PLANNING COMMISSION

MEETING DATE: **Monday, September 10, 2018**

STAFF REPORT: **Denise Swinger, Zoning Administrator**

LOCATION: 117 East North College Street

ZONING DISTRICT: R-C, High-Density Residential District (pending Council approval)

APPLICANT: Antioch College and McLennan Design

PROPERTY OWNER: Antioch College

REQUESTED ACTION: Request for a conditional use permit, per Yellow Springs Zoning Ordinance ï Ch.1262 Conditional Use Requirements, Ch. 1262.08 Specific Requirements ï Pocket Neighborhood Developments, Chapter 1248: Residential Districts, Ch. 1268 Site Plan Review ï Level B, and the Yellow Springs Planning Code Ch. 1226.06 Design Standards, to allow for the construction of a Pocket Neighborhood Development.

HEARING NOTICE*: "Conditional Use Application* *– Antioch College is applying for a conditional use for the purpose of constructing a Pocket Neighborhood Development on their property located at 117 East North College Street – Parcel ID #F19000100090029400."*

GREENE COUNTY PARCEL ID # F19000100090029400

BACKGROUND:

Antioch College is planning the construction of the first Pocket Neighborhood Development (PND) since the Planning Commission added this new use to our zoning code last year. One of the requirements of the PND is that the property must be located in a residential district. Currently, the property is in the process of being rezoned from E-I, Educational Institutions to R-C, High Density Residential, having previously received a recommendation of approval from the Planning Commission on August 13, 2018. The Yellow Springs Village Council passed the first reading of the ordinance to rezone at their meeting on September 4, 2018, voicing strong support for this project. The second reading and public hearing is scheduled for September 17, 2018. If Council passes it on the second reading, the rezoning will become effective thirty (30) days after.

PROPERTY INFORMATION AND ANALYSIS:

The location, at 117 East North College Street, Parcel ID ##F19000100090029400, abuts the R-C, High Density Residential District on both the north and west sides. The property was previously subdivided into three sections, Lot #294, 295 and 136. After research by both staff of the Village of Yellow Springs and Greene County, it was determined that Lot #136 was part of Antiochôs land. Antioch filed a replat with the zoning office, combining the three parcels into two, which was recorded with the Greene County Recorder on June 20, 2018.

The specific property to be rezoned R-C is 0.905 of an acre or 39,421.8 square feet. This site has 297.22 feet of frontage on East North College Street. The topography is flat with a number of trees, some of

which will need to be removed. Abutting the property is an alley to the west and to the north. Encroachment by the neighbors into the alley was addressed with the neighbors present at the Planning Commission meeting on August 13, 2018. They acknowledged the encroachment and will clear the area. Currently, a garden extends into this alleyway at the north side.

STAFF ANALYSIS OF THE APPLICATION:
A review of Antiochôs plan at 117 East North College Street with the general standards for a conditional use and the specific requirements for the Pocket Neighborhood Development are outlined in this report. Additionally, there are seven attachments, including a site plan and storm water management review by the Village of Yellow Springs contracted engineer Michael Seeger of Choice One Engineering:

1) McLennan Design narrative of the proposed PND (Exhibit A)
2) McLennan Design site plan with details (Exhibit B)
3) McLennan Design memo re: alternative design of parking stalls (Exhibit C)
4) Choice One Engineering site plan review - Level B (Exhibit D)
5) Choice One Engineering design standards review of storm water management (Exhibit E)
6) Drainage analysis by Reinke Group - corresponds with page C004 and C005 of the site plan (Exhibit F)
7) Fire Chief Altmanôs fire lane designations (Attachment G)
8) Antioch Collegeôs draft Conditions, Covenants & Restrictions document (Exhibit H)

1262.03 GENERAL STANDARDS.

Any request for a conditional use shall only be approved upon a finding that each of the following general standards is satisfied, in addition to any applicable requirements pertaining to the specific use:

(a) The proposed use will be consistent with the intent and purposes of this zoning code and the vision, goals and recommendations of the Comprehensive Plan and Vision: Yellow Springs and Miami Township.

The use as a Pocket Neighborhood Development is consistent with the Village's goals for increased housing stock and infill development.

(b) The proposed use will comply with all applicable requirements of this code, except as specifically altered in the approved conditional use**.**

The use complies with most of the requirements of the zoning code as specified in the PND's specific requirements.

(c) The proposed use will be compatible with the character of the general vicinity.

The proposed use will abut an existing neighborhood on the north and west sides, and Antioch College on the west and south sides. Architecturally, the development is unique in its features. The design does provide a common open space area with the intent of inviting neighborly interactions within the pocket neighborhood development.

(d) The area and proposed use will be adequately served by essential public facilities and services, as applicable, such as highways, streets, police, and fire protection, drainage structures, refuse disposal, water and sewers, and schools. The applicant or landowner will be required to install public utilities, streets or other public infrastructure as required by the Village, State or other agencies to applicable specifications. Dedication of said public infrastructure may be required.

The area will be served by essential public facilities and services.

(e) The proposed use will not involve uses, activities, processes, materials, equipment and conditions of operations, including, but not limited to, hours of operation, that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare, odor or other characteristic not comparable to the uses permitted in the zoning district.

The proposed use is a residential pocket neighborhood development. The required parking will be off-street.

(f) The proposed use will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the district.

This will be a residential development.

(g) The proposed use will not block sight lines from the right-of-way to existing signs or windows on the front or side of a building.

The property borders E. North College and Livermore Streets and an alleyway to the west and north, and will not block sight lines from the ROW to existing signs/windows on the front or side of a building.

1262.04 CONDITIONS OF APPROVAL.

Reasonable conditions may be imposed on the approval of a conditional land use in order to achieve the following:

(a) Ensure public services and facilities affected by the proposed use or activity will be capable of accommodating increased service and facility loads necessitated by the proposed use.

(b) Ensure that the use is compatible with adjacent conforming land uses and activities.

(c) Protect natural resources; the health, safety, and welfare; and the social and economic well being of those who will use the land use or activity under consideration; residents, business owners and landowners immediately adjacent to the proposed use or activity; and the community as a whole.

(d) Relate to the valid exercise of the police power and purposes which are affected by the proposed use or activity.

(e) Meet the purpose of the zoning code, be in compliance with the standards established in the code for the land use or activity under consideration, and be in compliance with the zoning district standards.

1262.08 SPECIFIC REQUIREMENTS.

In addition to the general standards of Section 1262.03 applicable to all conditional uses, additional requirements may be applicable to specific conditional uses and shall be satisfied in order to obtain approval. Conditional uses for which added requirements apply are:

(e) Residential. (6) Pocket Neighborhood Developments (PNDs). The following regulations apply to Pocket Neighborhood Developments (PNDs):

A. Location.

1. Pocket Neighborhood Developments may be considered in only the three residential districts; Residential A - Low Density Residential District,

2. Residential B - Moderate Density Residential District

3. Residential C - High Density Residential District.

Upon rezoning, the PND will be located in R-C, which fits with the residential zoning of the neighborhood to the west and north of the property.

B. Density and Minimum Lot Area.

1. In Residential A, the permitted density shall be a maximum of six units per acre.

2. In Residential B, the permitted density shall be a maximum of eight units per acre.

3. In Residential C, the permitted density shall be a maximum of fourteen units per acre.

Antioch College intends to build eight (8) units.

4. The minimum lot area for a PND is equal to the minimum lot requirements for the corresponding residential district.

Complies with the requirements of Table 1248.03 at 39,424 sf and a lot frontage of 297.22 feet (see Table 1248.03 below).

Table 1248.03 Lot and Width Requirements: Residential Districts		
Zoning District	**Minimum Lot Area (Sq. Ft.)[1]**	**Minimum Lot Width (Ft.)**
R-C, High-Density Residential	**4,800[3]**	**40**
1 Public water and sanitary sewer is required for all property in these districts. 3 Two-family, attached single-family and multi-family dwellings are permitted a density up to 14 units per acre.		

5. On a lot to be used for a PND, the lot size maximum must be under five acres.

The property is just under one acre at 0.905.

6. On a lot to be used for a PND, a minimum of four dwelling units around a common open space area are required.

The proposed development will have eight dwelling units around a common open space area.

7. On a lot to be used for a PND, an existing single-family dwelling or duplex structure, which may be nonconforming with respect to the standards of this section, shall be permitted to remain, but the extent of the nonconformity may not be increased, and the existing structure will factor into the maximum lot coverage permitted for that residential zoning district. An existing single-family dwelling or duplex structure will only count as one dwelling unit towards the minimum of four dwelling units as noted in subsection B.6. An existing accessory dwelling unit (ADU) will not be allowed in a PND. An existing ADU may be converted to another use such as a storage building, HOA community room or HOA guest housing.

Does not apply – the property has no existing structures.

C. Height Limit and Roof Pitch.

1. The height limit permitted for structures in PNDs shall be a maximum of thirty-five feet for each dwelling unit, and rooflines must present a distinct profile and appearance and express the neighborhood character.

The proposed roof lines are similar in height (24 feet). The rooflines are uniform in appearance within the PND itself.

D. Lot Coverage.

1. The maximum lot coverage permitted for principal dwelling units in PNDs shall be limited to that allowed in the corresponding residential zoning district. Because PNDS shall be located on one lot under the control of a Home Owner's Association (HOA), the developer and/or the Greene County Engineer shall determine the lot area for each individual dwelling unit.

The maximum lot coverage for R-C, High-Density Residential is 50 percent. With the property measuring 39,424 sf, the maximum allowable lot coverage is 19,712 sf. The total proposed footprint for all buildings is 7,096 sf (4 units at 798 sf and 4 units at 976 sf) using 36 percent of the maximum allowable lot coverage. Parking lots are not included in lot coverage calculations. The Yellow Springs Zoning Code definition for lot coverage is: **Lot coverage. The part of the lot occupied by buildings or structures, expressed as a percentage, including accessory buildings or structures, but not including parking lots.**

E. Yard Setbacks.

1. Front and Rear Setbacks shall be equal to the setback requirements in the corresponding residential districts and will be measured from the perimeter property lot line. The front yard setback shall be measured by where the road frontage is and not the lot line of the land owned by each individual property owner within the PND. The side yard setback is a minimum of ten feet between the eaves of each dwelling unit unless it is single-family attached dwelling units.

Table 1248.03a Dimensional Requirements: Residential Districts

Zoning District	Maximum Building Height (Ft./stories)	Minimum Yard Setbacks (Ft.)				Max. Lot Coverage (%)
		Front	Side		Rear	
			Total	Least		
R-C	**35/3**	**20**	**10**	**5**	**15**	**50**
4 Average established setback shall apply, where applicable, in accordance with Section 1260.02(a).						

The front yard setback is 20 feet to the location of the buildings. The rear yard setback is 15 feet to the location of the buildings. There is a minimum of five feet for the side yard, with no dwelling closer than ten feet between the eaves. This applies to six building footprints as two of the buildings are two-family units. The actual property side yard setback is also met with no structure closer than five feet to the property line at the west or east.

2. Frontage on a public street is not required for individual lots in a PND provided that the Planning Commission determines through the site review process that the development provides for adequate access to the lot via easements, shared driveways or other means.

The property has 297.22 feet of frontage on East North College Street and will have an accessible parking area entrance on it.

F. Required Common Open Space.

1. A minimum of 200 square feet of contiguous usable common open space is required per dwelling unit with no dimension less than ten feet. At least fifty percent of the dwelling units shall abut the common open space, all of the dwelling units shall be within sixty feet walking distance to the common open space, and the common open space shall have dwelling units abutting at least two sides.

The requirement of contiguous usable common open space is 200 sf X 8 units = 1,600 sf. According to the architect, this square footage is identified as the triangular area labeled "Plaza" as bound and defined by the pathways at the center of the neighborhood, and excludes the square footage of all pathways, parking, and the area labeled "The Gardens." The "Plaza" measures 2,650 sf. All of the dwelling units are located within sixty feet walking distance to the common open space with two sides of the common open space in front of six of the eight dwelling units. All of the dwelling units have a common boundary with the "Plaza."

G. Parking.

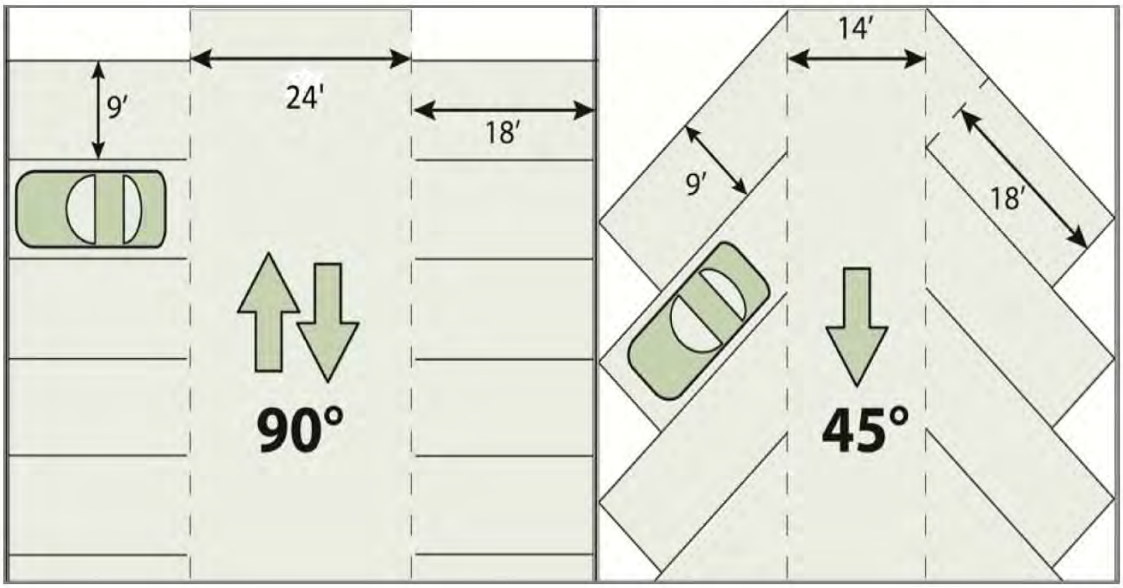
1. One and one-half spaces per dwelling unit shall be required.

The required twelve parking spaces for the eight dwelling units is shown on the site plan proposed.

2. Location:

a. Parking shall be on the PND property with a plan approved by the Planning Commission to ensure that parking is as unobtrusive as possible. The parking requirements and landscape requirements in the PND shall be limited to that allowed in the Yellow Springs Planning and Zoning codes. Parking areas are excluded from the calculations of common open space.

Table 1264.03 Dimensional Requirements (feet)					
Parking Pattern	**Parking Space**		**Maneuvering Lane Width**	**Total One Row of Parking and Maneuvering Lane**	**Total Bay (Two Rows of Parking and Maneuvering Lane)**
	Width	**Length**			



The 90 degree parking angle was used for this development. There are a total of 12 parking spaces, each 10 feet wide by 16 feet in length with a 24 foot maneuvering lane. The parking stall is 2 feet shorter than the zoning code design requirement for parking lots. The zoning code for parking lot areas state: **<u>Curbing</u>. A six-inch concrete curb, or alternative as determined by the Planning Commission, shall be provided around all sides of any parking lot of five or more spaces to protect landscaped areas, sidewalks, buildings, or adjacent property from vehicles that might otherwise extend beyond the edge of the parking lot. Curb openings are allowed for storm water drainage, as recommended by the Village Engineer. Plantings shall be set back two feet from curbs to allow for bumper overhang.**

In response to a question from staff about this design, McLennan Design initially responded with, **"We included a curb around the perimeter and were utilizing wheel blocks to better facilitate storm water flow as an alternative (and) as a better pairing with the porous asphalt with its substrate layers at the relevant stalls, but if this option is deemed non-compliant as an alternative for an end of stall condition, we can switch out with a 6" curb and incorporate openings for water flow."**

In a conference call meeting on September 6th, staff requested further explanation which was provided by McLennan Design in their memo labeled Exhibit C excerpted below:

"The parking lot has been configured and designed to minimize stormwater issues while facilitating a higher level of mobility and access for the residents of the pocket neighborhood. The 24'-0" wide drive lane utilizes heavy duty asphalt to facilitate emergency vehicle access and waste collection services.

The parking stalls aligned along the drive lane will utilize permeable asphalt which will include an open grade porous asphalt paving atop layers of substrate of rock courses to allow for some initial stormwater infiltration. Surface water is then shed through curb-cut openings within the required 6" perimeter curb to bioswales and rain gardens for further retention and infiltration. To provide more adequate space sizing for the bioswale, the design has incorporated the permissible 2'-0" overhang allotment to pull the paved surface back slightly from the far end of the stalls and instead allow for the landscaping/bioswale to fill in the area where vehicle tires and weight would never need to come to rest (the 6" curb would assure this protection).

The end result of the stall design is an 18'-0" x 10'-0" stall that has permeable paving for the first 16'-0", a 6" curb, and a remaining 18" paving free landscaped zone within the 2'-0" permissible overhang. The intent of providing an adequate footprint for a personal vehicle to be parked within is fulfilled while at the same time minimizing the negative impacts of hardscaped surfaces."

If the proposed design is acceptable to the Planning Commission, this should be formally approved.

It should be noted that there is no requirement for ADA parking in the PND partly because we didn't anticipate one parking area. Chapter 1264 Off-Street Parking and Loading does mention barrier free parking stalls in the design of parking lots. McLennan Design has provided two barrier free parking stalls.

Our zoning code does not mention specific side yard setbacks for parking lots in residential zones. Our zoning code does require a three foot setback from the side yard property line for driveways.

H. Lighting.

1. Lighting fixtures shall be equipped with cutoff elements to direct light downwards and prevent light spill or trespass beyond the boundaries of the individual dwelling unit lot areas.

The site plan shows LED direct cut-off lighting along the pathway and parking area. McLennan Design revised the site plan to show the total number of lights proposed for the property. There is not a requirement for a photometric site plan in the PND. In this design, with all parking for the development located in one parking lot, the PND references the zoning code for parking. The language in this section of the zoning code states:

Lighting. Light fixtures used to illuminate off-street parking areas shall be arranged to deflect the light away from adjoining properties and adjacent streets. Lighting fixtures in parking areas adjacent to any residentially zoned or used property shall not exceed 20 feet in height. Fixtures in all other parking areas shall not exceed 35 feet in height. Light fixtures shall be designed to achieve 90 degree luminary cutoff.

The Planning Commission may want to add this requirement to the PND language to ensure that in future developments, a photometric site plan is indicated if the development uses a parking lot design. This way we can be assured that light spill will not trespass on neighboring properties if light fixtures illuminating parking areas are installed. Because the height of the lights in this plan do not exceed 42 inches, staff does not anticipate any issues with light spill trespass.

I. Utilities.

1. A utility vault will be required where all meters can be located.

The proposed master meter vault is shown on C004 of the Grading & Utility Plan.

Johnnie Burns, the Public Works Director questioned the location of the sanitary sewer manhole that has been placed on Lot #3A in the revised grading and utility plan (C004) because it is a separately zoned lot. This property is also owned by Antioch College.

J. Other PND standards.

1. PNDs are limited to detached single family dwelling units in R-A, Low Density Residential. In R-B, Moderate Density Residential and R-C, High Density Residential, up to fifty percent can be either two-family dwellings and/or single-family attached.

With the rezoning to R-C, High-Density Residential, the property will contain four single-family dwelling units and two two-family dwelling units for a total of eight.

2. Privately-held accessory structures and accessory dwelling units are not allowed.

No such structures are indicated on the site plan.

3. A PND shall be located on one lot with all common open space under the control of a Homeowner's Association (HOA). A draft of the conditions, covenants and restrictions (CC&Rs) shall be provided to the Planning Commission during the Level B site plan review meeting, with final approval of the CC&R by staff. Once approved, the CC&Rs shall be recorded with Greene County. The CC&Rs must create a homeowner's association that will provide for maintenance of all common areas in the PND which includes but are not limited to areas of common open space, parking, roadways, street right-of-ways, exterior setbacks, driveways, required yards, utility easements, pedestrian paths, and shared community buildings or shared accessory structures.

A copy of the CC& R is provided with this report. It is being reviewed by our solicitor and he will provide an analysis of the document at the public hearing..

4. The dwelling units may be individually owned or rented with no more than fifty percent rentals.

Antioch College intends to sell all eight of the units.

5. Prior to the Planning Commission conditional use hearing, a preliminary meeting with utilities and planning staff to review the project must be held. A Level B site plan review, including a storm water plan as specified in 1226.06 Design Standards is required for approval of the PND conditional use. Prior to submittal to the Planning Commission, the Level B site plan shall be reviewed by a designated Village of Yellow Springs engineer, who will provide a written report of findings for the Planning Commission. The engineer may be present at the conditional use hearing to answer questions related to their findings.

A preliminary meeting was held with the Public Works Director who provided the representatives from Antioch College and McLennan Design with information on the current infrastructure at this site. The Village of Yellow Springs contracted with Choice One Engineering to provide a Level B Site Plan Review and a review of the storm water plan (Exhibit C & D). Choice One Engineering identified additional information needed. A conference call with McLennan Design, Choice One, Reinke Group, Antioch College and the Village's Public Works Director on September 6th was held to finalize the requirements needed to move forward with the Public Hearing. The data provided in this report reflects any additions or modifications made as a result of this meeting.

6. Pedestrian pathways must be included to provide for movement of residents and guests from parking areas to homes and other amenities. These pathways must be shown on the site plan and be part of the common areas/tracts.

Pedestrian pathways are shown on the site plan with a width of four feet. This measurement meets the planning code and current ADA standards.

7. Mailboxes shall follow the US Postal Service requirements for cluster box units (CBUs).

The revised site plan (C003) shows the USPS pedestal mailbox.

8. Other considerations not addressed specifically, shall follow the requirements of the Yellow Springs Planning and Zoning codes.

Staff has identified the following:

<u>Landscaping</u>. Off-street parking areas shall be landscaped and/or buffered, in accordance with the requirements of Chapter 1270.

<u>1270.02 Greenbelts and Parking Lot Landscaping</u>

Greenbelts and landscaping shall be required in the following situations, except for parking areas within the B-1, Central Business District.

(1) Along the street frontage, between the right-of-way line and the parking lot of any parking lot containing four or more spaces;
(2) Within any required parking setback area; and
(3) Within the interior of any parking lot containing ten spaces or more.

<u>Greenbelt Standards for Front Setbacks</u>. Greenbelts shall meet the requirements of this chapter.

(1) At a minimum, a required greenbelt shall contain one canopy tree, plus two additional canopy or understory trees for each 50 feet of road frontage.
(2) Trees within a required greenbelt may be clustered to create more visual impact and appeal, rather than uniformly spaced along the street.
(3) The minimum width of a required greenbelt shall correspond to the parking setback requirements prescribed for the district, but shall not be less than ten feet.
(4) Landscaping shall be located so it does not obstruct the vision of drivers entering or leaving a site.
(5) Storm water detention/retention areas shall be permitted within required greenbelts; provided, they shall not hamper the screening intent of the greenbelt or jeopardize the survival of plants.

<u>Parking Lot Landscaping</u>. Where landscaping is required within parking lots, it shall meet the following requirements:

(1) One tree for every ten parking spaces shall be planted within the parking lot. Trees shall be canopy species. While drought tolerant native species are preferred, other species may be planted within parking areas if approved by the Zoning Administrator or Planning Commission, as applicable.
(2) Parking lots shall contain landscape islands. Each island shall be a minimum of ten feet wide, although islands may be combined to ensure a better environment for tree and plant growth. Each island shall be planted with a minimum of two trees to provide shade and to break up the visual monotony of

large paved parking lots. Trees shall be planted at least three feet from the edge of the island to avoid contact with vehicles.

(3) Landscaping shall be arranged so as not to obscure traffic signs or fire hydrants, or obstruct drivers' sight distance within the parking area and at driveway entrances.

(4) All landscape areas shall be protected by raised curbs, parking blocks or other similar methods to prevent damage. Notwithstanding this requirement, alternative low-impact design solutions shall be encouraged.

(5) Landscaping required for front yards which abut parking areas may apply toward up to 50% of the required parking lot landscaping.

1270.03 General Requirements

All required landscaping and greenbelts shall comply with the following requirements, in addition to all other applicable requirements of this chapter:

Minimum Plant Material Standards.

(1) All plant materials shall be hardy, free of disease and insects, and indigenous to Greene County.

(2) Artificial plant material shall not be used within any required landscaped area. This shall not preclude the use of stone, shredded bark, wood chips, lava rock or similar accent materials within planting beds.

(3) All plant material shall be installed in a manner that does not alter drainage patterns on site or adjacent properties, or obstruct vision for safety of ingress or egress.

(4) No substitution of plant species or sizes shall be allowed unless approved by the Zoning Administrator in writing.

(5) All plant material shall be planted in a manner that will not cause damage to utility lines (above- and below-ground) and public roadways.

(6) Existing plant material which complies with the standards and intent of this chapter may be credited toward meeting the landscape requirements.

(7) The overall landscape plan shall not contain more than 33% of any one plant species.

(8) Plant material shall not be placed closer than four feet to any fence or property line.

(9) Where trees are placed in two or more rows, planting shall be staggered in rows.

Minimum Standards for Berms.

(1) If berms are constructed, they shall be constructed to maintain a side slope not to exceed a one-foot rise to a three-foot run ratio. When topography or other site conditions prevent construction of berms at this ratio, retaining walls or terracing may be permitted. If a berm is constructed with a retaining wall or by terracing, the earthen slope shall face the exterior of the site.

(2) Bermed areas not containing planting beds shall be covered with grass or other living ground cover maintained in a healthy condition.

(3) Berms shall be constructed so drainage patterns on site or toward adjacent properties will not be altered and vision will not be obstructed for safety of ingress and egress.

(4) If berms are used for any part of a screen or greenbelt, all required plant material shall be placed on the top and side slope facing the exterior property line.

Rain Gardens. Rain gardens are encouraged as part of a site development and may be approved within a required greenbelt. If provided, rain gardens shall be prepared according to the following guidelines:

(1) The purpose of the rain garden is to absorb rain water and to improve the attractiveness of the site.

(2) The size of the rain garden shall be appropriate for the soils located on the site.

(3) Soils used in the rain garden shall be appropriately prepared and amended following any compaction that may have occurred during construction.

(4) The rain garden shall be graded to assure that rain water entering the garden will spread out over a large flat area and will soak into the soil.

(5) To minimize hazards to pedestrians, the rain garden shall be graded so that at its deepest it is approximately six inches.

(6) The rain garden is planted with native perennial flowers, grasses and sedges.

(7) The rain garden shall be maintained with minimal or no fertilizers; no herbicides or pesticides will be used.

Following the above requirements, the PND should have 5-6 canopy trees plus 10-12 understory trees in the frontage setback area.

Seven canopy trees are located in the ROW tree lawn area and an additional four are in the frontage setback area. Planter beds (raised and non-raised) are shown for the homeowner's use. Twenty-two additional trees exist or shown as relocated on the Landscape Plan (L101). All are within the property line border, except one large canopy tree in the rear yard alleyway.

The Landscape Plan's rain garden extends from the front to the rear along the east side of the property totaling 2,550 sf with 31 varieties of plants. The rain garden ponding depth is indicated on the site plan's rain garden exhibit (C005) and ranges from 6" to 12" in depth.

Additional plants and shrubs on L801 of the Landscape Plan identified as a meadow will cover 10,000 sf of the property.

One tree for every ten parking spaces shall be planted within the parking lot. Trees shall be canopy species.

A minimum of two trees are required in a parking lot landscape island and two trees are shown on the Landscape Plan (L101).

Storm water detention/retention areas shall be permitted within required greenbelts.

Refer to the site plan's rain garden exhibit (C005) from the Reinke Group and Choice One Engineering's report.

Fire lanes. Fire lanes shall be designated on the site and posted with signage prior to occupancy. Vehicle circulation shall meet turning radius requirements set by the Fire Department.

The fire chief has identified the location of fire lanes that will need to be properly marked (Exhibit F). Specifically, Chief Altman stated, **"To facilitate firefighting access to this neighborhood, two (2) designated fire lanes will be required in the locations shown on the attached site plan. The areas shall be indicated with yellow painted curbs, and with signage stating NO PARKING FIRE LANE, per section 503 of the Ohio Fire Code. One is on the public way, the other is on the private access lane."** ***The revised site plan shows one area marked for the fire lane. Both areas specifically shown on the diagram will need to be added to the site plan.***

RECOMMENDATIONS

Staff recommends the Planning Commission review the information provided and any additional information available at the meeting, and consider:

- The expansion is in conformance with goals of the Villageôs 2010 Comprehensive Plan and the Vision: Yellow Springs and Miami Township visioning plan.
- The expansion will not be detrimental to the health, safety and welfare of the villageôs residents.
- The expansion is adequately served by essential public facilities.
- The expansion is compatible with the surrounding character of the general vicinity.
- The expansion will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the district.
- The expansion will not block sight lines.
- The proposal as presented complies with most of the requirements of the Villageôs Zoning Code.

ADDITIONAL RECOMMENDATIONS:

Staff requests Planning Commission approval on the following;

- Deviation from the parking lot requirements of the zoning code
- Addition of fire lanes as shown in Exhibit F
- Final storm water calculations provided upon completion of construction plans and reviewed by the Villageôs engineer.
- A review of the construction plans by the Public Works Director prior to or at the same time the plans are submitted to Greene County Building Regulations for building permits.
- The Planning Commission also has the option of requiring a performance guarantee per Chapter 1272.04 (b) of the zoning code (see below).

CHAPTER 1272.04(b) – PERFORMANCE GUARANTEES

Chapter 1272.04 (b) Performance Guarantees. The Planning Commission, Board of Zoning Appeals or Village Council, as applicable, may require an applicant to deposit a performance guarantee to ensure compliance with this code, the completion of improvements and to protect natural resources and the health, safety and welfare of Village residents and the future users or inhabitants of the project.

(1) A "performance guarantee" shall mean a cash deposit, certified check, letter of credit or other legal surety approved by the Village in an amount equal to the estimated cost for any improvements to be made, as determined by the applicant and confirmed and verified by a representative of the Village.

(2) The performance guarantee shall be deposited with the Village before any building permits can be issued. The Treasurer shall retain the performance guarantee, in accordance with this section.

(3) When a performance guarantee is required as a condition of approval, the approving body shall also specify when the related improvement must be completed.

(4) As the project is constructed, the Village may rebate money to the applicant based on a reasonable proportion of the completed work, provided that at least 10% shall be retained for each related element until the entire project has been satisfactorily completed. The Village may solicit the opinion of a civil engineer or other licensed professional in the State of Ohio to determine the value of the completed work.

(5) Once a project has been satisfactorily completed, as determined by the Zoning Administrator, and all the landscaping (if required) has been established, the Treasurer shall return any remaining funds to the applicant. The Village may retain up to 10% of the performance guarantee to cover any administrative or consultant costs directly associated with reviewing and/or inspecting any improvements.

(6) In the event an applicant does not make the improvements for which the performance guarantee was required within the established time period, or if improvements are not constructed in accordance with this zoning code and/or any required conditions and attempts to attain compliance are unsuccessful, the Village may enter the subject property and complete the improvements using the performance guarantee to cover costs.

(7) In the event an applicant does not make or complete the improvements and the performance guarantee is insufficient to allow the Village to complete them, the applicant shall be required to pay the Village an amount necessary to complete the improvements, plus any administrative or legal fees.

Staff recommends **APPROVAL** of the conditional use and site plan review for Antioch College's Pocket Neighborhood Development with consideration of the five conditions outlined above and any other specific conditions the Planning Commission deems necessary.

If you have any questions or if I can be of assistance please feel free to contact me at (937) 767-1702 or email at dswinger@vil.yellowsprings.oh.us.

ANTIOCH POCKET NEIGHBORHOOD DEVELOPMENT

PROJECT NARRATIVE - SITE PLAN REVIEW

MCLENNAN DESIGN

ANTIOCH COLLEGE

CONTENTS

ANTIOCH COLLEGE VILLAGE

A POCKET SUSTAINABLE NEIGHBORHOOD

The McLennan Design team has created a unique sustainable pocket neighborhood as a pilot project for Antioch College and the future co-housing community. The project integrates into the Yellow Springs neighborhood while being connected to the larger college campus.

Comprised of eight tiny home units - four 2-bedroom units (836sf net/976sf gross) and four attached 1-bedroom units (693sf net/798sf gross) - this new community is to be developed on a presently vacant lot and will feature compact homes built to high energy efficiency and sustainability standards, a vibrant village green shared by all of the residents, and ample space for community gardens.

The units themselves will exemplify the state of the art features of sustainable design, with energy efficient forms, rooftop arrays of PV panels, tight thermal enclosures, energy efficient equipment, and ample natural light. Options for green water and material solutions are also possible.

The site design has each of the homes looking out on a common greenspace which could be landscaped with food production, seating areas, and gathering areas. Porches face the green space to promote community interaction and kitchens and large windows look onto this greenspace as well. To the rear of each unit, a cellar hatch will lead to the optional basement storage area, which doubles as a storm shelter and could also provide options for composting toilets if approved and desired.

Parking is grouped to the east side of the site and features a number of LID stormwater management strategies.

READING ON THE PORCH

Modular Design

Both the 2 Bedroom Units and the 1 Bedroom Attached Units are based off of the same modular footprint to allow for efficient construction and to reduce initial costs to promote affordability. This one-size-fits-all strategy not only greatly reduces the cost of construction, but also provides a generous yet fully compact form that facilitates low heating and cooling needs. Two bedroom units are detached whereas one bedroom units have been paired.

Net Zero Energy

Designed to Passive House standards, each unit takes advantage of a full 10" of exterior wall to provide superior insulation and thermal efficiency. This could be achieved through using structural insulated panels (SIPs)..

This energy efficiency reduces the overall energy needs of the building, allowing 100% of the energy to be provided by the rooftop PV arrays.

Daylighting

Despite their compact form, each unit feels incredibly spacious due to the generous quality of natural light that floods each space through large windows and multiple skylights ombined with the vaulted ceilings featured inside.

Water and Waste

The homes have been designed to be initially connected to municipal water and waste, but are able to be decoupled depending on the interest of the homeowners and eventual willingness by the state to approve alternative means of water collection, such as rainwater collection for potable use and waste treatment through composting systems.

Stormwater is being handled on-site with a series of rain gardens, bioswales, and permeable surfaces where feasible.

A SUMMER AFTERNOON IN THE VILLAGE

INTERIOR VIEW


MCLENNAN DESIGN
ANTIOCH COLLEGE
www.mclennan-design.com

*Artist conceptual rendering of the project.

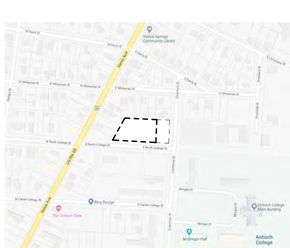
SHEET INDEX

Total sheets in current set: 17

ANTIOCH POCKET NEIGHBORHOOD DEVELOPMENT

Site Plan Review - Update
September 6th, 2018

ITEM	REQUIRED	PROPOSED	SECTION
USE (ZONE CHANGED TO RESIDENTIAL-C)			
POCKET NEIGHBORHOOD DEVELOPMENT	MAX. 14 UNITS PER ACRE	8 UNITS	1262.08.e.6.B.3
UNIT TYPE A (SINGLE DETATCHED RESIDENTIAL UNITS)		4 UNITS / 976 SF EACH	
UNIT TYPE B (DUPLEX RESIDETIAL UNITS, UP TO 50% PERMITTED)		4 UNITS / 798 SF EACH	1262.08.e.6.J.1
LOT / BUILDING			
MINIMUM LOT AREA (RESIDENTIAL-C)	4,800 SF	39,414 SF	TABLE 1248.03
MINIMUM LOT WIDTH (RESIDENTIAL-C)	40'	228'-1 1/8" NARROW	TABLE 1248.03
MAXIMUM LOT AREA (FOR POCKET NEIGHBORHOOD DEVELOPMENT)	UNDER 5 ACRES	.905 ACRES	1262.08.e.6.B.5
MAXIMUM LOT COVERAGE	50%	18%	TABLE 1248.03a
MINIMUM FRONT YARD	20' FROM PROPERTY	20'-0"	TABLE 1248.03a
MINIMUM SIDE YARD	5' FROM PROPERTY	5'-0"	TABLE 1248.03a
MINIMUM REAR YARD	15' FROM PROPERTY	15'-0"	TABLE 1248.03a
MINIMUM DISTANCE BETWEEN UNITS	10' FROM EAVES	10'-0"	1262.08.e.6.E.1
MINIMUM COMMON AREA	8 UNITS x 200 = 1,600 SF	2,650 SF	1262.08.e.6.F.1
MAXIMUM BUILDING HEIGHT	35'-0"	24'-0"	1262.08.e.6.C.1
PARKING			
OFF-STREET PARKING REQUIREMENT	12 STALLS	12 TOTAL STALLS	
FOUR (4) UNIT TYPE A (SINGLE DETATCHED RESIDENTIAL UNITS)	4 UNITS x 1.5 = 6	6 STALLS	1262.08.e.6.G.1
FOUR (4) UNIT TYPE B (DUPLEX RESIDENTIAL UNITS)	4 UNITS x 1.5 = 6	6 STALLS	1262.08.e.6.G.1
MINIMUM STALL DIMENSIONS (90 DEGREE PARKING)	9' x 18'	10' x 18'	TABLE 1264.03
ADA PARKING REQUIREMENTS	1 STALL	2 STALLS	
MINIMUM DRIVE AISLE WIDTH (90 DEGREE PARKING, DOUBLE LOADED)	24'	24'	TABLE 1264.03



Legal Description:
Lot 2A in Replat of Lots 2 and 3
in the Antioch College Corp. Plat
Plat Cabinet 38, Pages 300B - 301A

Parcel No. F19-1-9-294
Antioch College Corporation
O.R. 3053, Page 191

Address:
E North College Street
Yellow Springs, OH 45387

9/6/2018 9:27:47 AM

Project

ANTIOCH COLLEGE

Antioch PND

E North College Street
Yellow Springs, OH 45387

Property Owner/Petitioner

Antioch College Corporation
One Morgan Place
Yellow Springs, OH 45387

McLennan Design, LLC

500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Key Plan

Professional Seals

No.	Issue Description	YYYY-MM-DD

No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

Drawn by SRBC Reviewed by DRD

Project No. 16016.01

Sheet Title:

COVER SHEET

Original drawing is Arch D. Do not scale contents of this drawing.

Sheet Number:

G001

UNDERGROUND UTILITIES
2 WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

STATE OF OHIO
MITCHELL W. COSLER
40788
REGISTERED PROFESSIONAL ENGINEER
SEAL

No.	DATE	REVISION

DATE 07/11/2018
DES.
DR.
CKD.
PROJECT No: 4912

COSLER ENGINEERING, LLC
545 Hilltop Road
Beavercreek Twp., Ohio 45385
Ph: 937-426-9913
Fax: 937-426-3390
By: Mitchell W. Cosler

McLennan Design
Antioch College PND Project

Located in Section 20, Town 4, Range 8
Village of Yellow Springs, Greene County, Ohio

TOPOGRAPHIC PLAN

SHEET NO.
C-1

Topographic Legend
Symbols & Lines

Cosler Engineering, LLC
545 Hilltop Road
Beavercreek Twp. OH 45385-7137
Ph (937)426-9913
mcosler@sbcglobal.net

Cable TV riser box	UGTV — UGTV	Existing underground cable television line
Fiber Optics Marker	FOC — FOC	Existing underground fiber optics line
Telephone riser box & manhole		Existing underground telephone line
Telephone pole	OHT	Existing overhead telephone line
Electric MH, transformer & pull box	UE — UE	Existing underground electric line
Power pole, anchor & underground box	OHE	Existing overhead electric line
Light pole, ground/sign light, & electric panel		
Gas valve, meter & marker	UG — UG	Existing underground gas line
Fire hydrant, water valve, meter, curb stop	W — W	Existing water line
Water MH, post indicator valve, fire deptartment connection		
Sanitary manhole, cleanout & lamp hole	SAN — SAN	Existing sanitary sewer line
Storm manhole & "2-2" catch basin	STM — STM	Existing storm sewer line
Catch basin – Type 3A & Type 3		Existing woven wire fence
Yard Drain		Existing chain link fence
Fence post, concrete		Existing fence stockade/board
Fence post, steel		Existing fence split rail
Fence post, wood		Existing barbed wire fence
End of gate/post		Existing hedge/brush/tree line
Existing tree, pine, bush & stump		Landscape planting area
Mail box		Corporation line
Soil boring location		Existing pavement striping
Flag pole, bollard, steel post & swing		Existing guardrail
Well & unknown valve		Existing edge of gravel line
Unknown manhole		Existing centerline
Road sign	EX-RW	Existing right-of-way line
Elevation bench mark/finish floor elevation		Existing property line
Survey control w/red "Cosler Traverse" cap		Existing elevation contour line
Iron pin found		Existing water service line
Iron pin set		Existing sanitary service line
Parker-kalon nail found	805.05	Finish Grade elevation
MAG nail set		
MAG nail found		
Stone found	806	Elevation of finish grade contour
Railroad spike found		
Railroad spike set	806	Elevation of existing ground contour
Iron pipe found	×806.23	Elevation of existing ground point
Concrete monument found	806.23	
Axle found		
Aluminum monument found		

- Wood hub and tack
- Right of way monument found
- Highway monument found
- Survey control benchmark – 0.5" dia rebar with red cap "COSLER TRAVERSE"

STATE OF OHIO
MITCHELL W. COSLER
40788
REGISTERED PROFESSIONAL ENGINEER
SEAL

No.	DATE	REVISION

DATE 07/11/2018
DES.
DR.
CKD.
PROJECT No: 4912

COSLER ENGINEERING, LLC
545 Hilltop Road
Beavercreek Twp., Ohio 45385
Ph: 937-426-9913
Fax: 937-426-3390
By: Mitchell W. Cosler

McLennan Design
Antioch College PND Project
Located in Section 20, Town 4, Range 8
Village of Yellow Springs, Greene County, Ohio
TOPOGRAPHIC SYMBOL LEGEND

SHEET NO.
C-2

GRAPHIC SCALE

40' 0 20' 40'

(IN FEET)

1 inch = 40 ft.

Property Owner/Petitioner
Antioch College Corporation
One Morgan Place
Yellow Springs, Oh. 45387

2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICE

Antioch PND

E North College Street
Yellow Springs, OH 45387

McLennan Design, LLC
500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Engineer

REINKE GROUP
Civil Engineering
Surveying
959 Congress Park Drive
Dayton, OH 45459
(937) 434-4810

Professional Seals

STATE OF OHIO
FRANKLIN K. WRIGHT III
39113
REGISTERED
PROFESSIONAL ENGINEER

No.	Issue Description	YYYY-MM-DD
1		2018-09-06

No.	Revision Description	YYYY-MM-DD

Drawn by Reviewed by

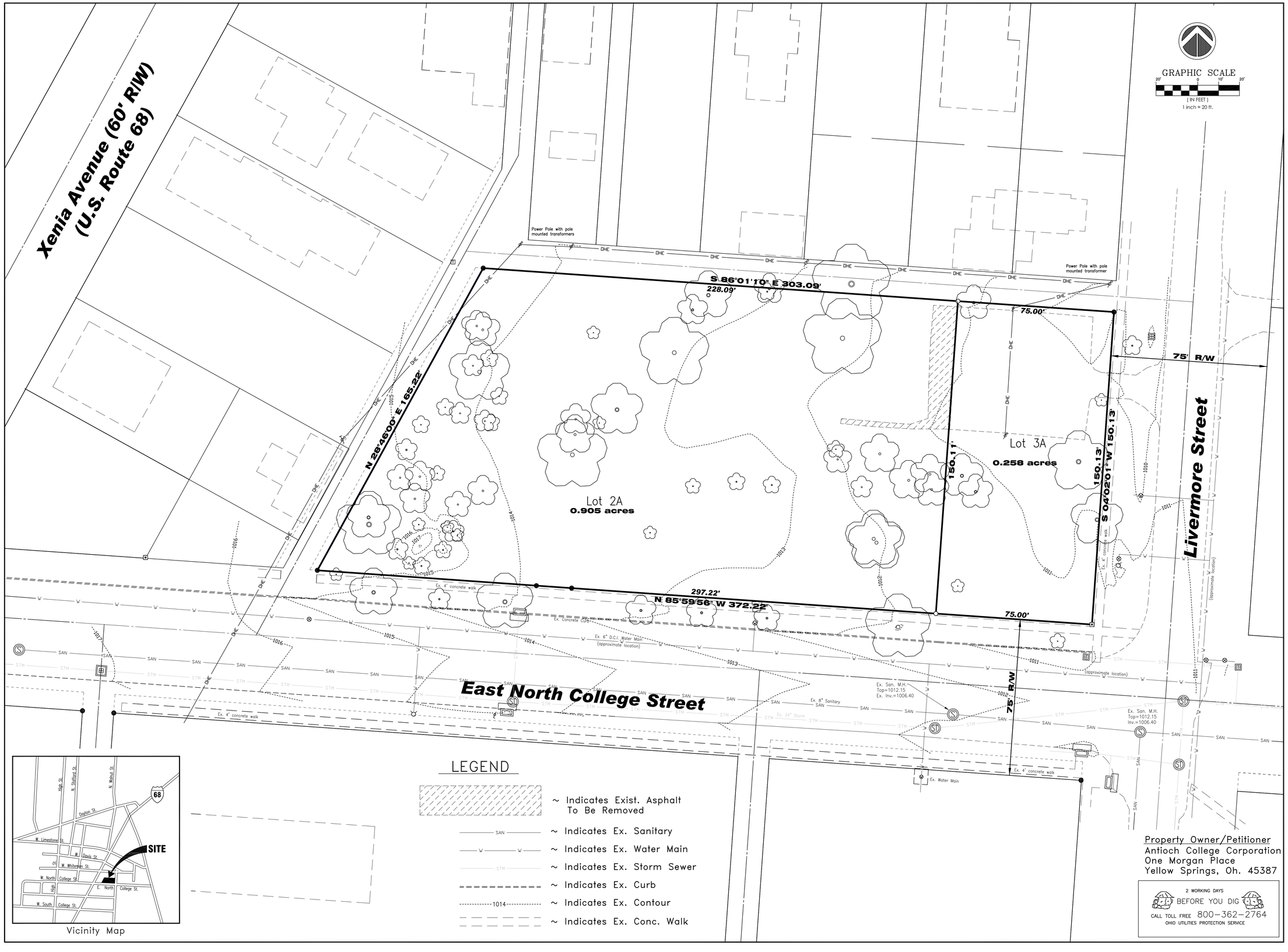
Project No. 16016.01

Sheet Title:

AERIAL SITE PLAN

Sheet Number:

C001



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No.	Issue Description	YYYY-MM-DD
1		2018-09-06

No.	Revision Description	YYYY-MM-DD

Drawn by Reviewed by

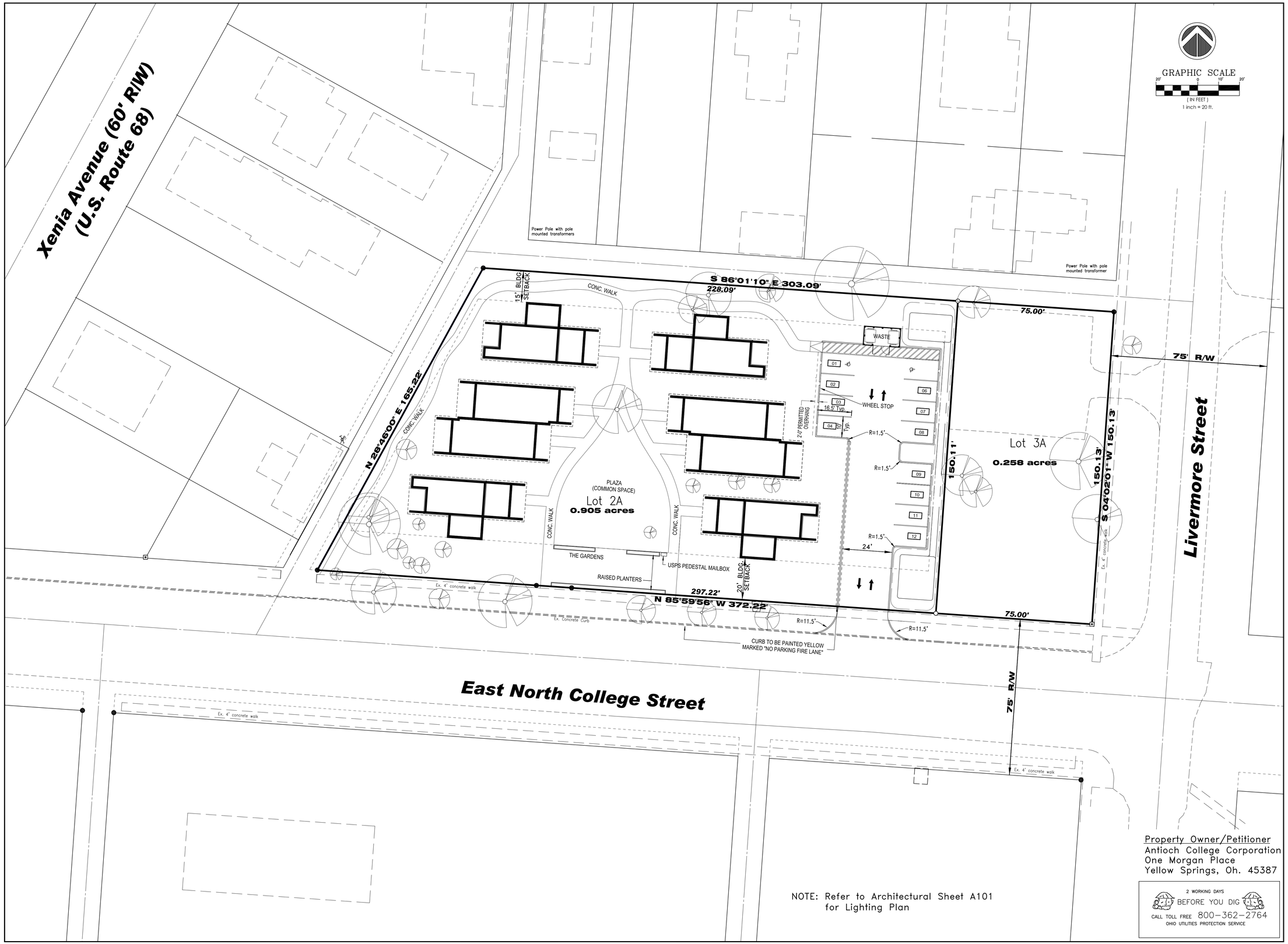
Project No. 16016.01

Sheet Title:

EXISTING CONDITIONS PLAN

Sheet Number:

C002



Property Owner/Petitioner
Antioch College Corporation
One Morgan Place
Yellow Springs, Oh. 45387

NOTE: Refer to Architectural Sheet A101
for Lighting Plan

2 WORKING DAYS
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No.	Issue Description	YYYY-MM-DD
1		2018-09-06

No.	Revision Description	YYYY-MM-DD

Drawn by

Reviewed by

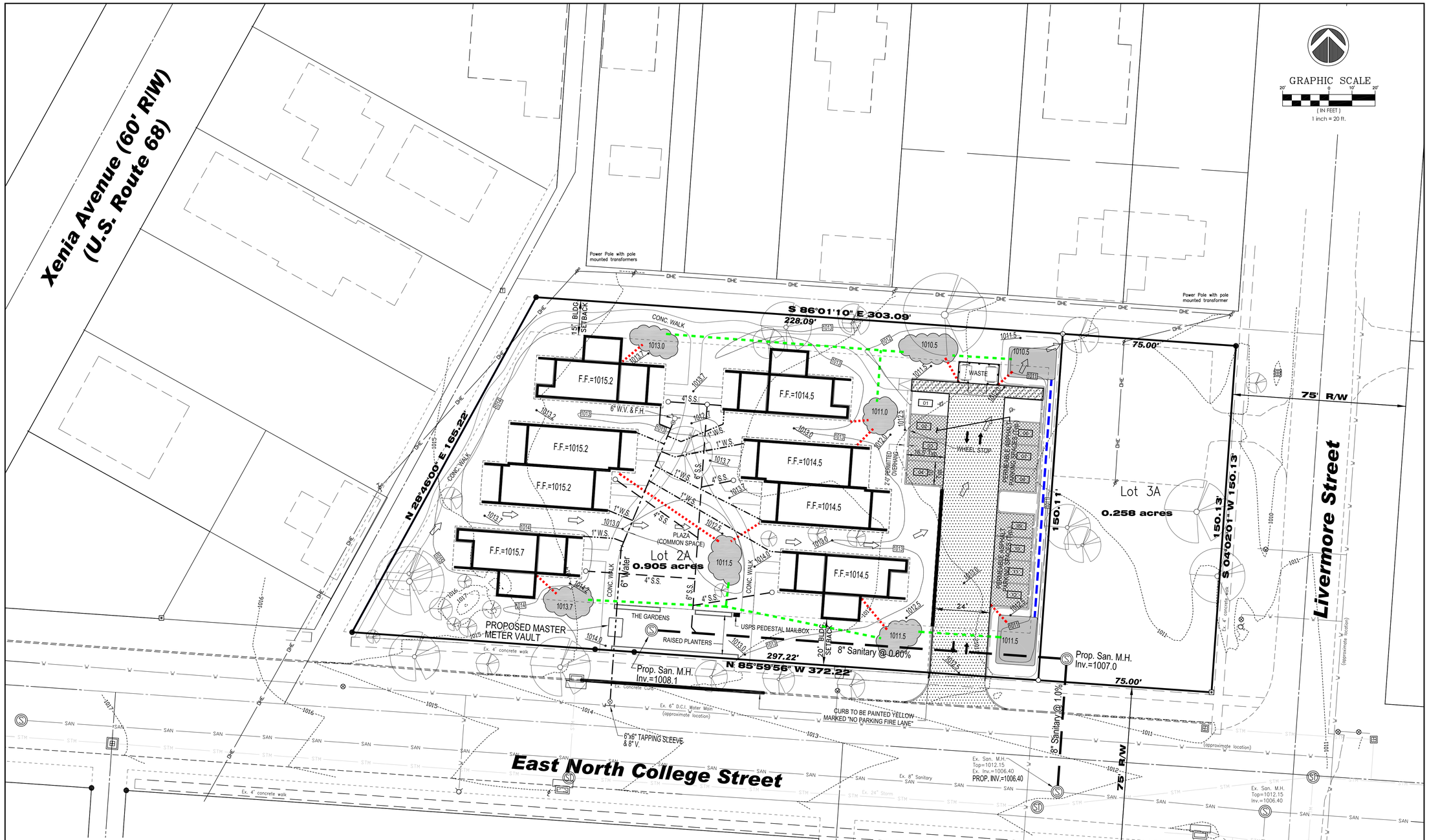
Project No. 16016.01

Sheet Title:

PRELIMINARY SITE PLAN

Sheet Number:

C003



LEGEND

- 1013.7 ~ Indicates R.G. (Rain Garden) & Bottom Elev.
- ~ Indicates Swale or Down Spout Lateral
- ~ Indicates Bioswale
- ~ Indicates Proposed 8" Water Main
- ~ Indicates Proposed 8" Sanitary
- ~ Indicates Underdrain
- ~ Indicates Heavy Duty Asphalt
- W ~ Indicates Exist. Water Main
- SAN ~ Indicates Exist. Sanitary Sewer
- STM ~ Indicates Exist. Storm Sewer
- 1"W.S. ~ Indicates Proposed 1" Water Service
- 4"S.S./6"S.S. ~ Indicates Proposed 4" or 6" Sanitary Service
- 1014 ~ Indicates Proposed Contour
- ~ Indicates 100 Year Overland Flow Path
- F.F.=1015.7 ~ Indicates Finish Floor Elevation
- 1014.7 ~ Indicates Proposed Grade Elevation
- ~ Indicates Permeable Asphalt Parking Spaces (Typ.)

Note: 6" Sanitary Collector and 4" Sanitary Service to be Maintained By H.O.A.

NOTE: Each building unit will have 2~55 gal. rain barrels that will overflow into the rain gardens and eventually the bioswale.

Property Owner/Petitioner
Antioch College Corporation
One Morgan Place
Yellow Springs, Oh. 45387

2 WORKING DAYS
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FRANKLIN K. WRIGHT III
39113
REGISTERED
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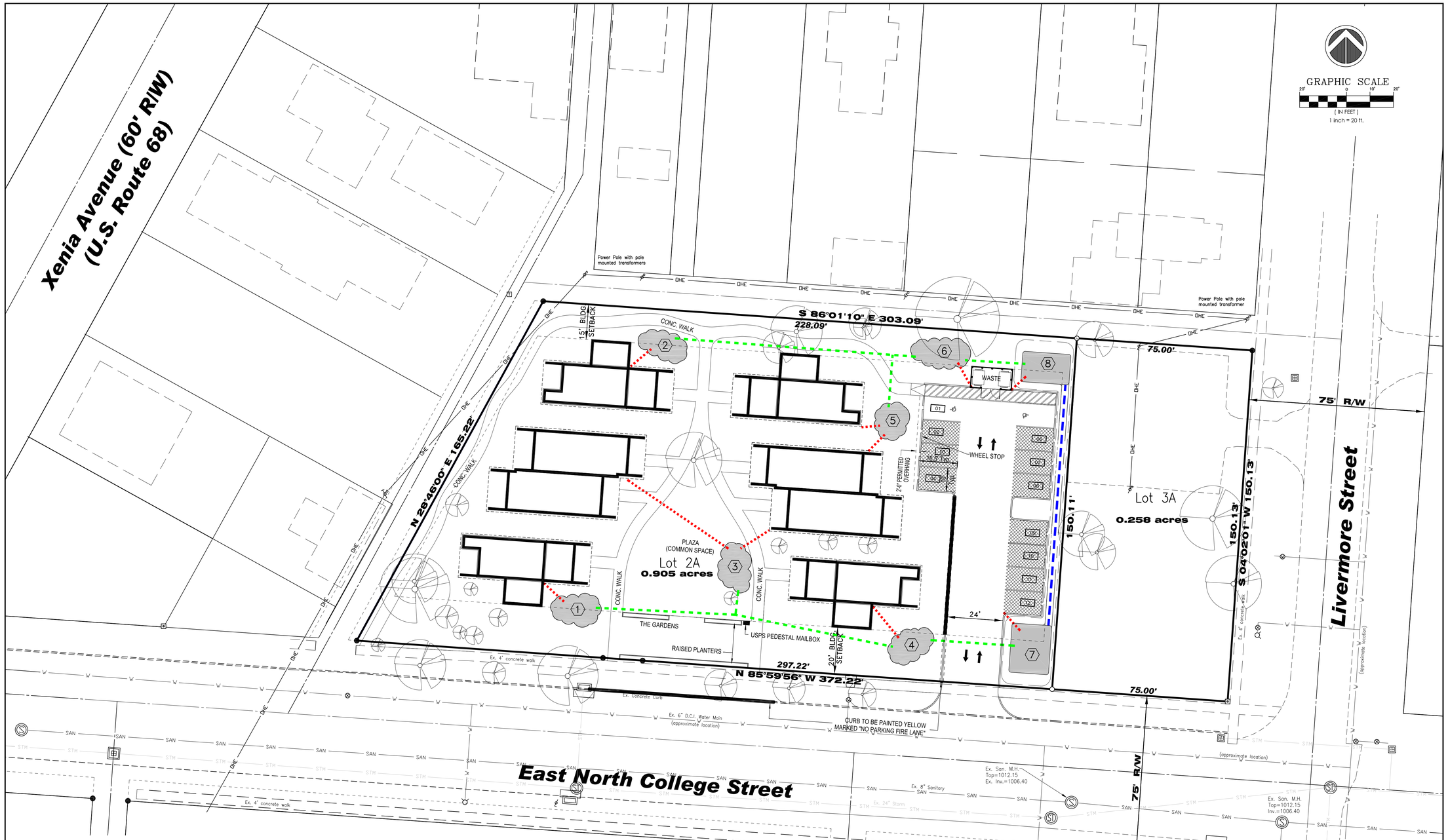
No.	Issue Description	YYYY-MM-DD
1		2018-09-06

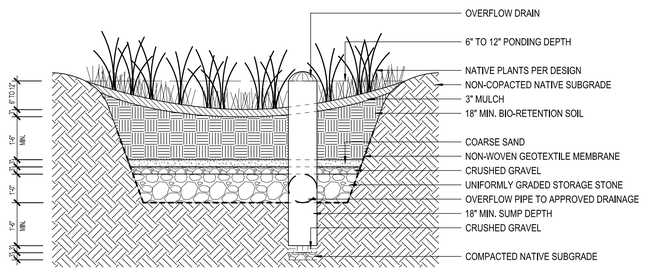
No.	Revision Description	YYYY-MM-DD
1	Underdrains Added	2018-08-30

Drawn by
Reviewed by
Project No. 16016.01

Sheet Title:
GRADING & UTILITY PLAN

Sheet Number:
C004





RAIN GARDEN DETAIL
No Scale

LEGEND

- ~ Indicates R.G. (Rain Garden)
- ~ Indicates Swale or Down Spout Lateral
- ~ Indicates Bioswale
- ~ Indicates Underdrain
- ~ Indicates Permeable Asphalt Parking Spaces (Typ.)

Property Owner/Petitioner
Antioch College Corporation
One Morgan Place
Yellow Springs, Oh. 45387

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PROFESSIONAL ENGINEER

No.	Issue Description	YYYY-MM-DD
1		2018-09-06

No.	Revision Description	YYYY-MM-DD
1	Underdrains Added	2018-08-30

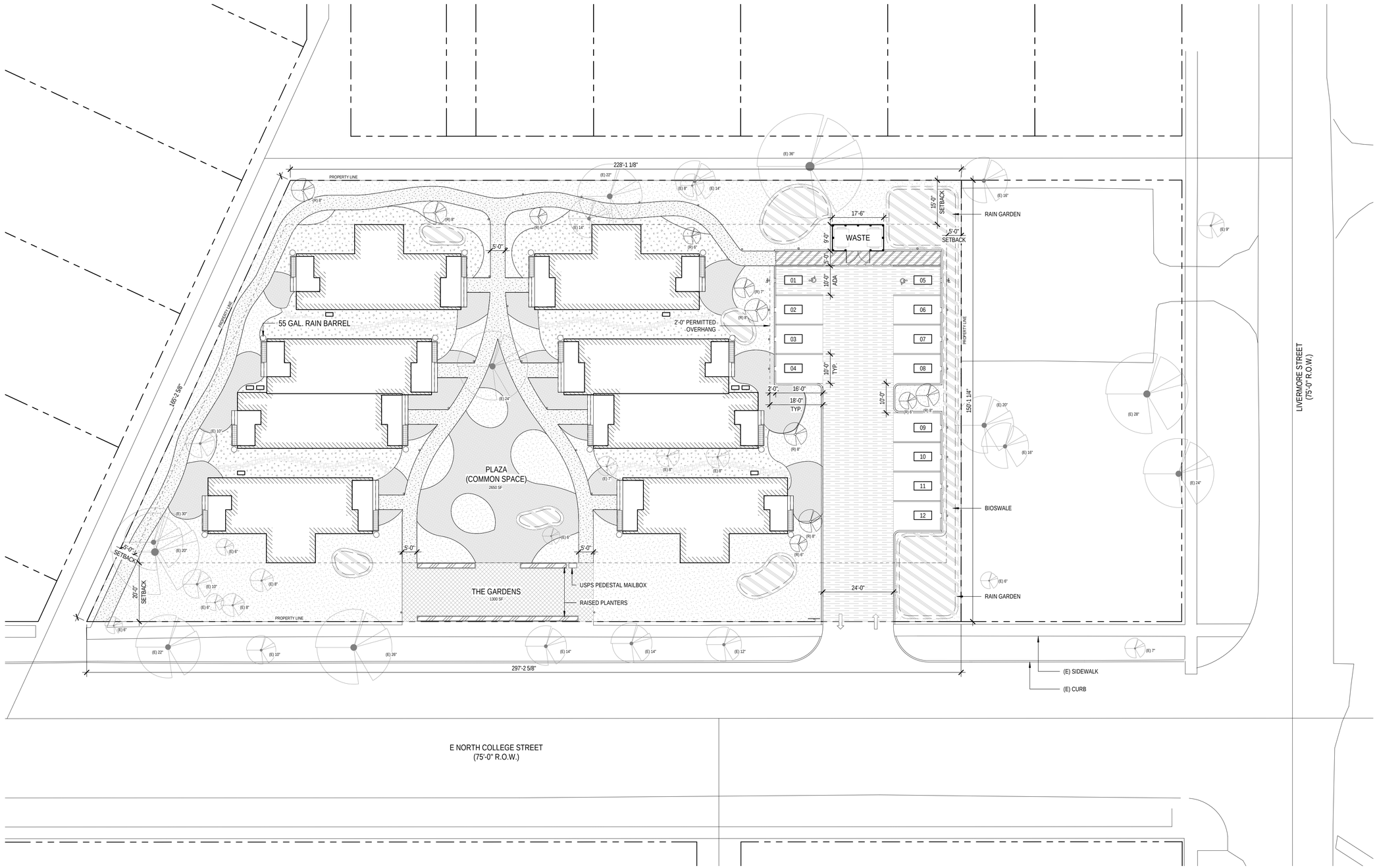
Drawn by
Reviewed by
Project No. 16016.01

Sheet Title:
SITE RAIN GARDEN EXHIBIT

Sheet Number:
C005

MATERIAL LEGEND

PLANTER BED	LOW MAINTENANCE LAWN	GREENCRETE PAVERS	CIP CONCRETE
RAISED PLANTER BED	SHADE	ASPHALT PAVING	TREE
MEADOW	RAIN GARDEN	MAINTENANCE ACCESS PATH	(E) 9" TRUNK DIAMETER (E) EXISITING (R) RELOCATE



1 LANDSCAPE PLAN
1/16" = 1'-0"

9/6/2018 9:28:10 AM

Project

ANTIOCH COLLEGE

Antioch PND

E North College Street
Yellow Springs, OH 45387

Property Owner/Petitioner

Antioch College Corporation
One Morgan Place
Yellow Springs, OH 45387

McLennan Design, LLC

500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Key Plan

N

Professional Seals

No.	Issue Description	YYYY-MM-DD

No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

Drawn by AP Reviewed by DRD

Project No. 16016.01

Sheet Title:

LANDSCAPE PLAN

Original drawing is Arch D. Do not scale contents of this drawing.

Sheet Number:

L101

BOTANICAL NAME	COMMON NAME	TYPE	LIGHTING	HEIGHT	SPACING
PLANTER BED - 250 sf					
For homeowners' personal use					
RAISED PLANTER BED - 200 sf					
For homeowners' personal use					
MEADOW - 10,000 sf					
Rudbeckia hirta	Black-eyed Susan	FlwrPeren	F	1-3'	1.5'
Solidago speciosa	Showy Golderod	FlwrPeren	F	2-3'	2.5'
Monarda fistulosa	Wild Bergamot	FlwrPeren	F-P	3-5'	2.5'
Penstemon digitalis	Foxglove Beardtongue	FlwrPeren	F	3-4'	1.5'
Aster umbellatus	Flat-topped White Aster	FlwrPeren	F	3.5'	3'
Astragalus canadensis	Canadian Milk Vetch	FlwrPeren	F	3'	21"
Bouteloua curtipendula	Side-oats Grama	Grss	F	2'	1.5'
Bouteloua gracilis	Blue Grama	Grss	F	1.5'	1'
Coreopsis lanceolata	Lanceleaf Coreopsis	FlwrPeren	F	1.5'	1.5'
Dalea candida	White Prairie Clover	FlwrPeren	F	1.5'	1'
Dalea purpurea	Purple Prairie Clover	FlwrPeren	F	2'	1.5'
Elymus canadensis	Nodding Wild Rye	Grss	F	2.5'	3.5'
Elymus virginicus	Virginia Wild Rye	Grss	F-P	3'	1.5'
Gaillardia aristata	Blanket Flower	FlwrPeren	F	9"	9"
Gaillardia pulchella	Indian Blanket	FlwrPeren	F	1'	1'
Ratibida pinnata	Yellow / Grey-Headed Coneflower	FlwrPeren	F	4'	2'
Schizachyrium scoparium	Little Bluestem / (grass)	Grss	F	3'	2'
Monarda citriodora	Lemon Mint	Annual	F-P	1.5'	1'
Echinacea purpurea	Purple Coneflower	FlwrPeren	F-P	3.5'	2'
Symphyotrichum novae-anglia	New England Aster	FlwrPeren	F	4.5'	2.5'
Symphyotrichum laeve	Smooth Aster	FlwrPeren	F	3'	1.5'
Helianthus occidentalis	Ox-eye Sunflower	FlwrPeren	F	2.5'	2'
Eutrochium maculatum	Joe-pye-weed	FlwrPeren	F-P	4'	
Helianthus tuberosus	Jerusalem Artichoke	FlwrPeren	F-P	7'	4'
Lysimachia punctata	Yellow Loosestrife	FlwrPeren	F-P	2.5'	1.5'
Phlox divaricata	Blue Phlox	FlwrPeren	F-P	1'	1'
Asclepias syriaca	Common Milkweed	FlwrPeren	F-P	2.5'	1'
Baptesia alba	White False Indigo	FlwrPeren	F-P	3'	2.5'
Dodecatheon meadia	Shooting Star	FlwrPeren	F-P	1'	1'
Eupatorium perfoliatum	White Boneset	FlwrPeren	F-P	3'	3'
LOW MAINTENANCE LAWN - 3,700 sf					
Festuca trachyphylla	Hard Fescue (Introduced)	Grss	F		
Festuca rubra commutata	Chewing's Fescue (Introduced)	Grss	F		
Lolium multiform	Annual Ryegrass (Introduced)	Grss	F		
Fescue ovina	Sheep's Fescue (Introduced)	Grss	F		
SHADE - 3,500 sf					
Lupinus perennis	Wild Lupine	FlwrPeren	S	1-2'	15"
Adiantum pedatum	Maidenhair Fern	Frn Peren	S	18-36"	1'
Athyrium filix-femina	Lady Fern	Frn Peren	S	18-24"	2'
Dryopteris goldiana	Goldie Fern	Frn Peren	S	2-3'	5'
Dryopteris marginalis	Leatherwood Fern	Frn Peren	S	2-3'	1.5'
Polystichum acrostichoides	Christmas Fern	Frn Peren	S	12-36"	1.5'
Eurybia divaricata	White Wood Aster	GrCov	P-S	1.5'	2'
Baptisia australis	Blue False Indigo	FlwrPeren	F-P	3.5'	3.5'
RAIN GARDEN - 2,550 sf					
Monarda didyma	Bee Balm	FlwrPeren	F-P	3'	5'
Vernonia noveboracensis	Ironweed	FlwrPeren	F-P	5'	3.5'
Lobelia siphilitica	Great Blue Lobelia	FlwrPeren	P-S	2.5'	1.5'
Caltha palustris	Marsh Marigold	FlwrPeren	F	1'	1.5'
Geranium maculatum	Wild Geranium	FlwrPeren	F-P	12-24"	18"
Asclepias tuberosa	Butterflyweed	FlwrPeren	F-P	1.5'	1.5'
Chelone glabra	Turtlehead	FlwrPeren	F-P	2.5'	2'
Iris versicolor	Blue Flag Iris	FlwrPeren	F-P	2.5'	2'
Asclepias incarnata	Swamp Milkweed	FlwrPeren	F-P	3'	2.5'
Aquilegia canadensis	Wild Columbine	FlwrPeren	P-S	2'	1.5'
Lobelia cardinalis	Cardinal Flower	FlwrPeren	P-S	3'	1.5'
Verbena hastata	Blue Vervain	FlwrPeren	P-S	3.5'	2'
Leucanthemum maximum	Shasta Daisy	FlwrPeren	F	3'	2.5'
Eutrochium purpureum	Joe-Pye Weed	FlwrPeren	F	5'	3'
Liatris spicata	Blazing Star	FlwrPeren	F	3'	1'
Rhus copallinum	Shining Sumac	SHRUB	F	10'	15'
Spartina pectinata	Prairie Cord Grass	Grss	F	5'	5'
Rudbeckia trilob	Brown Eyed Susan	FlwrPeren	F-P	2.5'	1.5'
Viburnum lentago	Nannyberry	Shrub	F-P	14'	8'
Helenium autumnale	Sneezeweed	FlwrPeren	F-P	3.5'	2.5'
Lobelia siphilitica	Great Blue Lobelia	FlwrPeren	F-P	2.5'	1.5'
Myosotis sylvatica	Forget-me-not	FlwrPeren	F-P	0.5'	1'
Rudbeckia subtomentosa	Sweet Black Eyed Susan	FlwrPeren	F-P	3.5'	1.5'
Sagittaria latifolia	Arrowhead	FlwrPeren	F-P	2.5'	2'
Silene regia	Royal Catchfly	FlwrPeren	F-P	3.5'	2'
Silphium perfoliatum	Cup Plant	FlwrPeren	F-P	6'	2'
Vaccinium sp.	Blueberries	Shrub	F-P	6'	6'
Carex stipata	Stalk-Grain Sedge	Sdge	F-S	2.5'	3'
Kalmia latifolia	Mountain-laurel	Shrub	P	7'	7'
Tradescantia ohiensis	Ohio Spiderwort	FlwrPeren	S	2.5'	2.5'
Cornus sericea	Red Twig Dogwood	Shrub	F-P	7'	8'
GREENCRETE PAVERS - 1,700 sf					
ASPHALT PAVING - 3,500 sf					
MAINTENANCE ACCESS PATH - 500 sf					
Flagstones					
CIP CONCRETE - 3,100 sf					

9/6/2018 9:28:15 AM

Project

ANTIOCH COLLEGE

Antioch PND

E North College Street
Yellow Springs, OH 45387

Property Owner/Petitioner

Antioch College Corporation
One Morgan Place
Yellow Springs, OH 45387

McLennan Design, LLC

500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Key Plan

Professional Seals

No.	Issue Description	YYYY-MM-DD

No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

Drawn by AP Reviewed by DRD

Project No. 16016.01

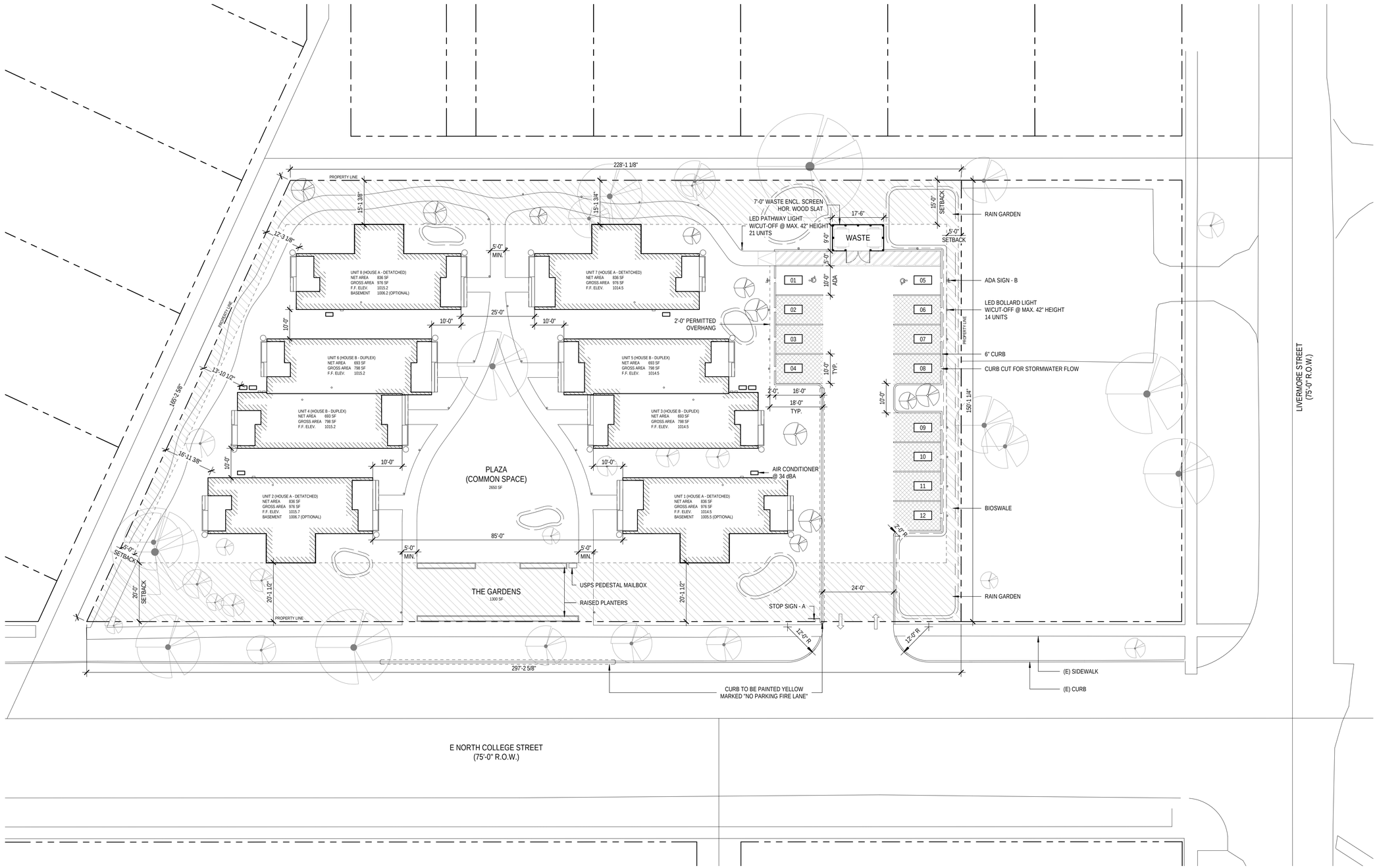
Sheet Title:

SCHEDULES

Original drawing is Arch D. Do not scale contents of this drawing.

