  - CN=96  
  - Runoff: 0.08 cfs  
  - 283 cf

### Subcatchment P-3E: Northeast Corner
- Runoff Area: 5,025 sf
- Impervious: 100.00%
- Runoff Depth: 3.16"  
  - Tc=10.0 min  
  - CN=96  
  - Runoff: 0.33 cfs  
  - 1,322 cf

### Subcatchment P-4R: Roof to 4P
- Runoff Area: 2,828 sf
- Impervious: 100.00%
- Runoff Depth: 3.16"  
  - Tc=10.0 min  
  - CN=96  
  - Runoff: 0.19 cfs  
  - 744 cf

### Subcatchment P-4S: Paved Parking
- Runoff Area: 7,833 sf
- Impervious: 80.24%
- Runoff Depth: 2.73"  
  - Tc=10.0 min  
  - CN=94  
  - Runoff: 0.47 cfs  
  - 1,781 cf

### Subcatchment P-6R: Roof
- Runoff Area: 8,937 sf
- Impervious: 100.00%
- Runoff Depth: 3.16"  
  - Tc=10.0 min  
  - CN=98  
  - Runoff: 0.43 cfs  
  - 1,743 cf

### Subcatchment P-7: Slab Area - Repaved
- Runoff Area: 30,112 sf
- Impervious: 100.00%
- Runoff Depth: 3.16"  
  - Tc=10.0 min  
  - CN=98  
  - Runoff: 1.97 cfs  
  - 7,922 cf

### Subcatchment P-7A: S CORNER ALLEY
- Runoff Area: 2,831 sf
- Impervious: 100.00%
- Runoff Depth: 3.16"  
  - Tc=10.0 min  
  - CN=98  
  - Runoff: 0.19 cfs  
  - 745 cf

### Subcatchment P-7B: Paved Parking
- Runoff Area: 6,605 sf
- Impervious: 100.00%
- Runoff Depth: 3.16"  
  - Tc=10.0 min  
  - CN=98  
  - Runoff: 0.43 cfs  
  - 1,738 cf

### Subcatchment P-7R: Roof
- Runoff Area: 6,627 sf
- Impervious: 100.00%
- Runoff Depth: 3.16"  
  - Tc=10.0 min  
  - CN=98  
  - Runoff: 0.43 cfs  
  - 1,743 cf

### Subcatchment P-8: Alley
- Runoff Area: 3,884 sf
- Impervious: 100.00%
- Runoff Depth: 3.16"  
  - Tc=10.0 min  
  - CN=98  
  - Runoff: 0.25 cfs  
  - 1,022 cf

### Subcatchment P-8R: Roof
- Runoff Area: 4,876 sf
- Impervious: 100.00%
- Runoff Depth: 3.16"  
  - Tc=10.0 min  
  - CN=98  
  - Runoff: 0.32 cfs  
  - 1,283 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"
HydroCAD® 10.00-25  s/n 06187 © 2019 HydroCAD Software Solutions LLC  Page 12

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=2.06 fps  Inflow=6.44 cfs  60,811 cf
  n=0.016  L=25.0’  S=0.0080 '/'  Capacity=63.73 cfs  Outflow=6.43 cfs  60,811 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: RetainIt
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

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 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: RetainIt
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: RetainIt
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”


HydroCAD® 10.00-25 s/n 06187 © 2019 HydroCAD Software Solutions LLC 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
SSDC SITE PLAN PROPOSED - ROOFS INCLUDED

2020-02-28 SSDC-1699.C PROPOSED incl roofs  Type III 24-hr 10-YEAR Rainfall=5.17”
HydroCAD® 10.00-25  s/n 06187 © 2019 HydroCAD Software Solutions LLC

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=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  0.00% Impervious  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  0.00% Impervious  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  0.00% Impervious  Runoff Depth=3.23”
  - Tc=10.0 min  CN=82  Runoff=0.19 cfs  693 cf

Subcatchment B-5: River Stone and
- Runoff Area=3,703 sf  0.00% Impervious  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  0.00% Impervious  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  0.00% Impervious  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  0.00% Impervious  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  0.00% Impervious  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  0.00% Impervious  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  0.00% Impervious  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  100.00% Impervious  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  100.00% Impervious  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  100.00% Impervious  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  100.00% Impervious  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  100.00% Impervious  Runoff Depth=4.93”
  - Flow Length=175’  Tc=10.8 min  CN=98  Runoff=0.52 cfs  2,171 cf
Subcatchment P-1: Northwest
Runoff Area=30,556 sf  88.67% Impervious  Runoff Depth=4.70"
  Tc=10.0 min  CN=96  Runoff=3.02 cfs  11,972 cf

Subcatchment P-10A: Alley
Runoff Area=4,612 sf  100.00% Impervious  Runoff Depth=4.93"
  Tc=10.0 min  CN=98  Runoff=0.46 cfs  1,896 cf

Subcatchment P-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 P-2M: North Central
Runoff Area=18,201 sf  74.95% Impervious  Runoff Depth=4.26"
  Flow Length=180’  Tc=10.0 min  CN=92  Runoff=1.71 cfs  6,454 cf

Subcatchment P-2NE: North Central
Runoff Area=8,999 sf  88.73% Impervious  Runoff Depth=4.70"
  Tc=10.0 min  CN=96  Runoff=0.89 cfs  3,526 cf

Subcatchment P-2R: Roofs, warehouse
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 P-2S: Between Buildings
Runoff Area=1,292 sf  77.40% Impervious  Runoff Depth=4.36"
  Flow Length=180’  Tc=10.0 min  CN=93  Runoff=0.12 cfs  470 cf

Subcatchment P-3E: Northeast Corner
Runoff Area=5,025 sf  100.00% Impervious  Runoff Depth=4.93"
  Tc=10.0 min  CN=98  Runoff=0.51 cfs  2,066 cf

Subcatchment P-4R: Roof to 4P
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 P-4S: Paved Parking
Runoff Area=7,833 sf  80.24% Impervious  Runoff Depth=4.48"
  Flow Length=260’  Tc=10.0 min  CN=94  Runoff=0.76 cfs  2,922 cf

Subcatchment P-6R: Roof
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 P-7: Slab Area - Repaved
Runoff Area=30,112 sf  100.00% Impervious  Runoff Depth=4.93"
  Tc=10.0 min  CN=98  Runoff=3.03 cfs  12,378 cf

Subcatchment P-7A: S CORNER ALLEY
Runoff Area=2,831 sf  100.00% Impervious  Runoff Depth=4.93"
  Flow Length=160’  Tc=10.0 min  CN=98  Runoff=0.28 cfs  1,164 cf

Subcatchment P-7B: Paved Parking
Runoff Area=6,605 sf  100.00% Impervious  Runoff Depth=4.93"
  Flow Length=260’  Tc=10.0 min  CN=98  Runoff=0.66 cfs  2,715 cf

Subcatchment P-7R: Roof
Runoff Area=6,627 sf  100.00% Impervious  Runoff Depth=4.93"
  Tc=10.0 min  CN=98  Runoff=0.67 cfs  2,724 cf

