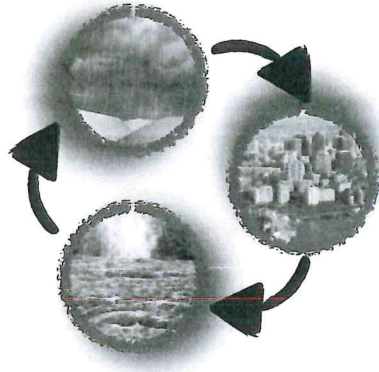


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MAR 05 2014

PLANNING



# STORMWATER ENGINEERING REPORT

2014 MAR -5 AM 10:36

TOWN OF FRANKLIN  
T. STONE

## Prepared For:

Whitman  
7 Pleasant Hill Road  
Cranbury, New Jersey, 08512

## Project Address:

Tri-County Regional Vocational Technical High School  
147 Pond Street  
Franklin, Massachusetts 02038

## Prepared By:



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## Date:

March 03, 2014

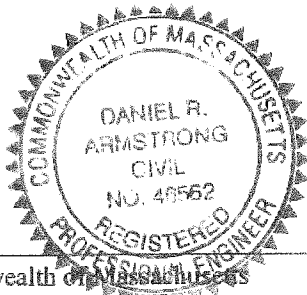
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## CERTIFICATION

The following Stormwater Engineering Report was prepared by me or under my direct supervision in accordance with the rules and regulations outlined in the Massachusetts Stormwater Standards as incorporated in the Wetland Protection Act Regulations 310 CMR 10.05(6)(k) and the Water Quality Certification Regulations, 314 CMR 9.06(6)(a), including hydrologic and hydraulic inputs and calculations, erosion potential and mitigation, groundwater effects, Long-Term Pollution Prevention Plan, Operation and Maintenance Plan, exhibits, and all other applicable documents associated with the proposed design, construction and maintenance of the proposed storm water management system located at the Tri-County Regional Vocational Technical High School, 147 Pond Street, Franklin, Massachusetts 02038.

 03/04/2014  
Daniel R. Armstrong, P.E., LEED AP



Commonwealth of Massachusetts  
Professional Engineer No. 46562



STRONG CIVIL DESIGN, LLC • 83 PEACH STREET, BRAINTREE, MA 02184 • (781) 974-8244



# STORMWATER REPORT

## **Introduction:**

The Tri-County Regional Vocational Technical High School, located at 147 Pond Street, Franklin Massachusetts, is proposing to install a ground mounted  $\pm 1.3$  Megawatt (direct current), 1.0 Megawatt (alternating current) Photovoltaic System. The proposed system will be installed in an undeveloped portion of wooded land located east of the main building. This stormwater engineering report accompanied by the Design Plans illustrate how the proposed improvements and stormwater management system will provide appropriate mitigation to stormwater runoff and groundwater recharge. An itemized breakdown illustrating that the proposed improvements are in accordance with the applicable rules and regulations outlined in the Massachusetts Stormwater Standards as incorporated in the Wetland Protection Act Regulations 310 CMR 10.05(6)(k) and the Water Quality Certification Regulations, 314 CMR 9.06(6)(a) is provided in this report.

## **Existing Conditions:**

### Topography and Drainage Patterns

The project limits currently drain toward three distinct discharge points located at the northeast corner (Catchment A), southwest corner (Catchment C) and approximately 150 feet north of the southern limit along the eastern side (Catchment B) as illustrated in the "Existing Conditions Aerial Photo and Catchment Area" exhibit.

The high point elevation of all three catchment areas is around elevation 394 and terminate at elevation 375 for Catchment A, 373 for Catchment B and 376 for Catchment C. The general drainage path for each catchment area (time of concentration) is also illustrated in the "Existing Conditions Aerial Photo and Catchment Area" exhibit.

### Soils Conditions and Ground Cover

The underlying soils located within the project limits are comprised of Montauk fine sandy loam and Urban land according to the Natural Resource Conservation Services (NRCS). A brief description of of Montauk fine sandy loam soil is:

- **Montauk fine sandy loam - 3 to 8 percent slopes (300B)** - Average slopes ranging from three to eight percent (3-8%). Hydrologic Soil Group C. A typical profile consists of sandy loam within the top nine inches (9") with layers of fine sandy loam within the following nine to twenty-nine inches (9"-29"), and loamy sand in the remaining twenty-nine to sixty inches (29"-60"). Soils are well drained.

A sieve analysis was performed by Paul B. Aldinger & Associates, Inc, dated July 2013, for the Montauk fine sandy loam and Urban land soil with similar results, inferring that the Urban land in this location should react similar to the Mantauk fine sandy loam and therefore can also be classified as hydrologic soil group "C". A copy of the Paul B. Aldinger & Associates, Inc. is not included in this report, but has been submitted to the Town of Franklin under separate cover.



The ground cover within the drainage catchment areas consists of woods.

#### FEMA Flood Zone

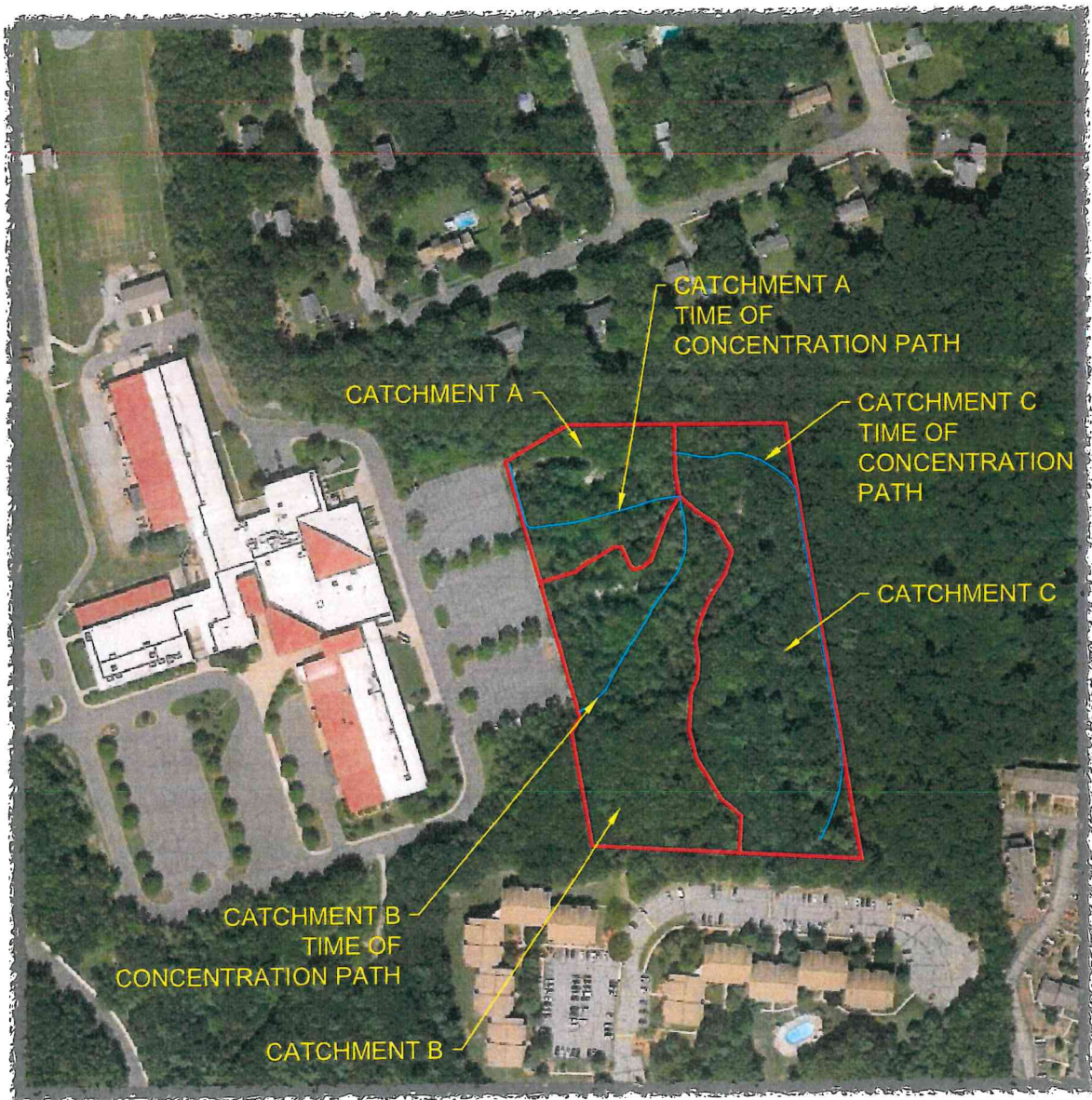
The project is located outside the 100 year flood zone, as indicated on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Number 25021C0306E, dated July 17, 2012, and 25021C0308E, dated July 17, 2012.

#### Seasonal High Groundwater Elevation

Test pits were performed in multiple locations throughout the project limits by Paul B. Aldinger & Associates, Inc., with observed groundwater. The seasonal high groundwater elevation ranges from approximately 384 near the north of the site and 374 near the south.



EXISTING CONDITIONS  
AERIAL PHOTO & CATCHMENT AREA





## Proposed Conditions:

### Proposed Improvements

The proposed improvements include clearing the existing wooded area leveling grades and installing solar photovoltaic panels. Intermittent stormwater drainage ditches shall be constructed throughout the project limits to retain and infiltrate excess runoff, ensuring that stormwater runoff rates and volumes do not exceed the existing conditions. Retaining stormwater throughout the limits of the project will evenly distribute groundwater recharge, similar to existing conditions.

### Stormwater Runoff Rate and Volume Comparison

The following tables illustrates the theoretical pre and post stormwater runoff rates and volumes for each catchment area as calculated by the SCS Unit Hydrograph method within HydroCAD software.

#### 2-Year Storm Event

| Catchment Area | Runoff Rate (cfs) |                  | Runoff Volume (cubic feet) |                  |
|----------------|-------------------|------------------|----------------------------|------------------|
|                | Pre-Development   | Post-Development | Pre-Development            | Post-Development |
| A              | 0.84              | 0.03             | 0.091                      | 0.015            |
| B              | 1.78              | 1.21             | 0.194                      | 0.108            |
| C              | 1.69              | 1.31             | 0.231                      | 0.142            |

#### 10-Year Storm Event

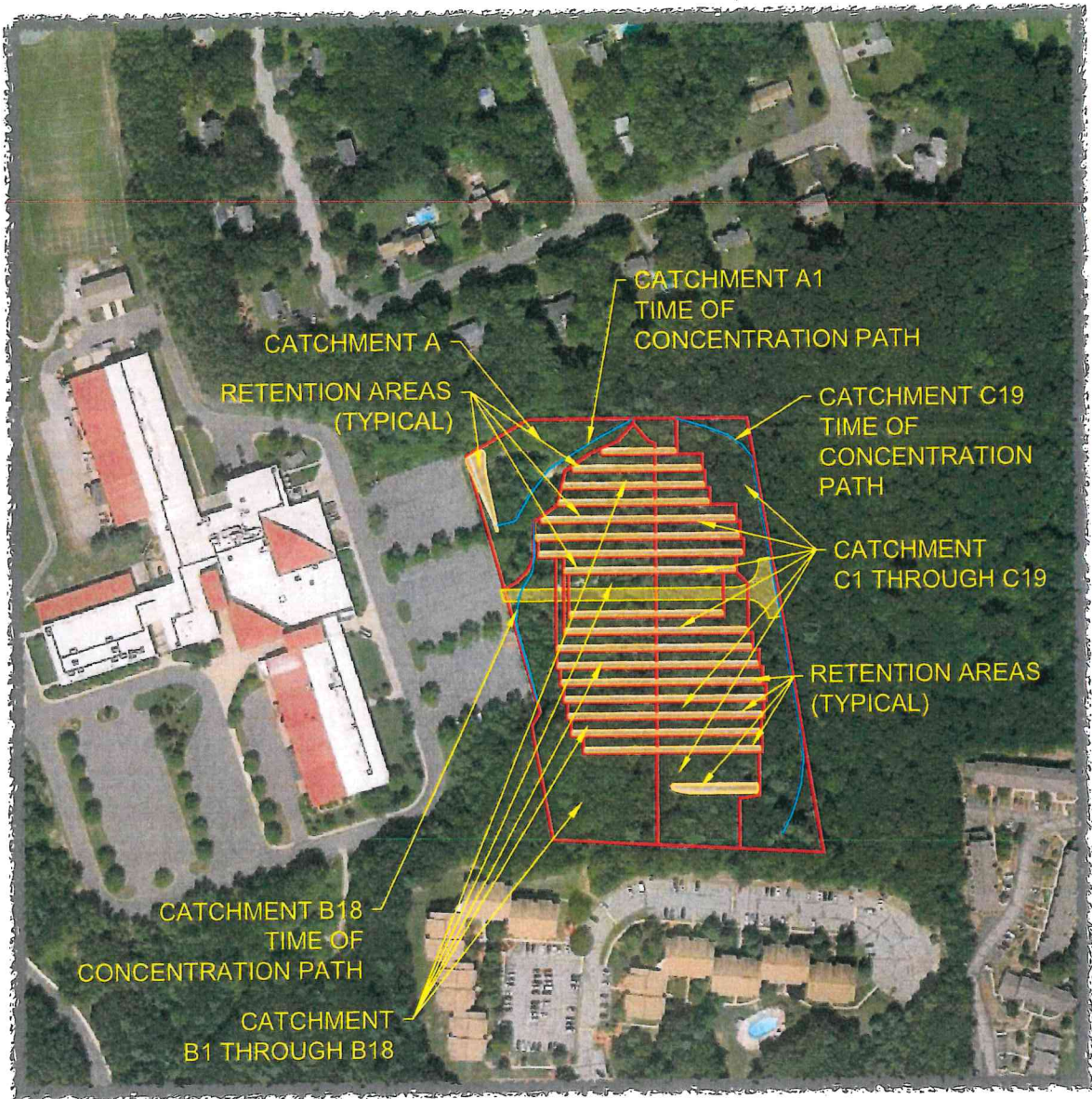
| Catchment Area | Runoff Rate (cfs) |                  | Runoff Volume (cubic feet) |                  |
|----------------|-------------------|------------------|----------------------------|------------------|
|                | Pre-Development   | Post-Development | Pre-Development            | Post-Development |
| A              | 2.02              | 1.79             | 0.200                      | 0.159            |
| B              | 4.29              | 2.59             | 0.425                      | 0.312            |
| C              | 4.03              | 2.59             | 0.403                      | 0.339            |

#### 100-Year Storm Event

| Catchment Area | Runoff Rate (cfs) |                  | Runoff Volume (cubic feet) |                  |
|----------------|-------------------|------------------|----------------------------|------------------|
|                | Pre-Development   | Post-Development | Pre-Development            | Post-Development |
| A              | 3.86              | 3.09             | 0.372                      | 0.274            |
| B              | 8.19              | 5.58             | 0.789                      | 0.665            |
| C              | 7.66              | 6.64             | 0.941                      | 0.863            |



## PROPOSED CATCHMENT AREAS





## **Massachusetts Stormwater Standards**

The following itemized breakdown illustrates how the proposed development is designed in accordance with the applicable rules and regulations outlined in the Massachusetts Stormwater Standards as incorporated in the Wetland Protection Act Regulations 310 CMR 10.05(6)(k) and the Water Quality Certification Regulations, 314 CMR 9.06(6)(a).

### Standard 1:

*No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.*

The proposed improvements will reduce runoff rates and volumes currently discharging from the site.

All velocities discharging from each proposed stormwater storage facility is less than 2 ft/sec. The estimated runoff velocity from each structure for the 100-year storm event is presented in the HydroCAD printout at the end of this report.

### Standard 2:

*Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.*

The proposed project will reduce runoff rates and volumes as indicated previously in this report.

### Standard 3:

*Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.*

#### **Required Recharge Volume:**

For hydrologic soil group C, a depth factor of 0.25 inches of new impervious area shall be utilized to determine the required recharge volume.

$$R_v = F \times i$$

where:

$R_v$  = Required Recharge Volume (ft<sup>3</sup>)

$F$  = Depth Factor = 0.25 inches

$i$  = Impervious Area (ft<sup>2</sup>)



Catchment Area A Impervious Area = 4,334 ft<sup>2</sup>:

$$R_v = 0.25 \text{ in.} \times \left( \frac{1 \text{ ft}}{12 \text{ in.}} \right) \times 4,334 \text{ ft}^2 = 90 \text{ ft}^3$$

Provided recharge volume = **2,891 ft<sup>3</sup>**

Catchment Area B Impervious Area = 37,448 ft<sup>2</sup>:

$$R_v = 0.25 \text{ in.} \times \left( \frac{1 \text{ ft}}{12 \text{ in.}} \right) \times 37,448 \text{ ft}^2 = 780 \text{ ft}^3$$

Provided recharge volume = **16,136 ft<sup>3</sup>**

Catchment Area C Impervious Area = 33,793 ft<sup>2</sup>:

$$R_v = 0.25 \text{ in.} \times \left( \frac{1 \text{ ft}}{12 \text{ in.}} \right) \times 33,793 \text{ ft}^2 = 704 \text{ ft}^3$$

Provided recharge volume = **20,377 ft<sup>3</sup>**

The recharge volume that is provided will infiltrate within 72 hours as illustrated below.

$$t_d(k_i)(A) = R_p$$

where:

$t_d$  = Time to Drawdown (hrs)

$R_p$  = Provided Recharge Volume (ft<sup>3</sup>)

$k_i$  = Infiltration Rate = 0.17 in./hr. (Rawles Rate)\*

$A$  = Average Horizontal Area (ft<sup>2</sup>)

\* - The bottom elevation of each drainage swale is approximately 2 feet above the seasonal high groundwater elevation

To determine the drawdown time for the stormwater drainage ditches within the solar field is calculated based on a sample foot section

$$t_d = \frac{7 \text{ ft}^3}{(0.17 \text{ in./hr})(1 \text{ ft}/12 \text{ in.})(7 \text{ ft}^2)} = 70.6 \text{ hours} < 72 \text{ hours}$$

The drawdown time for the drainage ditch at the end of Catchment A is as follows:

$$t_d = \frac{2,891 \text{ ft}^3}{(0.17 \text{ in./hr})(1 \text{ ft}/12 \text{ in.})(2,891 \text{ ft}^2)} = 70.6 \text{ hours} < 72 \text{ hours}$$



The drawdown time for the drainage ditch at the end of Catchment C is as follows:

$$t_d = \frac{1,968 \text{ ft}^3}{(0.17 \text{ in./hr})(1 \text{ ft}/12 \text{ in.})(1,968 \text{ ft}^2)} = 70.6 \text{ hours} < 72 \text{ hours}$$

**Standard 4:**

*Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:*

- a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;*
- b. Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and*
- c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.*

The proposed project does not generate Total Suspended Solids.

**Standard 5**

*For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.*

The proposed improvements do not qualify as a land use with a high potential pollution load.

**Standard 6**

*Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.*

The property is not located within an area of critical environmental concern.



#### Standard 7

*A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.*

The project is new development.

#### Standard 8

*A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.*

The following erosion control measures shall be implemented during construction and are indicated within the plans as the Construction Period Pollution Prevention Plan

- The owner and contractor are responsible for the installation and maintenance of the silt fence, and all other pollution prevention measures throughout the entire construction period.
- Should groundwater pumping be required during construction, all pumped groundwater shall be treated prior to discharge. Direct discharge of pumps groundwater is strictly prohibited.
- Silt fence shall be placed on the down gradient side of any and all stockpiled soil.
- There shall be no storage of hazardous material onsite (such as fuels, hydraulic fluids and oils).
- A spill clean-up kit shall be onsite at all times.
- Any area disturbed by construction that will remain undisturbed longer than 14 days shall be stabilized with hydro-seeding or other appropriate measures.
- Additional sedimentation control devices shall be kept on-site during construction and shall be installed at any time during construction if instructed by the Engineer or Town.
- Inspection of maintenance of the erosion control features shall be conducted weekly or after any storm event with a depth of 1/2-inch or greater and recorded.
- All sedimentation collected during construction shall disposed of offsite.