Sheet Number:

L801



1 SITE PLAN
1/16" = 1'-0"

9/6/2018 9:27:17 AM

Project

ANTIOCH COLLEGE

Antioch PND

E North College Street
Yellow Springs, OH 45387

Property Owner/Petitioner

Antioch College Corporation
One Morgan Place
Yellow Springs, OH 45387

McLennan Design, LLC

500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Key Plan

N

Professional Seals

No.	Issue Description	YYYY-MM-DD

No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

Drawn by SRBC Reviewed by DRD

Project No. 16016.01

Sheet Title:

SITE PLAN

Original drawing is Arch D. Do not scale contents of this drawing.

Sheet Number:

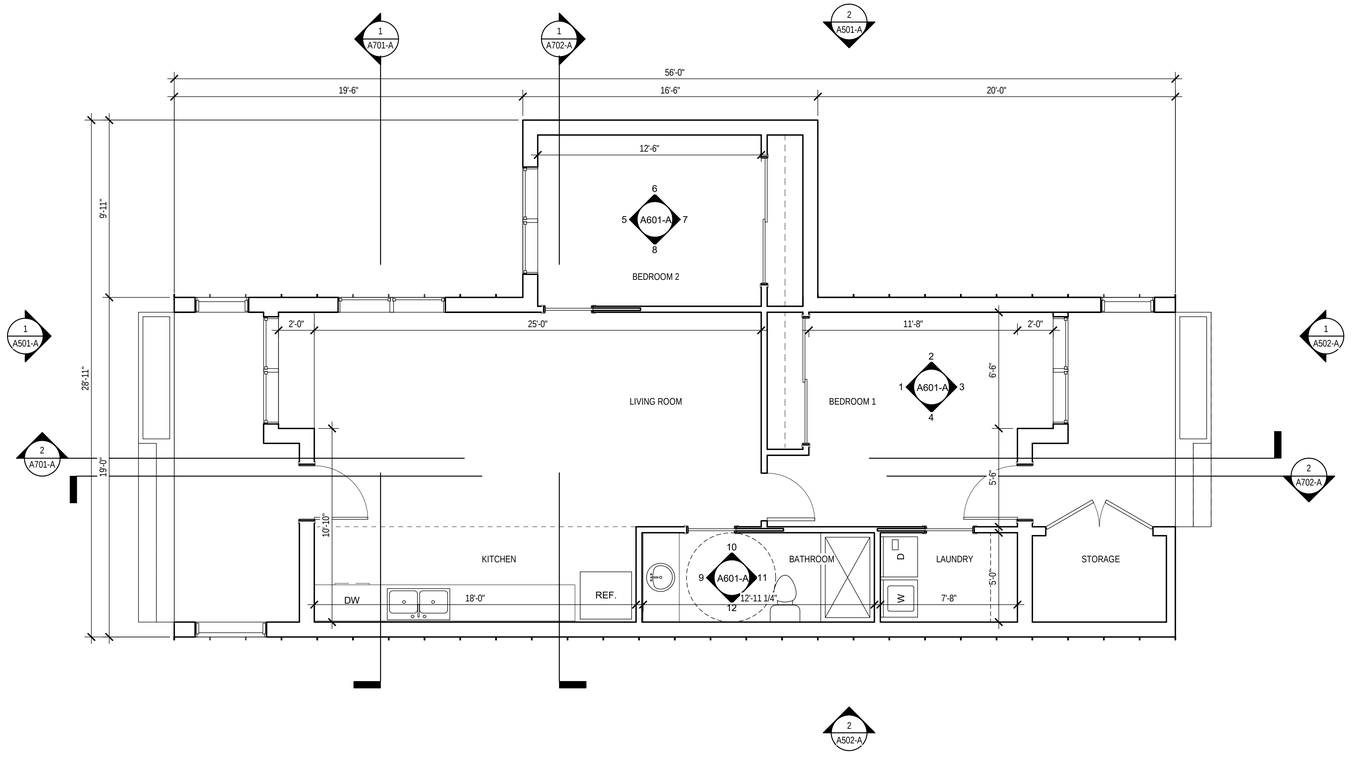
A101

GENERAL NOTES - HOUSE TYPE A

1. LOT 2A IN REPLAT OF LOTS 2 AND 3
   IN THE ANTIOCH COLLEGE CORP. PLAT
   PLAT CABINET 38, PAGES 300B - 301A

   PARCEL NO. F19-1-9-294
   ANTIOCH COLLEGE CORPORATION
   O.R. 3053, PAGE 191

2. HOUSE TYPE A (DETATCHED)
   976 SF GROSS / 836 SF NET



1 FLOOR PLAN - HOUSE A
1/4" = 1'-0"

8/16/2018 1:19:39 PM

Project

ANTIOCH COLLEGE

Antioch PND

E North College Street
Yellow Springs, OH 45387

Property Owner/Petitioner

Antioch College Corporation
One Morgan Place
Yellow Springs, OH 45387

McLennan Design, LLC

500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Key Plan

Professional Seals

No.	Issue Description	YYYY-MM-DD

No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

Drawn by SRBC Reviewed by DRD

Project No. 16016.01

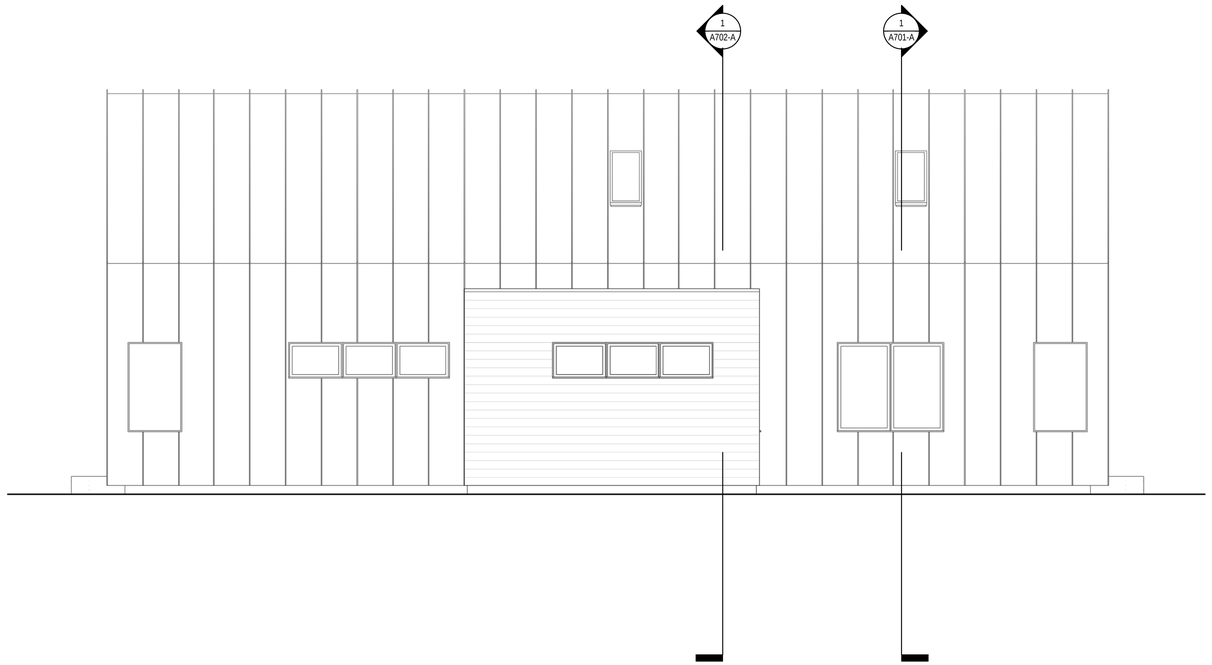
Sheet Title:

FLOOR PLAN

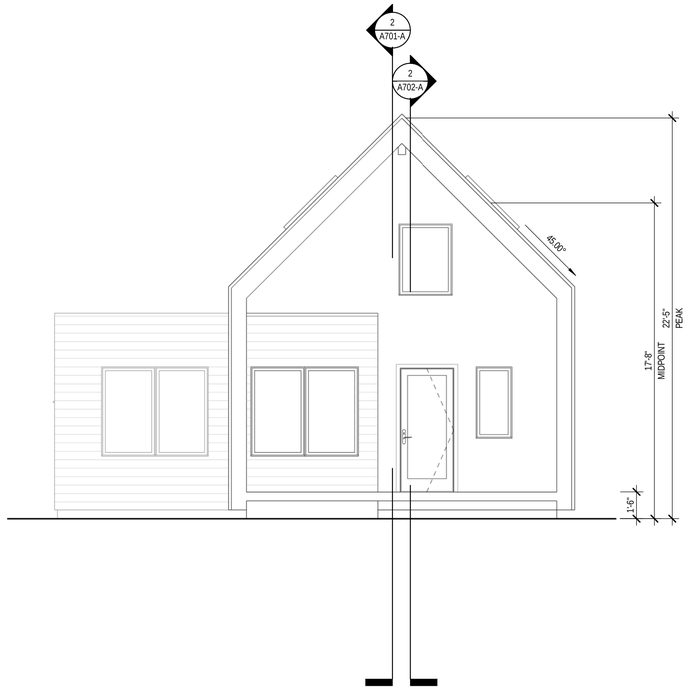
Original drawing is Arch D. Do not scale contents of this drawing.

Sheet Number:

A201-A



2 ELEVATION - OUTER - HOUSE A
1/4" = 1'-0"



1 ELEVATION - FRONT - HOUSE A
1/4" = 1'-0"

9/16/2018 1:19:45 PM

Project

ANTIOCH COLLEGE

Antioch PND

E North College Street
Yellow Springs, OH 45387

Property Owner/Petitioner

Antioch College Corporation
One Morgan Place
Yellow Springs, OH 45387

McLennan Design, LLC

500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Key Plan

Professional Seals

No.	Issue Description	YYYY-MM-DD

No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

Drawn by SRBC Reviewed by DRD

Project No. 16016.01

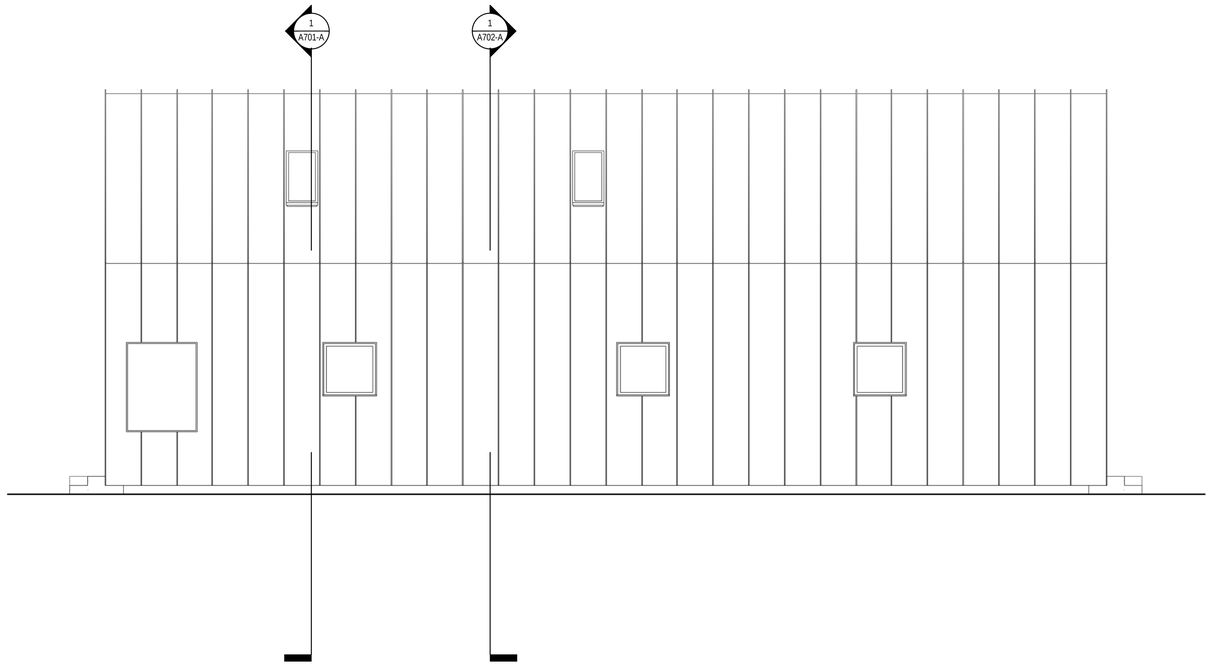
Sheet Title:

ELEVATIONS

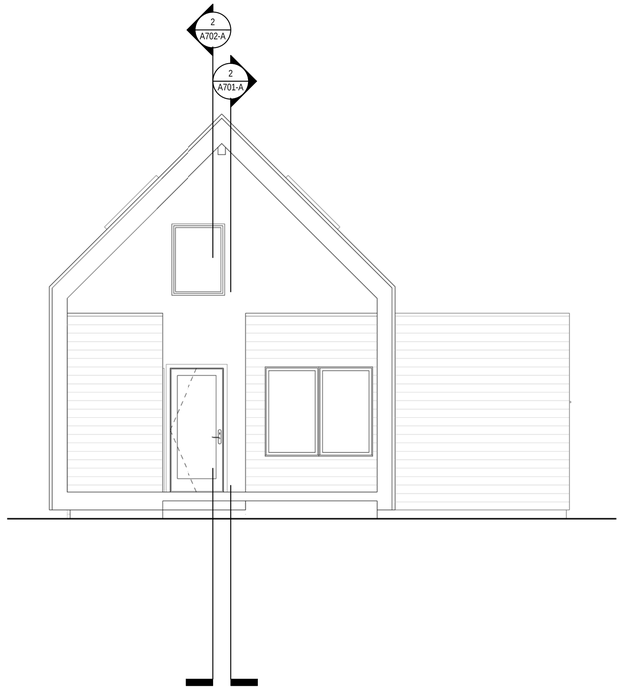
Original drawing is Arch D. Do not scale contents of this drawing.

Sheet Number:

A501-A



2 ELEVATION - SERVICES - HOUSE A
1/4" = 1'-0"



1 ELEVATION - REAR - HOUSE A
1/4" = 1'-0"

9/16/2018 1:13:54 PM

Project

ANTIOCH COLLEGE

Antioch PND

E North College Street
Yellow Springs, OH 45387

Property Owner/Petitioner

Antioch College Corporation
One Morgan Place
Yellow Springs, OH 45387

McLennan Design, LLC

500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Key Plan

Professional Seals

No.	Issue Description	YYYY-MM-DD

No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

Drawn by SRBC Reviewed by DRD

Project No. 16016.01

Sheet Title:

ELEVATIONS

Original drawing is Arch D. Do not scale contents of this drawing.

Sheet Number:

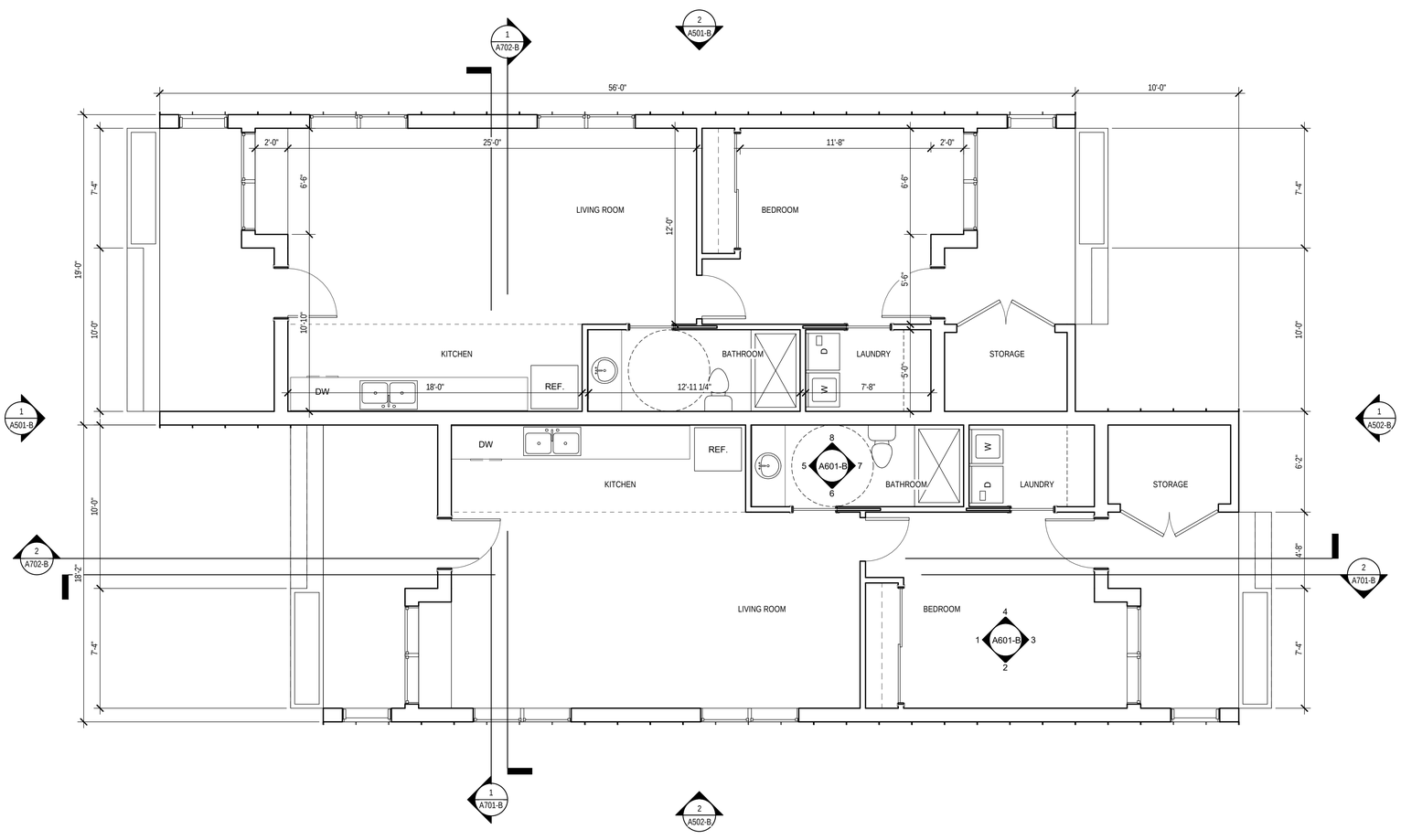
A502-A

GENERAL NOTES - HOUSE TYPE B

1. LOT 2A IN REPLAT OF LOTS 2 AND 3
   IN THE ANTIOCH COLLEGE CORP. PLAT
   PLAT CABINET 38, PAGES 300B - 301A

   PARCEL NO. F19-1-9-294
   ANTIOCH COLLEGE CORPORATION
   O.R. 3053, PAGE 191

2. HOUSE TYPE B (DUPLEX)
   798 SF GROSS / 693 SF NET (INDIVIDUAL UNIT)



1 FLOOR PLAN - HOUSE B
1/4" = 1'-0"

8/16/2018 1:19:40 PM

Project

ANTIOCH COLLEGE

Antioch PND

E North College Street
Yellow Springs, OH 45387

Property Owner/Petitioner

Antioch College Corporation
One Morgan Place
Yellow Springs, OH 45387

McLennan Design, LLC

500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Key Plan

Professional Seals

No.	Issue Description	YYYY-MM-DD

No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

Drawn by SRBC Reviewed by DRD

Project No. 16016.01

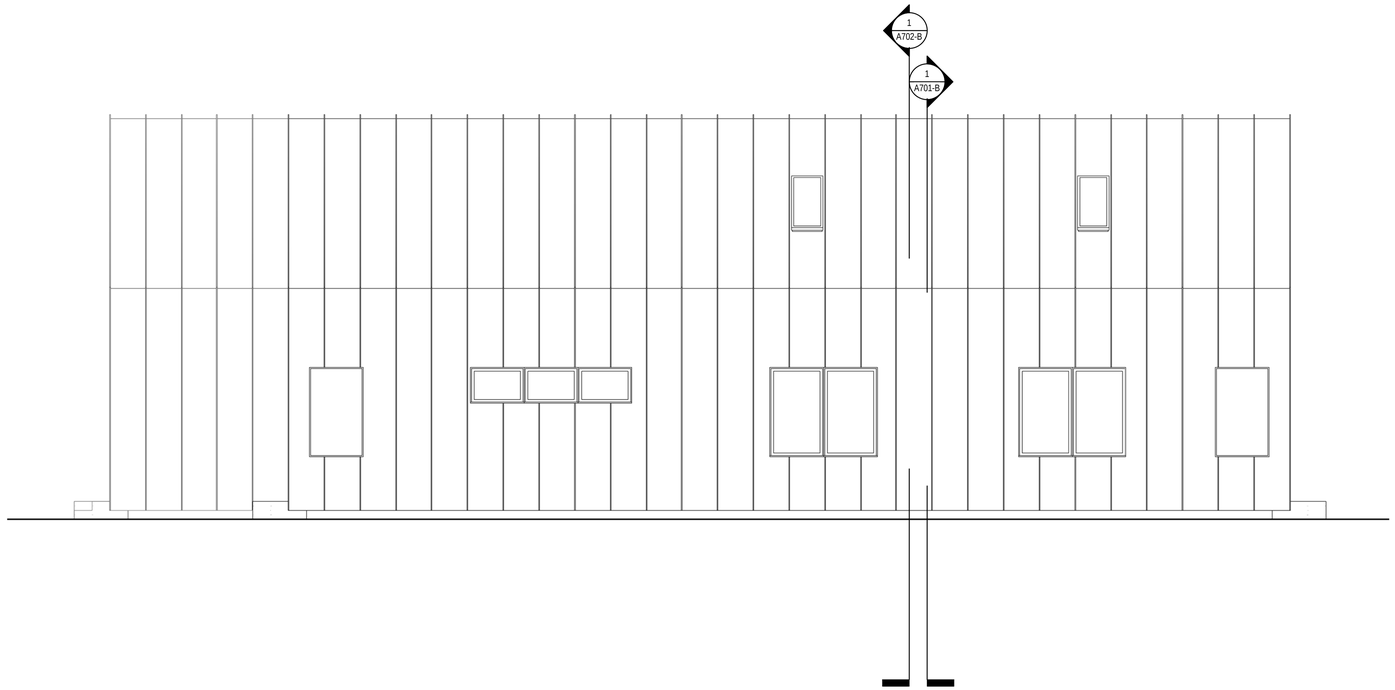
Sheet Title:

FLOOR PLAN

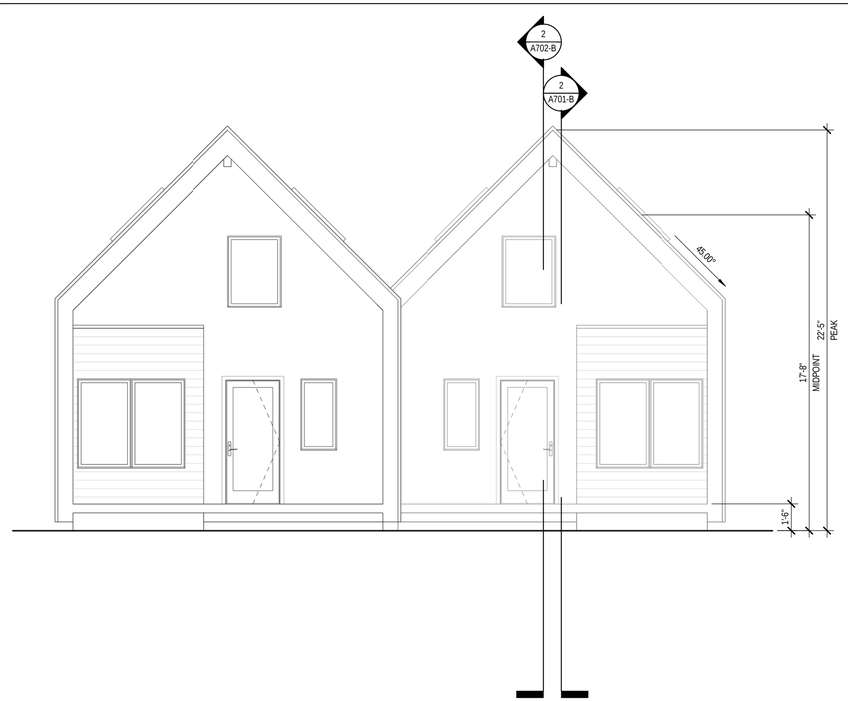
Original drawing is Arch D. Do not scale contents of this drawing.

Sheet Number:

A201-B



2 ELEVATION - FRONT UNIT - HOUSE B
1/4" = 1'-0"



1 ELEVATION - FRONT - HOUSE B
1/4" = 1'-0"

8/16/2018 1:19:49 PM

Project

ANTIOCH COLLEGE

Antioch PND

E North College Street
Yellow Springs, OH 45387

Property Owner/Petitioner

Antioch College Corporation
One Morgan Place
Yellow Springs, OH 45387

McLennan Design, LLC

500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Key Plan

Professional Seals

No.	Issue Description	YYYY-MM-DD

No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

Drawn by SRBC Reviewed by DRD

Project No. 16016.01

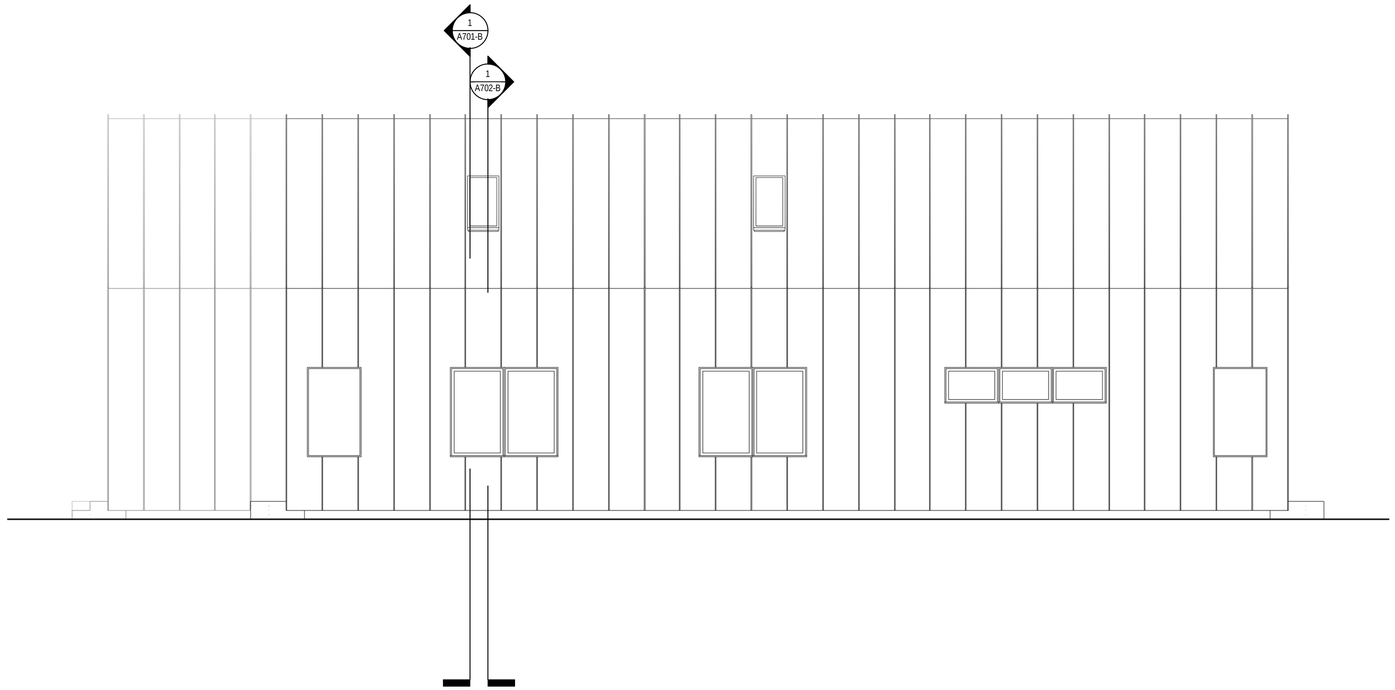
Sheet Title:

ELEVATIONS

Original drawing is Arch D. Do not scale contents of this drawing.

Sheet Number:

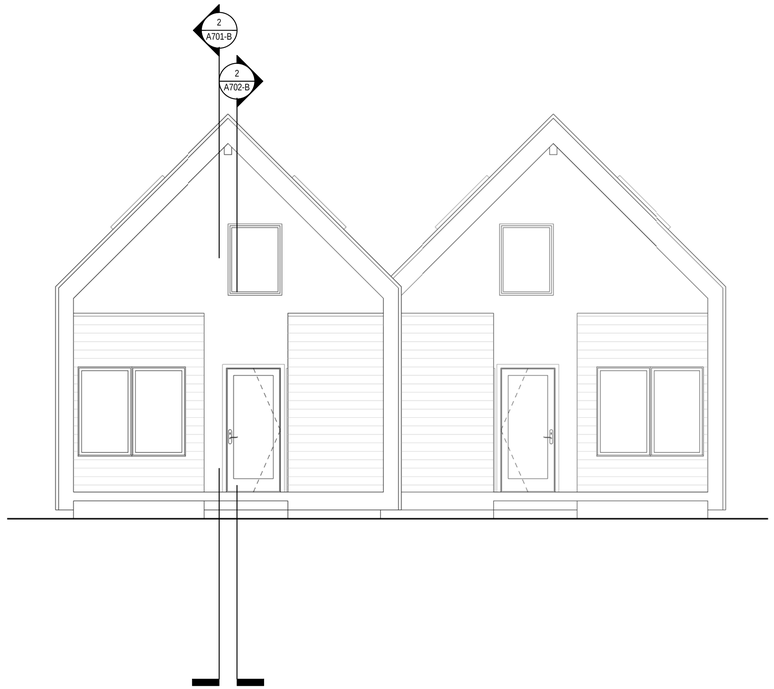
A501-B



ELEVATION - REAR UNIT - HOUSE B

2

1/4" = 1'-0"



ELEVATON - REAR - HOUSE B

1

1/4" = 1'-0"

9/16/2018 1:19:59 PM

Project

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Antioch PND

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Property Owner/Petitioner

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Yellow Springs, OH 45387

McLennan Design, LLC

500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Key Plan

Professional Seals

No.	Issue Description	YYYY-MM-DD

No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

Drawn by SRBC Reviewed by DRD

Project No. 16016.01

Sheet Title:

ELEVATIONS

Original drawing is Arch D. Do not scale contents of this drawing.

Sheet Number:

A502-B

MCLENNAN DESIGN

September 6th, 2018

MEMO: Antioch Pocket Neighborhood Development – SPR Summary of Review Responses

This memo is intended to serve as a supplement to the "20180906 Antioch PND – SPR Set Update" package that was submitted to the Village of Yellow Springs on September 6th, 2018. The purpose of this memo is to document the discussed action items as they were provided by the Village's third-party engineering consultant in the report dated September 4th, 2018 (GRE-YSP-1805), as well as to provide a requested narrative response to define the intent of the alternative design of the parking stalls for the project.

Action items as provided in the Summary of Review report:

1. Name and address of the property owner/petitioner. *(Note – Provide property owner and petitioner information)*

   This information was originally provided within the application as part of the overall package, but upon clarification the information has now been included on all sheets of the submitted drawing set.

2. Location of all existing structures, driveways, and parking areas within 300 feet of the subject property's boundary. *(Note – Surrounding area must extend 300 feet beyond the property boundary. Submitting the site plan on a detailed aerial will be acceptable.)*

   This drawing has now been included in the drawing set.

3. Size and location of existing utilities. *(Note – Approximate location of water shown on the plans. Sizes of the existing utilities need to be provided.)*

   Public works has provided existing sizes and have now been included on the relevant drawings.

4. Location of all proposed drives (including dimensions and radii), acceleration/deceleration lanes, sidewalks, walls, fences, signs, exterior lighting, curbing, parking areas (including dimensions of a typical parking space and the total number of spaces to be provided), and loading and unloading areas. *(Note – Exterior lighting plan was not provided for the proposed site. Photometric plan will need to be supplied along with proposed lighting layout.)*

   A previous conversation with the Village had confirmed that a photometric plan was not necessary and that it was not required as per the requirements of a Level B Site Plan Review submission. The requested information of lighting fixture heights and quantity has now been included in the drawing set on sheet A101 (21/14 for a total of 35 units).

5. All deed restrictions/covenants. *(Note – Deed restrictions and covenants were not provided at the time of review.)*

   This information has now been forwarded to the Village in the form of an A.L.T.A. Schedule A and B Parts 1 & 2 as prepared by Chicago Title.

6. Proposed method of handling sanitary sewage and providing potable water. *(Note – Water and sewer extensions have been proposed to the property. Each individual unit service lateral must still be addressed. Per PND conditional use a utility vault shall be provided where all meters can be located.)*

   The vault and laterals have now been included on the relevant drawings.

7. Location and size of proposed utilities, including connections to public sewer and water supply systems. *(Note – Water and sewer laterals to each dwelling unit need to be provided. Connection to each public utility needs to be made per the local jurisdiction.)*

   Same as previous, the vault and laterals have now been included on the relevant drawings.

8. Location and spacing of fire hydrants and fire department connections. *(Note – One fire hydrant was shown on-site. Type of hydrant shall be coordinated with fire department requirements. Additional comments regarding placement of hydrant may be provided by the fire department.)*

   The third-party engineer noted that this item was included as a highlight note to reference any comments provided by the fire department as this action item is outside their scope. Comments from the fire department at present only denoted the need of two marked areas, one on public land and one on the property, to be designated as per standards as "NO PARKING FIRE LANE." This has now been included on the relevant drawings and any additional actions will be coordinated with the fire department as they may require as part of the construction documentation.

9. Location and type of all proposed surface water drainage facilities. *(Note – Generalized locations and routings were provided. Engineering calculations were not provided.)*

   This action item was a hold over in the report. The third party engineer has since received sufficient calculations for this stage of the project development with further detailed hydraulic calculations to be completed as part of the construction documentation.

10. Grading plan at no more than two-foot contour intervals. *(Note – Proposed contours are not shown across the property.)*

    The grading plan has now been updated to include the missing contour information.

11. Proposed streets (including pavement width, materials, and easement or right-of-way dimensions). *(Pavement sections were not provided for the proposed areas. Typical section for roadway repair shall be provided as well.)*

    The requested pavement section will be provided upon the completion of the soil testing.

Parking stall design intent narrative, as requested by the Village:

The parking lot has been configured and designed to minimize stormwater issues while facilitating a higher level of mobility and access for the residents of the pocket neighborhood. The 24'-0" wide drive lane utilizes heavy duty asphalt to facilitate emergency vehicle access and waste collection services.

The parking stalls aligned along the drive lane will utilize permeable asphalt which will include an open grade porous asphalt paving atop layers of substrate of rock courses to allow for some initial stormwater infiltration. Surface water is then shed through curb-cut openings within the required 6" perimeter curb to bioswales and rain gardens for further retention and infiltration. To provide more adequate space sizing for the bioswale, the design has incorporated the permissible 2'-0" overhang allotment to pull the paved surface back slightly from the far end of the stalls and instead allow for the landscaping/bioswale to fill in the area where vehicle tires and weight would never need to come to rest (the 6" curb would assure this protection).

The end result of the stall design is an 18’-0” x 10’-0” stall that has permeable paving for the first 16’-0”, a 6” curb, and a remaining 18” paving free landscaped zone within the 2’-0” permissible overhang. The intent of providing an adequate footprint for a personal vehicle to be parked within is fulfilled while at the same time minimizing the negative impacts of hardscaped surfaces.

Existing tree relocation:

As a clarifying note for the Landscape Plan on sheet L101, the (R) designation that appears on a number of 6”, 7”, and 8” trees denote existing trees on the site at present time that will be relocated throughout the site due to construction needs. The intent is to minimize the amount of tree loss by transplanting the existing healthy small caliber trees that are more feasibly capable of being moved from an area that may be needed for a house footprint, eventual solar access for rooftop PV, or to accommodate the parking area.

Choice One Engineering

Date	Attention	Address
September 7, 2018	Denise Swinger Planning and Zoning Administrator	Village of Yellow Springs 100 Dayton Street Yellow Springs, OH 45387

Subject
Summary of Review, Antioch Pocket Neighborhood Development, Yellow Springs, Ohio
GRE-YSP-1805

Dear Ms. Swinger:

Enclosed is a summary of our review of the Site Plan Review Set dated August 17th, 2018 for the Antioch Pocket Neighborhood Development.

General Comments Observed During Plan Review:
Storm Water Management Plan is required for the PND Conditional Use review and was provided at the time of review.

Details pertaining to the construction of the Bio Swale shall be provided with final construction drawings for review.

All pipe routing, sizing and elevations shall be provided for the site.

Infiltration of 0.500 in/hr was included in the calculations for the Rain Gardens. Documentation certifying that this infiltration rate can be achieved shall be provided.

Any connection to the public storm sewer shall be shown.

100-year storm routing shall be indicated on the site. *Addressed in Set submitted 9/6/2018*

Detailed grading and pavement elevations throughout the site shall be provided.

Gas, electric and communication utilities have not been shown on this site.

Provisions for Mailboxes per the requirements of the US postal Service were not provided.

Provide typical sections for all pavement sections utilized for proposed development.

Repair to existing public infrastructure disturbed during construction of proposed development must be depicted, include the roadway, curbing, sidewalk and utilities.

West Central Ohio
440 E. Hoewisher Rd.
Sidney, OH 45365
937.497.0200 Phone

S. Ohio/N. Kentucky
203 W. Loveland Ave.
Loveland, OH 45140
513.239.8554 Phone

Eastern Indiana
607 N. Meridian St.
Portland, IN 47371
260.766.2500 Phone

WWW.CHOICEONEENGINEERING.COM

Table 1268.05 Required Site Plan Content		
Required Information	***Provided***	***Level B***
General Information		
Date, north arrow, and scale	X	X
Name and firm address of the professional individual responsible for preparing site plan	X	X
Name and address of the property owner or petitioner	X	X
Location sketch	X	X
Legal description of the subject property	X	X
Size of subject property in acres or square feet	X	X
Boundary survey	X	X
Preparer's professional seal	X	X
Existing Conditions		
Existing zoning classification of subject property	X	X
Property lines and required setbacks (dimensioned)	X	X
Location, width and purpose of all existing easements	X	X
Location and dimension of all existing structures on the subject property	X	X
Location of all existing driveways, parking areas and total number of existing parking spaces on subject property	X	X
Abutting street right-of-way width	X	X
Location of all existing structures, driveways, and parking areas within 300 feet of the subject property's boundary	X	X
Existing water bodies (rivers, creeks, wetlands, etc.)	X	X
Existing landscaping and vegetation on the subject property	X	X
Size and location of existing utilities	X	X
Location of all existing surface water drainage facilities	X	X
Proposed Development		
Location and dimensions of all proposed buildings	X	X
Location of all proposed drives (including dimensions and radii), acceleration/deceleration lanes, sidewalks, walls, fences, signs, exterior lighting,	X	X

curbing, parking areas (including dimensions of a typical parking space and the total number of spaces to be provided), and loading and unloading areas		
Type and location of exterior mechanical equipment and published operating noise level of the equipment.	X	X
Setbacks for all buildings and structures	X	X
Recreation areas, common use areas, dedicated open space and areas to be conveyed for public use	X	X
Flood plain areas and basement and finished floor elevations of all buildings	X	X
Landscape plan (showing location of proposed materials, size and type)	X	X
Layout and typical dimensions of proposed parcels and lots	X	X
Number of proposed dwelling units (by type), including typical floor plans for each type of unit	X	X
Number and location (by code, if necessary) of efficiency and one, two and three or more bedroom units	X	X
All deed restrictions or covenants	X	X
Brief narrative description of the project including proposed use, existing floor area (square feet), size of proposed expansion (square feet), and any change in the number of parking spaces	X	X
Engineering		
Proposed method of handling sanitary sewage and providing potable water	X	X
Location and size of proposed utilities, including connections to public sewer and water supply systems	X	X
Location and spacing of fire hydrants and Fire Department connections	X	X
Location and type of all proposed surface water drainage facilities	X	X
Grading plan at no more than two-foot contour intervals	X	X
Proposed streets (including pavement width, materials, and easement or right-of-way dimensions)		X
Building Details		
Typical elevation views of all sides of each building type	X	X
Gross and net floor area	X	X
Elevation views of building additions	X	X
Building height	X	X
Additional Information		
Any other information required by the Zoning Administrator or Planning Commission and/or Board of Zoning Appeals to demonstrate compliance with other applicable provisions of this zoning code		X

Name and address of the property owner or petitioner:

Provide property owner and petitioner information. Addressed in Set submitted 9/6/2018

Location of all existing structures, driveways, and parking areas within 300 feet of the subject property's boundary:

Surrounding area must extend 300 feet beyond the property boundary. Submitting the site plan on a detailed aerial will be acceptable. Addressed in Set submitted 9/6/2018

Size and location of existing utilities:

Approximate location of water shown on the plans. Sizes of the existing utilities need to be provided. Addressed in Set submitted 9/6/2018

Location of all proposed drives (including dimensions and radii), acceleration/deceleration lanes, sidewalks, walls, fences, signs, exterior lighting, curbing, parking areas (including dimensions of a typical parking space and the total number of spaces to be provided), and loading and unloading areas:

Photometric plan may need to be supplied depending on the requirements of the Commission.

All deed restrictions or covenants:

Deed restrictions and covenants were not provided at the time of review. Provided to the Village on 9/6/2018

Proposed method of handling sanitary sewage and providing potable water:

Water and sewer extensions have been proposed to the property. Each individual unit service lateral must still be addressed. Per PND conditional use a utility vault shall be provided where all meters can be located. Addressed in Set submitted 9/6/2018

Location and size of proposed utilities, including connections to public sewer and water supply systems:

Water and Sewer laterals to each dwelling unit need to be provided. Connection to each public utility needs to be made per the local jurisdiction. Addressed in Set submitted 9/6/2018

Location and spacing of fire hydrants and Fire Department connections:

One fire hydrant was shown on-site. Type of hydrant shall be coordinated with Fire Department requirements. Additional comments regarding placement of hydrant may be provided by the Fire Department. It is recommended that prior to submission of construction plans, the applicant provides the Fire Department a final opportunity to review the plans.

Location and type of all proposed surface water drainage facilities:

Generalized locations and routings were provided. Preliminary Engineering calculations were provided. A final review of the plans and calculations at the time construction plans are submitted shall be required.

Grading plan at no more than two-foot contour intervals:

Proposed contours are not shown across the property. Addressed in Set submitted 9/6/2018

Revise grading with Construction Plan submittal to eliminate low spot that will not drain.

Proposed streets (including pavement width, materials, and easement or right-of-way dimensions):

Pavement sections were not provided for the proposed areas. Typical section for roadway repair shall be provided as well.

This project shall be subject to a final review at the time Construction plans are submitted to the Village of Yellow Springs.

Thank you for the opportunity to review the plans and suggest our comments.

Sincerely,

Michael L. Seeger, P.E.
Project Manager

Enclosed: Plan Summary Comments

*Artist conceptual rendering of the project.

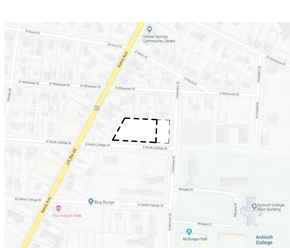
SHEET INDEX

Total sheets in current set: 17

ANTIOCH POCKET NEIGHBORHOOD DEVELOPMENT

Site Plan Review - Update
September 6th, 2018

ITEM	REQUIRED	PROPOSED	SECTION
USE (ZONE CHANGED TO RESIDENTIAL-C)			
POCKET NEIGHBORHOOD DEVELOPMENT	MAX. 14 UNITS PER ACRE	8 UNITS	1262.08.e.6.B.3
UNIT TYPE A (SINGLE DETATCHED RESIDENTIAL UNITS)		4 UNITS / 976 SF EACH	
UNIT TYPE B (DUPLEX RESIDETIAL UNITS, UP TO 50% PERMITTED)		4 UNITS / 798 SF EACH	1262.08.e.6.J.1
LOT / BUILDING			
MINIMUM LOT AREA (RESIDENTIAL-C)	4,800 SF	39,414 SF	TABLE 1248.03
MINIMUM LOT WIDTH (RESIDENTIAL-C)	40'	228'-1 1/8" NARROW	TABLE 1248.03
MAXIMUM LOT AREA (FOR POCKET NEIGHBORHOOD DEVELOPMENT)	UNDER 5 ACRES	.905 ACRES	1262.08.e.6.B.5
MAXIMUM LOT COVERAGE	50%	18%	TABLE 1248.03a
MINIMUM FRONT YARD	20' FROM PROPERTY	20'-0"	TABLE 1248.03a
MINIMUM SIDE YARD	5' FROM PROPERTY	5'-0"	TABLE 1248.03a
MINIMUM REAR YARD	15' FROM PROPERTY	15'-0"	TABLE 1248.03a
MINIMUM DISTANCE BETWEEN UNITS	10' FROM EAVES	10'-0"	1262.08.e.6.E.1
MINIMUM COMMON AREA	8 UNITS x 200 = 1,600 SF	2,650 SF	1262.08.e.6.F.1
MAXIMUM BUILDING HEIGHT	35'-0"	24'-0"	1262.08.e.6.C.1
PARKING			
OFF-STREET PARKING REQUIREMENT	12 STALLS	12 TOTAL STALLS	
FOUR (4) UNIT TYPE A (SINGLE DETATCHED RESIDENTIAL UNITS)	4 UNITS x 1.5 = 6	6 STALLS	1262.08.e.6.G.1
FOUR (4) UNIT TYPE B (DUPLEX RESIDENTIAL UNITS)	4 UNITS x 1.5 = 6	6 STALLS	1262.08.e.6.G.1
MINIMUM STALL DIMENSIONS (90 DEGREE PARKING)	9' x 18'	10' x 18'	TABLE 1264.03
ADA PARKING REQUIREMENTS	1 STALL	2 STALLS	
MINIMUM DRIVE AISLE WIDTH (90 DEGREE PARKING, DOUBLE LOADED)	24'	24'	TABLE 1264.03



Legal Description:
Lot 2A in Replat of Lots 2 and 3
in the Antioch College Corp. Plat
Plat Cabinet 38, Pages 300B - 301A

Parcel No. F19-1-9-294
Antioch College Corporation
O.R. 3053, Page 191

Address:
E North College Street
Yellow Springs, OH 45387

9/6/2018 9:27:47 AM

Project

ANTIOCH COLLEGE

Antioch PND

E North College Street
Yellow Springs, OH 45387

Property Owner/Petitioner

Antioch College Corporation
One Morgan Place
Yellow Springs, OH 45387

McLennan Design, LLC

500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Key Plan

Professional Seals

No.	Issue Description	YYYY-MM-DD

No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

Drawn by SRBC Reviewed by DRD

Project No. 16016.01

Sheet Title:

COVER SHEET

Original drawing is Arch D. Do not scale contents of this drawing.

Sheet Number:

G001

UNDERGROUND UTILITIES
2 WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

STATE OF OHIO
MITCHELL W. COSLER
40788
REGISTERED PROFESSIONAL ENGINEER
SEAL

No.	DATE	REVISION

DATE 07/11/2018
DES.
DR.
CKD.
PROJECT No: 4912

COSLER ENGINEERING, LLC
545 Hilltop Road
Beavercreek Twp., Ohio 45385
Ph: 937-426-9913
Fax: 937-426-3390
By: Mitchell W. Cosler

McLennan Design
Antioch College PND Project

Located in Section 20, Town 4, Range 8
Village of Yellow Springs, Greene County, Ohio

TOPOGRAPHIC PLAN

SHEET NO.
C-1

Topographic Legend
Symbols & Lines

Cosler Engineering, LLC
545 Hilltop Road
Beavercreek Twp. OH 45385-7137
Ph (937)426-9913
mcosler@sbcglobal.net

Cable TV riser box	UGTV — UGTV	Existing underground cable television line
Fiber Optics Marker	FOC — FOC	Existing underground fiber optics line
Telephone riser box & manhole		Existing underground telephone line
Telephone pole	OHT	Existing overhead telephone line
Electric MH, transformer & pull box	UE — UE	Existing underground electric line
Power pole, anchor & underground box	OHE	Existing overhead electric line
Light pole, ground/sign light, & electric panel		
Gas valve, meter & marker	UG — UG	Existing underground gas line
Fire hydrant, water valve, meter, curb stop	W — W	Existing water line
Water MH, post indicator valve, fire deptartment connection		
Sanitary manhole, cleanout & lamp hole	SAN — SAN	Existing sanitary sewer line
Storm manhole & "2-2" catch basin	STM — STM	Existing storm sewer line
Catch basin – Type 3A & Type 3		Existing woven wire fence
Yard Drain		Existing chain link fence
Fence post, concrete		Existing fence stockade/board
Fence post, steel		Existing fence split rail
Fence post, wood		Existing barbed wire fence
End of gate/post		Existing hedge/brush/tree line
Existing tree, pine, bush & stump		Landscape planting area
Mail box		Corporation line
Soil boring location		Existing pavement striping
Flag pole, bollard, steel post & swing		Existing guardrail
Well & unknown valve		Existing edge of gravel line
Unknown manhole		Existing centerline
Road sign	EX-RW	Existing right-of-way line
Elevation bench mark/finish floor elevation		Existing property line
Survey control w/red "Cosler Traverse" cap		Existing elevation contour line
Iron pin found		Existing water service line
Iron pin set		Existing sanitary service line
Parker-kalon nail found	805.05	Finish Grade elevation
MAG nail set		
MAG nail found		
Stone found	806	Elevation of finish grade contour
Railroad spike found		
Railroad spike set	806	Elevation of existing ground contour
Iron pipe found	×806.23	Elevation of existing ground point
Concrete monument found	806.23	
Axle found		
Aluminum monument found		

- Wood hub and tack
- Right of way monument found
- Highway monument found
- Survey control benchmark – 0.5" dia rebar with red cap "COSLER TRAVERSE"

STATE OF OHIO
MITCHELL W. COSLER
40788
REGISTERED PROFESSIONAL ENGINEER
SEAL

No.	DATE	REVISION

DATE 07/11/2018
DES.
DR.
CKD.
PROJECT No: 4912

COSLER ENGINEERING, LLC
545 Hilltop Road
Beavercreek Twp., Ohio 45385
Ph: 937-426-9913
Fax: 937-426-3390
By: Mitchell W. Cosler

McLennan Design
Antioch College PND Project
Located in Section 20, Town 4, Range 8
Village of Yellow Springs, Greene County, Ohio
TOPOGRAPHIC SYMBOL LEGEND

SHEET NO.
C-2

GRAPHIC SCALE

40' 0 20' 40'

(IN FEET)

1 inch = 40 ft.

Property Owner/Petitioner
Antioch College Corporation
One Morgan Place
Yellow Springs, Oh. 45387

2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICE

Antioch PND

E North College Street
Yellow Springs, OH 45387

McLennan Design, LLC
500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Engineer

REINKE GROUP
Civil Engineering
Surveying
959 Congress Park Drive
Dayton, OH 45459
(937) 434-4810

Professional Seals

STATE OF OHIO
FRANKLIN K. WRIGHT III
39113
REGISTERED
PROFESSIONAL ENGINEER

No.	Issue Description	YYYY-MM-DD
1		2018-09-06

No.	Revision Description	YYYY-MM-DD

Drawn by Reviewed by

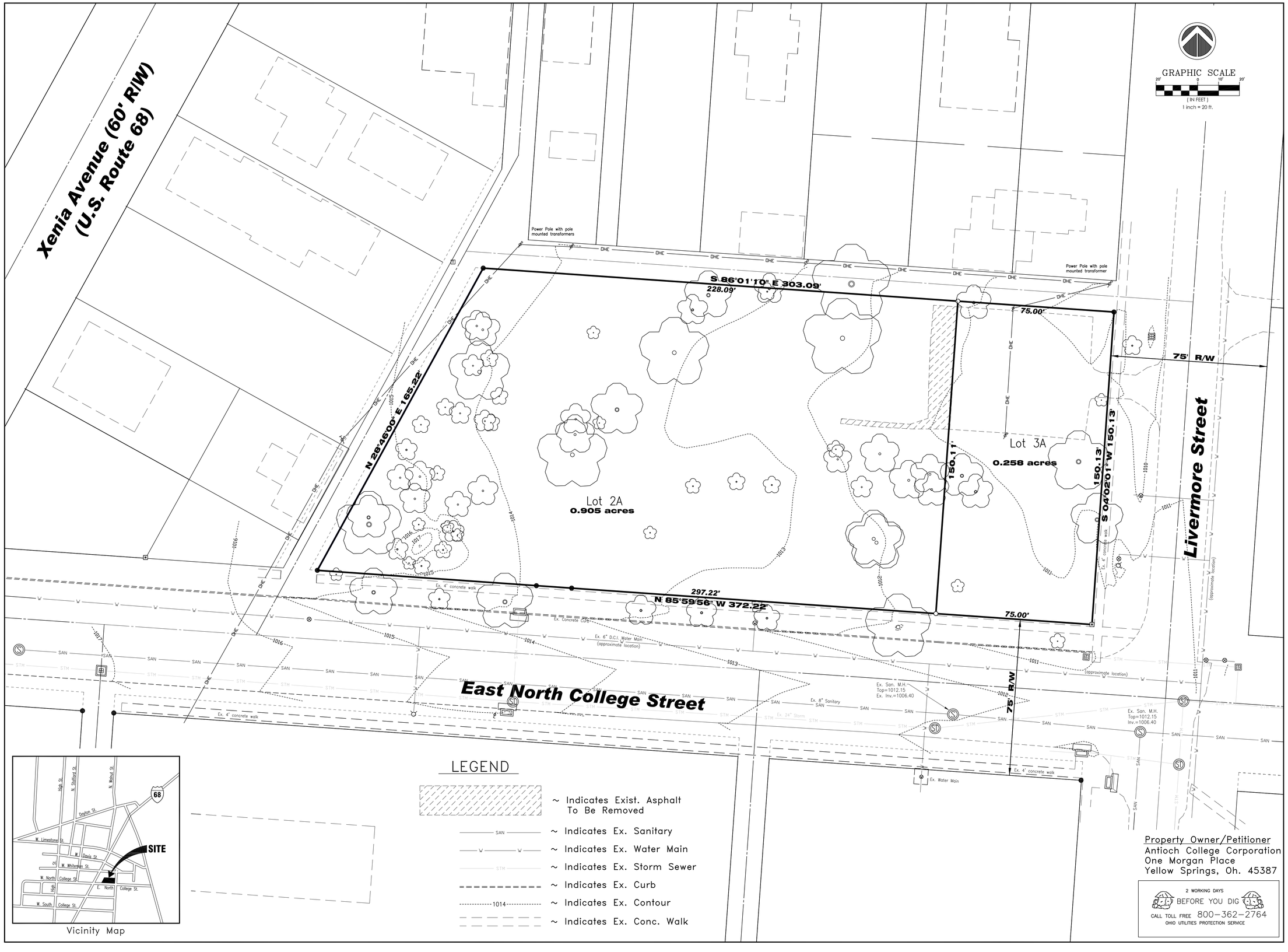
Project No. 16016.01

Sheet Title:

AERIAL SITE PLAN

Sheet Number:

C001



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39113
REGISTERED
PROFESSIONAL ENGINEER

No.	Issue Description	YYYY-MM-DD
1		2018-09-06

No.	Revision Description	YYYY-MM-DD

Drawn by Reviewed by

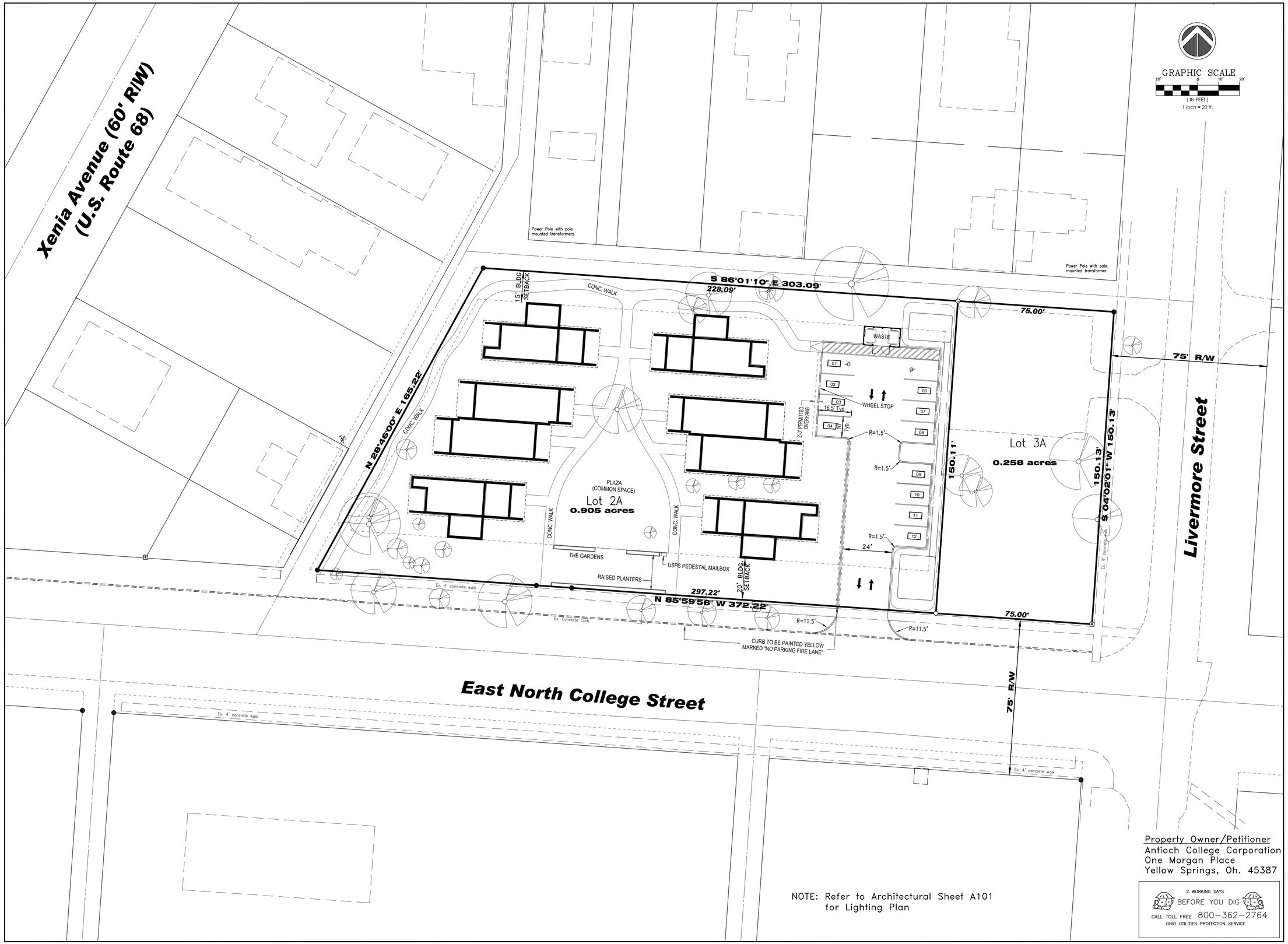
Project No. 16016.01

Sheet Title:

EXISTING CONDITIONS PLAN

Sheet Number:

C002



Property Owner/Petitioner
Antioch College Corporation
One Morgan Place
Yellow Springs, Oh. 45387

NOTE: Refer to Architectural Sheet A101
for Lighting Plan

2 WORKING DAYS
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No.	Issue Description	YYYY-MM-DD
1		2018-09-06

No.	Revision Description	YYYY-MM-DD

Drawn by

Reviewed by

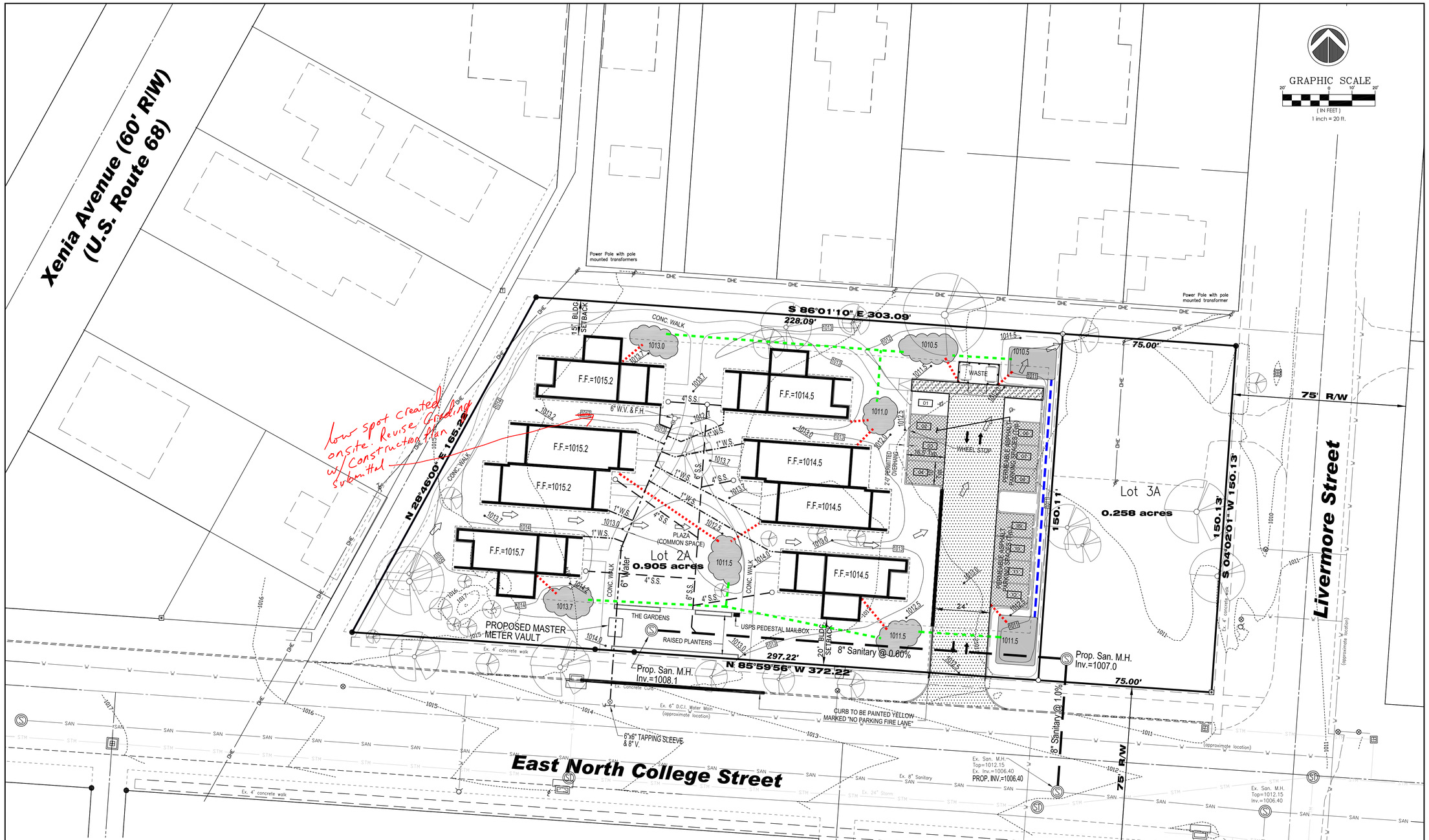
Project No. 16016.01

Sheet Title:

PRELIMINARY SITE PLAN

Sheet Number:

C003



LEGEND

- 1013.7 ~ Indicates R.G. (Rain Garden) & Bottom Elev.
- ~ Indicates Swale or Down Spout Lateral
- ~ Indicates Bioswale
- ~ Indicates Proposed 8" Water Main
- ~ Indicates Proposed 8" Sanitary
- ~ Indicates Underdrain
- ~ Indicates Heavy Duty Asphalt
- W ~ Indicates Exist. Water Main
- SAN ~ Indicates Exist. Sanitary Sewer
- STM ~ Indicates Exist. Storm Sewer
- 1" W.S. ~ Indicates Proposed 1" Water Service
- 4" S.S. / 6" S.S. ~ Indicates Proposed 4" or 6" Sanitary Service
- 1014 ~ Indicates Proposed Contour
- ~ Indicates 100 Year Overland Flow Path
- F.F.=1015.7 ~ Indicates Finish Floor Elevation
- 1014.7 ~ Indicates Proposed Grade Elevation
- ~ Indicates Permeable Asphalt Parking Spaces (Typ.)

Note: 6" Sanitary Collector and 4" Sanitary Service to be Maintained By H.O.A.

NOTE: Each building unit will have 2~55 gal. rain barrels that will overflow into the rain gardens and eventually the bioswale.