Subcatchment P-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 P-8R: 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 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
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=0.17’  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=0.0080 '/'  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: RetainIts
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=0.71 cfs  2,166 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
SSDC SITE PLAN PROPOSED - ROOFS INCLUDED

2020-02-28 SSDC-1699.C PROPOSED incl roofs  Type III 24-hr 10-YEAR Rainfall=5.17"
HydroCAD® 10.00-25 s/n 06187 © 2019 HydroCAD Software Solutions LLC  Page 18

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=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  14,042 cf
- Primary=3,852 cf  Secondary=0.00 cfs  0 cf  Outflow=0.21 cfs  3,852 cf

Pond 4PGP1: Geopave
- Peak Elev=14.60'  Storage=623 cf  Inflow=0.19 cfs  693 cf
- Outflow=0.30 cfs  693 cf

Pond 4PGP2: Geopave
- Peak Elev=15.60'  Storage=1,767 cf  Inflow=1.40 cfs  5,448 cf
- Outflow=0.32 cfs  5,448 cf

Pond 5P: RetainIt
- Peak Elev=14.60'  Storage=2,953 cf  Inflow=2.22 cfs  10,284 cf
- Primary=2,953 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=350 cf  Secondary=1.62 cfs  2,174 cf  Outflow=1.98 cfs  8,520 cf

Pond COMM-1: Grate SW corner Comm Bldg
- Peak Elev=17.35'  Storage=138 cf  Inflow=3.42 cfs  14,221 cf
- Primary=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=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
SSDC SITE PLAN PROPOSED - ROOFS INCLUDED

Pond MH-A4: Storm MH Comm Site Alley
- Peak Elev=17.29'
- Storage=0 cf
- Inflow=1.05 cfs
- 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
- 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
- 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
- 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
- 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
- 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
- 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
- Primary=0.52 cfs 2,171 cf

Link SSPRING ST: Spring Street
- Inflow=0.52 cfs
- 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
<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Description</th>
<th>Runoff Area</th>
<th>Impervious</th>
<th>Runoff Depth</th>
<th>Tc (min)</th>
<th>CN</th>
<th>Runoff</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-1</td>
<td>Landscape Buffer North</td>
<td>930 sf</td>
<td>0.00%</td>
<td>3.75”</td>
<td>10.0</td>
<td>76</td>
<td>0.08 cfs 290 cf</td>
</tr>
<tr>
<td>B-2</td>
<td>Riverstone Buffer North</td>
<td>1,432 sf</td>
<td>0.00%</td>
<td>4.16”</td>
<td>10.0</td>
<td>80</td>
<td>0.14 cfs 497 cf</td>
</tr>
<tr>
<td>B-3</td>
<td>Riverstone Buffer North</td>
<td>1,354 sf</td>
<td>0.00%</td>
<td>5.37”</td>
<td>10.0</td>
<td>91</td>
<td>0.16 cfs 606 cf</td>
</tr>
<tr>
<td>B-4</td>
<td>Riverstone and Geopave</td>
<td>2,575 sf</td>
<td>0.00%</td>
<td>4.38”</td>
<td>10.0</td>
<td>82</td>
<td>0.26 cfs 939 cf</td>
</tr>
<tr>
<td>B-5</td>
<td>River Stone and</td>
<td>3,703 sf</td>
<td>0.00%</td>
<td>4.38”</td>
<td>10.0</td>
<td>82</td>
<td>0.37 cfs 1,350 cf</td>
</tr>
<tr>
<td>B-6</td>
<td>Riverstone Buffer and</td>
<td>3,261 sf</td>
<td>0.00%</td>
<td>4.48”</td>
<td>10.0</td>
<td>83</td>
<td>0.33 cfs 1,218 cf</td>
</tr>
<tr>
<td>B-7</td>
<td>Riverstone and Geopave</td>
<td>2,955 sf</td>
<td>0.00%</td>
<td>4.27”</td>
<td>10.0</td>
<td>81</td>
<td>0.29 cfs 1,051 cf</td>
</tr>
<tr>
<td>ISL 4</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00%</td>
<td>3.75”</td>
<td>10.0</td>
<td>76</td>
<td>0.03 cfs 96 cf</td>
</tr>
<tr>
<td>ISL-1</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00%</td>
<td>3.75”</td>
<td>10.0</td>
<td>76</td>
<td>0.03 cfs 96 cf</td>
</tr>
<tr>
<td>ISL-2</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00%</td>
<td>3.75”</td>
<td>10.0</td>
<td>76</td>
<td>0.03 cfs 96 cf</td>
</tr>
<tr>
<td>ISL-3</td>
<td>River Stone Island</td>
<td>306 sf</td>
<td>0.00%</td>
<td>3.75”</td>
<td>10.0</td>
<td>76</td>
<td>0.03 cfs 96 cf</td>
</tr>
<tr>
<td>OS-5</td>
<td>OFFSITE</td>
<td>2,249 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td>10.0</td>
<td>98</td>
<td>0.28 cfs 1,159 cf</td>
</tr>
<tr>
<td>OS-6E</td>
<td>COMM EAST</td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td>10.0</td>
<td>98</td>
<td>2.59 cfs 10,653 cf</td>
</tr>
<tr>
<td>OS-6R</td>
<td>COMM ROOF</td>
<td>13,913 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td>10.0</td>
<td>98</td>
<td>1.74 cfs 7,167 cf</td>
</tr>
<tr>
<td>OS-6W</td>
<td>COMM-WEST</td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td>10.0</td>
<td>98</td>
<td>2.59 cfs 10,653 cf</td>
</tr>
<tr>
<td>OS1</td>
<td>North Driveway</td>
<td>5,281 sf</td>
<td>100.00%</td>
<td>6.18”</td>
<td>10.8</td>
<td>98</td>
<td>0.65 cfs 2,720 cf</td>
</tr>
</tbody>
</table>
Subcatchment P-1: Northwest
Runoff Area=30,556 sf  88.67% Impervious  Runoff Depth=5.95"
Tc=10.0 min  CN=96  Runoff=3.78 cfs  15,140 cf

Subcatchment P-10A: Alley
Runoff Area=4,612 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.58 cfs  2,376 cf

Subcatchment P-1R: ROOFS
Runoff Area=1,400 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.18 cfs  721 cf

Subcatchment P-2M: North Central
Runoff Area=18,201 sf  74.95% Impervious  Runoff Depth=5.48"
Flow Length=180’  Tc=10.0 min  CN=92  Runoff=2.17 cfs  8,316 cf

Subcatchment P-2NE: North Central
Runoff Area=8,999 sf  88.73% Impervious  Runoff Depth=5.95"
Tc=10.0 min  CN=96  Runoff=1.11 cfs  4,459 cf

Subcatchment P-2R: Roofs, warehouse
Runoff Area=4,125 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.52 cfs  2,125 cf

Subcatchment P-2S: Between Buildings
Runoff Area=1,292 sf  77.40% Impervious  Runoff Depth=5.60"
Flow Length=180’  Tc=10.0 min  CN=93  Runoff=0.16 cfs  603 cf