#### Standard 9

*A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.*

A long term pollution prevention plan for the stormwater management system is provided on the following page.

#### Standard 10

*All illicit discharges to the stormwater management system are prohibited.*

No illicit discharges to stormwater management systems are proposed with this development. The project shall conform to the Town's MS4 IDDE program.





## LONG TERM POLLUTION PREVENTION AND MAINTENANCE PLAN

The proposed stormwater management system is designed to require minimal to no maintenance. The long term pollution prevention plan for this system is as follows:

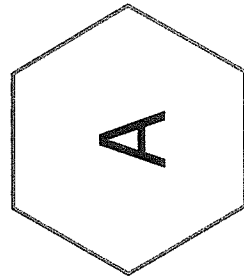
- No mowing or major plant clearing except as needed for major repairs. All grass clippings shall be disposed of offsite.
- Town fire department shall be immediately contacted to respond to and manage the clean-up of any spill of oil or hazardous materials as recommend by MassDEP. MassDEP 24-hour Spill Reporting shall be contacted to report any such spills toll-free at (888) 304-1133.
- The project shall conform to the Town's MS4 IDDE program.

Tri-County Regional Vocational is the owner, and Sun-Edison is the operator of the proposed solar field system.

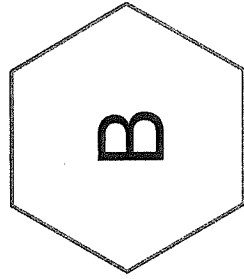


# HYDROCAD PRINTOUT

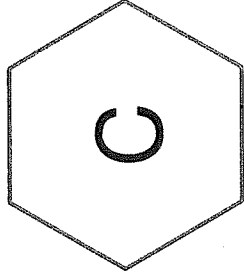




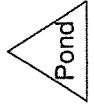
Catchment A



Catchment B



Catchment C



**Drainage Diagram for Existing**

Prepared by Strong Civil Design, LLC, Printed 3/3/2014  
HydroCAD® 9.10 s/n 06749 © 2010 HydroCAD Software Solutions LLC

**Existing**

Prepared by Strong Civil Design, LLC

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Franklin Solar Field  
Type III 24-hr 2-Year Rainfall=3.20"

Printed 3/2/2014

Page 1

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points

Runoff by SCS TR-20 method, UH=SCS

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

**Subcatchment A: Catchment A**Runoff Area=57,861 sf 0.00% Impervious Runoff Depth>0.82"  
Flow Length=375' Tc=16.1 min CN=70 Runoff=0.84 cfs 0.091 af**Subcatchment B: Catchment B**Runoff Area=122,837 sf 0.00% Impervious Runoff Depth>0.82"  
Flow Length=425' Tc=16.1 min CN=70 Runoff=1.78 cfs 0.194 af**Subcatchment C: Catchment C**Runoff Area=146,797 sf 0.00% Impervious Runoff Depth>0.82"  
Flow Length=825' Tc=28.6 min CN=70 Runoff=1.69 cfs 0.231 af**Total Runoff Area = 7.518 ac Runoff Volume = 0.515 af Average Runoff Depth = 0.82"**  
**100.00% Pervious = 7.518 ac 0.00% Impervious = 0.000 ac**



**Existing**

Prepared by Strong Civil Design, LLC

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Franklin Solar Field  
Type III 24-hr 10-Year Rainfall=4.70"

Printed 3/2/2014

Page 2

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points

Runoff by SCS TR-20 method, UH=SCS

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

**Subcatchment A: Catchment A**Runoff Area=57,861 sf 0.00% Impervious Runoff Depth>1.81"  
Flow Length=375' Tc=16.1 min CN=70 Runoff=2.02 cfs 0.200 af**Subcatchment B: Catchment B**Runoff Area=122,837 sf 0.00% Impervious Runoff Depth>1.81"  
Flow Length=425' Tc=16.1 min CN=70 Runoff=4.29 cfs 0.425 af**Subcatchment C: Catchment C**Runoff Area=146,797 sf 0.00% Impervious Runoff Depth>1.80"  
Flow Length=825' Tc=28.6 min CN=70 Runoff=4.03 cfs 0.507 af**Total Runoff Area = 7.518 ac Runoff Volume = 1.132 af Average Runoff Depth = 1.81"**  
**100.00% Pervious = 7.518 ac 0.00% Impervious = 0.000 ac**

**Existing**

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Franklin Solar Field

Type III 24-hr 100-Year Rainfall=6.70"

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Page 3

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points

Runoff by SCS TR-20 method, UH=SCS

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

**Subcatchment A: Catchment A**Runoff Area=57,861 sf 0.00% Impervious Runoff Depth>3.36"  
Flow Length=375' Tc=16.1 min CN=70 Runoff=3.86 cfs 0.372 af**Subcatchment B: Catchment B**Runoff Area=122,837 sf 0.00% Impervious Runoff Depth>3.36"  
Flow Length=425' Tc=16.1 min CN=70 Runoff=8.19 cfs 0.789 af**Subcatchment C: Catchment C**Runoff Area=146,797 sf 0.00% Impervious Runoff Depth>3.35"  
Flow Length=825' Tc=28.6 min CN=70 Runoff=7.66 cfs 0.941 af**Total Runoff Area = 7.518 ac Runoff Volume = 2.102 af Average Runoff Depth = 3.35"**  
**100.00% Pervious = 7.518 ac 0.00% Impervious = 0.000 ac**

**Existing**

Prepared by Strong Civil Design, LLC

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Franklin Solar Field  
Type III 24-hr 100-Year Rainfall=6.70"

Printed 3/2/2014

Page 1

**Summary for Subcatchment A: Catchment A**

Runoff = 3.86 cfs @ 12.22 hrs, Volume= 0.372 af, Depth&gt; 3.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 57,861    | 70 | Woods, Good, HSG C    |
| 57,861    |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 11.3     | 50            | 0.0250        | 0.07              |                | <b>Sheet Flow, Initial Sheet Flow</b><br>Woods: Light underbrush n= 0.400 P2= 3.20" |
| 4.8      | 325           | 0.0500        | 1.12              |                | <b>Shallow Concentrated Flow, General Flow</b><br>Woodland Kv= 5.0 fps              |
| 16.1     | 375           | Total         |                   |                |   |

**Summary for Subcatchment B: Catchment B**

Runoff = 8.19 cfs @ 12.22 hrs, Volume= 0.789 af, Depth&gt; 3.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 122,837   | 70 | Woods, Good, HSG C    |
| 122,837   |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 10.5     | 50            | 0.0300        | 0.08              |                | <b>Sheet Flow, Initial Sheet Flow</b><br>Woods: Light underbrush n= 0.400 P2= 3.20" |
| 5.6      | 375           | 0.0500        | 1.12              |                | <b>Shallow Concentrated Flow, General Flow</b><br>Woodland Kv= 5.0 fps              |
| 16.1     | 425           | Total         |                   |                |   |

**Summary for Subcatchment C: Catchment C**

Runoff = 7.66 cfs @ 12.42 hrs, Volume= 0.941 af, Depth&gt; 3.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 146,797   | 70 | Woods, Good, HSG C    |
| 146,797   |    | 100.00% Pervious Area |

**Existing**

Prepared by Strong Civil Design, LLC

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Franklin Solar Field

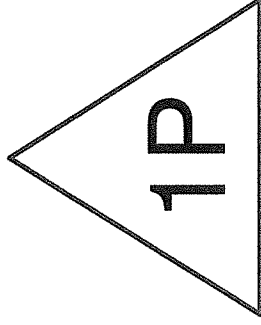
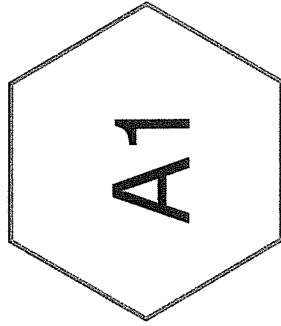
Type III 24-hr 100-Year Rainfall=6.70"

Printed 3/2/2014

Page 2

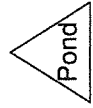
| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---|
| 12.3        | 50               | 0.0200           | 0.07                 |                   | <b>Sheet Flow, Initial Sheet Flow</b><br>Woods: Light underbrush n= 0.400 P2= 3.20" |
| 16.3        | 775              | 0.0250           | 0.79                 |                   | <b>Shallow Concentrated Flow, General Flow</b><br>Woodland Kv= 5.0 fps              |
| 28.6        | 825              | Total            |                      |                   |   |





Catchment A

Depression A1



**Drainage Diagram for Proposed A**

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## Proposed A

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Franklin Solar Field

Type III 24-hr 2-Year Rainfall=3.20"

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Page 1

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points

Runoff by SCS TR-20 method, UH=SCS

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

### Subcatchment A1: Catchment A

Runoff Area=35,073 sf 12.36% Impervious Runoff Depth>1.21"  
Flow Length=425' Tc=13.0 min CN=77 Runoff=0.88 cfs 0.081 af

### Pond 1P: Depression A1

Peak Elev=375.00' Storage=2,902 cf Inflow=0.88 cfs 0.081 af  
Discarded=0.00 cfs 0.003 af Primary=0.03 cfs 0.011 af Outflow=0.03 cfs 0.015 af

**Total Runoff Area = 0.805 ac Runoff Volume = 0.081 af Average Runoff Depth = 1.21"**  
**87.64% Pervious = 0.706 ac 12.36% Impervious = 0.099 ac**

## Proposed A

Prepared by Strong Civil Design, LLC

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Franklin Solar Field  
Type III 24-hr 10-Year Rainfall=4.70"

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points

Runoff by SCS TR-20 method, UH=SCS

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

### Subcatchment A1: Catchment A

Runoff Area=35,073 sf 12.36% Impervious Runoff Depth>2.37"  
Flow Length=425' Tc=13.0 min CN=77 Runoff=1.79 cfs 0.159 af

### Pond 1P: Depression A1

Peak Elev=375.05' Storage=3,070 cf Inflow=1.79 cfs 0.159 af  
Discarded=0.00 cfs 0.004 af Primary=0.79 cfs 0.088 af Outflow=0.80 cfs 0.092 af

**Total Runoff Area = 0.805 ac Runoff Volume = 0.159 af Average Runoff Depth = 2.37"**  
**87.64% Pervious = 0.706 ac 12.36% Impervious = 0.099 ac**

**Proposed A**

Prepared by Strong Civil Design, LLC

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Franklin Solar Field  
Type III 24-hr 100-Year Rainfall=6.70"

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points

Runoff by SCS TR-20 method, UH=SCS

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

**Subcatchment A1: Catchment A**

Runoff Area=35,073 sf 12.36% Impervious Runoff Depth>4.09"  
Flow Length=425' Tc=13.0 min CN=77 Runoff=3.09 cfs 0.274 af

**Pond 1P: Depression A1**

Peak Elev=375.13' Storage=3,326 cf Inflow=3.09 cfs 0.274 af  
Discarded=0.00 cfs 0.004 af Primary=2.92 cfs 0.204 af Outflow=2.93 cfs 0.208 af

**Total Runoff Area = 0.805 ac Runoff Volume = 0.274 af Average Runoff Depth = 4.09"**  
**87.64% Pervious = 0.706 ac 12.36% Impervious = 0.099 ac**



**Proposed A**

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Franklin Solar Field

Type III 24-hr 100-Year Rainfall=6.70"

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Page 1

**Summary for Subcatchment A1: Catchment A**

Runoff = 3.09 cfs @ 12.18 hrs, Volume= 0.274 af, Depth&gt; 4.09"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 4,334     | 98 | Roofs, HSG C                  |
| 30,739    | 74 | >75% Grass cover, Good, HSG C |
| 35,073    | 77 | Weighted Average              |
| 30,739    |    | 87.64% Pervious Area          |
| 4,334     |    | 12.36% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 8.2      | 50            | 0.0200        | 0.10              |                | <b>Sheet Flow, Initial Sheet Flow</b><br>Grass: Dense n= 0.240 P2= 3.20"          |
| 4.8      | 375           | 0.0350        | 1.31              |                | <b>Shallow Concentrated Flow, General Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 13.0     | 425           | Total         |                   |                |   |

**Summary for Pond 1P: Depression A1**

Inflow Area = 0.805 ac, 12.36% Impervious, Inflow Depth > 4.09" for 100-Year event  
 Inflow = 3.09 cfs @ 12.18 hrs, Volume= 0.274 af  
 Outflow = 2.93 cfs @ 12.22 hrs, Volume= 0.208 af, Atten= 5%, Lag= 2.6 min  
 Discarded = 0.00 cfs @ 12.22 hrs, Volume= 0.004 af  
 Primary = 2.92 cfs @ 12.22 hrs, Volume= 0.204 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 375.13' @ 12.22 hrs Surf.Area= 3,499 sf Storage= 3,326 cf

Plug-Flow detention time= 132.7 min calculated for 0.208 af (76% of inflow)  
 Center-of-Mass det. time= 48.3 min ( 870.1 - 821.9 )

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 374.00' | 6,768 cf      | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|------------------|-------------------|------------------------|------------------------|
| 374.00           | 2,411             | 0                      | 0                      |
| 375.00           | 3,370             | 2,891                  | 2,891                  |
| 376.00           | 4,385             | 3,878                  | 6,768                  |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Primary   | 375.00' | <b>24.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 374.00' | <b>0.170 in/hr Exfiltration over Horizontal area above 374.00'</b><br>Excluded Horizontal area = 2,411 sf   |

## Proposed A

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Franklin Solar Field  
Type III 24-hr 100-Year Rainfall=6.70"

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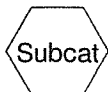
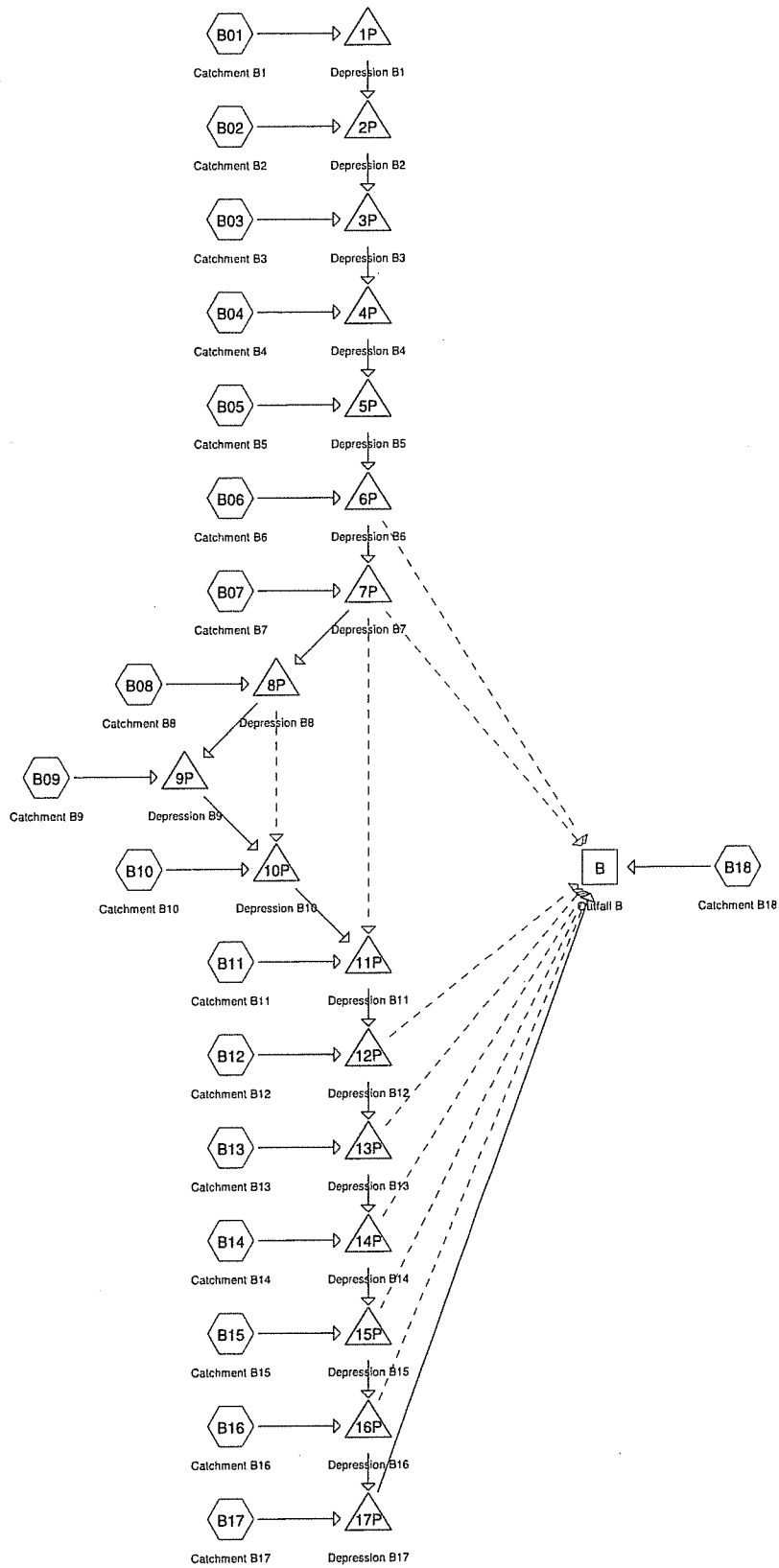
Page 2

**Discarded OutFlow** Max=0.00 cfs @ 12.22 hrs HW=375.13' (Free Discharge)

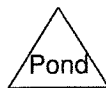
↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=2.91 cfs @ 12.22 hrs HW=375.13' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 2.91 cfs @ 0.96 fps)



Subcat



Reach

**Drainage Diagram for Proposed B**  
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**Proposed B**

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Franklin Solar Field  
Type III 24-hr 2-Year Rainfall=3.20"

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Page 1

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points

Runoff by SCS TR-20 method, UH=SCS

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

|  |   |
|--|---|
| <b>Subcatchment B01: Catchment B1</b>  | Runoff Area=2,527 sf 33.87% Impervious Runoff Depth>1.54"<br>Tc=6.0 min CN=82 Runoff=0.10 cfs 0.007 af  |
| <b>Subcatchment B02: Catchment B2</b>  | Runoff Area=3,864 sf 38.48% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.17 cfs 0.012 af  |
| <b>Subcatchment B03: Catchment B3</b>  | Runoff Area=4,528 sf 38.91% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.20 cfs 0.014 af  |
| <b>Subcatchment B04: Catchment B4</b>  | Runoff Area=4,673 sf 39.48% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.20 cfs 0.014 af  |
| <b>Subcatchment B05: Catchment B5</b>  | Runoff Area=5,319 sf 39.63% Impervious Runoff Depth>1.68"<br>Tc=6.0 min CN=84 Runoff=0.24 cfs 0.017 af  |
| <b>Subcatchment B06: Catchment B6</b>  | Runoff Area=5,930 sf 39.16% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.26 cfs 0.018 af  |
| <b>Subcatchment B07: Catchment B7</b>  | Runoff Area=5,688 sf 39.61% Impervious Runoff Depth>1.68"<br>Tc=6.0 min CN=84 Runoff=0.26 cfs 0.018 af  |
| <b>Subcatchment B08: Catchment B8</b>  | Runoff Area=4,462 sf 39.60% Impervious Runoff Depth>1.68"<br>Tc=6.0 min CN=84 Runoff=0.20 cfs 0.014 af  |
| <b>Subcatchment B09: Catchment B9</b>  | Runoff Area=10,871 sf 19.20% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.47 cfs 0.033 af |
| <b>Subcatchment B10: Catchment B10</b> | Runoff Area=5,067 sf 37.56% Impervious Runoff Depth>1.68"<br>Tc=6.0 min CN=84 Runoff=0.23 cfs 0.016 af  |
| <b>Subcatchment B11: Catchment B11</b> | Runoff Area=6,566 sf 34.28% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.28 cfs 0.020 af  |
| <b>Subcatchment B12: Catchment B12</b> | Runoff Area=4,816 sf 39.64% Impervious Runoff Depth>1.68"<br>Tc=6.0 min CN=84 Runoff=0.22 cfs 0.015 af  |
| <b>Subcatchment B13: Catchment B13</b> | Runoff Area=4,650 sf 39.63% Impervious Runoff Depth>1.68"<br>Tc=6.0 min CN=84 Runoff=0.21 cfs 0.015 af  |
| <b>Subcatchment B14: Catchment B14</b> | Runoff Area=4,492 sf 39.60% Impervious Runoff Depth>1.68"<br>Tc=6.0 min CN=84 Runoff=0.20 cfs 0.014 af  |
| <b>Subcatchment B15: Catchment B15</b> | Runoff Area=4,322 sf 39.59% Impervious Runoff Depth>1.68"<br>Tc=6.0 min CN=84 Runoff=0.20 cfs 0.014 af  |
| <b>Subcatchment B16: Catchment B16</b> | Runoff Area=4,153 sf 39.56% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.18 cfs 0.013 af  |
| <b>Subcatchment B17: Catchment B17</b> | Runoff Area=3,554 sf 39.48% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.15 cfs 0.011 af  |