Property Owner/Petitioner
Antioch College Corporation
One Morgan Place
Yellow Springs, Oh. 45387

2 WORKING DAYS
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CALL TOLL FREE 800-362-2764
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Antioch PND
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(937) 434-4810

Professional Seals
STATE OF OHIO
FRANKLIN K. WRIGHT III
39113
REGISTERED
PROFESSIONAL ENGINEER

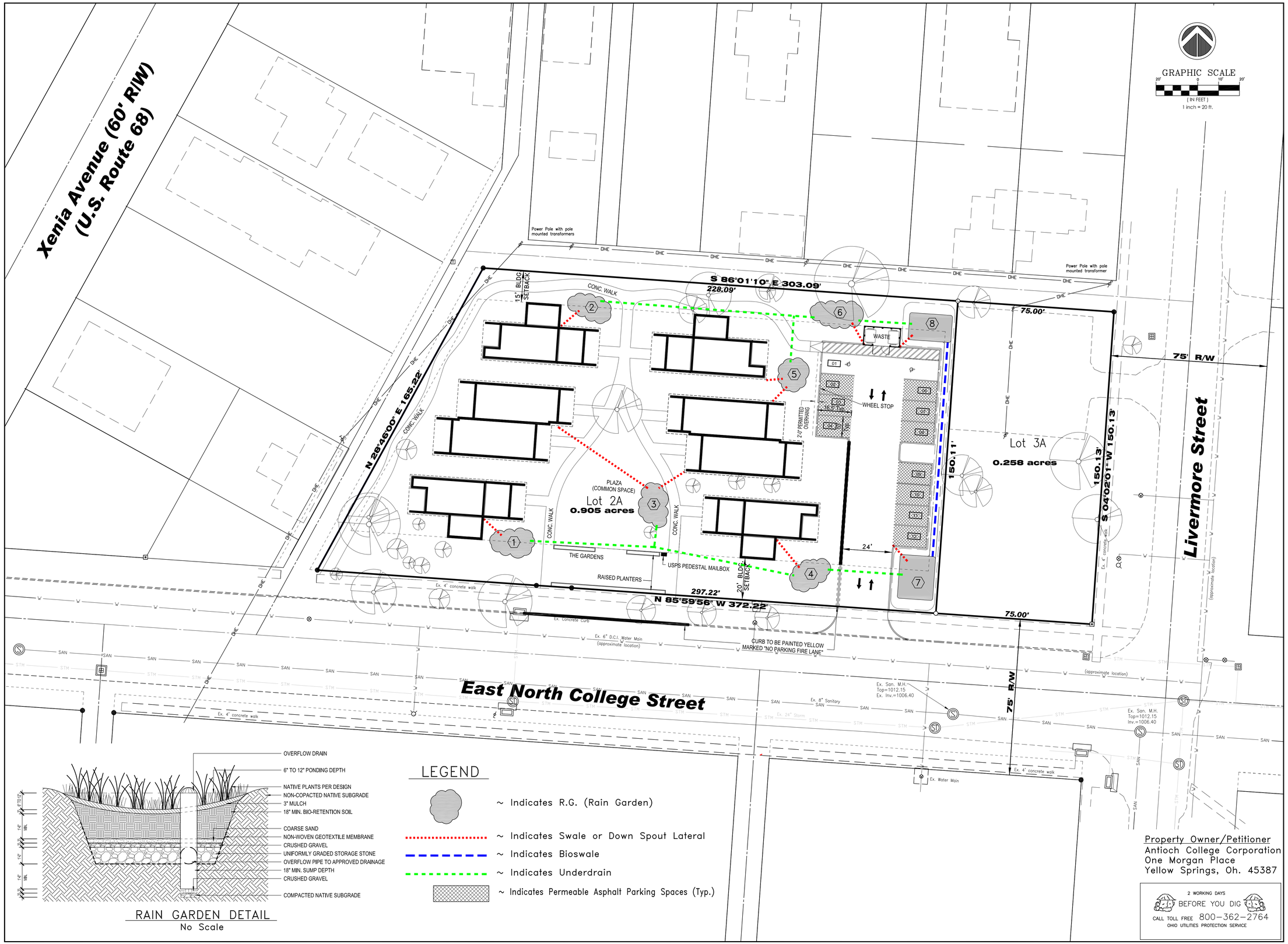
No.	Issue Description	YYYY-MM-DD
1		2018-09-06

No.	Revision Description	YYYY-MM-DD
1	Underdrains Added	2018-08-30

Drawn by
Reviewed by
Project No. 16016.01

Sheet Title:
GRADING & UTILITY PLAN

Sheet Number:
C004



Antioch PND

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Yellow Springs, OH 45387

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Engineer

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No.	Issue Description	YYYY-MM-DD
1		2018-09-06

No.	Revision Description	YYYY-MM-DD
1	Underdrains Added	2018-08-30

Drawn by

Reviewed by

Project No. 16016.01

Sheet Title:

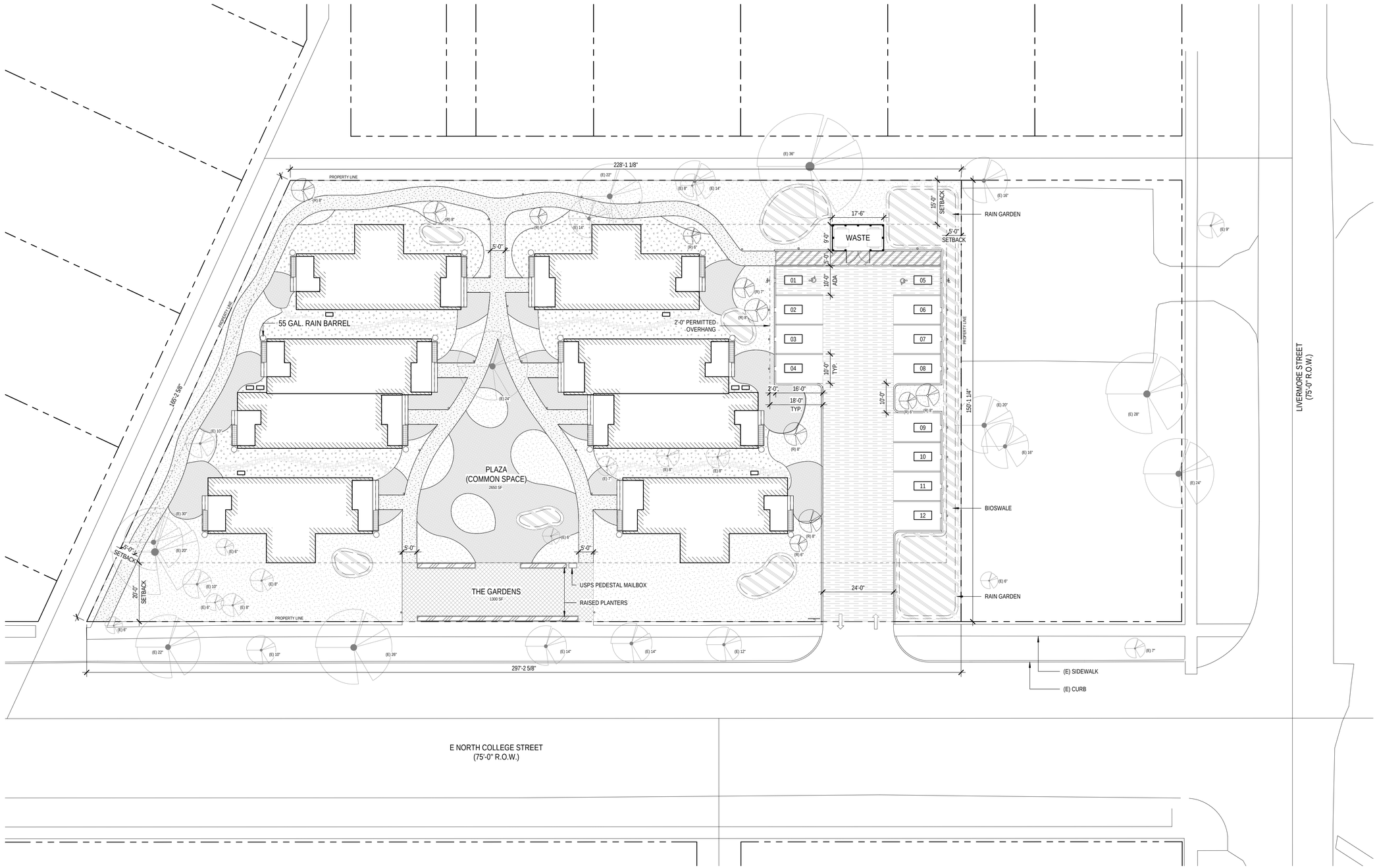
SITE RAIN GARDEN EXHIBIT

Sheet Number:

C005

MATERIAL LEGEND

PLANTER BED	LOW MAINTENANCE LAWN	GREENCRETE PAVERS	CIP CONCRETE
RAISED PLANTER BED	SHADE	ASPHALT PAVING	TREE
MEADOW	RAIN GARDEN	MAINTENANCE ACCESS PATH	(E) 9" TRUNK DIAMETER (E) EXISITING (R) RELOCATE



1 LANDSCAPE PLAN
1/16" = 1'-0"

9/6/2018 9:28:10 AM

Project

ANTIOCH COLLEGE

Antioch PND

E North College Street
Yellow Springs, OH 45387

Property Owner/Petitioner

Antioch College Corporation
One Morgan Place
Yellow Springs, OH 45387

McLennan Design, LLC

500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Key Plan

N

Professional Seals

No.	Issue Description	YYYY-MM-DD

No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

Drawn by AP Reviewed by DRD

Project No. 16016.01

Sheet Title:

LANDSCAPE PLAN

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Sheet Number:

L101

BOTANICAL NAME	COMMON NAME	TYPE	LIGHTING	HEIGHT	SPACING
PLANTER BED - 250 sf					
For homeowners' personal use					
RAISED PLANTER BED - 200 sf					
For homeowners' personal use					
MEADOW - 10,000 sf					
Rudbeckia hirta	Black-eyed Susan	FlwrPeren	F	1-3'	1.5'
Solidago speciosa	Showy Golderod	FlwrPeren	F	2-3'	2.5'
Monarda fistulosa	Wild Bergamot	FlwrPeren	F-P	3-5'	2.5'
Penstemon digitalis	Foxglove Beardtongue	FlwrPeren	F	3-4'	1.5'
Aster umbellatus	Flat-topped White Aster	FlwrPeren	F	3.5'	3'
Astragalus canadensis	Canadian Milk Vetch	FlwrPeren	F	3'	21"
Bouteloua curtipendula	Side-oats Grama	Grss	F	2'	1.5'
Bouteloua gracilis	Blue Grama	Grss	F	1.5'	1'
Coreopsis lanceolata	Lanceleaf Coreopsis	FlwrPeren	F	1.5'	1.5'
Dalea candida	White Prairie Clover	FlwrPeren	F	1.5'	1'
Dalea purpurea	Purple Prairie Clover	FlwrPeren	F	2'	1.5'
Elymus canadensis	Nodding Wild Rye	Grss	F	2.5'	3.5'
Elymus virginicus	Virginia Wild Rye	Grss	F-P	3'	1.5'
Gaillardia aristata	Blanket Flower	FlwrPeren	F	9"	9"
Gaillardia pulchella	Indian Blanket	FlwrPeren	F	1'	1'
Ratibida pinnata	Yellow / Grey-Headed Coneflower	FlwrPeren	F	4'	2'
Schizachyrium scoparium	Little Bluestem / (grass)	Grss	F	3'	2'
Monarda citriodora	Lemon Mint	Annual	F-P	1.5'	1'
Echinacea purpurea	Purple Coneflower	FlwrPeren	F-P	3.5'	2'
Symphyotrichum novae-anglia	New England Aster	FlwrPeren	F	4.5'	2.5'
Symphyotrichum laeve	Smooth Aster	FlwrPeren	F	3'	1.5'
Helianthus occidentalis	Ox-eye Sunflower	FlwrPeren	F	2.5'	2'
Eutrochium maculatum	Joe-pye-weed	FlwrPeren	F-P	4'	
Helianthus tuberosus	Jerusalem Artichoke	FlwrPeren	F-P	7'	4'
Lysimachia punctata	Yellow Loosestrife	FlwrPeren	F-P	2.5'	1.5'
Phlox divaricata	Blue Phlox	FlwrPeren	F-P	1'	1'
Asclepias syriaca	Common Milkweed	FlwrPeren	F-P	2.5'	1'
Baptesia alba	White False Indigo	FlwrPeren	F-P	3'	2.5'
Dodecatheon meadia	Shooting Star	FlwrPeren	F-P	1'	1'
Eupatorium perfoliatum	White Boneset	FlwrPeren	F-P	3'	3'
LOW MAINTENANCE LAWN - 3,700 sf					
Festuca trachyphylla	Hard Fescue (Introduced)	Grss	F		
Festuca rubra commutata	Chewing's Fescue (Introduced)	Grss	F		
Lolium multiform	Annual Ryegrass (Introduced)	Grss	F		
Fescue ovina	Sheep's Fescue (Introduced)	Grss	F		
SHADE - 3,500 sf					
Lupinus perennis	Wild Lupine	FlwrPeren	S	1-2'	15"
Adiantum pedatum	Maidenhair Fern	Frn Peren	S	18-36"	1'
Athyrium filix-femina	Lady Fern	Frn Peren	S	18-24"	2'
Dryopteris goldiana	Goldie Fern	Frn Peren	S	2-3'	5'
Dryopteris marginalis	Leatherwood Fern	Frn Peren	S	2-3'	1.5'
Polystichum acrostichoides	Christmas Fern	Frn Peren	S	12-36"	1.5'
Eurybia divaricata	White Wood Aster	GrCov	P-S	1.5'	2'
Baptisia australis	Blue False Indigo	FlwrPeren	F-P	3.5'	3.5'
RAIN GARDEN - 2,550 sf					
Monarda didyma	Bee Balm	FlwrPeren	F-P	3'	5'
Vernonia noveboracensis	Ironweed	FlwrPeren	F-P	5'	3.5'
Lobelia siphilitica	Great Blue Lobelia	FlwrPeren	P-S	2.5'	1.5'
Caltha palustris	Marsh Marigold	FlwrPeren	F	1'	1.5'
Geranium maculatum	Wild Geranium	FlwrPeren	F-P	12-24"	18"
Asclepias tuberosa	Butterflyweed	FlwrPeren	F-P	1.5'	1.5'
Chelone glabra	Turtlehead	FlwrPeren	F-P	2.5'	2'
Iris versicolor	Blue Flag Iris	FlwrPeren	F-P	2.5'	2'
Asclepias incarnata	Swamp Milkweed	FlwrPeren	F-P	3'	2.5'
Aquilegia canadensis	Wild Columbine	FlwrPeren	P-S	2'	1.5'
Lobelia cardinalis	Cardinal Flower	FlwrPeren	P-S	3'	1.5'
Verbena hastata	Blue Vervain	FlwrPeren	P-S	3.5'	2'
Leucanthemum maximum	Shasta Daisy	FlwrPeren	F	3'	2.5'
Eutrochium purpureum	Joe-Pye Weed	FlwrPeren	F	5'	3'
Liatris spicata	Blazing Star	FlwrPeren	F	3'	1'
Rhus copallinum	Shining Sumac	SHRUB	F	10'	15'
Spartina pectinata	Prairie Cord Grass	Grss	F	5'	5'
Rudbeckia trilob	Brown Eyed Susan	FlwrPeren	F-P	2.5'	1.5'
Viburnum lentago	Nannyberry	Shrub	F-P	14'	8'
Helenium autumnale	Sneezeweed	FlwrPeren	F-P	3.5'	2.5'
Lobelia siphilitica	Great Blue Lobelia	FlwrPeren	F-P	2.5'	1.5'
Myosotis sylvatica	Forget-me-not	FlwrPeren	F-P	0.5'	1'
Rudbeckia subtomentosa	Sweet Black Eyed Susan	FlwrPeren	F-P	3.5'	1.5'
Sagittaria latifolia	Arrowhead	FlwrPeren	F-P	2.5'	2'
Silene regia	Royal Catchfly	FlwrPeren	F-P	3.5'	2'
Silphium perfoliatum	Cup Plant	FlwrPeren	F-P	6'	2'
Vaccinium sp.	Blueberries	Shrub	F-P	6'	6'
Carex stipata	Stalk-Grain Sedge	Sdge	F-S	2.5'	3'
Kalmia latifolia	Mountain-laurel	Shrub	P	7'	7'
Tradescantia ohiensis	Ohio Spiderwort	FlwrPeren	S	2.5'	2.5'
Cornus sericea	Red Twig Dogwood	Shrub	F-P	7'	8'
GREENCRETE PAVERS - 1,700 sf					
ASPHALT PAVING - 3,500 sf					
MAINTENANCE ACCESS PATH - 500 sf					
Flagstones					
CIP CONCRETE - 3,100 sf					

9/6/2018 9:28:15 AM

Project

ANTIOCH COLLEGE

Antioch PND

E North College Street
Yellow Springs, OH 45387

Property Owner/Petitioner

Antioch College Corporation
One Morgan Place
Yellow Springs, OH 45387

McLennan Design, LLC

500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Key Plan

Professional Seals

No.	Issue Description	YYYY-MM-DD

No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

Drawn by AP Reviewed by DRD

Project No. 16016.01

Sheet Title:

SCHEDULES

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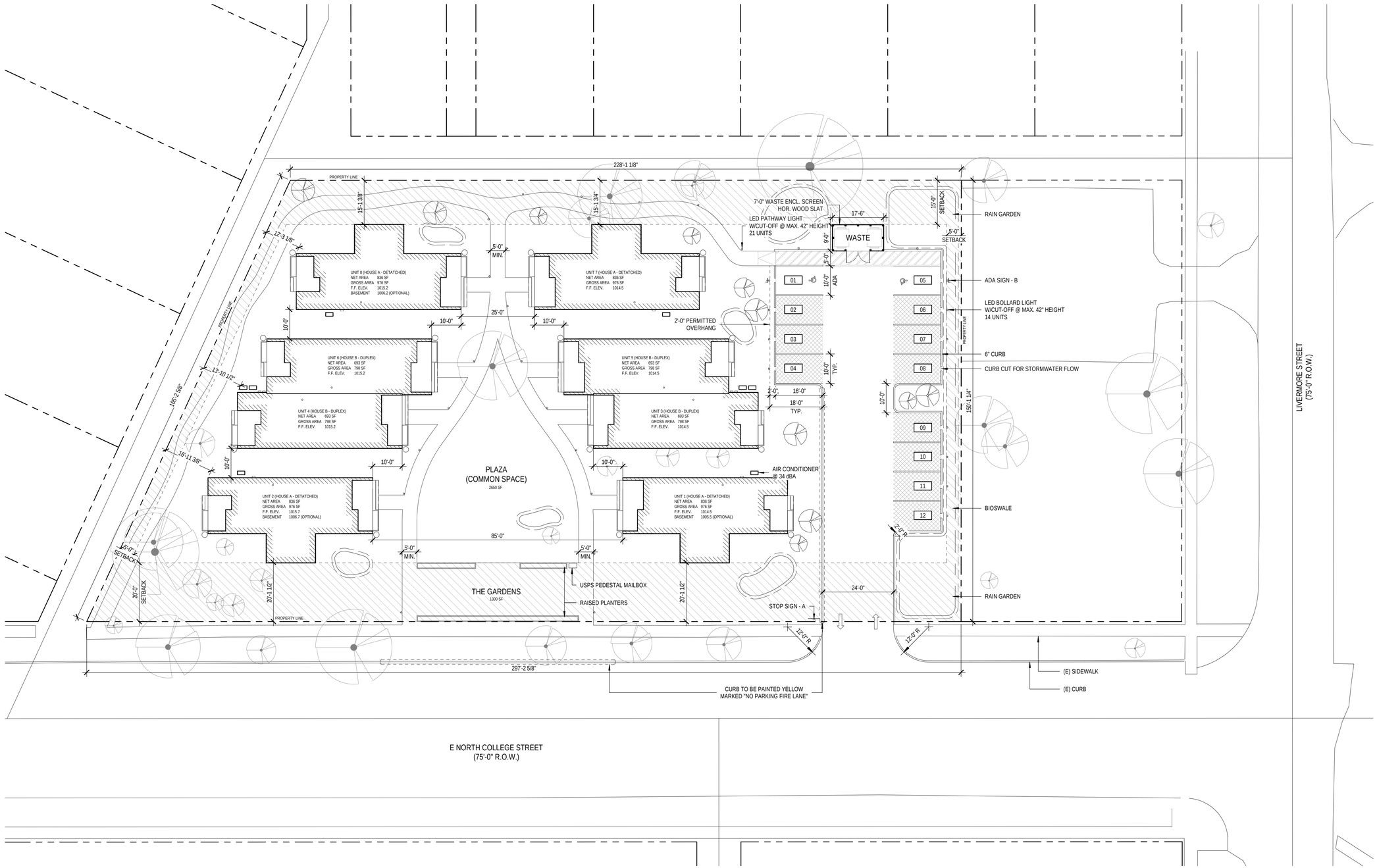
Sheet Number:

L801



1 SITE PLAN
1/16" = 1'-0"

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Project

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Key Plan

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Professional Seals

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No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

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Project No. 16016.01

Sheet Title:

SITE PLAN

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Sheet Number:

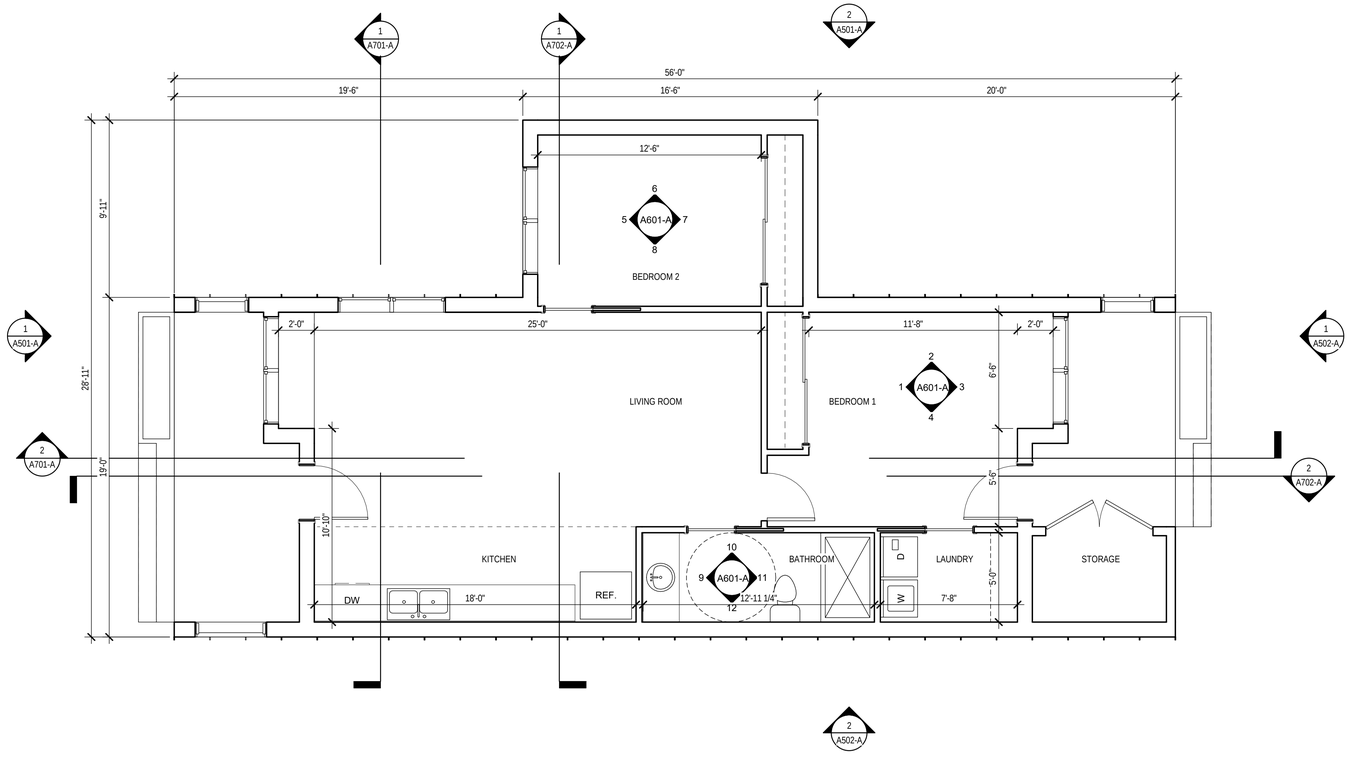
A101

GENERAL NOTES - HOUSE TYPE A

1. LOT 2A IN REPLAT OF LOTS 2 AND 3
   IN THE ANTIOCH COLLEGE CORP. PLAT
   PLAT CABINET 38, PAGES 300B - 301A

   PARCEL NO. F19-1-9-294
   ANTIOCH COLLEGE CORPORATION
   O.R. 3053, PAGE 191

2. HOUSE TYPE A (DETATCHED)
   976 SF GROSS / 836 SF NET



1 FLOOR PLAN - HOUSE A
1/4" = 1'-0"

8/16/2018 1:19:39 PM

Project

ANTIOCH COLLEGE

Antioch PND

E North College Street
Yellow Springs, OH 45387

Property Owner/Petitioner

Antioch College Corporation
One Morgan Place
Yellow Springs, OH 45387

McLennan Design, LLC

500 Winslow Way E, Suite 201
Bainbridge Island, WA 98110
t 206 219 3777

Key Plan

Professional Seals

No.	Issue Description	YYYY-MM-DD

No.	Revision Description	YYYY-MM-DD
01	Site Plan Review - Update	2018-09-06

Drawn by SRBC Reviewed by DRD

Project No. 16016.01

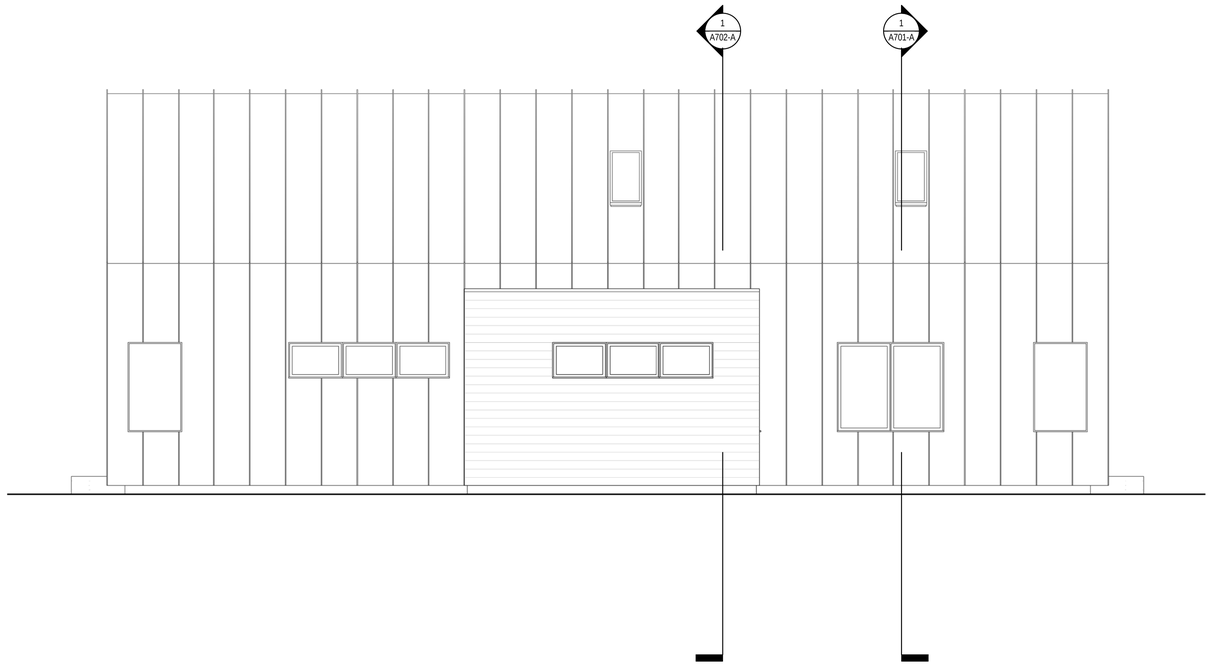
Sheet Title:

FLOOR PLAN

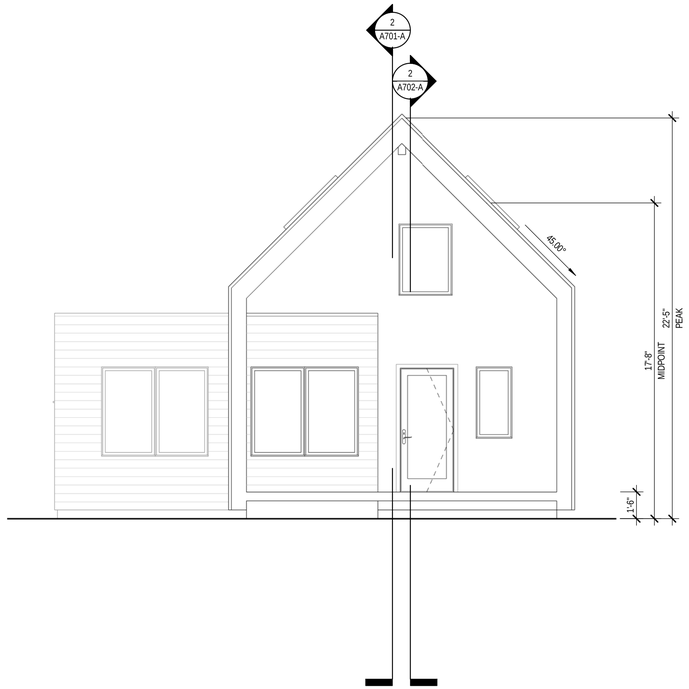
Original drawing is Arch D. Do not scale contents of this drawing.

Sheet Number:

A201-A



2 ELEVATION - OUTER - HOUSE A
1/4" = 1'-0"



1 ELEVATION - FRONT - HOUSE A
1/4" = 1'-0"

9/16/2018 1:19:45 PM

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Drawn by SRBC Reviewed by DRD

Project No. 16016.01

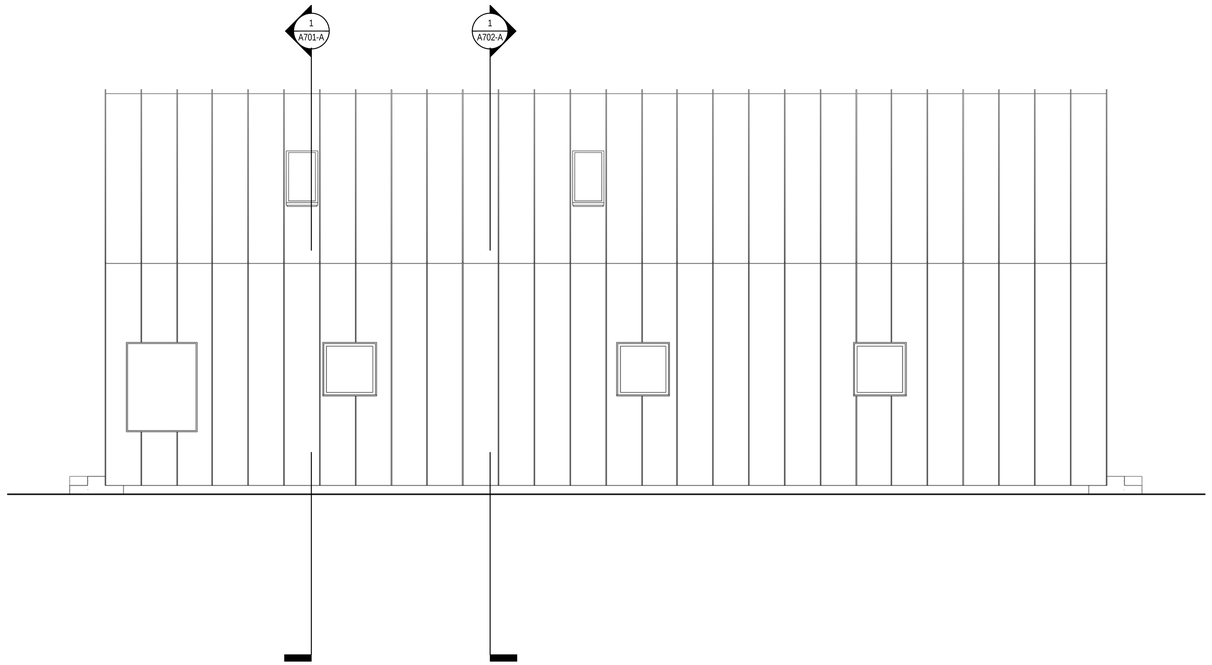
Sheet Title:

ELEVATIONS

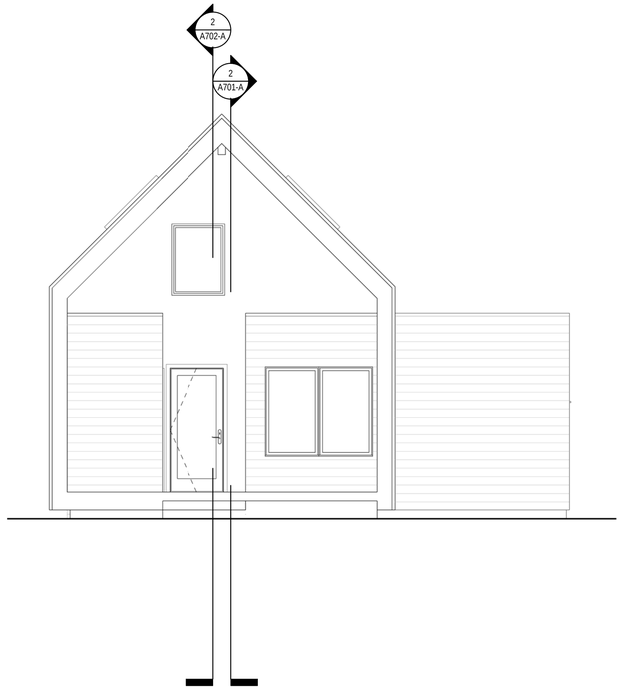
Original drawing is Arch D. Do not scale contents of this drawing.

Sheet Number:

A501-A



2 ELEVATION - SERVICES - HOUSE A
1/4" = 1'-0"



1 ELEVATION - REAR - HOUSE A
1/4" = 1'-0"

9/16/2018 1:13:54 PM

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Project No. 16016.01

Sheet Title:

ELEVATIONS

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Sheet Number:

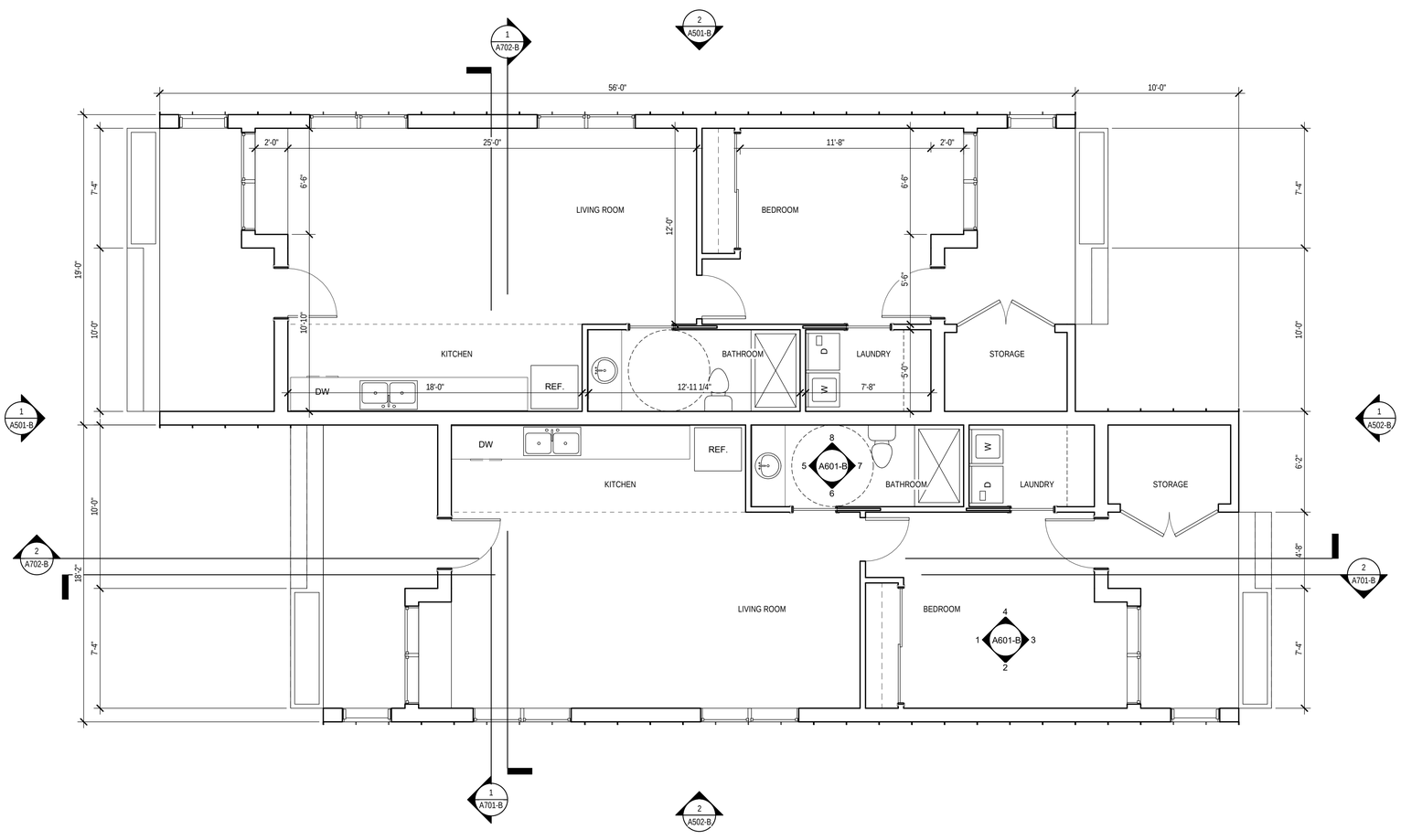
A502-A

GENERAL NOTES - HOUSE TYPE B

1. LOT 2A IN REPLAT OF LOTS 2 AND 3
   IN THE ANTIOCH COLLEGE CORP. PLAT
   PLAT CABINET 38, PAGES 300B - 301A

   PARCEL NO. F19-1-9-294
   ANTIOCH COLLEGE CORPORATION
   O.R. 3053, PAGE 191

2. HOUSE TYPE B (DUPLEX)
   798 SF GROSS / 693 SF NET (INDIVIDUAL UNIT)



1 FLOOR PLAN - HOUSE B
1/4" = 1'-0"

8/16/2018 1:19:40 PM

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Project No. 16016.01

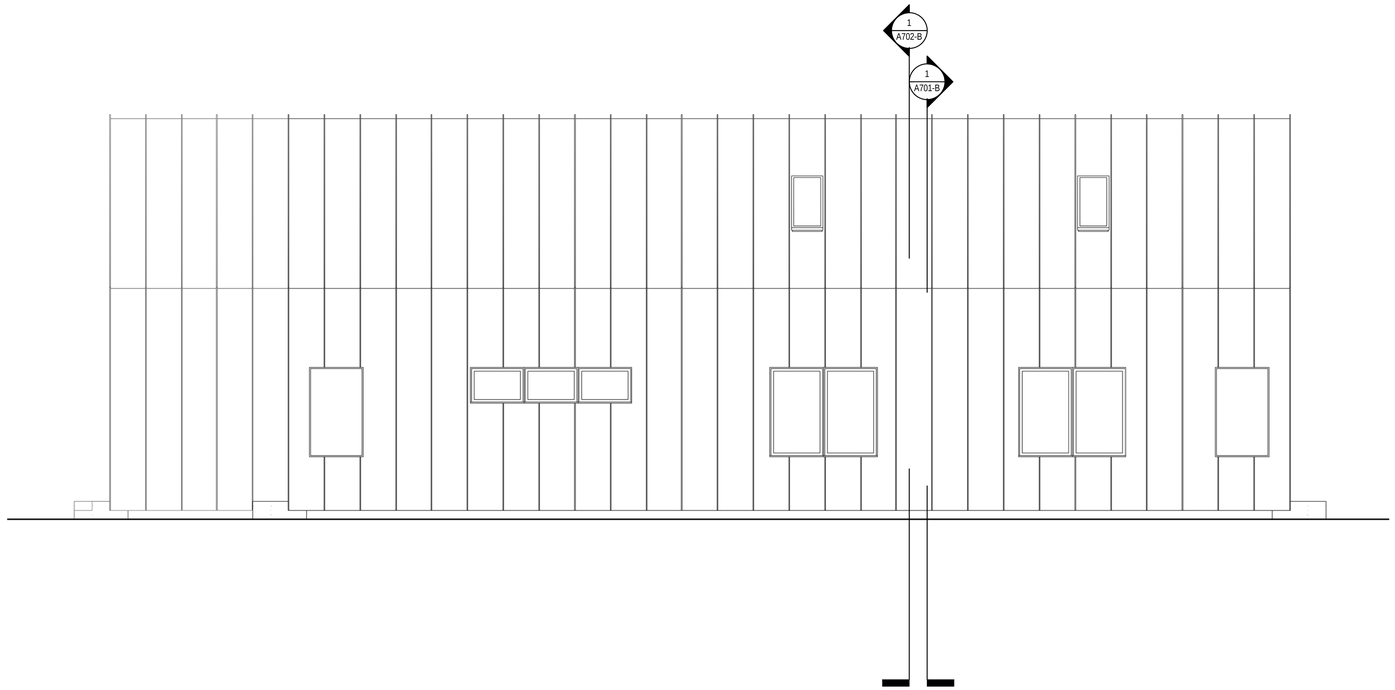
Sheet Title:

FLOOR PLAN

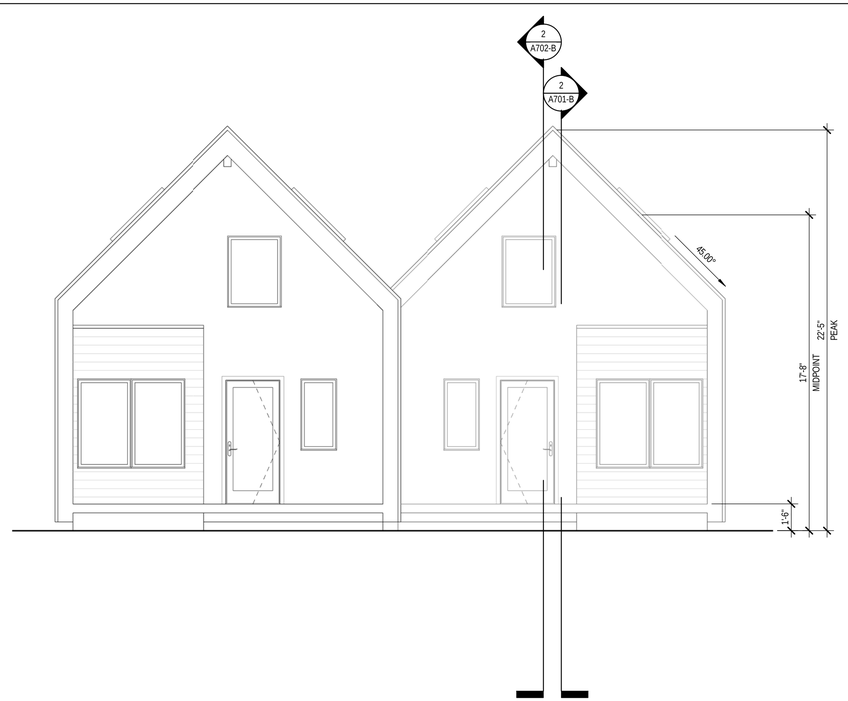
Original drawing is Arch D. Do not scale contents of this drawing.

Sheet Number:

A201-B



2 ELEVATION - FRONT UNIT - HOUSE B
1/4" = 1'-0"



1 ELEVATION - FRONT - HOUSE B
1/4" = 1'-0"

8/16/2018 1:19:49 PM

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Sheet Title:

ELEVATIONS

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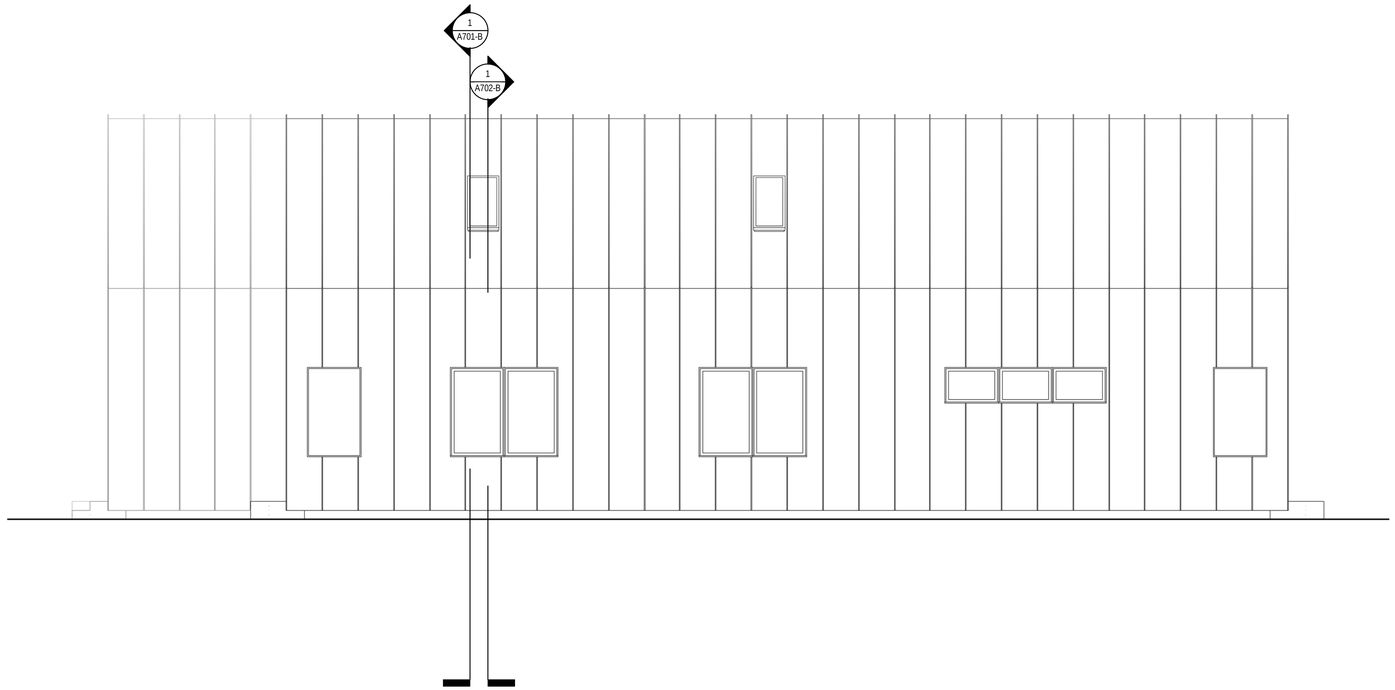
Sheet Number:

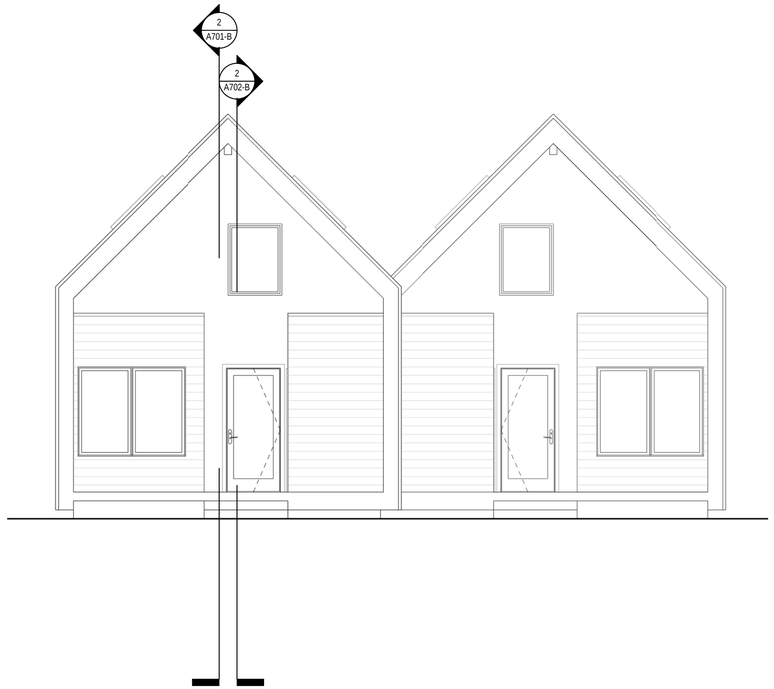
A501-B



ELEVATION - REAR UNIT - HOUSE B

2

1/4" = 1'-0"



ELEVATON - REAR - HOUSE B

1

1/4" = 1'-0"

9/16/2018 1:19:59 PM

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Drawn by SRBC Reviewed by DRD

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Sheet Title:

ELEVATIONS

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Sheet Number:

A502-B

CIVIL ENGINEERING
SURVEYING
LAND PLANNING
LANDSCAPE ARCHITECTURE

959 Congress Park Drive
Centerville, Ohio 45459
www.ReinkeGroup.com
937.434.4810 phone
937.434.3978 fax

Antioch PND
Drainage Analysis
August 31, 2018

General

This site is located on the north side of East North College Street, on the northeast side of the intersection with Xenia Avenue. The site is approximately 0.905 acres. The soils are C type soils.

The site drains to the east towards Livermore Street. Currently it has grass cover with some impervious area.

Storm Water and Water Quality Control

We are directing storm water from impervious surfaces to eight rain gardens. All eventually drain into a bio-swale on the east property line. The rain gardens are designed to allow rain water to infiltrate into the ground. The prevalence of clay in the area make it likely that we will have to use an underdrain system to ensure that water doesn't pond in the rain gardens for long periods. Each rain garden will have a small weir to allow water to escape in larger rainstorms. The rain gardens are designed to hold the first inch of rainfall on the site. There is an area of about .09 acres which will be a direct discharge to East North College Street. This area will not include impervious area, so there is no rain garden associated with this area. It is labeled "dd" in the report.

Water Quality Volume

OEPA does not require post development BMPs for sites that are less than an acre. However, this site is being designed as a low impact development, so we used the same criteria as OEPA to determine the required water quality volume.

The new state storm water general permit uses the following formula to calculate the required water quality volume:

WQv=RvPA/12, where P = .90 inches, A is area (.905 acres) and Rv= .05+.9i, where i is equal to the impervious area. There is .245 acres of impervious area, so Rv = .27

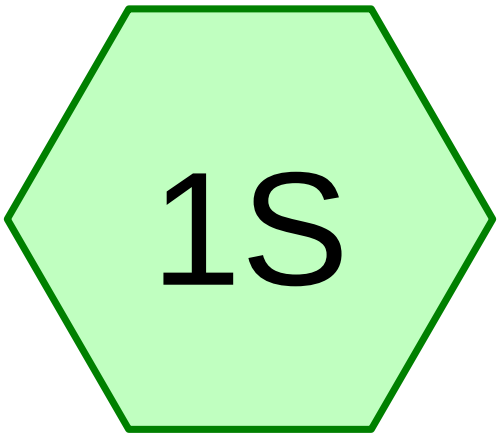
Therefore, WQv = .27(.90)(.905)/12 = .0183 ac-ft – or 798 cf. We are providing 2,042 cf of storage in our water control system.

Curve Numbers

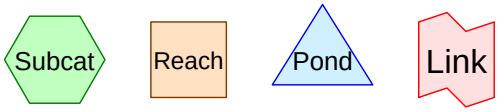
The pre-development curve number is 74. The post development curve number is 80. The peak site discharge (in cubic feet per second) is shown below:

Storm Summary for Northwest Drainage Area – Peak Discharge (cfs)

Storm	1	10	50	100
Pre	.47	1.54	2.32	2.64
Post	.34	1.10	2.01	2.23



Pre



Routing Diagram for Prelim
Prepared by {enter your company name here}, Printed 8/30/2018
HydroCAD® 10.00 s/n 02509 © 2013 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Pre

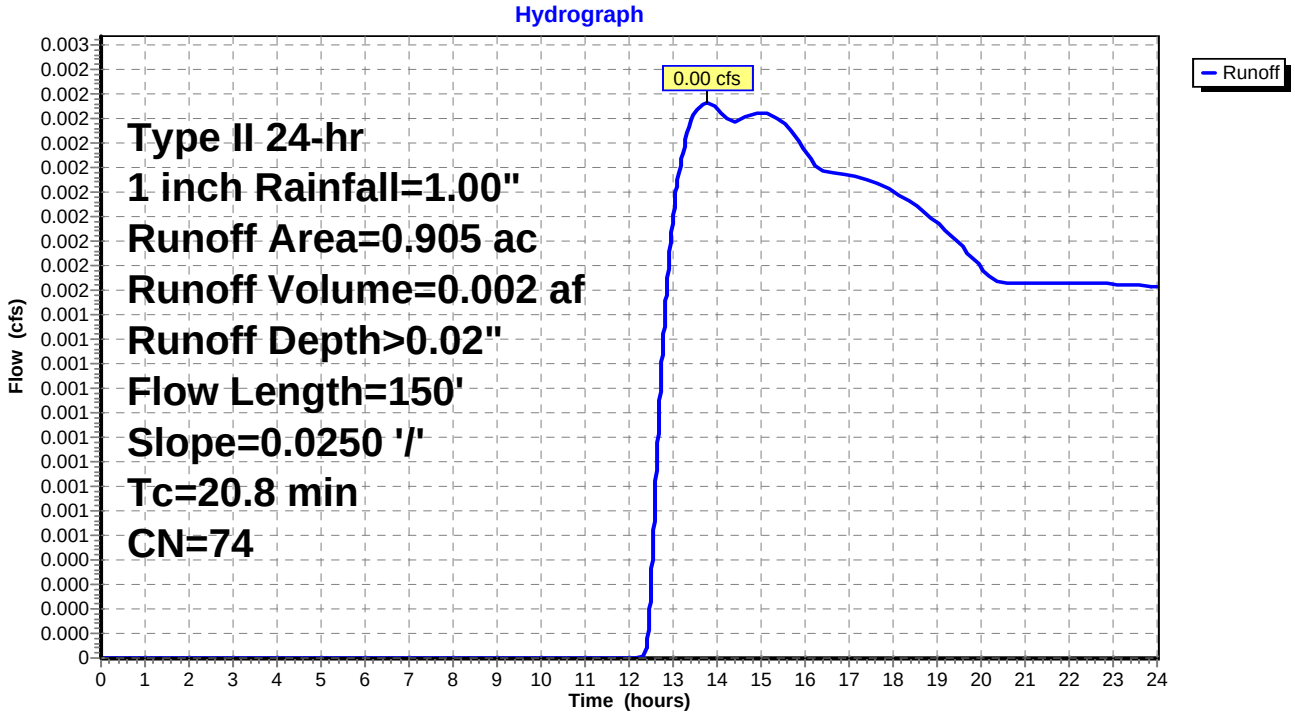
Runoff = 0.00 cfs @ 13.75 hrs, Volume= 0.002 af, Depth> 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 inch Rainfall=1.00"

Area (ac)	CN	Description
0.905	74	>75% Grass cover, Good, HSG C
0.905		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	150	0.0250	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment 1S: Pre



Summary for Subcatchment 1S: Pre

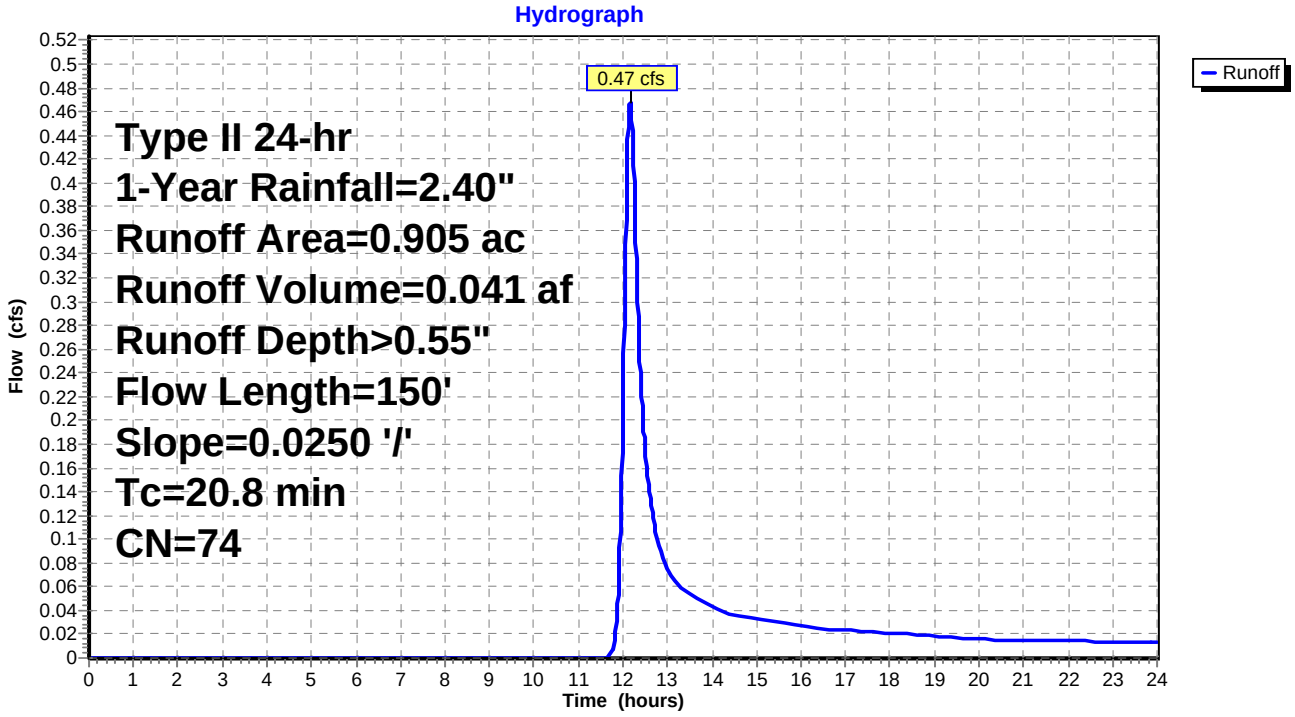
Runoff = 0.47 cfs @ 12.16 hrs, Volume= 0.041 af, Depth> 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.40"

Area (ac)	CN	Description
0.905	74	>75% Grass cover, Good, HSG C
0.905		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	150	0.0250	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment 1S: Pre



Summary for Subcatchment 1S: Pre

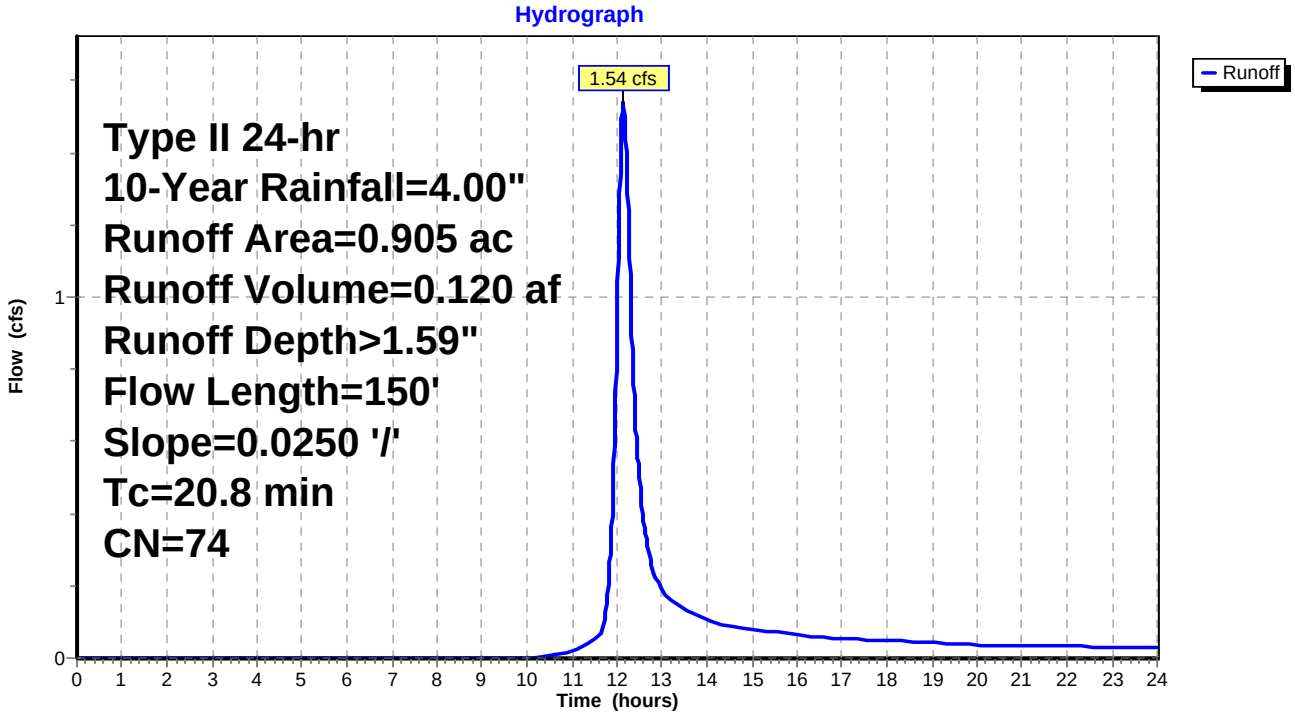
Runoff = 1.54 cfs @ 12.14 hrs, Volume= 0.120 af, Depth> 1.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=4.00"

Area (ac)	CN	Description
0.905	74	>75% Grass cover, Good, HSG C
0.905		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	150	0.0250	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment 1S: Pre



Summary for Subcatchment 1S: Pre

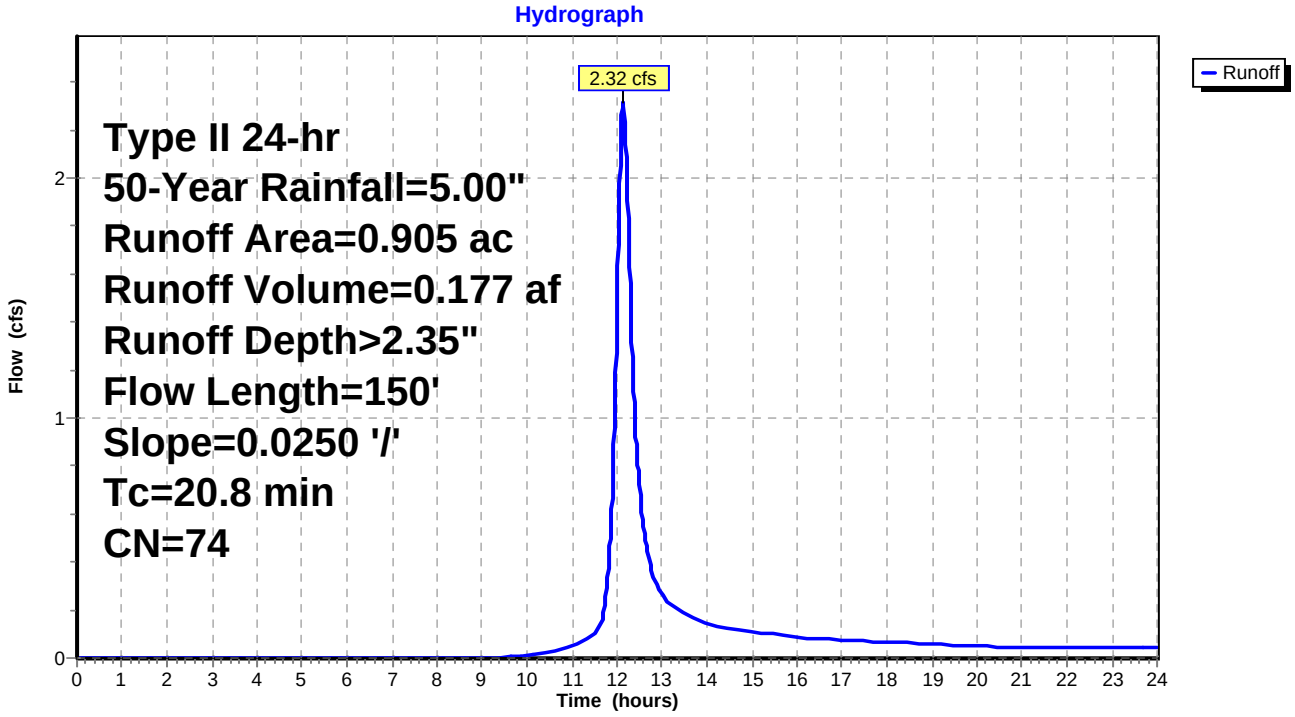
Runoff = 2.32 cfs @ 12.14 hrs, Volume= 0.177 af, Depth> 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.00"

Area (ac)	CN	Description
0.905	74	>75% Grass cover, Good, HSG C
0.905		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	150	0.0250	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment 1S: Pre



Summary for Subcatchment 1S: Pre

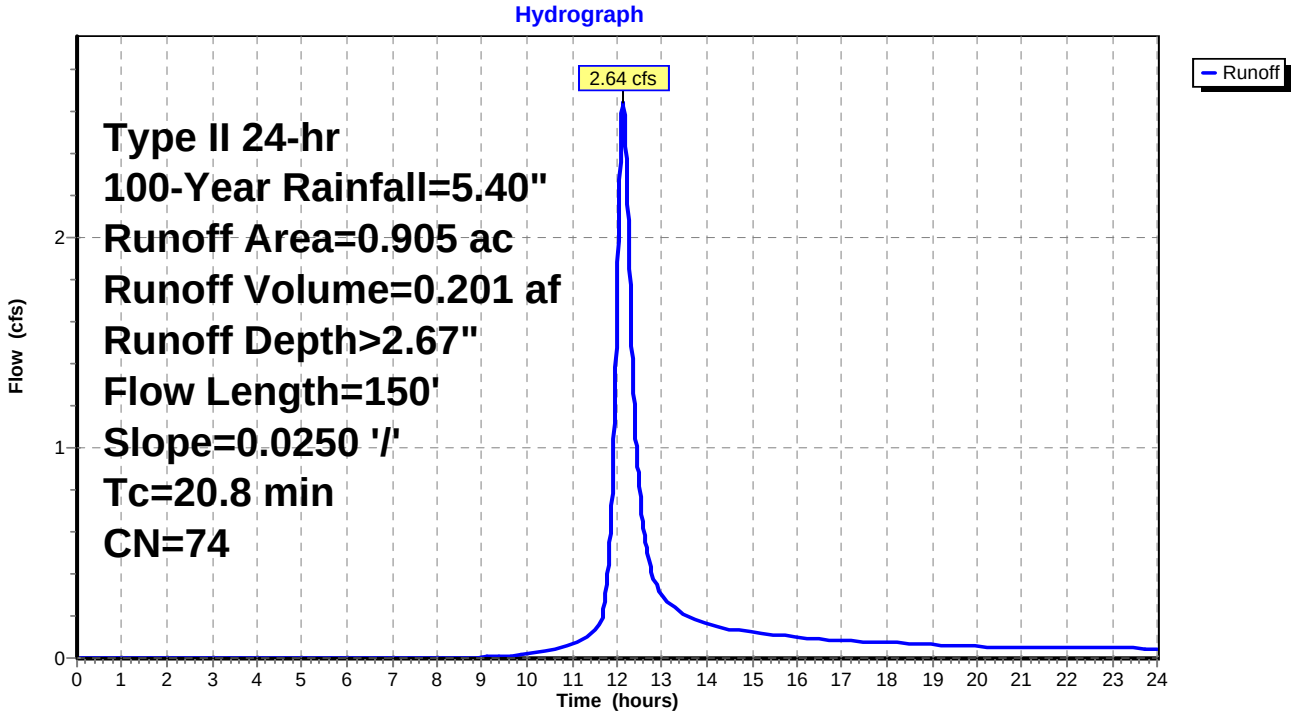
Runoff = 2.64 cfs @ 12.14 hrs, Volume= 0.201 af, Depth> 2.67"

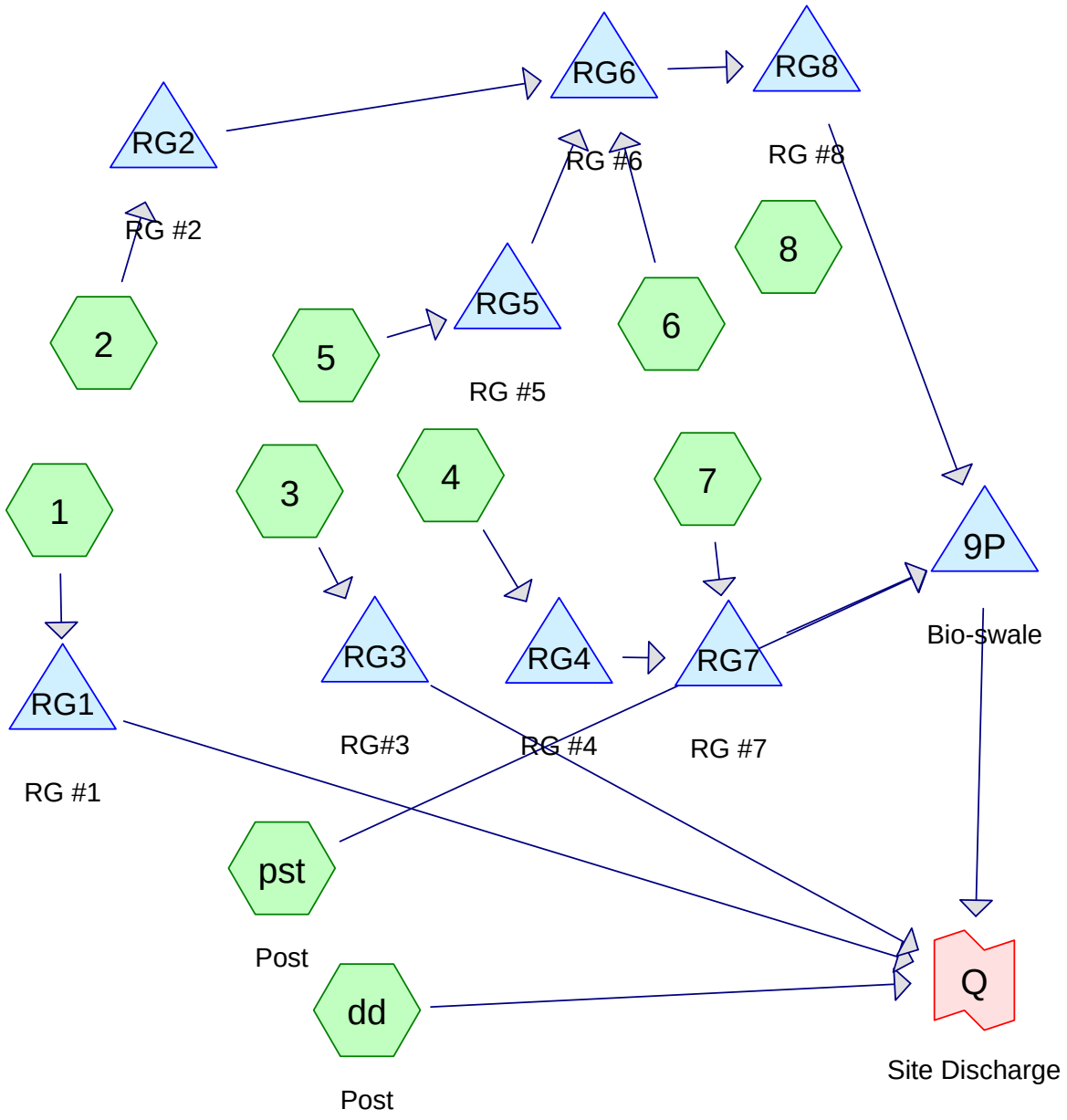
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.40"

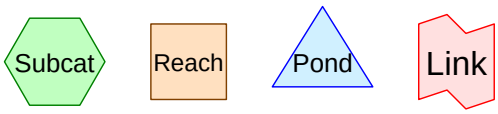
Area (ac)	CN	Description
0.905	74	>75% Grass cover, Good, HSG C
0.905		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	150	0.0250	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment 1S: Pre







Routing Diagram for Prelim 8 31 18
Prepared by {enter your company name here}, Printed 8/31/2018
HydroCAD® 10.00 s/n 02509 © 2013 HydroCAD Software Solutions LLC

Summary for Subcatchment 1:

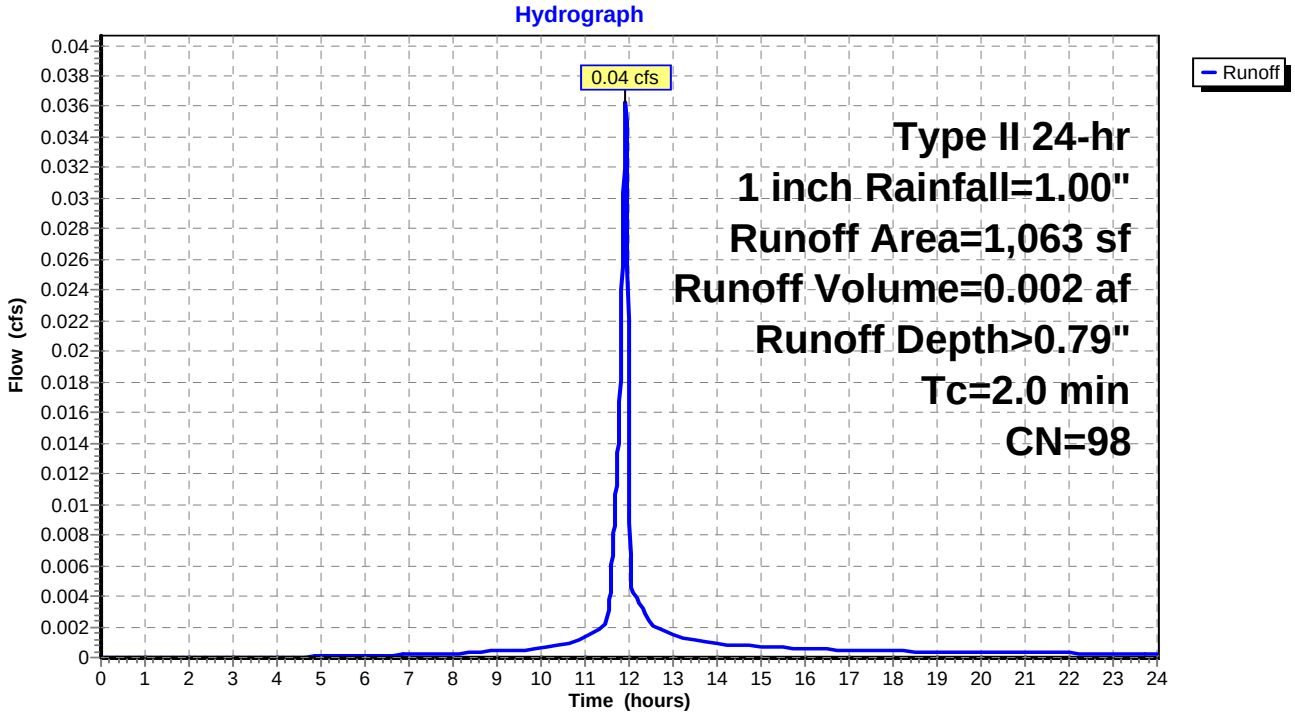
Runoff = 0.04 cfs @ 11.92 hrs, Volume= 0.002 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 inch Rainfall=1.00"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 1:



Summary for Subcatchment 2:

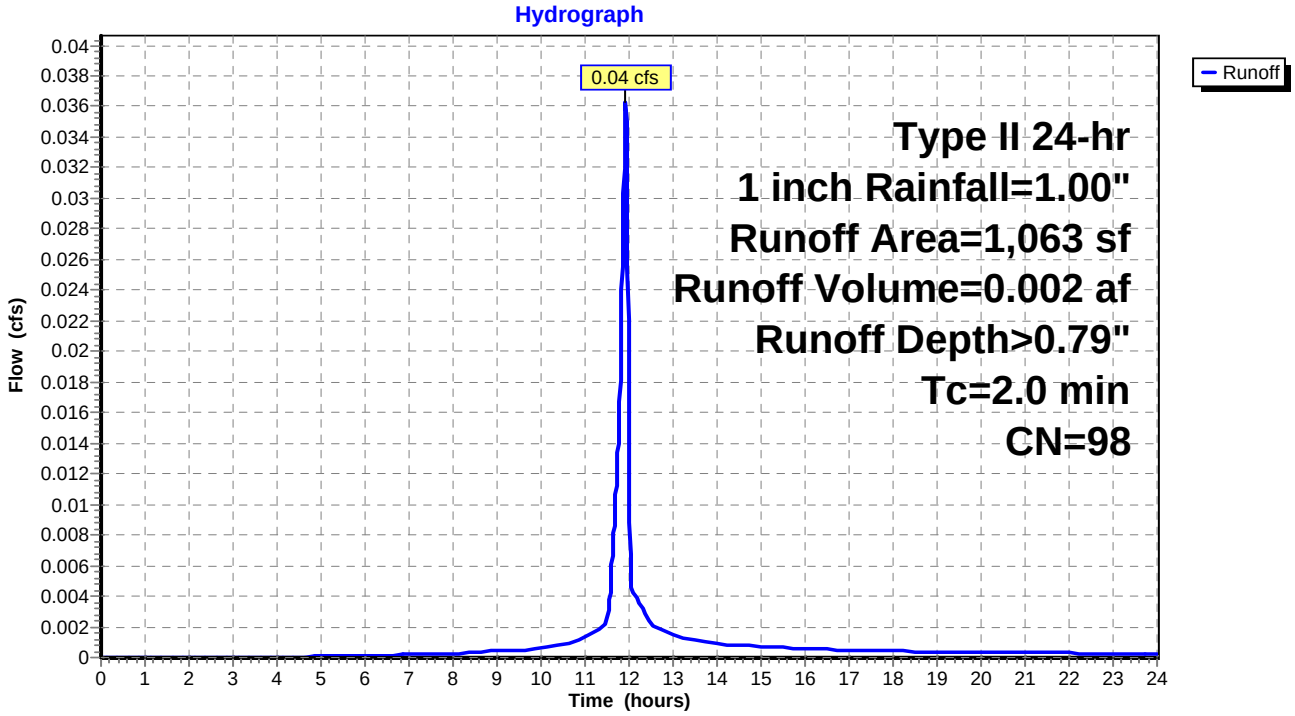
Runoff = 0.04 cfs @ 11.92 hrs, Volume= 0.002 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 inch Rainfall=1.00"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 2:



Summary for Subcatchment 3:

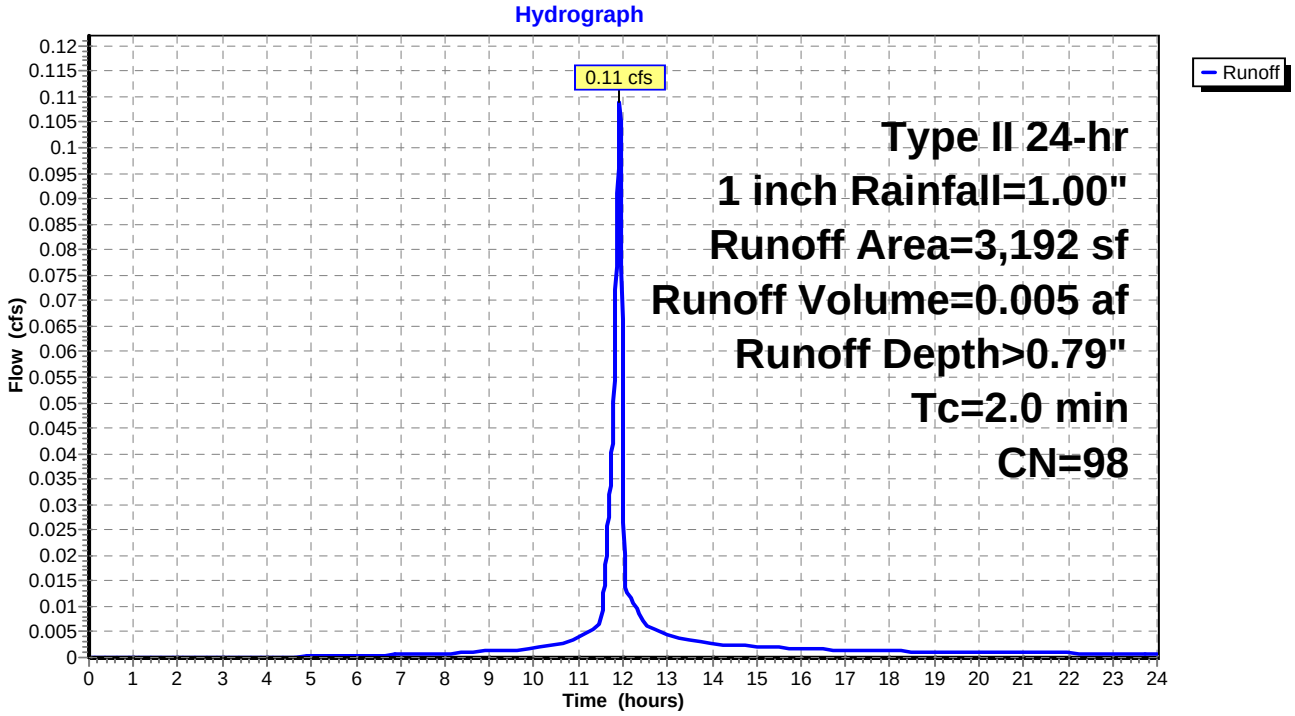
Runoff = 0.11 cfs @ 11.92 hrs, Volume= 0.005 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 inch Rainfall=1.00"

	Area (sf)	CN	Description
*	3,192	98	
	3,192		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 3:



Summary for Subcatchment 4:

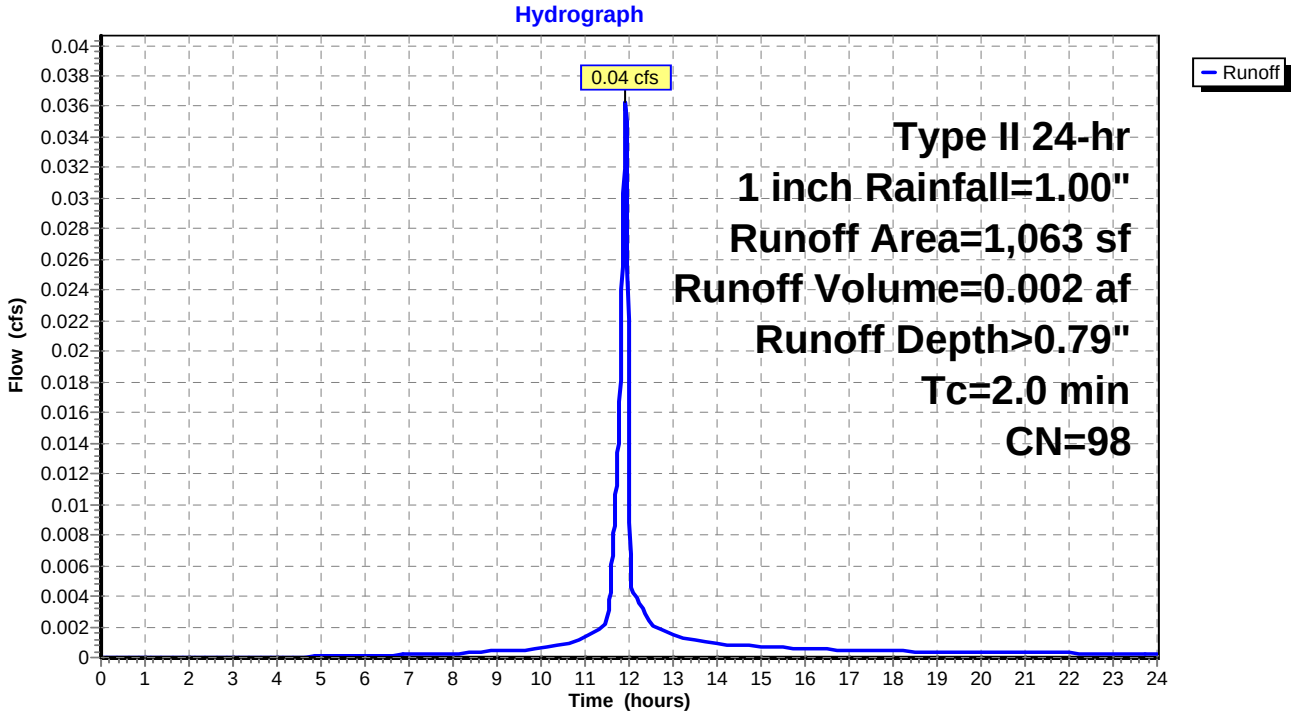
Runoff = 0.04 cfs @ 11.92 hrs, Volume= 0.002 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 inch Rainfall=1.00"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 4:



Summary for Subcatchment 5:

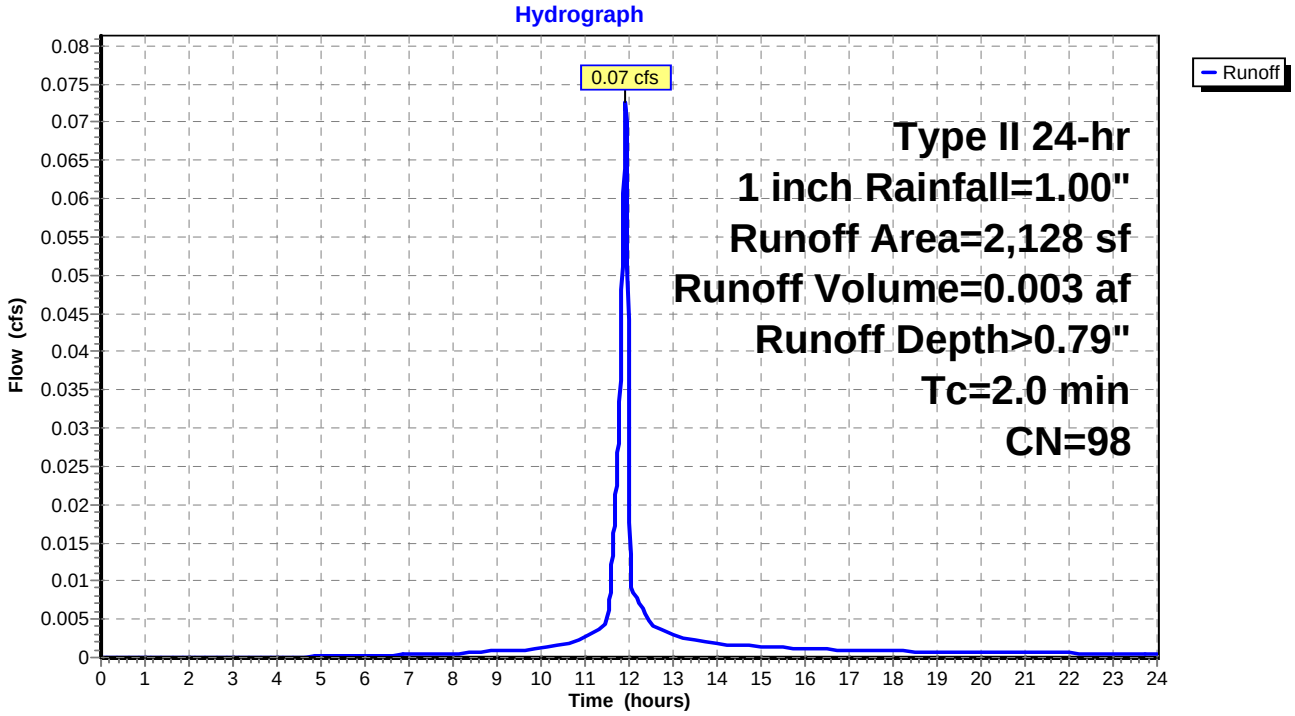
Runoff = 0.07 cfs @ 11.92 hrs, Volume= 0.003 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 inch Rainfall=1.00"

	Area (sf)	CN	Description
*	2,128	98	
	2,128		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 5:



Summary for Subcatchment 6:

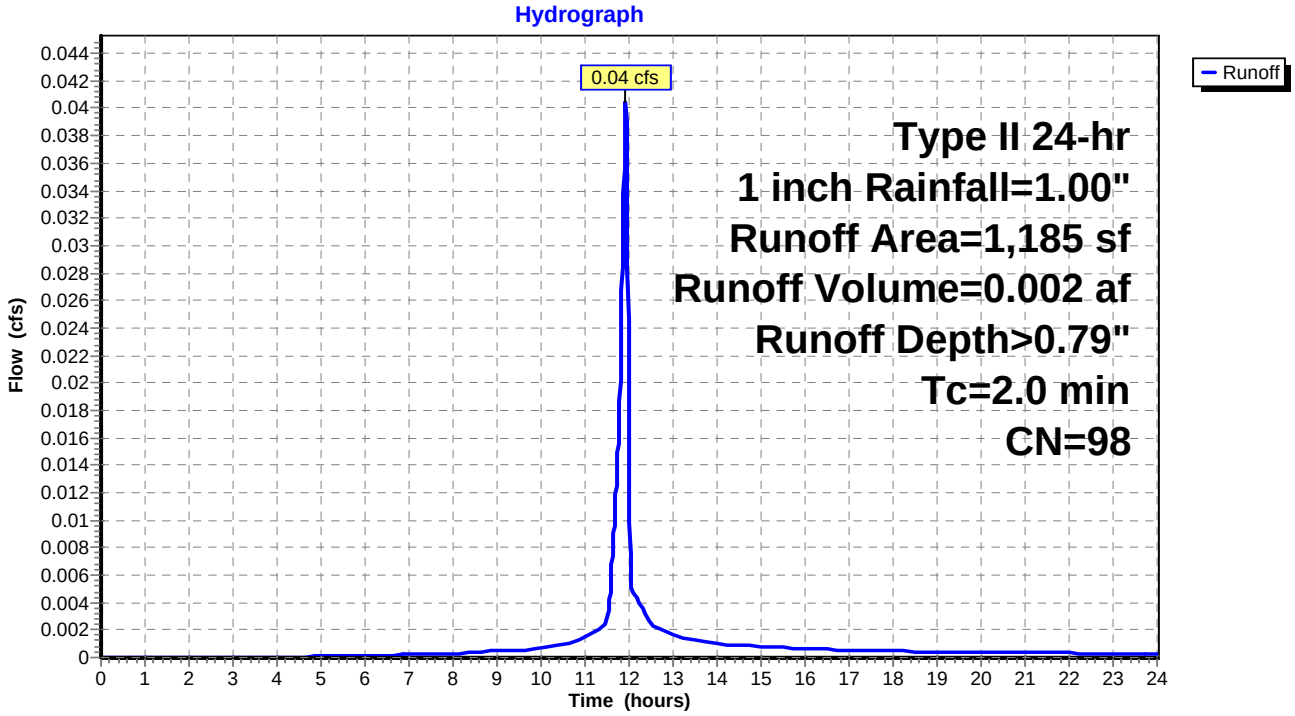
Runoff = 0.04 cfs @ 11.92 hrs, Volume= 0.002 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 inch Rainfall=1.00"

	Area (sf)	CN	Description
*	1,185	98	
	1,185		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 6:



Summary for Subcatchment 7:

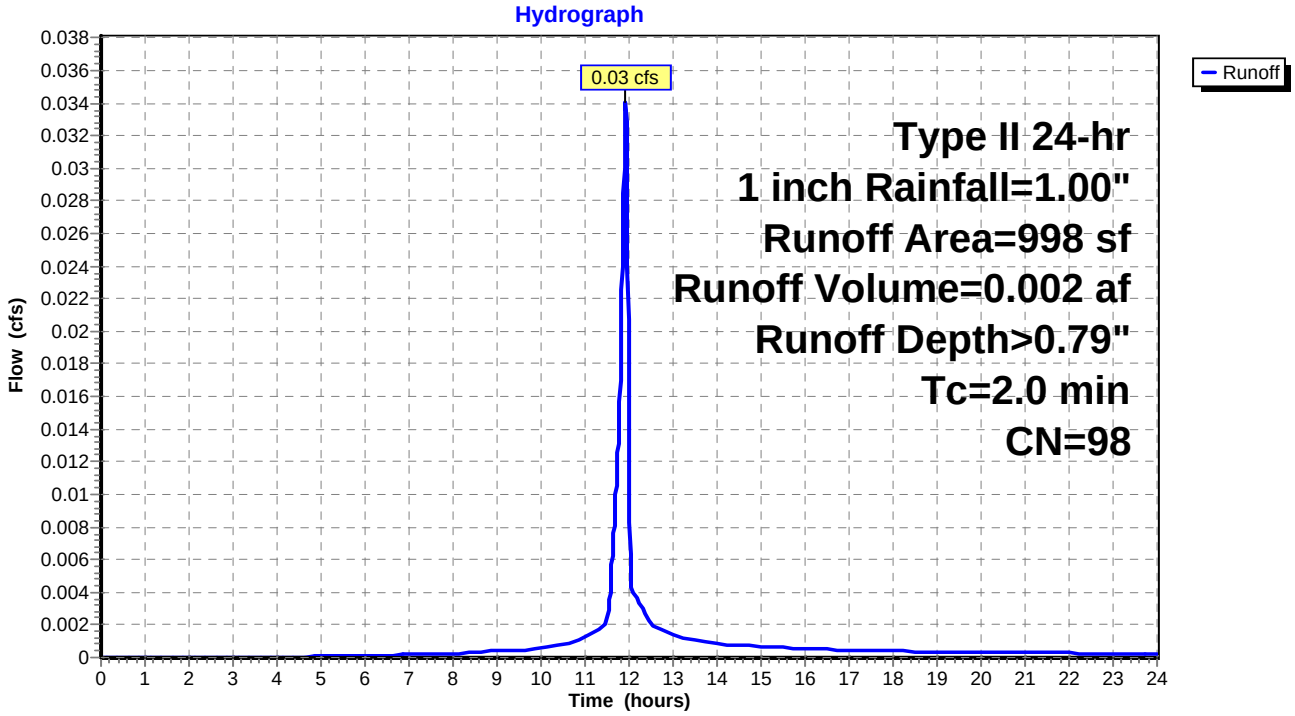
Runoff = 0.03 cfs @ 11.92 hrs, Volume= 0.002 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 inch Rainfall=1.00"

	Area (sf)	CN	Description
*	998	98	
	998		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 7:



Summary for Subcatchment 8:

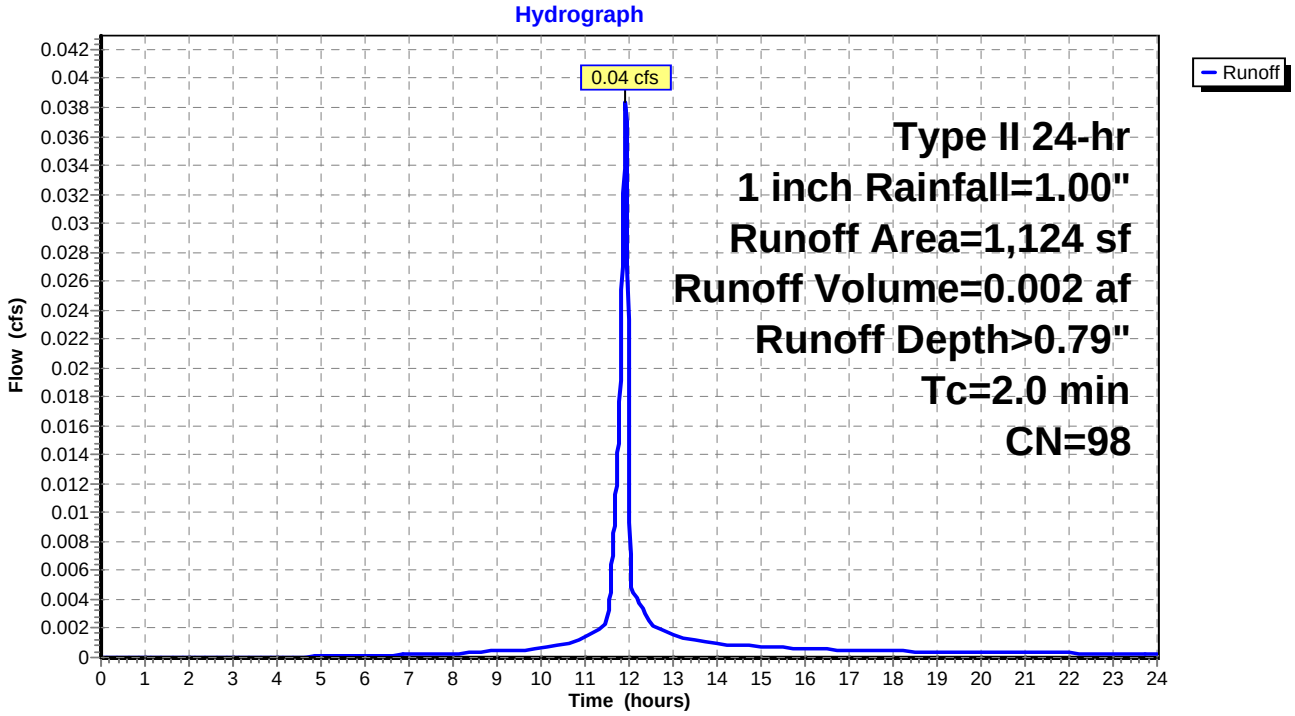
Runoff = 0.04 cfs @ 11.92 hrs, Volume= 0.002 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 inch Rainfall=1.00"

	Area (sf)	CN	Description
*	1,124	98	
	1,124		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 8:



Summary for Subcatchment dd: Post

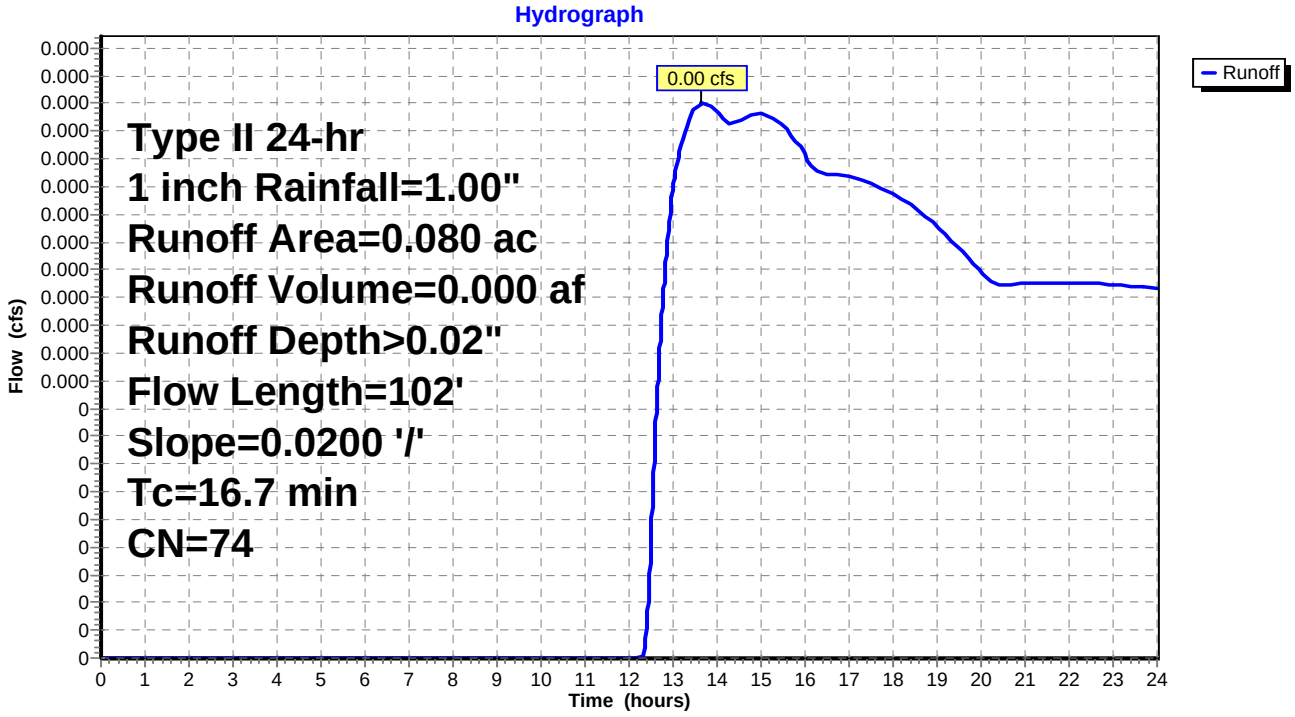
Runoff = 0.00 cfs @ 13.64 hrs, Volume= 0.000 af, Depth> 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 inch Rainfall=1.00"

Area (ac)	CN	Description
0.080	74	>75% Grass cover, Good, HSG C
0.080		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	102	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment dd: Post



Summary for Subcatchment pst: Post

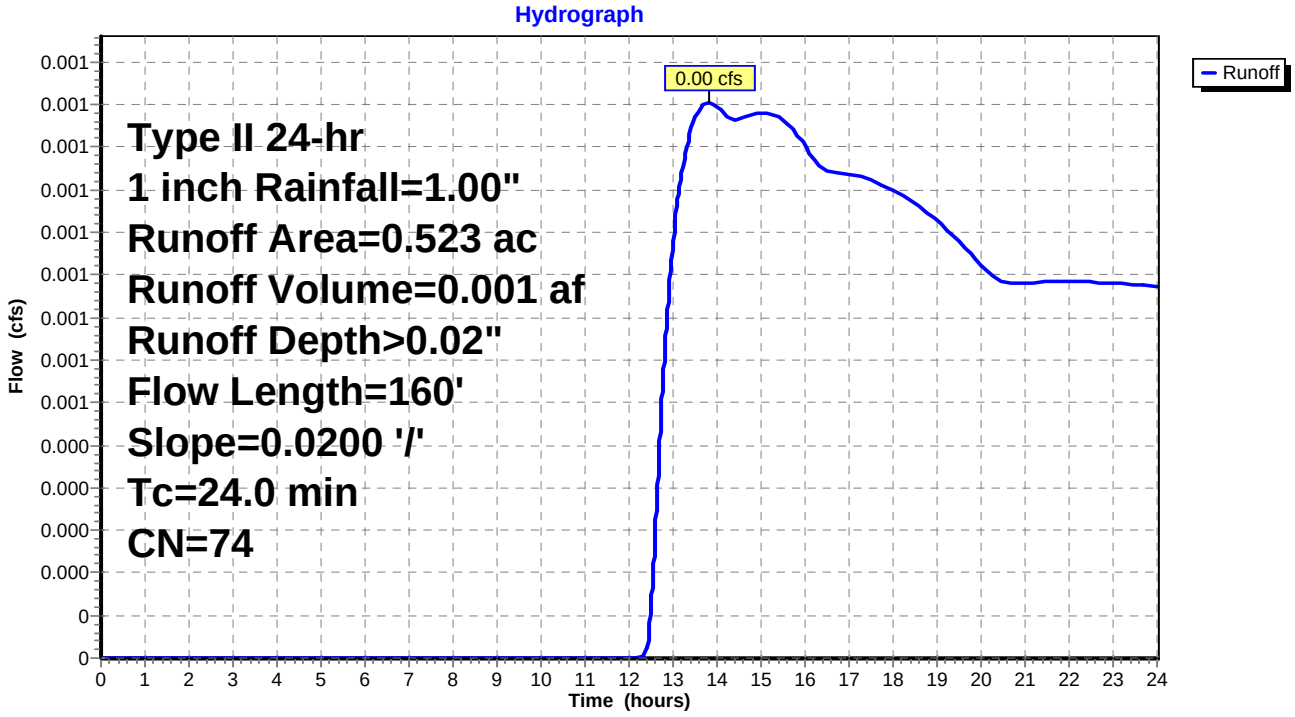
Runoff = 0.00 cfs @ 13.84 hrs, Volume= 0.001 af, Depth> 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 inch Rainfall=1.00"

Area (ac)	CN	Description
0.523	74	>75% Grass cover, Good, HSG C
0.523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	160	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment pst: Post



Summary for Pond 9P: Bio-swale

Inflow Area =	0.671 ac, 22.03% Impervious, Inflow Depth > 0.02" for 1 inch event				
Inflow =	0.00 cfs @	13.84 hrs,	Volume=	0.001 af	
Outflow =	0.00 cfs @	20.24 hrs,	Volume=	0.001 af,	Atten= 31%, Lag= 384.3 min
Discarded =	0.00 cfs @	20.24 hrs,	Volume=	0.001 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,009.30' @ 20.24 hrs Surf.Area= 77 sf Storage= 12 cf

Plug-Flow detention time= 156.7 min calculated for 0.001 af (73% of inflow)
Center-of-Mass det. time= 63.2 min (1,139.1 - 1,075.9)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.00'	515 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

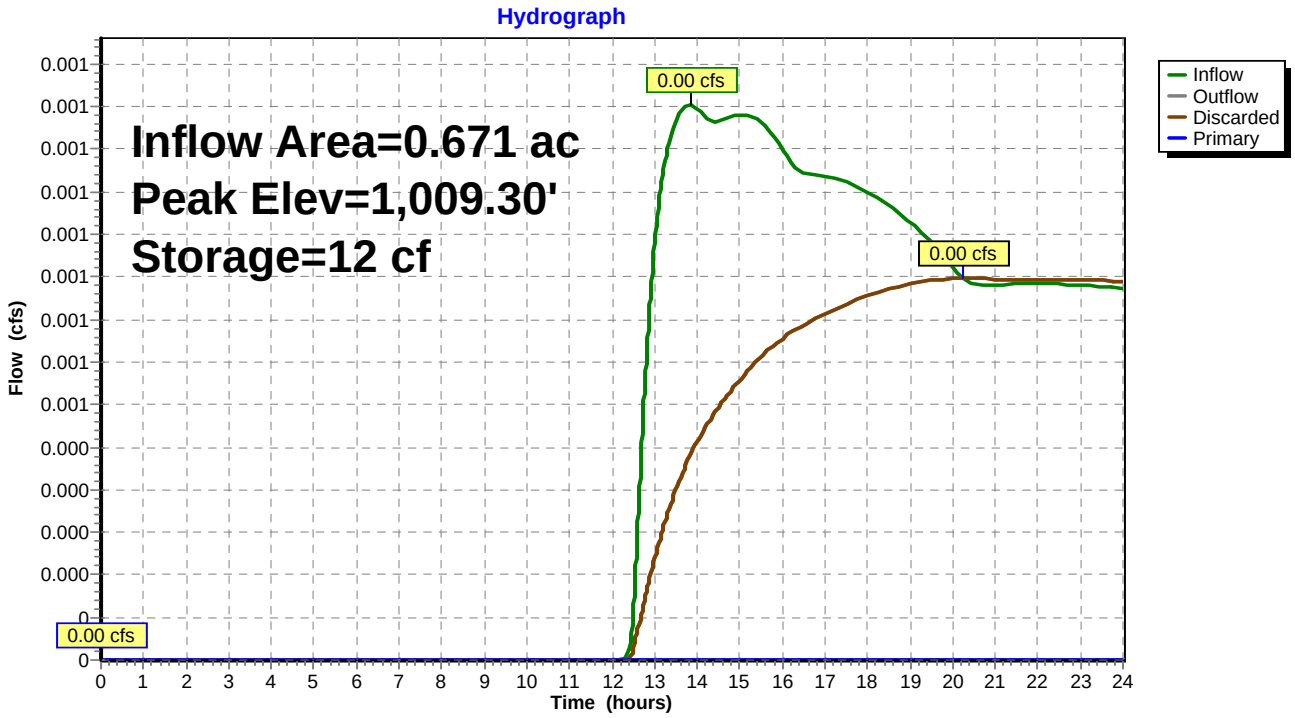
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.00	0	0	0
1,011.00	515	515	515

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,010.75'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 20.24 hrs HW=1,009.30' (Free Discharge)
└─**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,009.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 9P: Bio-swale



Stage-Area-Storage for Pond 9P: Bio-swale

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.00	0	0
1,009.02	5	0
1,009.04	10	0
1,009.06	15	0
1,009.08	21	1
1,009.10	26	1
1,009.12	31	2
1,009.14	36	3
1,009.16	41	3
1,009.18	46	4
1,009.20	52	5
1,009.22	57	6
1,009.24	62	7
1,009.26	67	9
1,009.28	72	10
1,009.30	77	12
1,009.32	82	13
1,009.34	88	15
1,009.36	93	17
1,009.38	98	19
1,009.40	103	21
1,009.42	108	23
1,009.44	113	25
1,009.46	118	27
1,009.48	124	30
1,009.50	129	32
1,009.52	134	35
1,009.54	139	38
1,009.56	144	40
1,009.58	149	43
1,009.60	155	46
1,009.62	160	49
1,009.64	165	53
1,009.66	170	56
1,009.68	175	60
1,009.70	180	63
1,009.72	185	67
1,009.74	191	71
1,009.76	196	74
1,009.78	201	78
1,009.80	206	82
1,009.82	211	87
1,009.84	216	91
1,009.86	221	95
1,009.88	227	100
1,009.90	232	104
1,009.92	237	109
1,009.94	242	114
1,009.96	247	119
1,009.98	252	124
1,010.00	258	129
1,010.02	263	134
1,010.04	268	139
1,010.06	273	145
1,010.08	278	150
1,010.10	283	156
1,010.12	288	162
1,010.14	294	167
1,010.16	299	173
1,010.18	304	179
1,010.20	309	185
1,010.22	314	192
1,010.24	319	198
1,010.26	324	204
1,010.28	330	211
1,010.30	335	218
1,010.32	340	224
1,010.34	345	231
1,010.36	350	238
1,010.38	355	245
1,010.40	360	252
1,010.42	366	260
1,010.44	371	267
1,010.46	376	274
1,010.48	381	282
1,010.50	386	290
1,010.52	391	297
1,010.54	397	305
1,010.56	402	313
1,010.58	407	321
1,010.60	412	330
1,010.62	417	338
1,010.64	422	346
1,010.66	427	355
1,010.68	433	363
1,010.70	438	372
1,010.72	443	381
1,010.74	448	390
1,010.76	453	399
1,010.78	458	408
1,010.80	463	417
1,010.82	469	426
1,010.84	474	436
1,010.86	479	445
1,010.88	484	455
1,010.90	489	465
1,010.92	494	475
1,010.94	500	485
1,010.96	505	495
1,010.98	510	505
1,011.00	**515**	**515**

Summary for Pond RG1: RG #1

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 0.79" for 1 inch event				
Inflow =	0.04 cfs @	11.92 hrs,	Volume=	0.002 af	
Outflow =	0.00 cfs @	13.78 hrs,	Volume=	0.001 af,	Atten= 97%, Lag= 111.3 min
Discarded =	0.00 cfs @	13.78 hrs,	Volume=	0.001 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,013.72' @ 13.78 hrs Surf.Area= 85 sf Storage= 37 cf

Plug-Flow detention time= 284.3 min calculated for 0.001 af (72% of inflow)
Center-of-Mass det. time= 191.4 min (972.0 - 780.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,012.20'	113 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

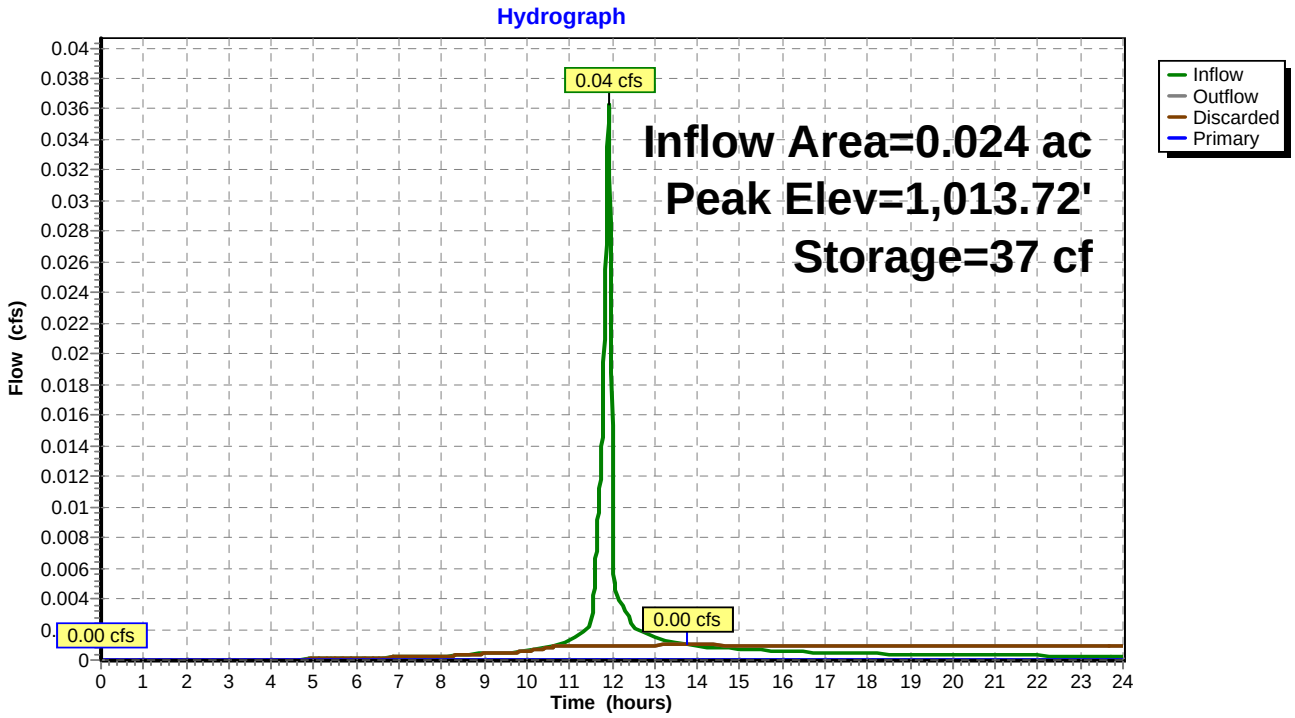
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,012.20	78	0.0	0	0
1,013.70	78	30.0	35	35
1,014.20	234	100.0	78	113

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,012.20'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,014.00'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 13.78 hrs HW=1,013.72' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,012.20' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond RG1: RG #1


Hydrograph
Inflow
Outflow
Discarded
Primary
0.04 cfs
0.00 cfs
0.00 cfs
Inflow Area=0.024 ac
Peak Elev=1,013.72'
Storage=37 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG1: RG #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,012.20	78	0
1,012.22	78	0
1,012.24	78	1
1,012.26	78	1
1,012.28	78	2
1,012.30	78	2
1,012.32	78	3
1,012.34	78	3
1,012.36	78	4
1,012.38	78	4
1,012.40	78	5
1,012.42	78	5
1,012.44	78	6
1,012.46	78	6
1,012.48	78	7
1,012.50	78	7
1,012.52	78	7
1,012.54	78	8
1,012.56	78	8
1,012.58	78	9
1,012.60	78	9
1,012.62	78	10
1,012.64	78	10
1,012.66	78	11
1,012.68	78	11
1,012.70	78	12
1,012.72	78	12
1,012.74	78	13
1,012.76	78	13
1,012.78	78	14
1,012.80	78	14
1,012.82	78	15
1,012.84	78	15
1,012.86	78	15
1,012.88	78	16
1,012.90	78	16
1,012.92	78	17
1,012.94	78	17
1,012.96	78	18
1,012.98	78	18
1,013.00	78	19
1,013.02	78	19
1,013.04	78	20
1,013.06	78	20
1,013.08	78	21
1,013.10	78	21
1,013.12	78	22
1,013.14	78	22
1,013.16	78	22
1,013.18	78	23
1,013.20	78	23
1,013.22	78	24
1,013.24	78	24
1,013.26	78	25
1,013.28	78	25
1,013.30	78	26
1,013.32	78	26
1,013.34	78	27
1,013.36	78	27
1,013.38	78	28
1,013.40	78	28
1,013.42	78	29
1,013.44	78	29
1,013.46	78	29
1,013.48	78	30
1,013.50	78	30
1,013.52	78	31
1,013.54	78	31
1,013.56	78	32
1,013.58	78	32
1,013.60	78	33
1,013.62	78	33
1,013.64	78	34
1,013.66	78	34
1,013.68	78	35
1,013.70	78	35
1,013.72	84	37
1,013.74	90	38
1,013.76	97	40
1,013.78	103	42
1,013.80	109	44
1,013.82	115	47
1,013.84	122	49
1,013.86	128	52
1,013.88	134	54
1,013.90	140	57
1,013.92	147	60
1,013.94	153	63
1,013.96	159	66
1,013.98	165	69
1,014.00	172	73
1,014.02	178	76
1,014.04	184	80
1,014.06	190	83
1,014.08	197	87
1,014.10	203	91
1,014.12	209	95
1,014.14	215	100
1,014.16	222	104
1,014.18	228	108
1,014.20	**234**	**113**

Summary for Pond RG2: RG #2

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 0.79" for 1 inch event				
Inflow =	0.04 cfs @	11.92 hrs,	Volume=	0.002 af	
Outflow =	0.00 cfs @	13.64 hrs,	Volume=	0.001 af,	Atten= 97%, Lag= 103.2 min
Discarded =	0.00 cfs @	13.64 hrs,	Volume=	0.001 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,013.14' @ 13.64 hrs Surf.Area= 91 sf Storage= 38 cf

Plug-Flow detention time= 271.0 min calculated for 0.001 af (67% of inflow)
Center-of-Mass det. time= 172.9 min (953.6 - 780.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.50'	122 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

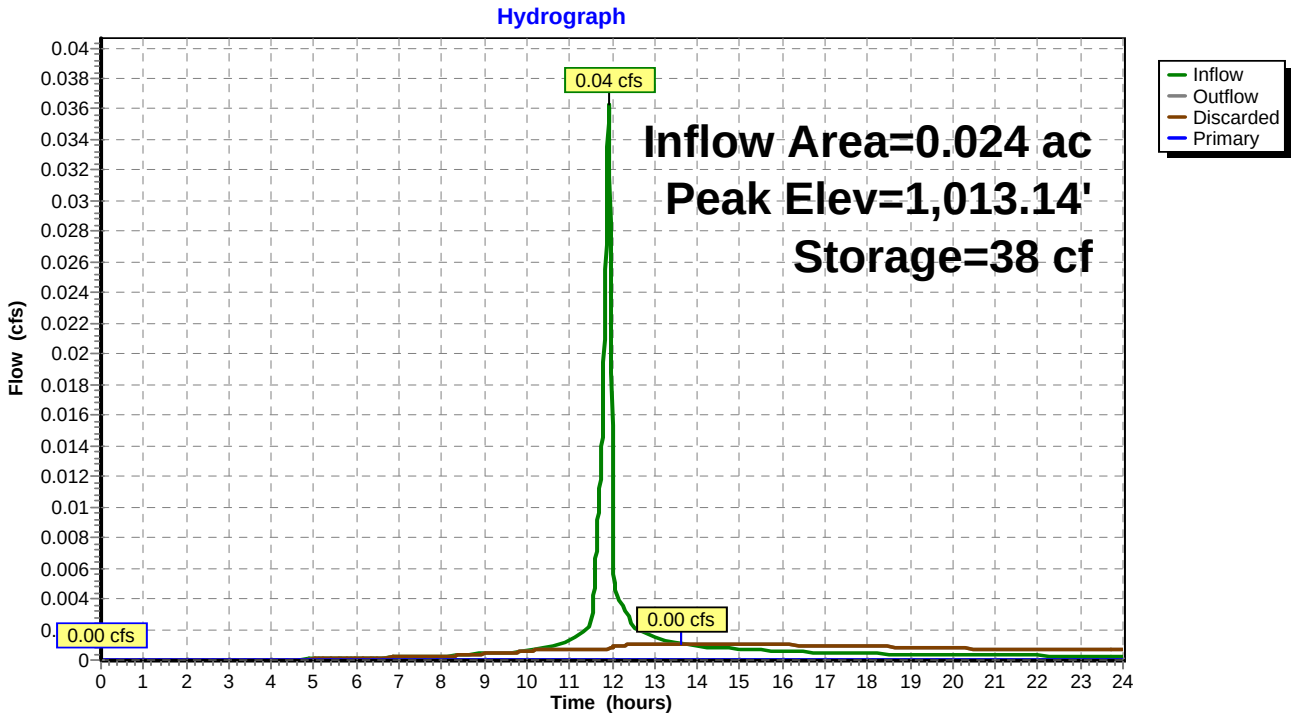
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,011.50	60	0.0	0	0
1,013.00	60	30.0	27	27
1,013.70	211	100.0	95	122

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,011.50'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,013.50'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 13.64 hrs HW=1,013.14' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,011.50' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond RG2: RG #2


Hydrograph
Inflow Area=0.024 ac
Peak Elev=1,013.14'
Storage=38 cf
0.04 cfs
0.00 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG2: RG #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,011.50	60	0
1,011.55	60	1
1,011.60	60	2
1,011.65	60	3
1,011.70	60	4
1,011.75	60	5
1,011.80	60	5
1,011.85	60	6
1,011.90	60	7
1,011.95	60	8
1,012.00	60	9
1,012.05	60	10
1,012.10	60	11
1,012.15	60	12
1,012.20	60	13
1,012.25	60	14
1,012.30	60	14
1,012.35	60	15
1,012.40	60	16
1,012.45	60	17
1,012.50	60	18
1,012.55	60	19
1,012.60	60	20
1,012.65	60	21
1,012.70	60	22
1,012.75	60	23
1,012.80	60	23
1,012.85	60	24
1,012.90	60	25
1,012.95	60	26
1,013.00	60	27
1,013.05	71	30
1,013.10	82	34
1,013.15	92	38
1,013.20	103	43
1,013.25	114	49
1,013.30	125	55
1,013.35	136	61
1,013.40	146	68
1,013.45	157	76
1,013.50	168	84
1,013.55	179	93
1,013.60	189	102
1,013.65	200	112
1,013.70	**211**	**122**

Summary for Pond RG3: RG#3

Inflow Area =	0.073 ac,100.00% Impervious, Inflow Depth > 0.79" for 1 inch event				
Inflow =	0.11 cfs @	11.92 hrs,	Volume=	0.005 af	
Outflow =	0.00 cfs @	14.87 hrs,	Volume=	0.003 af,	Atten= 98%, Lag= 176.9 min
Discarded =	0.00 cfs @	14.87 hrs,	Volume=	0.003 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,012.20' @ 14.87 hrs Surf.Area= 190 sf Storage= 130 cf

Plug-Flow detention time= 313.2 min calculated for 0.003 af (52% of inflow)
Center-of-Mass det. time= 201.9 min (982.5 - 780.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	194 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

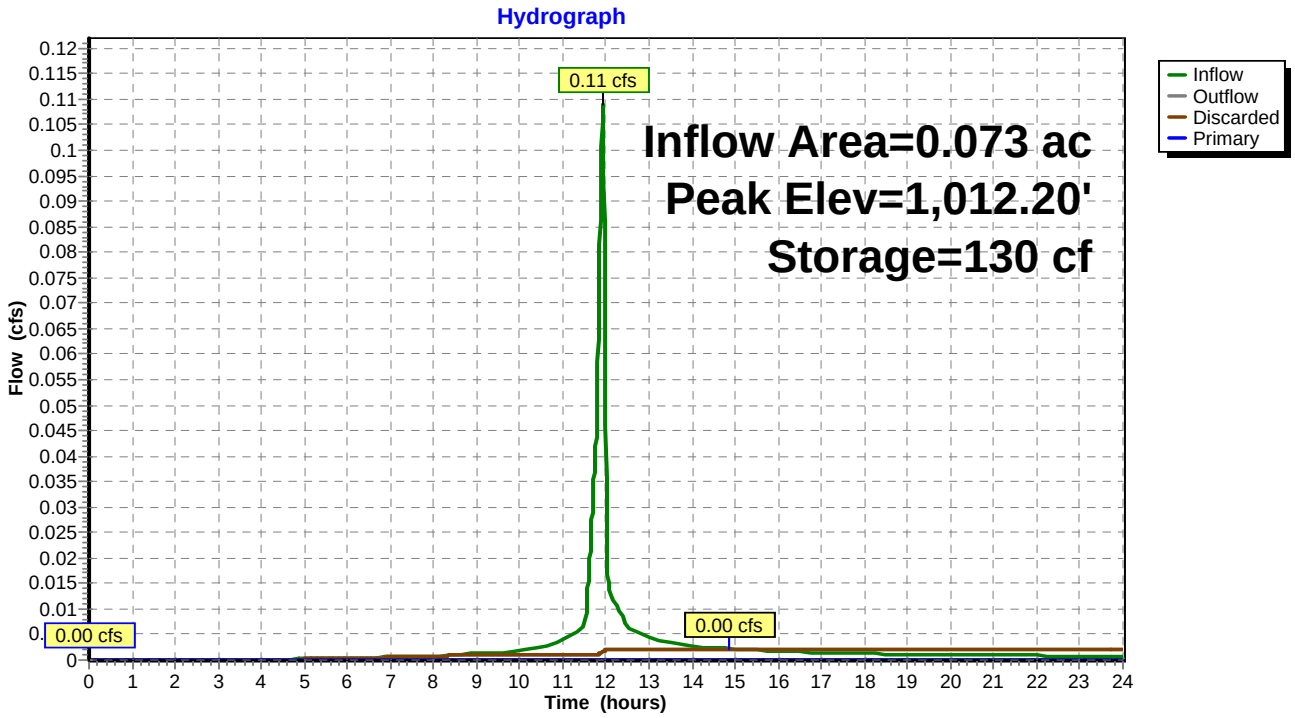
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	79	0.0	0	0
1,011.50	79	30.0	36	36
1,012.50	237	100.0	158	194

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 14.87 hrs HW=1,012.20' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,010.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond RG3: RG#3


Hydrograph
0.11 cfs
0.00 cfs
0.00 cfs
Inflow Area=0.073 ac
Peak Elev=1,012.20'
Storage=130 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG3: RG#3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	79	0
1,010.05	79	1
1,010.10	79	2
1,010.15	79	4
1,010.20	79	5
1,010.25	79	6
1,010.30	79	7
1,010.35	79	8
1,010.40	79	9
1,010.45	79	11
1,010.50	79	12
1,010.55	79	13
1,010.60	79	14
1,010.65	79	15
1,010.70	79	17
1,010.75	79	18
1,010.80	79	19
1,010.85	79	20
1,010.90	79	21
1,010.95	79	23
1,011.00	79	24
1,011.05	79	25
1,011.10	79	26
1,011.15	79	27
1,011.20	79	28
1,011.25	79	30
1,011.30	79	31
1,011.35	79	32
1,011.40	79	33
1,011.45	79	34
1,011.50	79	36
1,011.55	87	40
1,011.60	95	44
1,011.65	103	49
1,011.70	111	55
1,011.75	119	60
1,011.80	126	66
1,011.85	134	73
1,011.90	142	80
1,011.95	150	87
1,012.00	158	95
1,012.05	166	103
1,012.10	174	111
1,012.15	182	120
1,012.20	190	130
1,012.25	198	139
1,012.30	205	149
1,012.35	213	160
1,012.40	221	171
1,012.45	229	182
1,012.50	**237**	**194**

Summary for Pond RG4: RG #4

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 0.79" for 1 inch event				
Inflow =	0.04 cfs @	11.92 hrs,	Volume=	0.002 af	
Outflow =	0.00 cfs @	13.74 hrs,	Volume=	0.001 af,	Atten= 97%, Lag= 108.9 min
Discarded =	0.00 cfs @	13.74 hrs,	Volume=	0.001 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,011.39' @ 13.74 hrs Surf.Area= 87 sf Storage= 36 cf

Plug-Flow detention time= 284.0 min calculated for 0.001 af (78% of inflow)
Center-of-Mass det. time= 200.4 min (981.0 - 780.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	196 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

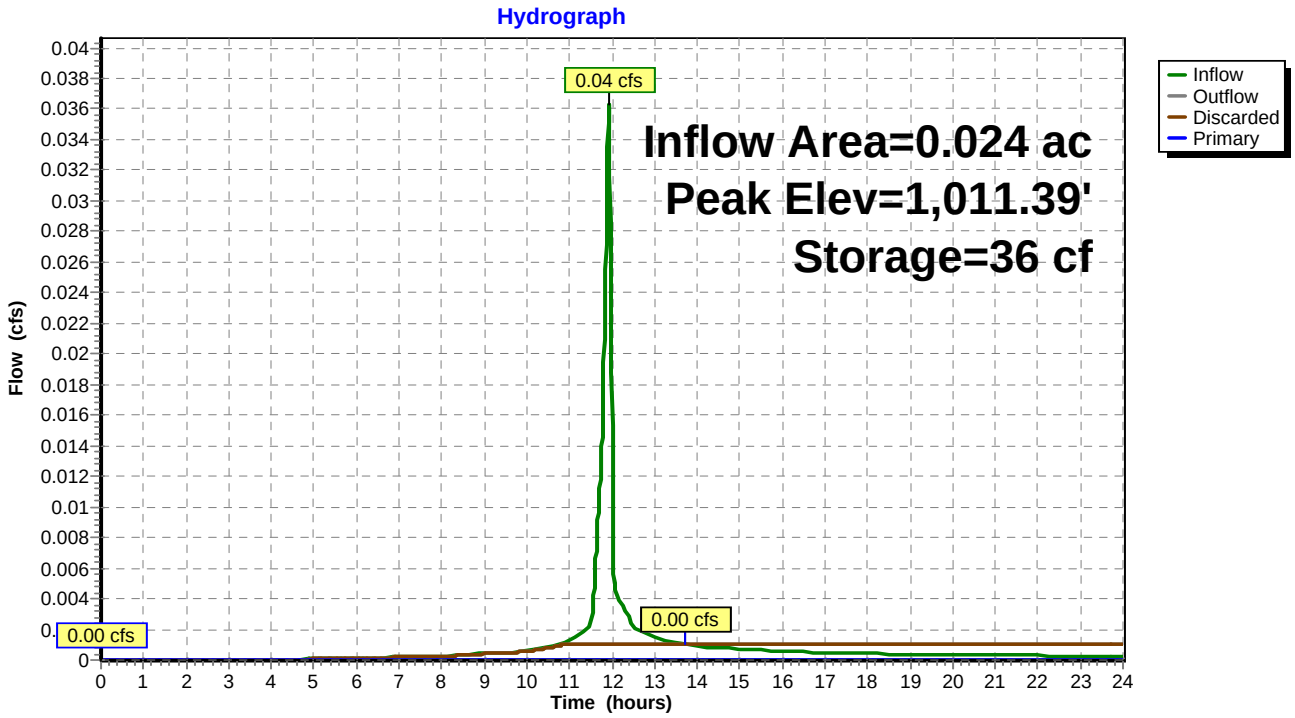
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	87	0.0	0	0
1,011.50	87	30.0	39	39
1,012.50	226	100.0	157	196

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 13.74 hrs HW=1,011.39' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,010.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond RG4: RG #4


Hydrograph
Inflow Area=0.024 ac
Peak Elev=1,011.39'
Storage=36 cf
0.04 cfs
0.00 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG4: RG #4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	87	0
1,010.05	87	1
1,010.10	87	3
1,010.15	87	4
1,010.20	87	5
1,010.25	87	7
1,010.30	87	8
1,010.35	87	9
1,010.40	87	10
1,010.45	87	12
1,010.50	87	13
1,010.55	87	14
1,010.60	87	16
1,010.65	87	17
1,010.70	87	18
1,010.75	87	20
1,010.80	87	21
1,010.85	87	22
1,010.90	87	23
1,010.95	87	25
1,011.00	87	26
1,011.05	87	27
1,011.10	87	29
1,011.15	87	30
1,011.20	87	31
1,011.25	87	33
1,011.30	87	34
1,011.35	87	35
1,011.40	87	37
1,011.45	87	38
1,011.50	87	39
1,011.55	94	44
1,011.60	101	49
1,011.65	108	54
1,011.70	115	59
1,011.75	122	65
1,011.80	129	72
1,011.85	136	78
1,011.90	143	85
1,011.95	150	92
1,012.00	157	100
1,012.05	163	108
1,012.10	170	116
1,012.15	177	125
1,012.20	184	134
1,012.25	191	143
1,012.30	198	153
1,012.35	205	163
1,012.40	212	174
1,012.45	219	185
1,012.50	**226**	**196**

Summary for Pond RG5: RG #5

Inflow Area =	0.049 ac,100.00% Impervious, Inflow Depth > 0.79" for 1 inch event				
Inflow =	0.07 cfs @	11.92 hrs,	Volume=	0.003 af	
Outflow =	0.00 cfs @	13.78 hrs,	Volume=	0.002 af,	Atten= 97%, Lag= 111.5 min
Discarded =	0.00 cfs @	13.78 hrs,	Volume=	0.002 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,011.55' @ 13.78 hrs Surf.Area= 131 sf Storage= 81 cf

Plug-Flow detention time= 302.3 min calculated for 0.002 af (65% of inflow)
Center-of-Mass det. time= 202.4 min (983.0 - 780.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	153 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

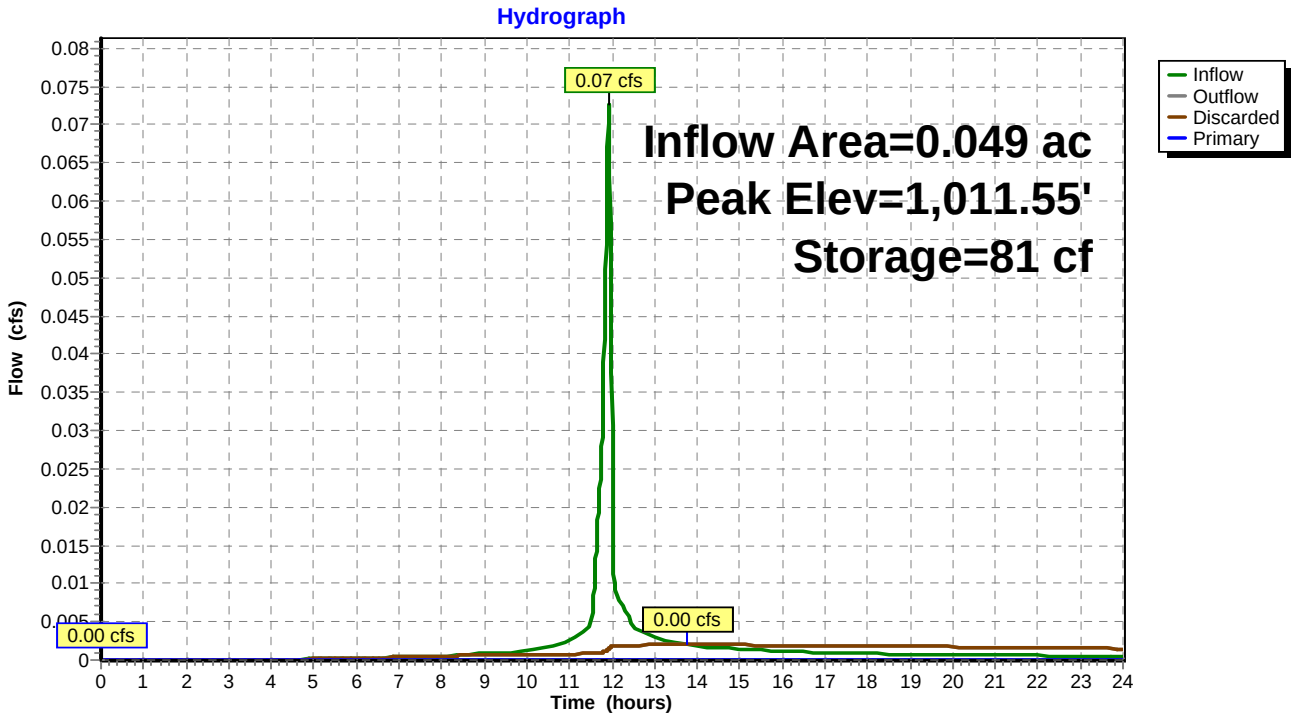
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.50	62	0.0	0	0
1,011.00	62	30.0	28	28
1,012.00	188	100.0	125	153

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.50'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1,006.00'
#2	Primary	1,011.80'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 13.78 hrs HW=1,011.55' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,009.50' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond RG5: RG #5


Hydrograph
Inflow
Outflow
Discarded
Primary
0.07 cfs
0.00 cfs
0.00 cfs
Inflow Area=0.049 ac
Peak Elev=1,011.55'
Storage=81 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG5: RG #5

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.50	62	0
1,009.55	62	1
1,009.60	62	2
1,009.65	62	3
1,009.70	62	4
1,009.75	62	5
1,009.80	62	6
1,009.85	62	7
1,009.90	62	7
1,009.95	62	8
1,010.00	62	9
1,010.05	62	10
1,010.10	62	11
1,010.15	62	12
1,010.20	62	13
1,010.25	62	14
1,010.30	62	15
1,010.35	62	16
1,010.40	62	17
1,010.45	62	18
1,010.50	62	19
1,010.55	62	20
1,010.60	62	20
1,010.65	62	21
1,010.70	62	22
1,010.75	62	23
1,010.80	62	24
1,010.85	62	25
1,010.90	62	26
1,010.95	62	27
1,011.00	62	28
1,011.05	68	31
1,011.10	75	35
1,011.15	81	39
1,011.20	87	43
1,011.25	94	47
1,011.30	100	52
1,011.35	106	57
1,011.40	112	63
1,011.45	119	69
1,011.50	125	75
1,011.55	131	81
1,011.60	138	88
1,011.65	144	95
1,011.70	150	102
1,011.75	157	110
1,011.80	163	118
1,011.85	169	126
1,011.90	175	135
1,011.95	182	144
1,012.00	**188**	**153**

Summary for Pond RG6: RG #6

Inflow Area =	0.100 ac,100.00% Impervious, Inflow Depth > 0.21" for 1 inch event				
Inflow =	0.04 cfs @	11.92 hrs,	Volume=	0.002 af	
Outflow =	0.00 cfs @	13.86 hrs,	Volume=	0.001 af,	Atten= 97%, Lag= 115.9 min
Discarded =	0.00 cfs @	13.86 hrs,	Volume=	0.001 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,010.61' @ 13.86 hrs Surf.Area= 92 sf Storage= 41 cf

Plug-Flow detention time= 287.0 min calculated for 0.001 af (73% of inflow)
Center-of-Mass det. time= 195.7 min (976.4 - 780.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.10'	202 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

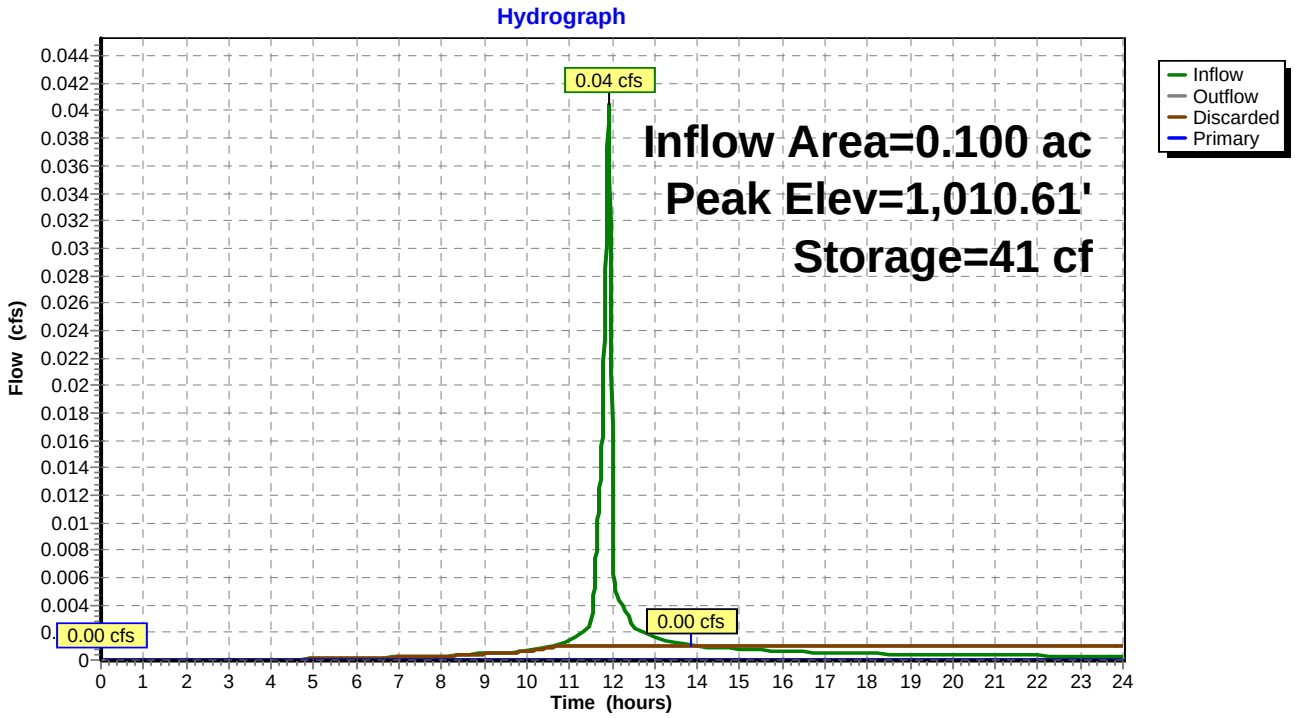
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.10	90	0.0	0	0
1,010.60	90	30.0	41	41
1,011.50	270	100.0	162	202

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.10'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,011.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 13.86 hrs HW=1,010.61' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,009.10' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond RG6: RG #6


Hydrograph
Inflow
Outflow
Discarded
Primary
0.04 cfs
0.00 cfs
0.00 cfs
Inflow Area=0.100 ac
Peak Elev=1,010.61'
Storage=41 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG6: RG #6

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.10	90	0
1,009.15	90	1
1,009.20	90	3
1,009.25	90	4
1,009.30	90	5
1,009.35	90	7
1,009.40	90	8
1,009.45	90	9
1,009.50	90	11
1,009.55	90	12
1,009.60	90	14
1,009.65	90	15
1,009.70	90	16
1,009.75	90	18
1,009.80	90	19
1,009.85	90	20
1,009.90	90	22
1,009.95	90	23
1,010.00	90	24
1,010.05	90	26
1,010.10	90	27
1,010.15	90	28
1,010.20	90	30
1,010.25	90	31
1,010.30	90	32
1,010.35	90	34
1,010.40	90	35
1,010.45	90	36
1,010.50	90	38
1,010.55	90	39
1,010.60	90	41
1,010.65	100	45
1,010.70	110	51
1,010.75	120	56
1,010.80	130	63
1,010.85	140	69
1,010.90	150	76
1,010.95	160	84
1,011.00	170	92
1,011.05	180	101
1,011.10	190	111
1,011.15	200	120
1,011.20	210	131
1,011.25	220	141
1,011.30	230	153
1,011.35	240	164
1,011.40	250	176
1,011.45	260	189
1,011.50	**270**	**202**

Summary for Pond RG7: RG #7

Inflow Area =	0.047 ac,100.00% Impervious, Inflow Depth > 0.38" for 1 inch event				
Inflow =	0.03 cfs @	11.92 hrs,	Volume=	0.002 af	
Outflow =	0.00 cfs @	12.54 hrs,	Volume=	0.002 af,	Atten= 94%, Lag= 37.0 min
Discarded =	0.00 cfs @	12.54 hrs,	Volume=	0.002 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,010.57' @ 12.54 hrs Surf.Area= 165 sf Storage= 28 cf

Plug-Flow detention time= 113.8 min calculated for 0.002 af (100% of inflow)
Center-of-Mass det. time= 112.2 min (892.8 - 780.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	335 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

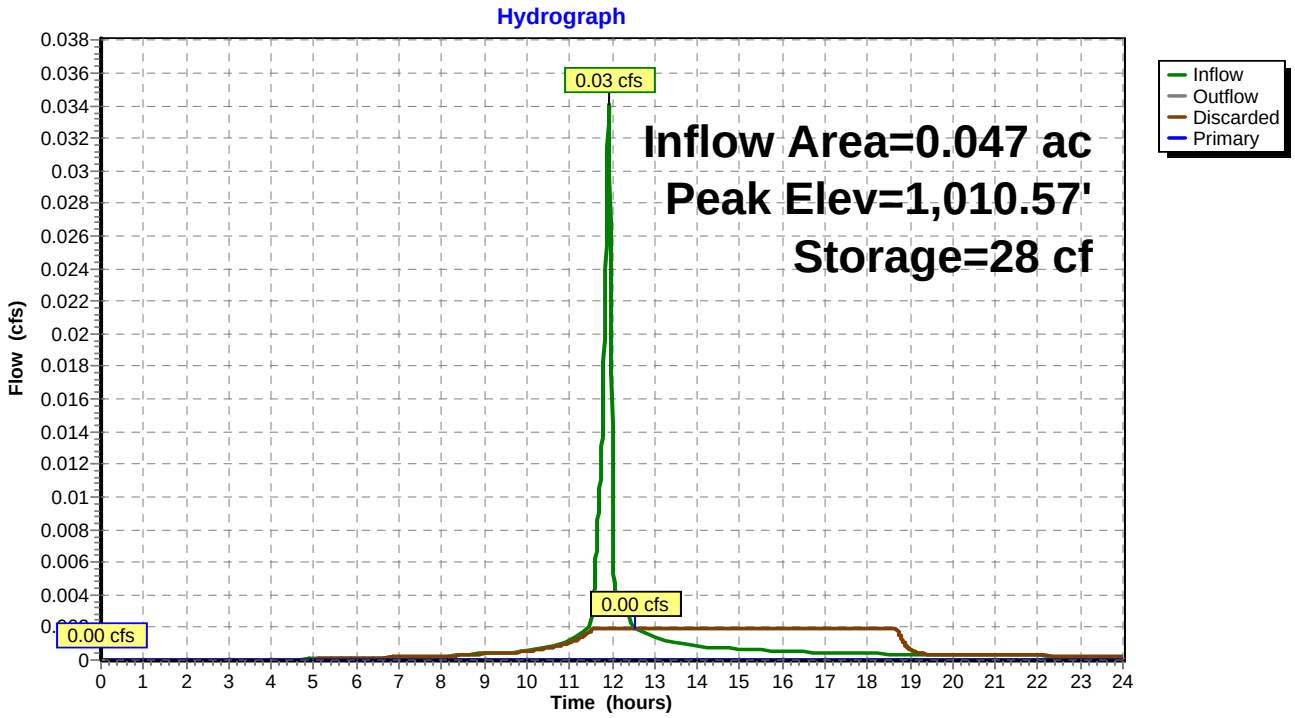
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	165	0.0	0	0
1,011.50	165	30.0	74	74
1,012.50	356	100.0	261	335

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 12.54 hrs HW=1,010.57' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,010.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond RG7: RG #7


Hydrograph
Inflow
Outflow
Discarded
Primary
0.03 cfs
0.00 cfs
0.00 cfs
Inflow Area=0.047 ac
Peak Elev=1,010.57'
Storage=28 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG7: RG #7

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	165	0
1,010.05	165	2
1,010.10	165	5
1,010.15	165	7
1,010.20	165	10
1,010.25	165	12
1,010.30	165	15
1,010.35	165	17
1,010.40	165	20
1,010.45	165	22
1,010.50	165	25
1,010.55	165	27
1,010.60	165	30
1,010.65	165	32
1,010.70	165	35
1,010.75	165	37
1,010.80	165	40
1,010.85	165	42
1,010.90	165	45
1,010.95	165	47
1,011.00	165	50
1,011.05	165	52
1,011.10	165	54
1,011.15	165	57
1,011.20	165	59
1,011.25	165	62
1,011.30	165	64
1,011.35	165	67
1,011.40	165	69
1,011.45	165	72
1,011.50	165	74
1,011.55	175	83
1,011.60	184	92
1,011.65	194	101
1,011.70	203	111
1,011.75	213	121
1,011.80	222	132
1,011.85	232	144
1,011.90	241	156
1,011.95	251	168
1,012.00	261	181
1,012.05	270	194
1,012.10	280	208
1,012.15	289	222
1,012.20	299	237
1,012.25	308	252
1,012.30	318	267
1,012.35	327	283
1,012.40	337	300
1,012.45	346	317
1,012.50	**356**	**335**

Summary for Pond RG8: RG #8

Inflow Area = 0.100 ac,100.00% Impervious, Inflow Depth = 0.00" for 1 inch event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,009.10' @ 0.00 hrs Surf.Area= 102 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.10'	212 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

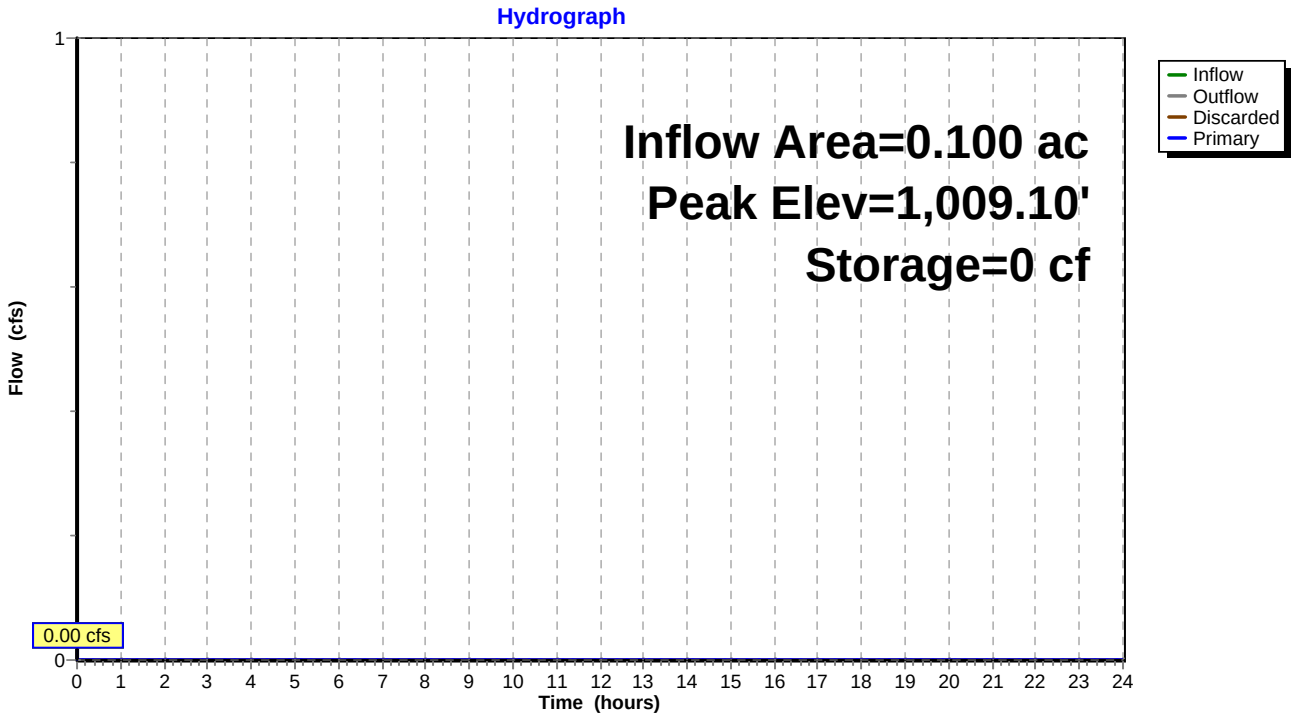
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.10	102	0.0	0	0
1,010.60	102	30.0	46	46
1,011.50	267	100.0	166	212

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.10'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,010.80'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,009.10' (Free Discharge)
└**1=Exfiltration** (Passes 0.00 cfs of 0.00 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,009.10' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond RG8: RG #8


Hydrograph
Inflow Area=0.100 ac
Peak Elev=1,009.10'
Storage=0 cf
Inflow
Outflow
Discarded
Primary
0.00 cfs
Flow (cfs)
Time (hours)
1
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Area-Storage for Pond RG8: RG #8