Subcatchment P-3E: Northeast Corner
Runoff Area=5,025 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.63 cfs  2,588 cf

Subcatchment P-4R: Roof to 4P
Runoff Area=2,828 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.35 cfs  1,457 cf

Subcatchment P-4S: Paved Parking
Runoff Area=7,833 sf  80.24% Impervious  Runoff Depth=5.71"
Flow Length=260’  Tc=10.0 min  CN=94  Runoff=0.95 cfs  3,729 cf

Subcatchment P-6R: Roof
Runoff Area=8,937 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=1.12 cfs  4,604 cf

Subcatchment P-7: Slab Area - Repaved
Runoff Area=30,112 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=3.77 cfs  15,511 cf

Subcatchment P-7A: S CORNER ALLEY
Runoff Area=2,831 sf  100.00% Impervious  Runoff Depth=6.18"
Flow Length=160’  Tc=10.0 min  CN=98  Runoff=0.35 cfs  1,458 cf

Subcatchment P-7B: Paved Parking
Runoff Area=6,605 sf  100.00% Impervious  Runoff Depth=6.18"
Flow Length=260’  Tc=10.0 min  CN=98  Runoff=0.83 cfs  3,402 cf

Subcatchment P-7R: Roof
Runoff Area=6,627 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.83 cfs  3,414 cf

Subcatchment P-8: Alley
Runoff Area=3,884 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.49 cfs  2,001 cf

Subcatchment P-8R: Roof
Runoff Area=4,876 sf  100.00% Impervious  Runoff Depth=6.18"
Tc=10.0 min  CN=98  Runoff=0.61 cfs  2,512 cf
**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: 0.78 cfs
  - 3,223 cf

**Subcatchment P3N: Northeast Corner**
- Runoff Area: 6,257 sf
- 100.00% Impervious
- Runoff Depth: 6.18”
- Tc=10.0 min
- CN=92
- Runoff: 0.81 cfs
  - 3,316 cf

**Subcatchment P4-N: Paved Parking**
- Runoff Area: 6,437 sf
- 100.00% Impervious
- Runoff Depth: 6.18”
- Flow Length: 260’
- Tc=10.0 min
- CN=98
- Runoff: 0.78 cfs
  - 3,223 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: 3.25 fps
- Inflow: 4.91 cfs
- 20,222 cf
- n=0.013
- L=200.0’
- S=0.0200”
- Capacity: 6.25 cfs
- Outflow: 4.78 cfs
- 20,222 cf

**Reach TD1: Drain for slab to Geopave**
- Avg. Flow Depth: 0.00’
- Max Vel: 0.00 fps
- Inflow: 4.62 cfs
- 35,856 cf
- 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  4,955 cf  
Outflow=1.13 cfs  4,955 cf

Pond 3P: Retainit  
Peak Elev=15.57' Storage=2,995 cf  Inflow=0.42 cfs  7,896 cf  
Primary=0.24 cfs  7,896 cf  Secondary=0.00 cfs  0 cf  Outflow=0.24 cfs  7,896 cf

Pond 3PGPE: Geopave  
Peak Elev=14.54' Storage=149 cf  Inflow=0.26 cfs  939 cf  
Outflow=0.10 cfs  939 cf

Pond 3PGPN: Geopave  
Peak Elev=16.90' Storage=1,971 cf  Inflow=1.77 cfs  6,957 cf  
Outflow=0.32 cfs  6,957 cf

Pond 4P: RetainIt  
Peak Elev=17.51' Storage=4,854 cf  Inflow=5.52 cfs  17,774 cf  
Primary=0.83 cfs  17,583 cf  Secondary=0.29 cfs  94 cf  Outflow=1.14 cfs  17,677 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=17.44' Storage=1,819 cf  Inflow=3.26 cfs  13,201 cf  
Outflow=3.22 cfs  13,201 cf