**Proposed B**

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Franklin Solar Field  
Type III 24-hr 2-Year Rainfall=3.20"

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**Subcatchment B18: Catchment B18**Runoff Area=49,270 sf 5.81% Impervious Runoff Depth>1.15"  
Flow Length=325' Tc=12.0 min CN=76 Runoff=1.21 cfs 0.108 af**Reach B: Outfall B**Inflow=1.21 cfs 0.108 af  
Outflow=1.21 cfs 0.108 af**Pond 1P: Depression B1**Peak Elev=386.51' Storage=275 cf Inflow=0.10 cfs 0.007 af  
Discarded=0.00 cfs 0.001 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.001 af**Pond 2P: Depression B2**Peak Elev=385.55' Storage=441 cf Inflow=0.17 cfs 0.012 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af**Pond 3P: Depression B3**Peak Elev=385.07' Storage=518 cf Inflow=0.20 cfs 0.014 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af**Pond 4P: Depression B4**Peak Elev=384.53' Storage=535 cf Inflow=0.20 cfs 0.014 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af**Pond 5P: Depression B5**Peak Elev=383.56' Storage=636 cf Inflow=0.24 cfs 0.017 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af**Pond 6P: Depression B6**Peak Elev=383.07' Storage=679 cf Inflow=0.26 cfs 0.018 af  
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af**Pond 7P: Depression B7**Peak Elev=382.59' Storage=681 cf Inflow=0.26 cfs 0.018 af  
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Tertiary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af**Pond 8P: Depression B8**Peak Elev=382.31' Storage=534 cf Inflow=0.20 cfs 0.014 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af**Pond 9P: Depression B9**Peak Elev=381.95' Storage=1,018 cf Inflow=0.47 cfs 0.033 af  
Discarded=0.00 cfs 0.004 af Primary=0.02 cfs 0.007 af Outflow=0.03 cfs 0.010 af**Pond 10P: Depression B10**Peak Elev=380.86' Storage=876 cf Inflow=0.23 cfs 0.023 af  
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af**Pond 11P: Depression B11**Peak Elev=380.48' Storage=759 cf Inflow=0.28 cfs 0.020 af  
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af**Pond 12P: Depression B12**Peak Elev=380.16' Storage=577 cf Inflow=0.22 cfs 0.015 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af**Pond 13P: Depression B13**Peak Elev=379.84' Storage=557 cf Inflow=0.21 cfs 0.015 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af**Pond 14P: Depression B14**Peak Elev=379.59' Storage=538 cf Inflow=0.20 cfs 0.014 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af**Pond 15P: Depression B15**Peak Elev=379.39' Storage=517 cf Inflow=0.20 cfs 0.014 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af**Pond 16P: Depression B16**Peak Elev=379.15' Storage=475 cf Inflow=0.18 cfs 0.013 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af**Pond 17P: Depression B17**Peak Elev=378.95' Storage=406 cf Inflow=0.15 cfs 0.011 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

**Proposed B**

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Franklin Solar Field  
*Type III 24-hr 2-Year Rainfall=3.20"*

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**Total Runoff Area = 3.093 ac   Runoff Volume = 0.376 af   Average Runoff Depth = 1.46"**  
**74.92% Pervious = 2.318 ac   25.08% Impervious = 0.776 ac**

**Proposed B**

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Franklin Solar Field  
Type III 24-hr 10-Year Rainfall=4.70"

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points

Runoff by SCS TR-20 method, UH=SCS

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

|  |   |
|--|---|
| <b>Subcatchment B01: Catchment B1</b>  | Runoff Area=2,527 sf 33.87% Impervious Runoff Depth>2.81"<br>Tc=6.0 min CN=82 Runoff=0.19 cfs 0.014 af  |
| <b>Subcatchment B02: Catchment B2</b>  | Runoff Area=3,864 sf 38.48% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.30 cfs 0.021 af  |
| <b>Subcatchment B03: Catchment B3</b>  | Runoff Area=4,528 sf 38.91% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.35 cfs 0.025 af  |
| <b>Subcatchment B04: Catchment B4</b>  | Runoff Area=4,673 sf 39.48% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.36 cfs 0.026 af  |
| <b>Subcatchment B05: Catchment B5</b>  | Runoff Area=5,319 sf 39.63% Impervious Runoff Depth>2.99"<br>Tc=6.0 min CN=84 Runoff=0.43 cfs 0.030 af  |
| <b>Subcatchment B06: Catchment B6</b>  | Runoff Area=5,930 sf 39.16% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.46 cfs 0.033 af  |
| <b>Subcatchment B07: Catchment B7</b>  | Runoff Area=5,688 sf 39.61% Impervious Runoff Depth>2.99"<br>Tc=6.0 min CN=84 Runoff=0.46 cfs 0.033 af  |
| <b>Subcatchment B08: Catchment B8</b>  | Runoff Area=4,462 sf 39.60% Impervious Runoff Depth>2.99"<br>Tc=6.0 min CN=84 Runoff=0.36 cfs 0.026 af  |
| <b>Subcatchment B09: Catchment B9</b>  | Runoff Area=10,871 sf 19.20% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.85 cfs 0.060 af |
| <b>Subcatchment B10: Catchment B10</b> | Runoff Area=5,067 sf 37.56% Impervious Runoff Depth>2.99"<br>Tc=6.0 min CN=84 Runoff=0.41 cfs 0.029 af  |
| <b>Subcatchment B11: Catchment B11</b> | Runoff Area=6,566 sf 34.28% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.51 cfs 0.036 af  |
| <b>Subcatchment B12: Catchment B12</b> | Runoff Area=4,816 sf 39.64% Impervious Runoff Depth>2.99"<br>Tc=6.0 min CN=84 Runoff=0.39 cfs 0.028 af  |
| <b>Subcatchment B13: Catchment B13</b> | Runoff Area=4,650 sf 39.63% Impervious Runoff Depth>2.99"<br>Tc=6.0 min CN=84 Runoff=0.37 cfs 0.027 af  |
| <b>Subcatchment B14: Catchment B14</b> | Runoff Area=4,492 sf 39.60% Impervious Runoff Depth>2.99"<br>Tc=6.0 min CN=84 Runoff=0.36 cfs 0.026 af  |
| <b>Subcatchment B15: Catchment B15</b> | Runoff Area=4,322 sf 39.59% Impervious Runoff Depth>2.99"<br>Tc=6.0 min CN=84 Runoff=0.35 cfs 0.025 af  |
| <b>Subcatchment B16: Catchment B16</b> | Runoff Area=4,153 sf 39.56% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.32 cfs 0.023 af  |
| <b>Subcatchment B17: Catchment B17</b> | Runoff Area=3,554 sf 39.48% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.28 cfs 0.020 af  |

## Proposed B

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Franklin Solar Field  
Type III 24-hr 10-Year Rainfall=4.70"

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### Subcatchment B18: Catchment B18

Runoff Area=49,270 sf 5.81% Impervious Runoff Depth>2.28"  
Flow Length=325' Tc=12.0 min CN=76 Runoff=2.48 cfs 0.215 af

### Reach B: Outfall B

Inflow=2.48 cfs 0.237 af  
Outflow=2.48 cfs 0.237 af

### Pond 1P: Depression B1

Peak Elev=386.83' Storage=511 cf Inflow=0.19 cfs 0.014 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

### Pond 2P: Depression B2

Peak Elev=385.87' Storage=810 cf Inflow=0.30 cfs 0.021 af  
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af

### Pond 3P: Depression B3

Peak Elev=385.40' Storage=952 cf Inflow=0.35 cfs 0.025 af  
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af

### Pond 4P: Depression B4

Peak Elev=384.86' Storage=982 cf Inflow=0.36 cfs 0.026 af  
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af

### Pond 5P: Depression B5

Peak Elev=383.88' Storage=1,153 cf Inflow=0.43 cfs 0.030 af  
Discarded=0.00 cfs 0.004 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.004 af

### Pond 6P: Depression B6

Peak Elev=383.40' Storage=1,248 cf Inflow=0.46 cfs 0.033 af  
Discarded=0.00 cfs 0.004 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.004 af

### Pond 7P: Depression B7

Peak Elev=382.92' Storage=1,235 cf Inflow=0.46 cfs 0.033 af  
Discarded=0.00 cfs 0.004 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Tertiary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.004 af

### Pond 8P: Depression B8

Peak Elev=382.64' Storage=968 cf Inflow=0.36 cfs 0.026 af  
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af

### Pond 9P: Depression B9

Peak Elev=381.96' Storage=1,034 cf Inflow=0.85 cfs 0.060 af  
Discarded=0.00 cfs 0.004 af Primary=0.60 cfs 0.033 af Outflow=0.60 cfs 0.037 af

### Pond 10P: Depression B10

Peak Elev=381.00' Storage=1,086 cf Inflow=0.87 cfs 0.062 af  
Discarded=0.00 cfs 0.004 af Primary=0.33 cfs 0.034 af Outflow=0.33 cfs 0.038 af

### Pond 11P: Depression B11

Peak Elev=380.75' Storage=1,175 cf Inflow=0.51 cfs 0.070 af  
Discarded=0.00 cfs 0.004 af Primary=0.20 cfs 0.039 af Outflow=0.21 cfs 0.043 af

### Pond 12P: Depression B12

Peak Elev=380.56' Storage=1,168 cf Inflow=0.39 cfs 0.067 af  
Discarded=0.00 cfs 0.004 af Primary=0.14 cfs 0.035 af Secondary=0.01 cfs 0.001 af Outflow=0.15 cfs 0.040 af

### Pond 13P: Depression B13

Peak Elev=380.24' Storage=1,126 cf Inflow=0.37 cfs 0.062 af  
Discarded=0.00 cfs 0.004 af Primary=0.12 cfs 0.031 af Secondary=0.00 cfs 0.001 af Outflow=0.13 cfs 0.036 af

### Pond 14P: Depression B14

Peak Elev=379.99' Storage=1,087 cf Inflow=0.36 cfs 0.057 af  
Discarded=0.00 cfs 0.004 af Primary=0.11 cfs 0.027 af Secondary=0.00 cfs 0.001 af Outflow=0.12 cfs 0.032 af

### Pond 15P: Depression B15

Peak Elev=379.78' Storage=1,044 cf Inflow=0.35 cfs 0.052 af  
Discarded=0.00 cfs 0.004 af Primary=0.10 cfs 0.024 af Secondary=0.00 cfs 0.001 af Outflow=0.11 cfs 0.028 af

### Pond 16P: Depression B16

Peak Elev=379.57' Storage=1,002 cf Inflow=0.32 cfs 0.047 af  
Discarded=0.00 cfs 0.003 af Primary=0.07 cfs 0.017 af Secondary=0.01 cfs 0.003 af Outflow=0.09 cfs 0.024 af

### Pond 17P: Depression B17

Peak Elev=379.36' Storage=855 cf Inflow=0.28 cfs 0.037 af  
Discarded=0.00 cfs 0.003 af Primary=0.06 cfs 0.015 af Outflow=0.06 cfs 0.018 af



**Proposed B**

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*Type III 24-hr 10-Year Rainfall=4.70"*

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**Total Runoff Area = 3.093 ac   Runoff Volume = 0.696 af   Average Runoff Depth = 2.70"**  
**74.92% Pervious = 2.318 ac   25.08% Impervious = 0.776 ac**

**Proposed B**

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Franklin Solar Field  
Type III 24-hr 100-Year Rainfall=6.70"

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points

Runoff by SCS TR-20 method, UH=SCS

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

|  |   |
|--|---|
| <b>Subcatchment B01: Catchment B1</b>  | Runoff Area=2,527 sf 33.87% Impervious Runoff Depth>4.63"<br>Tc=6.0 min CN=82 Runoff=0.31 cfs 0.022 af  |
| <b>Subcatchment B02: Catchment B2</b>  | Runoff Area=3,864 sf 38.48% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.49 cfs 0.035 af  |
| <b>Subcatchment B03: Catchment B3</b>  | Runoff Area=4,528 sf 38.91% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.57 cfs 0.041 af  |
| <b>Subcatchment B04: Catchment B4</b>  | Runoff Area=4,673 sf 39.48% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.59 cfs 0.042 af  |
| <b>Subcatchment B05: Catchment B5</b>  | Runoff Area=5,319 sf 39.63% Impervious Runoff Depth>4.85"<br>Tc=6.0 min CN=84 Runoff=0.68 cfs 0.049 af  |
| <b>Subcatchment B06: Catchment B6</b>  | Runoff Area=5,930 sf 39.16% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.74 cfs 0.054 af  |
| <b>Subcatchment B07: Catchment B7</b>  | Runoff Area=5,688 sf 39.61% Impervious Runoff Depth>4.85"<br>Tc=6.0 min CN=84 Runoff=0.73 cfs 0.053 af  |
| <b>Subcatchment B08: Catchment B8</b>  | Runoff Area=4,462 sf 39.60% Impervious Runoff Depth>4.85"<br>Tc=6.0 min CN=84 Runoff=0.57 cfs 0.041 af  |
| <b>Subcatchment B09: Catchment B9</b>  | Runoff Area=10,871 sf 19.20% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=1.36 cfs 0.099 af |
| <b>Subcatchment B10: Catchment B10</b> | Runoff Area=5,067 sf 37.56% Impervious Runoff Depth>4.85"<br>Tc=6.0 min CN=84 Runoff=0.65 cfs 0.047 af  |
| <b>Subcatchment B11: Catchment B11</b> | Runoff Area=6,566 sf 34.28% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.82 cfs 0.060 af  |
| <b>Subcatchment B12: Catchment B12</b> | Runoff Area=4,816 sf 39.64% Impervious Runoff Depth>4.85"<br>Tc=6.0 min CN=84 Runoff=0.62 cfs 0.045 af  |
| <b>Subcatchment B13: Catchment B13</b> | Runoff Area=4,650 sf 39.63% Impervious Runoff Depth>4.85"<br>Tc=6.0 min CN=84 Runoff=0.60 cfs 0.043 af  |
| <b>Subcatchment B14: Catchment B14</b> | Runoff Area=4,492 sf 39.60% Impervious Runoff Depth>4.85"<br>Tc=6.0 min CN=84 Runoff=0.57 cfs 0.042 af  |
| <b>Subcatchment B15: Catchment B15</b> | Runoff Area=4,322 sf 39.59% Impervious Runoff Depth>4.85"<br>Tc=6.0 min CN=84 Runoff=0.55 cfs 0.040 af  |
| <b>Subcatchment B16: Catchment B16</b> | Runoff Area=4,153 sf 39.56% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.52 cfs 0.038 af  |
| <b>Subcatchment B17: Catchment B17</b> | Runoff Area=3,554 sf 39.48% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.45 cfs 0.032 af  |

## Proposed B

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Type III 24-hr 100-Year Rainfall=6.70"

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### Subcatchment B18: Catchment B18

Runoff Area=49,270 sf 5.81% Impervious Runoff Depth>3.98"  
Flow Length=325' Tc=12.0 min CN=76 Runoff=4.35 cfs 0.375 af

### Reach B: Outfall B

Inflow=5.58 cfs 0.665 af  
Outflow=5.58 cfs 0.665 af

### Pond 1P: Depression B1

Peak Elev=386.95' Storage=616 cf Inflow=0.31 cfs 0.022 af  
Discarded=0.00 cfs 0.002 af Primary=0.03 cfs 0.006 af Outflow=0.03 cfs 0.008 af

### Pond 2P: Depression B2

Peak Elev=385.98' Storage=963 cf Inflow=0.49 cfs 0.041 af  
Discarded=0.00 cfs 0.004 af Primary=0.07 cfs 0.015 af Outflow=0.08 cfs 0.019 af

### Pond 3P: Depression B3

Peak Elev=385.48' Storage=1,085 cf Inflow=0.57 cfs 0.057 af  
Discarded=0.00 cfs 0.004 af Primary=0.13 cfs 0.028 af Outflow=0.13 cfs 0.032 af

### Pond 4P: Depression B4

Peak Elev=384.96' Storage=1,140 cf Inflow=0.59 cfs 0.070 af  
Discarded=0.00 cfs 0.004 af Primary=0.18 cfs 0.040 af Outflow=0.19 cfs 0.044 af

### Pond 5P: Depression B5

Peak Elev=383.99' Storage=1,349 cf Inflow=0.68 cfs 0.089 af  
Discarded=0.00 cfs 0.005 af Primary=0.24 cfs 0.054 af Outflow=0.25 cfs 0.059 af

### Pond 6P: Depression B6

Peak Elev=383.49' Storage=1,429 cf Inflow=0.74 cfs 0.108 af  
Discarded=0.00 cfs 0.005 af Primary=0.31 cfs 0.068 af Secondary=0.01 cfs 0.002 af Outflow=0.32 cfs 0.075 af

### Pond 7P: Depression B7

Peak Elev=383.00' Storage=1,388 cf Inflow=0.73 cfs 0.121 af  
Discarded=0.00 cfs 0.005 af Primary=0.29 cfs 0.066 af Secondary=0.02 cfs 0.006 af Tertiary=0.06 cfs 0.013 af Outflow=0.38 cfs 0.089 af

### Pond 8P: Depression B8

Peak Elev=382.72' Storage=1,086 cf Inflow=0.57 cfs 0.107 af  
Discarded=0.00 cfs 0.004 af Primary=0.33 cfs 0.075 af Secondary=0.02 cfs 0.004 af Outflow=0.36 cfs 0.083 af

### Pond 9P: Depression B9

Peak Elev=381.97' Storage=1,050 cf Inflow=1.36 cfs 0.173 af  
Discarded=0.00 cfs 0.004 af Primary=1.36 cfs 0.146 af Outflow=1.36 cfs 0.150 af

### Pond 10P: Depression B10

Peak Elev=381.02' Storage=1,118 cf Inflow=2.01 cfs 0.197 af  
Discarded=0.00 cfs 0.004 af Primary=2.00 cfs 0.168 af Outflow=2.00 cfs 0.172 af

### Pond 11P: Depression B11

Peak Elev=380.77' Storage=1,221 cf Inflow=2.82 cfs 0.234 af  
Discarded=0.00 cfs 0.004 af Primary=2.68 cfs 0.202 af Outflow=2.68 cfs 0.207 af

### Pond 12P: Depression B12

Peak Elev=380.59' Storage=1,217 cf Inflow=3.24 cfs 0.247 af  
Discarded=0.00 cfs 0.004 af Primary=2.70 cfs 0.208 af Secondary=0.10 cfs 0.007 af Outflow=2.80 cfs 0.220 af