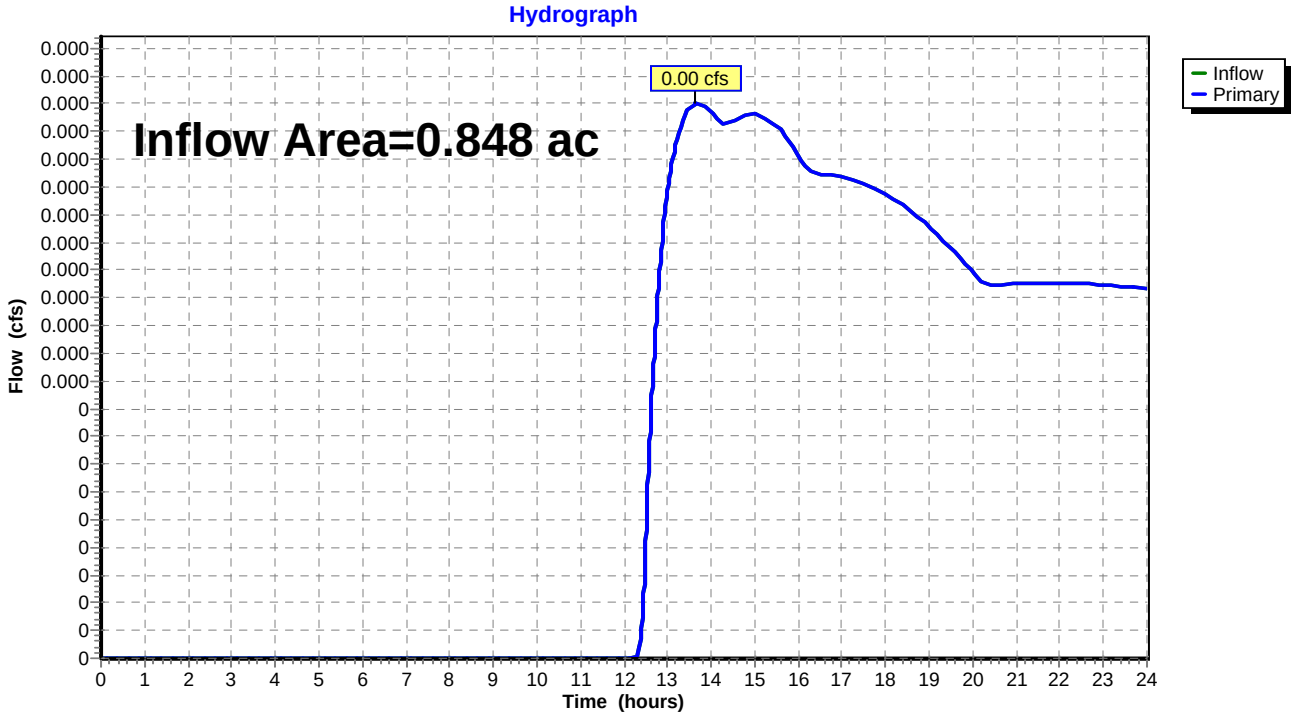
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.10	102	0
1,009.15	102	2
1,009.20	102	3
1,009.25	102	5
1,009.30	102	6
1,009.35	102	8
1,009.40	102	9
1,009.45	102	11
1,009.50	102	12
1,009.55	102	14
1,009.60	102	15
1,009.65	102	17
1,009.70	102	18
1,009.75	102	20
1,009.80	102	21
1,009.85	102	23
1,009.90	102	24
1,009.95	102	26
1,010.00	102	28
1,010.05	102	29
1,010.10	102	31
1,010.15	102	32
1,010.20	102	34
1,010.25	102	35
1,010.30	102	37
1,010.35	102	38
1,010.40	102	40
1,010.45	102	41
1,010.50	102	43
1,010.55	102	44
1,010.60	102	46
1,010.65	111	51
1,010.70	120	57
1,010.75	129	63
1,010.80	139	70
1,010.85	148	77
1,010.90	157	85
1,010.95	166	93
1,011.00	175	101
1,011.05	185	110
1,011.10	194	120
1,011.15	203	130
1,011.20	212	140
1,011.25	221	151
1,011.30	230	162
1,011.35	240	174
1,011.40	249	186
1,011.45	258	199
1,011.50	**267**	**212**

Summary for Link Q: Site Discharge

Inflow Area = 0.848 ac, 28.93% Impervious, Inflow Depth > 0.00" for 1 inch event
Inflow = 0.00 cfs @ 13.64 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 13.64 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Q: Site Discharge



Summary for Subcatchment 1:

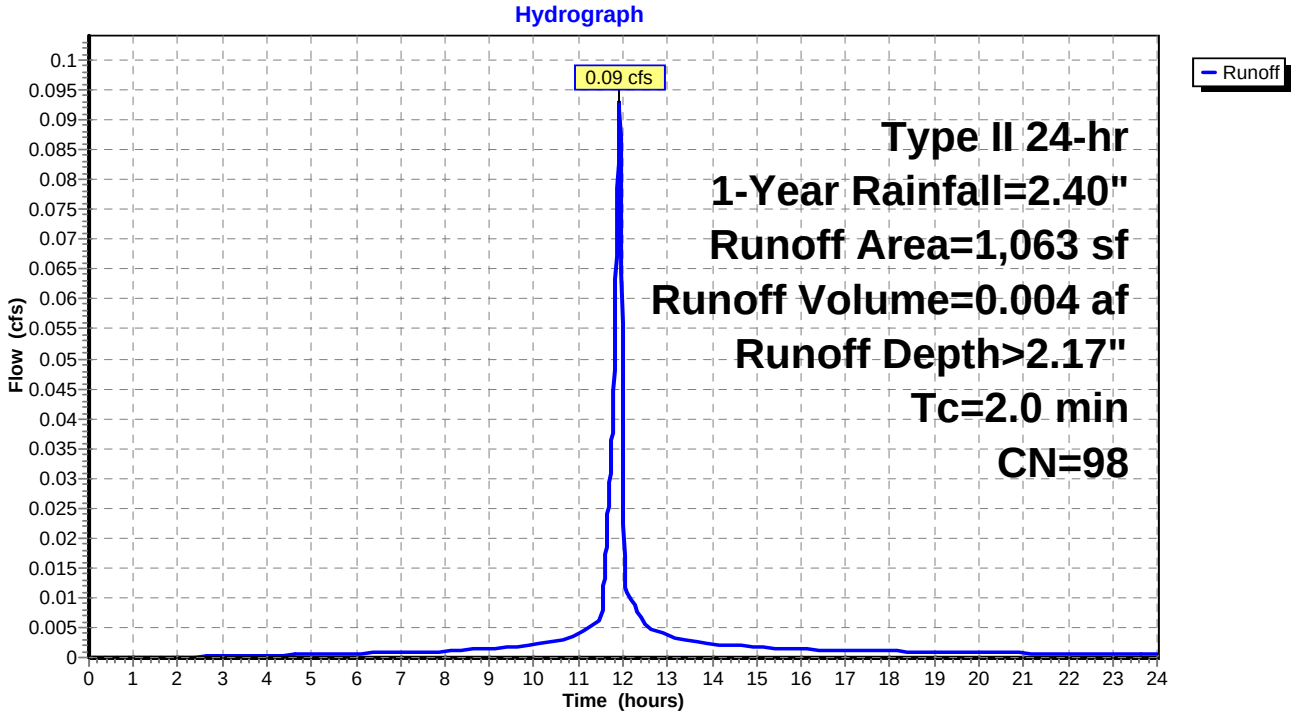
Runoff = 0.09 cfs @ 11.92 hrs, Volume= 0.004 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.40"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 1:



Summary for Subcatchment 2:

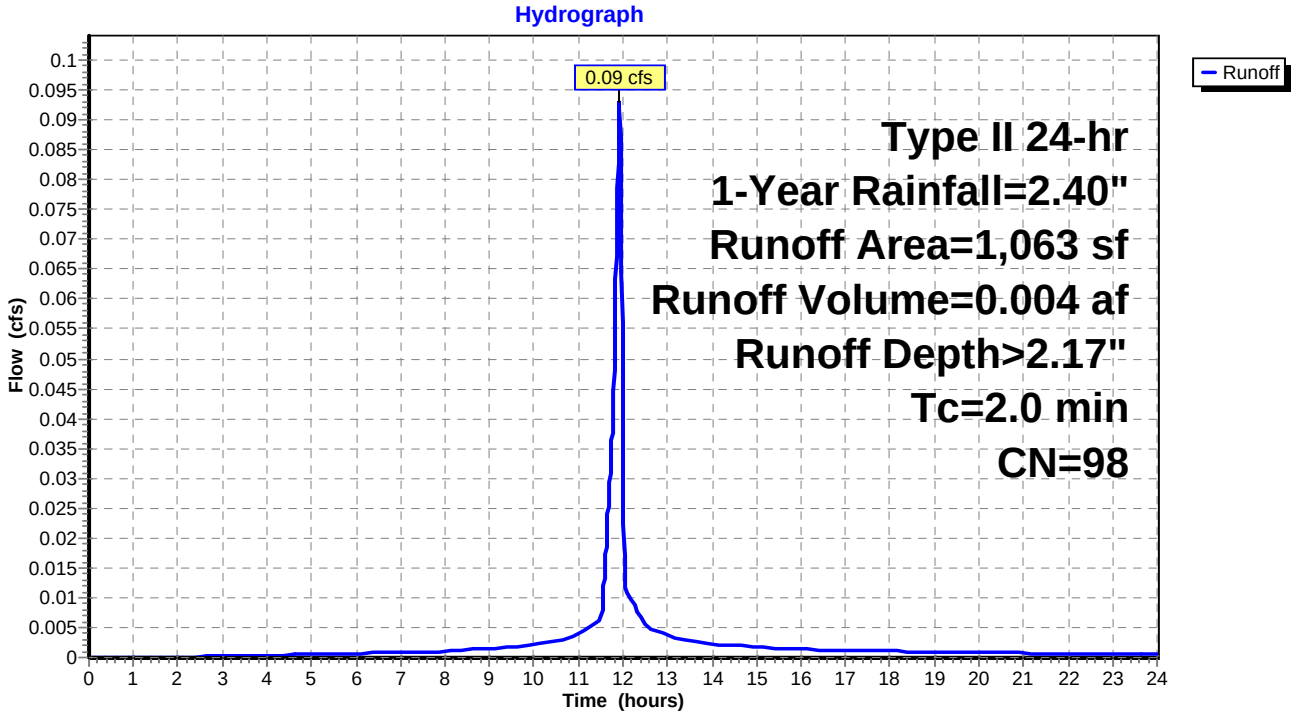
Runoff = 0.09 cfs @ 11.92 hrs, Volume= 0.004 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.40"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 2:



Summary for Subcatchment 3:

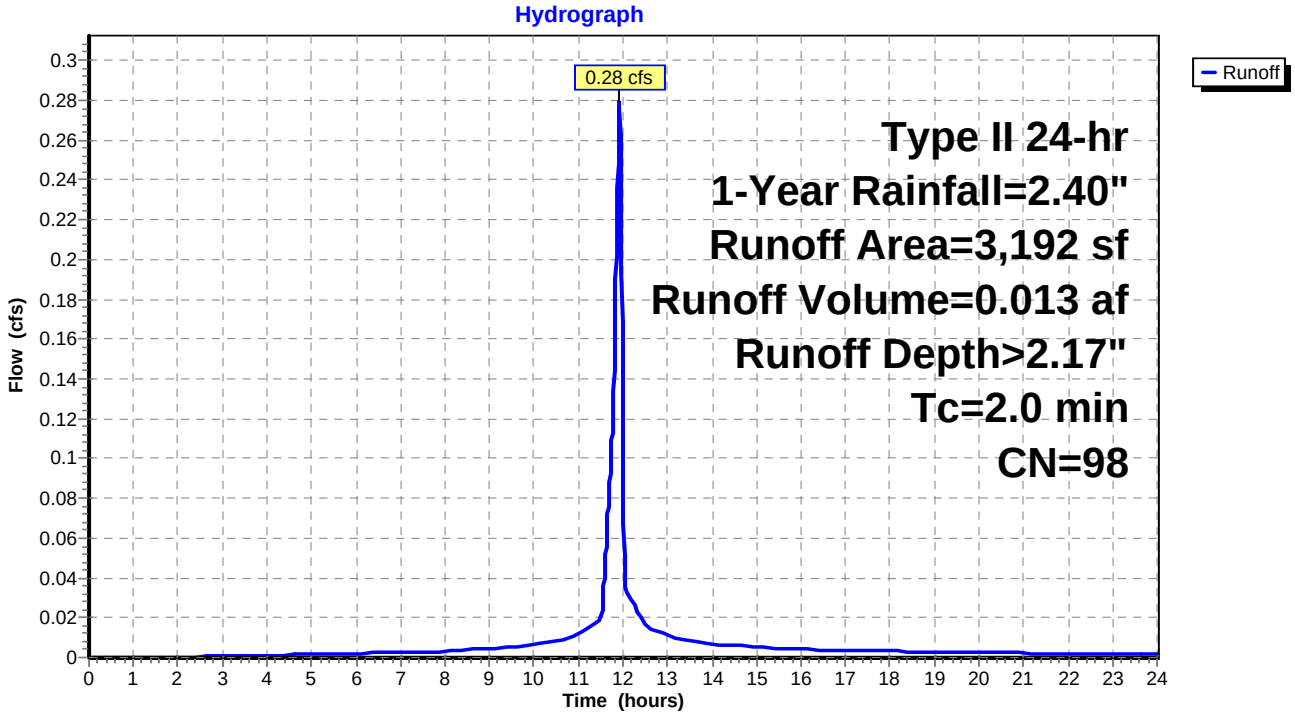
Runoff = 0.28 cfs @ 11.92 hrs, Volume= 0.013 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.40"

	Area (sf)	CN	Description
*	3,192	98	
	3,192		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 3:



Summary for Subcatchment 4:

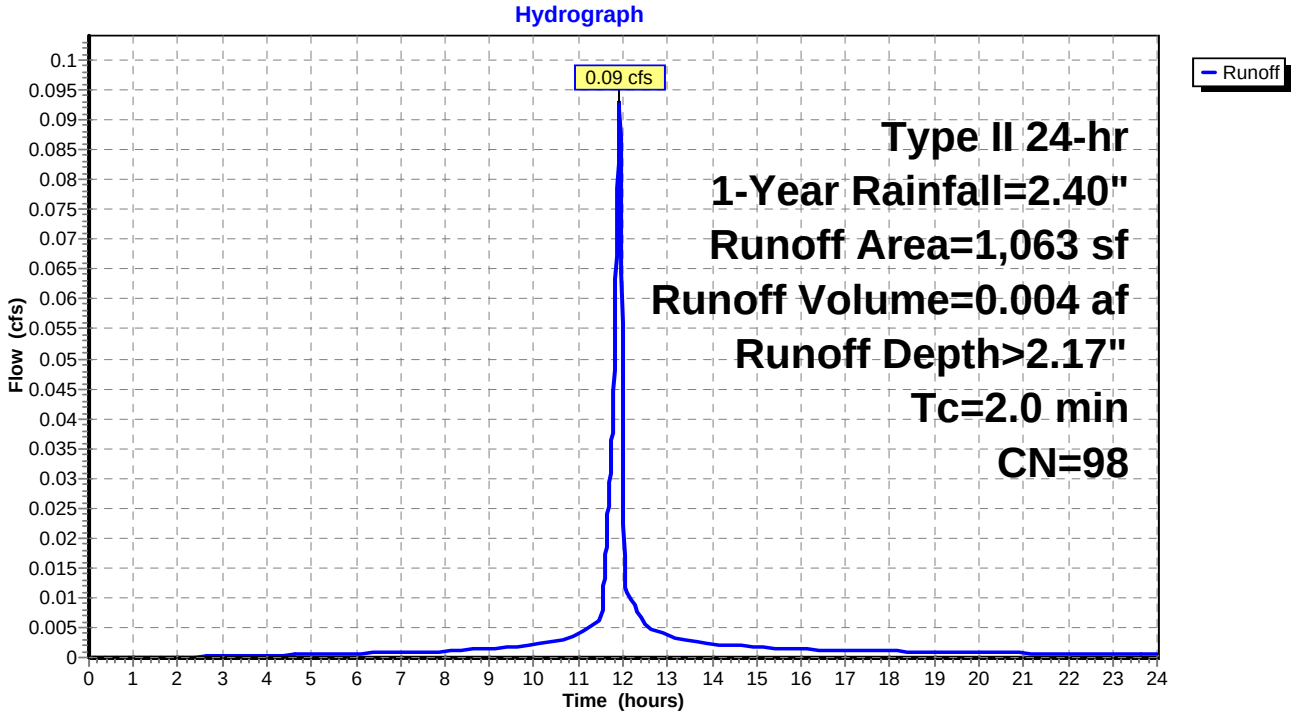
Runoff = 0.09 cfs @ 11.92 hrs, Volume= 0.004 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.40"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 4:



Summary for Subcatchment 5:

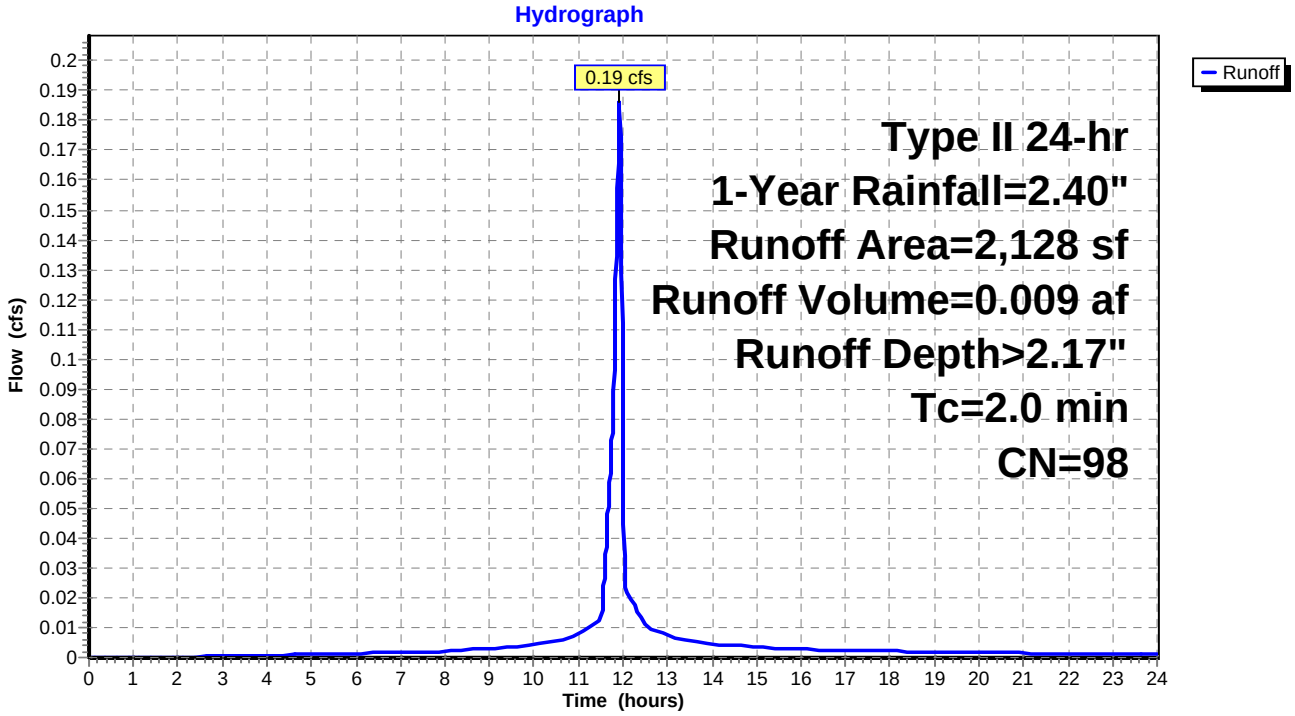
Runoff = 0.19 cfs @ 11.92 hrs, Volume= 0.009 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.40"

	Area (sf)	CN	Description
*	2,128	98	
	2,128		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 5:



Summary for Subcatchment 6:

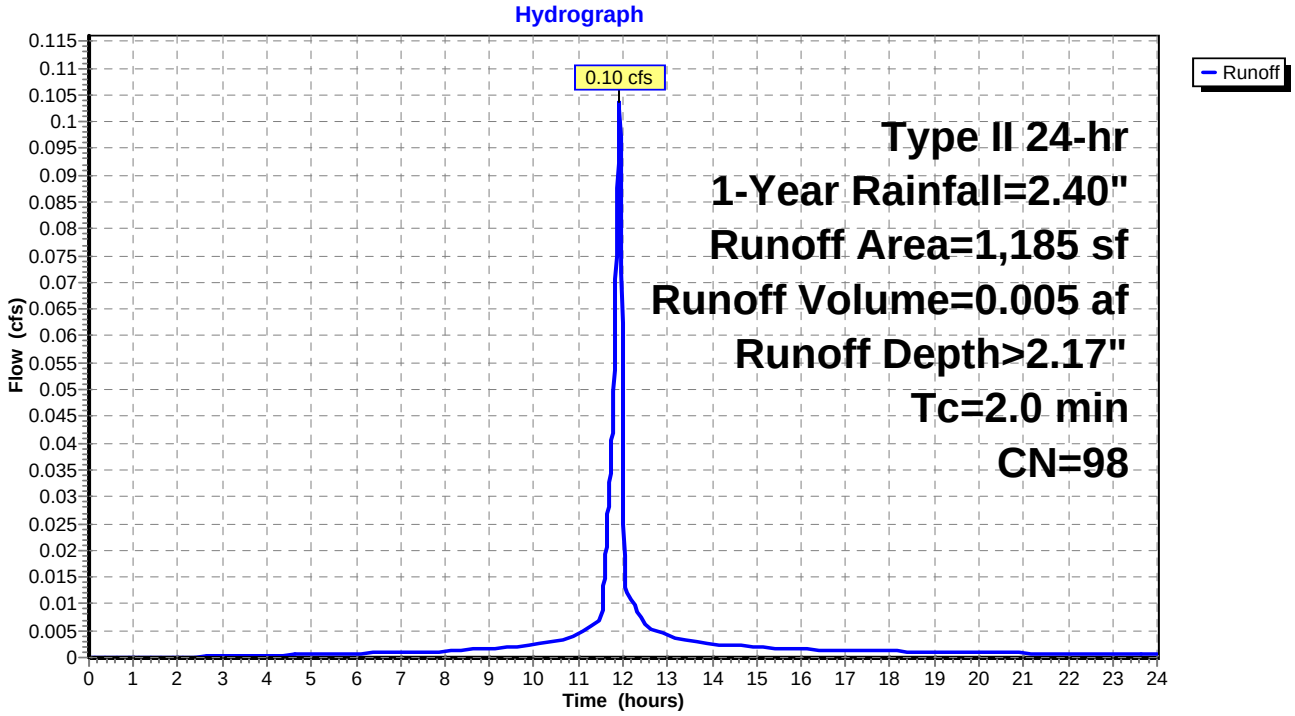
Runoff = 0.10 cfs @ 11.92 hrs, Volume= 0.005 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.40"

	Area (sf)	CN	Description
*	1,185	98	
	1,185		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 6:



Summary for Subcatchment 7:

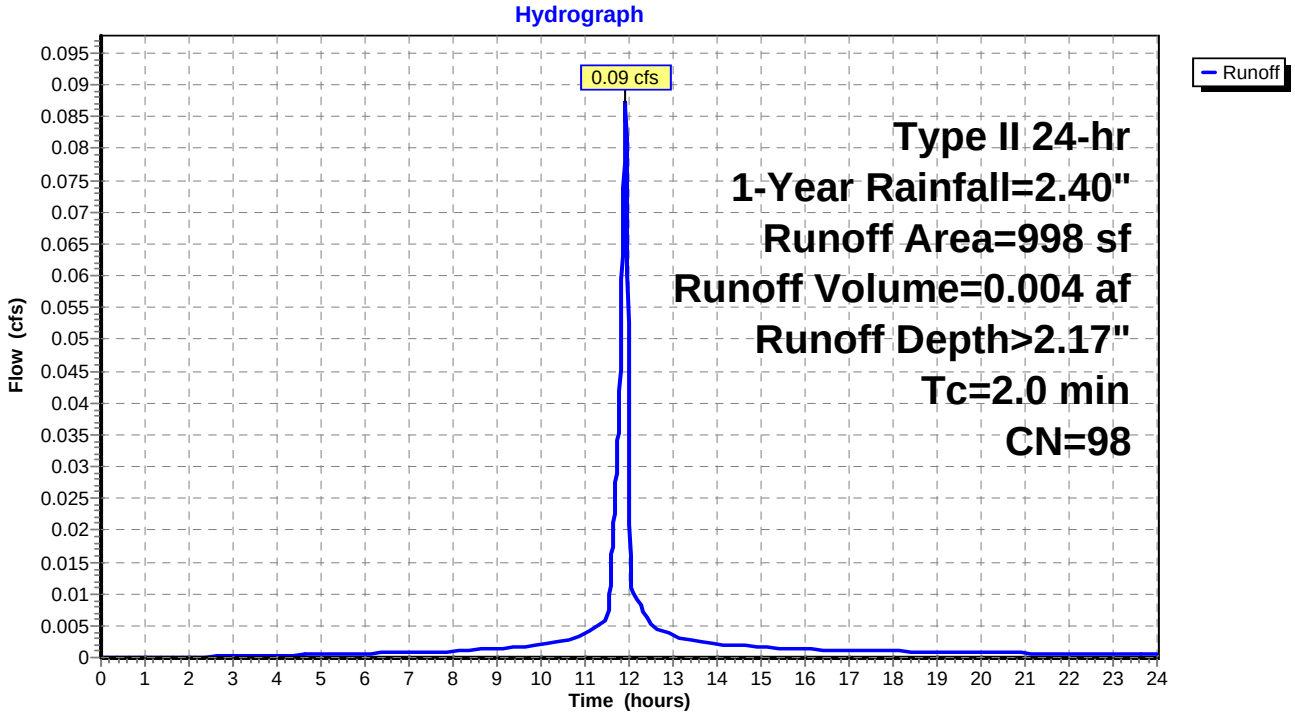
Runoff = 0.09 cfs @ 11.92 hrs, Volume= 0.004 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.40"

	Area (sf)	CN	Description
*	998	98	
	998		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 7:



Summary for Subcatchment 8:

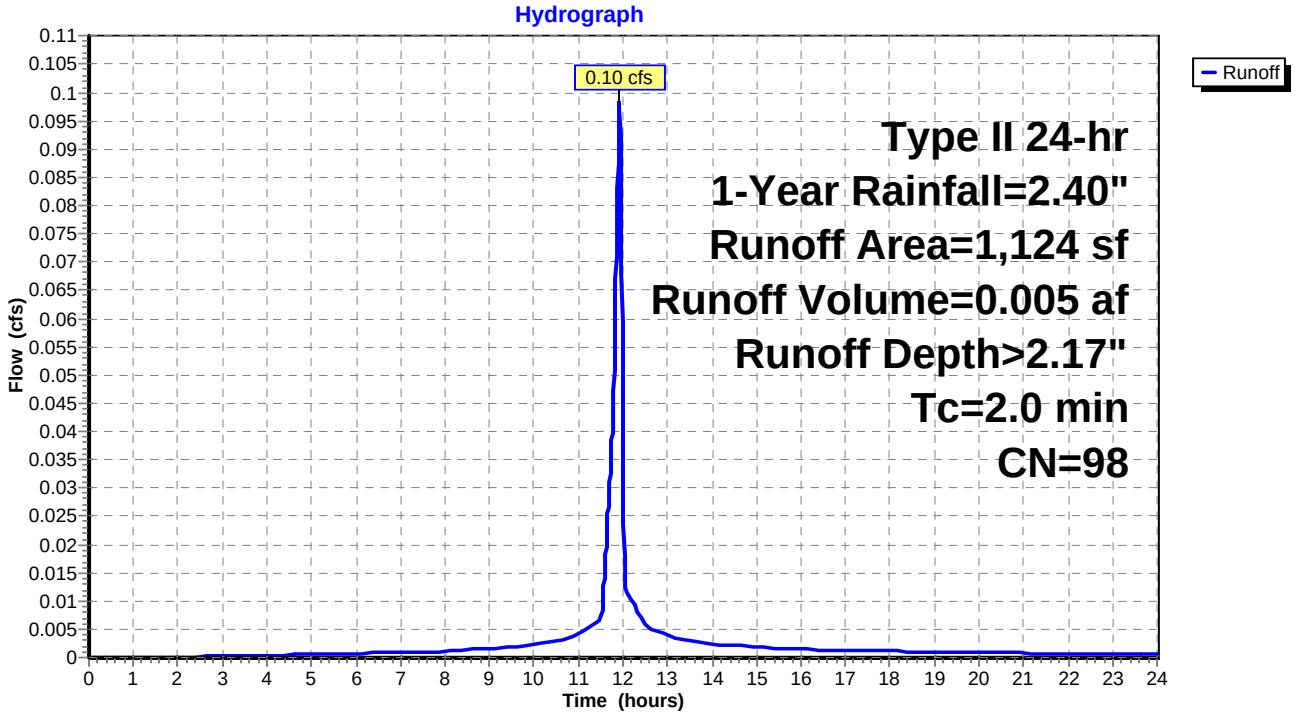
Runoff = 0.10 cfs @ 11.92 hrs, Volume= 0.005 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.40"

	Area (sf)	CN	Description
*	1,124	98	
	1,124		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 8:



Summary for Subcatchment dd: Post

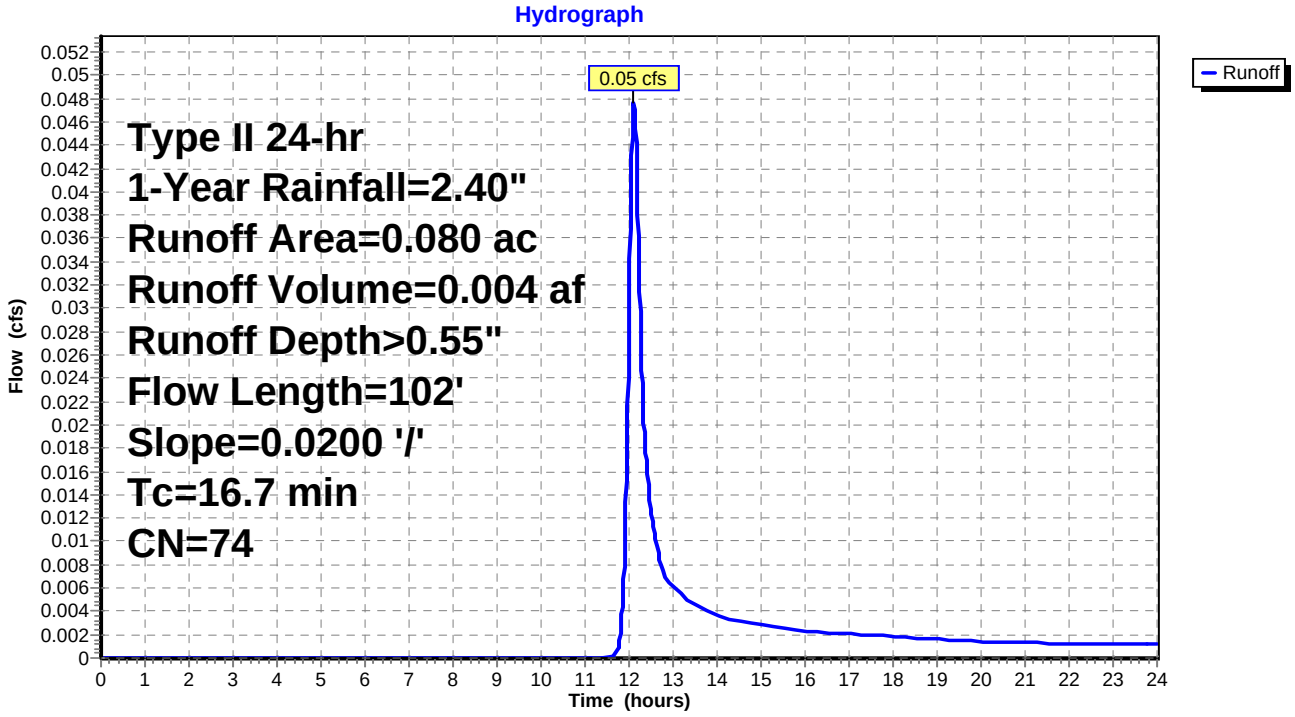
Runoff = 0.05 cfs @ 12.11 hrs, Volume= 0.004 af, Depth> 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.40"

Area (ac)	CN	Description
0.080	74	>75% Grass cover, Good, HSG C
0.080		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	102	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment dd: Post



Summary for Subcatchment pst: Post

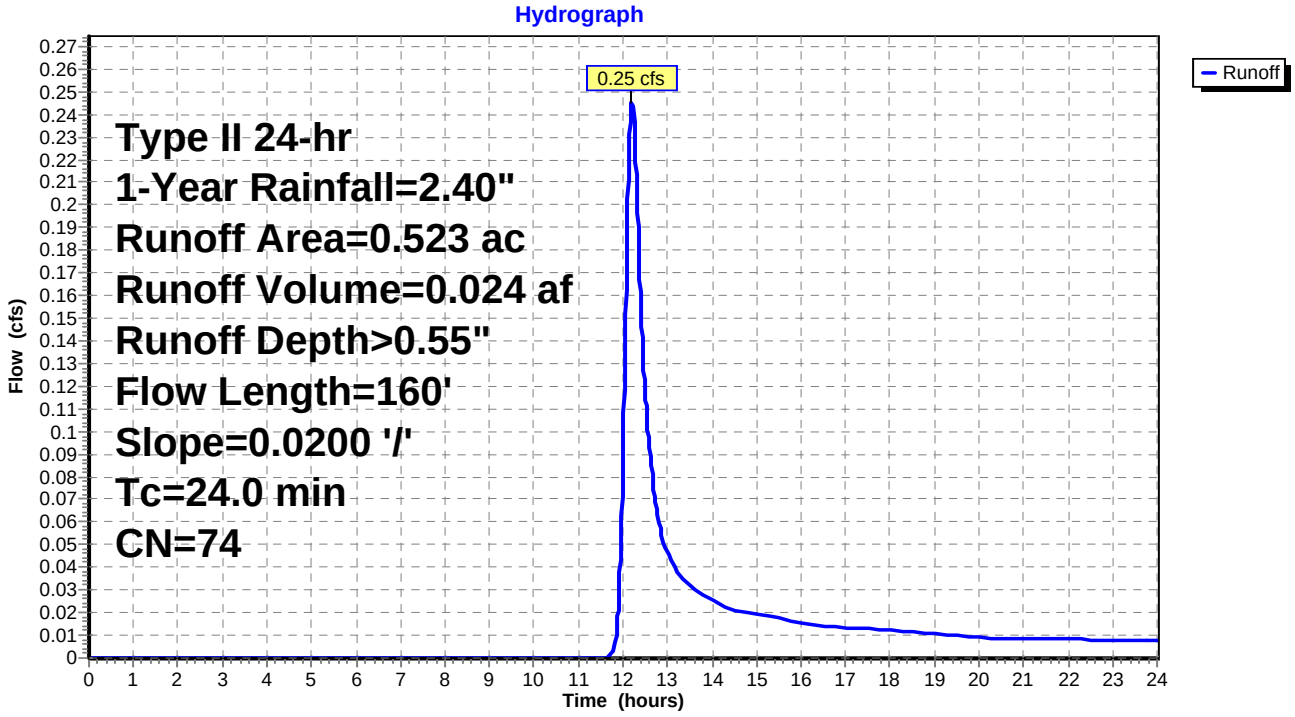
Runoff = 0.25 cfs @ 12.19 hrs, Volume= 0.024 af, Depth> 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.40"

Area (ac)	CN	Description
0.523	74	>75% Grass cover, Good, HSG C
0.523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	160	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment pst: Post



Summary for Pond 9P: Bio-swale

Inflow Area =	0.671 ac, 22.03% Impervious, Inflow Depth > 0.45" for 1-Year event				
Inflow =	0.28 cfs @	12.19 hrs, Volume=	0.025 af		
Outflow =	0.10 cfs @	12.64 hrs, Volume=	0.016 af, Atten= 66%, Lag= 26.7 min		
Discarded =	0.01 cfs @	12.64 hrs, Volume=	0.005 af		
Primary =	0.09 cfs @	12.64 hrs, Volume=	0.011 af		

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,010.79' @ 12.64 hrs Surf.Area= 460 sf Storage= 411 cf

Plug-Flow detention time= 208.0 min calculated for 0.016 af (64% of inflow)
Center-of-Mass det. time= 85.1 min (968.3 - 883.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.00'	515 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

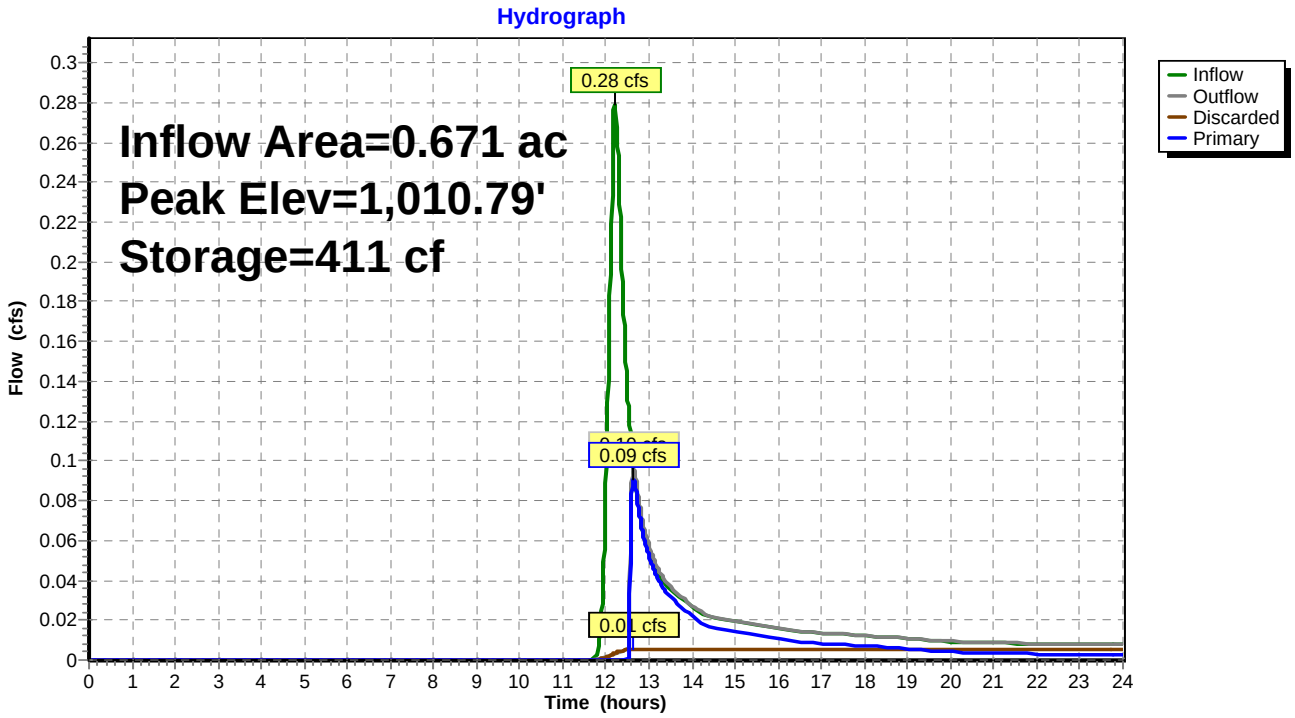
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.00	0	0	0
1,011.00	515	515	515

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,010.75'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.01 cfs @ 12.64 hrs HW=1,010.79' (Free Discharge)
└**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.09 cfs @ 12.64 hrs HW=1,010.79' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.48 fps)

Pond 9P: Bio-swale



Stage-Area-Storage for Pond 9P: Bio-swale

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.00	0	0
1,009.02	5	0
1,009.04	10	0
1,009.06	15	0
1,009.08	21	1
1,009.10	26	1
1,009.12	31	2
1,009.14	36	3
1,009.16	41	3
1,009.18	46	4
1,009.20	52	5
1,009.22	57	6
1,009.24	62	7
1,009.26	67	9
1,009.28	72	10
1,009.30	77	12
1,009.32	82	13
1,009.34	88	15
1,009.36	93	17
1,009.38	98	19
1,009.40	103	21
1,009.42	108	23
1,009.44	113	25
1,009.46	118	27
1,009.48	124	30
1,009.50	129	32
1,009.52	134	35
1,009.54	139	38
1,009.56	144	40
1,009.58	149	43
1,009.60	155	46
1,009.62	160	49
1,009.64	165	53
1,009.66	170	56
1,009.68	175	60
1,009.70	180	63
1,009.72	185	67
1,009.74	191	71
1,009.76	196	74
1,009.78	201	78
1,009.80	206	82
1,009.82	211	87
1,009.84	216	91
1,009.86	221	95
1,009.88	227	100
1,009.90	232	104
1,009.92	237	109
1,009.94	242	114
1,009.96	247	119
1,009.98	252	124
1,010.00	258	129
1,010.02	263	134
1,010.04	268	139
1,010.06	273	145
1,010.08	278	150
1,010.10	283	156
1,010.12	288	162
1,010.14	294	167
1,010.16	299	173
1,010.18	304	179
1,010.20	309	185
1,010.22	314	192
1,010.24	319	198
1,010.26	324	204
1,010.28	330	211
1,010.30	335	218
1,010.32	340	224
1,010.34	345	231
1,010.36	350	238
1,010.38	355	245
1,010.40	360	252
1,010.42	366	260
1,010.44	371	267
1,010.46	376	274
1,010.48	381	282
1,010.50	386	290
1,010.52	391	297
1,010.54	397	305
1,010.56	402	313
1,010.58	407	321
1,010.60	412	330
1,010.62	417	338
1,010.64	422	346
1,010.66	427	355
1,010.68	433	363
1,010.70	438	372
1,010.72	443	381
1,010.74	448	390
1,010.76	453	399
1,010.78	458	408
1,010.80	463	417
1,010.82	469	426
1,010.84	474	436
1,010.86	479	445
1,010.88	484	455
1,010.90	489	465
1,010.92	494	475
1,010.94	500	485
1,010.96	505	495
1,010.98	510	505
1,011.00	**515**	**515**

Summary for Pond RG1: RG #1

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 2.17" for 1-Year event				
Inflow =	0.09 cfs @	11.92 hrs,	Volume=	0.004 af	
Outflow =	0.07 cfs @	11.96 hrs,	Volume=	0.003 af,	Atten= 20%, Lag= 2.2 min
Discarded =	0.00 cfs @	11.96 hrs,	Volume=	0.002 af	
Primary =	0.07 cfs @	11.96 hrs,	Volume=	0.001 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,014.03' @ 11.96 hrs Surf.Area= 181 sf Storage= 78 cf

Plug-Flow detention time= 198.2 min calculated for 0.003 af (75% of inflow)
Center-of-Mass det. time= 109.9 min (865.1 - 755.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,012.20'	113 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

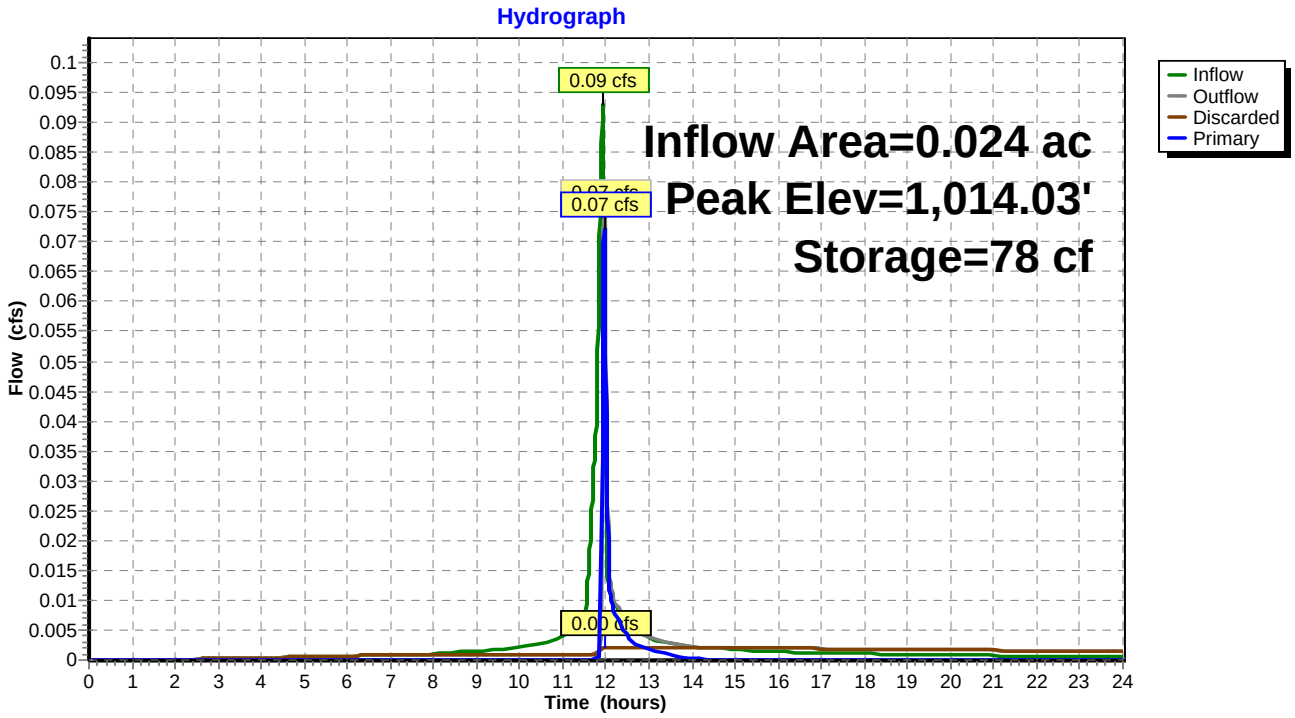
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,012.20	78	0.0	0	0
1,013.70	78	30.0	35	35
1,014.20	234	100.0	78	113

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,012.20'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,014.00'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.96 hrs HW=1,014.03' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.07 cfs @ 11.96 hrs HW=1,014.03' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.44 fps)

Pond RG1: RG #1


Hydrograph
Inflow
Outflow
Discarded
Primary
0.09 cfs
0.07 cfs
0.00 cfs
Inflow Area=0.024 ac
Peak Elev=1,014.03'
Storage=78 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG1: RG #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,012.20	78	0
1,012.22	78	0
1,012.24	78	1
1,012.26	78	1
1,012.28	78	2
1,012.30	78	2
1,012.32	78	3
1,012.34	78	3
1,012.36	78	4
1,012.38	78	4
1,012.40	78	5
1,012.42	78	5
1,012.44	78	6
1,012.46	78	6
1,012.48	78	7
1,012.50	78	7
1,012.52	78	7
1,012.54	78	8
1,012.56	78	8
1,012.58	78	9
1,012.60	78	9
1,012.62	78	10
1,012.64	78	10
1,012.66	78	11
1,012.68	78	11
1,012.70	78	12
1,012.72	78	12
1,012.74	78	13
1,012.76	78	13
1,012.78	78	14
1,012.80	78	14
1,012.82	78	15
1,012.84	78	15
1,012.86	78	15
1,012.88	78	16
1,012.90	78	16
1,012.92	78	17
1,012.94	78	17
1,012.96	78	18
1,012.98	78	18
1,013.00	78	19
1,013.02	78	19
1,013.04	78	20
1,013.06	78	20
1,013.08	78	21
1,013.10	78	21
1,013.12	78	22
1,013.14	78	22
1,013.16	78	22
1,013.18	78	23
1,013.20	78	23
1,013.22	78	24
1,013.24	78	24
1,013.26	78	25
1,013.28	78	25
1,013.30	78	26
1,013.32	78	26
1,013.34	78	27
1,013.36	78	27
1,013.38	78	28
1,013.40	78	28
1,013.42	78	29
1,013.44	78	29
1,013.46	78	29
1,013.48	78	30
1,013.50	78	30
1,013.52	78	31
1,013.54	78	31
1,013.56	78	32
1,013.58	78	32
1,013.60	78	33
1,013.62	78	33
1,013.64	78	34
1,013.66	78	34
1,013.68	78	35
1,013.70	78	35
1,013.72	84	37
1,013.74	90	38
1,013.76	97	40
1,013.78	103	42
1,013.80	109	44
1,013.82	115	47
1,013.84	122	49
1,013.86	128	52
1,013.88	134	54
1,013.90	140	57
1,013.92	147	60
1,013.94	153	63
1,013.96	159	66
1,013.98	165	69
1,014.00	172	73
1,014.02	178	76
1,014.04	184	80
1,014.06	190	83
1,014.08	197	87
1,014.10	203	91
1,014.12	209	95
1,014.14	215	100
1,014.16	222	104
1,014.18	228	108
1,014.20	**234**	**113**

Summary for Pond RG2: RG #2

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 2.17" for 1-Year event				
Inflow =	0.09 cfs @	11.92 hrs,	Volume=	0.004 af	
Outflow =	0.06 cfs @	11.98 hrs,	Volume=	0.003 af,	Atten= 38%, Lag= 3.5 min
Discarded =	0.00 cfs @	11.98 hrs,	Volume=	0.002 af	
Primary =	0.06 cfs @	11.98 hrs,	Volume=	0.001 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,013.53' @ 11.98 hrs Surf.Area= 174 sf Storage= 89 cf

Plug-Flow detention time= 228.1 min calculated for 0.003 af (70% of inflow)
Center-of-Mass det. time= 132.4 min (887.6 - 755.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.50'	122 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

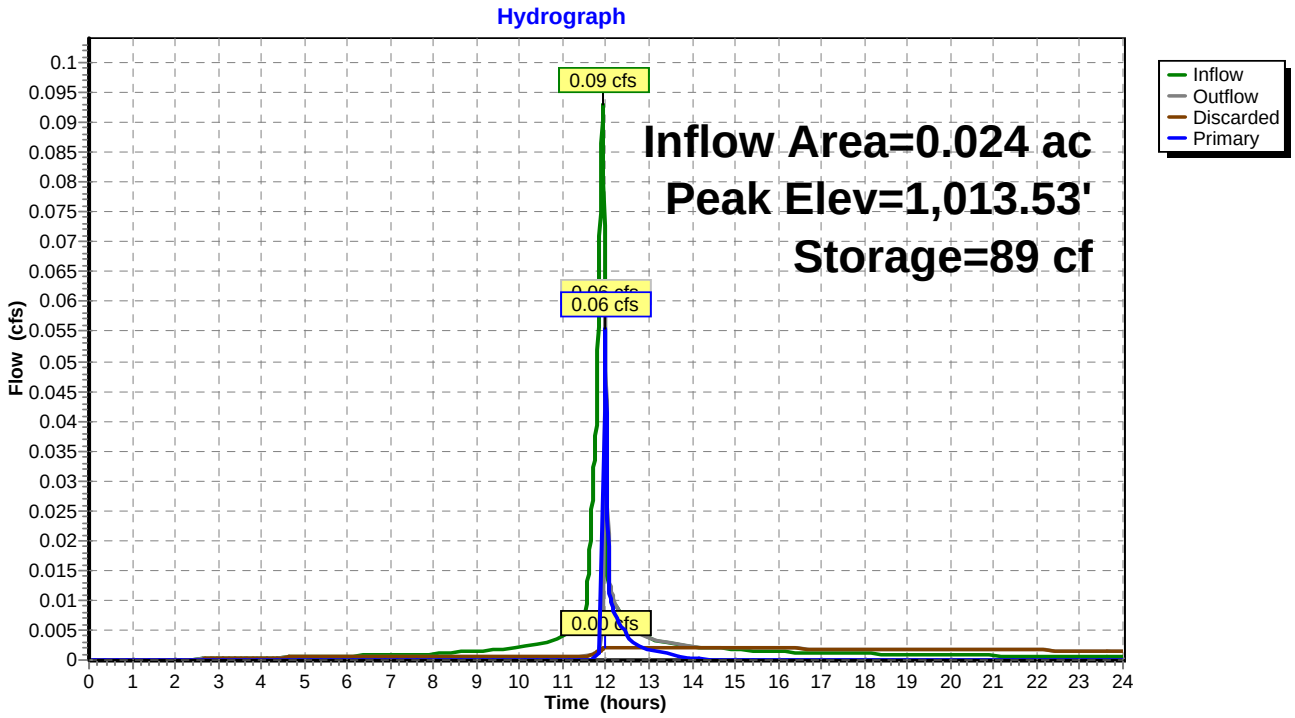
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,011.50	60	0.0	0	0
1,013.00	60	30.0	27	27
1,013.70	211	100.0	95	122

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,011.50'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,013.50'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.98 hrs HW=1,013.53' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.05 cfs @ 11.98 hrs HW=1,013.53' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.41 fps)

Pond RG2: RG #2


Hydrograph
Inflow Area=0.024 ac
Peak Elev=1,013.53'
Storage=89 cf
0.09 cfs
0.06 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG2: RG #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,011.50	60	0
1,011.55	60	1
1,011.60	60	2
1,011.65	60	3
1,011.70	60	4
1,011.75	60	5
1,011.80	60	5
1,011.85	60	6
1,011.90	60	7
1,011.95	60	8
1,012.00	60	9
1,012.05	60	10
1,012.10	60	11
1,012.15	60	12
1,012.20	60	13
1,012.25	60	14
1,012.30	60	14
1,012.35	60	15
1,012.40	60	16
1,012.45	60	17
1,012.50	60	18
1,012.55	60	19
1,012.60	60	20
1,012.65	60	21
1,012.70	60	22
1,012.75	60	23
1,012.80	60	23
1,012.85	60	24
1,012.90	60	25
1,012.95	60	26
1,013.00	60	27
1,013.05	71	30
1,013.10	82	34
1,013.15	92	38
1,013.20	103	43
1,013.25	114	49
1,013.30	125	55
1,013.35	136	61
1,013.40	146	68
1,013.45	157	76
1,013.50	168	84
1,013.55	179	93
1,013.60	189	102
1,013.65	200	112
1,013.70	**211**	**122**

Summary for Pond RG3: RG#3

Inflow Area =	0.073 ac,100.00% Impervious, Inflow Depth > 2.17" for 1-Year event				
Inflow =	0.28 cfs @	11.92 hrs,	Volume=	0.013 af	
Outflow =	0.27 cfs @	11.93 hrs,	Volume=	0.010 af,	Atten= 2%, Lag= 0.6 min
Discarded =	0.00 cfs @	11.93 hrs,	Volume=	0.003 af	
Primary =	0.27 cfs @	11.93 hrs,	Volume=	0.007 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,012.38' @ 11.93 hrs Surf.Area= 218 sf Storage= 166 cf

Plug-Flow detention time= 141.9 min calculated for 0.010 af (75% of inflow)
Center-of-Mass det. time= 52.8 min (808.0 - 755.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	194 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

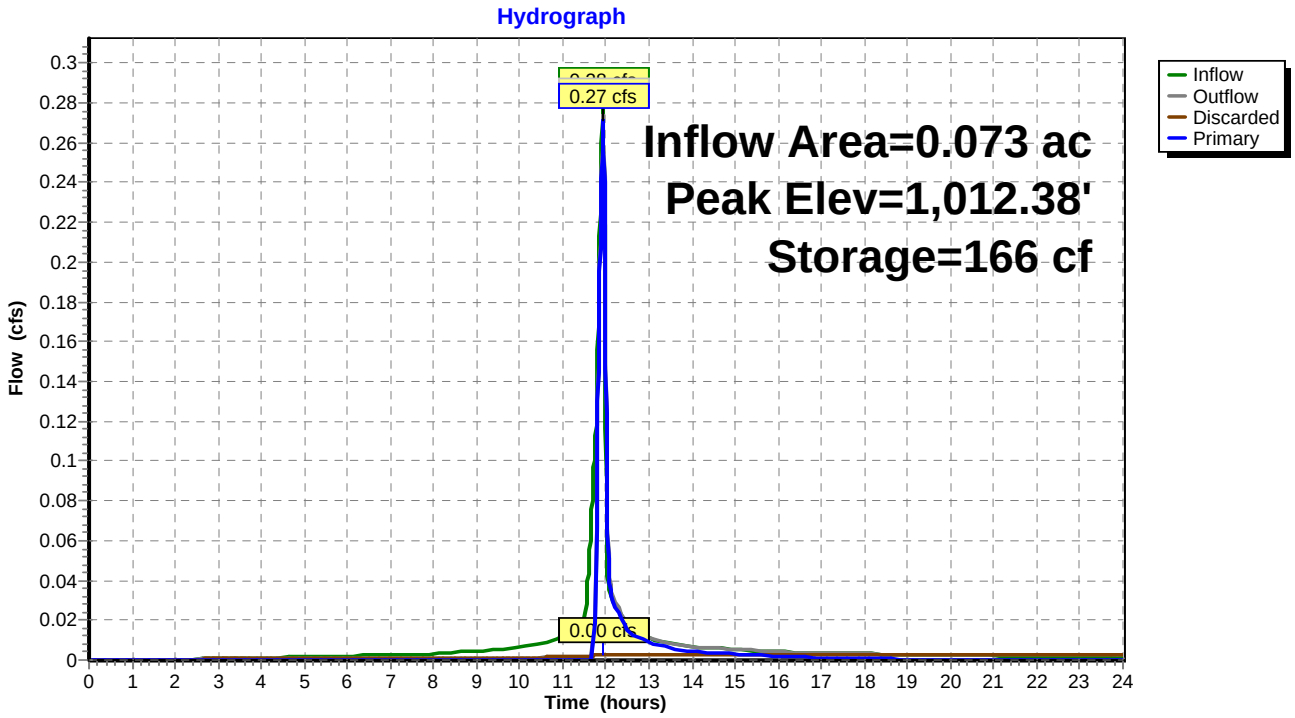
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	79	0.0	0	0
1,011.50	79	30.0	36	36
1,012.50	237	100.0	158	194

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,012.38' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.27 cfs @ 11.93 hrs HW=1,012.38' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.27 cfs @ 0.69 fps)

Pond RG3: RG#3


Hydrograph
0.27 cfs
0.00 cfs
Inflow Area=0.073 ac
Peak Elev=1,012.38'
Storage=166 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG3: RG#3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	79	0
1,010.05	79	1
1,010.10	79	2
1,010.15	79	4
1,010.20	79	5
1,010.25	79	6
1,010.30	79	7
1,010.35	79	8
1,010.40	79	9
1,010.45	79	11
1,010.50	79	12
1,010.55	79	13
1,010.60	79	14
1,010.65	79	15
1,010.70	79	17
1,010.75	79	18
1,010.80	79	19
1,010.85	79	20
1,010.90	79	21
1,010.95	79	23
1,011.00	79	24
1,011.05	79	25
1,011.10	79	26
1,011.15	79	27
1,011.20	79	28
1,011.25	79	30
1,011.30	79	31
1,011.35	79	32
1,011.40	79	33
1,011.45	79	34
1,011.50	79	36
1,011.55	87	40
1,011.60	95	44
1,011.65	103	49
1,011.70	111	55
1,011.75	119	60
1,011.80	126	66
1,011.85	134	73
1,011.90	142	80
1,011.95	150	87
1,012.00	158	95
1,012.05	166	103
1,012.10	174	111
1,012.15	182	120
1,012.20	190	130
1,012.25	198	139
1,012.30	205	149
1,012.35	213	160
1,012.40	221	171
1,012.45	229	182
1,012.50	**237**	**194**

Summary for Pond RG4: RG #4

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 2.17" for 1-Year event				
Inflow =	0.09 cfs @	11.92 hrs,	Volume=	0.004 af	
Outflow =	0.00 cfs @	14.54 hrs,	Volume=	0.002 af,	Atten= 98%, Lag= 157.0 min
Discarded =	0.00 cfs @	14.54 hrs,	Volume=	0.002 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,012.09' @ 14.54 hrs Surf.Area= 169 sf Storage= 115 cf

Plug-Flow detention time= 288.3 min calculated for 0.002 af (55% of inflow)
Center-of-Mass det. time= 175.2 min (930.4 - 755.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	196 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

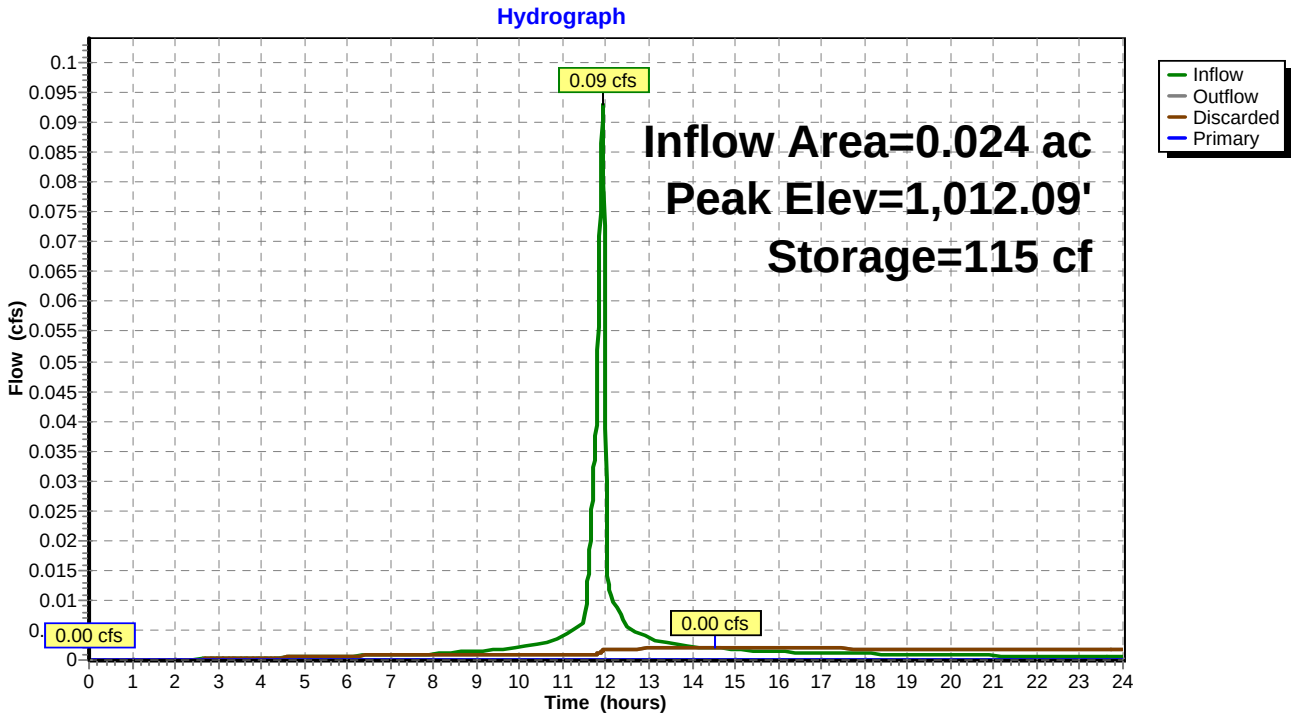
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	87	0.0	0	0
1,011.50	87	30.0	39	39
1,012.50	226	100.0	157	196

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 14.54 hrs HW=1,012.09' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,010.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond RG4: RG #4


Hydrograph
Inflow
Outflow
Discarded
Primary
0.09 cfs
0.00 cfs
0.00 cfs
Inflow Area=0.024 ac
Peak Elev=1,012.09'
Storage=115 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG4: RG #4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	87	0
1,010.05	87	1
1,010.10	87	3
1,010.15	87	4
1,010.20	87	5
1,010.25	87	7
1,010.30	87	8
1,010.35	87	9
1,010.40	87	10
1,010.45	87	12
1,010.50	87	13
1,010.55	87	14
1,010.60	87	16
1,010.65	87	17
1,010.70	87	18
1,010.75	87	20
1,010.80	87	21
1,010.85	87	22
1,010.90	87	23
1,010.95	87	25
1,011.00	87	26
1,011.05	87	27
1,011.10	87	29
1,011.15	87	30
1,011.20	87	31
1,011.25	87	33
1,011.30	87	34
1,011.35	87	35
1,011.40	87	37
1,011.45	87	38
1,011.50	87	39
1,011.55	94	44
1,011.60	101	49
1,011.65	108	54
1,011.70	115	59
1,011.75	122	65
1,011.80	129	72
1,011.85	136	78
1,011.90	143	85
1,011.95	150	92
1,012.00	157	100
1,012.05	163	108
1,012.10	170	116
1,012.15	177	125
1,012.20	184	134
1,012.25	191	143
1,012.30	198	153
1,012.35	205	163
1,012.40	212	174
1,012.45	219	185
1,012.50	**226**	**196**

Summary for Pond RG5: RG #5

Inflow Area =	0.049 ac,100.00% Impervious, Inflow Depth > 2.17" for 1-Year event				
Inflow =	0.19 cfs @	11.92 hrs,	Volume=	0.009 af	
Outflow =	0.18 cfs @	11.93 hrs,	Volume=	0.007 af,	Atten= 2%, Lag= 0.5 min
Discarded =	0.00 cfs @	11.93 hrs,	Volume=	0.003 af	
Primary =	0.18 cfs @	11.93 hrs,	Volume=	0.003 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,011.86' @ 11.93 hrs Surf.Area= 170 sf Storage= 128 cf

Plug-Flow detention time= 169.4 min calculated for 0.007 af (74% of inflow)
Center-of-Mass det. time= 79.1 min (834.3 - 755.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	153 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

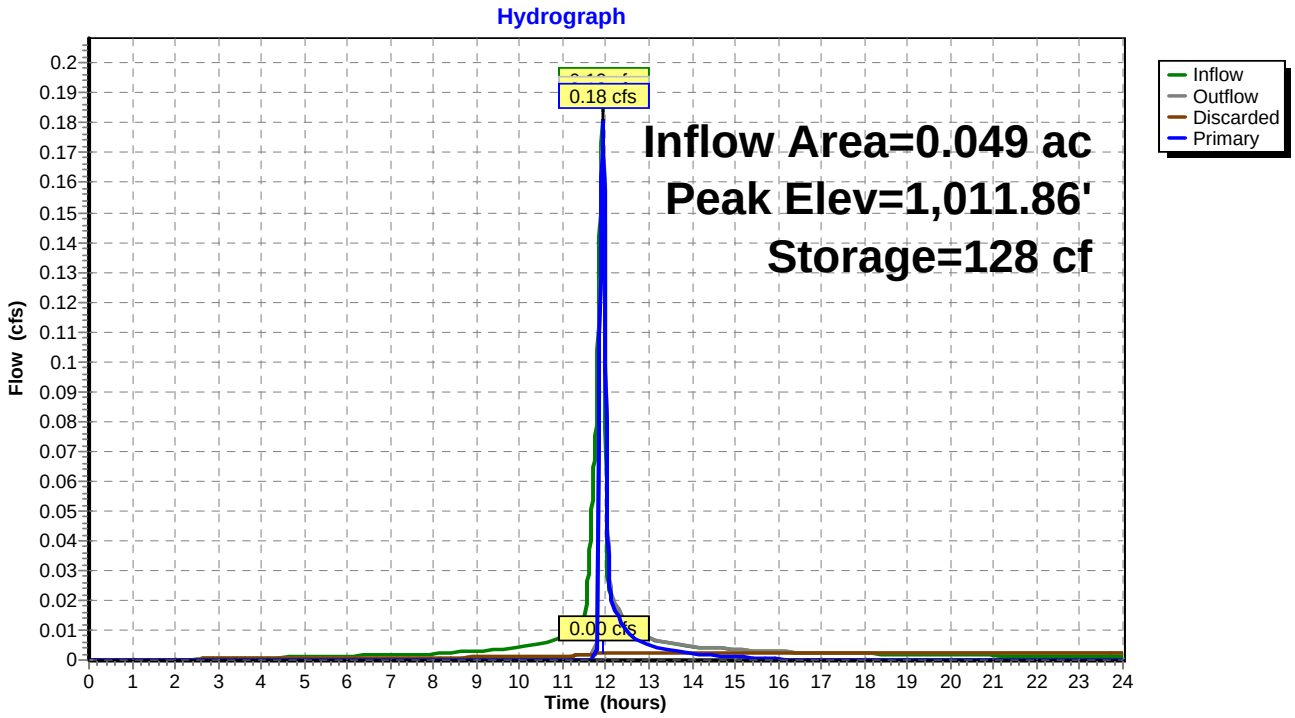
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.50	62	0.0	0	0
1,011.00	62	30.0	28	28
1,012.00	188	100.0	125	153

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.50'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1,006.00'
#2	Primary	1,011.80'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,011.86' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.18 cfs @ 11.93 hrs HW=1,011.86' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.18 cfs @ 0.60 fps)

Pond RG5: RG #5


Hydrograph
Inflow
Outflow
Discarded
Primary
0.18 cfs
0.00 cfs
Inflow Area=0.049 ac
Peak Elev=1,011.86'
Storage=128 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG5: RG #5

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.50	62	0
1,009.55	62	1
1,009.60	62	2
1,009.65	62	3
1,009.70	62	4
1,009.75	62	5
1,009.80	62	6
1,009.85	62	7
1,009.90	62	7
1,009.95	62	8
1,010.00	62	9
1,010.05	62	10
1,010.10	62	11
1,010.15	62	12
1,010.20	62	13
1,010.25	62	14
1,010.30	62	15
1,010.35	62	16
1,010.40	62	17
1,010.45	62	18
1,010.50	62	19
1,010.55	62	20
1,010.60	62	20
1,010.65	62	21
1,010.70	62	22
1,010.75	62	23
1,010.80	62	24
1,010.85	62	25
1,010.90	62	26
1,010.95	62	27
1,011.00	62	28
1,011.05	68	31
1,011.10	75	35
1,011.15	81	39
1,011.20	87	43
1,011.25	94	47
1,011.30	100	52
1,011.35	106	57
1,011.40	112	63
1,011.45	119	69
1,011.50	125	75
1,011.55	131	81
1,011.60	138	88
1,011.65	144	95
1,011.70	150	102
1,011.75	157	110
1,011.80	163	118
1,011.85	169	126
1,011.90	175	135
1,011.95	182	144
1,012.00	**188**	**153**

Summary for Pond RG6: RG #6

Inflow Area =	0.100 ac,100.00% Impervious, Inflow Depth > 1.10" for 1-Year event				
Inflow =	0.28 cfs @	11.93 hrs,	Volume=	0.009 af	
Outflow =	0.22 cfs @	11.99 hrs,	Volume=	0.007 af,	Atten= 23%, Lag= 3.7 min
Discarded =	0.00 cfs @	11.99 hrs,	Volume=	0.003 af	
Primary =	0.22 cfs @	11.99 hrs,	Volume=	0.004 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,011.37' @ 11.99 hrs Surf.Area= 243 sf Storage= 168 cf

Plug-Flow detention time= 153.4 min calculated for 0.007 af (73% of inflow)
Center-of-Mass det. time= 94.1 min (842.2 - 748.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.10'	202 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

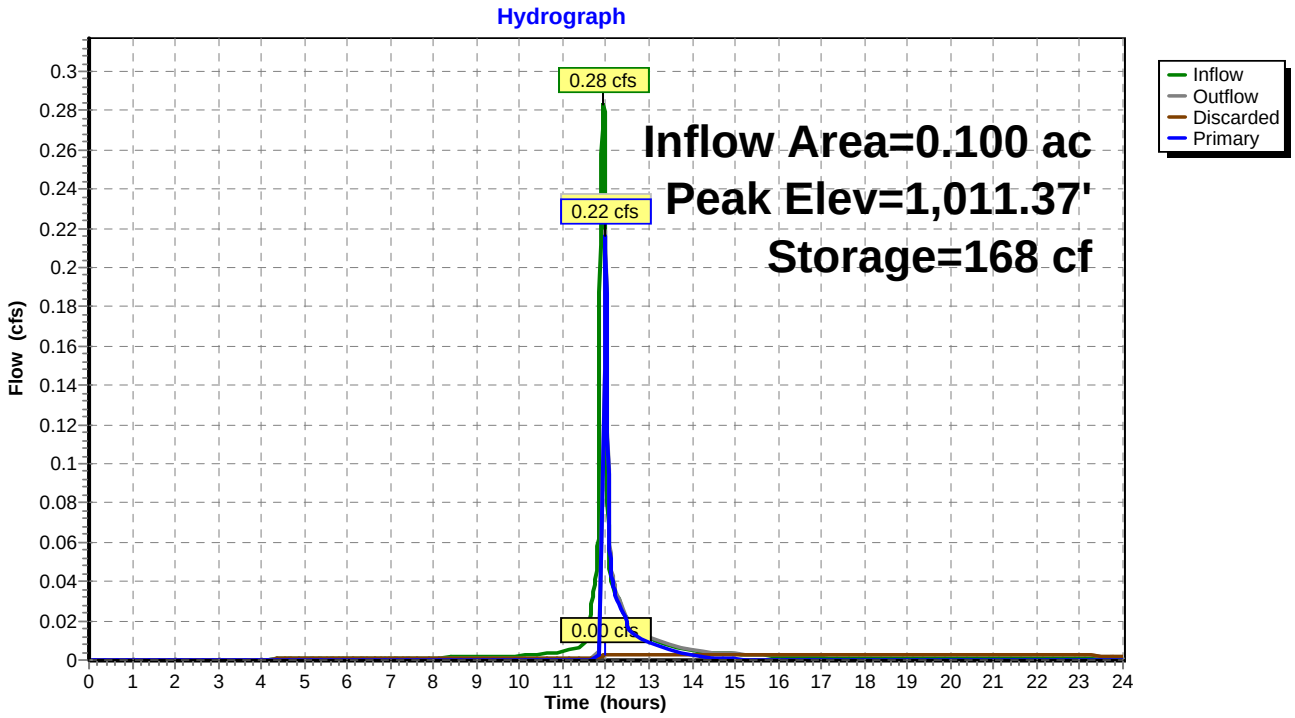
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.10	90	0.0	0	0
1,010.60	90	30.0	41	41
1,011.50	270	100.0	162	202

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.10'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,011.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.99 hrs HW=1,011.37' (Free Discharge)
└─**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.21 cfs @ 11.99 hrs HW=1,011.37' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.21 cfs @ 0.64 fps)

Pond RG6: RG #6


Hydrograph
0.28 cfs
0.22 cfs
0.00 cfs
Inflow Area=0.100 ac
Peak Elev=1,011.37'
Storage=168 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG6: RG #6

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.10	90	0
1,009.15	90	1
1,009.20	90	3
1,009.25	90	4
1,009.30	90	5
1,009.35	90	7
1,009.40	90	8
1,009.45	90	9
1,009.50	90	11
1,009.55	90	12
1,009.60	90	14
1,009.65	90	15
1,009.70	90	16
1,009.75	90	18
1,009.80	90	19
1,009.85	90	20
1,009.90	90	22
1,009.95	90	23
1,010.00	90	24
1,010.05	90	26
1,010.10	90	27
1,010.15	90	28
1,010.20	90	30
1,010.25	90	31
1,010.30	90	32
1,010.35	90	34
1,010.40	90	35
1,010.45	90	36
1,010.50	90	38
1,010.55	90	39
1,010.60	90	41
1,010.65	100	45
1,010.70	110	51
1,010.75	120	56
1,010.80	130	63
1,010.85	140	69
1,010.90	150	76
1,010.95	160	84
1,011.00	170	92
1,011.05	180	101
1,011.10	190	111
1,011.15	200	120
1,011.20	210	131
1,011.25	220	141
1,011.30	230	153
1,011.35	240	164
1,011.40	250	176
1,011.45	260	189
1,011.50	**270**	**202**