Pond 5P: RetainIt  
Peak Elev=14.90' Storage=3,680 cf  Inflow=2.41 cfs  13,055 cf  
Primary=0.54 cfs  12,557 cf  Secondary=0.00 cfs  0 cf  Outflow=0.54 cfs  12,557 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=17.28' Storage=972 cf  Inflow=2.08 cfs  8,435 cf  
Outflow=2.20 cfs  8,435 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=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=17.13' 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=18.67'  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 SPRING 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
<table>
<thead>
<tr>
<th>Subcatchment</th>
<th>Type</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>B1: Landscape Buffer North</td>
<td></td>
<td>930 sf</td>
<td>0.00%</td>
<td>5.79&quot;</td>
<td>10.0 min</td>
<td>76</td>
<td>0.12 cfs 449 cf</td>
</tr>
<tr>
<td>B2: Riverstone Buffer North</td>
<td></td>
<td>1,432 sf</td>
<td>0.00%</td>
<td>6.27&quot;</td>
<td>10.0 min</td>
<td>80</td>
<td>0.20 cfs 749 cf</td>
</tr>
<tr>
<td>B3: Riverstone Buffer North</td>
<td></td>
<td>1,354 sf</td>
<td>0.00%</td>
<td>7.61&quot;</td>
<td>10.0 min</td>
<td>91</td>
<td>0.22 cfs 858 cf</td>
</tr>
<tr>
<td>B4: Riverstone and Geopave</td>
<td></td>
<td>2,575 sf</td>
<td>0.00%</td>
<td>6.52&quot;</td>
<td>10.0 min</td>
<td>82</td>
<td>0.38 cfs 1,398 cf</td>
</tr>
<tr>
<td>B5: River Stone and</td>
<td></td>
<td>3,703 sf</td>
<td>0.00%</td>
<td>6.52&quot;</td>
<td>10.0 min</td>
<td>82</td>
<td>0.55 cfs 2,011 cf</td>
</tr>
<tr>
<td>B6: Riverstone Buffer and</td>
<td></td>
<td>3,261 sf</td>
<td>0.00%</td>
<td>6.64&quot;</td>
<td>10.0 min</td>
<td>83</td>
<td>0.49 cfs 1,804 cf</td>
</tr>
<tr>
<td>B7: Riverstone and Geopave</td>
<td></td>
<td>2,955 sf</td>
<td>0.00%</td>
<td>6.40&quot;</td>
<td>10.0 min</td>
<td>81</td>
<td>0.43 cfs 1,575 cf</td>
</tr>
<tr>
<td>ISL 4: River Stone Island</td>
<td></td>
<td>306 sf</td>
<td>0.00%</td>
<td>5.79&quot;</td>
<td>10.0 min</td>
<td>76</td>
<td>0.04 cfs 148 cf</td>
</tr>
<tr>
<td>ISL-1: River Stone Island</td>
<td></td>
<td>306 sf</td>
<td>0.00%</td>
<td>5.79&quot;</td>
<td>10.0 min</td>
<td>76</td>
<td>0.04 cfs 148 cf</td>
</tr>
<tr>
<td>ISL-2: River Stone Island</td>
<td></td>
<td>306 sf</td>
<td>0.00%</td>
<td>5.79&quot;</td>
<td>10.0 min</td>
<td>76</td>
<td>0.04 cfs 148 cf</td>
</tr>
<tr>
<td>ISL-3: River Stone Island</td>
<td></td>
<td>306 sf</td>
<td>0.00%</td>
<td>5.79&quot;</td>
<td>10.0 min</td>
<td>76</td>
<td>0.04 cfs 148 cf</td>
</tr>
<tr>
<td>OS - 5: OFFSITE</td>
<td></td>
<td>2,249 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>0.38 cfs 1,584 cf</td>
</tr>
<tr>
<td>OS-6E: COMM EAST</td>
<td></td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>3.51 cfs 14,563 cf</td>
</tr>
<tr>
<td>OS-6R: COMM ROOF</td>
<td></td>
<td>13,913 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>2.36 cfs 9,797 cf</td>
</tr>
<tr>
<td>OS-6W: COMM-WEST</td>
<td></td>
<td>20,681 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>3.51 cfs 14,563 cf</td>
</tr>
<tr>
<td>OS1: North Driveway</td>
<td></td>
<td>5,281 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.8 min</td>
<td>98</td>
<td>0.88 cfs 3,719 cf</td>
</tr>
<tr>
<td>Subcatchment</td>
<td>Runoff Area</td>
<td>Impervious</td>
<td>Runoff Depth</td>
<td>Tc</td>
<td>CN</td>
<td>Runoff</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<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>8.21&quot;</td>
<td>10.0 min</td>
<td>96</td>
<td>20,903 cf</td>
<td></td>
</tr>
<tr>
<td>P-10A: Alley</td>
<td>4,612 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>3,248 cf</td>
<td></td>
</tr>
<tr>
<td>P-1R: ROOFS</td>
<td>1,400 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>986 cf</td>
<td></td>
</tr>
<tr>
<td>P-2M: North Central</td>
<td>18,201 sf</td>
<td>74.95%</td>
<td>7.73&quot;</td>
<td>10.0 min</td>
<td>92</td>
<td>11,720 cf</td>
<td></td>
</tr>
<tr>
<td>P-2NE: North Central</td>
<td>8,999 sf</td>
<td>88.73%</td>
<td>8.21&quot;</td>
<td>10.0 min</td>
<td>96</td>
<td>6,156 cf</td>
<td></td>
</tr>
<tr>
<td>P-2R: Roofs, warehouse</td>
<td>4,125 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>2,905 cf</td>
<td></td>
</tr>
<tr>
<td>P-2S: Between Buildings</td>
<td>1,292 sf</td>
<td>77.40%</td>
<td>7.85&quot;</td>
<td>10.0 min</td>
<td>93</td>
<td>845 cf</td>
<td></td>
</tr>
<tr>
<td>P-3E: Northeast Corner</td>
<td>5,025 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>3,538 cf</td>
<td></td>
</tr>
<tr>
<td>P-4R: Roof to 4P</td>
<td>2,828 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>1,991 cf</td>
<td></td>
</tr>
<tr>
<td>P-4S: Paved Parking</td>
<td>7,833 sf</td>
<td>80.24%</td>
<td>7.97&quot;</td>
<td>10.0 min</td>
<td>94</td>
<td>5,201 cf</td>
<td></td>
</tr>
<tr>
<td>P-6R: Roof</td>
<td>8,937 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>6,293 cf</td>
<td></td>
</tr>
<tr>
<td>P-7: Slab Area - Repaved</td>
<td>30,112 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>21,203 cf</td>
<td></td>
</tr>
<tr>
<td>P-7A: S CORNER ALLEY</td>
<td>2,831 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>1,993 cf</td>
<td></td>
</tr>
<tr>
<td>P-7B: Paved Parking</td>
<td>6,605 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>4,651 cf</td>
<td></td>
</tr>
<tr>
<td>P-7R: Roof</td>
<td>6,627 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>4,666 cf</td>
<td></td>
</tr>
<tr>
<td>P-8: Alley</td>
<td>3,884 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>2,735 cf</td>
<td></td>
</tr>
<tr>
<td>P-8R: Roof</td>
<td>4,876 sf</td>
<td>100.00%</td>
<td>8.45&quot;</td>
<td>10.0 min</td>
<td>98</td>
<td>3,433 cf</td>
<td></td>
</tr>
</tbody>
</table>
SSDC SITE PLAN PROPOSED - ROOFS INCLUDED

2020-02-28 SSDC-1699.C PROPOSED incl roofs  Type III 24-hr  100-YEAR Rainfall=8.69"
HydroCAD® 10.00-25  s/n 06187 © 2019 HydroCAD Software Solutions LLC

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=0.32’  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=0.41’  Max Vel=0.85 fps  Inflow=7.90 cfs  17,285 cf
n=0.016  L=120.0’  S=0.0005 '/'  Capacity=12.15 cfs Outflow=7.72 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
n=0.016  L=160.0’  S=0.0006 '/'  Capacity=13.58 cfs Outflow=3.97 cfs  20,519 cf

Reach STRT: EXISTING STREET
Avg. Flow Depth=0.25’  Max Vel=3.22 fps  Inflow=19.79 cfs  171,181 cf
n=0.016  L=25.0’  S=0.0080 '/'  Capacity=63.73 cfs Outflow=19.80 cfs  171,181 cf

Reach SW-3: Overland swale
Avg. Flow Depth=0.20’  Max Vel=3.58 fps  Inflow=11.38 cfs  34,155 cf
n=0.016  L=160.0’  S=0.0200 '/'  Capacity=76.85 cfs Outflow=11.23 cfs  34,155 cf

Reach TD1: Drain for slab to Geopave
Avg. Flow Depth=0.94’  Max Vel=3.53 fps  Inflow=6.66 cfs  27,643 cf
n=0.013  L=200.0’  S=0.0025 '/'  Capacity=6.25 cfs Outflow=6.49 cfs  27,643 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=17.26’  Storage=7,610 cf  Inflow=8.21 cfs  48,790 cf
Primary=6.83 cfs 48,790 cf  Secondary=0.00 cfs  0 cf

Pond 1PGP: Geopave Area
Peak Elev=17.96’  Storage=6,219 cf  Inflow=11.65 cfs  48,842 cf
Outflow=8.12 cfs  48,341 cf

Pond 2P: RetainIts
Peak Elev=15.61’  Storage=7,016 cf  Inflow=5.73 cfs  22,375 cf
Primary=1.22 cfs  21,707 cf  Secondary=0.00 cfs  0 cf
Outflow=1.22 cfs  21,707 cf

Pond 2PGP1: Geopave
Peak Elev=17.07’  Storage=258 cf  Inflow=0.91 cfs  3,750 cf
Outflow=0.93 cfs  3,750 cf

Pond 2PGP2: Geopave
Peak Elev=17.19’  Storage=1,392 cf  Inflow=3.92 cfs  15,470 cf
Outflow=4.43 cfs  15,470 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"