### Pond 13P: Depression B13

Peak Elev=380.27' Storage=1,173 cf Inflow=3.13 cfs 0.252 af  
Discarded=0.00 cfs 0.004 af Primary=2.71 cfs 0.214 af Secondary=0.10 cfs 0.008 af Outflow=2.81 cfs 0.226 af

### Pond 14P: Depression B14

Peak Elev=380.02' Storage=1,132 cf Inflow=3.05 cfs 0.256 af  
Discarded=0.00 cfs 0.004 af Primary=2.59 cfs 0.218 af Secondary=0.10 cfs 0.009 af Outflow=2.70 cfs 0.231 af

### Pond 15P: Depression B15

Peak Elev=379.81' Storage=1,089 cf Inflow=2.88 cfs 0.259 af  
Discarded=0.00 cfs 0.004 af Primary=2.52 cfs 0.222 af Secondary=0.10 cfs 0.009 af Outflow=2.62 cfs 0.235 af

### Pond 16P: Depression B16

Peak Elev=379.60' Storage=1,048 cf Inflow=2.76 cfs 0.259 af  
Discarded=0.00 cfs 0.004 af Primary=2.19 cfs 0.199 af Secondary=0.37 cfs 0.034 af Outflow=2.56 cfs 0.236 af

### Pond 17P: Depression B17

Peak Elev=379.39' Storage=893 cf Inflow=2.38 cfs 0.231 af  
Discarded=0.00 cfs 0.003 af Primary=2.03 cfs 0.208 af Outflow=2.03 cfs 0.211 af

**Proposed B**

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Total Runoff Area = 3.093 ac   Runoff Volume = 1.158 af   Average Runoff Depth = 4.49"  
74.92% Pervious = 2.318 ac   25.08% Impervious = 0.776 ac

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**Summary for Subcatchment B01: Catchment B1**

Runoff = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af, Depth&gt; 4.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 856       | 98 | Roofs, HSG C                  |
| 1,671     | 74 | >75% Grass cover, Good, HSG C |
| 2,527     | 82 | Weighted Average              |
| 1,671     |    | 66.13% Pervious Area          |
| 856       |    | 33.87% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description              |
|----------|---------------|---------------|-------------------|----------------|--------------------------|
| 6.0      |               |               |                   |                | Direct Entry, Minimum Tc |

**Summary for Subcatchment B02: Catchment B2**

Runoff = 0.49 cfs @ 12.09 hrs, Volume= 0.035 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,487     | 98 | Roofs, HSG C                  |
| 2,377     | 74 | >75% Grass cover, Good, HSG C |
| 3,864     | 83 | Weighted Average              |
| 2,377     |    | 61.52% Pervious Area          |
| 1,487     |    | 38.48% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description              |
|----------|---------------|---------------|-------------------|----------------|--------------------------|
| 6.0      |               |               |                   |                | Direct Entry, Minimum Tc |

**Summary for Subcatchment B03: Catchment B3**

Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.041 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,762     | 98 | Roofs, HSG C                  |
| 2,766     | 74 | >75% Grass cover, Good, HSG C |
| 4,528     | 83 | Weighted Average              |
| 2,766     |    | 61.09% Pervious Area          |
| 1,762     |    | 38.91% Impervious Area        |

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Type III 24-hr 100-Year Rainfall=6.70"

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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B04: Catchment B4**

Runoff = 0.59 cfs @ 12.09 hrs, Volume= 0.042 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,845     | 98 | Roofs, HSG C                  |
| 2,828     | 74 | >75% Grass cover, Good, HSG C |
| 4,673     | 83 | Weighted Average              |
| 2,828     |    | 60.52% Pervious Area          |
| 1,845     |    | 39.48% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B05: Catchment B5**

Runoff = 0.68 cfs @ 12.09 hrs, Volume= 0.049 af, Depth&gt; 4.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 2,108     | 98 | Roofs, HSG C                  |
| 3,211     | 74 | >75% Grass cover, Good, HSG C |
| 5,319     | 84 | Weighted Average              |
| 3,211     |    | 60.37% Pervious Area          |
| 2,108     |    | 39.63% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B06: Catchment B6**

Runoff = 0.74 cfs @ 12.09 hrs, Volume= 0.054 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 2,322     | 98 | Roofs, HSG C                  |
| 3,608     | 74 | >75% Grass cover, Good, HSG C |
| 5,930     | 83 | Weighted Average              |
| 3,608     |    | 60.84% Pervious Area          |
| 2,322     |    | 39.16% Impervious Area        |

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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B07: Catchment B7**

Runoff = 0.73 cfs @ 12.09 hrs, Volume= 0.053 af, Depth&gt; 4.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 2,253     | 98 | Roofs, HSG C                  |
| 3,435     | 74 | >75% Grass cover, Good, HSG C |
| 5,688     | 84 | Weighted Average              |
| 3,435     |    | 60.39% Pervious Area          |
| 2,253     |    | 39.61% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B08: Catchment B8**

Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.041 af, Depth&gt; 4.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,767     | 98 | Roofs, HSG C                  |
| 2,695     | 74 | >75% Grass cover, Good, HSG C |
| 4,462     | 84 | Weighted Average              |
| 2,695     |    | 60.40% Pervious Area          |
| 1,767     |    | 39.60% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B09: Catchment B9**

Runoff = 1.36 cfs @ 12.09 hrs, Volume= 0.099 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 2,087     | 98 | Roofs, HSG C                  |
| 5,829     | 74 | >75% Grass cover, Good, HSG C |
| 2,955     | 91 | Newly graded area, HSG C      |
| 10,871    | 83 | Weighted Average              |
| 8,784     |    | 80.80% Pervious Area          |
| 2,087     |    | 19.20% Impervious Area        |

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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B10: Catchment B10**

Runoff = 0.65 cfs @ 12.09 hrs, Volume= 0.047 af, Depth&gt; 4.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,903     | 98 | Roofs, HSG C                  |
| 3,000     | 74 | >75% Grass cover, Good, HSG C |
| 164       | 91 | Newly graded area, HSG C      |
| 5,067     | 84 | Weighted Average              |
| 3,164     |    | 62.44% Pervious Area          |
| 1,903     |    | 37.56% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B11: Catchment B11**

Runoff = 0.82 cfs @ 12.09 hrs, Volume= 0.060 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 2,251     | 98 | Roofs, HSG C                  |
| 4,051     | 74 | >75% Grass cover, Good, HSG C |
| 264       | 91 | Newly graded area, HSG C      |
| 6,566     | 83 | Weighted Average              |
| 4,315     |    | 65.72% Pervious Area          |
| 2,251     |    | 34.28% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B12: Catchment B12**

Runoff = 0.62 cfs @ 12.09 hrs, Volume= 0.045 af, Depth&gt; 4.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"



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| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,909     | 98 | Roofs, HSG C                  |
| 2,907     | 74 | >75% Grass cover, Good, HSG C |
| 4,816     | 84 | Weighted Average              |
| 2,907     |    | 60.36% Pervious Area          |
| 1,909     |    | 39.64% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B13: Catchment B13**

Runoff = 0.60 cfs @ 12.09 hrs, Volume= 0.043 af, Depth&gt; 4.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,843     | 98 | Roofs, HSG C                  |
| 2,807     | 74 | >75% Grass cover, Good, HSG C |
| 4,650     | 84 | Weighted Average              |
| 2,807     |    | 60.37% Pervious Area          |
| 1,843     |    | 39.63% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B14: Catchment B14**

Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.042 af, Depth&gt; 4.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,779     | 98 | Roofs, HSG C                  |
| 2,713     | 74 | >75% Grass cover, Good, HSG C |
| 4,492     | 84 | Weighted Average              |
| 2,713     |    | 60.40% Pervious Area          |
| 1,779     |    | 39.60% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B15: Catchment B15**

Runoff = 0.55 cfs @ 12.09 hrs, Volume= 0.040 af, Depth&gt; 4.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

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| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,711     | 98 | Roofs, HSG C                  |
| 2,611     | 74 | >75% Grass cover, Good, HSG C |
| 4,322     | 84 | Weighted Average              |
| 2,611     |    | 60.41% Pervious Area          |
| 1,711     |    | 39.59% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B16: Catchment B16**

Runoff = 0.52 cfs @ 12.09 hrs, Volume= 0.038 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,643     | 98 | Roofs, HSG C                  |
| 2,510     | 74 | >75% Grass cover, Good, HSG C |
| 4,153     | 83 | Weighted Average              |
| 2,510     |    | 60.44% Pervious Area          |
| 1,643     |    | 39.56% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B17: Catchment B17**

Runoff = 0.45 cfs @ 12.09 hrs, Volume= 0.032 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,403     | 98 | Roofs, HSG C                  |
| 2,151     | 74 | >75% Grass cover, Good, HSG C |
| 3,554     | 83 | Weighted Average              |
| 2,151     |    | 60.52% Pervious Area          |
| 1,403     |    | 39.48% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment B18: Catchment B18**

Runoff = 4.35 cfs @ 12.17 hrs, Volume= 0.375 af, Depth&gt; 3.98"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

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| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 2,863     | 98 | Roofs, HSG C                  |
| 44,724    | 74 | >75% Grass cover, Good, HSG C |
| 1,683     | 91 | Newly graded area, HSG C      |
| 49,270    | 76 | Weighted Average              |
| 46,407    |    | 94.19% Pervious Area          |
| 2,863     |    | 5.81% Impervious Area         |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 8.2      | 50            | 0.0200        | 0.10              |                | <b>Sheet Flow, Initial Sheet Flow</b><br>Grass: Dense n= 0.240 P2= 3.20"          |
| 3.8      | 275           | 0.0300        | 1.21              |                | <b>Shallow Concentrated Flow, General Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 12.0     | 325           | Total         |                   |                |   |

**Summary for Reach B: Outfall B**

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.093 ac, 25.08% Impervious, Inflow Depth > 2.58" for 100-Year event  
 Inflow = 5.58 cfs @ 12.31 hrs, Volume= 0.665 af  
 Outflow = 5.58 cfs @ 12.31 hrs, Volume= 0.665 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

**Summary for Pond 1P: Depression B1**

Inflow Area = 0.058 ac, 33.87% Impervious, Inflow Depth > 4.63" for 100-Year event  
 Inflow = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af  
 Outflow = 0.03 cfs @ 12.90 hrs, Volume= 0.008 af, Atten= 90%, Lag= 48.6 min  
 Discarded = 0.00 cfs @ 12.90 hrs, Volume= 0.002 af  
 Primary = 0.03 cfs @ 12.90 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 386.95' @ 12.90 hrs Surf.Area= 905 sf Storage= 616 cf

Plug-Flow detention time= 296.0 min calculated for 0.008 af (37% of inflow)  
 Center-of-Mass det. time= 170.4 min ( 974.4 - 804.0 )

| Volume | Invert  | Avail.Storage | Storage Description                              |
|--------|---------|---------------|--|
| #1     | 385.95' | 1,144 cf      | <b>4.00'W x 84.40'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Primary   | 386.95' | <b>90.4' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 385.95' | <b>0.170 in/hr Exfiltration over Horizontal area above 385.95'</b><br>Excluded Horizontal area = 338 sf   |

**Discarded OutFlow** Max=0.00 cfs @ 12.90 hrs HW=386.95' (Free Discharge)  
 ↳ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=0.02 cfs @ 12.90 hrs HW=386.95' (Free Discharge)  
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.11 fps)

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**Summary for Pond 2P: Depression B2**

Inflow Area = 0.147 ac, 36.66% Impervious, Inflow Depth > 3.35" for 100-Year event  
 Inflow = 0.49 cfs @ 12.09 hrs, Volume= 0.041 af  
 Outflow = 0.08 cfs @ 12.91 hrs, Volume= 0.019 af, Atten= 84%, Lag= 49.2 min  
 Discarded = 0.00 cfs @ 12.91 hrs, Volume= 0.004 af  
 Primary = 0.07 cfs @ 12.91 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 385.98' @ 12.91 hrs Surf.Area= 1,399 sf Storage= 963 cf

Plug-Flow detention time= 267.8 min calculated for 0.019 af (46% of inflow)  
 Center-of-Mass det. time= 139.4 min ( 961.1 - 821.7 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 384.98' | 1,772 cf      | <b>4.00'W x 133.65'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 385.98' | <b>139.7' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 384.98' | <b>0.170 in/hr Exfiltration over Horizontal area above 384.98'</b><br>Excluded Horizontal area = 535 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.91 hrs HW=385.98' (Free Discharge)  
 ↳ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=0.06 cfs @ 12.91 hrs HW=385.98' (Free Discharge)  
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.06 cfs @ 0.14 fps)

**Summary for Pond 3P: Depression B3**

Inflow Area = 0.251 ac, 37.60% Impervious, Inflow Depth > 2.71" for 100-Year event  
 Inflow = 0.57 cfs @ 12.09 hrs, Volume= 0.057 af  
 Outflow = 0.13 cfs @ 12.91 hrs, Volume= 0.032 af, Atten= 77%, Lag= 49.7 min  
 Discarded = 0.00 cfs @ 12.91 hrs, Volume= 0.004 af  
 Primary = 0.13 cfs @ 12.91 hrs, Volume= 0.028 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 385.48' @ 12.91 hrs Surf.Area= 1,571 sf Storage= 1,085 cf

Plug-Flow detention time= 232.0 min calculated for 0.032 af (56% of inflow)  
 Center-of-Mass det. time= 109.3 min ( 948.2 - 838.9 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 384.48' | 1,988 cf      | <b>4.00'W x 150.65'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 385.48' | <b>156.7' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 384.48' | <b>0.170 in/hr Exfiltration over Horizontal area above 384.48'</b><br>Excluded Horizontal area = 603 sf  |

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**Discarded OutFlow** Max=0.00 cfs @ 12.91 hrs HW=385.48' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=0.12 cfs @ 12.91 hrs HW=385.48' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 0.12 cfs @ 0.18 fps)

### Summary for Pond 4P: Depression B4

Inflow Area = 0.358 ac, 38.16% Impervious, Inflow Depth > 2.35" for 100-Year event  
Inflow = 0.59 cfs @ 12.09 hrs, Volume= 0.070 af  
Outflow = 0.19 cfs @ 12.91 hrs, Volume= 0.044 af, Atten= 68%, Lag= 49.7 min  
Discarded = 0.00 cfs @ 12.91 hrs, Volume= 0.004 af  
Primary = 0.18 cfs @ 12.91 hrs, Volume= 0.040 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 384.96' @ 12.91 hrs Surf.Area= 1,647 sf Storage= 1,140 cf

Plug-Flow detention time= 202.2 min calculated for 0.044 af (63% of inflow)  
Center-of-Mass det. time= 90.5 min ( 943.8 - 853.4 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 383.95' | 2,084 cf      | <b>4.00'W x 158.15'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 384.95' | <b>164.2' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 383.95' | <b>0.170 in/hr Exfiltration over Horizontal area above 383.95'</b><br>Excluded Horizontal area = 633 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.91 hrs HW=384.96' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=0.17 cfs @ 12.91 hrs HW=384.96' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 0.17 cfs @ 0.20 fps)

### Summary for Pond 5P: Depression B5

Inflow Area = 0.480 ac, 38.53% Impervious, Inflow Depth > 2.24" for 100-Year event  
Inflow = 0.68 cfs @ 12.09 hrs, Volume= 0.089 af  
Outflow = 0.25 cfs @ 12.91 hrs, Volume= 0.059 af, Atten= 63%, Lag= 49.6 min  
Discarded = 0.00 cfs @ 12.91 hrs, Volume= 0.005 af  
Primary = 0.24 cfs @ 12.91 hrs, Volume= 0.054 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 383.99' @ 12.91 hrs Surf.Area= 1,943 sf Storage= 1,349 cf

Plug-Flow detention time= 191.0 min calculated for 0.059 af (66% of inflow)  
Center-of-Mass det. time= 84.0 min ( 942.5 - 858.4 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 382.98' | 2,460 cf      | <b>4.00'W x 187.65'L x 1.50'H Prismatic Z=3.0</b> |

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| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 383.98' | <b>193.7' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 382.98' | <b>0.170 in/hr Exfiltration over Horizontal area above 382.98'</b><br>Excluded Horizontal area = 751 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.91 hrs HW=383.99' (Free Discharge)↳ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)**Primary OutFlow** Max=0.22 cfs @ 12.91 hrs HW=383.99' (Free Discharge)↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.22 cfs @ 0.20 fps)**Summary for Pond 6P: Depression B6**

Inflow Area = 0.616 ac, 38.67% Impervious, Inflow Depth > 2.10" for 100-Year event  
 Inflow = 0.74 cfs @ 12.09 hrs, Volume= 0.108 af  
 Outflow = 0.32 cfs @ 12.91 hrs, Volume= 0.075 af, Atten= 57%, Lag= 49.6 min  
 Discarded = 0.00 cfs @ 12.91 hrs, Volume= 0.005 af  
 Primary = 0.31 cfs @ 12.91 hrs, Volume= 0.068 af  
 Secondary = 0.01 cfs @ 12.91 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 383.49' @ 12.91 hrs Surf.Area= 2,056 sf Storage= 1,429 cf

Plug-Flow detention time= 171.2 min calculated for 0.075 af (70% of inflow)  
 Center-of-Mass det. time= 73.0 min ( 939.7 - 866.8 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 382.48' | 2,602 cf      | <b>4.00'W x 198.80'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 383.48' | <b>198.8' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Secondary | 383.48' | <b>6.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32   |
| #3     | Discarded | 382.48' | <b>0.170 in/hr Exfiltration over Horizontal area above 382.48'</b><br>Excluded Horizontal area = 795 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.91 hrs HW=383.49' (Free Discharge)↳ **3=Exfiltration** (Exfiltration Controls 0.00 cfs)**Primary OutFlow** Max=0.27 cfs @ 12.91 hrs HW=383.49' (Free Discharge)↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.27 cfs @ 0.21 fps)**Secondary OutFlow** Max=0.01 cfs @ 12.91 hrs HW=383.49' (Free Discharge)↳ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.21 fps)

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**Summary for Pond 7P: Depression B7**

Inflow Area = 0.747 ac, 38.84% Impervious, Inflow Depth > 1.94" for 100-Year event  
 Inflow = 0.73 cfs @ 12.09 hrs, Volume= 0.121 af  
 Outflow = 0.38 cfs @ 12.91 hrs, Volume= 0.089 af, Atten= 48%, Lag= 49.6 min  
 Discarded = 0.00 cfs @ 12.91 hrs, Volume= 0.005 af  
 Primary = 0.29 cfs @ 12.91 hrs, Volume= 0.066 af  
 Secondary = 0.02 cfs @ 12.91 hrs, Volume= 0.006 af  
 Tertiary = 0.06 cfs @ 12.91 hrs, Volume= 0.013 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 383.00' @ 12.91 hrs Surf.Area= 1,997 sf Storage= 1,388 cf

Plug-Flow detention time= 152.0 min calculated for 0.089 af (74% of inflow)  
 Center-of-Mass det. time= 63.1 min ( 936.2 - 873.2 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 381.99' | 2,526 cf      | <b>4.00'W x 192.80'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 382.99' | <b>155.9' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Secondary | 382.99' | <b>13.2' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32  |
| #3     | Tertiary  | 382.99' | <b>29.6' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32  |
| #4     | Discarded | 381.99' | <b>0.170 in/hr Exfiltration over Horizontal area above 381.99'</b><br>Excluded Horizontal area = 771 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.91 hrs HW=383.00' (Free Discharge)  
 ↳ **4=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=0.25 cfs @ 12.91 hrs HW=383.00' (Free Discharge)  
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.25 cfs @ 0.23 fps)

**Secondary OutFlow** Max=0.02 cfs @ 12.91 hrs HW=383.00' (Free Discharge)  
 ↳ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.23 fps)