Summary for Pond RG7: RG #7

Inflow Area =	0.047 ac,100.00% Impervious, Inflow Depth > 1.05" for 1-Year event				
Inflow =	0.09 cfs @	11.92 hrs,	Volume=	0.004 af	
Outflow =	0.00 cfs @	13.90 hrs,	Volume=	0.003 af,	Atten= 98%, Lag= 118.6 min
Discarded =	0.00 cfs @	13.90 hrs,	Volume=	0.003 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,011.62' @ 13.90 hrs Surf.Area= 188 sf Storage= 95 cf

Plug-Flow detention time= 264.4 min calculated for 0.003 af (68% of inflow)
Center-of-Mass det. time= 165.8 min (921.0 - 755.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	335 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

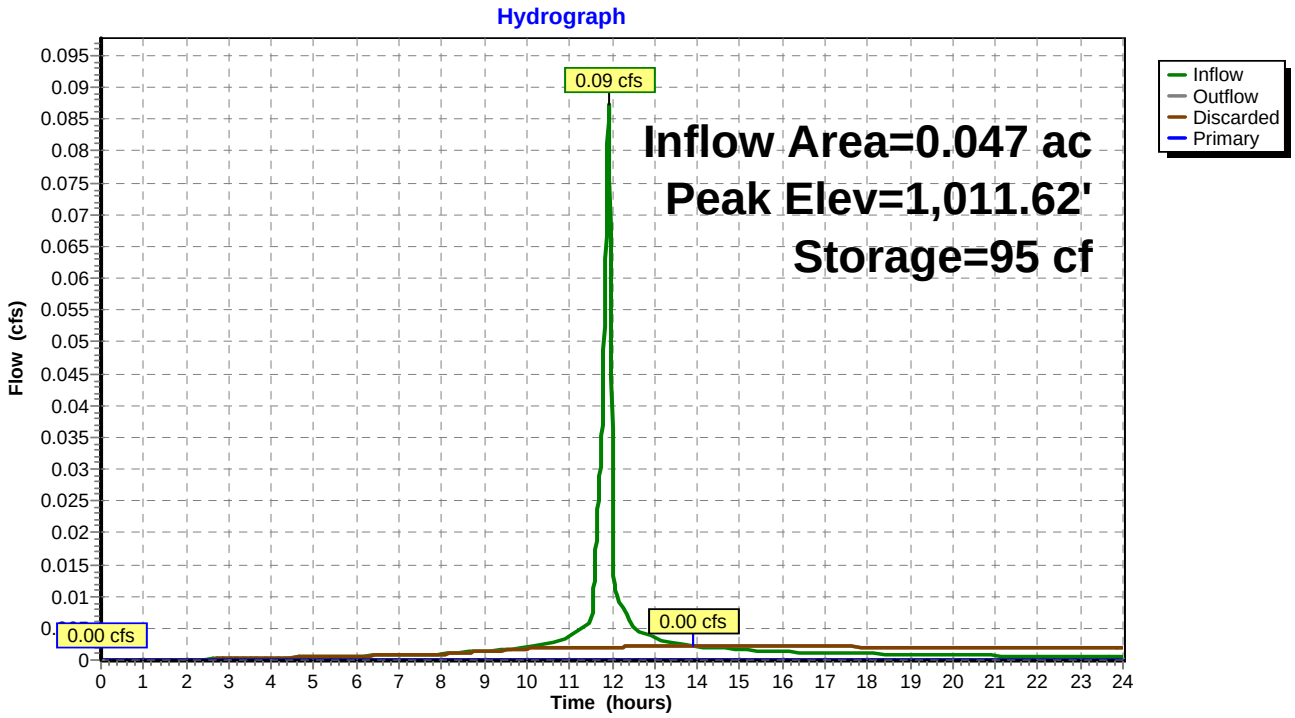
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	165	0.0	0	0
1,011.50	165	30.0	74	74
1,012.50	356	100.0	261	335

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 13.90 hrs HW=1,011.62' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,010.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond RG7: RG #7


Hydrograph
Inflow
Outflow
Discarded
Primary
0.09 cfs
0.00 cfs
0.00 cfs
Inflow Area=0.047 ac
Peak Elev=1,011.62'
Storage=95 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG7: RG #7

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	165	0
1,010.05	165	2
1,010.10	165	5
1,010.15	165	7
1,010.20	165	10
1,010.25	165	12
1,010.30	165	15
1,010.35	165	17
1,010.40	165	20
1,010.45	165	22
1,010.50	165	25
1,010.55	165	27
1,010.60	165	30
1,010.65	165	32
1,010.70	165	35
1,010.75	165	37
1,010.80	165	40
1,010.85	165	42
1,010.90	165	45
1,010.95	165	47
1,011.00	165	50
1,011.05	165	52
1,011.10	165	54
1,011.15	165	57
1,011.20	165	59
1,011.25	165	62
1,011.30	165	64
1,011.35	165	67
1,011.40	165	69
1,011.45	165	72
1,011.50	165	74
1,011.55	175	83
1,011.60	184	92
1,011.65	194	101
1,011.70	203	111
1,011.75	213	121
1,011.80	222	132
1,011.85	232	144
1,011.90	241	156
1,011.95	251	168
1,012.00	261	181
1,012.05	270	194
1,012.10	280	208
1,012.15	289	222
1,012.20	299	237
1,012.25	308	252
1,012.30	318	267
1,012.35	327	283
1,012.40	337	300
1,012.45	346	317
1,012.50	**356**	**335**

Summary for Pond RG8: RG #8

Inflow Area =	0.100 ac,100.00% Impervious, Inflow Depth = 0.42" for 1-Year event				
Inflow =	0.22 cfs @	11.99 hrs,	Volume=	0.004 af	
Outflow =	0.04 cfs @	12.19 hrs,	Volume=	0.003 af,	Atten= 84%, Lag= 12.1 min
Discarded =	0.00 cfs @	12.19 hrs,	Volume=	0.001 af	
Primary =	0.03 cfs @	12.19 hrs,	Volume=	0.002 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,010.82' @ 12.19 hrs Surf.Area= 142 sf Storage= 72 cf

Plug-Flow detention time= 165.5 min calculated for 0.003 af (82% of inflow)
Center-of-Mass det. time= 151.5 min (897.4 - 746.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.10'	212 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

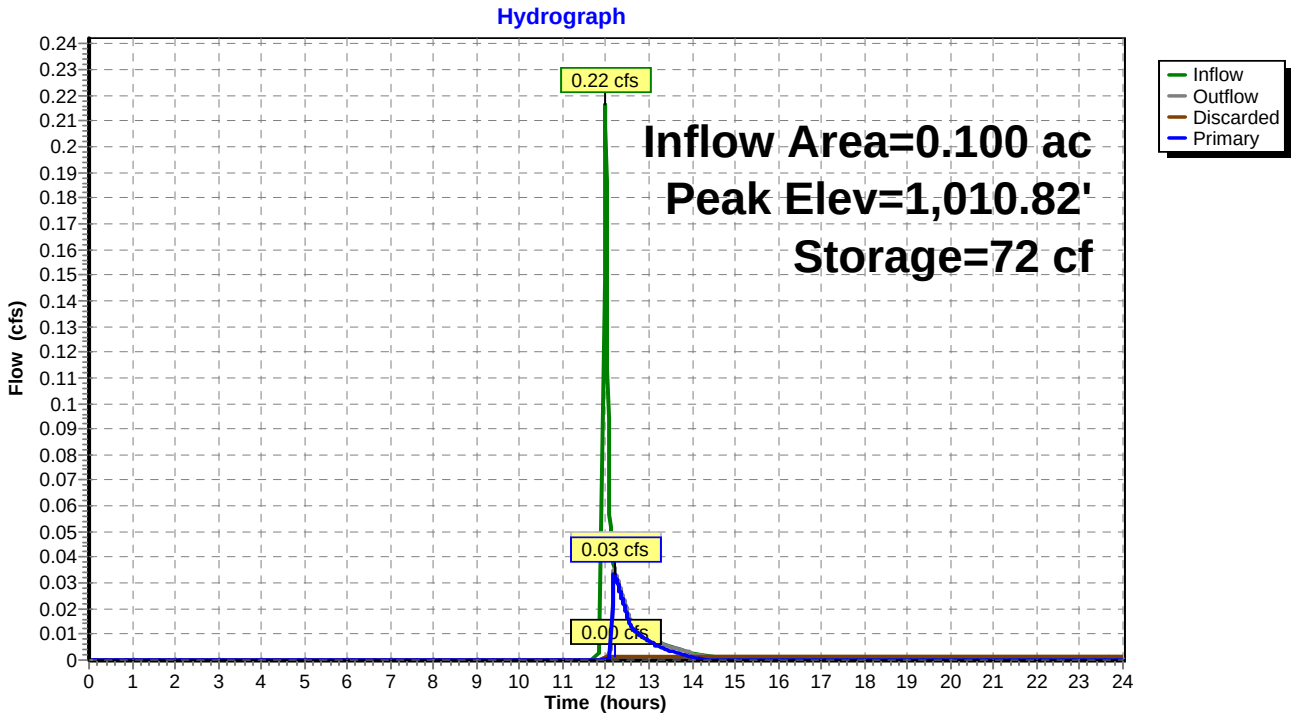
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.10	102	0.0	0	0
1,010.60	102	30.0	46	46
1,011.50	267	100.0	166	212

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.10'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,010.80'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 12.19 hrs HW=1,010.82' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.03 cfs @ 12.19 hrs HW=1,010.82' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.03 cfs @ 0.33 fps)

Pond RG8: RG #8


Hydrograph
0.22 cfs
0.03 cfs
0.00 cfs
Inflow Area=0.100 ac
Peak Elev=1,010.82'
Storage=72 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG8: RG #8

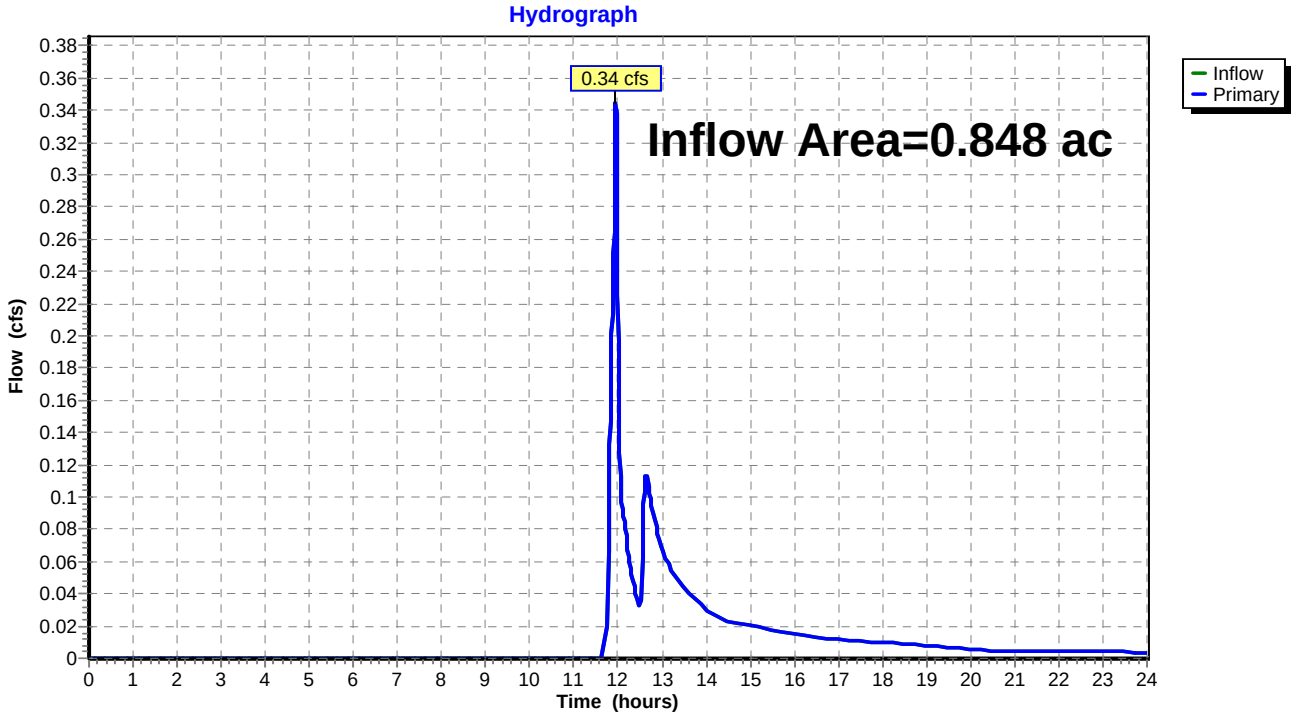
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.10	102	0
1,009.15	102	2
1,009.20	102	3
1,009.25	102	5
1,009.30	102	6
1,009.35	102	8
1,009.40	102	9
1,009.45	102	11
1,009.50	102	12
1,009.55	102	14
1,009.60	102	15
1,009.65	102	17
1,009.70	102	18
1,009.75	102	20
1,009.80	102	21
1,009.85	102	23
1,009.90	102	24
1,009.95	102	26
1,010.00	102	28
1,010.05	102	29
1,010.10	102	31
1,010.15	102	32
1,010.20	102	34
1,010.25	102	35
1,010.30	102	37
1,010.35	102	38
1,010.40	102	40
1,010.45	102	41
1,010.50	102	43
1,010.55	102	44
1,010.60	102	46
1,010.65	111	51
1,010.70	120	57
1,010.75	129	63
1,010.80	139	70
1,010.85	148	77
1,010.90	157	85
1,010.95	166	93
1,011.00	175	101
1,011.05	185	110
1,011.10	194	120
1,011.15	203	130
1,011.20	212	140
1,011.25	221	151
1,011.30	230	162
1,011.35	240	174
1,011.40	249	186
1,011.45	258	199
1,011.50	**267**	**212**

Summary for Link Q: Site Discharge

Inflow Area = 0.848 ac, 28.93% Impervious, Inflow Depth > 0.32" for 1-Year event
Inflow = 0.34 cfs @ 11.95 hrs, Volume= 0.023 af
Primary = 0.34 cfs @ 11.95 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Q: Site Discharge



Summary for Subcatchment 1:

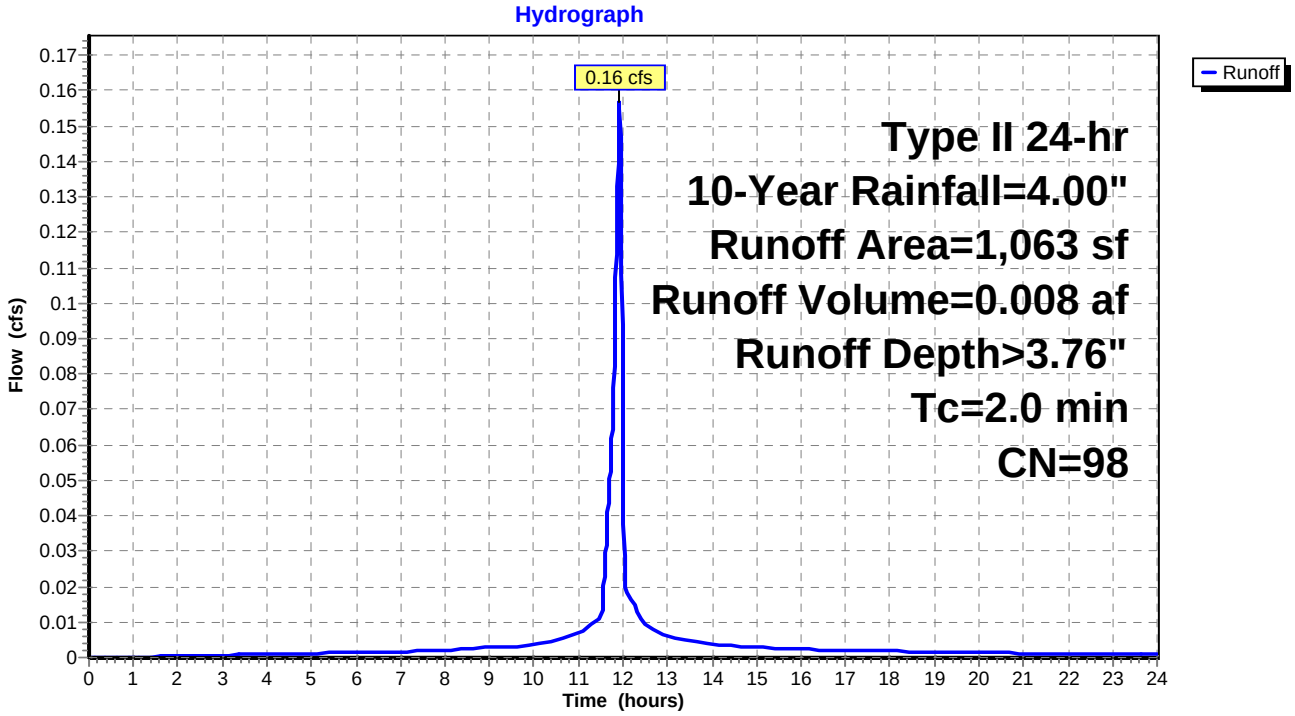
Runoff = 0.16 cfs @ 11.92 hrs, Volume= 0.008 af, Depth> 3.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=4.00"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 1:



Summary for Subcatchment 2:

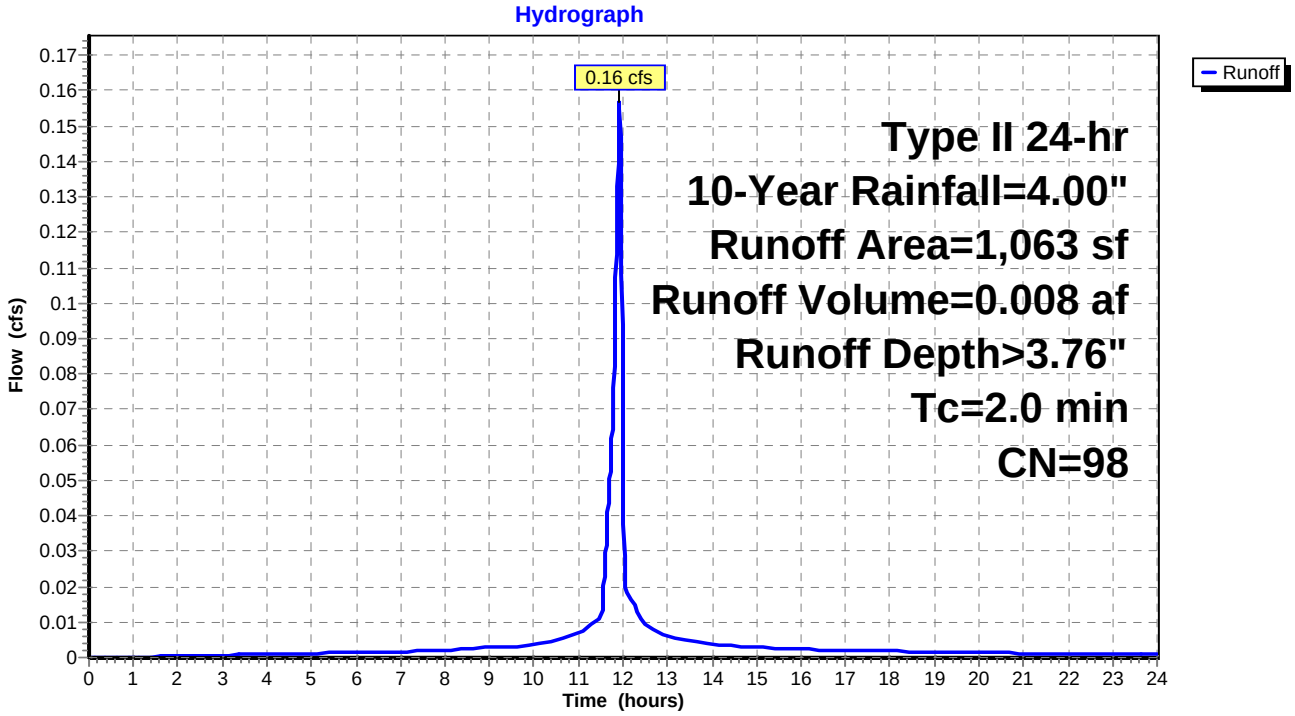
Runoff = 0.16 cfs @ 11.92 hrs, Volume= 0.008 af, Depth> 3.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=4.00"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 2:



Summary for Subcatchment 3:

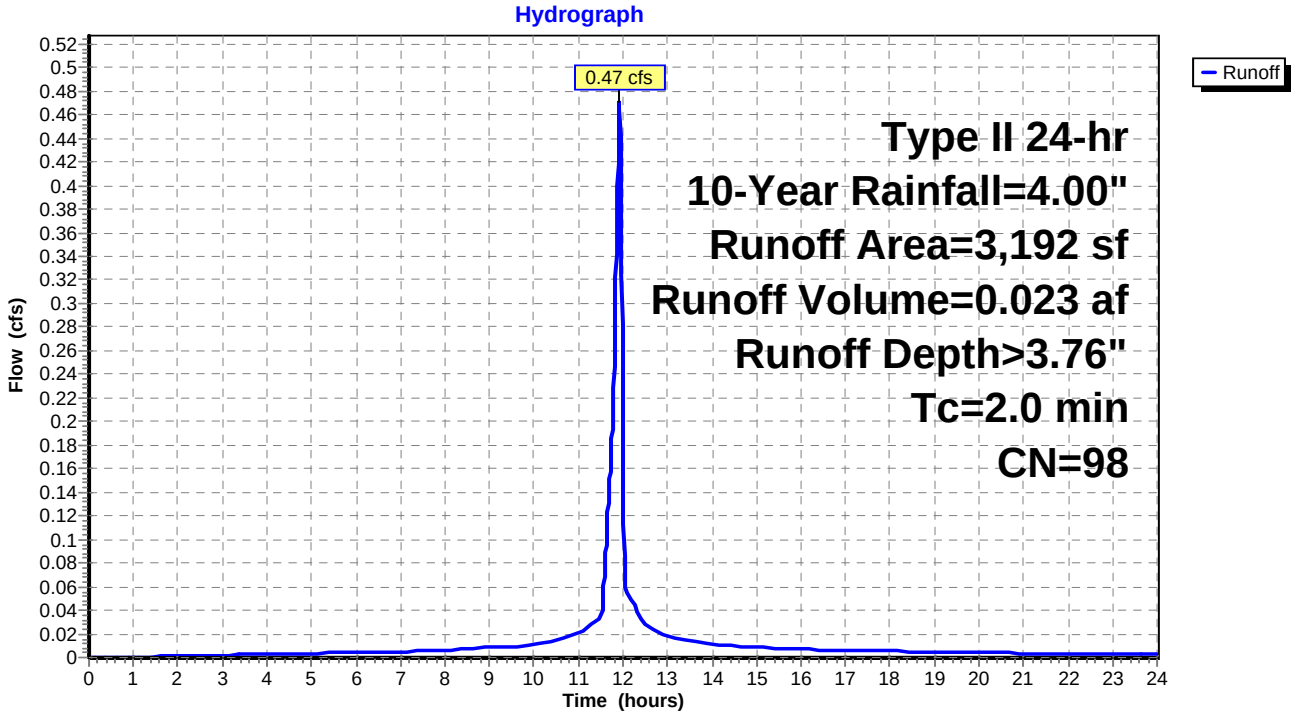
Runoff = 0.47 cfs @ 11.92 hrs, Volume= 0.023 af, Depth> 3.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=4.00"

	Area (sf)	CN	Description
*	3,192	98	
	3,192		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 3:



Summary for Subcatchment 4:

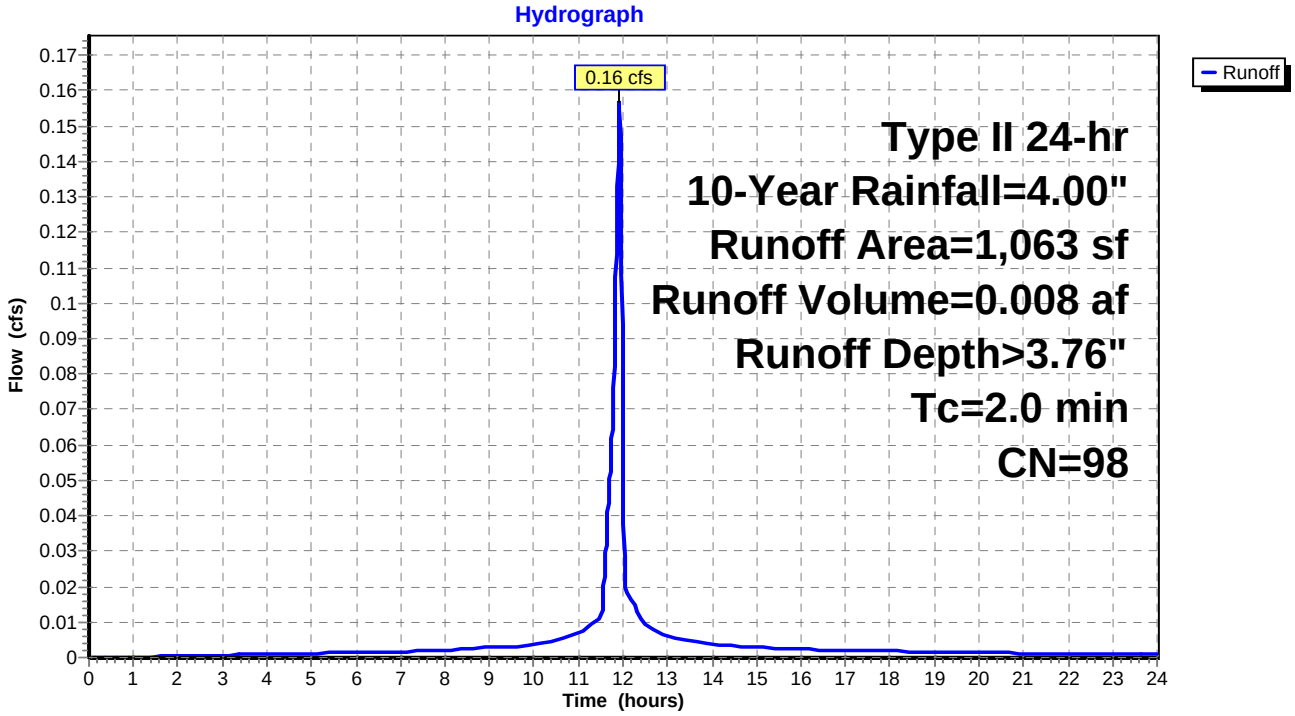
Runoff = 0.16 cfs @ 11.92 hrs, Volume= 0.008 af, Depth> 3.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=4.00"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 4:



Summary for Subcatchment 5:

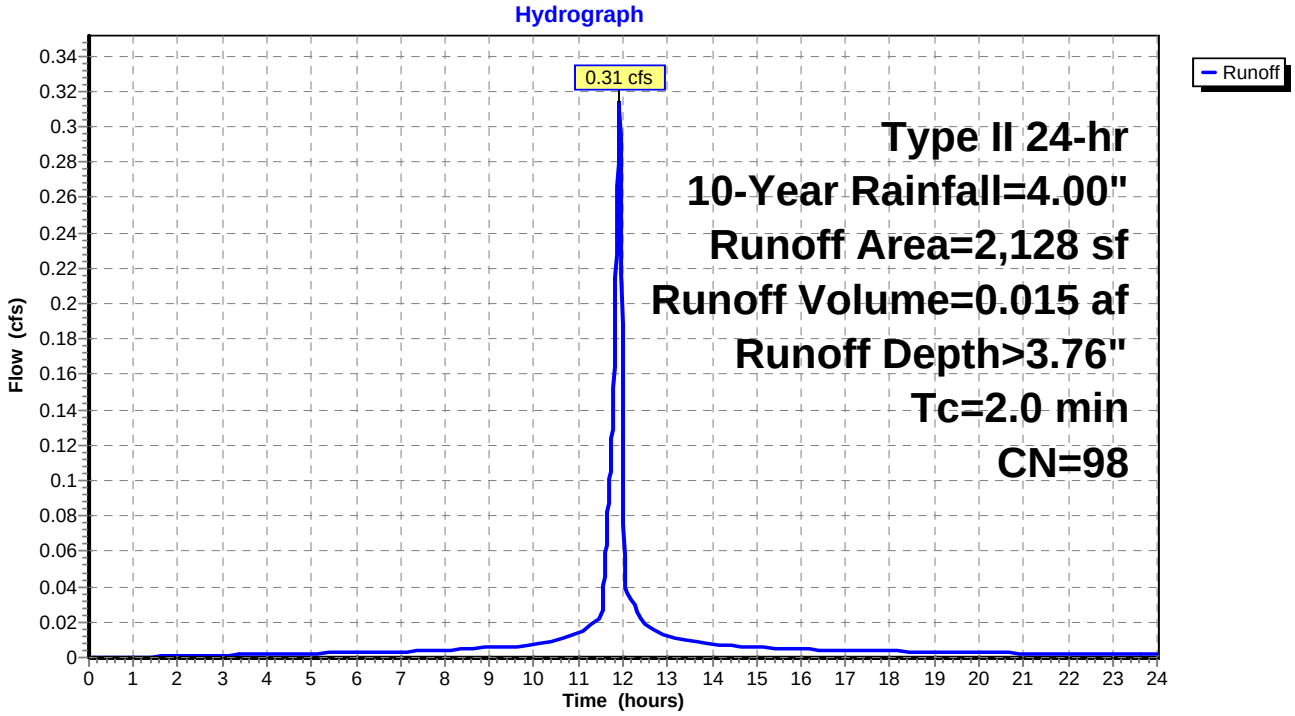
Runoff = 0.31 cfs @ 11.92 hrs, Volume= 0.015 af, Depth> 3.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=4.00"

	Area (sf)	CN	Description
*	2,128	98	
	2,128		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 5:



Summary for Subcatchment 6:

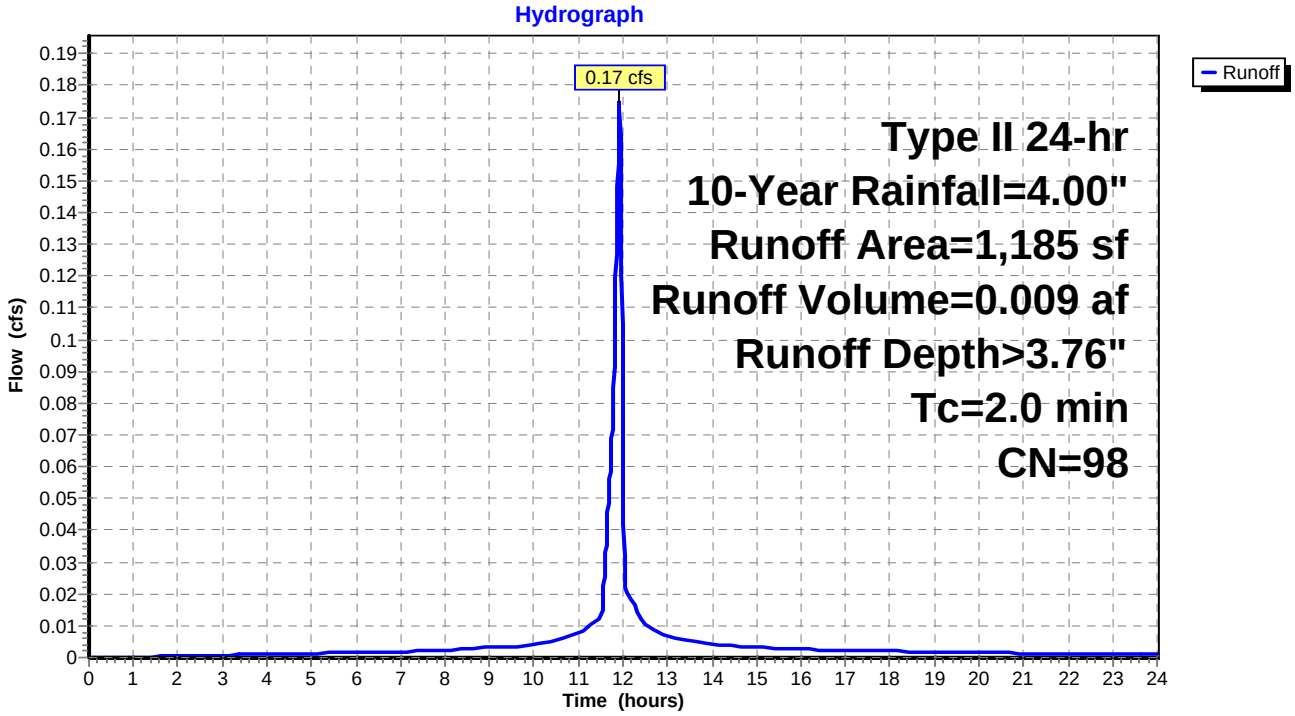
Runoff = 0.17 cfs @ 11.92 hrs, Volume= 0.009 af, Depth> 3.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=4.00"

	Area (sf)	CN	Description
*	1,185	98	
	1,185		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 6:



Summary for Subcatchment 7:

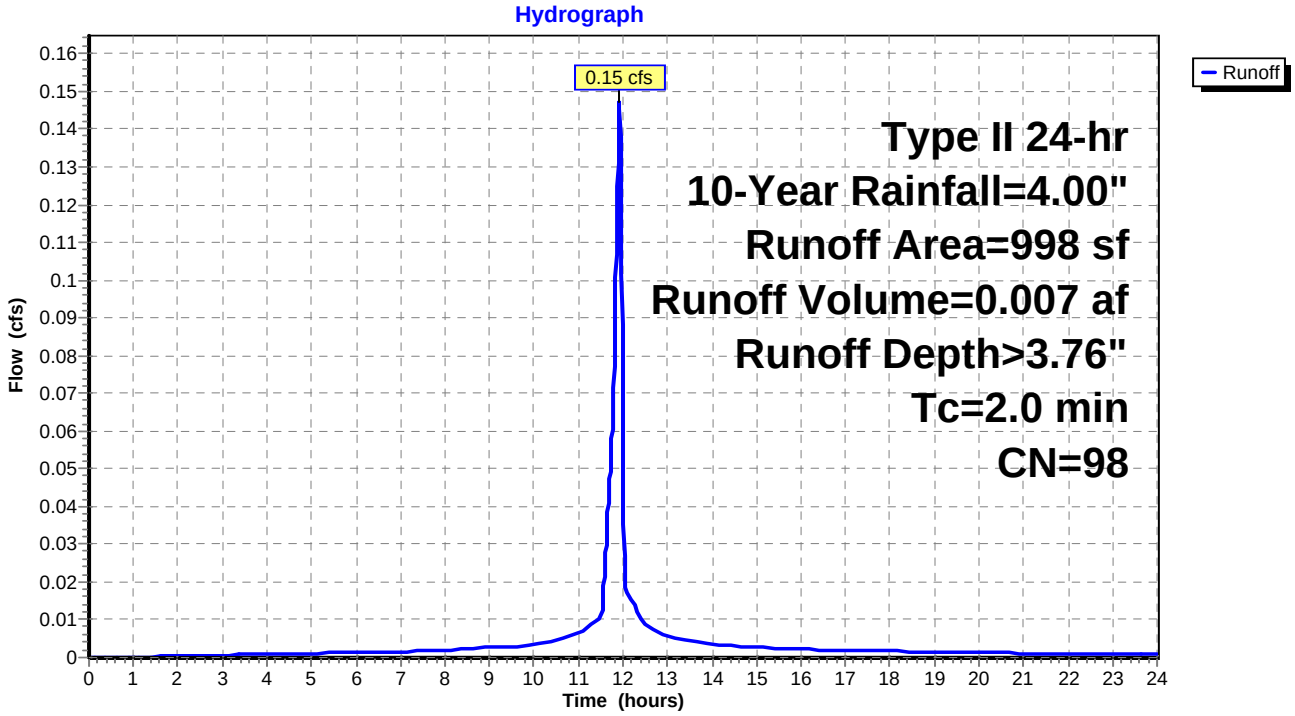
Runoff = 0.15 cfs @ 11.92 hrs, Volume= 0.007 af, Depth> 3.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=4.00"

	Area (sf)	CN	Description
*	998	98	
	998		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 7:



Summary for Subcatchment 8:

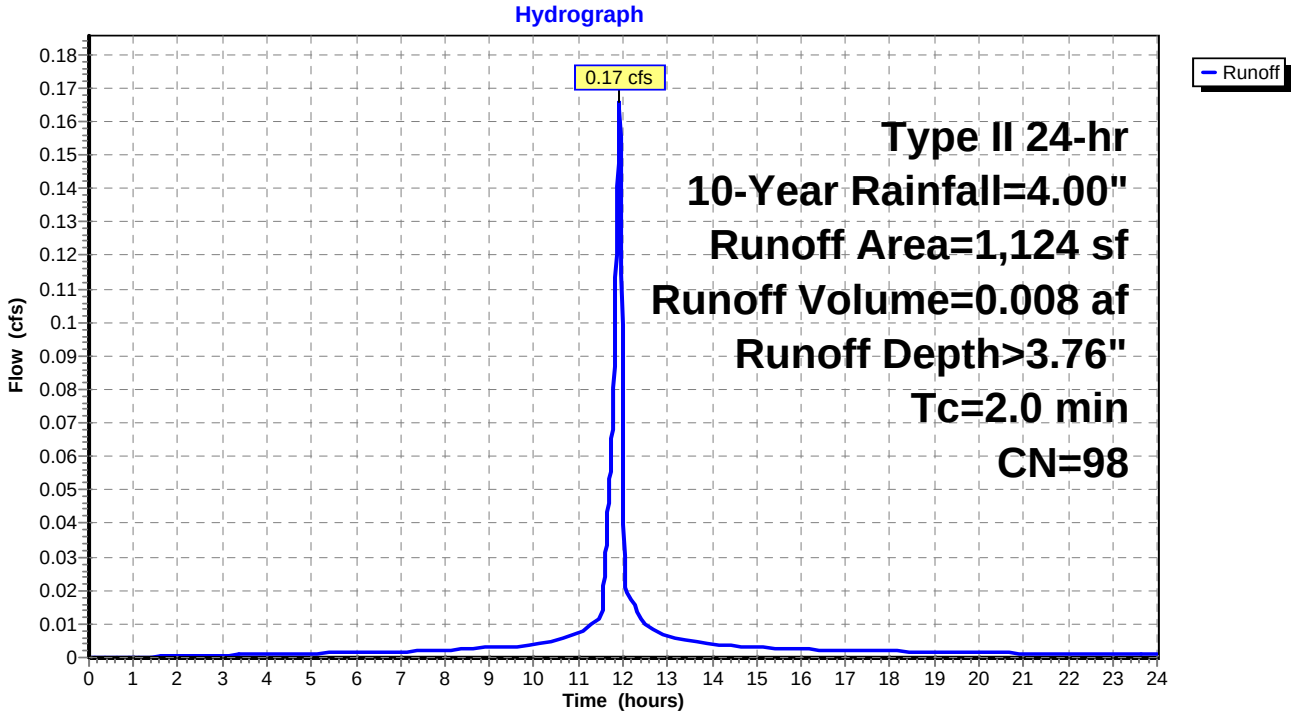
Runoff = 0.17 cfs @ 11.92 hrs, Volume= 0.008 af, Depth> 3.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=4.00"

	Area (sf)	CN	Description
*	1,124	98	
	1,124		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 8:



Summary for Subcatchment dd: Post

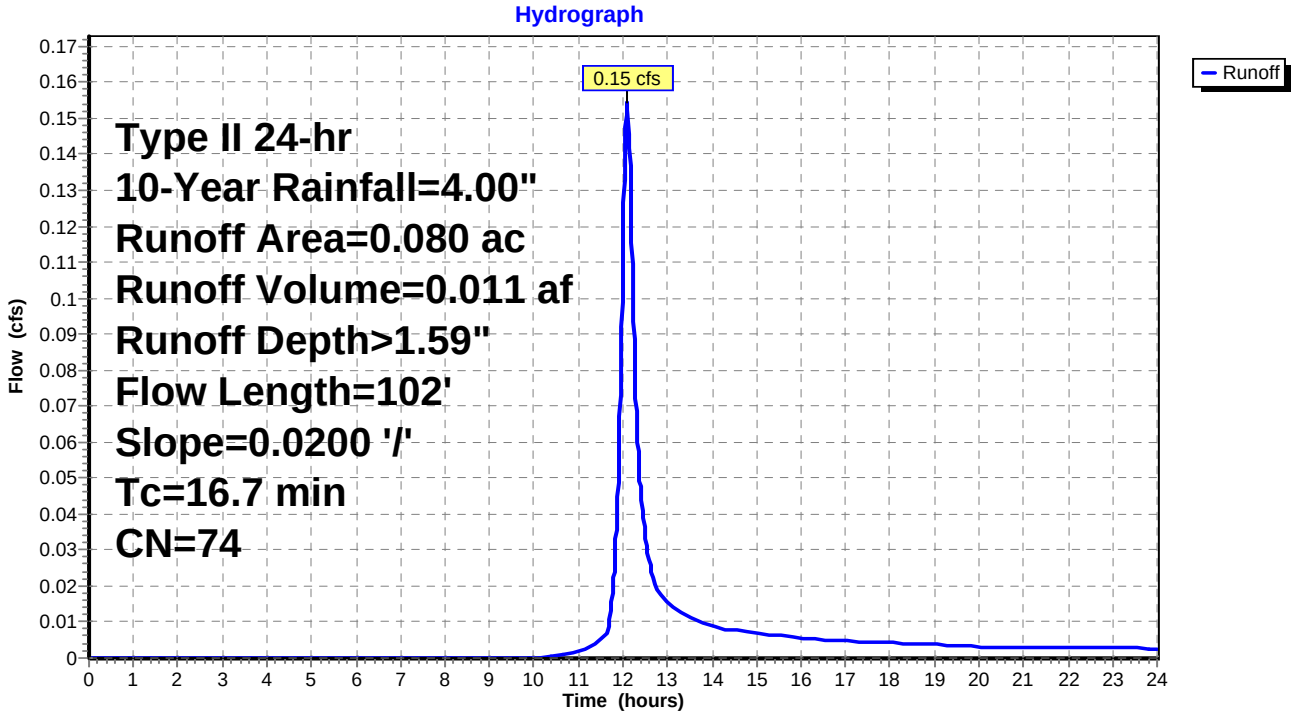
Runoff = 0.15 cfs @ 12.10 hrs, Volume= 0.011 af, Depth> 1.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=4.00"

Area (ac)	CN	Description
0.080	74	>75% Grass cover, Good, HSG C
0.080		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	102	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment dd: Post



Summary for Subcatchment pst: Post

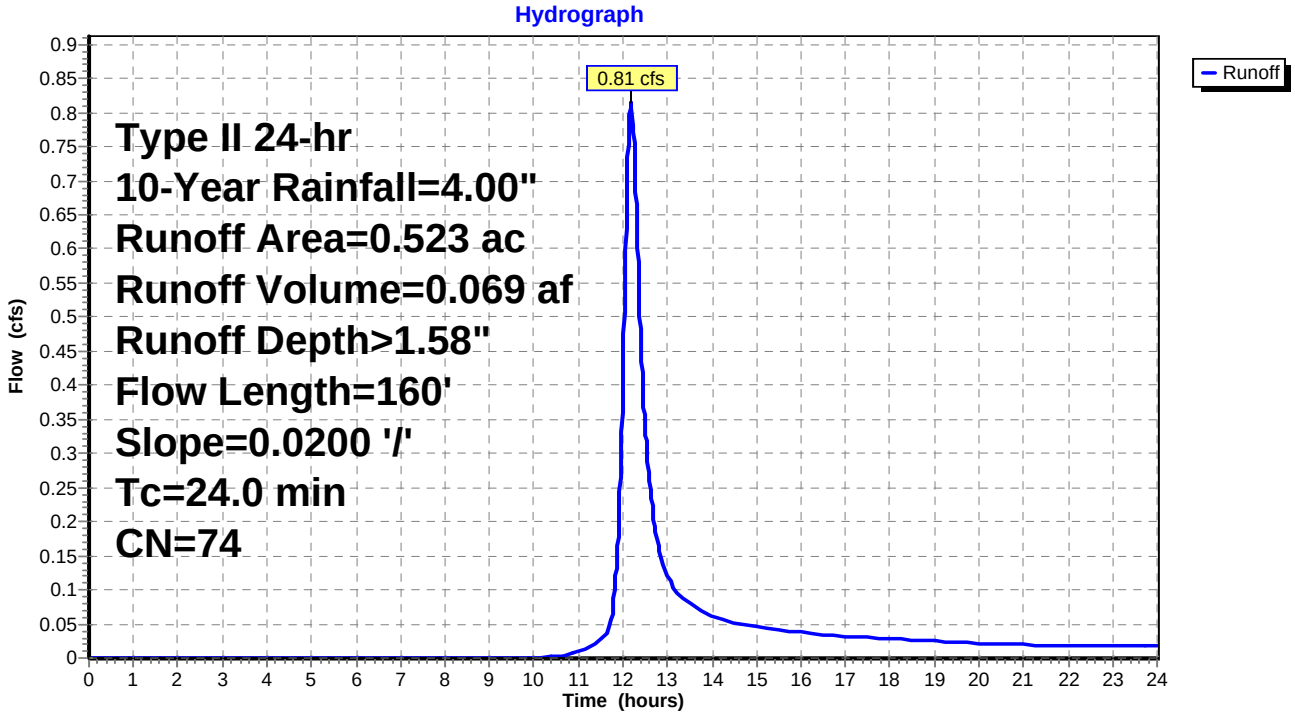
Runoff = 0.81 cfs @ 12.19 hrs, Volume= 0.069 af, Depth> 1.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=4.00"

Area (ac)	CN	Description
0.523	74	>75% Grass cover, Good, HSG C
0.523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	160	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment pst: Post



Summary for Pond 9P: Bio-swale

Inflow Area =	0.671 ac, 22.03% Impervious, Inflow Depth > 1.45" for 10-Year event				
Inflow =	0.90 cfs @	11.96 hrs, Volume=	0.081 af		
Outflow =	0.87 cfs @	12.20 hrs, Volume=	0.072 af, Atten= 3%, Lag= 14.3 min		
Discarded =	0.01 cfs @	12.20 hrs, Volume=	0.005 af		
Primary =	0.87 cfs @	12.20 hrs, Volume=	0.067 af		

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,010.92' @ 12.20 hrs Surf.Area= 494 sf Storage= 474 cf

Plug-Flow detention time= 71.8 min calculated for 0.072 af (89% of inflow)
Center-of-Mass det. time= 18.2 min (858.3 - 840.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.00'	515 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

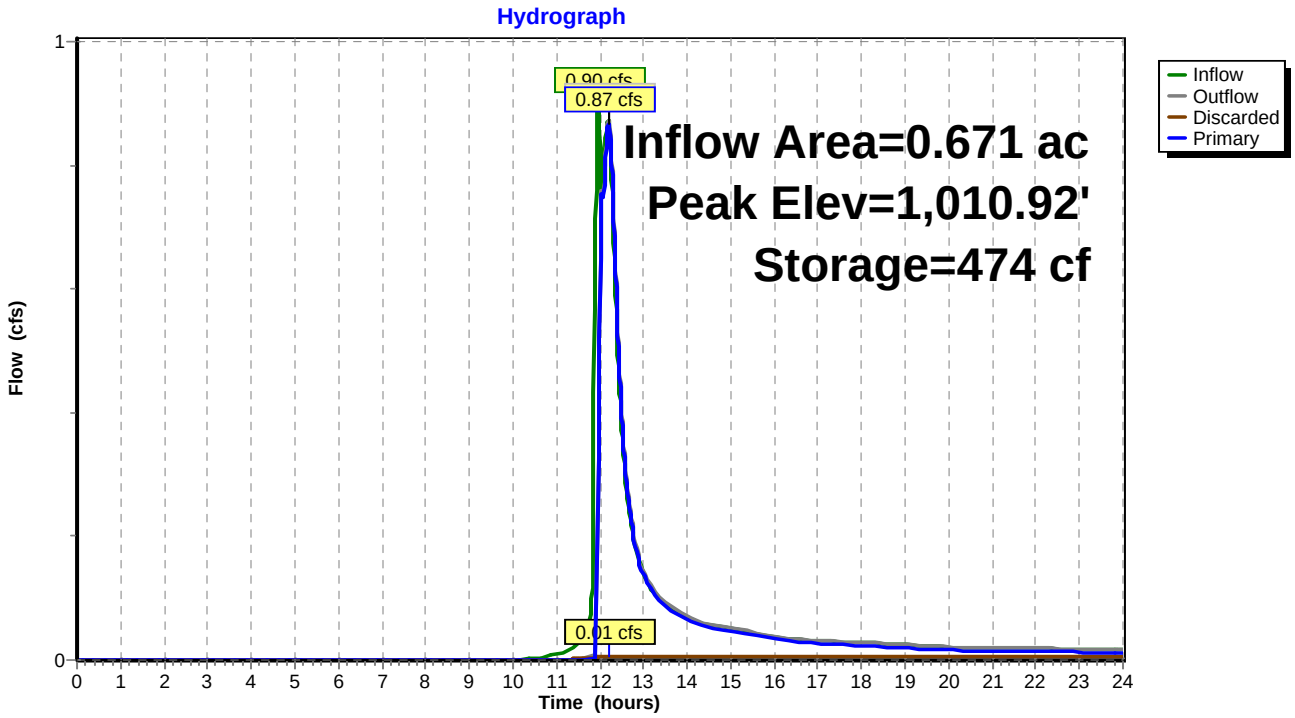
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.00	0	0	0
1,011.00	515	515	515

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,010.75'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.01 cfs @ 12.20 hrs HW=1,010.92' (Free Discharge)
└─**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.87 cfs @ 12.20 hrs HW=1,010.92' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.87 cfs @ 1.02 fps)

Pond 9P: Bio-swale



Stage-Area-Storage for Pond 9P: Bio-swale

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.00	0	0
1,009.02	5	0
1,009.04	10	0
1,009.06	15	0
1,009.08	21	1
1,009.10	26	1
1,009.12	31	2
1,009.14	36	3
1,009.16	41	3
1,009.18	46	4
1,009.20	52	5
1,009.22	57	6
1,009.24	62	7
1,009.26	67	9
1,009.28	72	10
1,009.30	77	12
1,009.32	82	13
1,009.34	88	15
1,009.36	93	17
1,009.38	98	19
1,009.40	103	21
1,009.42	108	23
1,009.44	113	25
1,009.46	118	27
1,009.48	124	30
1,009.50	129	32
1,009.52	134	35
1,009.54	139	38
1,009.56	144	40
1,009.58	149	43
1,009.60	155	46
1,009.62	160	49
1,009.64	165	53
1,009.66	170	56
1,009.68	175	60
1,009.70	180	63
1,009.72	185	67
1,009.74	191	71
1,009.76	196	74
1,009.78	201	78
1,009.80	206	82
1,009.82	211	87
1,009.84	216	91
1,009.86	221	95
1,009.88	227	100
1,009.90	232	104
1,009.92	237	109
1,009.94	242	114
1,009.96	247	119
1,009.98	252	124
1,010.00	258	129
1,010.02	263	134
1,010.04	268	139
1,010.06	273	145
1,010.08	278	150
1,010.10	283	156
1,010.12	288	162
1,010.14	294	167
1,010.16	299	173
1,010.18	304	179
1,010.20	309	185
1,010.22	314	192
1,010.24	319	198
1,010.26	324	204
1,010.28	330	211
1,010.30	335	218
1,010.32	340	224
1,010.34	345	231
1,010.36	350	238
1,010.38	355	245
1,010.40	360	252
1,010.42	366	260
1,010.44	371	267
1,010.46	376	274
1,010.48	381	282
1,010.50	386	290
1,010.52	391	297
1,010.54	397	305
1,010.56	402	313
1,010.58	407	321
1,010.60	412	330
1,010.62	417	338
1,010.64	422	346
1,010.66	427	355
1,010.68	433	363
1,010.70	438	372
1,010.72	443	381
1,010.74	448	390
1,010.76	453	399
1,010.78	458	408
1,010.80	463	417
1,010.82	469	426
1,010.84	474	436
1,010.86	479	445
1,010.88	484	455
1,010.90	489	465
1,010.92	494	475
1,010.94	500	485
1,010.96	505	495
1,010.98	510	505
1,011.00	**515**	**515**

Summary for Pond RG1: RG #1

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 3.76" for 10-Year event				
Inflow =	0.16 cfs @	11.92 hrs,	Volume=	0.008 af	
Outflow =	0.15 cfs @	11.93 hrs,	Volume=	0.006 af,	Atten= 2%, Lag= 0.6 min
Discarded =	0.00 cfs @	11.93 hrs,	Volume=	0.003 af	
Primary =	0.15 cfs @	11.93 hrs,	Volume=	0.004 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,014.05' @ 11.93 hrs Surf.Area= 188 sf Storage= 82 cf

Plug-Flow detention time= 134.5 min calculated for 0.006 af (82% of inflow)
Center-of-Mass det. time= 58.4 min (802.4 - 744.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,012.20'	113 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

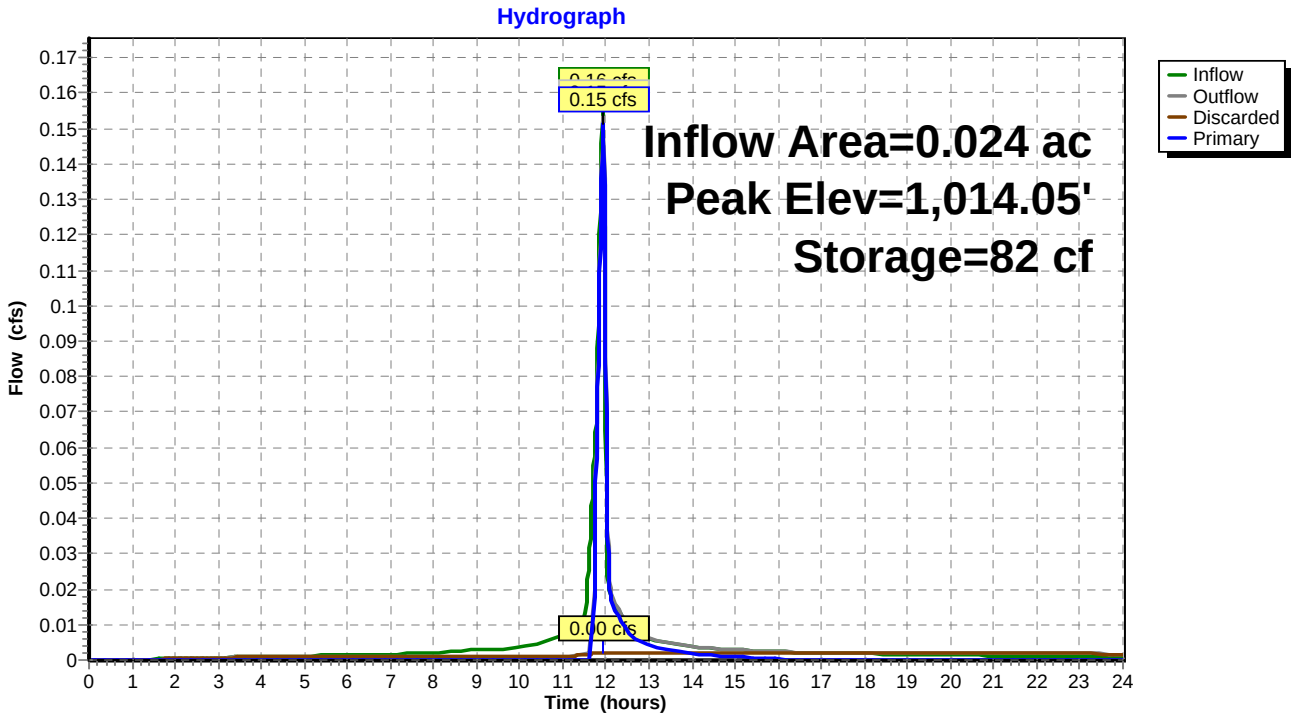
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,012.20	78	0.0	0	0
1,013.70	78	30.0	35	35
1,014.20	234	100.0	78	113

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,012.20'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,014.00'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,014.05' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.15 cfs @ 11.93 hrs HW=1,014.05' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.15 cfs @ 0.57 fps)

Pond RG1: RG #1


Hydrograph
Inflow
Outflow
Discarded
Primary
0.15 cfs
0.00 cfs
Inflow Area=0.024 ac
Peak Elev=1,014.05'
Storage=82 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG1: RG #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,012.20	78	0
1,012.22	78	0
1,012.24	78	1
1,012.26	78	1
1,012.28	78	2
1,012.30	78	2
1,012.32	78	3
1,012.34	78	3
1,012.36	78	4
1,012.38	78	4
1,012.40	78	5
1,012.42	78	5
1,012.44	78	6
1,012.46	78	6
1,012.48	78	7
1,012.50	78	7
1,012.52	78	7
1,012.54	78	8
1,012.56	78	8
1,012.58	78	9
1,012.60	78	9
1,012.62	78	10
1,012.64	78	10
1,012.66	78	11
1,012.68	78	11
1,012.70	78	12
1,012.72	78	12
1,012.74	78	13
1,012.76	78	13
1,012.78	78	14
1,012.80	78	14
1,012.82	78	15
1,012.84	78	15
1,012.86	78	15
1,012.88	78	16
1,012.90	78	16
1,012.92	78	17
1,012.94	78	17
1,012.96	78	18
1,012.98	78	18
1,013.00	78	19
1,013.02	78	19
1,013.04	78	20
1,013.06	78	20
1,013.08	78	21
1,013.10	78	21
1,013.12	78	22
1,013.14	78	22
1,013.16	78	22
1,013.18	78	23
1,013.20	78	23
1,013.22	78	24
1,013.24	78	24
1,013.26	78	25
1,013.28	78	25
1,013.30	78	26
1,013.32	78	26
1,013.34	78	27
1,013.36	78	27
1,013.38	78	28
1,013.40	78	28
1,013.42	78	29
1,013.44	78	29
1,013.46	78	29
1,013.48	78	30
1,013.50	78	30
1,013.52	78	31
1,013.54	78	31
1,013.56	78	32
1,013.58	78	32
1,013.60	78	33
1,013.62	78	33
1,013.64	78	34
1,013.66	78	34
1,013.68	78	35
1,013.70	78	35
1,013.72	84	37
1,013.74	90	38
1,013.76	97	40
1,013.78	103	42
1,013.80	109	44
1,013.82	115	47
1,013.84	122	49
1,013.86	128	52
1,013.88	134	54
1,013.90	140	57
1,013.92	147	60
1,013.94	153	63
1,013.96	159	66
1,013.98	165	69
1,014.00	172	73
1,014.02	178	76
1,014.04	184	80
1,014.06	190	83
1,014.08	197	87
1,014.10	203	91
1,014.12	209	95
1,014.14	215	100
1,014.16	222	104
1,014.18	228	108
1,014.20	**234**	**113**

Summary for Pond RG2: RG #2

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 3.76" for 10-Year event				
Inflow =	0.16 cfs @	11.92 hrs,	Volume=	0.008 af	
Outflow =	0.15 cfs @	11.93 hrs,	Volume=	0.006 af,	Atten= 2%, Lag= 0.5 min
Discarded =	0.00 cfs @	11.93 hrs,	Volume=	0.003 af	
Primary =	0.15 cfs @	11.93 hrs,	Volume=	0.003 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,013.55' @ 11.93 hrs Surf.Area= 179 sf Storage= 93 cf

Plug-Flow detention time= 151.8 min calculated for 0.006 af (78% of inflow)
Center-of-Mass det. time= 68.4 min (812.4 - 744.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.50'	122 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

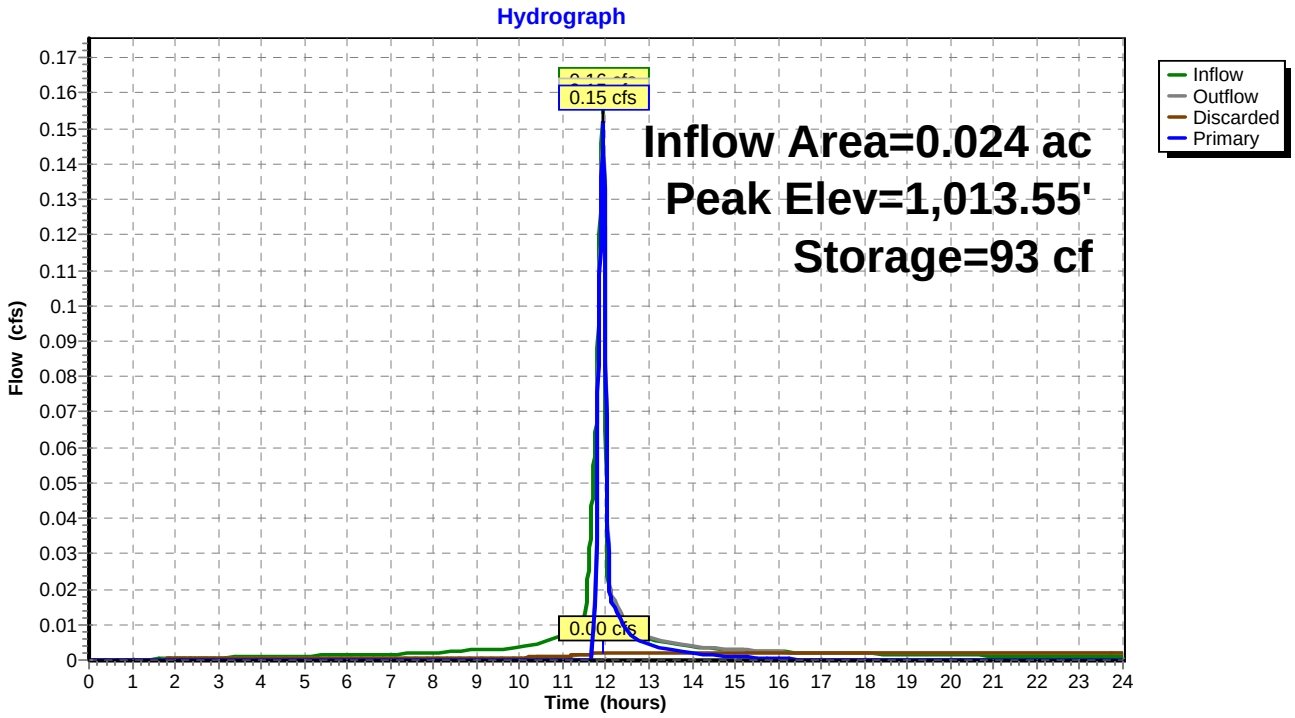
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,011.50	60	0.0	0	0
1,013.00	60	30.0	27	27
1,013.70	211	100.0	95	122

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,011.50'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,013.50'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,013.55' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.15 cfs @ 11.93 hrs HW=1,013.55' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.15 cfs @ 0.57 fps)

Pond RG2: RG #2


Hydrograph
Inflow Area=0.024 ac
Peak Elev=1,013.55'
Storage=93 cf
0.15 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG2: RG #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,011.50	60	0
1,011.55	60	1
1,011.60	60	2
1,011.65	60	3
1,011.70	60	4
1,011.75	60	5
1,011.80	60	5
1,011.85	60	6
1,011.90	60	7
1,011.95	60	8
1,012.00	60	9
1,012.05	60	10
1,012.10	60	11
1,012.15	60	12
1,012.20	60	13
1,012.25	60	14
1,012.30	60	14
1,012.35	60	15
1,012.40	60	16
1,012.45	60	17
1,012.50	60	18
1,012.55	60	19
1,012.60	60	20
1,012.65	60	21
1,012.70	60	22
1,012.75	60	23
1,012.80	60	23
1,012.85	60	24
1,012.90	60	25
1,012.95	60	26
1,013.00	60	27
1,013.05	71	30
1,013.10	82	34
1,013.15	92	38
1,013.20	103	43
1,013.25	114	49
1,013.30	125	55
1,013.35	136	61
1,013.40	146	68
1,013.45	157	76
1,013.50	168	84
1,013.55	179	93
1,013.60	189	102
1,013.65	200	112
1,013.70	**211**	**122**

Summary for Pond RG3: RG#3

Inflow Area =	0.073 ac,100.00% Impervious, Inflow Depth > 3.76" for 10-Year event				
Inflow =	0.47 cfs @	11.92 hrs,	Volume=	0.023 af	
Outflow =	0.46 cfs @	11.93 hrs,	Volume=	0.020 af,	Atten= 1%, Lag= 0.5 min
Discarded =	0.00 cfs @	11.93 hrs,	Volume=	0.004 af	
Primary =	0.46 cfs @	11.93 hrs,	Volume=	0.016 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,012.41' @ 11.93 hrs Surf.Area= 223 sf Storage= 173 cf

Plug-Flow detention time= 112.7 min calculated for 0.020 af (85% of inflow)
Center-of-Mass det. time= 44.4 min (788.5 - 744.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	194 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

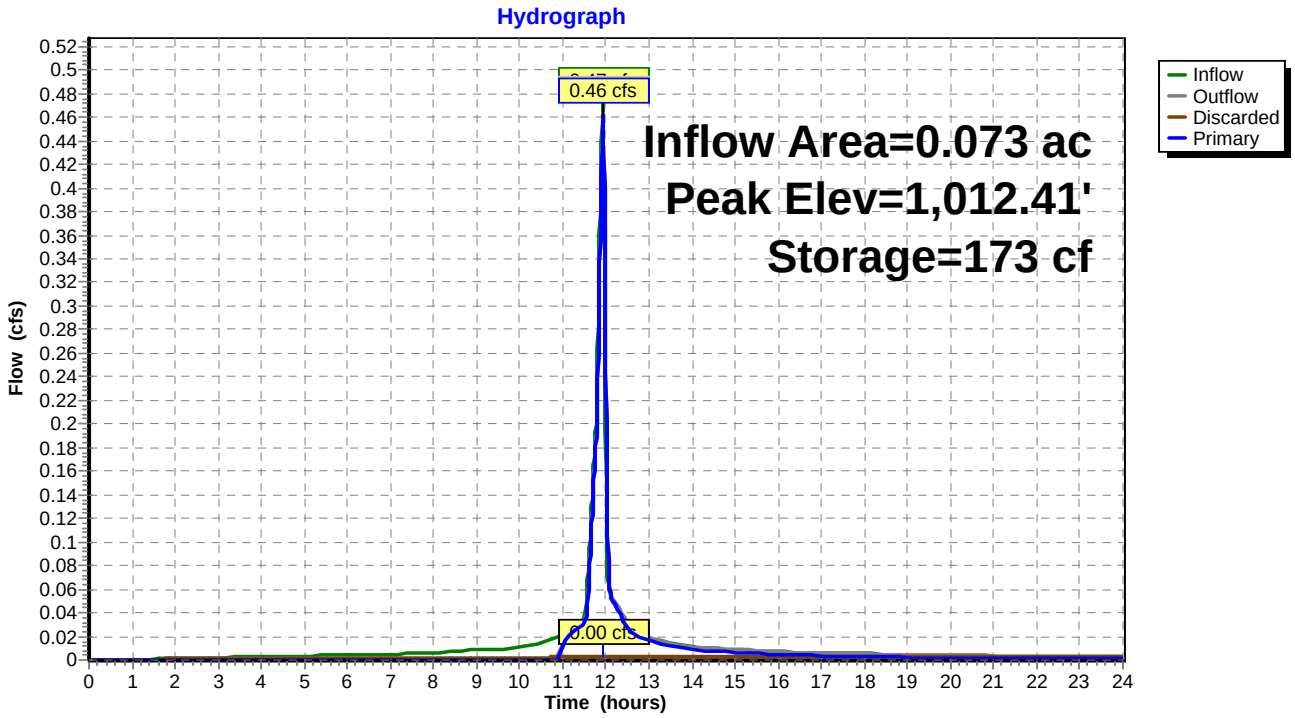
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	79	0.0	0	0
1,011.50	79	30.0	36	36
1,012.50	237	100.0	158	194

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,012.41' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.46 cfs @ 11.93 hrs HW=1,012.41' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.46 cfs @ 0.83 fps)

Pond RG3: RG#3


Hydrograph
0.46 cfs
0.00 cfs
Inflow Area=0.073 ac
Peak Elev=1,012.41'
Storage=173 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG3: RG#3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	79	0
1,010.05	79	1
1,010.10	79	2
1,010.15	79	4
1,010.20	79	5
1,010.25	79	6
1,010.30	79	7
1,010.35	79	8
1,010.40	79	9
1,010.45	79	11
1,010.50	79	12
1,010.55	79	13
1,010.60	79	14
1,010.65	79	15
1,010.70	79	17
1,010.75	79	18
1,010.80	79	19
1,010.85	79	20
1,010.90	79	21
1,010.95	79	23
1,011.00	79	24
1,011.05	79	25
1,011.10	79	26
1,011.15	79	27
1,011.20	79	28
1,011.25	79	30
1,011.30	79	31
1,011.35	79	32
1,011.40	79	33
1,011.45	79	34
1,011.50	79	36
1,011.55	87	40
1,011.60	95	44
1,011.65	103	49
1,011.70	111	55
1,011.75	119	60
1,011.80	126	66
1,011.85	134	73
1,011.90	142	80
1,011.95	150	87
1,012.00	158	95
1,012.05	166	103
1,012.10	174	111
1,012.15	182	120
1,012.20	190	130
1,012.25	198	139
1,012.30	205	149
1,012.35	213	160
1,012.40	221	171
1,012.45	229	182
1,012.50	**237**	**194**

Summary for Pond RG4: RG #4

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 3.76" for 10-Year event				
Inflow =	0.16 cfs @	11.92 hrs,	Volume=	0.008 af	
Outflow =	0.09 cfs @	11.98 hrs,	Volume=	0.005 af,	Atten= 40%, Lag= 3.6 min
Discarded =	0.00 cfs @	11.98 hrs,	Volume=	0.003 af	
Primary =	0.09 cfs @	11.98 hrs,	Volume=	0.002 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,012.34' @ 11.98 hrs Surf.Area= 203 sf Storage= 161 cf

Plug-Flow detention time= 220.1 min calculated for 0.005 af (60% of inflow)
Center-of-Mass det. time= 110.8 min (854.9 - 744.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	196 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

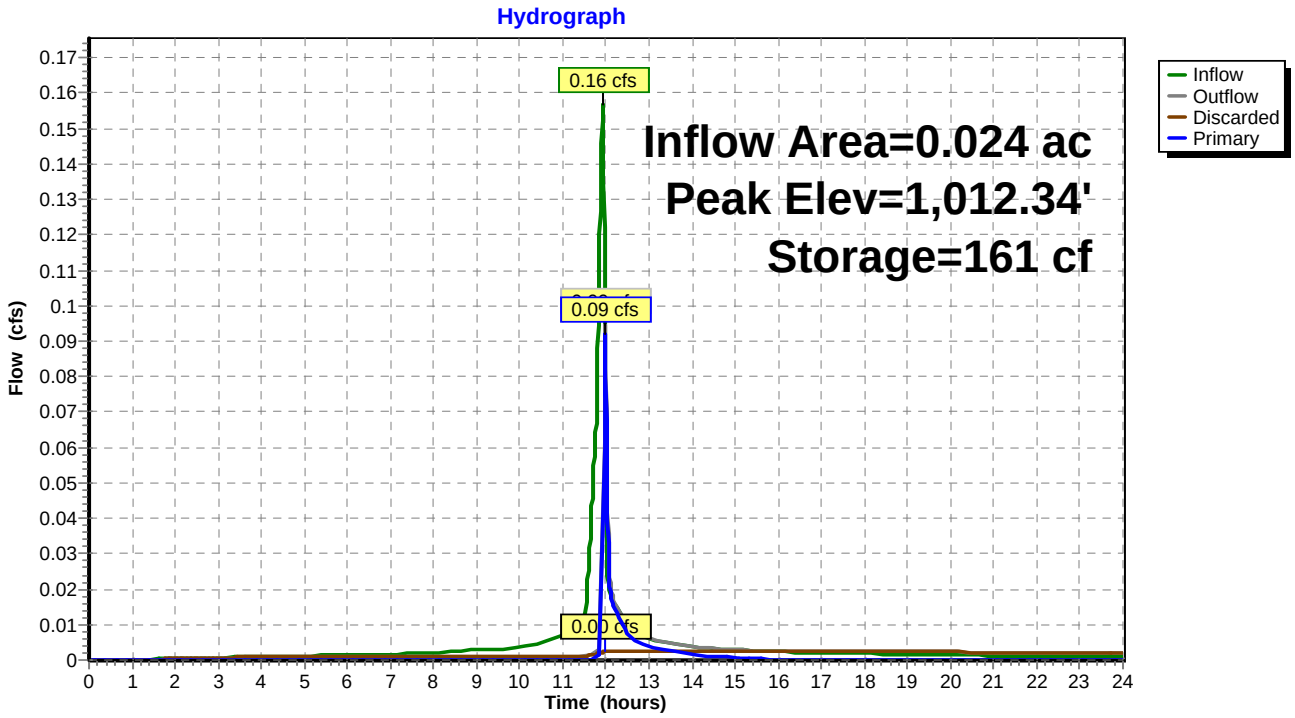
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	87	0.0	0	0
1,011.50	87	30.0	39	39
1,012.50	226	100.0	157	196

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.98 hrs HW=1,012.34' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.09 cfs @ 11.98 hrs HW=1,012.34' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.48 fps)

Pond RG4: RG #4


Hydrograph
Inflow Area=0.024 ac
Peak Elev=1,012.34'
Storage=161 cf
0.16 cfs
0.09 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG4: RG #4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	87	0
1,010.05	87	1
1,010.10	87	3
1,010.15	87	4
1,010.20	87	5
1,010.25	87	7
1,010.30	87	8
1,010.35	87	9
1,010.40	87	10
1,010.45	87	12
1,010.50	87	13
1,010.55	87	14
1,010.60	87	16
1,010.65	87	17
1,010.70	87	18
1,010.75	87	20
1,010.80	87	21
1,010.85	87	22
1,010.90	87	23
1,010.95	87	25
1,011.00	87	26
1,011.05	87	27
1,011.10	87	29
1,011.15	87	30
1,011.20	87	31
1,011.25	87	33
1,011.30	87	34
1,011.35	87	35
1,011.40	87	37
1,011.45	87	38
1,011.50	87	39
1,011.55	94	44
1,011.60	101	49
1,011.65	108	54
1,011.70	115	59
1,011.75	122	65
1,011.80	129	72
1,011.85	136	78
1,011.90	143	85
1,011.95	150	92
1,012.00	157	100
1,012.05	163	108
1,012.10	170	116
1,012.15	177	125
1,012.20	184	134
1,012.25	191	143
1,012.30	198	153
1,012.35	205	163
1,012.40	212	174
1,012.45	219	185
1,012.50	**226**	**196**