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

Page 28

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
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 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
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’

Reach STRT: EXISTING STREET

Hydrograph

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</td>
</tr>
<tr>
<td>#2A</td>
<td>13.50'</td>
<td>7,191 cf</td>
<td>retain_it retain_it 2.5' x 52 Inside #1</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>Elevation</th>
<th>Surf.Area</th>
<th>Inc.Store</th>
<th>Cum.Store</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=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 sf**
- **Volume Invert Avail.Storage Storage Description**
  - #1 17.50' 3,183 cf **Parking Area (Prismatic)** Listed below (Recalc)
  - #2 17.20' 208 cf **Geopave units (Prismatic)** Listed below (Recalc)
  - #3 16.60' 623 cf **Crushed gravel 3/8"-1" (Prismatic)** Listed below (Recalc)
  - #4 14.10' 2,520 cf **32.00'W x 105.00'L x 2.50'H TSS basin unit**

**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 )**

**Volume Invert Avail.Storage Storage Description**

<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>
<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>2,077</td>
<td>2,077</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**

- **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
- **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
- **6,000 in/hr Exfiltration over Surface area**
- **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 @ 1.80 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)

<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></td>
<td></td>
<td></td>
<td>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>30.00’D x 0.50’H Riser</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’W x 30.0’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’W x 38.0’H =&gt; 25.33 sf x 8.00’L = 202.7 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>9,924 cf Total Available Storage</td>
</tr>
</tbody>
</table>

Storage Group A created with Chamber Wizard

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<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

#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=0.17 cfs @ 2.33 hrs HW=13.96’ (Free Discharge)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.50’ (Free Discharge)
Pond 2P: RetainIts

Hydrograph

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)

Volume Invert Avail.Storage Storage Description
#1 14.10’ 270 cf 14.50’W x 20.00’L x 3.10’H Geopave Unit
699 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’ 6.0” 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)
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, Atten= 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
1,924 cf Total Available Storage

<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>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=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, Attenuation 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 Surf.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
#2B 13.40' 3,445 cf retain_it retain_it 2.5' x 25 Inside #1
#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

<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-ft)</td>
<td>(cubic-ft)</td>
</tr>
<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 = 0.10 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, Atten= 50%, Lag= 2.6 min
Primary = 0.32 cfs @ 1.20 hrs, Volume= 895 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 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>36.00'W x 63.00'L x 3.40'H Geopave Unit</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>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>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=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

Hydrograph

- **Inflow Area**: 0.63 cfs
- **Peak Elev**: 0.32 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

**Flow (cfs)**

0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7
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)

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
(0000) (sq-ft) (cubic-feet) (cubic-feet)
17.45 200 0 0
17.90 2,000 495 495

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 GRADE 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=0.22 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 GRADE (Controls 0.00 cfs)
Pond 4P: RetainIt

Inflow Area=36,301 sf
Peak Elev=13.90'
Storage=959 cf

Hydrograph

Time (hours)

Flow (cfs)

0.52 cfs
0.22 cfs
0.22 cfs
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, 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>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>

<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>2,160</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 |

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)</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>

3,584 cf Total Available Storage

<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>

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)

<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 = 243.7 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></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<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 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)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.40' (Free Discharge)
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, Atten= 52%, Lag= 0.0 min
Primary = 0.21 cfs @ 1.15 hrs, Volume= 636 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 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 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

<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>2,600</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>#1</th>
<th>Primary</th>
<th>13.70’</th>
<th>6.0” Round 6” PVC X 4.00</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>#2</th>
<th>Device 1</th>
<th>13.80’</th>
<th>4.0” Round 4” PVC drains X 2.00</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>#3</th>
<th>Device 2</th>
<th>14.00’</th>
<th>6.000 in/hr Exfiltration over Surface area</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>#4</th>
<th>Device 1</th>
<th>17.40’</th>
<th>1.0” x 4.0” Horiz. E-Type Grate X 4.00 columns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 11 rows C= 0.600 in 48.0” x 48.0” 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 14.10'</td>
<td>1,620 sf</td>
<td>837 cf</td>
<td>10.00'W x 90.00'L x 3.10'H Geopave Unit</td>
</tr>
<tr>
<td>#2 17.20'</td>
<td>2,000 sf</td>
<td>543 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)
17.20 1,620 0 0
17.50 2,000 543 543

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 cf)
Pond 5 PGPS: Geopave

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

Hydrograph

Inflow Area=249,666 sf
Peak Elev=10.46'

Flow (cfs)

Time (hours)
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>Device:</th>
<th>Routing</th>
<th>Invert</th>
<th>Outlet Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Primary</td>
<td>8.00'</td>
<td>12.0&quot; Round PVC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>L= 30.0’ RCP, square edge headwall, Ke= 0.500</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 8.00’ / 7.90’ S= 0.0033 ’/’ Cc= 0.900</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.79 sf</td>
<td></td>
</tr>
<tr>
<td>#2 Secondary</td>
<td>12.50’</td>
<td>48.0&quot; x 42.0&quot; Horiz. Orifice/Grate</td>
<td>C= 0.600</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
<td></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)
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'' Vert. Orifice/Grate C= 0.600</td>
</tr>
<tr>
<td>#2</td>
<td>Primary</td>
<td>6.90'</td>
<td>15.0'' Round 15'' RCP</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 100.0' RCP, sq.cut end projecting, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 6.90' / 6.80' S= 0.0010 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>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'' x 4.0'' Horiz. Orifice/Grate X 4.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 5 rows C= 0.600 in 24.0'' x 48.0'' Grate (7% 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=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

Hydrograph

Inflow Area=249,666 sf
Peak Elev=8.11'

Flow (cfs)

0.00 cfs
3.05 cfs
3.05 cfs
3.05 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
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

Inflow Area=105,404 sf
Peak Elev=13.04’
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

<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>11.70'</td>
<td>24.0&quot; Round HDPE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 118.0' Box, headwall w/3 square edges, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 11.70' / 11.10' S= 0.0051 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 3.14 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Secondary</td>
<td>18.00'</td>
<td>1.0&quot; x 2.0&quot; Horiz. Manhole Cover X 4.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 6 rows C= 0.600 in 24.0&quot; Grate (11% 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=1.20 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)

Inflow Area=158,991 sf
Peak Elev=12.19'
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'

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 )  

<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</td>
</tr>
<tr>
<td>#2A</td>
<td>13.50'</td>
<td>7,191 cf</td>
<td>retain_it retain_it 2.5' x 52 Inside #1</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>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>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

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”-1” (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>

6,533 cf Total Available Storage

<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

<table>
<thead>
<tr>
<th>#1</th>
<th>Primary</th>
<th>13.70’</th>
<th>12.0” Round 12” PVC</th>
</tr>
</thead>
<tbody>
<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= 0.79 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Device 1</td>
<td>13.80’</td>
<td>4.0” Round 4” PVC drains X 4.00</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>14.10’</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” x 4.0” Horiz. E-Type Grate X 4.00 columns</td>
</tr>
</tbody>
</table>
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