**Tertiary OutFlow** Max=0.05 cfs @ 12.91 hrs HW=383.00' (Free Discharge)  
 ↳ **3=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.23 fps)

**Summary for Pond 8P: Depression B8**

Inflow Area = 0.849 ac, 38.93% Impervious, Inflow Depth > 1.52" for 100-Year event  
 Inflow = 0.57 cfs @ 12.09 hrs, Volume= 0.107 af  
 Outflow = 0.36 cfs @ 12.73 hrs, Volume= 0.083 af, Atten= 38%, Lag= 38.7 min  
 Discarded = 0.00 cfs @ 12.73 hrs, Volume= 0.004 af  
 Primary = 0.33 cfs @ 12.73 hrs, Volume= 0.075 af  
 Secondary = 0.02 cfs @ 12.73 hrs, Volume= 0.004 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

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Peak Elev= 382.72' @ 12.73 hrs Surf.Area= 1,567 sf Storage= 1,086 cf

Plug-Flow detention time= 136.0 min calculated for 0.083 af (77% of inflow)

Center-of-Mass det. time= 54.9 min ( 933.8 - 878.8 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 381.71' | 1,979 cf      | <b>4.00'W x 149.95'L x 1.50'H Prismaoid Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 382.71' | <b>147.8' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Secondary | 382.71' | <b>8.2' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32   |
| #3     | Discarded | 381.71' | <b>0.170 in/hr Exfiltration over Horizontal area above 381.71'</b><br>Excluded Horizontal area = 600 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.73 hrs HW=382.72' (Free Discharge)

↑ **3=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=0.28 cfs @ 12.73 hrs HW=382.72' (Free Discharge)

↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.28 cfs @ 0.24 fps)

**Secondary OutFlow** Max=0.02 cfs @ 12.73 hrs HW=382.72' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.24 fps)

### Summary for Pond 9P: Depression B9

Inflow Area = 1.099 ac, 34.45% Impervious, Inflow Depth > 1.89" for 100-Year event  
Inflow = 1.36 cfs @ 12.09 hrs, Volume= 0.173 af  
Outflow = 1.36 cfs @ 12.09 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.3 min  
Discarded = 0.00 cfs @ 12.09 hrs, Volume= 0.004 af  
Primary = 1.36 cfs @ 12.09 hrs, Volume= 0.146 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 381.97' @ 12.09 hrs Surf.Area= 1,499 sf Storage= 1,050 cf

Plug-Flow detention time= 89.8 min calculated for 0.150 af (86% of inflow)

Center-of-Mass det. time= 32.5 min ( 888.3 - 855.8 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 380.95' | 1,875 cf      | <b>4.00'W x 141.75'L x 1.50'H Prismaoid Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 381.95' | <b>147.8' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 380.95' | <b>0.170 in/hr Exfiltration over Horizontal area above 380.95'</b><br>Excluded Horizontal area = 567 sf  |



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**Discarded OutFlow** Max=0.00 cfs @ 12.09 hrs HW=381.97' (Free Discharge)

└─2=Exfiltration (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=1.33 cfs @ 12.09 hrs HW=381.97' (Free Discharge)

└─1=Broad-Crested Rectangular Weir (Weir Controls 1.33 cfs @ 0.40 fps)

**Summary for Pond 10P: Depression B10**

Inflow Area = 1.215 ac, 34.74% Impervious, Inflow Depth > 1.95" for 100-Year event  
 Inflow = 2.01 cfs @ 12.09 hrs, Volume= 0.197 af  
 Outflow = 2.00 cfs @ 12.09 hrs, Volume= 0.172 af, Atten= 0%, Lag= 0.1 min  
 Discarded = 0.00 cfs @ 12.09 hrs, Volume= 0.004 af  
 Primary = 2.00 cfs @ 12.09 hrs, Volume= 0.168 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 381.02' @ 12.09 hrs Surf.Area= 1,588 sf Storage= 1,118 cf

Plug-Flow detention time= 79.4 min calculated for 0.172 af (87% of inflow)  
 Center-of-Mass det. time= 26.0 min ( 890.8 - 864.9 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 379.99' | 1,980 cf      | <b>4.00'W x 150.00'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 380.99' | <b>156.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 379.99' | <b>0.170 in/hr Exfiltration over Horizontal area above 379.99'</b><br>Excluded Horizontal area = 600 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.09 hrs HW=381.02' (Free Discharge)

└─2=Exfiltration (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=1.95 cfs @ 12.09 hrs HW=381.02' (Free Discharge)

└─1=Broad-Crested Rectangular Weir (Weir Controls 1.95 cfs @ 0.45 fps)

**Summary for Pond 11P: Depression B11**

Inflow Area = 1.366 ac, 34.69% Impervious, Inflow Depth > 2.05" for 100-Year event  
 Inflow = 2.82 cfs @ 12.09 hrs, Volume= 0.234 af  
 Outflow = 2.68 cfs @ 12.12 hrs, Volume= 0.207 af, Atten= 5%, Lag= 1.8 min  
 Discarded = 0.00 cfs @ 12.12 hrs, Volume= 0.004 af  
 Primary = 2.68 cfs @ 12.12 hrs, Volume= 0.202 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 380.77' @ 12.12 hrs Surf.Area= 1,726 sf Storage= 1,221 cf

Plug-Flow detention time= 74.1 min calculated for 0.206 af (88% of inflow)  
 Center-of-Mass det. time= 24.1 min ( 890.3 - 866.2 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 379.74' | 2,148 cf      | <b>4.00'W x 163.15'L x 1.50'H Prismatic Z=3.0</b> |

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| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 380.74' | <b>169.2' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 379.74' | <b>0.170 in/hr Exfiltration over Horizontal area above 379.74'</b><br>Excluded Horizontal area = 653 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.12 hrs HW=380.77' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)**Primary OutFlow** Max=2.61 cfs @ 12.12 hrs HW=380.77' (Free Discharge)↑**1=Broad-Crested Rectangular Weir** (Weir Controls 2.61 cfs @ 0.48 fps)**Summary for Pond 12P: Depression B12**

Inflow Area = 1.476 ac, 35.06% Impervious, Inflow Depth > 2.01" for 100-Year event  
 Inflow = 3.24 cfs @ 12.12 hrs, Volume= 0.247 af  
 Outflow = 2.80 cfs @ 12.16 hrs, Volume= 0.220 af, Atten= 13%, Lag= 2.5 min  
 Discarded = 0.00 cfs @ 12.16 hrs, Volume= 0.004 af  
 Primary = 2.70 cfs @ 12.16 hrs, Volume= 0.208 af  
 Secondary = 0.10 cfs @ 12.16 hrs, Volume= 0.007 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 380.59' @ 12.16 hrs Surf.Area= 1,719 sf Storage= 1,217 cf

Plug-Flow detention time= 69.2 min calculated for 0.220 af (89% of inflow)  
 Center-of-Mass det. time= 22.0 min ( 892.8 - 870.9 )

| Volume | Invert  | Avail.Storage | Storage Description                                |
|--------|---------|---------------|--|
| #1     | 379.56' | 2,137 cf      | <b>4.00'W x 162.35'L x 1.50'H Prismatoid Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 380.56' | <b>162.5' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Secondary | 380.56' | <b>5.8' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32   |
| #3     | Discarded | 379.56' | <b>0.170 in/hr Exfiltration over Horizontal area above 379.56'</b><br>Excluded Horizontal area = 649 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.16 hrs HW=380.59' (Free Discharge)↑**3=Exfiltration** (Exfiltration Controls 0.00 cfs)**Primary OutFlow** Max=2.59 cfs @ 12.16 hrs HW=380.59' (Free Discharge)↑**1=Broad-Crested Rectangular Weir** (Weir Controls 2.59 cfs @ 0.49 fps)**Secondary OutFlow** Max=0.09 cfs @ 12.16 hrs HW=380.59' (Free Discharge)↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.49 fps)

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**Summary for Pond 13P: Depression B13**

Inflow Area = 1.583 ac, 35.37% Impervious, Inflow Depth > 1.91" for 100-Year event  
 Inflow = 3.13 cfs @ 12.16 hrs, Volume= 0.252 af  
 Outflow = 2.81 cfs @ 12.19 hrs, Volume= 0.226 af, Atten= 10%, Lag= 1.9 min  
 Discarded = 0.00 cfs @ 12.19 hrs, Volume= 0.004 af  
 Primary = 2.71 cfs @ 12.19 hrs, Volume= 0.214 af  
 Secondary = 0.10 cfs @ 12.19 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 380.27' @ 12.19 hrs Surf.Area= 1,659 sf Storage= 1,173 cf

Plug-Flow detention time= 65.9 min calculated for 0.226 af (90% of inflow)  
 Center-of-Mass det. time= 21.0 min ( 895.0 - 874.0 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 379.24' | 2,063 cf      | <b>4.00'W x 156.50'L x 1.50'H Prismaoid Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 380.24' | <b>157.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Secondary | 380.24' | <b>5.5' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32   |
| #3     | Discarded | 379.24' | <b>0.170 in/hr Exfiltration over Horizontal area above 379.24'</b><br>Excluded Horizontal area = 626 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.19 hrs HW=380.27' (Free Discharge)  
 ↳ **3=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=2.42 cfs @ 12.19 hrs HW=380.27' (Free Discharge)  
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 2.42 cfs @ 0.48 fps)

**Secondary OutFlow** Max=0.08 cfs @ 12.19 hrs HW=380.27' (Free Discharge)  
 ↳ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.08 cfs @ 0.48 fps)

**Summary for Pond 14P: Depression B14**

Inflow Area = 1.686 ac, 35.63% Impervious, Inflow Depth > 1.82" for 100-Year event  
 Inflow = 3.05 cfs @ 12.19 hrs, Volume= 0.256 af  
 Outflow = 2.70 cfs @ 12.22 hrs, Volume= 0.231 af, Atten= 12%, Lag= 1.8 min  
 Discarded = 0.00 cfs @ 12.22 hrs, Volume= 0.004 af  
 Primary = 2.59 cfs @ 12.22 hrs, Volume= 0.218 af  
 Secondary = 0.10 cfs @ 12.22 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 380.02' @ 12.22 hrs Surf.Area= 1,602 sf Storage= 1,132 cf

Plug-Flow detention time= 63.1 min calculated for 0.231 af (90% of inflow)  
 Center-of-Mass det. time= 20.0 min ( 896.9 - 876.8 )

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| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 378.99' | 1,993 cf      | <b>4.00'W x 151.00'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 379.99' | <b>151.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Secondary | 379.99' | <b>6.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32   |
| #3     | Discarded | 378.99' | <b>0.170 in/hr Exfiltration over Horizontal area above 378.99'</b><br>Excluded Horizontal area = 604 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.22 hrs HW=380.02' (Free Discharge)**3=Exfiltration** (Exfiltration Controls 0.00 cfs)**Primary OutFlow** Max=2.28 cfs @ 12.22 hrs HW=380.02' (Free Discharge)**1=Broad-Crested Rectangular Weir** (Weir Controls 2.28 cfs @ 0.48 fps)**Secondary OutFlow** Max=0.09 cfs @ 12.22 hrs HW=380.02' (Free Discharge)**2=Broad-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.48 fps)**Summary for Pond 15P: Depression B15**

Inflow Area = 1.785 ac, 35.85% Impervious, Inflow Depth > 1.74" for 100-Year event  
 Inflow = 2.88 cfs @ 12.22 hrs, Volume= 0.259 af  
 Outflow = 2.62 cfs @ 12.25 hrs, Volume= 0.235 af, Atten= 9%, Lag= 1.8 min  
 Discarded = 0.00 cfs @ 12.25 hrs, Volume= 0.004 af  
 Primary = 2.52 cfs @ 12.25 hrs, Volume= 0.222 af  
 Secondary = 0.10 cfs @ 12.25 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 379.81' @ 12.25 hrs Surf.Area= 1,542 sf Storage= 1,089 cf

Plug-Flow detention time= 60.4 min calculated for 0.235 af (91% of inflow)

Center-of-Mass det. time= 19.2 min ( 898.5 - 879.3 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 378.78' | 1,916 cf      | <b>4.00'W x 145.00'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 379.78' | <b>145.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Secondary | 379.78' | <b>6.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32   |
| #3     | Discarded | 378.78' | <b>0.170 in/hr Exfiltration over Horizontal area above 378.78'</b><br>Excluded Horizontal area = 580 sf  |

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**Discarded OutFlow** Max=0.00 cfs @ 12.25 hrs HW=379.81' (Free Discharge)

↑**3=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=2.26 cfs @ 12.25 hrs HW=379.81' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 2.26 cfs @ 0.48 fps)

**Secondary OutFlow** Max=0.09 cfs @ 12.25 hrs HW=379.81' (Free Discharge)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.48 fps)

### Summary for Pond 16P: Depression B16

Inflow Area = 1.881 ac, 36.04% Impervious, Inflow Depth > 1.65" for 100-Year event  
Inflow = 2.76 cfs @ 12.25 hrs, Volume= 0.259 af  
Outflow = 2.56 cfs @ 12.28 hrs, Volume= 0.236 af, Atten= 7%, Lag= 1.8 min  
Discarded = 0.00 cfs @ 12.28 hrs, Volume= 0.004 af  
Primary = 2.19 cfs @ 12.28 hrs, Volume= 0.199 af  
Secondary = 0.37 cfs @ 12.28 hrs, Volume= 0.034 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 379.60' @ 12.28 hrs Surf.Area= 1,483 sf Storage= 1,048 cf

Plug-Flow detention time= 57.9 min calculated for 0.236 af (91% of inflow)  
Center-of-Mass det. time= 18.3 min ( 900.4 - 882.1 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 378.57' | 1,842 cf      | <b>4.00'W x 139.15'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 379.57' | <b>124.2' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Secondary | 379.57' | <b>21.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32  |
| #3     | Discarded | 378.57' | <b>0.170 in/hr Exfiltration over Horizontal area above 378.57'</b><br>Excluded Horizontal area = 557 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.28 hrs HW=379.60' (Free Discharge)

↑**3=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=2.01 cfs @ 12.28 hrs HW=379.60' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 2.01 cfs @ 0.49 fps)

**Secondary OutFlow** Max=0.34 cfs @ 12.28 hrs HW=379.60' (Free Discharge)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.34 cfs @ 0.49 fps)

### Summary for Pond 17P: Depression B17

Inflow Area = 1.962 ac, 36.18% Impervious, Inflow Depth > 1.41" for 100-Year event  
Inflow = 2.38 cfs @ 12.28 hrs, Volume= 0.231 af  
Outflow = 2.03 cfs @ 12.31 hrs, Volume= 0.211 af, Atten= 15%, Lag= 1.6 min  
Discarded = 0.00 cfs @ 12.31 hrs, Volume= 0.003 af  
Primary = 2.03 cfs @ 12.31 hrs, Volume= 0.208 af

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Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 2  
Peak Elev= 379.39' @ 12.31 hrs Surf.Area= 1,269 sf Storage= 893 cf

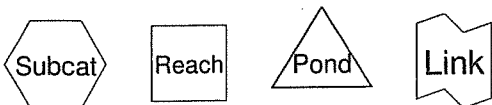
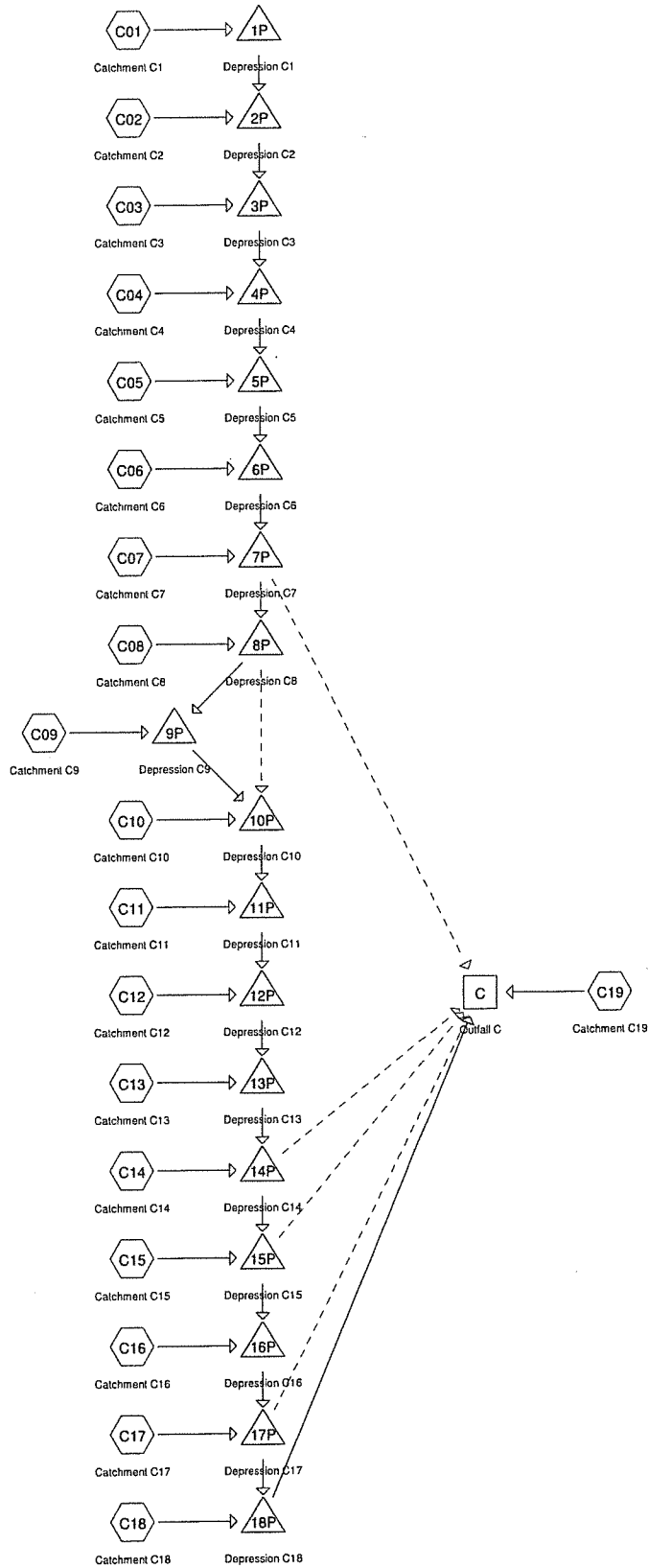
Plug-Flow detention time= 56.1 min calculated for 0.211 af (91% of inflow)  
Center-of-Mass det. time= 17.7 min ( 902.2 - 884.5 )

| Volume | Invert  | Avail.Storage | Storage Description                        |
|--------|---------|---------------|--|
| #1     | 378.36' | 1,575 cf      | 4.00'W x 118.20'L x 1.50'H Prismatic Z=3.0 |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 379.36' | <b>124.2' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 378.36' | <b>0.170 in/hr Exfiltration over Horizontal area above 378.36'</b><br>Excluded Horizontal area = 473 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.31 hrs HW=379.39' (Free Discharge)  
↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=2.01 cfs @ 12.31 hrs HW=379.39' (Free Discharge)  
↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 2.01 cfs @ 0.49 fps)



**Drainage Diagram for Proposed C**  
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## Proposed C

Prepared by Strong Civil Design, LLC

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Franklin Solar Field  
Type III 24-hr 2-Year Rainfall=3.20"