Summary for Pond RG5: RG #5

Inflow Area =	0.049 ac,100.00% Impervious, Inflow Depth > 3.76" for 10-Year event				
Inflow =	0.31 cfs @	11.92 hrs, Volume=	0.015 af		
Outflow =	0.31 cfs @	11.93 hrs, Volume=	0.013 af, Atten= 1%, Lag= 0.5 min		
Discarded =	0.00 cfs @	11.93 hrs, Volume=	0.003 af		
Primary =	0.31 cfs @	11.93 hrs, Volume=	0.009 af		

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,011.88' @ 11.93 hrs Surf.Area= 173 sf Storage= 132 cf

Plug-Flow detention time= 120.7 min calculated for 0.013 af (83% of inflow)
Center-of-Mass det. time= 45.8 min (789.9 - 744.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	153 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

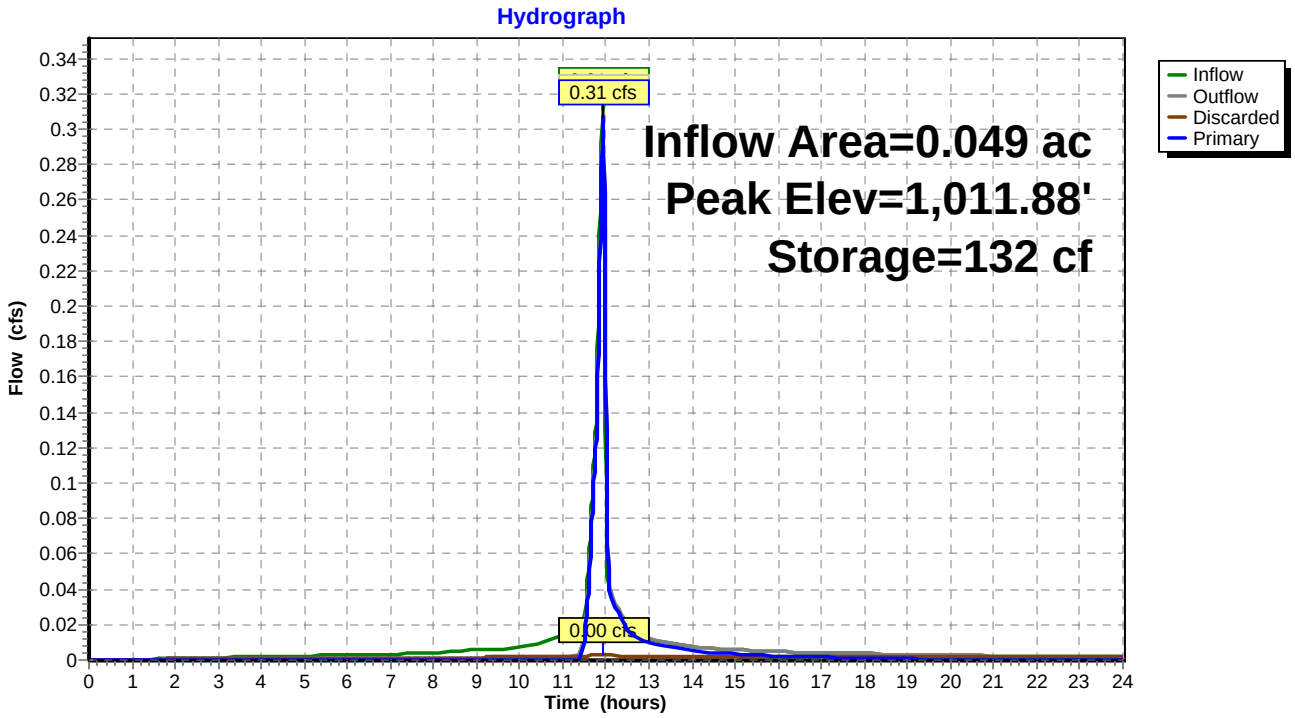
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.50	62	0.0	0	0
1,011.00	62	30.0	28	28
1,012.00	188	100.0	125	153

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.50'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1,006.00'
#2	Primary	1,011.80'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,011.88' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.30 cfs @ 11.93 hrs HW=1,011.88' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.30 cfs @ 0.72 fps)

Pond RG5: RG #5


Hydrograph
Inflow
Outflow
Discarded
Primary
0.31 cfs
0.00 cfs
Inflow Area=0.049 ac
Peak Elev=1,011.88'
Storage=132 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG5: RG #5

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.50	62	0
1,009.55	62	1
1,009.60	62	2
1,009.65	62	3
1,009.70	62	4
1,009.75	62	5
1,009.80	62	6
1,009.85	62	7
1,009.90	62	7
1,009.95	62	8
1,010.00	62	9
1,010.05	62	10
1,010.10	62	11
1,010.15	62	12
1,010.20	62	13
1,010.25	62	14
1,010.30	62	15
1,010.35	62	16
1,010.40	62	17
1,010.45	62	18
1,010.50	62	19
1,010.55	62	20
1,010.60	62	20
1,010.65	62	21
1,010.70	62	22
1,010.75	62	23
1,010.80	62	24
1,010.85	62	25
1,010.90	62	26
1,010.95	62	27
1,011.00	62	28
1,011.05	68	31
1,011.10	75	35
1,011.15	81	39
1,011.20	87	43
1,011.25	94	47
1,011.30	100	52
1,011.35	106	57
1,011.40	112	63
1,011.45	119	69
1,011.50	125	75
1,011.55	131	81
1,011.60	138	88
1,011.65	144	95
1,011.70	150	102
1,011.75	157	110
1,011.80	163	118
1,011.85	169	126
1,011.90	175	135
1,011.95	182	144
1,012.00	**188**	**153**

Summary for Pond RG6: RG #6

Inflow Area =	0.100 ac,100.00% Impervious, Inflow Depth > 2.53" for 10-Year event				
Inflow =	0.63 cfs @	11.93 hrs, Volume=	0.021 af		
Outflow =	0.62 cfs @	11.94 hrs, Volume=	0.018 af, Atten= 1%, Lag= 0.5 min		
Discarded =	0.00 cfs @	11.94 hrs, Volume=	0.003 af		
Primary =	0.62 cfs @	11.94 hrs, Volume=	0.015 af		

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,011.44' @ 11.94 hrs Surf.Area= 257 sf Storage= 185 cf

Plug-Flow detention time= 75.8 min calculated for 0.018 af (86% of inflow)
Center-of-Mass det. time= 32.3 min (777.0 - 744.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.10'	202 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

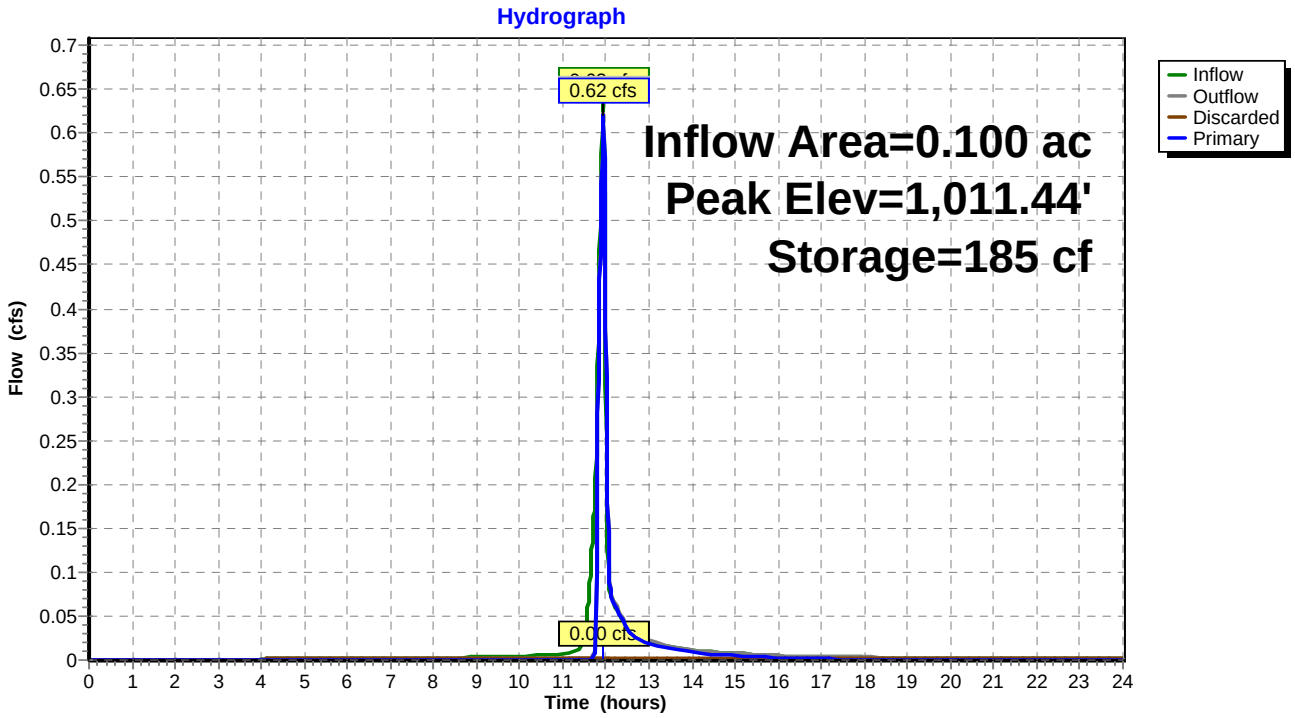
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.10	90	0.0	0	0
1,010.60	90	30.0	41	41
1,011.50	270	100.0	162	202

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.10'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,011.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.94 hrs HW=1,011.43' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.62 cfs @ 11.94 hrs HW=1,011.43' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.62 cfs @ 0.91 fps)

Pond RG6: RG #6


Hydrograph
0.62 cfs
0.00 cfs
Inflow Area=0.100 ac
Peak Elev=1,011.44'
Storage=185 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG6: RG #6

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.10	90	0
1,009.15	90	1
1,009.20	90	3
1,009.25	90	4
1,009.30	90	5
1,009.35	90	7
1,009.40	90	8
1,009.45	90	9
1,009.50	90	11
1,009.55	90	12
1,009.60	90	14
1,009.65	90	15
1,009.70	90	16
1,009.75	90	18
1,009.80	90	19
1,009.85	90	20
1,009.90	90	22
1,009.95	90	23
1,010.00	90	24
1,010.05	90	26
1,010.10	90	27
1,010.15	90	28
1,010.20	90	30
1,010.25	90	31
1,010.30	90	32
1,010.35	90	34
1,010.40	90	35
1,010.45	90	36
1,010.50	90	38
1,010.55	90	39
1,010.60	90	41
1,010.65	100	45
1,010.70	110	51
1,010.75	120	56
1,010.80	130	63
1,010.85	140	69
1,010.90	150	76
1,010.95	160	84
1,011.00	170	92
1,011.05	180	101
1,011.10	190	111
1,011.15	200	120
1,011.20	210	131
1,011.25	220	141
1,011.30	230	153
1,011.35	240	164
1,011.40	250	176
1,011.45	260	189
1,011.50	**270**	**202**

Summary for Pond RG7: RG #7

Inflow Area =	0.047 ac,100.00% Impervious, Inflow Depth > 2.23" for 10-Year event				
Inflow =	0.19 cfs @	11.97 hrs,	Volume=	0.009 af	
Outflow =	0.00 cfs @	14.96 hrs,	Volume=	0.004 af,	Atten= 98%, Lag= 179.5 min
Discarded =	0.00 cfs @	14.96 hrs,	Volume=	0.004 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,012.23' @ 14.96 hrs Surf.Area= 304 sf Storage= 244 cf

Plug-Flow detention time= 280.9 min calculated for 0.004 af (51% of inflow)
Center-of-Mass det. time= 172.7 min (918.4 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	335 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

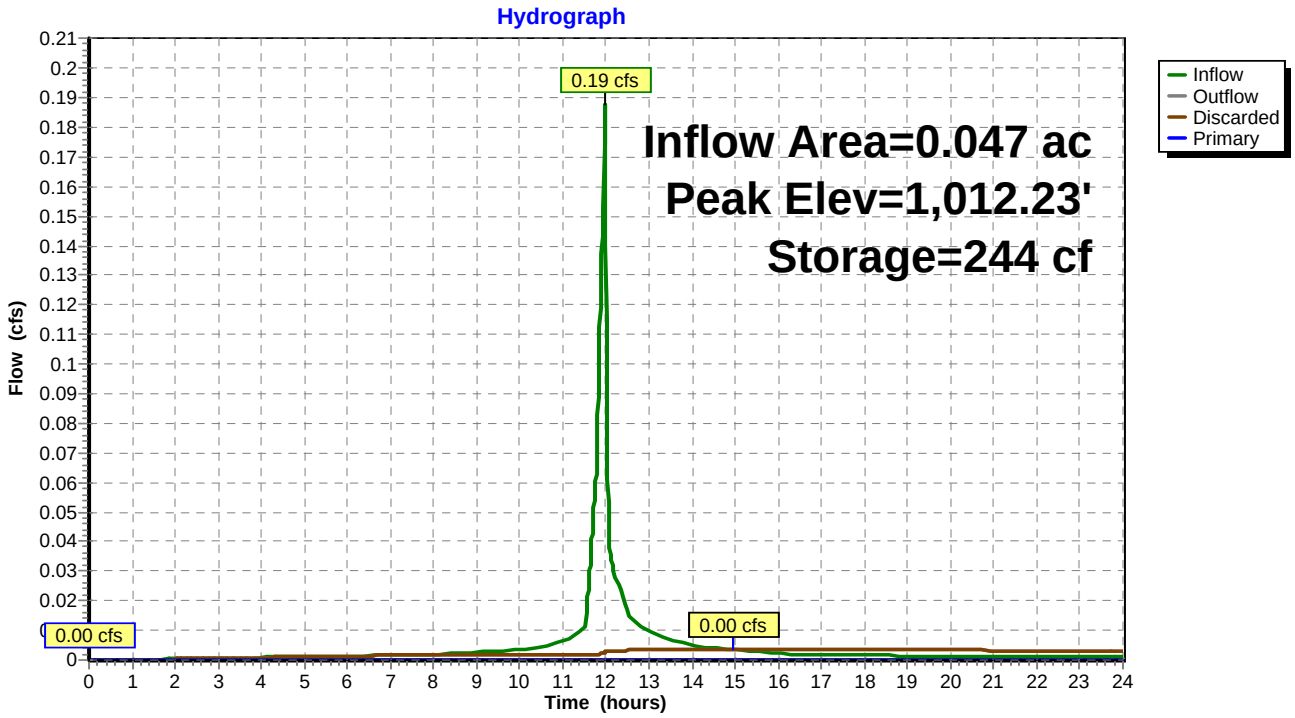
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	165	0.0	0	0
1,011.50	165	30.0	74	74
1,012.50	356	100.0	261	335

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 14.96 hrs HW=1,012.23' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,010.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond RG7: RG #7


Hydrograph
0.19 cfs
0.00 cfs
0.00 cfs
Inflow Area=0.047 ac
Peak Elev=1,012.23'
Storage=244 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG7: RG #7

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	165	0
1,010.05	165	2
1,010.10	165	5
1,010.15	165	7
1,010.20	165	10
1,010.25	165	12
1,010.30	165	15
1,010.35	165	17
1,010.40	165	20
1,010.45	165	22
1,010.50	165	25
1,010.55	165	27
1,010.60	165	30
1,010.65	165	32
1,010.70	165	35
1,010.75	165	37
1,010.80	165	40
1,010.85	165	42
1,010.90	165	45
1,010.95	165	47
1,011.00	165	50
1,011.05	165	52
1,011.10	165	54
1,011.15	165	57
1,011.20	165	59
1,011.25	165	62
1,011.30	165	64
1,011.35	165	67
1,011.40	165	69
1,011.45	165	72
1,011.50	165	74
1,011.55	175	83
1,011.60	184	92
1,011.65	194	101
1,011.70	203	111
1,011.75	213	121
1,011.80	222	132
1,011.85	232	144
1,011.90	241	156
1,011.95	251	168
1,012.00	261	181
1,012.05	270	194
1,012.10	280	208
1,012.15	289	222
1,012.20	299	237
1,012.25	308	252
1,012.30	318	267
1,012.35	327	283
1,012.40	337	300
1,012.45	346	317
1,012.50	**356**	**335**

Summary for Pond RG8: RG #8

Inflow Area =	0.100 ac,100.00% Impervious, Inflow Depth = 1.75" for 10-Year event				
Inflow =	0.62 cfs @	11.94 hrs,	Volume=	0.015 af	
Outflow =	0.62 cfs @	11.94 hrs,	Volume=	0.014 af,	Atten= 1%, Lag= 0.4 min
Discarded =	0.00 cfs @	11.94 hrs,	Volume=	0.001 af	
Primary =	0.61 cfs @	11.94 hrs,	Volume=	0.012 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,010.93' @ 11.94 hrs Surf.Area= 163 sf Storage= 90 cf

Plug-Flow detention time= 42.4 min calculated for 0.014 af (94% of inflow)
Center-of-Mass det. time= 30.1 min (773.5 - 743.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.10'	212 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

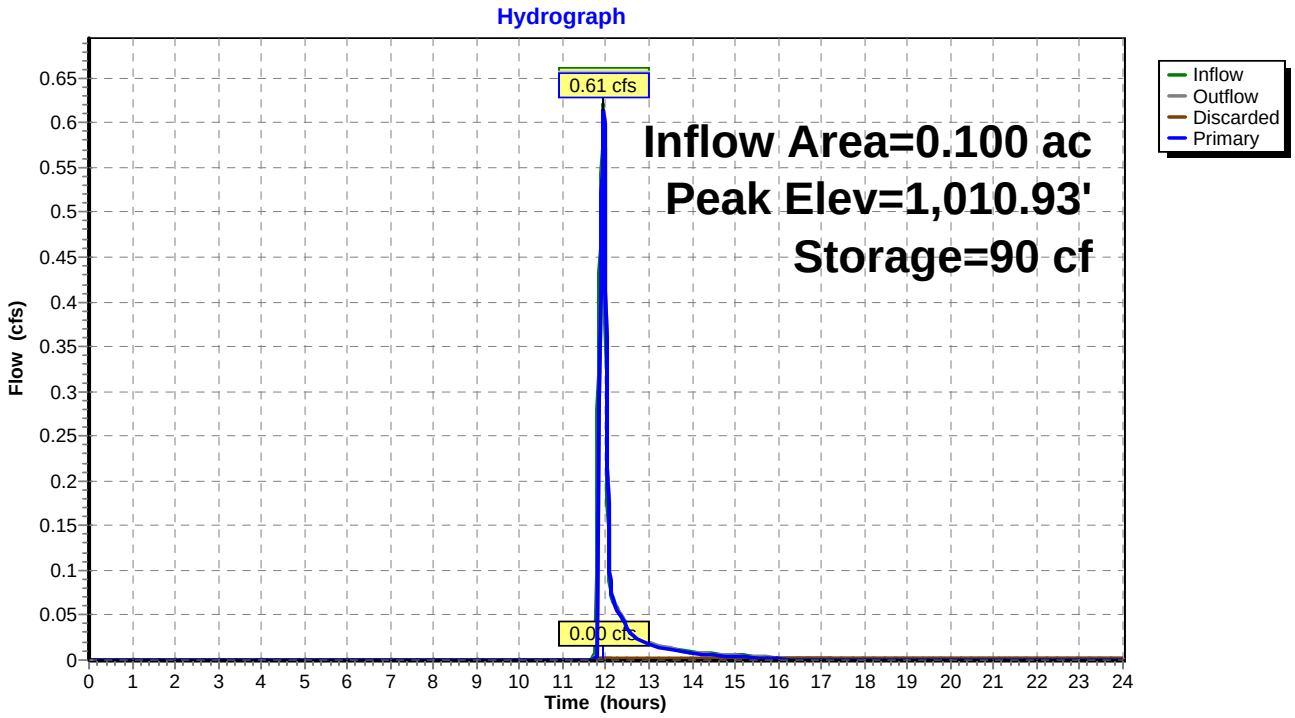
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.10	102	0.0	0	0
1,010.60	102	30.0	46	46
1,011.50	267	100.0	166	212

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.10'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,010.80'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.94 hrs HW=1,010.93' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.61 cfs @ 11.94 hrs HW=1,010.93' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.61 cfs @ 0.91 fps)

Pond RG8: RG #8


Hydrograph
0.61 cfs
0.00 cfs
Inflow Area=0.100 ac
Peak Elev=1,010.93'
Storage=90 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG8: RG #8

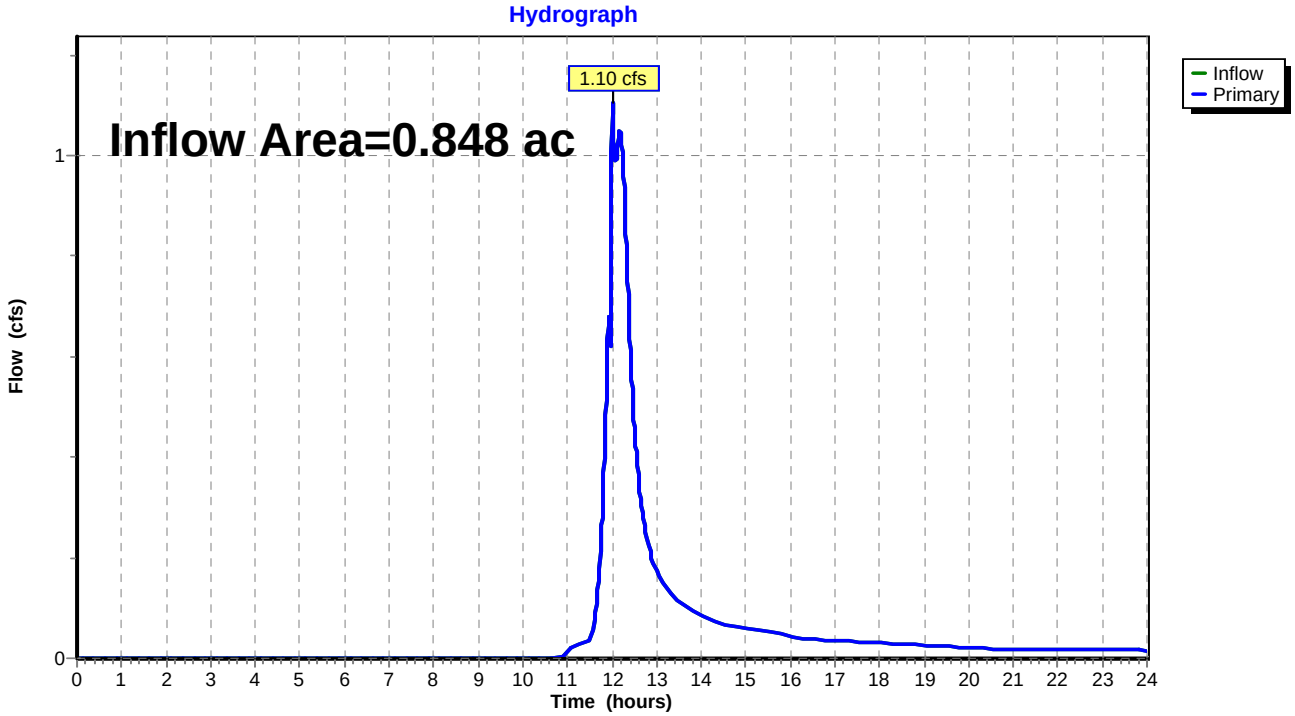
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.10	102	0
1,009.15	102	2
1,009.20	102	3
1,009.25	102	5
1,009.30	102	6
1,009.35	102	8
1,009.40	102	9
1,009.45	102	11
1,009.50	102	12
1,009.55	102	14
1,009.60	102	15
1,009.65	102	17
1,009.70	102	18
1,009.75	102	20
1,009.80	102	21
1,009.85	102	23
1,009.90	102	24
1,009.95	102	26
1,010.00	102	28
1,010.05	102	29
1,010.10	102	31
1,010.15	102	32
1,010.20	102	34
1,010.25	102	35
1,010.30	102	37
1,010.35	102	38
1,010.40	102	40
1,010.45	102	41
1,010.50	102	43
1,010.55	102	44
1,010.60	102	46
1,010.65	111	51
1,010.70	120	57
1,010.75	129	63
1,010.80	139	70
1,010.85	148	77
1,010.90	157	85
1,010.95	166	93
1,011.00	175	101
1,011.05	185	110
1,011.10	194	120
1,011.15	203	130
1,011.20	212	140
1,011.25	221	151
1,011.30	230	162
1,011.35	240	174
1,011.40	249	186
1,011.45	258	199
1,011.50	**267**	**212**

Summary for Link Q: Site Discharge

Inflow Area = 0.848 ac, 28.93% Impervious, Inflow Depth > 1.37" for 10-Year event
Inflow = 1.10 cfs @ 12.01 hrs, Volume= 0.097 af
Primary = 1.10 cfs @ 12.01 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Q: Site Discharge



Summary for Subcatchment 1:

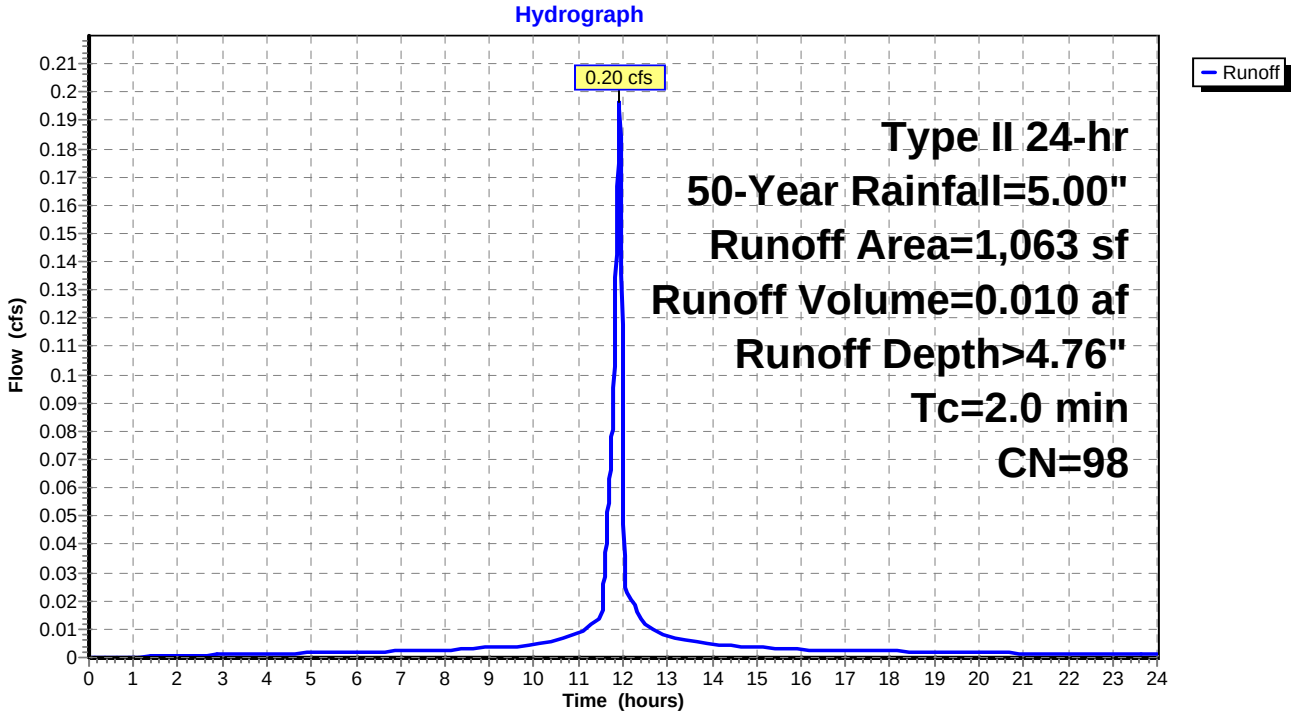
Runoff = 0.20 cfs @ 11.92 hrs, Volume= 0.010 af, Depth> 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.00"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 1:



Summary for Subcatchment 2:

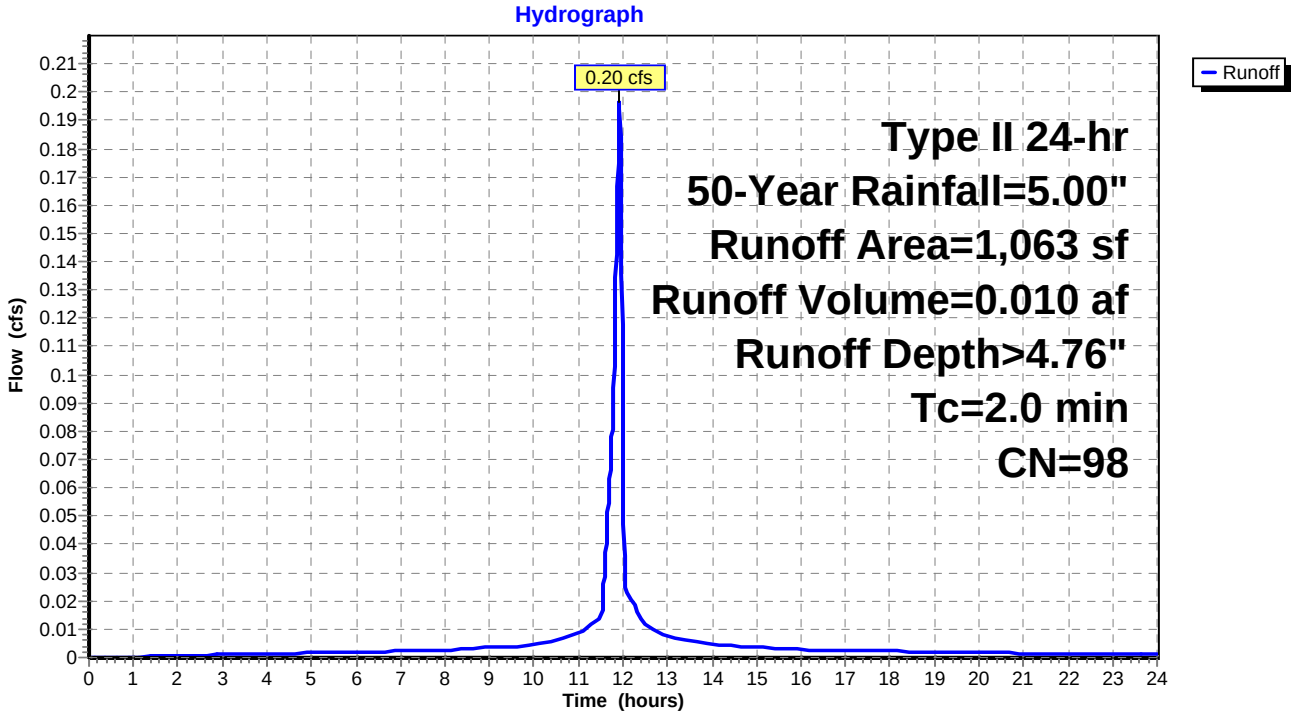
Runoff = 0.20 cfs @ 11.92 hrs, Volume= 0.010 af, Depth> 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.00"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 2:



Summary for Subcatchment 3:

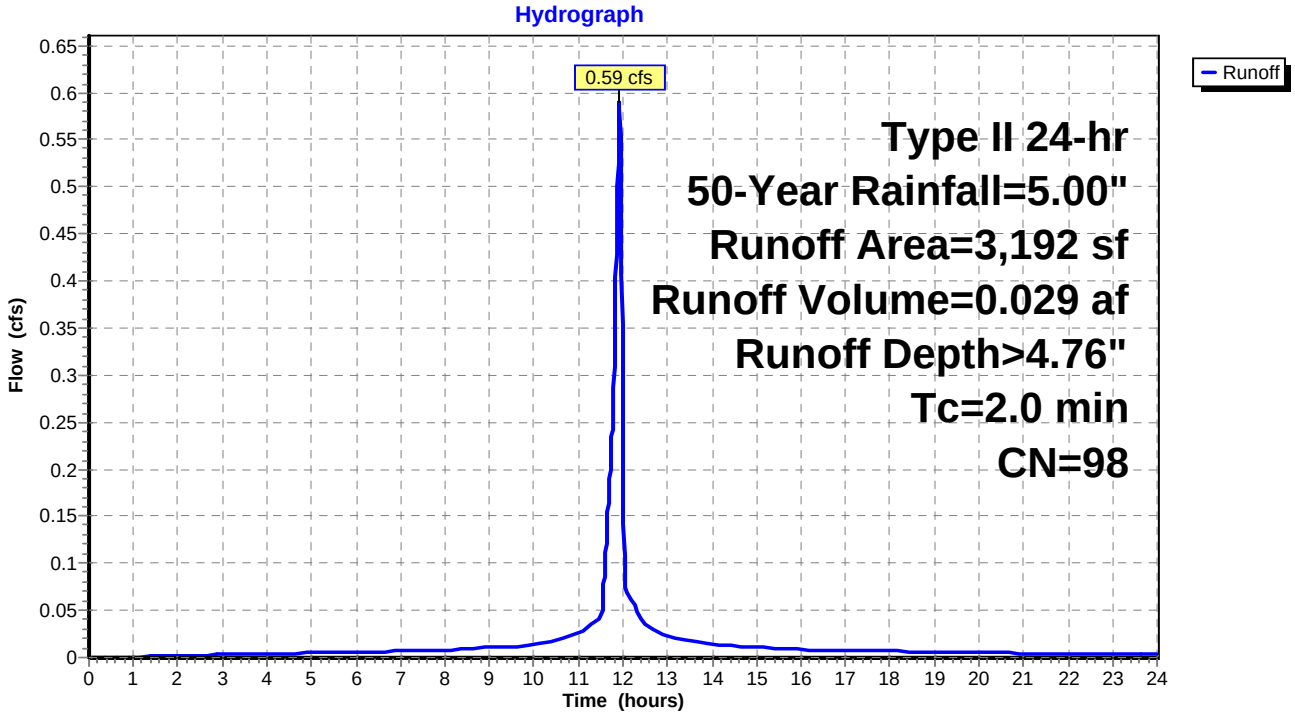
Runoff = 0.59 cfs @ 11.92 hrs, Volume= 0.029 af, Depth> 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.00"

	Area (sf)	CN	Description
*	3,192	98	
	3,192		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 3:



Summary for Subcatchment 4:

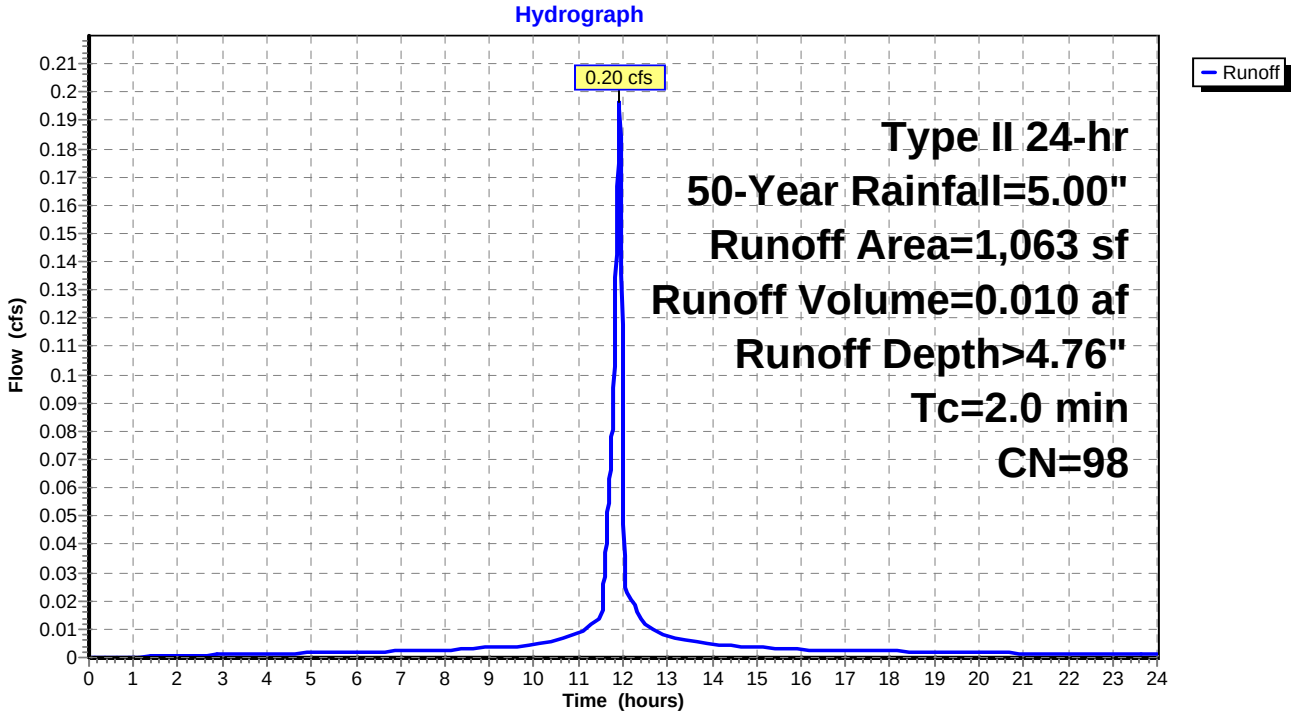
Runoff = 0.20 cfs @ 11.92 hrs, Volume= 0.010 af, Depth> 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.00"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 4:



Summary for Subcatchment 5:

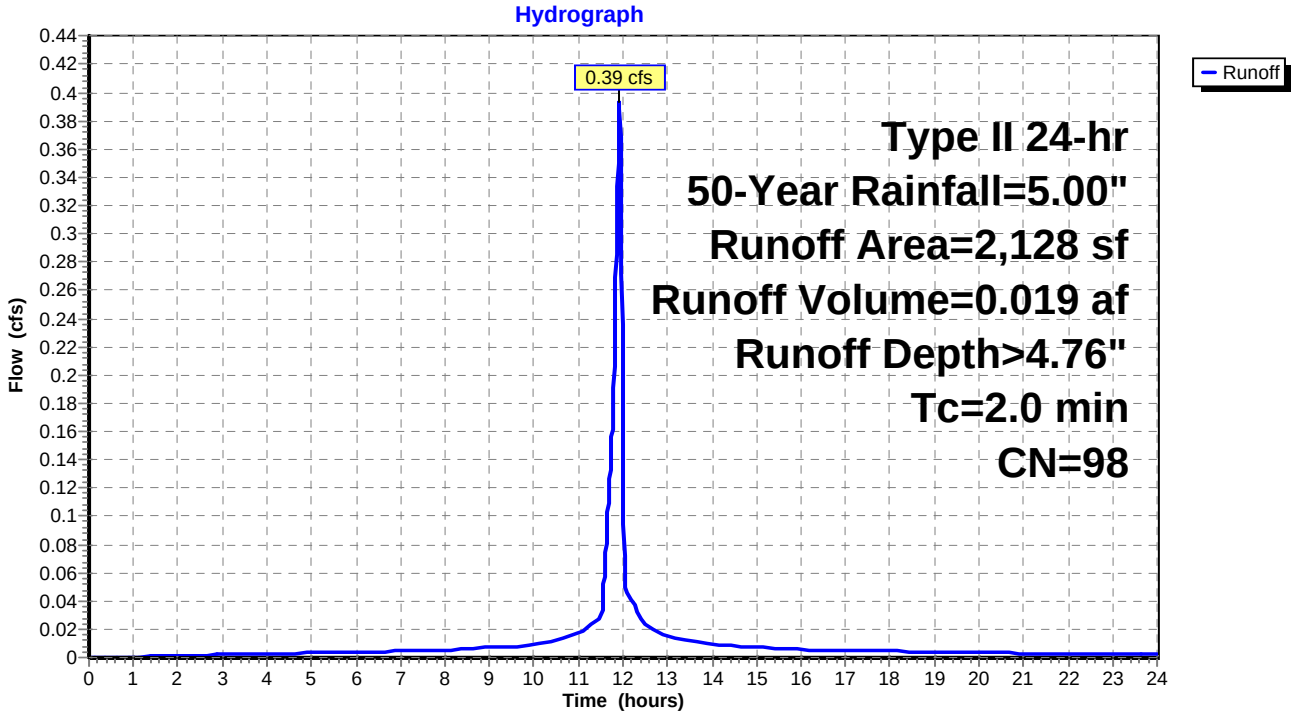
Runoff = 0.39 cfs @ 11.92 hrs, Volume= 0.019 af, Depth> 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.00"

	Area (sf)	CN	Description
*	2,128	98	
	2,128		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 5:



Summary for Subcatchment 6:

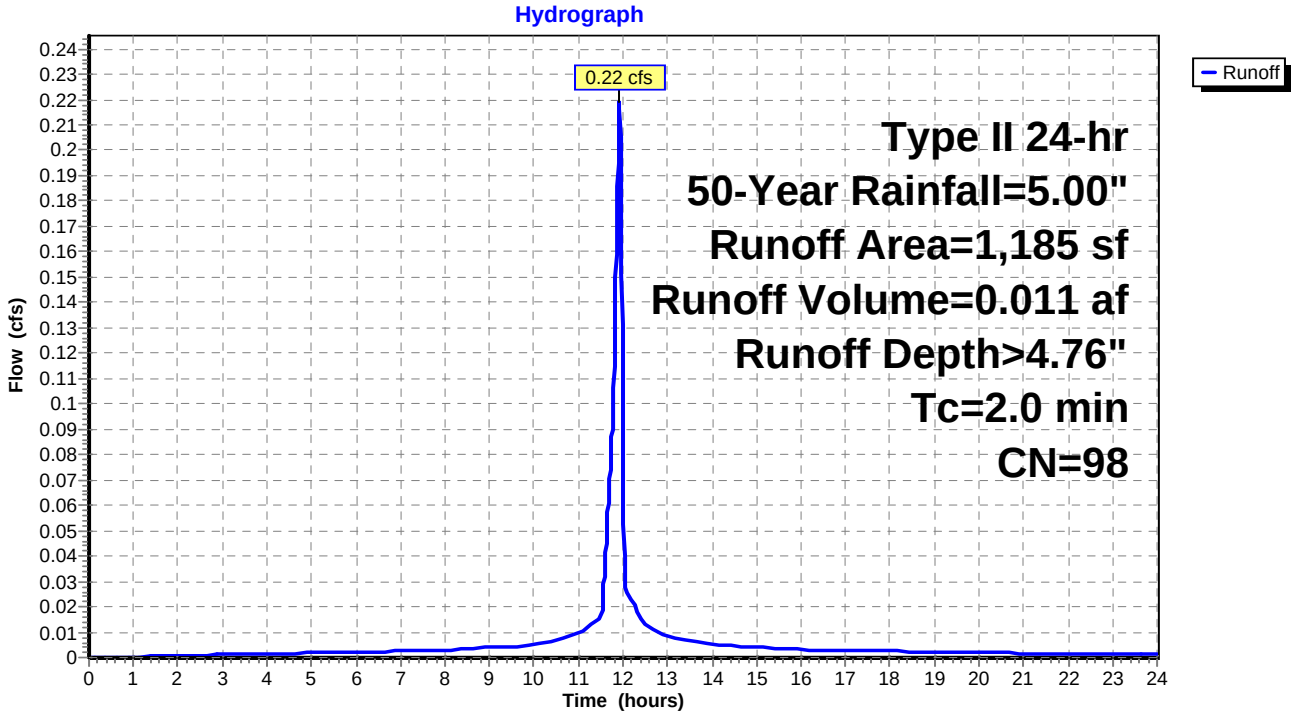
Runoff = 0.22 cfs @ 11.92 hrs, Volume= 0.011 af, Depth> 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.00"

	Area (sf)	CN	Description
*	1,185	98	
	1,185		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 6:



Summary for Subcatchment 7:

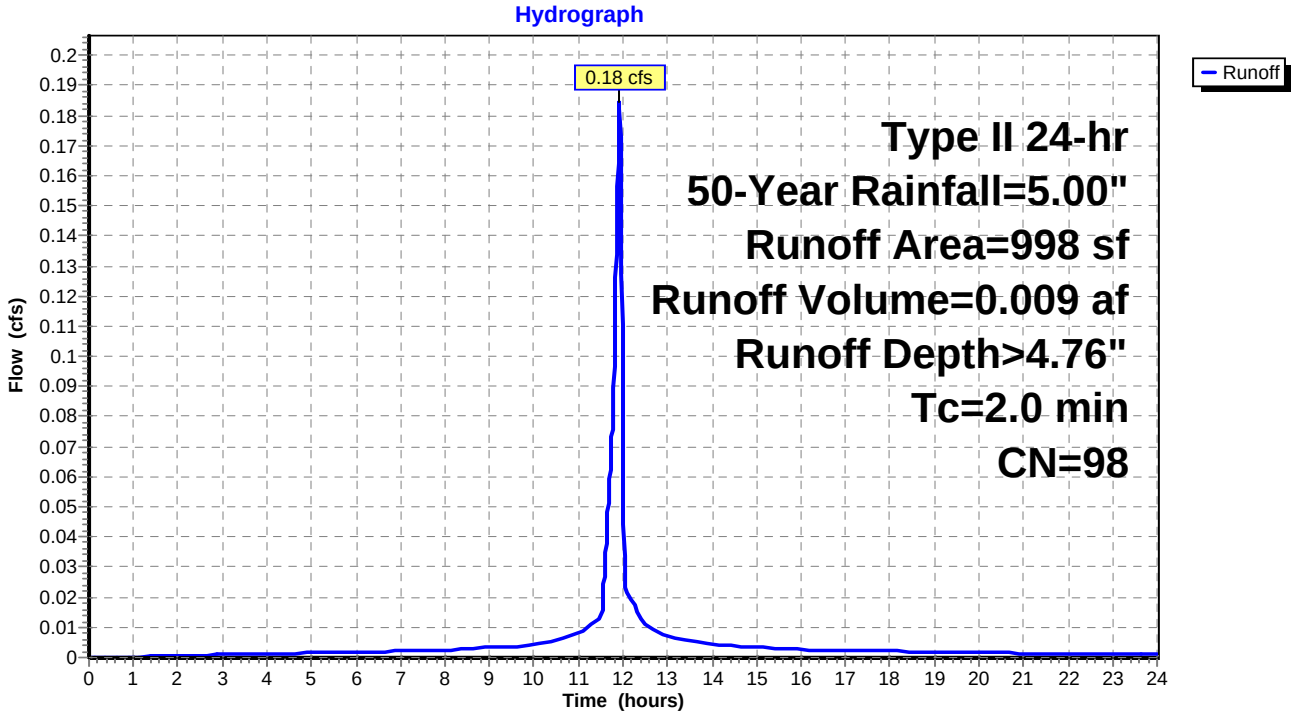
Runoff = 0.18 cfs @ 11.92 hrs, Volume= 0.009 af, Depth> 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.00"

	Area (sf)	CN	Description
*	998	98	
	998		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 7:



Summary for Subcatchment 8:

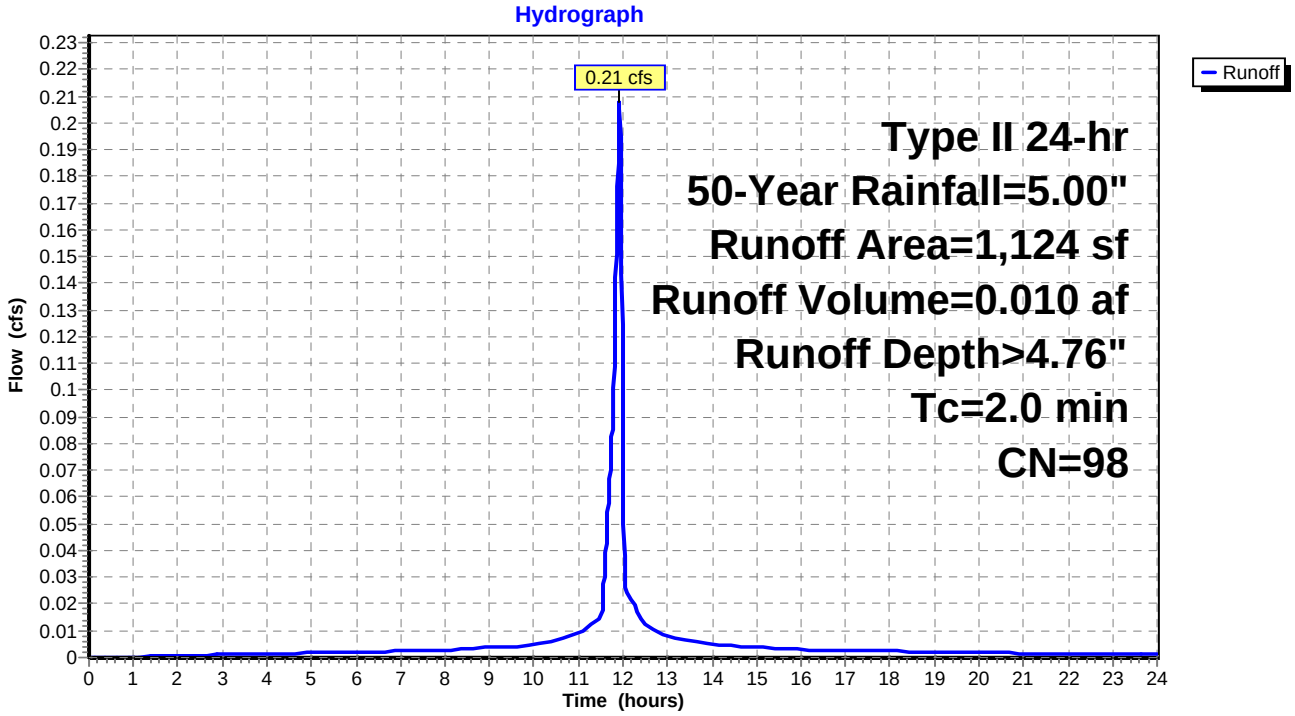
Runoff = 0.21 cfs @ 11.92 hrs, Volume= 0.010 af, Depth> 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.00"

	Area (sf)	CN	Description
*	1,124	98	
	1,124		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 8:



Summary for Subcatchment dd: Post

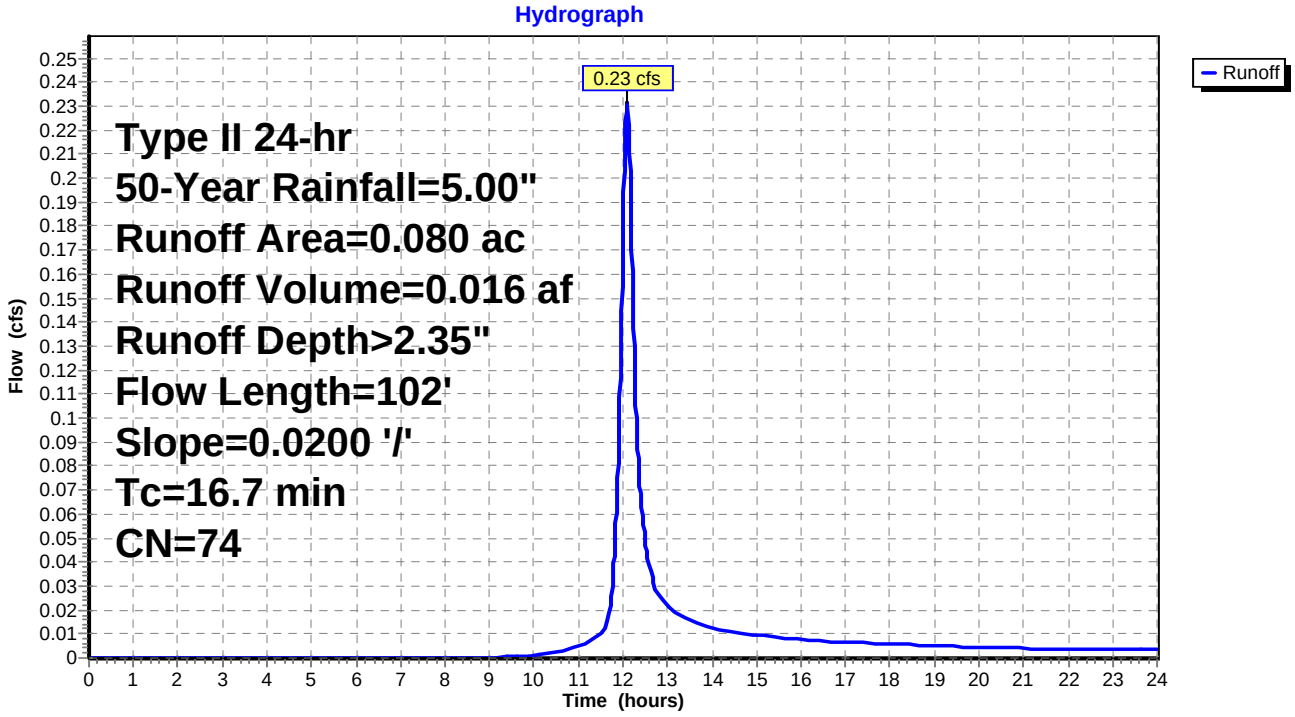
Runoff = 0.23 cfs @ 12.09 hrs, Volume= 0.016 af, Depth> 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.00"

Area (ac)	CN	Description
0.080	74	>75% Grass cover, Good, HSG C
0.080		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	102	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment dd: Post



Summary for Subcatchment pst: Post

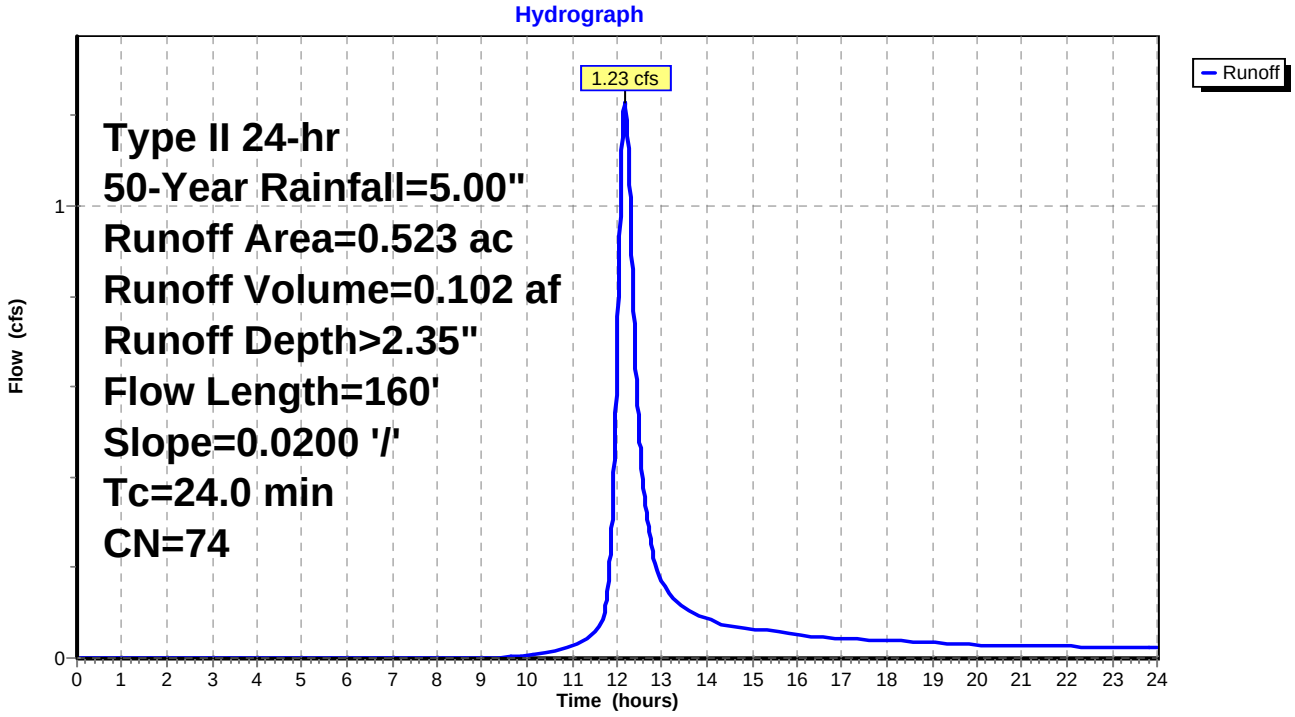
Runoff = 1.23 cfs @ 12.18 hrs, Volume= 0.102 af, Depth> 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.00"

Area (ac)	CN	Description
0.523	74	>75% Grass cover, Good, HSG C
0.523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	160	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment pst: Post



Summary for Pond 9P: Bio-swale

Inflow Area =	0.671 ac, 22.03% Impervious, Inflow Depth > 2.22" for 50-Year event				
Inflow =	1.35 cfs @	12.18 hrs, Volume=	0.124 af		
Outflow =	1.34 cfs @	12.19 hrs, Volume=	0.115 af, Atten= 0%, Lag= 0.7 min		
Discarded =	0.01 cfs @	12.19 hrs, Volume=	0.006 af		
Primary =	1.34 cfs @	12.19 hrs, Volume=	0.109 af		

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,010.98' @ 12.19 hrs Surf.Area= 509 sf Storage= 502 cf

Plug-Flow detention time= 50.4 min calculated for 0.115 af (93% of inflow)
Center-of-Mass det. time= 12.4 min (841.2 - 828.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.00'	515 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

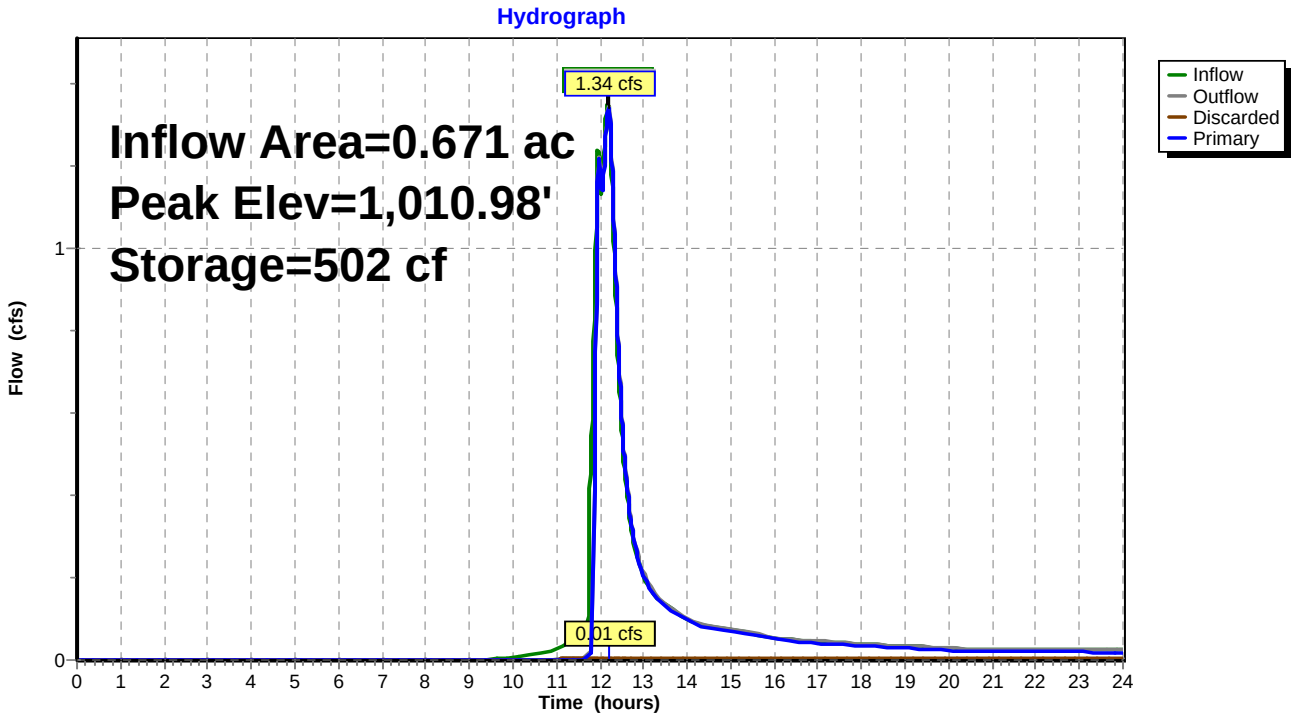
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.00	0	0	0
1,011.00	515	515	515

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,010.75'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.01 cfs @ 12.19 hrs HW=1,010.98' (Free Discharge)
└─**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=1.33 cfs @ 12.19 hrs HW=1,010.98' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 1.33 cfs @ 1.19 fps)

Pond 9P: Bio-swale



Stage-Area-Storage for Pond 9P: Bio-swale

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.00	0	0	1,010.04	268	139
1,009.02	5	0	1,010.06	273	145
1,009.04	10	0	1,010.08	278	150
1,009.06	15	0	1,010.10	283	156
1,009.08	21	1	1,010.12	288	162
1,009.10	26	1	1,010.14	294	167
1,009.12	31	2	1,010.16	299	173
1,009.14	36	3	1,010.18	304	179
1,009.16	41	3	1,010.20	309	185
1,009.18	46	4	1,010.22	314	192
1,009.20	52	5	1,010.24	319	198
1,009.22	57	6	1,010.26	324	204
1,009.24	62	7	1,010.28	330	211
1,009.26	67	9	1,010.30	335	218
1,009.28	72	10	1,010.32	340	224
1,009.30	77	12	1,010.34	345	231
1,009.32	82	13	1,010.36	350	238
1,009.34	88	15	1,010.38	355	245
1,009.36	93	17	1,010.40	360	252
1,009.38	98	19	1,010.42	366	260
1,009.40	103	21	1,010.44	371	267
1,009.42	108	23	1,010.46	376	274
1,009.44	113	25	1,010.48	381	282
1,009.46	118	27	1,010.50	386	290
1,009.48	124	30	1,010.52	391	297
1,009.50	129	32	1,010.54	397	305
1,009.52	134	35	1,010.56	402	313
1,009.54	139	38	1,010.58	407	321
1,009.56	144	40	1,010.60	412	330
1,009.58	149	43	1,010.62	417	338
1,009.60	155	46	1,010.64	422	346
1,009.62	160	49	1,010.66	427	355
1,009.64	165	53	1,010.68	433	363
1,009.66	170	56	1,010.70	438	372
1,009.68	175	60	1,010.72	443	381
1,009.70	180	63	1,010.74	448	390
1,009.72	185	67	1,010.76	453	399
1,009.74	191	71	1,010.78	458	408
1,009.76	196	74	1,010.80	463	417
1,009.78	201	78	1,010.82	469	426
1,009.80	206	82	1,010.84	474	436
1,009.82	211	87	1,010.86	479	445
1,009.84	216	91	1,010.88	484	455
1,009.86	221	95	1,010.90	489	465
1,009.88	227	100	1,010.92	494	475
1,009.90	232	104	1,010.94	500	485
1,009.92	237	109	1,010.96	505	495
1,009.94	242	114	1,010.98	510	505
1,009.96	247	119	1,011.00	**515**	**515**
1,009.98	252	124			
1,010.00	258	129			
1,010.02	263	134			

Summary for Pond RG1: RG #1

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 4.76" for 50-Year event				
Inflow =	0.20 cfs @	11.92 hrs,	Volume=	0.010 af	
Outflow =	0.19 cfs @	11.93 hrs,	Volume=	0.008 af,	Atten= 2%, Lag= 0.6 min
Discarded =	0.00 cfs @	11.93 hrs,	Volume=	0.003 af	
Primary =	0.19 cfs @	11.93 hrs,	Volume=	0.005 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,014.06' @ 11.93 hrs Surf.Area= 191 sf Storage= 84 cf

Plug-Flow detention time= 118.2 min calculated for 0.008 af (84% of inflow)
Center-of-Mass det. time= 47.7 min (787.7 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,012.20'	113 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

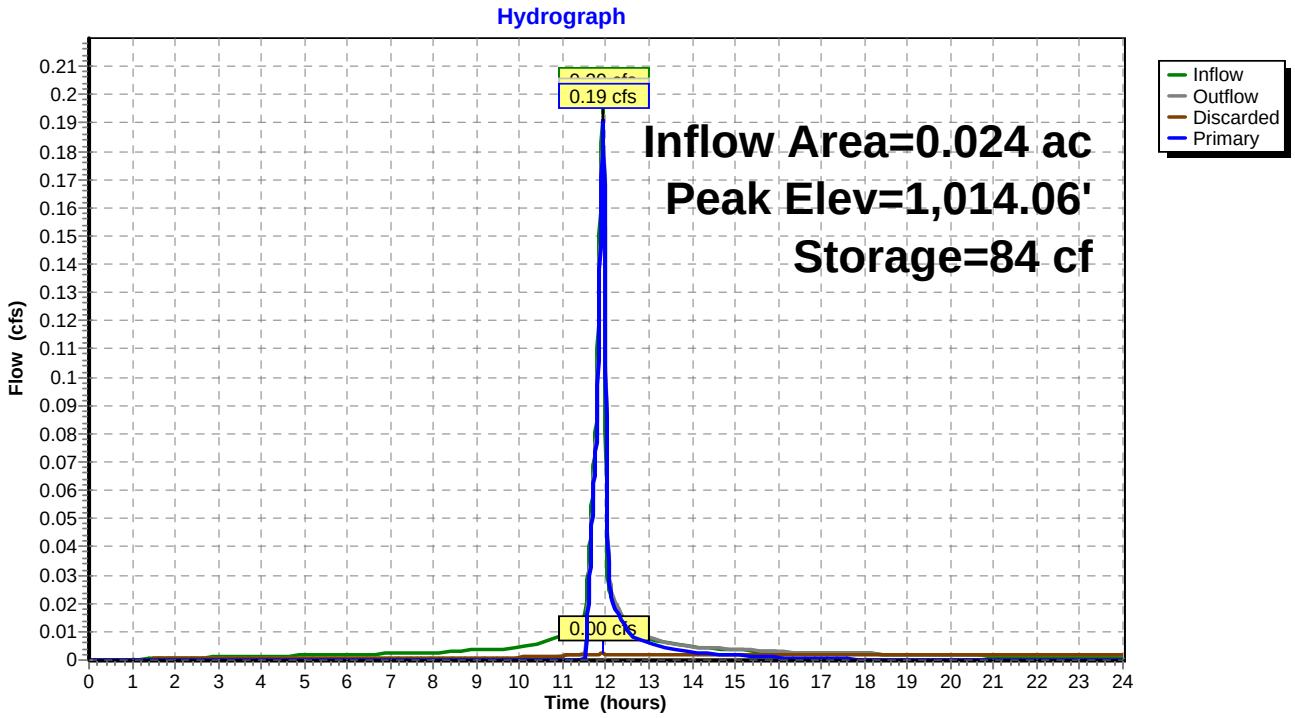
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,012.20	78	0.0	0	0
1,013.70	78	30.0	35	35
1,014.20	234	100.0	78	113

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,012.20'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,014.00'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,014.06' (Free Discharge)
└─**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.19 cfs @ 11.93 hrs HW=1,014.06' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.19 cfs @ 0.62 fps)

Pond RG1: RG #1


Hydrograph
Inflow
Outflow
Discarded
Primary
0.19 cfs
0.00 cfs
Inflow Area=0.024 ac
Peak Elev=1,014.06'
Storage=84 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG1: RG #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,012.20	78	0	1,013.24	78	24
1,012.22	78	0	1,013.26	78	25
1,012.24	78	1	1,013.28	78	25
1,012.26	78	1	1,013.30	78	26
1,012.28	78	2	1,013.32	78	26
1,012.30	78	2	1,013.34	78	27
1,012.32	78	3	1,013.36	78	27
1,012.34	78	3	1,013.38	78	28
1,012.36	78	4	1,013.40	78	28
1,012.38	78	4	1,013.42	78	29
1,012.40	78	5	1,013.44	78	29
1,012.42	78	5	1,013.46	78	29
1,012.44	78	6	1,013.48	78	30
1,012.46	78	6	1,013.50	78	30
1,012.48	78	7	1,013.52	78	31
1,012.50	78	7	1,013.54	78	31
1,012.52	78	7	1,013.56	78	32
1,012.54	78	8	1,013.58	78	32
1,012.56	78	8	1,013.60	78	33
1,012.58	78	9	1,013.62	78	33
1,012.60	78	9	1,013.64	78	34
1,012.62	78	10	1,013.66	78	34
1,012.64	78	10	1,013.68	78	35
1,012.66	78	11	1,013.70	78	35
1,012.68	78	11	1,013.72	84	37
1,012.70	78	12	1,013.74	90	38
1,012.72	78	12	1,013.76	97	40
1,012.74	78	13	1,013.78	103	42
1,012.76	78	13	1,013.80	109	44
1,012.78	78	14	1,013.82	115	47
1,012.80	78	14	1,013.84	122	49
1,012.82	78	15	1,013.86	128	52
1,012.84	78	15	1,013.88	134	54
1,012.86	78	15	1,013.90	140	57
1,012.88	78	16	1,013.92	147	60
1,012.90	78	16	1,013.94	153	63
1,012.92	78	17	1,013.96	159	66
1,012.94	78	17	1,013.98	165	69
1,012.96	78	18	1,014.00	172	73
1,012.98	78	18	1,014.02	178	76
1,013.00	78	19	1,014.04	184	80
1,013.02	78	19	1,014.06	190	83
1,013.04	78	20	1,014.08	197	87
1,013.06	78	20	1,014.10	203	91
1,013.08	78	21	1,014.12	209	95
1,013.10	78	21	1,014.14	215	100
1,013.12	78	22	1,014.16	222	104
1,013.14	78	22	1,014.18	228	108
1,013.16	78	22	1,014.20	**234**	**113**
1,013.18	78	23			
1,013.20	78	23			
1,013.22	78	24			

Summary for Pond RG2: RG #2

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 4.76" for 50-Year event				
Inflow =	0.20 cfs @	11.92 hrs,	Volume=	0.010 af	
Outflow =	0.19 cfs @	11.93 hrs,	Volume=	0.008 af,	Atten= 2%, Lag= 0.5 min
Discarded =	0.00 cfs @	11.93 hrs,	Volume=	0.003 af	
Primary =	0.19 cfs @	11.93 hrs,	Volume=	0.005 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,013.56' @ 11.93 hrs Surf.Area= 181 sf Storage= 95 cf

Plug-Flow detention time= 132.5 min calculated for 0.008 af (82% of inflow)
Center-of-Mass det. time= 55.3 min (795.3 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.50'	122 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

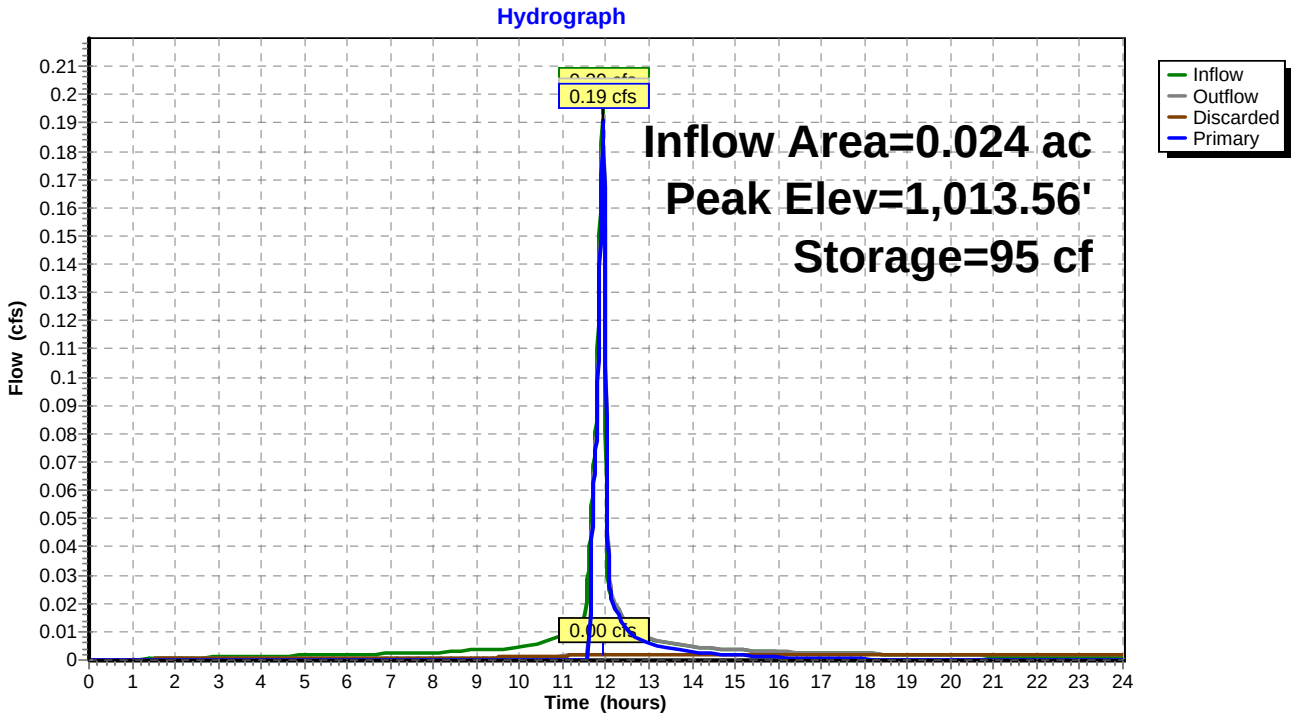
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,011.50	60	0.0	0	0
1,013.00	60	30.0	27	27
1,013.70	211	100.0	95	122

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,011.50'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,013.50'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,013.56' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.19 cfs @ 11.93 hrs HW=1,013.56' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.19 cfs @ 0.62 fps)