Hydrograph

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 2P: RetainIts

Inflow Area = 34,049 sf, 78.57% Impervious, Inflow Depth = 7.89" for 100-YEAR event
Inflow = 5.73 cfs @ 12.10 hrs, Volume= 22,375 cf
Outflow = 1.22 cfs @ 12.63 hrs, Volume= 21,707 cf, Atten= 79%, Lag= 31.6 min
Primary = 1.22 cfs @ 12.63 hrs, Volume= 21,707 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= 15.61' @ 12.63 hrs Surf.Area= 3,840 sf Storage= 7,016 cf

Plug-Flow detention time= 112.2 min calculated for 21,707 cf (97% of inflow)
Center-of-Mass det. time= 94.7 min (891.6 - 796.9)

### Volume Invert Avail.Storage Storage Description

<table>
<thead>
<tr>
<th>#</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></td>
<td></td>
<td></td>
<td>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</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inside #2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inside= 84.0 W x 30.0 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 W x 38.0 H =&gt; 25.33 sf x 8.00'L = 202.7 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>
</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>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>
</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

Inflow Area=34,409 sf
Peak Elev=15.61'
Storage=7,016 ft³

Hydrograph

<table>
<thead>
<tr>
<th>Time (hours)</th>
<th>00</th>
<th>36</th>
<th>72</th>
<th>108</th>
<th>144</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow (cfs)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Inflow:
- Area: 34,409 sf
- Peak Elev: 15.61'
- Storage: 7,016 ft³
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 )

<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>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.20</td>
<td>290</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17.50</td>
<td>400</td>
<td>104</td>
<td>104</td>
</tr>
</tbody>
</table>

Device Routing Invert Outlet Devices

<table>
<thead>
<tr>
<th>#1</th>
<th>Primary</th>
<th>13.80'</th>
<th>6.00&quot; Round 6&quot; PVC X 4.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 65.0' RCP, groove end w/headwall, Ke= 0.200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 13.80' / 13.70' S= 0.0015 '/' 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>4.00&quot; Round 4&quot; PVC drains X 2.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 10.0' 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= 0.0100 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012 Corrugated PP, smooth interior, 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>17.00'</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 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=0.90 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 4,640 cf Overall x 30.0% Voids</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>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, grooved 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)
Summary for Pond 3P: Retain it

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' 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)
1=HDPE DUAL WALL (Passes 0.31 cfs of 6.85 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.31 cfs @ 9.11 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

Hydrograph

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>36.00'W x 63.00'L x 3.40'H Geopave Unit</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>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
</tr>
</tbody>
</table>

2,618 cf Total Available Storage

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.40</td>
<td>2,600</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

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>8.0&quot; Round 8&quot; PVC X 4.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Primary</td>
<td>13.60'</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>
</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>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>

<table>
<thead>
<tr>
<th>Device</th>
<th>Routing</th>
<th>Invert</th>
<th>1.0&quot; x 4.0&quot; Horiz. E-Type Grate X 4.00 columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>#4</td>
<td>Device 1</td>
<td>17.40'</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 = 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

Inflow Area = 14,711 sf
Peak Elev = 17.44'
Storage = 2,434 cf

Hydrograph

Flow (cfs)

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

Time (hours)

2.44 cfs

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, Attenuation 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 (874.3 - 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 13.40’</td>
<td>0 cf</td>
<td>56.00’W x 40.00’L x 3.17’H Field B</td>
<td>Overall - 7,093 cf Embedded = 0 cf x 0.0% Voids</td>
</tr>
<tr>
<td>#2B 13.40’</td>
<td>4,836 cf</td>
<td>retain_it retain_it 2.5’ x 35 Inside #1</td>
<td>Inside= 84.0”W x 30.0”H =&gt; 17.56 sf x 8.00’L = 140.4 cf</td>
</tr>
<tr>
<td>#3 17.45’</td>
<td>495 cf</td>
<td>Custom Stage Data (Prismatic) Listed below (Recalc)</td>
<td></td>
</tr>
</tbody>
</table>

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>#1 Primary 13.30’</th>
<th>8.0” Round HDPE DUAL WALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>L= 25.0’ Box, headwall w/3 square edges, Ke= 0.500</td>
<td></td>
</tr>
<tr>
<td>Inlet / Outlet Invert= 13.30’ / 12.00’ S= 0.0520 ’ Cc= 0.900</td>
<td></td>
</tr>
<tr>
<td>n= 0.012, Flow Area= 0.35 sf</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>#2 Device 1 13.45’</th>
<th>4.0” Vert. Orifice/Grate</th>
</tr>
</thead>
<tbody>
<tr>
<td>C= 0.600</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>#3 Secondary 17.45’</th>
<th>1.0” x 4.0” Horiz. MANHOLE GRATE X 4.00 columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>X 14 rows C= 0.600 in 24.0” Grate (50% open area)</td>
<td></td>
</tr>
<tr>
<td>Limited to weir flow at low heads</td>
<td></td>
</tr>
</tbody>
</table>

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
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)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Listed below (Recalc)</td>
</tr>
</tbody>
</table>

3,751 cf Total Available Storage

<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>2,160</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
Inflow = 4.44 cfs @ 12.14 hrs, Volume= 18,166 cf
Outflow = 4.10 cfs @ 12.18 hrs, Volume= 18,166 cf, Atten= 8%, Lag= 2.6 min
Primary = 4.10 cfs @ 12.18 hrs, Volume= 18,166 cf

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>17.60’</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>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” Round 12” 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>
<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>17.30’</td>
<td>1.0” x 4.0” Horiz. E-Type Grate X 4.00 columns</td>
</tr>
</tbody>
</table>

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
   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

<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 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)
SSDC PROPOSED SITE PLANS - ROOFS INCLUDED

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

2020-02-28 SSDC-1699.C PROPOSED incl roofs


Pond 5P: RetainIt

Inflow

Outflow

Primary

Secondary

Hydrograph

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)

3.08 cfs

0.70 cfs

0.70 cfs

0.00 cfs

Storage=5,625 cf
Peak Elev=15.69'
Inflow Area=27,155 sf

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, Attenu= 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>

<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>

<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” Round 6” 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 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” 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 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>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 11 rows C= 0.600 in 48.0” x 48.0” Grate (8% open area) 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, Atten= 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></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>14.10'</td>
<td>1,620</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>#2</td>
<td>17.20'</td>
<td>2,000</td>
<td>543</td>
<td>543</td>
</tr>
<tr>
<td>#3</td>
<td>14.10'</td>
<td>13.70'</td>
<td>6.000 in/hr Exfiltration over Surface area</td>
<td></td>
</tr>
<tr>
<td>#4</td>
<td>17.25'</td>
<td>1.0&quot; x 9.0&quot; Horiz. E-Type Grate X 4.00 columns X 14 rows C= 0.600 Limited to weir flow at low heads</td>
<td></td>
<td></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

**Inflow Area**: 17,289 sf
**Peak Elev**: 17.29'
**Storage**: 987 cf

Hydrograph
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'