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points

Runoff by SCS TR-20 method, UH=SCS

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

|                                 |  |
|---------------------------------|--|
| Subcatchment C01: Catchment C1  | Runoff Area=3,187 sf 13.24% Impervious Runoff Depth>1.21"<br>Tc=6.0 min CN=77 Runoff=0.10 cfs 0.007 af |
| Subcatchment C02: Catchment C2  | Runoff Area=2,241 sf 39.63% Impervious Runoff Depth>1.68"<br>Tc=6.0 min CN=84 Runoff=0.10 cfs 0.007 af |
| Subcatchment C03: Catchment C3  | Runoff Area=2,385 sf 39.62% Impervious Runoff Depth>1.68"<br>Tc=6.0 min CN=84 Runoff=0.11 cfs 0.008 af |
| Subcatchment C04: Catchment C4  | Runoff Area=2,599 sf 39.48% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.11 cfs 0.008 af |
| Subcatchment C05: Catchment C5  | Runoff Area=3,815 sf 39.53% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.17 cfs 0.012 af |
| Subcatchment C06: Catchment C6  | Runoff Area=4,011 sf 39.54% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.17 cfs 0.012 af |
| Subcatchment C07: Catchment C7  | Runoff Area=4,183 sf 39.56% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.18 cfs 0.013 af |
| Subcatchment C08: Catchment C8  | Runoff Area=3,835 sf 39.53% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.17 cfs 0.012 af |
| Subcatchment C09: Catchment C9  | Runoff Area=8,259 sf 30.78% Impervious Runoff Depth>1.83"<br>Tc=6.0 min CN=86 Runoff=0.41 cfs 0.029 af |
| Subcatchment C10: Catchment C10 | Runoff Area=7,280 sf 32.94% Impervious Runoff Depth>1.68"<br>Tc=6.0 min CN=84 Runoff=0.33 cfs 0.023 af |
| Subcatchment C11: Catchment C11 | Runoff Area=4,601 sf 39.51% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.20 cfs 0.014 af |
| Subcatchment C12: Catchment C12 | Runoff Area=4,911 sf 39.54% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.21 cfs 0.015 af |
| Subcatchment C13: Catchment C13 | Runoff Area=5,077 sf 39.55% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.22 cfs 0.016 af |
| Subcatchment C14: Catchment C14 | Runoff Area=5,236 sf 39.57% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.23 cfs 0.016 af |
| Subcatchment C15: Catchment C15 | Runoff Area=5,119 sf 39.56% Impervious Runoff Depth>1.61"<br>Tc=6.0 min CN=83 Runoff=0.22 cfs 0.016 af |
| Subcatchment C16: Catchment C16 | Runoff Area=5,002 sf 39.66% Impervious Runoff Depth>1.68"<br>Tc=6.0 min CN=84 Runoff=0.23 cfs 0.016 af |
| Subcatchment C17: Catchment C17 | Runoff Area=5,029 sf 39.67% Impervious Runoff Depth>1.68"<br>Tc=6.0 min CN=84 Runoff=0.23 cfs 0.016 af |



## Proposed C

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Franklin Solar Field  
Type III 24-hr 2-Year Rainfall=3.20"

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### Subcatchment C18: Catchment C18

Runoff Area=24,390 sf 7.95% Impervious Runoff Depth>1.15"  
Tc=6.0 min CN=76 Runoff=0.73 cfs 0.054 af

### Subcatchment C19: Catchment C19

Runoff Area=56,506 sf 12.70% Impervious Runoff Depth>1.27"  
Flow Length=800' Tc=18.7 min CN=78 Runoff=1.31 cfs 0.137 af

### Reach C: Outfall C

Inflow=1.31 cfs 0.142 af  
Outflow=1.31 cfs 0.142 af

### Pond 1P: Depression C1

Peak Elev=386.95' Storage=231 cf Inflow=0.10 cfs 0.007 af  
Discarded=0.00 cfs 0.001 af Primary=0.00 cfs 0.001 af Outflow=0.01 cfs 0.002 af

### Pond 2P: Depression C2

Peak Elev=385.67' Storage=315 cf Inflow=0.10 cfs 0.008 af  
Discarded=0.00 cfs 0.001 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.001 af

### Pond 3P: Depression C3

Peak Elev=385.09' Storage=284 cf Inflow=0.11 cfs 0.008 af  
Discarded=0.00 cfs 0.001 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.001 af

### Pond 4P: Depression C4

Peak Elev=384.54' Storage=296 cf Inflow=0.11 cfs 0.008 af  
Discarded=0.00 cfs 0.001 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.001 af

### Pond 5P: Depression C5

Peak Elev=383.57' Storage=436 cf Inflow=0.17 cfs 0.012 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

### Pond 6P: Depression C6

Peak Elev=383.07' Storage=459 cf Inflow=0.17 cfs 0.012 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

### Pond 7P: Depression C7

Peak Elev=382.57' Storage=478 cf Inflow=0.18 cfs 0.013 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

### Pond 8P: Depression C8

Peak Elev=382.30' Storage=438 cf Inflow=0.17 cfs 0.012 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

### Pond 9P: Depression C9

Peak Elev=381.95' Storage=770 cf Inflow=0.41 cfs 0.029 af  
Discarded=0.00 cfs 0.003 af Primary=0.04 cfs 0.009 af Outflow=0.04 cfs 0.011 af

### Pond 10P: Depression C10

Peak Elev=380.99' Storage=1,061 cf Inflow=0.33 cfs 0.032 af  
Discarded=0.00 cfs 0.003 af Primary=0.02 cfs 0.004 af Outflow=0.02 cfs 0.008 af

### Pond 11P: Depression C11

Peak Elev=380.46' Storage=697 cf Inflow=0.20 cfs 0.018 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

### Pond 12P: Depression C12

Peak Elev=380.14' Storage=562 cf Inflow=0.21 cfs 0.015 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

### Pond 13P: Depression C13

Peak Elev=379.82' Storage=581 cf Inflow=0.22 cfs 0.016 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

### Pond 14P: Depression C14

Peak Elev=379.57' Storage=599 cf Inflow=0.23 cfs 0.016 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

### Pond 15P: Depression C15

Peak Elev=379.36' Storage=586 cf Inflow=0.22 cfs 0.016 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

### Pond 16P: Depression C16

Peak Elev=379.17' Storage=599 cf Inflow=0.23 cfs 0.016 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

## Proposed C

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Franklin Solar Field  
Type III 24-hr 2-Year Rainfall=3.20"

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### Pond 17P: Depression C17

Peak Elev=378.96' Storage=602 cf Inflow=0.23 cfs 0.016 af  
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

### Pond 18P: Depression C18

Peak Elev=378.01' Storage=1,981 cf Inflow=0.73 cfs 0.054 af  
Discarded=0.00 cfs 0.003 af Primary=0.01 cfs 0.005 af Outflow=0.02 cfs 0.008 af

**Total Runoff Area = 3.620 ac Runoff Volume = 0.431 af Average Runoff Depth = 1.43"**  
**76.25% Pervious = 2.760 ac 23.75% Impervious = 0.860 ac**

**Proposed C**

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Franklin Solar Field

Type III 24-hr 10-Year Rainfall=4.70"

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points

Runoff by SCS TR-20 method, UH=SCS

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

|  |  |
|--|--|
| <b>Subcatchment C01: Catchment C1</b>  | Runoff Area=3,187 sf 13.24% Impervious Runoff Depth>2.37"<br>Tc=6.0 min CN=77 Runoff=0.20 cfs 0.014 af |
| <b>Subcatchment C02: Catchment C2</b>  | Runoff Area=2,241 sf 39.63% Impervious Runoff Depth>2.99"<br>Tc=6.0 min CN=84 Runoff=0.18 cfs 0.013 af |
| <b>Subcatchment C03: Catchment C3</b>  | Runoff Area=2,385 sf 39.62% Impervious Runoff Depth>2.99"<br>Tc=6.0 min CN=84 Runoff=0.19 cfs 0.014 af |
| <b>Subcatchment C04: Catchment C4</b>  | Runoff Area=2,599 sf 39.48% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.20 cfs 0.014 af |
| <b>Subcatchment C05: Catchment C5</b>  | Runoff Area=3,815 sf 39.53% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.30 cfs 0.021 af |
| <b>Subcatchment C06: Catchment C6</b>  | Runoff Area=4,011 sf 39.54% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.31 cfs 0.022 af |
| <b>Subcatchment C07: Catchment C7</b>  | Runoff Area=4,183 sf 39.56% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.33 cfs 0.023 af |
| <b>Subcatchment C08: Catchment C8</b>  | Runoff Area=3,835 sf 39.53% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.30 cfs 0.021 af |
| <b>Subcatchment C09: Catchment C9</b>  | Runoff Area=8,259 sf 30.78% Impervious Runoff Depth>3.18"<br>Tc=6.0 min CN=86 Runoff=0.70 cfs 0.050 af |
| <b>Subcatchment C10: Catchment C10</b> | Runoff Area=7,280 sf 32.94% Impervious Runoff Depth>2.99"<br>Tc=6.0 min CN=84 Runoff=0.58 cfs 0.042 af |
| <b>Subcatchment C11: Catchment C11</b> | Runoff Area=4,601 sf 39.51% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.36 cfs 0.026 af |
| <b>Subcatchment C12: Catchment C12</b> | Runoff Area=4,911 sf 39.54% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.38 cfs 0.027 af |
| <b>Subcatchment C13: Catchment C13</b> | Runoff Area=5,077 sf 39.55% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.40 cfs 0.028 af |
| <b>Subcatchment C14: Catchment C14</b> | Runoff Area=5,236 sf 39.57% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.41 cfs 0.029 af |
| <b>Subcatchment C15: Catchment C15</b> | Runoff Area=5,119 sf 39.56% Impervious Runoff Depth>2.90"<br>Tc=6.0 min CN=83 Runoff=0.40 cfs 0.028 af |
| <b>Subcatchment C16: Catchment C16</b> | Runoff Area=5,002 sf 39.66% Impervious Runoff Depth>2.99"<br>Tc=6.0 min CN=84 Runoff=0.40 cfs 0.029 af |
| <b>Subcatchment C17: Catchment C17</b> | Runoff Area=5,029 sf 39.67% Impervious Runoff Depth>2.99"<br>Tc=6.0 min CN=84 Runoff=0.40 cfs 0.029 af |

## Proposed C

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Franklin Solar Field  
Type III 24-hr 10-Year Rainfall=4.70"

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### Subcatchment C18: Catchment C18

Runoff Area=24,390 sf 7.95% Impervious Runoff Depth>2.29"  
Tc=6.0 min CN=76 Runoff=1.50 cfs 0.107 af

### Subcatchment C19: Catchment C19

Runoff Area=56,506 sf 12.70% Impervious Runoff Depth>2.45"  
Flow Length=800' Tc=18.7 min CN=78 Runoff=2.59 cfs 0.265 af

### Reach C: Outfall C

Inflow=2.59 cfs 0.339 af  
Outflow=2.59 cfs 0.339 af

### Pond 1P: Depression C1

Peak Elev=386.96' Storage=235 cf Inflow=0.20 cfs 0.014 af  
Discarded=0.00 cfs 0.001 af Primary=0.12 cfs 0.008 af Outflow=0.12 cfs 0.009 af

### Pond 2P: Depression C2

Peak Elev=385.98' Storage=532 cf Inflow=0.22 cfs 0.021 af  
Discarded=0.00 cfs 0.002 af Primary=0.03 cfs 0.007 af Outflow=0.03 cfs 0.009 af

### Pond 3P: Depression C3

Peak Elev=385.48' Storage=567 cf Inflow=0.19 cfs 0.021 af  
Discarded=0.00 cfs 0.002 af Primary=0.02 cfs 0.006 af Outflow=0.03 cfs 0.008 af

### Pond 4P: Depression C4

Peak Elev=384.95' Storage=619 cf Inflow=0.20 cfs 0.020 af  
Discarded=0.00 cfs 0.002 af Primary=0.02 cfs 0.004 af Outflow=0.02 cfs 0.006 af

### Pond 5P: Depression C5

Peak Elev=383.98' Storage=916 cf Inflow=0.30 cfs 0.025 af  
Discarded=0.00 cfs 0.003 af Primary=0.01 cfs 0.001 af Outflow=0.01 cfs 0.004 af

### Pond 6P: Depression C6

Peak Elev=383.42' Storage=882 cf Inflow=0.31 cfs 0.023 af  
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af

### Pond 7P: Depression C7

Peak Elev=382.90' Storage=878 cf Inflow=0.33 cfs 0.023 af  
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af

### Pond 8P: Depression C8

Peak Elev=382.62' Storage=805 cf Inflow=0.30 cfs 0.021 af  
Discarded=0.00 cfs 0.003 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af

### Pond 9P: Depression C9

Peak Elev=381.97' Storage=786 cf Inflow=0.70 cfs 0.050 af  
Discarded=0.00 cfs 0.003 af Primary=0.66 cfs 0.030 af Outflow=0.66 cfs 0.033 af

### Pond 10P: Depression C10

Peak Elev=381.00' Storage=1,078 cf Inflow=1.23 cfs 0.071 af  
Discarded=0.00 cfs 0.004 af Primary=0.62 cfs 0.043 af Outflow=0.62 cfs 0.047 af

### Pond 11P: Depression C11

Peak Elev=380.75' Storage=1,119 cf Inflow=0.80 cfs 0.069 af  
Discarded=0.00 cfs 0.004 af Primary=0.27 cfs 0.039 af Outflow=0.27 cfs 0.043 af

### Pond 12P: Depression C12

Peak Elev=380.56' Storage=1,191 cf Inflow=0.38 cfs 0.067 af  
Discarded=0.00 cfs 0.004 af Primary=0.15 cfs 0.035 af Outflow=0.15 cfs 0.040 af

### Pond 13P: Depression C13

Peak Elev=380.24' Storage=1,231 cf Inflow=0.40 cfs 0.064 af  
Discarded=0.00 cfs 0.004 af Primary=0.13 cfs 0.031 af Outflow=0.13 cfs 0.035 af

### Pond 14P: Depression C14

Peak Elev=379.99' Storage=1,269 cf Inflow=0.41 cfs 0.060 af  
Discarded=0.00 cfs 0.004 af Primary=0.11 cfs 0.027 af Secondary=0.00 cfs 0.001 af Outflow=0.12 cfs 0.031 af

### Pond 15P: Depression C15

Peak Elev=379.78' Storage=1,240 cf Inflow=0.40 cfs 0.055 af  
Discarded=0.00 cfs 0.004 af Primary=0.09 cfs 0.022 af Secondary=0.00 cfs 0.001 af Outflow=0.10 cfs 0.027 af

### Pond 16P: Depression C16

Peak Elev=379.57' Storage=1,210 cf Inflow=0.40 cfs 0.051 af  
Discarded=0.00 cfs 0.004 af Primary=0.07 cfs 0.019 af Outflow=0.08 cfs 0.023 af

## Proposed C

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Type III 24-hr 10-Year Rainfall=4.70"

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### Pond 17P: Depression C17

Peak Elev=379.36' Storage=1,216 cf Inflow=0.40 cfs 0.048 af  
Discarded=0.00 cfs 0.004 af Primary=0.06 cfs 0.016 af Secondary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.020 af

### Pond 18P: Depression C18

Peak Elev=378.08' Storage=2,159 cf Inflow=1.50 cfs 0.122 af  
Discarded=0.00 cfs 0.004 af Primary=0.41 cfs 0.073 af Outflow=0.41 cfs 0.077 af

**Total Runoff Area = 3.620 ac Runoff Volume = 0.803 af Average Runoff Depth = 2.66"**  
**76.25% Pervious = 2.760 ac 23.75% Impervious = 0.860 ac**

**Proposed C**

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Franklin Solar Field

Type III 24-hr 100-Year Rainfall=6.70"

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points

Runoff by SCS TR-20 method, UH=SCS

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

|  |  |
|--|--|
| <b>Subcatchment C01: Catchment C1</b>  | Runoff Area=3,187 sf 13.24% Impervious Runoff Depth>4.09"<br>Tc=6.0 min CN=77 Runoff=0.35 cfs 0.025 af |
| <b>Subcatchment C02: Catchment C2</b>  | Runoff Area=2,241 sf 39.63% Impervious Runoff Depth>4.85"<br>Tc=6.0 min CN=84 Runoff=0.29 cfs 0.021 af |
| <b>Subcatchment C03: Catchment C3</b>  | Runoff Area=2,385 sf 39.62% Impervious Runoff Depth>4.85"<br>Tc=6.0 min CN=84 Runoff=0.31 cfs 0.022 af |
| <b>Subcatchment C04: Catchment C4</b>  | Runoff Area=2,599 sf 39.48% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.33 cfs 0.024 af |
| <b>Subcatchment C05: Catchment C5</b>  | Runoff Area=3,815 sf 39.53% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.48 cfs 0.035 af |
| <b>Subcatchment C06: Catchment C6</b>  | Runoff Area=4,011 sf 39.54% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.50 cfs 0.036 af |
| <b>Subcatchment C07: Catchment C7</b>  | Runoff Area=4,183 sf 39.56% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.53 cfs 0.038 af |
| <b>Subcatchment C08: Catchment C8</b>  | Runoff Area=3,835 sf 39.53% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.48 cfs 0.035 af |
| <b>Subcatchment C09: Catchment C9</b>  | Runoff Area=8,259 sf 30.78% Impervious Runoff Depth>5.07"<br>Tc=6.0 min CN=86 Runoff=1.10 cfs 0.080 af |
| <b>Subcatchment C10: Catchment C10</b> | Runoff Area=7,280 sf 32.94% Impervious Runoff Depth>4.85"<br>Tc=6.0 min CN=84 Runoff=0.93 cfs 0.068 af |
| <b>Subcatchment C11: Catchment C11</b> | Runoff Area=4,601 sf 39.51% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.58 cfs 0.042 af |
| <b>Subcatchment C12: Catchment C12</b> | Runoff Area=4,911 sf 39.54% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.62 cfs 0.045 af |
| <b>Subcatchment C13: Catchment C13</b> | Runoff Area=5,077 sf 39.55% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.64 cfs 0.046 af |
| <b>Subcatchment C14: Catchment C14</b> | Runoff Area=5,236 sf 39.57% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.66 cfs 0.047 af |
| <b>Subcatchment C15: Catchment C15</b> | Runoff Area=5,119 sf 39.56% Impervious Runoff Depth>4.74"<br>Tc=6.0 min CN=83 Runoff=0.64 cfs 0.046 af |
| <b>Subcatchment C16: Catchment C16</b> | Runoff Area=5,002 sf 39.66% Impervious Runoff Depth>4.85"<br>Tc=6.0 min CN=84 Runoff=0.64 cfs 0.046 af |
| <b>Subcatchment C17: Catchment C17</b> | Runoff Area=5,029 sf 39.67% Impervious Runoff Depth>4.85"<br>Tc=6.0 min CN=84 Runoff=0.64 cfs 0.047 af |

## Proposed C

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Franklin Solar Field  
Type III 24-hr 100-Year Rainfall=6.70"

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### Subcatchment C18: Catchment C18

Runoff Area=24,390 sf 7.95% Impervious Runoff Depth>3.99"  
Tc=6.0 min CN=76 Runoff=2.62 cfs 0.186 af

### Subcatchment C19: Catchment C19

Runoff Area=56,506 sf 12.70% Impervious Runoff Depth>4.19"  
Flow Length=800' Tc=18.7 min CN=78 Runoff=4.42 cfs 0.453 af

### Reach C: Outfall C

Inflow=6.64 cfs 0.863 af  
Outflow=6.64 cfs 0.863 af

### Pond 1P: Depression C1

Peak Elev=386.97' Storage=240 cf Inflow=0.35 cfs 0.025 af  
Discarded=0.00 cfs 0.001 af Primary=0.35 cfs 0.019 af Outflow=0.35 cfs 0.020 af

### Pond 2P: Depression C2

Peak Elev=386.00' Storage=544 cf Inflow=0.64 cfs 0.039 af  
Discarded=0.00 cfs 0.002 af Primary=0.51 cfs 0.025 af Outflow=0.52 cfs 0.027 af

### Pond 3P: Depression C3

Peak Elev=385.50' Storage=579 cf Inflow=0.74 cfs 0.047 af  
Discarded=0.00 cfs 0.002 af Primary=0.50 cfs 0.032 af Outflow=0.50 cfs 0.034 af