Primary Outflow Max = 8.57 cfs @ 10.92 fps (Free Discharge)

1 = PVC (barrel Discharge, 8.57 cf at 10.92 fps)

Tertiary Outflow Max = 5.99 cfs @ 7.70 fps (Free Discharge)

2 = Type Gate (Orifice Discharge, 5.99 cf at 7.70 fps)
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

<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>8.00'</td>
<td><strong>12.0” Round PVC</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>L= 30.0’ RCP, square edge headwall, Ke= 0.500</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 8.00’ / 7.90’ S= 0.0033 '/' Cc= 0.900</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 0.79 sf</td>
<td></td>
</tr>
<tr>
<td>#2 Secondary</td>
<td>12.50’</td>
<td><strong>48.0” x 42.0” Horiz. Orifice/Grate</strong> C= 0.600</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limited to weir flow at low heads</td>
<td></td>
</tr>
</tbody>
</table>

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)
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
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 = 8.58 cfs @ 12.47 hrs, Volume= 137,026 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= 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><strong>12.0” Vert. Orifice/Grate</strong> C= 0.600</td>
</tr>
<tr>
<td>#2</td>
<td>Primary</td>
<td>6.90'</td>
<td><strong>15.0” Round 15” RCP</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 100.0’ RCP, sq.cut end projecting, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 6.90’ / 6.80’ S= 0.0010 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>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><strong>1.0” x 4.0” Horiz. Orifice/Grate X 4.00 columns</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 5 rows C= 0.600 in 24.0” x 48.0” Grate (7% 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=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

Flow (cfs)

Time (hours)

Inflow
Outflow
Primary
Secondary

0.00 cfs
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
Summary for Pond PMH1: Proposed MH 1

Inflow Area = 105,404 sf

Inflow

- Area = 105,404 sf, 88.33% Impervious
- 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

Primary

- Invert Outlet: 12.60' / 11.80' S = 0.0040 '/' Cc = 0.900
- n = 0.012, Flow Area = 3.14 sf
- Outflow: Max = 8.03 cfs @ 12.50 hrs HW = 14.04', Free Discharge
- Barrel Controls 8.03 cfs @ 4.63 fps

Secondary

- Invert Outlet: 18.00' X 2.00" Horiz. Manhole Cover X 4.00 columns
- X 8 rows = 0.80, Flow Area = 3.14 sf
- Initial / Outlet Invert = 12.60' / 11.80' S = 0.0040 '/' Cc = 0.900
- L = 200.0', RCP, square edge headwall, Ke = 0.500
- Outflow: Max = 0.00 cfs @ 0.00 hrs HW = 14.04', Free Discharge
- Controls 0.00 cfs

Routing Graph

- Time (hours)
- Flow (cfs)

- Inflow Area = 105,404 sf
- Peak Elev = 14.04' 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

Device Routing

- Invert Outlet Devices
- #1 Primary Routing
- #2 Secondary Routing
- Peak Elev = 14.04' @ 12.50 hrs
- Time Span = 0.00-60.00 hrs, dt = 0.05 hrs

Invert

- 12.60' / 11.80' S = 0.0040 '/' Cc = 0.900
- n = 0.012, Flow Area = 3.14 sf
- Outflow: Max = 8.03 cfs @ 12.50 hrs HW = 14.04', Free Discharge
- Barrel Controls 8.03 cfs @ 4.63 fps

Secondary

- Invert Outlet: 18.00' X 2.00" Horiz. Manhole Cover X 4.00 columns
- X 8 rows = 0.80, Flow Area = 3.14 sf
- Initial / Outlet Invert = 12.60' / 11.80' S = 0.0040 '/' Cc = 0.900
- L = 200.0', RCP, square edge headwall, Ke = 0.500
- Outflow: Max = 0.00 cfs @ 0.00 hrs HW = 14.04', Free Discharge
- Controls 0.00 cfs

Routing Graph

- Time (hours)
- Flow (cfs)
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, Attenu= 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

<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>11.70'</td>
<td>24.0&quot; Round HDPE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L= 118.0’ Box, headwall w/3 square edges, Ke= 0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inlet / Outlet Invert= 11.70' / 11.10’ S= 0.0051 '/' Cc= 0.900</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n= 0.012, Flow Area= 3.14 sf</td>
</tr>
<tr>
<td>#2</td>
<td>Secondary</td>
<td>18.00'</td>
<td>1.0” x 2.0” Horiz. Manhole Cover X 4.00 columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X 6 rows C= 0.600 in 24.0&quot; Grate (11% 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=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 2pgp3 (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 Infiltration 3GPGPE (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, 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>76</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></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-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>0</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>0</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>0</td>
<td>1,014</td>
<td>Geopave Infiltration Area 2pgp3</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4,560</td>
<td>Geopave Infiltration Area 2pgp1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>292</td>
<td>Geopave Infiltration area 2pgp1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,502</td>
<td>Geopave Infiltration3GPGPE</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</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>0</td>
<td>2,160</td>
<td>Geopave Infiltration 4PGP1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3,700</td>
<td>Geopave Infiltration 5PGP1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>930</td>
<td>Landscape Buffer</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,432</td>
<td>0</td>
<td>Landscape Buffer Good</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>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>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>0.0100</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>5PGP1</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>5PGP1</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>5PGP2</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>5PGP3</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"


Printed 3/4/2020

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

Time span=0.00-60.00 hrs, dt=0.05 hrs, 1201 points
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=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 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