### Pond 4P: Depression C4

Peak Elev=384.97' Storage=633 cf Inflow=0.66 cfs 0.056 af  
Discarded=0.00 cfs 0.002 af Primary=0.54 cfs 0.039 af Outflow=0.54 cfs 0.042 af

### Pond 5P: Depression C5

Peak Elev=383.99' Storage=933 cf Inflow=0.74 cfs 0.074 af  
Discarded=0.00 cfs 0.003 af Primary=0.62 cfs 0.049 af Outflow=0.63 cfs 0.053 af

### Pond 6P: Depression C6

Peak Elev=383.49' Storage=983 cf Inflow=0.80 cfs 0.086 af  
Discarded=0.00 cfs 0.004 af Primary=0.70 cfs 0.060 af Outflow=0.71 cfs 0.064 af

### Pond 7P: Depression C7

Peak Elev=383.00' Storage=1,027 cf Inflow=0.88 cfs 0.098 af  
Discarded=0.00 cfs 0.004 af Primary=0.72 cfs 0.065 af Secondary=0.07 cfs 0.006 af Outflow=0.79 cfs 0.075 af

### Pond 8P: Depression C8

Peak Elev=382.73' Storage=942 cf Inflow=0.85 cfs 0.100 af  
Discarded=0.00 cfs 0.003 af Primary=0.65 cfs 0.063 af Secondary=0.13 cfs 0.012 af Outflow=0.78 cfs 0.079 af

### Pond 9P: Depression C9

Peak Elev=381.97' Storage=794 cf Inflow=1.10 cfs 0.143 af  
Discarded=0.00 cfs 0.003 af Primary=1.09 cfs 0.123 af Outflow=1.09 cfs 0.126 af

### Pond 10P: Depression C10

Peak Elev=381.02' Storage=1,104 cf Inflow=2.02 cfs 0.202 af  
Discarded=0.00 cfs 0.004 af Primary=2.02 cfs 0.174 af Outflow=2.02 cfs 0.178 af

### Pond 11P: Depression C11

Peak Elev=380.77' Storage=1,160 cf Inflow=2.59 cfs 0.216 af  
Discarded=0.00 cfs 0.004 af Primary=2.54 cfs 0.186 af Outflow=2.54 cfs 0.190 af

### Pond 12P: Depression C12

Peak Elev=380.59' Storage=1,241 cf Inflow=3.13 cfs 0.231 af  
Discarded=0.00 cfs 0.004 af Primary=2.80 cfs 0.199 af Outflow=2.80 cfs 0.204 af

### Pond 13P: Depression C13

Peak Elev=380.27' Storage=1,281 cf Inflow=3.28 cfs 0.245 af  
Discarded=0.00 cfs 0.004 af Primary=2.72 cfs 0.213 af Outflow=2.72 cfs 0.217 af

### Pond 14P: Depression C14

Peak Elev=380.02' Storage=1,317 cf Inflow=3.11 cfs 0.260 af  
Discarded=0.00 cfs 0.005 af Primary=2.55 cfs 0.222 af Secondary=0.06 cfs 0.005 af Outflow=2.61 cfs 0.231 af

### Pond 15P: Depression C15

Peak Elev=379.81' Storage=1,287 cf Inflow=2.87 cfs 0.268 af  
Discarded=0.00 cfs 0.005 af Primary=2.34 cfs 0.230 af Secondary=0.05 cfs 0.005 af Outflow=2.40 cfs 0.240 af

### Pond 16P: Depression C16

Peak Elev=379.60' Storage=1,258 cf Inflow=2.62 cfs 0.276 af  
Discarded=0.00 cfs 0.004 af Primary=2.41 cfs 0.244 af Outflow=2.42 cfs 0.249 af

## Proposed C

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### Pond 17P: Depression C17

Peak Elev=379.39' Storage=1,266 cf Inflow=2.68 cfs 0.291 af  
Discarded=0.00 cfs 0.004 af Primary=2.49 cfs 0.252 af Secondary=0.06 cfs 0.006 af Outflow=2.56 cfs 0.263 af

### Pond 18P: Depression C18

Peak Elev=378.28' Storage=2,698 cf Inflow=3.57 cfs 0.438 af  
Discarded=0.00 cfs 0.004 af Primary=2.86 cfs 0.387 af Outflow=2.87 cfs 0.392 af

**Total Runoff Area = 3.620 ac Runoff Volume = 1.341 af Average Runoff Depth = 4.45"**  
**76.25% Pervious = 2.760 ac 23.75% Impervious = 0.860 ac**



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**Summary for Subcatchment C01: Catchment C1**

Runoff = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af, Depth&gt; 4.09"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 422       | 98 | Roofs, HSG C                  |
| 2,765     | 74 | >75% Grass cover, Good, HSG C |
| 3,187     | 77 | Weighted Average              |
| 2,765     |    | 86.76% Pervious Area          |
| 422       |    | 13.24% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description              |
|----------|---------------|---------------|-------------------|----------------|--------------------------|
| 6.0      |               |               |                   |                | Direct Entry, Minimum Tc |

**Summary for Subcatchment C02: Catchment C2**

Runoff = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af, Depth&gt; 4.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 888       | 98 | Roofs, HSG C                  |
| 1,353     | 74 | >75% Grass cover, Good, HSG C |
| 2,241     | 84 | Weighted Average              |
| 1,353     |    | 60.37% Pervious Area          |
| 888       |    | 39.63% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description              |
|----------|---------------|---------------|-------------------|----------------|--------------------------|
| 6.0      |               |               |                   |                | Direct Entry, Minimum Tc |

**Summary for Subcatchment C03: Catchment C3**

Runoff = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af, Depth&gt; 4.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 945       | 98 | Roofs, HSG C                  |
| 1,440     | 74 | >75% Grass cover, Good, HSG C |
| 2,385     | 84 | Weighted Average              |
| 1,440     |    | 60.38% Pervious Area          |
| 945       |    | 39.62% Impervious Area        |

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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C04: Catchment C4**

Runoff = 0.33 cfs @ 12.09 hrs, Volume= 0.024 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,026     | 98 | Roofs, HSG C                  |
| 1,573     | 74 | >75% Grass cover, Good, HSG C |
| 2,599     | 83 | Weighted Average              |
| 1,573     |    | 60.52% Pervious Area          |
| 1,026     |    | 39.48% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C05: Catchment C5**

Runoff = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,508     | 98 | Roofs, HSG C                  |
| 2,307     | 74 | >75% Grass cover, Good, HSG C |
| 3,815     | 83 | Weighted Average              |
| 2,307     |    | 60.47% Pervious Area          |
| 1,508     |    | 39.53% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C06: Catchment C6**

Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,586     | 98 | Roofs, HSG C                  |
| 2,425     | 74 | >75% Grass cover, Good, HSG C |
| 4,011     | 83 | Weighted Average              |
| 2,425     |    | 60.46% Pervious Area          |
| 1,586     |    | 39.54% Impervious Area        |

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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C07: Catchment C7**

Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,655     | 98 | Roofs, HSG C                  |
| 2,528     | 74 | >75% Grass cover, Good, HSG C |
| 4,183     | 83 | Weighted Average              |
| 2,528     |    | 60.44% Pervious Area          |
| 1,655     |    | 39.56% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C08: Catchment C8**

Runoff = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,516     | 98 | Roofs, HSG C                  |
| 2,319     | 74 | >75% Grass cover, Good, HSG C |
| 3,835     | 83 | Weighted Average              |
| 2,319     |    | 60.47% Pervious Area          |
| 1,516     |    | 39.53% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C09: Catchment C9**

Runoff = 1.10 cfs @ 12.09 hrs, Volume= 0.080 af, Depth&gt; 5.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 2,542     | 98 | Roofs, HSG C                  |
| 3,472     | 74 | >75% Grass cover, Good, HSG C |
| 2,245     | 91 | Newly graded area, HSG C      |
| 8,259     | 86 | Weighted Average              |
| 5,717     |    | 69.22% Pervious Area          |
| 2,542     |    | 30.78% Impervious Area        |

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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C10: Catchment C10**

Runoff = 0.93 cfs @ 12.09 hrs, Volume= 0.068 af, Depth&gt; 4.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 2,398     | 98 | Roofs, HSG C                  |
| 4,002     | 74 | >75% Grass cover, Good, HSG C |
| 880       | 91 | Newly graded area, HSG C      |
| 7,280     | 84 | Weighted Average              |
| 4,882     |    | 67.06% Pervious Area          |
| 2,398     |    | 32.94% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C11: Catchment C11**

Runoff = 0.58 cfs @ 12.09 hrs, Volume= 0.042 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,818     | 98 | Roofs, HSG C                  |
| 2,783     | 74 | >75% Grass cover, Good, HSG C |
| 4,601     | 83 | Weighted Average              |
| 2,783     |    | 60.49% Pervious Area          |
| 1,818     |    | 39.51% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C12: Catchment C12**

Runoff = 0.62 cfs @ 12.09 hrs, Volume= 0.045 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

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| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,942     | 98 | Roofs, HSG C                  |
| 2,969     | 74 | >75% Grass cover, Good, HSG C |
| 4,911     | 83 | Weighted Average              |
| 2,969     |    | 60.46% Pervious Area          |
| 1,942     |    | 39.54% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C13: Catchment C13**

Runoff = 0.64 cfs @ 12.09 hrs, Volume= 0.046 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 2,008     | 98 | Roofs, HSG C                  |
| 3,069     | 74 | >75% Grass cover, Good, HSG C |
| 5,077     | 83 | Weighted Average              |
| 3,069     |    | 60.45% Pervious Area          |
| 2,008     |    | 39.55% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C14: Catchment C14**

Runoff = 0.66 cfs @ 12.09 hrs, Volume= 0.047 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 2,072     | 98 | Roofs, HSG C                  |
| 3,164     | 74 | >75% Grass cover, Good, HSG C |
| 5,236     | 83 | Weighted Average              |
| 3,164     |    | 60.43% Pervious Area          |
| 2,072     |    | 39.57% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C15: Catchment C15**

Runoff = 0.64 cfs @ 12.09 hrs, Volume= 0.046 af, Depth&gt; 4.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

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| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 2,025     | 98 | Roofs, HSG C                  |
| 3,094     | 74 | >75% Grass cover, Good, HSG C |
| 5,119     | 83 | Weighted Average              |
| 3,094     |    | 60.44% Pervious Area          |
| 2,025     |    | 39.56% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C16: Catchment C16**

Runoff = 0.64 cfs @ 12.09 hrs, Volume= 0.046 af, Depth&gt; 4.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,984     | 98 | Roofs, HSG C                  |
| 3,018     | 74 | >75% Grass cover, Good, HSG C |
| 5,002     | 84 | Weighted Average              |
| 3,018     |    | 60.34% Pervious Area          |
| 1,984     |    | 39.66% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C17: Catchment C17**

Runoff = 0.64 cfs @ 12.09 hrs, Volume= 0.047 af, Depth&gt; 4.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,995     | 98 | Roofs, HSG C                  |
| 3,034     | 74 | >75% Grass cover, Good, HSG C |
| 5,029     | 84 | Weighted Average              |
| 3,034     |    | 60.33% Pervious Area          |
| 1,995     |    | 39.67% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C18: Catchment C18**

Runoff = 2.62 cfs @ 12.09 hrs, Volume= 0.186 af, Depth&gt; 3.99"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

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| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 1,940     | 98 | Roofs, HSG C                  |
| 22,450    | 74 | >75% Grass cover, Good, HSG C |
| 24,390    | 76 | Weighted Average              |
| 22,450    |    | 92.05% Pervious Area          |
| 1,940     |    | 7.95% Impervious Area         |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description              |
|-------------|------------------|------------------|----------------------|-------------------|--------------------------|
| 6.0         |                  |                  |                      |                   | Direct Entry, Minimum Tc |

**Summary for Subcatchment C19: Catchment C19**

Runoff = 4.42 cfs @ 12.25 hrs, Volume= 0.453 af, Depth> 4.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=6.70"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 7,178     | 98 | Roofs, HSG C                  |
| 46,060    | 74 | >75% Grass cover, Good, HSG C |
| 3,268     | 91 | Newly graded area, HSG C      |
| 56,506    | 78 | Weighted Average              |
| 49,328    |    | 87.30% Pervious Area          |
| 7,178     |    | 12.70% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description  |
|-------------|------------------|------------------|----------------------|-------------------|--|
| 3.6         | 25               | 0.0400           | 0.12                 |                   | Sheet Flow, Initial Sheet Flow<br>Grass: Dense n= 0.240 P2= 3.20"          |
| 15.1        | 775              | 0.0150           | 0.86                 |                   | Shallow Concentrated Flow, General Flow<br>Short Grass Pasture Kv= 7.0 fps |
| 18.7        | 800              | Total            |                      |                   |  |

**Summary for Reach C: Outfall C**

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.620 ac, 23.75% Impervious, Inflow Depth > 2.86" for 100-Year event  
Inflow = 6.64 cfs @ 12.37 hrs, Volume= 0.863 af  
Outflow = 6.64 cfs @ 12.37 hrs, Volume= 0.863 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

**Summary for Pond 1P: Depression C1**

Inflow Area = 0.073 ac, 13.24% Impervious, Inflow Depth > 4.09" for 100-Year event  
Inflow = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af  
Outflow = 0.35 cfs @ 12.09 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.3 min  
Discarded = 0.00 cfs @ 12.09 hrs, Volume= 0.001 af  
Primary = 0.35 cfs @ 12.09 hrs, Volume= 0.019 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

## Proposed C

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Peak Elev= 386.97' @ 12.09 hrs Surf.Area= 362 sf Storage= 240 cf

Plug-Flow detention time= 119.2 min calculated for 0.020 af (79% of inflow)

Center-of-Mass det. time= 40.0 min ( 856.2 - 816.2 )

| Volume | Invert  | Avail.Storage | Storage Description                              |
|--------|---------|---------------|--|
| #1     | 385.95' | 445 cf        | <b>4.00'W x 29.60'L x 1.50'H Prismaoid Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Primary   | 386.95' | <b>35.6' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 385.95' | <b>0.170 in/hr Exfiltration over Horizontal area above 385.95'</b><br>Excluded Horizontal area = 118 sf   |

**Discarded OutFlow** Max=0.00 cfs @ 12.09 hrs HW=386.97' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=0.34 cfs @ 12.09 hrs HW=386.97' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 0.34 cfs @ 0.41 fps)

### Summary for Pond 2P: Depression C2

Inflow Area = 0.125 ac, 24.13% Impervious, Inflow Depth > 3.80" for 100-Year event  
Inflow = 0.64 cfs @ 12.09 hrs, Volume= 0.039 af  
Outflow = 0.52 cfs @ 12.15 hrs, Volume= 0.027 af, Atten= 19%, Lag= 3.9 min  
Discarded = 0.00 cfs @ 12.15 hrs, Volume= 0.002 af  
Primary = 0.51 cfs @ 12.15 hrs, Volume= 0.025 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 386.00' @ 12.15 hrs Surf.Area= 793 sf Storage= 544 cf

Plug-Flow detention time= 152.7 min calculated for 0.027 af (69% of inflow)

Center-of-Mass det. time= 58.3 min ( 879.4 - 821.1 )

| Volume | Invert  | Avail.Storage | Storage Description                              |
|--------|---------|---------------|--|
| #1     | 384.98' | 990 cf        | <b>4.00'W x 72.35'L x 1.50'H Prismaoid Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Primary   | 385.98' | <b>78.3' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 384.98' | <b>0.170 in/hr Exfiltration over Horizontal area above 384.98'</b><br>Excluded Horizontal area = 289 sf   |

**Discarded OutFlow** Max=0.00 cfs @ 12.15 hrs HW=386.00' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=0.47 cfs @ 12.15 hrs HW=386.00' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 0.47 cfs @ 0.35 fps)



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**Summary for Pond 3P: Depression C3**

Inflow Area = 0.179 ac, 28.86% Impervious, Inflow Depth > 3.17" for 100-Year event  
 Inflow = 0.74 cfs @ 12.15 hrs, Volume= 0.047 af  
 Outflow = 0.50 cfs @ 12.23 hrs, Volume= 0.034 af, Atten= 33%, Lag= 4.7 min  
 Discarded = 0.00 cfs @ 12.23 hrs, Volume= 0.002 af  
 Primary = 0.50 cfs @ 12.23 hrs, Volume= 0.032 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 385.50' @ 12.23 hrs Surf.Area= 843 sf Storage= 579 cf

Plug-Flow detention time= 143.4 min calculated for 0.034 af (73% of inflow)  
 Center-of-Mass det. time= 53.6 min ( 887.7 - 834.1 )

| Volume | Invert  | Avail.Storage | Storage Description                              |
|--------|---------|---------------|--|
| #1     | 384.48' | 1,054 cf      | <b>4.00'W x 77.35'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Primary   | 385.48' | <b>83.3' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 384.48' | <b>0.170 in/hr Exfiltration over Horizontal area above 384.48'</b><br>Excluded Horizontal area = 309 sf   |

**Discarded OutFlow** Max=0.00 cfs @ 12.23 hrs HW=385.50' (Free Discharge)  
 ↳ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=0.46 cfs @ 12.23 hrs HW=385.50' (Free Discharge)  
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.46 cfs @ 0.34 fps)

**Summary for Pond 4P: Depression C4**

Inflow Area = 0.239 ac, 31.51% Impervious, Inflow Depth > 2.80" for 100-Year event  
 Inflow = 0.66 cfs @ 12.23 hrs, Volume= 0.056 af  
 Outflow = 0.54 cfs @ 12.30 hrs, Volume= 0.042 af, Atten= 18%, Lag= 4.3 min  
 Discarded = 0.00 cfs @ 12.30 hrs, Volume= 0.002 af  
 Primary = 0.54 cfs @ 12.30 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 384.97' @ 12.30 hrs Surf.Area= 918 sf Storage= 633 cf

Plug-Flow detention time= 137.0 min calculated for 0.042 af (75% of inflow)  
 Center-of-Mass det. time= 50.7 min ( 895.4 - 844.7 )

| Volume | Invert  | Avail.Storage | Storage Description                              |
|--------|---------|---------------|--|
| #1     | 383.95' | 1,149 cf      | <b>4.00'W x 84.85'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Primary   | 384.95' | <b>90.8' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 383.95' | <b>0.170 in/hr Exfiltration over Horizontal area above 383.95'</b><br>Excluded Horizontal area = 339 sf   |

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**Discarded OutFlow** Max=0.00 cfs @ 12.30 hrs HW=384.97' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=0.50 cfs @ 12.30 hrs HW=384.97' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 0.50 cfs @ 0.34 fps)

### Summary for Pond 5P: Depression C5

Inflow Area = 0.327 ac, 33.66% Impervious, Inflow Depth > 2.71" for 100-Year event  
Inflow = 0.74 cfs @ 12.30 hrs, Volume= 0.074 af  
Outflow = 0.63 cfs @ 12.37 hrs, Volume= 0.053 af, Atten= 15%, Lag= 4.1 min  
Discarded = 0.00 cfs @ 12.37 hrs, Volume= 0.003 af  
Primary = 0.62 cfs @ 12.37 hrs, Volume= 0.049 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 383.99' @ 12.37 hrs Surf.Area= 1,345 sf Storage= 933 cf

Plug-Flow detention time= 151.9 min calculated for 0.053 af (72% of inflow)  
Center-of-Mass det. time= 59.3 min ( 905.5 - 846.2 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 382.98' | 1,691 cf      | <b>4.00'W x 127.35'L x 1.50'H Prismaoid Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 383.98' | <b>133.3' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 382.98' | <b>0.170 in/hr Exfiltration over Horizontal area above 382.98'</b><br>Excluded Horizontal area = 509 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.37 hrs HW=383.99' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=0.55 cfs @ 12.37 hrs HW=383.99' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 0.55 cfs @ 0.31 fps)

### Summary for Pond 6P: Depression C6

Inflow Area = 0.419 ac, 34.95% Impervious, Inflow Depth > 2.46" for 100-Year event  
Inflow = 0.80 cfs @ 12.37 hrs, Volume= 0.086 af  
Outflow = 0.71 cfs @ 12.41 hrs, Volume= 0.064 af, Atten= 11%, Lag= 2.6 min  
Discarded = 0.00 cfs @ 12.41 hrs, Volume= 0.004 af  
Primary = 0.70 cfs @ 12.41 hrs, Volume= 0.060 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 383.49' @ 12.41 hrs Surf.Area= 1,415 sf Storage= 983 cf

Plug-Flow detention time= 142.3 min calculated for 0.064 af (74% of inflow)  
Center-of-Mass det. time= 54.8 min ( 910.1 - 855.3 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 382.48' | 1,779 cf      | <b>4.00'W x 134.20'L x 1.50'H Prismaoid Z=3.0</b> |

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| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 383.48' | <b>140.2' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 382.48' | <b>0.170 in/hr Exfiltration over Horizontal area above 382.48'</b><br>Excluded Horizontal area = 537 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.41 hrs HW=383.49' (Free Discharge)↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)**Primary OutFlow** Max=0.64 cfs @ 12.41 hrs HW=383.49' (Free Discharge)↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.64 cfs @ 0.32 fps)**Summary for Pond 7P: Depression C7**

Inflow Area = 0.515 ac, 35.81% Impervious, Inflow Depth > 2.29" for 100-Year event  
 Inflow = 0.88 cfs @ 12.41 hrs, Volume= 0.098 af  
 Outflow = 0.79 cfs @ 12.45 hrs, Volume= 0.075 af, Atten= 10%, Lag= 2.2 min  
 Discarded = 0.00 cfs @ 12.45 hrs, Volume= 0.004 af  
 Primary = 0.72 cfs @ 12.45 hrs, Volume= 0.065 af  
 Secondary = 0.07 cfs @ 12.45 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 383.00' @ 12.45 hrs Surf.Area= 1,476 sf Storage= 1,027 cf

Plug-Flow detention time= 133.2 min calculated for 0.075 af (76% of inflow)  
 Center-of-Mass det. time= 50.8 min ( 913.5 - 862.7 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 381.99' | 1,855 cf      | <b>4.00'W x 140.20'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 382.99' | <b>134.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Secondary | 382.99' | <b>12.2' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32  |
| #3     | Discarded | 381.99' | <b>0.170 in/hr Exfiltration over Horizontal area above 381.99'</b><br>Excluded Horizontal area = 561 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.45 hrs HW=383.00' (Free Discharge)↑ **3=Exfiltration** (Exfiltration Controls 0.00 cfs)**Primary OutFlow** Max=0.65 cfs @ 12.45 hrs HW=383.00' (Free Discharge)↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.65 cfs @ 0.33 fps)**Secondary OutFlow** Max=0.06 cfs @ 12.45 hrs HW=383.00' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.06 cfs @ 0.33 fps)

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### Summary for Pond 8P: Depression C8

Inflow Area = 0.603 ac, 36.36% Impervious, Inflow Depth > 1.99" for 100-Year event  
Inflow = 0.85 cfs @ 12.45 hrs, Volume= 0.100 af  
Outflow = 0.78 cfs @ 12.48 hrs, Volume= 0.079 af, Atten= 8%, Lag= 1.7 min  
Discarded = 0.00 cfs @ 12.48 hrs, Volume= 0.003 af  
Primary = 0.65 cfs @ 12.48 hrs, Volume= 0.063 af  
Secondary = 0.13 cfs @ 12.48 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 382.73' @ 12.48 hrs Surf.Area= 1,354 sf Storage= 942 cf

Plug-Flow detention time= 122.7 min calculated for 0.079 af (79% of inflow)  
Center-of-Mass det. time= 46.1 min ( 915.7 - 869.6 )

| Volume | Invert  | Avail.Storage | Storage Description                        |
|--------|---------|---------------|--|
| #1     | 381.71' | 1,700 cf      | 4.00'W x 128.05'L x 1.50'H Prismatic Z=3.0 |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 382.71' | <b>112.3' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Secondary | 382.71' | <b>21.8' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32  |
| #3     | Discarded | 381.71' | <b>0.170 in/hr Exfiltration over Horizontal area above 381.71'</b><br>Excluded Horizontal area = 512 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.48 hrs HW=382.73' (Free Discharge)  
↑ **3=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=0.61 cfs @ 12.48 hrs HW=382.73' (Free Discharge)  
↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.61 cfs @ 0.34 fps)

**Secondary OutFlow** Max=0.12 cfs @ 12.48 hrs HW=382.73' (Free Discharge)  
↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.12 cfs @ 0.34 fps)

### Summary for Pond 9P: Depression C9

Inflow Area = 0.792 ac, 35.02% Impervious, Inflow Depth > 2.17" for 100-Year event  
Inflow = 1.10 cfs @ 12.09 hrs, Volume= 0.143 af  
Outflow = 1.09 cfs @ 12.09 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.3 min  
Discarded = 0.00 cfs @ 12.09 hrs, Volume= 0.003 af  
Primary = 1.09 cfs @ 12.09 hrs, Volume= 0.123 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 381.97' @ 12.09 hrs Surf.Area= 1,140 sf Storage= 794 cf

Plug-Flow detention time= 84.8 min calculated for 0.126 af (88% of inflow)  
Center-of-Mass det. time= 30.7 min ( 875.1 - 844.4 )

| Volume | Invert  | Avail.Storage | Storage Description                        |
|--------|---------|---------------|--|
| #1     | 380.95' | 1,422 cf      | 4.00'W x 106.25'L x 1.50'H Prismatic Z=3.0 |

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| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 381.95' | <b>112.3' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 380.95' | <b>0.170 in/hr Exfiltration over Horizontal area above 380.95'</b><br>Excluded Horizontal area = 425 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.09 hrs HW=381.97' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)**Primary OutFlow** Max=1.06 cfs @ 12.09 hrs HW=381.97' (Free Discharge)↑**1=Broad-Crested Rectangular Weir** (Weir Controls 1.06 cfs @ 0.41 fps)**Summary for Pond 10P: Depression C10**

Inflow Area = 0.959 ac, 34.66% Impervious, Inflow Depth > 2.53" for 100-Year event  
 Inflow = 2.02 cfs @ 12.09 hrs, Volume= 0.202 af  
 Outflow = 2.02 cfs @ 12.09 hrs, Volume= 0.178 af, Atten= 0%, Lag= 0.3 min  
 Discarded = 0.00 cfs @ 12.09 hrs, Volume= 0.004 af  
 Primary = 2.02 cfs @ 12.09 hrs, Volume= 0.174 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 381.02' @ 12.09 hrs Surf.Area= 1,568 sf Storage= 1,104 cf

Plug-Flow detention time= 77.5 min calculated for 0.178 af (88% of inflow)  
 Center-of-Mass det. time= 25.0 min ( 874.5 - 849.5 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 379.99' | 1,955 cf      | <b>4.00'W x 148.00'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 380.99' | <b>154.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 379.99' | <b>0.170 in/hr Exfiltration over Horizontal area above 379.99'</b><br>Excluded Horizontal area = 592 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.09 hrs HW=381.02' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)**Primary OutFlow** Max=1.96 cfs @ 12.09 hrs HW=381.02' (Free Discharge)↑**1=Broad-Crested Rectangular Weir** (Weir Controls 1.96 cfs @ 0.45 fps)**Summary for Pond 11P: Depression C11**

Inflow Area = 1.065 ac, 35.14% Impervious, Inflow Depth > 2.43" for 100-Year event  
 Inflow = 2.59 cfs @ 12.09 hrs, Volume= 0.216 af  
 Outflow = 2.54 cfs @ 12.11 hrs, Volume= 0.190 af, Atten= 2%, Lag= 1.0 min  
 Discarded = 0.00 cfs @ 12.11 hrs, Volume= 0.004 af  
 Primary = 2.54 cfs @ 12.11 hrs, Volume= 0.186 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 380.77' @ 12.11 hrs Surf.Area= 1,642 sf Storage= 1,160 cf

Plug-Flow detention time= 72.9 min calculated for 0.190 af (88% of inflow)

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Center-of-Mass det. time= 22.2 min ( 879.4 - 857.3 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 379.74' | 2,042 cf      | <b>4.00'W x 154.85'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 380.74' | <b>160.8' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 379.74' | <b>0.170 in/hr Exfiltration over Horizontal area above 379.74'</b><br>Excluded Horizontal area = 619 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.11 hrs HW=380.77' (Free Discharge)↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)**Primary OutFlow** Max=2.50 cfs @ 12.11 hrs HW=380.77' (Free Discharge)↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 2.50 cfs @ 0.48 fps)**Summary for Pond 12P: Depression C12**

Inflow Area = 1.178 ac, 35.56% Impervious, Inflow Depth > 2.35" for 100-Year event  
 Inflow = 3.13 cfs @ 12.10 hrs, Volume= 0.231 af  
 Outflow = 2.80 cfs @ 12.15 hrs, Volume= 0.204 af, Atten= 10%, Lag= 3.2 min  
 Discarded = 0.00 cfs @ 12.15 hrs, Volume= 0.004 af  
 Primary = 2.80 cfs @ 12.15 hrs, Volume= 0.199 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 Peak Elev= 380.59' @ 12.15 hrs Surf.Area= 1,753 sf Storage= 1,241 cf

Plug-Flow detention time= 73.3 min calculated for 0.204 af (88% of inflow)  
 Center-of-Mass det. time= 22.5 min ( 883.8 - 861.2 )

| Volume | Invert  | Avail.Storage | Storage Description                               |
|--------|---------|---------------|---|
| #1     | 379.56' | 2,180 cf      | <b>4.00'W x 165.65'L x 1.50'H Prismatic Z=3.0</b> |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 380.56' | <b>171.7' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 379.56' | <b>0.170 in/hr Exfiltration over Horizontal area above 379.56'</b><br>Excluded Horizontal area = 663 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.15 hrs HW=380.59' (Free Discharge)↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)**Primary OutFlow** Max=2.64 cfs @ 12.15 hrs HW=380.59' (Free Discharge)↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 2.64 cfs @ 0.48 fps)**Summary for Pond 13P: Depression C13**

Inflow Area = 1.294 ac, 35.92% Impervious, Inflow Depth > 2.27" for 100-Year event  
 Inflow = 3.28 cfs @ 12.15 hrs, Volume= 0.245 af  
 Outflow = 2.72 cfs @ 12.19 hrs, Volume= 0.217 af, Atten= 17%, Lag= 2.5 min  
 Discarded = 0.00 cfs @ 12.19 hrs, Volume= 0.004 af  
 Primary = 2.72 cfs @ 12.19 hrs, Volume= 0.213 af

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Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 380.27' @ 12.19 hrs Surf.Area= 1,811 sf Storage= 1,281 cf

Plug-Flow detention time= 71.7 min calculated for 0.217 af (88% of inflow)  
Center-of-Mass det. time= 22.3 min ( 887.5 - 865.2 )

| Volume | Invert  | Avail.Storage | Storage Description                        |
|--------|---------|---------------|--|
| #1     | 379.24' | 2,254 cf      | 4.00'W x 171.50'L x 1.50'H Prismatic Z=3.0 |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 380.24' | <b>177.5' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 379.24' | <b>0.170 in/hr Exfiltration over Horizontal area above 379.24'</b><br>Excluded Horizontal area = 686 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.19 hrs HW=380.27' (Free Discharge)  
↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=2.46 cfs @ 12.19 hrs HW=380.27' (Free Discharge)  
↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 2.46 cfs @ 0.46 fps)

### Summary for Pond 14P: Depression C14

Inflow Area = 1.415 ac, 36.23% Impervious, Inflow Depth > 2.21" for 100-Year event  
Inflow = 3.11 cfs @ 12.19 hrs, Volume= 0.260 af  
Outflow = 2.61 cfs @ 12.23 hrs, Volume= 0.231 af, Atten= 16%, Lag= 2.4 min  
Discarded = 0.00 cfs @ 12.23 hrs, Volume= 0.005 af  
Primary = 2.55 cfs @ 12.23 hrs, Volume= 0.222 af  
Secondary = 0.06 cfs @ 12.23 hrs, Volume= 0.005 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 380.02' @ 12.23 hrs Surf.Area= 1,864 sf Storage= 1,317 cf

Plug-Flow detention time= 70.2 min calculated for 0.231 af (89% of inflow)  
Center-of-Mass det. time= 22.0 min ( 890.8 - 868.8 )

| Volume | Invert  | Avail.Storage | Storage Description                        |
|--------|---------|---------------|--|
| #1     | 378.99' | 2,324 cf      | 4.00'W x 177.00'L x 1.50'H Prismatic Z=3.0 |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 379.99' | <b>179.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Secondary | 379.99' | <b>4.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32   |
| #3     | Discarded | 378.99' | <b>0.170 in/hr Exfiltration over Horizontal area above 378.99'</b><br>Excluded Horizontal area = 708 sf  |

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**Discarded OutFlow** Max=0.00 cfs @ 12.23 hrs HW=380.02' (Free Discharge)

↑**3=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=2.32 cfs @ 12.23 hrs HW=380.02' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 2.32 cfs @ 0.45 fps)

**Secondary OutFlow** Max=0.05 cfs @ 12.23 hrs HW=380.02' (Free Discharge)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.45 fps)

### Summary for Pond 15P: Depression C15

Inflow Area = 1.532 ac, 36.49% Impervious, Inflow Depth > 2.10" for 100-Year event  
Inflow = 2.87 cfs @ 12.23 hrs, Volume= 0.268 af  
Outflow = 2.40 cfs @ 12.27 hrs, Volume= 0.240 af, Atten= 17%, Lag= 2.2 min  
Discarded = 0.00 cfs @ 12.27 hrs, Volume= 0.005 af  
Primary = 2.34 cfs @ 12.27 hrs, Volume= 0.230 af  
Secondary = 0.05 cfs @ 12.27 hrs, Volume= 0.005 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 379.81' @ 12.27 hrs Surf.Area= 1,822 sf Storage= 1,287 cf

Plug-Flow detention time= 67.4 min calculated for 0.240 af (89% of inflow)  
Center-of-Mass det. time= 21.1 min ( 893.6 - 872.5 )

| Volume | Invert  | Avail.Storage | Storage Description                        |
|--------|---------|---------------|--|
| #1     | 378.78' | 2,273 cf      | 4.00'W x 173.00'L x 1.50'H Prismatic Z=3.0 |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 379.78' | <b>175.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Secondary | 379.78' | <b>4.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32   |
| #3     | Discarded | 378.78' | <b>0.170 in/hr Exfiltration over Horizontal area above 378.78'</b><br>Excluded Horizontal area = 692 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.27 hrs HW=379.81' (Free Discharge)

↑**3=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=2.27 cfs @ 12.27 hrs HW=379.81' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 2.27 cfs @ 0.45 fps)

**Secondary OutFlow** Max=0.05 cfs @ 12.27 hrs HW=379.81' (Free Discharge)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.45 fps)

### Summary for Pond 16P: Depression C16

Inflow Area = 1.647 ac, 36.71% Impervious, Inflow Depth > 2.01" for 100-Year event  
Inflow = 2.62 cfs @ 12.27 hrs, Volume= 0.276 af  
Outflow = 2.42 cfs @ 12.30 hrs, Volume= 0.249 af, Atten= 8%, Lag= 1.8 min  
Discarded = 0.00 cfs @ 12.30 hrs, Volume= 0.004 af  
Primary = 2.41 cfs @ 12.30 hrs, Volume= 0.244 af



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Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 2  
Peak Elev= 379.60' @ 12.30 hrs Surf.Area= 1,781 sf Storage= 1,258 cf

Plug-Flow detention time= 64.6 min calculated for 0.249 af (90% of inflow)  
Center-of-Mass det. time= 20.5 min ( 895.5 - 875.0 )

| Volume | Invert  | Avail.Storage | Storage Description                        |
|--------|---------|---------------|--|
| #1     | 378.57' | 2,220 cf      | 4.00'W x 168.85'L x 1.50'H Prismatic Z=3.0 |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 379.57' | <b>174.8' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 378.57' | <b>0.170 in/hr Exfiltration over Horizontal area above 378.57'</b><br>Excluded Horizontal area = 675 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.30 hrs HW=379.60' (Free Discharge)

↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=2.35 cfs @ 12.30 hrs HW=379.60' (Free Discharge)

↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 2.35 cfs @ 0.46 fps)

### Summary for Pond 17P: Depression C17

Inflow Area = 1.762 ac, 36.90% Impervious, Inflow Depth > 1.98" for 100-Year event  
Inflow = 2.68 cfs @ 12.30 hrs, Volume= 0.291 af  
Outflow = 2.56 cfs @ 12.32 hrs, Volume= 0.263 af, Atten= 5%, Lag= 1.2 min  
Discarded = 0.00 cfs @ 12.32 hrs, Volume= 0.004 af  
Primary = 2.49 cfs @ 12.32 hrs, Volume= 0.252 af  
Secondary = 0.06 cfs @ 12.32 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 2  
Peak Elev= 379.39' @ 12.32 hrs Surf.Area= 1,792 sf Storage= 1,266 cf

Plug-Flow detention time= 62.5 min calculated for 0.263 af (90% of inflow)  
Center-of-Mass det. time= 19.8 min ( 897.3 - 877.5 )

| Volume | Invert  | Avail.Storage | Storage Description                        |
|--------|---------|---------------|--|
| #1     | 378.36' | 2,232 cf      | 4.00'W x 169.80'L x 1.50'H Prismatic Z=3.0 |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 379.36' | <b>171.5' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Secondary | 379.36' | <b>4.3' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32   |
| #3     | Discarded | 378.36' | <b>0.170 in/hr Exfiltration over Horizontal area above 378.36'</b><br>Excluded Horizontal area = 679 sf  |

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**Discarded OutFlow** Max=0.00 cfs @ 12.32 hrs HW=379.39' (Free Discharge)

↑ **3=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=2.44 cfs @ 12.32 hrs HW=379.39' (Free Discharge)

↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 2.44 cfs @ 0.47 fps)

**Secondary OutFlow** Max=0.06 cfs @ 12.32 hrs HW=379.39' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.06 cfs @ 0.47 fps)

### Summary for Pond 18P: Depression C18

Inflow Area = 2.322 ac, 29.92% Impervious, Inflow Depth > 2.26" for 100-Year event  
Inflow = 3.57 cfs @ 12.32 hrs, Volume= 0.438 af  
Outflow = 2.87 cfs @ 12.40 hrs, Volume= 0.392 af, Atten= 20%, Lag= 4.9 min  
Discarded = 0.00 cfs @ 12.40 hrs, Volume= 0.004 af  
Primary = 2.86 cfs @ 12.40 hrs, Volume= 0.387 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 2  
Peak Elev= 378.28' @ 12.40 hrs Surf.Area= 2,713 sf Storage= 2,698 cf

Plug-Flow detention time= 73.7 min calculated for 0.392 af (89% of inflow)  
Center-of-Mass det. time= 26.3 min ( 888.6 - 862.3 )

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 377.00' | 4,894 cf      | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 377.00              | 1,503                | 0                         | 0                         |
| 378.00              | 2,433                | 1,968                     | 1,968                     |
| 379.00              | 3,419                | 2,926                     | 4,894                     |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Primary   | 378.00' | <b>7.0' long x 1.0' breadth Broad-Crested Rectangular Weir</b><br>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<br>Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32 |
| #2     | Discarded | 377.00' | <b>0.170 in/hr Exfiltration over Horizontal area above 377.00'</b><br>Excluded Horizontal area = 1,503 sf  |

**Discarded OutFlow** Max=0.00 cfs @ 12.40 hrs HW=378.28' (Free Discharge)

↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=2.86 cfs @ 12.40 hrs HW=378.28' (Free Discharge)

↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 2.86 cfs @ 1.44 fps)