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=306 sf  0.00% Impervious  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  0.00% Impervious  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  100.00% Impervious  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  100.00% Impervious  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  100.00% Impervious  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  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=30,556 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
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
<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</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</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>1.32 cfs</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</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</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reach</th>
<th>Avg. Flow Depth</th>
<th>Max Vel</th>
<th>Inflow</th>
<th>Capacity</th>
<th>Outflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASW1: Overland swale</td>
<td>0.26'</td>
<td>1.05 fps</td>
<td>5.03 cfs</td>
<td>9.177 cfs</td>
<td></td>
</tr>
<tr>
<td>ASW2: Overland swale</td>
<td>0.34'</td>
<td>0.76 fps</td>
<td>5.44 cfs</td>
<td>12.424 cfs</td>
<td></td>
</tr>
<tr>
<td>ASW3: Overland swale</td>
<td>0.17'</td>
<td>0.59 fps</td>
<td>1.69 cfs</td>
<td>12.267 cfs</td>
<td></td>
</tr>
<tr>
<td>EMSPY 2: Blocked Outlet Spwy</td>
<td>0.20'</td>
<td>1.02 fps</td>
<td>8.37 cfs</td>
<td>29.338 cfs</td>
<td></td>
</tr>
<tr>
<td>EMSPY 3: Blocked Outlet Spwy</td>
<td>0.21'</td>
<td>0.97 fps</td>
<td>7.51 cfs</td>
<td>47.565 cfs</td>
<td></td>
</tr>
<tr>
<td>EMSPY 4: Overland swale</td>
<td>0.21'</td>
<td>1.12 fps</td>
<td>8.35 cfs</td>
<td>58.838 cfs</td>
<td></td>
</tr>
<tr>
<td>STRT: EXISTING STREET</td>
<td>0.21'</td>
<td>2.92 fps</td>
<td>15.68 cfs</td>
<td>107.936 cfs</td>
<td></td>
</tr>
<tr>
<td>SW-3: Overland swale</td>
<td>0.15'</td>
<td>3.62 fps</td>
<td>17.01 cfs</td>
<td>107.936 cfs</td>
<td></td>
</tr>
<tr>
<td>TD1: Drain for slab to Geopave</td>
<td>0.77'</td>
<td>3.29 fps</td>
<td>5.11 cfs</td>
<td>42.402 cfs</td>
<td></td>
</tr>
<tr>
<td>TD2: East End of Buildings</td>
<td>0.36'</td>
<td>1.12 fps</td>
<td>4.666 cfs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond 1P: RetainIt</td>
<td>Peak Elev=20.85'</td>
<td>Storage=14,433 cf</td>
<td>Inflow=7.63 cfs</td>
<td>42,851 cf</td>
<td></td>
</tr>
<tr>
<td>Pond 1PGP: Geopave Area</td>
<td>Peak Elev=17.84'</td>
<td>Storage=5,365 cf</td>
<td>Inflow=10.13 cfs</td>
<td>42,402 cf</td>
<td></td>
</tr>
<tr>
<td>Pond</td>
<td>Type</td>
<td>Peak Elev (ft)</td>
<td>Storage (cf)</td>
<td>Inflow (cfs)</td>
<td>Outflow (cfs)</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
<td>---------------</td>
<td>--------------</td>
<td>--------------</td>
<td>---------------</td>
</tr>
<tr>
<td>2P</td>
<td>RetainIts</td>
<td>17.96</td>
<td>17,013</td>
<td>7.24</td>
<td>0.90</td>
</tr>
<tr>
<td>2PGP1</td>
<td>Geopave</td>
<td>17.02</td>
<td>254</td>
<td>0.21</td>
<td>0.15</td>
</tr>
<tr>
<td>2PGP2</td>
<td>Geopave</td>
<td>17.17</td>
<td>1,392</td>
<td>3.02</td>
<td>3.62</td>
</tr>
<tr>
<td>2PGP3</td>
<td>Geopave</td>
<td>17.99</td>
<td>981</td>
<td>1.72</td>
<td>0.63</td>
</tr>
<tr>
<td>3P</td>
<td>RetainIt</td>
<td>17.93</td>
<td>5,355</td>
<td>1.65</td>
<td>0.31</td>
</tr>
<tr>
<td>3PGPE</td>
<td>Geopave</td>
<td>14.93</td>
<td>317</td>
<td>0.38</td>
<td>0.10</td>
</tr>
<tr>
<td>3PGPN</td>
<td>Geopave</td>
<td>17.48</td>
<td>2,545</td>
<td>2.44</td>
<td>1.55</td>
</tr>
<tr>
<td>4P</td>
<td>RetainIt</td>
<td>17.88</td>
<td>7,619</td>
<td>3.06</td>
<td>1.04</td>
</tr>
<tr>
<td>4PGP1</td>
<td>Geopave</td>
<td>17.41</td>
<td>2,165</td>
<td>1.61</td>
<td>0.36</td>
</tr>
<tr>
<td>4PGP2</td>
<td>Geopave</td>
<td>17.42</td>
<td>1,782</td>
<td>2.44</td>
<td>0.44</td>
</tr>
<tr>
<td>5P</td>
<td>RetainIt</td>
<td>17.90</td>
<td>8,594</td>
<td>3.72</td>
<td>2.34</td>
</tr>
<tr>
<td>5PGPN</td>
<td>Geopave</td>
<td>17.46</td>
<td>1,676</td>
<td>1.61</td>
<td>1.01</td>
</tr>
<tr>
<td>5PGPS</td>
<td>Geopave</td>
<td>17.26</td>
<td>942</td>
<td>0.91</td>
<td>0.66</td>
</tr>
<tr>
<td>COMM-1</td>
<td>Grate SW corner Comm Bldg</td>
<td>17.65</td>
<td>338</td>
<td>5.87</td>
<td>0.49</td>
</tr>
<tr>
<td>COMM-2</td>
<td>Storm Grate East Side</td>
<td>17.65</td>
<td>5,87</td>
<td>24,359</td>
<td>0.49</td>
</tr>
<tr>
<td>I-5</td>
<td>MH5</td>
<td>17.28</td>
<td>3.46</td>
<td>14,393</td>
<td>3.46</td>
</tr>
<tr>
<td>I-6</td>
<td>Alley Inlet</td>
<td>17.11</td>
<td>5.42</td>
<td>13,399</td>
<td>5.42</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"
HydroCAD® 10.00-25  s/n 06187 © 2019 HydroCAD Software Solutions LLC

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"


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
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"

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=160.0’  S=0.0015 ’/’  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=0.016  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=0.90 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

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 12

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
SSDC PROPOSED SITE PLAN - BLOCKED CONDITIONS

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

2020-02-28 SSDC-1699.C PROPOSED blocked

Reach STRT: EXISTING STREET

Inflow
Outflow

Hydrograph

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)
14.22 cfs

Inflow Area=232,869 sf
Avg. Flow Depth=0.13'
Max Vel=3.34 fps
n=0.016
L=160.0'
S=0.0200 '/
Capacity=121.43 cfs

14.22 cfs

Reach SW-3: Overland swale

Inflow
Outflow

Hydrograph

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)
15

Inflow Area=232,869 sf
Avg. Flow Depth=0.19'
Max Vel=2.72 fps
n=0.016
L=25.0'
S=0.0080 '/
Capacity=63.73 cfs

12.90 cfs
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

Reach TD1: Drain for slab to Geopave

Hydrograph

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

Hydrograph

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
Pond 2P: RetainIts

Hydrograph

Inflow Area=43,194 sf
Peak Elev=17.96'
Storage=17,013 cf

Pond 2PGP1: Geopave

Hydrograph

Inflow Area=1,292 sf
Peak Elev=17.02'
Storage=254 cf
Pond 2PGP2: Geopave

Inflow Area=19,493 sf
Peak Elev=17.17'
Storage=1,392 cf

Pond 2PGP3: Geopave

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

Pond 3PGPE: Geopave

Inflow Area=2,575 sf  
Peak Elev=14.93'  
Storage=317 cf
**Pond 3PGPN: Geopave**

Inflow Area = 14,711 sf  
Peak Elev = 17.48'  
Storage = 2,545 cf

**Pond 4P: RetainIt**

Inflow Area = 27,364 sf  
Peak Elev = 17.88'  
Storage = 7,619 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
Page 22

Pond 4PGP1: Geopave

Inflow Area=9,960 sf
Peak Elev=17.41'
Storage=2,165 cf

Pond 4PGP2: Geopave

Inflow Area=14,576 sf
Peak Elev=17.42'
Storage=1,782 cf
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 5PGPS: 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'