Pond RG2: RG #2


Hydrograph
Inflow
Outflow
Discarded
Primary
0.19 cfs
0.00 cfs
Inflow Area=0.024 ac
Peak Elev=1,013.56'
Storage=95 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG2: RG #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,011.50	60	0
1,011.55	60	1
1,011.60	60	2
1,011.65	60	3
1,011.70	60	4
1,011.75	60	5
1,011.80	60	5
1,011.85	60	6
1,011.90	60	7
1,011.95	60	8
1,012.00	60	9
1,012.05	60	10
1,012.10	60	11
1,012.15	60	12
1,012.20	60	13
1,012.25	60	14
1,012.30	60	14
1,012.35	60	15
1,012.40	60	16
1,012.45	60	17
1,012.50	60	18
1,012.55	60	19
1,012.60	60	20
1,012.65	60	21
1,012.70	60	22
1,012.75	60	23
1,012.80	60	23
1,012.85	60	24
1,012.90	60	25
1,012.95	60	26
1,013.00	60	27
1,013.05	71	30
1,013.10	82	34
1,013.15	92	38
1,013.20	103	43
1,013.25	114	49
1,013.30	125	55
1,013.35	136	61
1,013.40	146	68
1,013.45	157	76
1,013.50	168	84
1,013.55	179	93
1,013.60	189	102
1,013.65	200	112
1,013.70	**211**	**122**

Summary for Pond RG3: RG#3

Inflow Area =	0.073 ac,100.00% Impervious, Inflow Depth > 4.76" for 50-Year event				
Inflow =	0.59 cfs @	11.92 hrs,	Volume=	0.029 af	
Outflow =	0.58 cfs @	11.93 hrs,	Volume=	0.026 af,	Atten= 1%, Lag= 0.5 min
Discarded =	0.00 cfs @	11.93 hrs,	Volume=	0.004 af	
Primary =	0.58 cfs @	11.93 hrs,	Volume=	0.022 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,012.43' @ 11.93 hrs Surf.Area= 226 sf Storage= 177 cf

Plug-Flow detention time= 101.4 min calculated for 0.026 af (88% of inflow)
Center-of-Mass det. time= 42.3 min (782.3 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	194 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

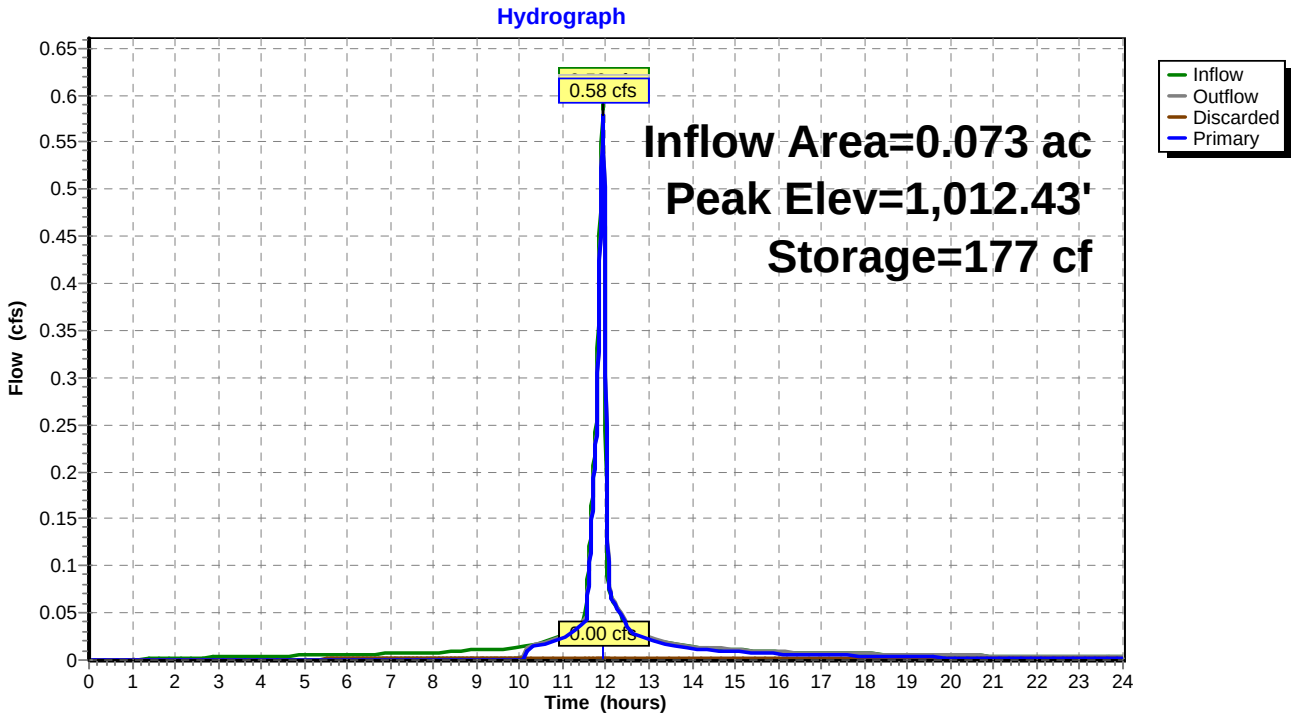
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	79	0.0	0	0
1,011.50	79	30.0	36	36
1,012.50	237	100.0	158	194

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,012.43' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.58 cfs @ 11.93 hrs HW=1,012.43' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.58 cfs @ 0.90 fps)

Pond RG3: RG#3


Hydrograph
0.58 cfs
0.00 cfs
Inflow Area=0.073 ac
Peak Elev=1,012.43'
Storage=177 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.55
0.6
0.65
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Area-Storage for Pond RG3: RG#3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	79	0
1,010.05	79	1
1,010.10	79	2
1,010.15	79	4
1,010.20	79	5
1,010.25	79	6
1,010.30	79	7
1,010.35	79	8
1,010.40	79	9
1,010.45	79	11
1,010.50	79	12
1,010.55	79	13
1,010.60	79	14
1,010.65	79	15
1,010.70	79	17
1,010.75	79	18
1,010.80	79	19
1,010.85	79	20
1,010.90	79	21
1,010.95	79	23
1,011.00	79	24
1,011.05	79	25
1,011.10	79	26
1,011.15	79	27
1,011.20	79	28
1,011.25	79	30
1,011.30	79	31
1,011.35	79	32
1,011.40	79	33
1,011.45	79	34
1,011.50	79	36
1,011.55	87	40
1,011.60	95	44
1,011.65	103	49
1,011.70	111	55
1,011.75	119	60
1,011.80	126	66
1,011.85	134	73
1,011.90	142	80
1,011.95	150	87
1,012.00	158	95
1,012.05	166	103
1,012.10	174	111
1,012.15	182	120
1,012.20	190	130
1,012.25	198	139
1,012.30	205	149
1,012.35	213	160
1,012.40	221	171
1,012.45	229	182
1,012.50	**237**	**194**

Summary for Pond RG4: RG #4

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 4.76" for 50-Year event				
Inflow =	0.20 cfs @	11.92 hrs,	Volume=	0.010 af	
Outflow =	0.19 cfs @	11.93 hrs,	Volume=	0.006 af,	Atten= 3%, Lag= 0.7 min
Discarded =	0.00 cfs @	11.93 hrs,	Volume=	0.003 af	
Primary =	0.19 cfs @	11.93 hrs,	Volume=	0.003 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,012.36' @ 11.93 hrs Surf.Area= 207 sf Storage= 165 cf

Plug-Flow detention time= 181.5 min calculated for 0.006 af (67% of inflow)
Center-of-Mass det. time= 79.8 min (819.8 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	196 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

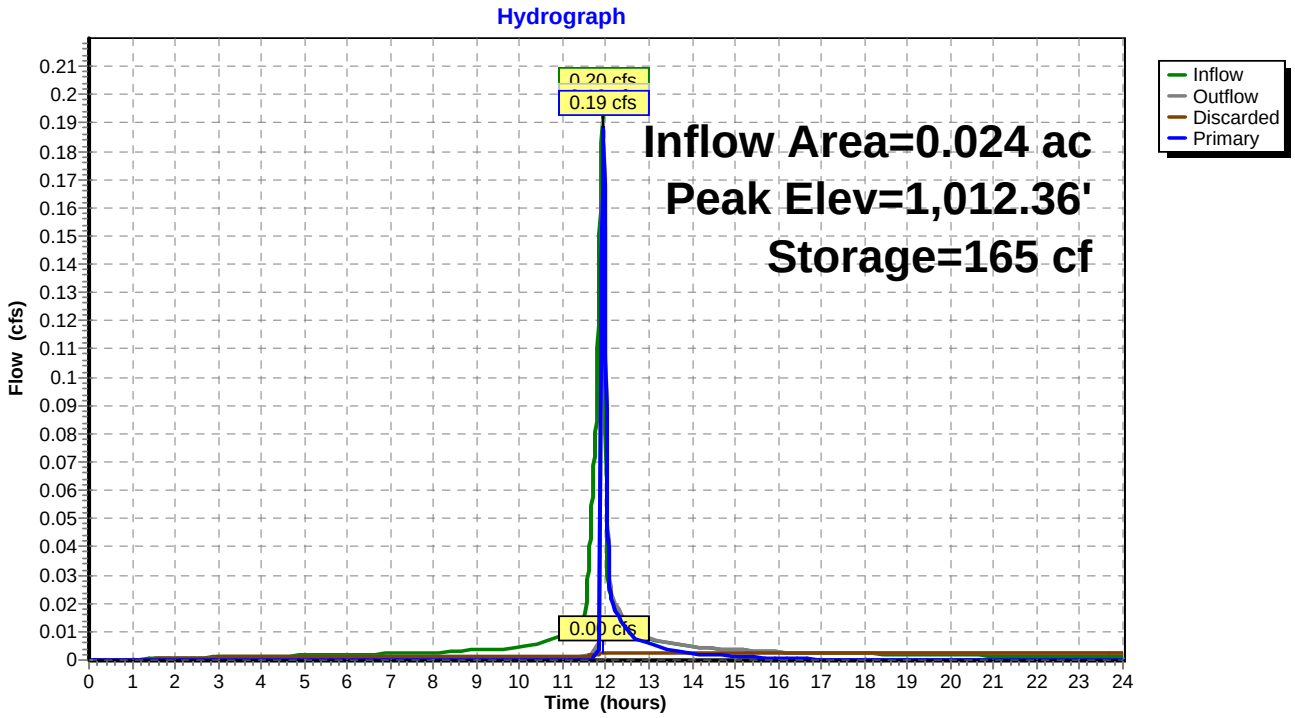
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	87	0.0	0	0
1,011.50	87	30.0	39	39
1,012.50	226	100.0	157	196

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,012.36' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.18 cfs @ 11.93 hrs HW=1,012.36' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.18 cfs @ 0.61 fps)

Pond RG4: RG #4


Hydrograph
0.20 cfs
0.19 cfs
0.00 cfs
Inflow Area=0.024 ac
Peak Elev=1,012.36'
Storage=165 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG4: RG #4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	87	0
1,010.05	87	1
1,010.10	87	3
1,010.15	87	4
1,010.20	87	5
1,010.25	87	7
1,010.30	87	8
1,010.35	87	9
1,010.40	87	10
1,010.45	87	12
1,010.50	87	13
1,010.55	87	14
1,010.60	87	16
1,010.65	87	17
1,010.70	87	18
1,010.75	87	20
1,010.80	87	21
1,010.85	87	22
1,010.90	87	23
1,010.95	87	25
1,011.00	87	26
1,011.05	87	27
1,011.10	87	29
1,011.15	87	30
1,011.20	87	31
1,011.25	87	33
1,011.30	87	34
1,011.35	87	35
1,011.40	87	37
1,011.45	87	38
1,011.50	87	39
1,011.55	94	44
1,011.60	101	49
1,011.65	108	54
1,011.70	115	59
1,011.75	122	65
1,011.80	129	72
1,011.85	136	78
1,011.90	143	85
1,011.95	150	92
1,012.00	157	100
1,012.05	163	108
1,012.10	170	116
1,012.15	177	125
1,012.20	184	134
1,012.25	191	143
1,012.30	198	153
1,012.35	205	163
1,012.40	212	174
1,012.45	219	185
1,012.50	**226**	**196**

Summary for Pond RG5: RG #5

Inflow Area =	0.049 ac,100.00% Impervious, Inflow Depth > 4.76" for 50-Year event				
Inflow =	0.39 cfs @	11.92 hrs,	Volume=	0.019 af	
Outflow =	0.39 cfs @	11.93 hrs,	Volume=	0.017 af,	Atten= 1%, Lag= 0.5 min
Discarded =	0.00 cfs @	11.93 hrs,	Volume=	0.004 af	
Primary =	0.39 cfs @	11.93 hrs,	Volume=	0.013 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,011.90' @ 11.93 hrs Surf.Area= 175 sf Storage= 134 cf

Plug-Flow detention time= 109.1 min calculated for 0.017 af (86% of inflow)
Center-of-Mass det. time= 43.1 min (783.1 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	153 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

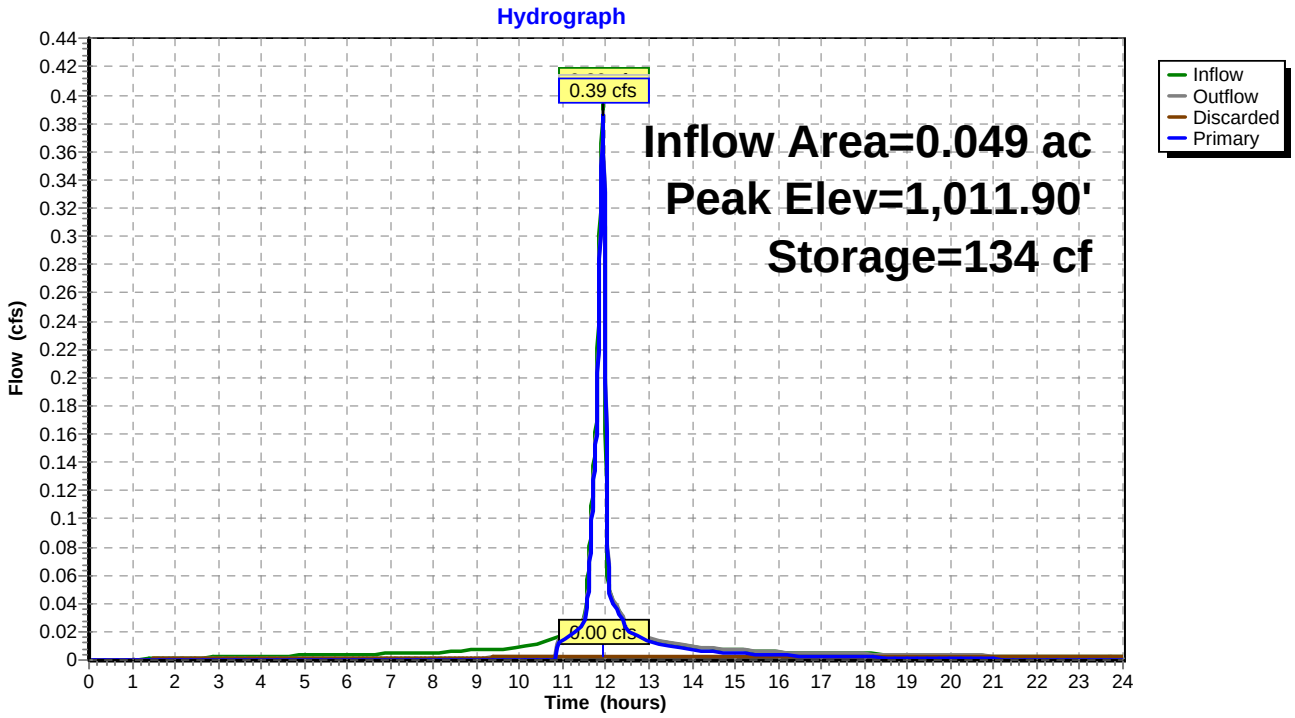
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.50	62	0.0	0	0
1,011.00	62	30.0	28	28
1,012.00	188	100.0	125	153

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.50'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1,006.00'
#2	Primary	1,011.80'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,011.90' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.39 cfs @ 11.93 hrs HW=1,011.90' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.39 cfs @ 0.78 fps)

Pond RG5: RG #5


Hydrograph
0.39 cfs
0.00 cfs
Inflow Area=0.049 ac
Peak Elev=1,011.90'
Storage=134 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG5: RG #5

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.50	62	0
1,009.55	62	1
1,009.60	62	2
1,009.65	62	3
1,009.70	62	4
1,009.75	62	5
1,009.80	62	6
1,009.85	62	7
1,009.90	62	7
1,009.95	62	8
1,010.00	62	9
1,010.05	62	10
1,010.10	62	11
1,010.15	62	12
1,010.20	62	13
1,010.25	62	14
1,010.30	62	15
1,010.35	62	16
1,010.40	62	17
1,010.45	62	18
1,010.50	62	19
1,010.55	62	20
1,010.60	62	20
1,010.65	62	21
1,010.70	62	22
1,010.75	62	23
1,010.80	62	24
1,010.85	62	25
1,010.90	62	26
1,010.95	62	27
1,011.00	62	28
1,011.05	68	31
1,011.10	75	35
1,011.15	81	39
1,011.20	87	43
1,011.25	94	47
1,011.30	100	52
1,011.35	106	57
1,011.40	112	63
1,011.45	119	69
1,011.50	125	75
1,011.55	131	81
1,011.60	138	88
1,011.65	144	95
1,011.70	150	102
1,011.75	157	110
1,011.80	163	118
1,011.85	169	126
1,011.90	175	135
1,011.95	182	144
1,012.00	**188**	**153**

Summary for Pond RG6: RG #6

Inflow Area = 0.100 ac,100.00% Impervious, Inflow Depth > 3.47" for 50-Year event
Inflow = 0.79 cfs @ 11.93 hrs, Volume= 0.029 af
Outflow = 0.78 cfs @ 11.94 hrs, Volume= 0.026 af, Atten= 1%, Lag= 0.5 min
Discarded = 0.00 cfs @ 11.94 hrs, Volume= 0.004 af
Primary = 0.78 cfs @ 11.94 hrs, Volume= 0.022 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,011.46' @ 11.94 hrs Surf.Area= 262 sf Storage= 191 cf

Plug-Flow detention time= 64.1 min calculated for 0.026 af (89% of inflow)
Center-of-Mass det. time= 22.1 min (769.6 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.10'	202 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

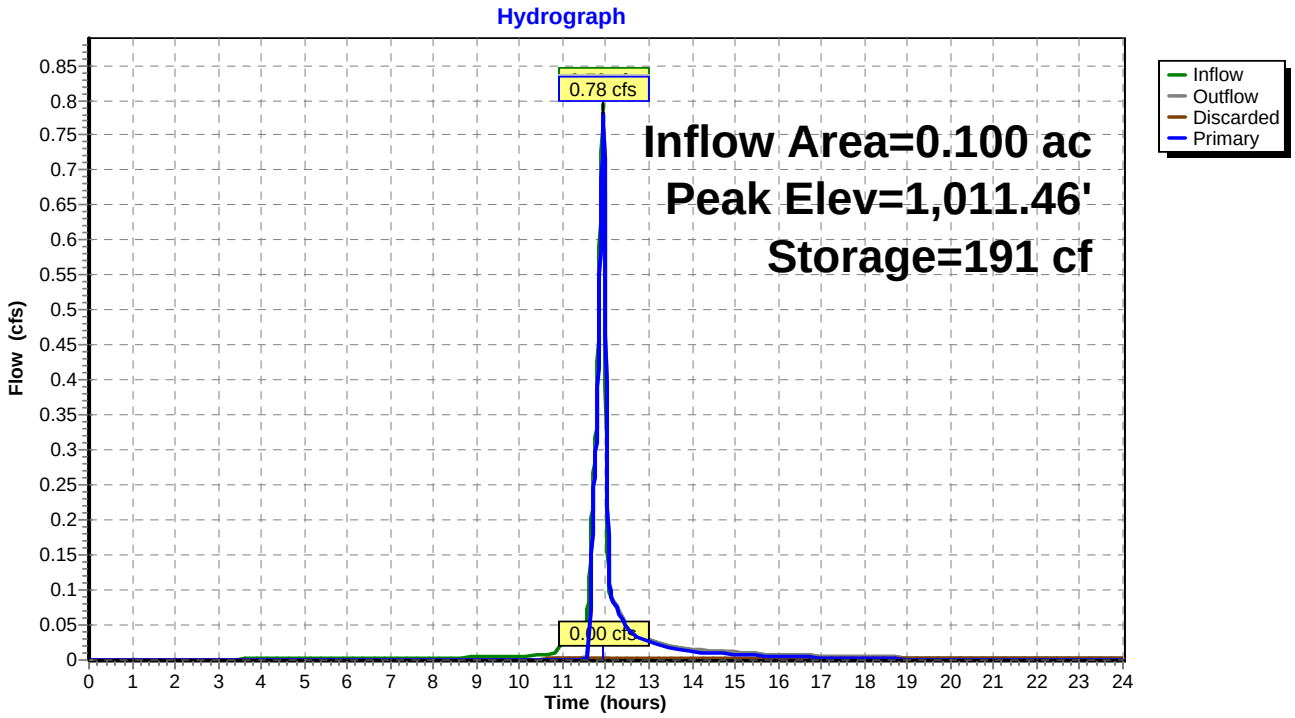
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.10	90	0.0	0	0
1,010.60	90	30.0	41	41
1,011.50	270	100.0	162	202

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.10'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,011.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.94 hrs HW=1,011.46' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.78 cfs @ 11.94 hrs HW=1,011.46' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.78 cfs @ 0.99 fps)

Pond RG6: RG #6


Hydrograph
Inflow
Outflow
Discarded
Primary
0.78 cfs
0.00 cfs
Inflow Area=0.100 ac
Peak Elev=1,011.46'
Storage=191 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG6: RG #6

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.10	90	0
1,009.15	90	1
1,009.20	90	3
1,009.25	90	4
1,009.30	90	5
1,009.35	90	7
1,009.40	90	8
1,009.45	90	9
1,009.50	90	11
1,009.55	90	12
1,009.60	90	14
1,009.65	90	15
1,009.70	90	16
1,009.75	90	18
1,009.80	90	19
1,009.85	90	20
1,009.90	90	22
1,009.95	90	23
1,010.00	90	24
1,010.05	90	26
1,010.10	90	27
1,010.15	90	28
1,010.20	90	30
1,010.25	90	31
1,010.30	90	32
1,010.35	90	34
1,010.40	90	35
1,010.45	90	36
1,010.50	90	38
1,010.55	90	39
1,010.60	90	41
1,010.65	100	45
1,010.70	110	51
1,010.75	120	56
1,010.80	130	63
1,010.85	140	69
1,010.90	150	76
1,010.95	160	84
1,011.00	170	92
1,011.05	180	101
1,011.10	190	111
1,011.15	200	120
1,011.20	210	131
1,011.25	220	141
1,011.30	230	153
1,011.35	240	164
1,011.40	250	176
1,011.45	260	189
1,011.50	**270**	**202**

Summary for Pond RG7: RG #7

Inflow Area =	0.047 ac,100.00% Impervious, Inflow Depth > 3.15" for 50-Year event				
Inflow =	0.37 cfs @	11.93 hrs, Volume=	0.012 af		
Outflow =	0.05 cfs @	12.09 hrs, Volume=	0.007 af, Atten= 87%, Lag= 9.7 min		
Discarded =	0.00 cfs @	12.09 hrs, Volume=	0.005 af		
Primary =	0.04 cfs @	12.09 hrs, Volume=	0.003 af		

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,012.32' @ 12.09 hrs Surf.Area= 322 sf Storage= 275 cf

Plug-Flow detention time= 204.1 min calculated for 0.007 af (60% of inflow)
Center-of-Mass det. time= 114.1 min (856.4 - 742.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	335 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

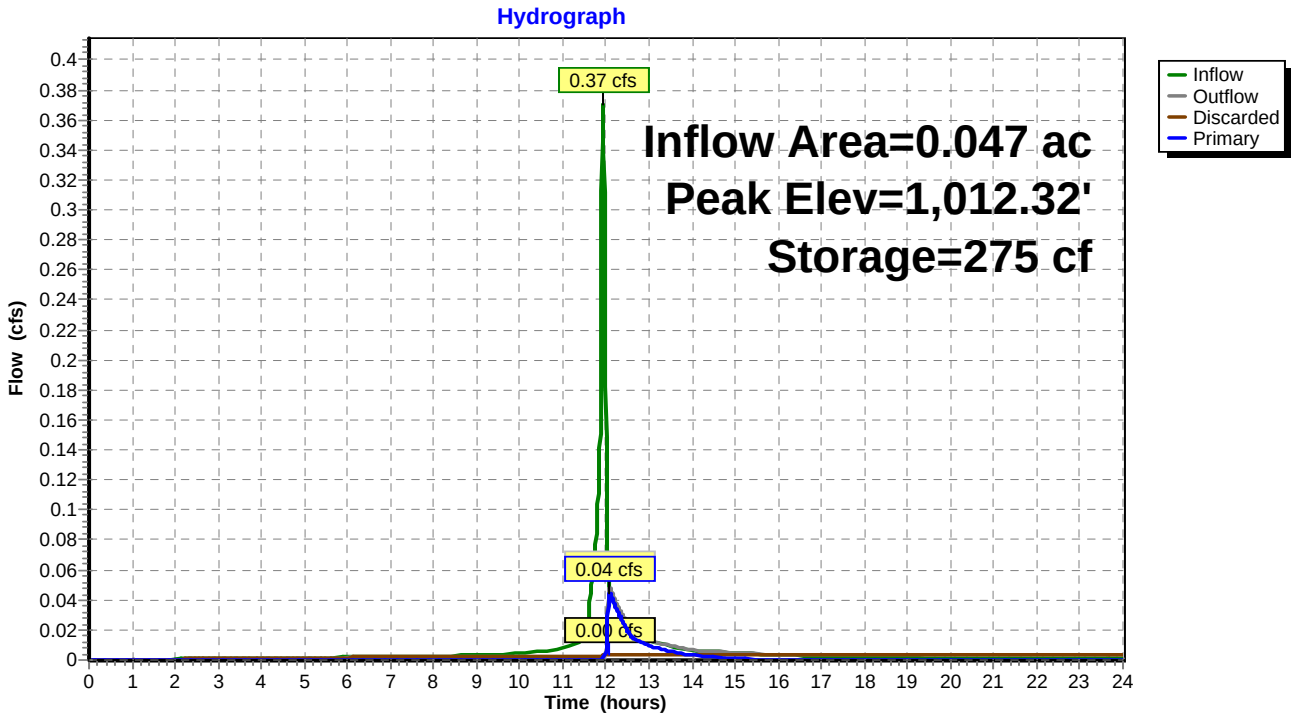
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	165	0.0	0	0
1,011.50	165	30.0	74	74
1,012.50	356	100.0	261	335

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 12.09 hrs HW=1,012.32' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.04 cfs @ 12.09 hrs HW=1,012.32' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.04 cfs @ 0.37 fps)

Pond RG7: RG #7


Hydrograph
0.37 cfs
0.04 cfs
0.00 cfs
Inflow Area=0.047 ac
Peak Elev=1,012.32'
Storage=275 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG7: RG #7

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	165	0
1,010.05	165	2
1,010.10	165	5
1,010.15	165	7
1,010.20	165	10
1,010.25	165	12
1,010.30	165	15
1,010.35	165	17
1,010.40	165	20
1,010.45	165	22
1,010.50	165	25
1,010.55	165	27
1,010.60	165	30
1,010.65	165	32
1,010.70	165	35
1,010.75	165	37
1,010.80	165	40
1,010.85	165	42
1,010.90	165	45
1,010.95	165	47
1,011.00	165	50
1,011.05	165	52
1,011.10	165	54
1,011.15	165	57
1,011.20	165	59
1,011.25	165	62
1,011.30	165	64
1,011.35	165	67
1,011.40	165	69
1,011.45	165	72
1,011.50	165	74
1,011.55	175	83
1,011.60	184	92
1,011.65	194	101
1,011.70	203	111
1,011.75	213	121
1,011.80	222	132
1,011.85	232	144
1,011.90	241	156
1,011.95	251	168
1,012.00	261	181
1,012.05	270	194
1,012.10	280	208
1,012.15	289	222
1,012.20	299	237
1,012.25	308	252
1,012.30	318	267
1,012.35	327	283
1,012.40	337	300
1,012.45	346	317
1,012.50	**356**	**335**

Summary for Pond RG8: RG #8

Inflow Area = 0.100 ac,100.00% Impervious, Inflow Depth = 2.64" for 50-Year event
Inflow = 0.78 cfs @ 11.94 hrs, Volume= 0.022 af
Outflow = 0.78 cfs @ 11.94 hrs, Volume= 0.021 af, Atten= 1%, Lag= 0.3 min
Discarded = 0.00 cfs @ 11.94 hrs, Volume= 0.002 af
Primary = 0.77 cfs @ 11.94 hrs, Volume= 0.019 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,010.96' @ 11.94 hrs Surf.Area= 167 sf Storage= 94 cf

Plug-Flow detention time= 31.5 min calculated for 0.021 af (95% of inflow)
Center-of-Mass det. time= 18.5 min (765.6 - 747.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.10'	212 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

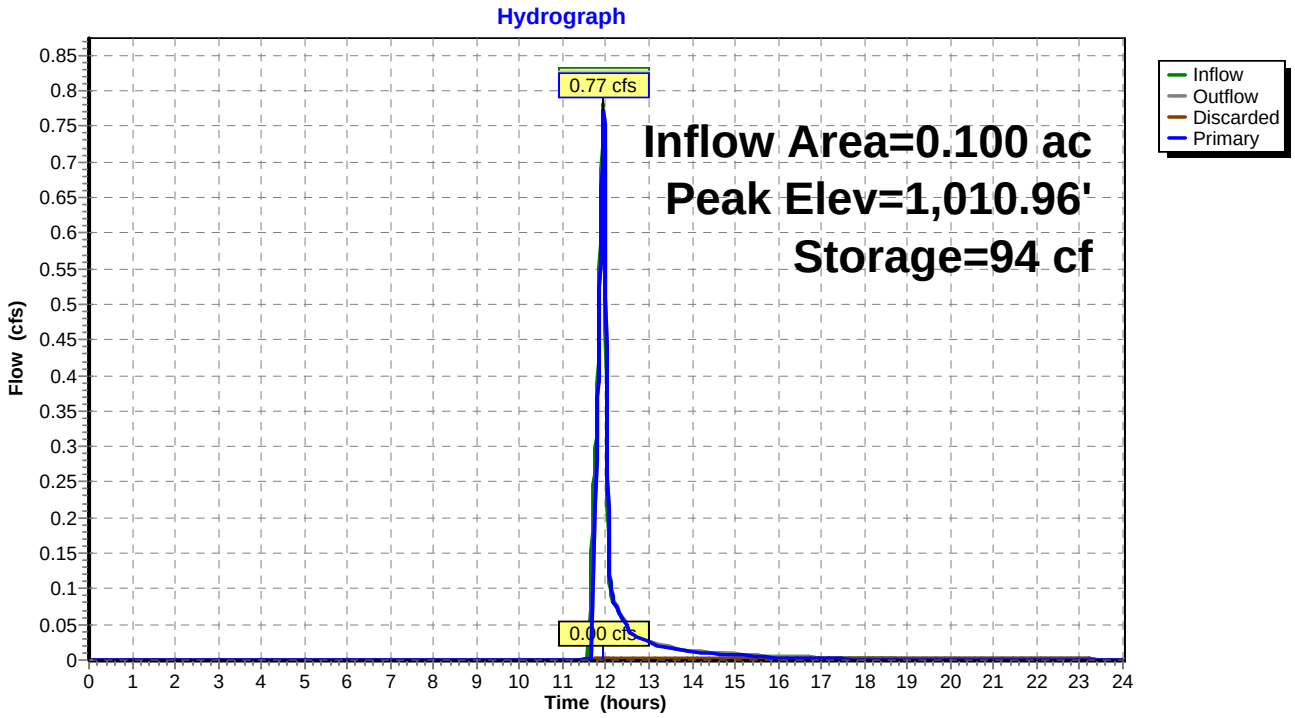
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.10	102	0.0	0	0
1,010.60	102	30.0	46	46
1,011.50	267	100.0	166	212

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.10'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,010.80'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.94 hrs HW=1,010.96' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.77 cfs @ 11.94 hrs HW=1,010.96' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.77 cfs @ 0.98 fps)

Pond RG8: RG #8


Hydrograph
0.77 cfs
0.00 cfs
Inflow Area=0.100 ac
Peak Elev=1,010.96'
Storage=94 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG8: RG #8

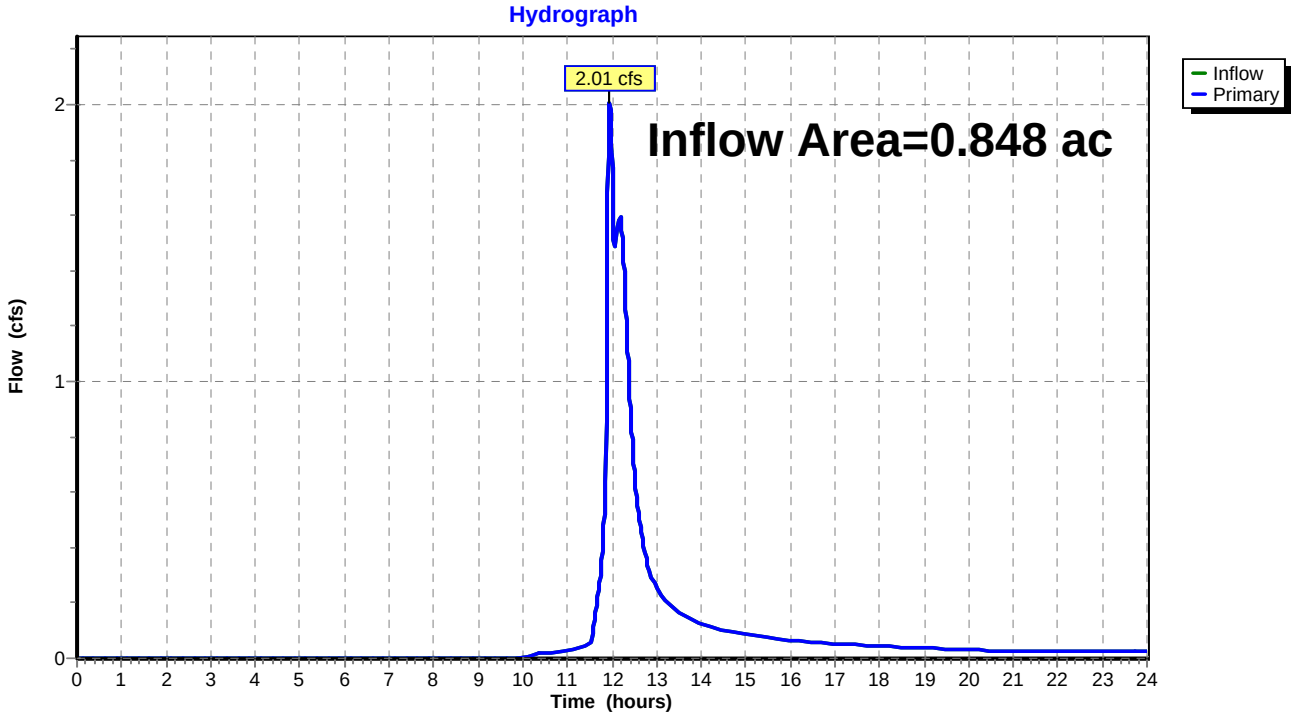
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.10	102	0
1,009.15	102	2
1,009.20	102	3
1,009.25	102	5
1,009.30	102	6
1,009.35	102	8
1,009.40	102	9
1,009.45	102	11
1,009.50	102	12
1,009.55	102	14
1,009.60	102	15
1,009.65	102	17
1,009.70	102	18
1,009.75	102	20
1,009.80	102	21
1,009.85	102	23
1,009.90	102	24
1,009.95	102	26
1,010.00	102	28
1,010.05	102	29
1,010.10	102	31
1,010.15	102	32
1,010.20	102	34
1,010.25	102	35
1,010.30	102	37
1,010.35	102	38
1,010.40	102	40
1,010.45	102	41
1,010.50	102	43
1,010.55	102	44
1,010.60	102	46
1,010.65	111	51
1,010.70	120	57
1,010.75	129	63
1,010.80	139	70
1,010.85	148	77
1,010.90	157	85
1,010.95	166	93
1,011.00	175	101
1,011.05	185	110
1,011.10	194	120
1,011.15	203	130
1,011.20	212	140
1,011.25	221	151
1,011.30	230	162
1,011.35	240	174
1,011.40	249	186
1,011.45	258	199
1,011.50	**267**	**212**

Summary for Link Q: Site Discharge

Inflow Area = 0.848 ac, 28.93% Impervious, Inflow Depth > 2.16" for 50-Year event
Inflow = 2.01 cfs @ 11.95 hrs, Volume= 0.152 af
Primary = 2.01 cfs @ 11.95 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Q: Site Discharge



Summary for Subcatchment 1:

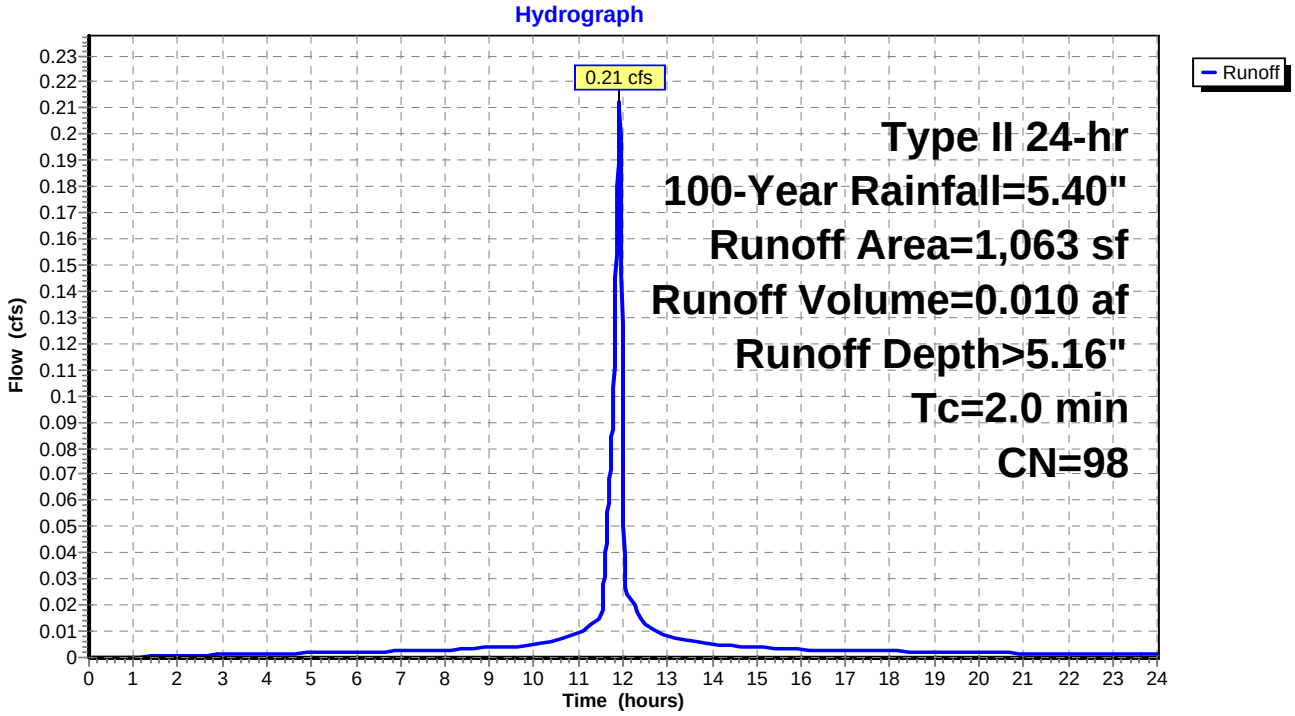
Runoff = 0.21 cfs @ 11.92 hrs, Volume= 0.010 af, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.40"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 1:



Summary for Subcatchment 2:

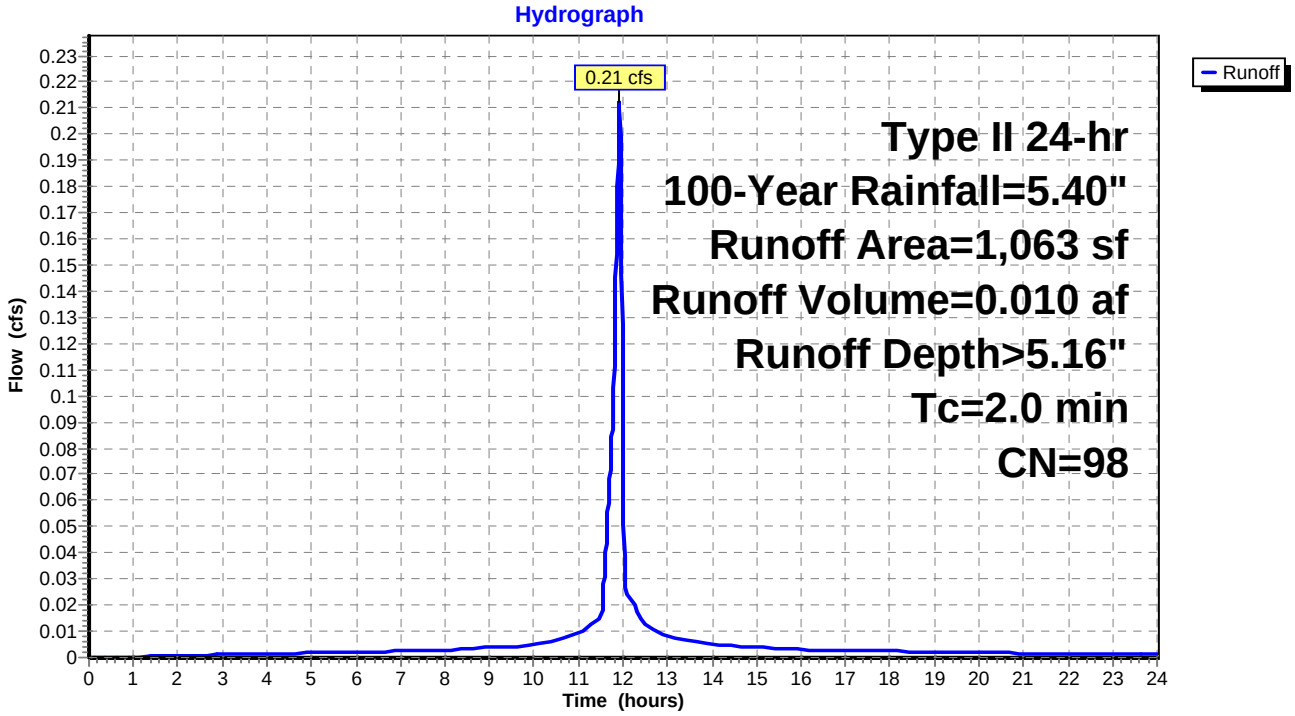
Runoff = 0.21 cfs @ 11.92 hrs, Volume= 0.010 af, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.40"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 2:



Summary for Subcatchment 3:

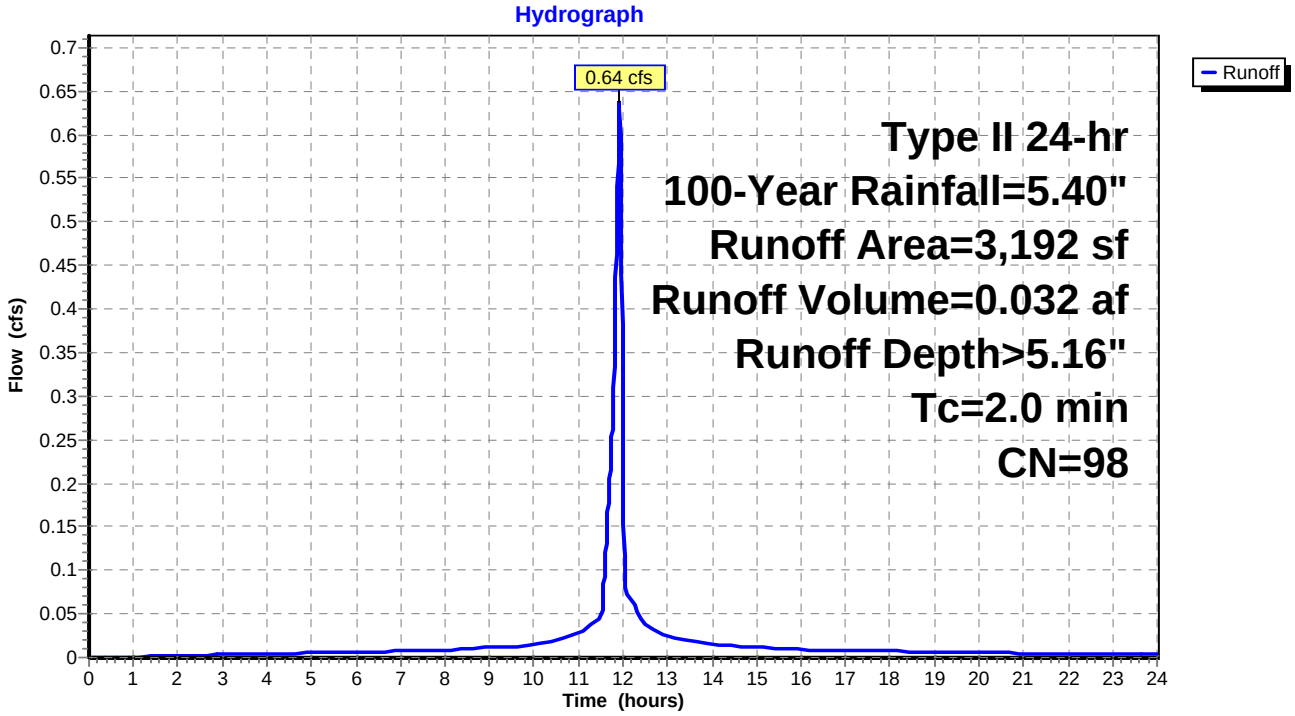
Runoff = 0.64 cfs @ 11.92 hrs, Volume= 0.032 af, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.40"

	Area (sf)	CN	Description
*	3,192	98	
	3,192		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 3:



Summary for Subcatchment 4:

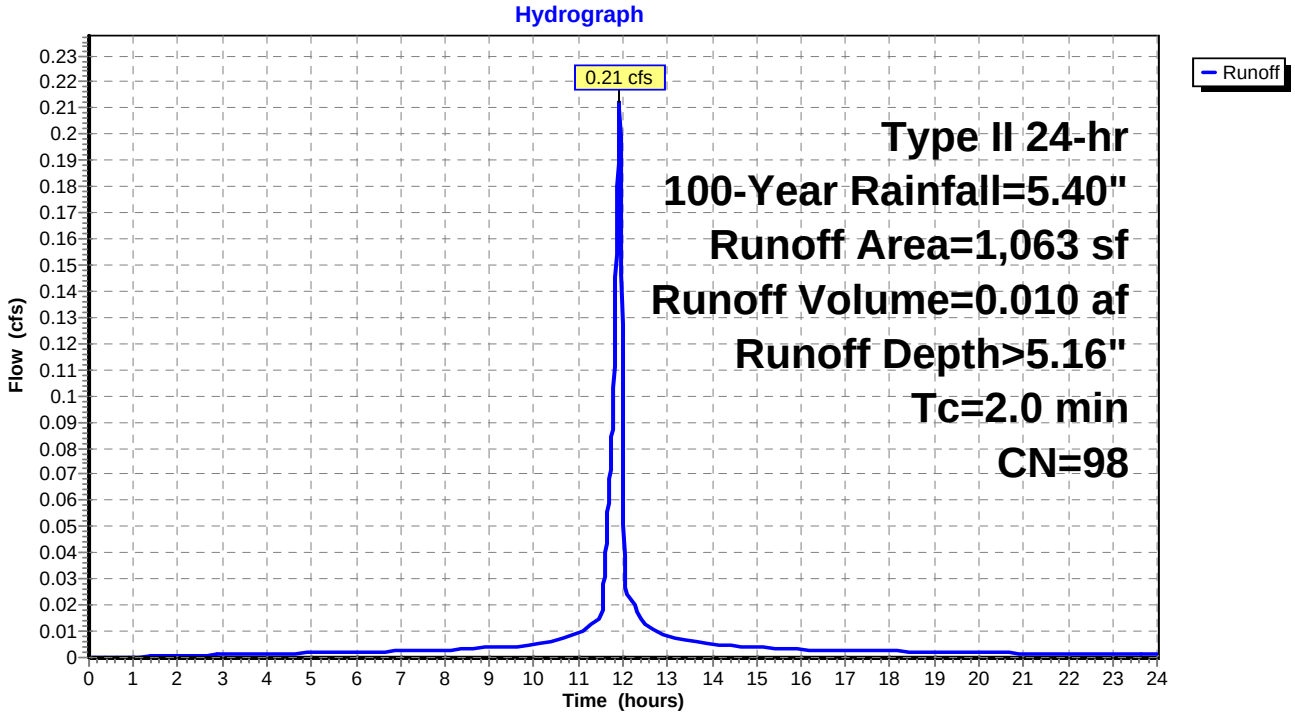
Runoff = 0.21 cfs @ 11.92 hrs, Volume= 0.010 af, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.40"

	Area (sf)	CN	Description
*	1,063	98	
	1,063		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 4:



Summary for Subcatchment 5:

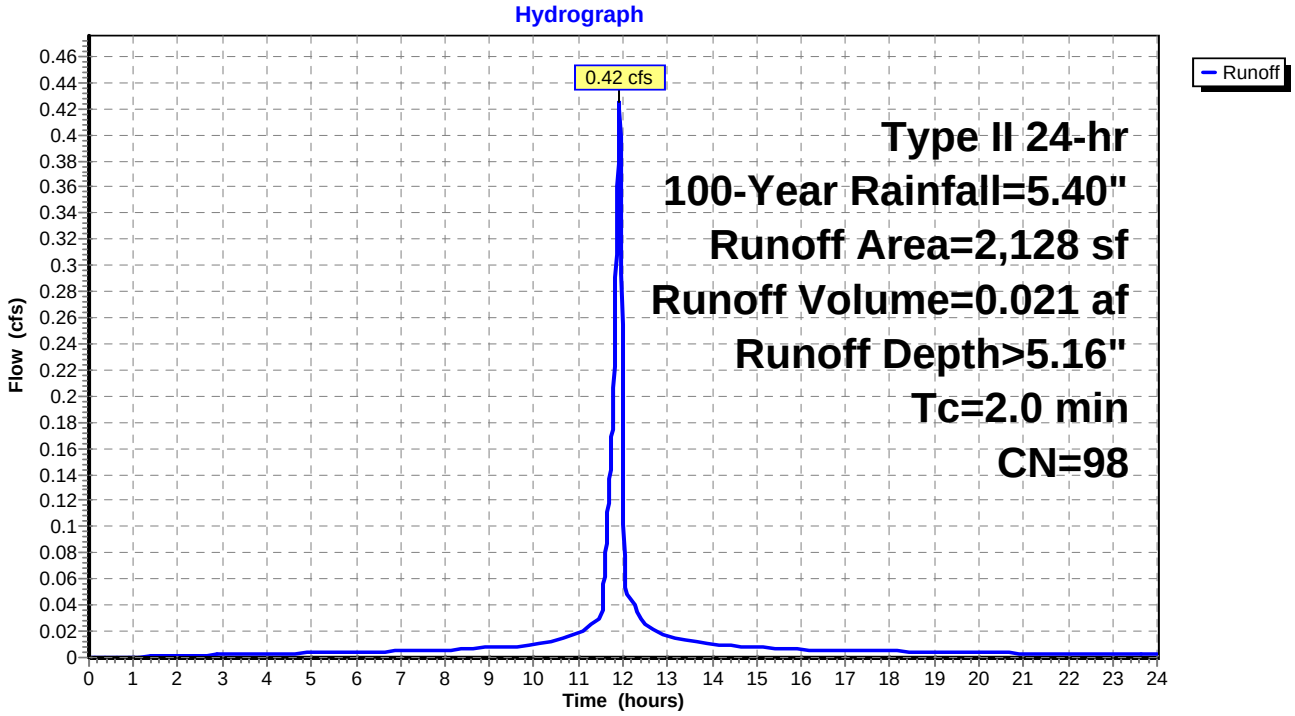
Runoff = 0.42 cfs @ 11.92 hrs, Volume= 0.021 af, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.40"

	Area (sf)	CN	Description
*	2,128	98	
	2,128		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 5:



Summary for Subcatchment 6:

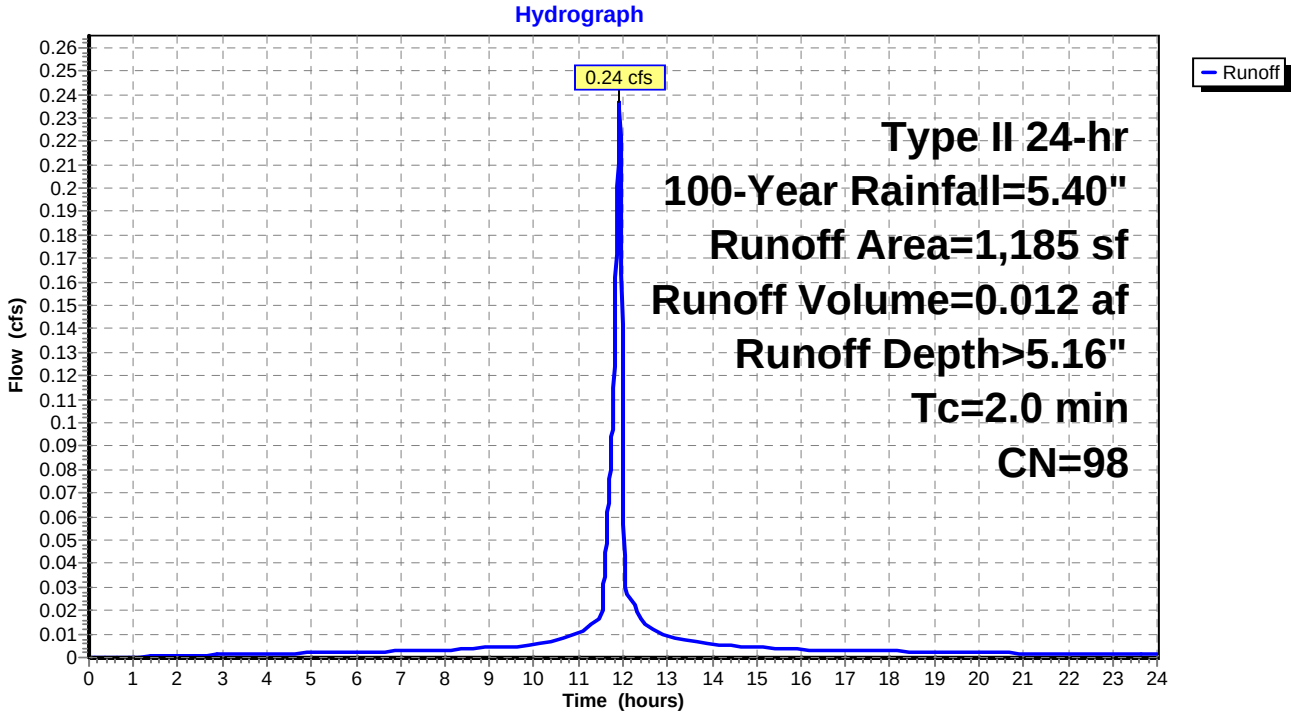
Runoff = 0.24 cfs @ 11.92 hrs, Volume= 0.012 af, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.40"

	Area (sf)	CN	Description
*	1,185	98	
	1,185		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 6:



Summary for Subcatchment 7:

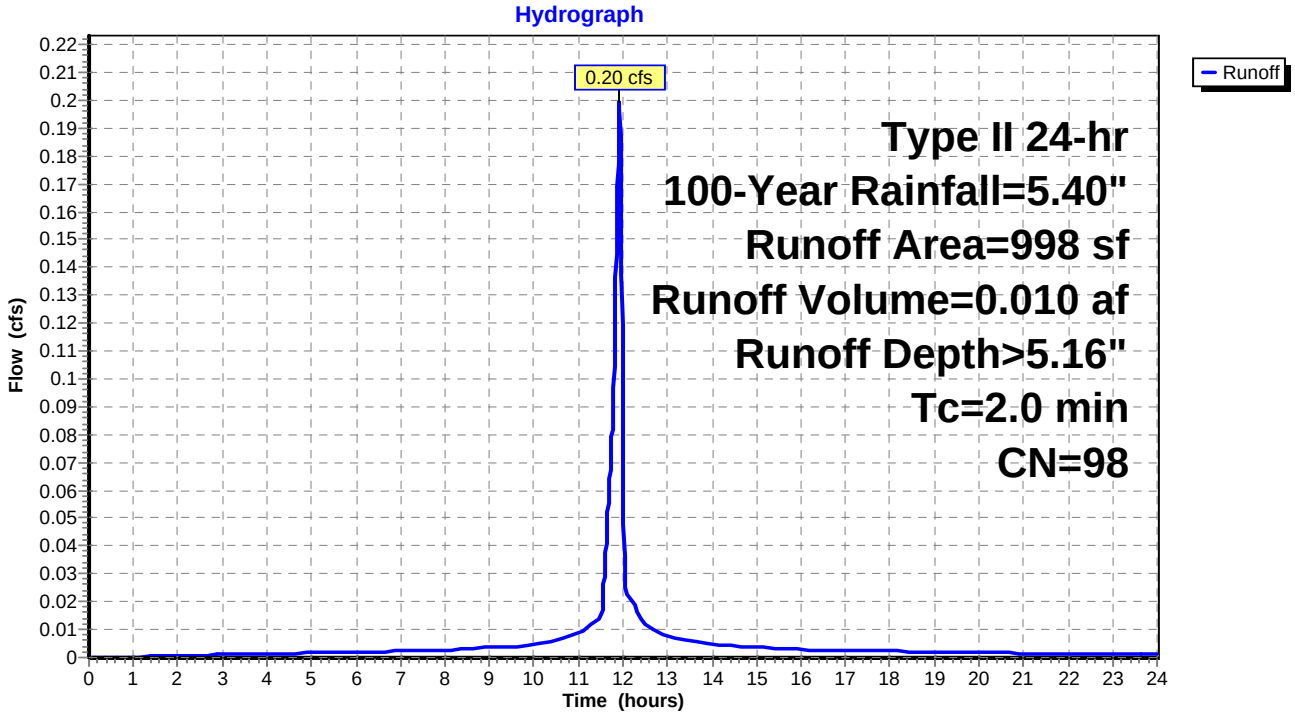
Runoff = 0.20 cfs @ 11.92 hrs, Volume= 0.010 af, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.40"

	Area (sf)	CN	Description
*	998	98	
	998		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 7:



Summary for Subcatchment 8:

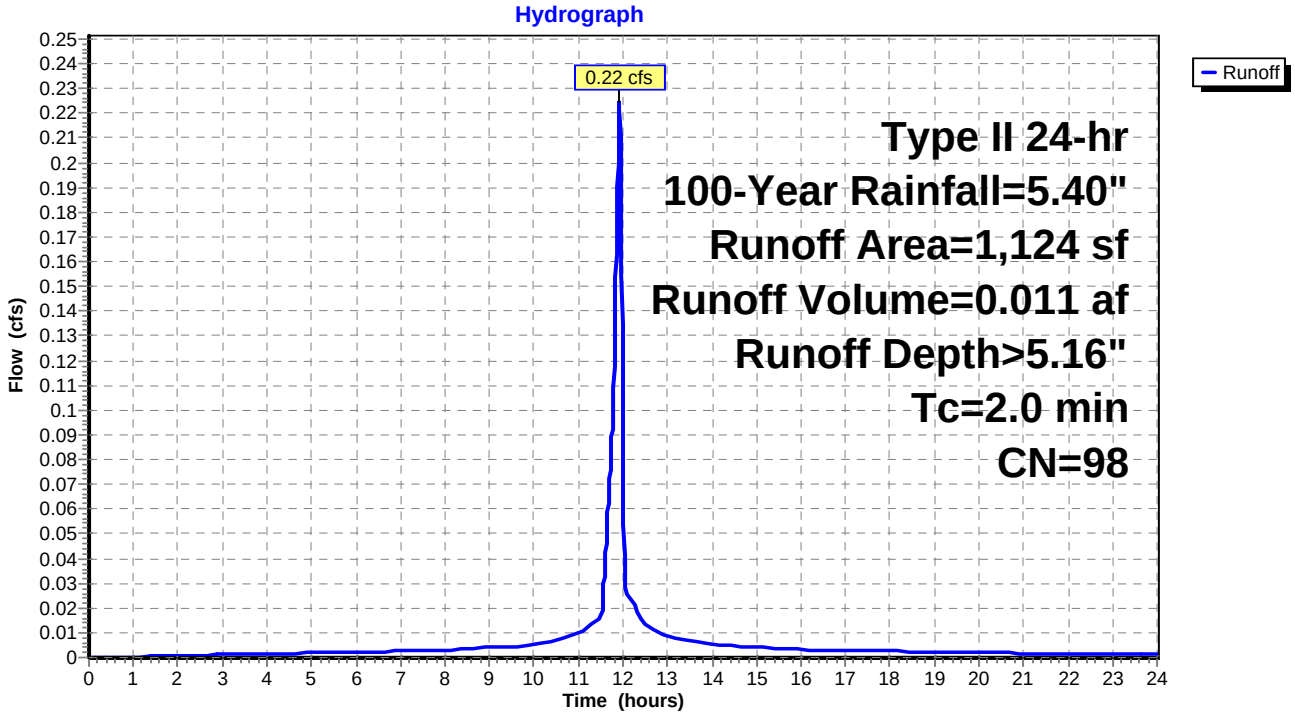
Runoff = 0.22 cfs @ 11.92 hrs, Volume= 0.011 af, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.40"

	Area (sf)	CN	Description
*	1,124	98	
	1,124		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 8:



Summary for Subcatchment dd: Post

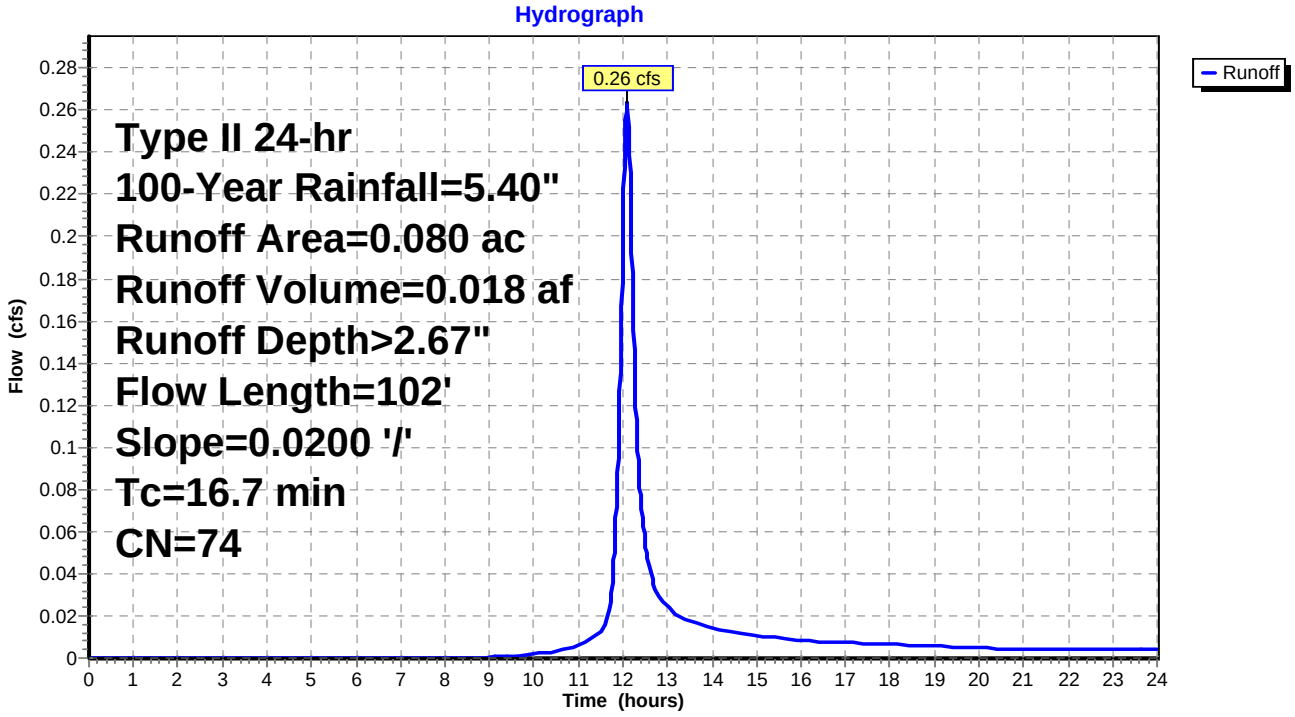
Runoff = 0.26 cfs @ 12.09 hrs, Volume= 0.018 af, Depth> 2.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.40"

Area (ac)	CN	Description
0.080	74	>75% Grass cover, Good, HSG C
0.080		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	102	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment dd: Post



Summary for Subcatchment pst: Post

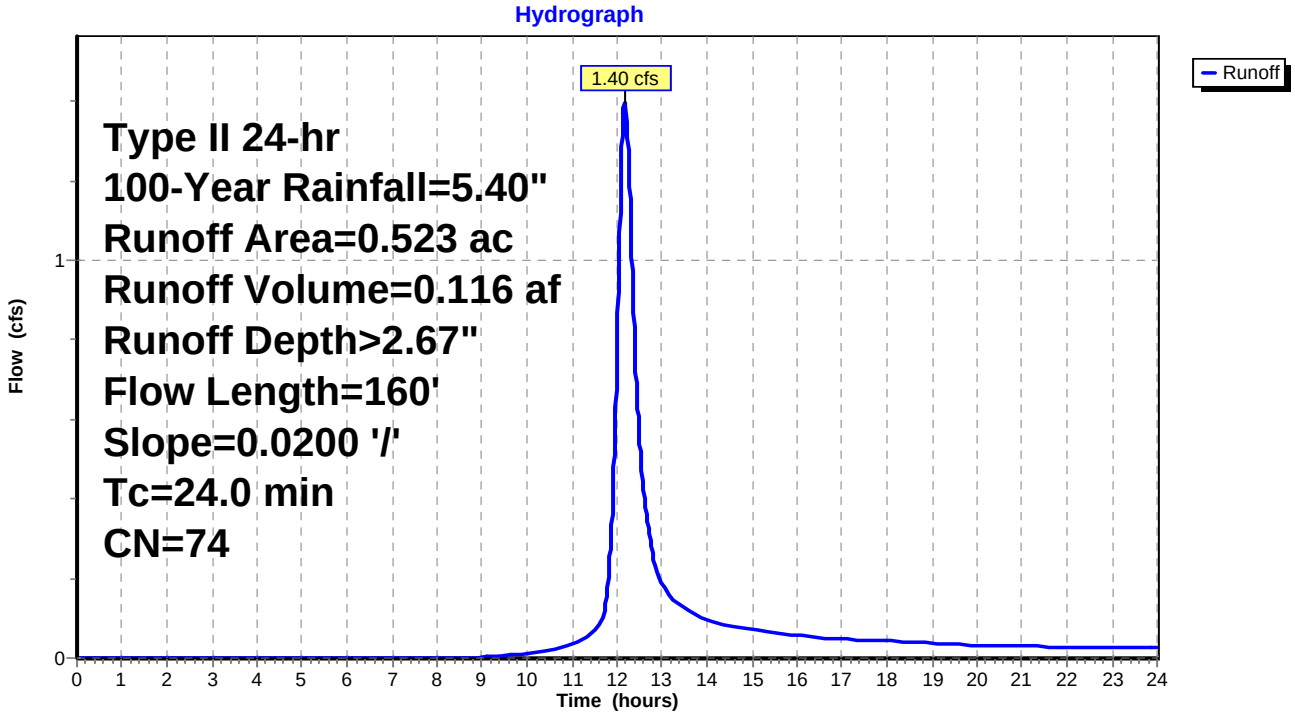
Runoff = 1.40 cfs @ 12.18 hrs, Volume= 0.116 af, Depth> 2.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.40"

Area (ac)	CN	Description
0.523	74	>75% Grass cover, Good, HSG C
0.523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	160	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.40"

Subcatchment pst: Post



Summary for Pond 9P: Bio-swale

Inflow Area =	0.671 ac, 22.03% Impervious, Inflow Depth > 2.55" for 100-Year event				
Inflow =	1.53 cfs @	12.18 hrs, Volume=	0.143 af		
Outflow =	1.53 cfs @	12.19 hrs, Volume=	0.133 af, Atten= 0%, Lag= 0.7 min		
Discarded =	0.01 cfs @	12.19 hrs, Volume=	0.006 af		
Primary =	1.52 cfs @	12.19 hrs, Volume=	0.128 af		

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,010.99' @ 12.19 hrs Surf.Area= 514 sf Storage= 512 cf

Plug-Flow detention time= 45.3 min calculated for 0.133 af (94% of inflow)
Center-of-Mass det. time= 11.3 min (836.6 - 825.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.00'	515 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

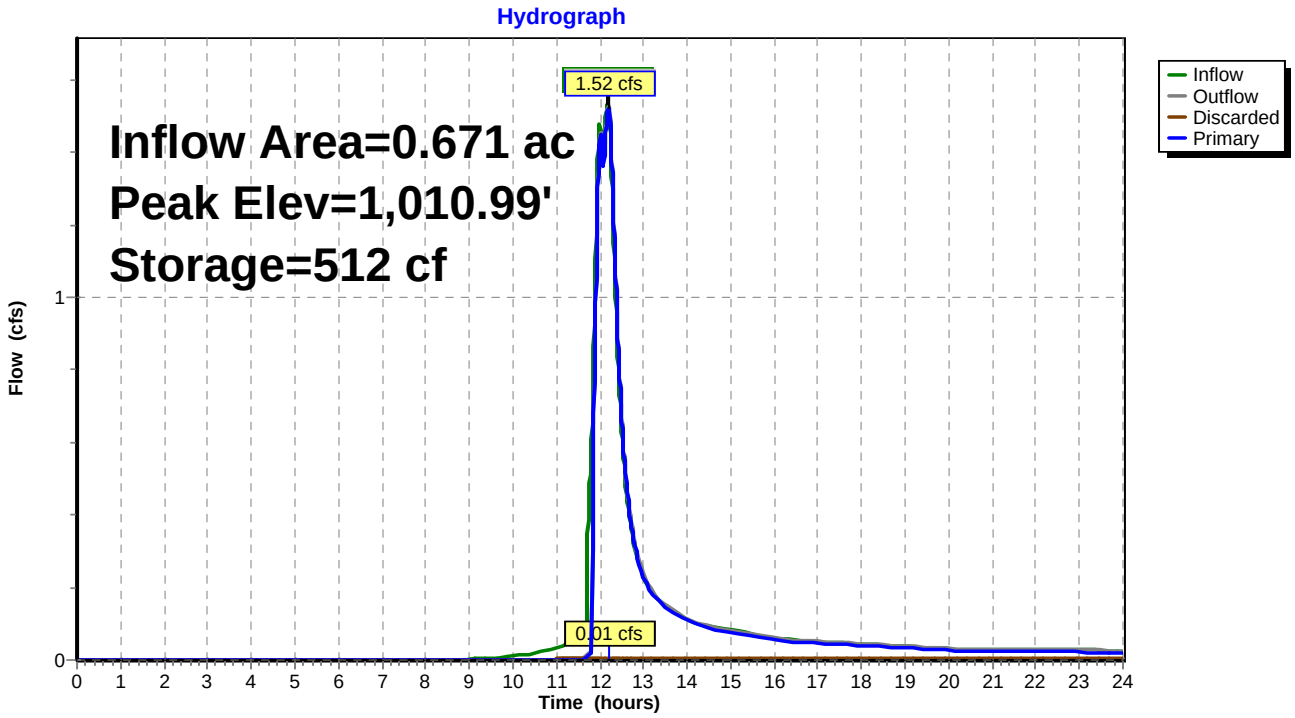
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.00	0	0	0
1,011.00	515	515	515

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,010.75'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.01 cfs @ 12.19 hrs HW=1,010.99' (Free Discharge)
└─**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=1.52 cfs @ 12.19 hrs HW=1,010.99' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 1.52 cfs @ 1.24 fps)

Pond 9P: Bio-swale



Stage-Area-Storage for Pond 9P: Bio-swale

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.00	0	0	1,010.04	268	139
1,009.02	5	0	1,010.06	273	145
1,009.04	10	0	1,010.08	278	150
1,009.06	15	0	1,010.10	283	156
1,009.08	21	1	1,010.12	288	162
1,009.10	26	1	1,010.14	294	167
1,009.12	31	2	1,010.16	299	173
1,009.14	36	3	1,010.18	304	179
1,009.16	41	3	1,010.20	309	185
1,009.18	46	4	1,010.22	314	192
1,009.20	52	5	1,010.24	319	198
1,009.22	57	6	1,010.26	324	204
1,009.24	62	7	1,010.28	330	211
1,009.26	67	9	1,010.30	335	218
1,009.28	72	10	1,010.32	340	224
1,009.30	77	12	1,010.34	345	231
1,009.32	82	13	1,010.36	350	238
1,009.34	88	15	1,010.38	355	245
1,009.36	93	17	1,010.40	360	252
1,009.38	98	19	1,010.42	366	260
1,009.40	103	21	1,010.44	371	267
1,009.42	108	23	1,010.46	376	274
1,009.44	113	25	1,010.48	381	282
1,009.46	118	27	1,010.50	386	290
1,009.48	124	30	1,010.52	391	297
1,009.50	129	32	1,010.54	397	305
1,009.52	134	35	1,010.56	402	313
1,009.54	139	38	1,010.58	407	321
1,009.56	144	40	1,010.60	412	330
1,009.58	149	43	1,010.62	417	338
1,009.60	155	46	1,010.64	422	346
1,009.62	160	49	1,010.66	427	355
1,009.64	165	53	1,010.68	433	363
1,009.66	170	56	1,010.70	438	372
1,009.68	175	60	1,010.72	443	381
1,009.70	180	63	1,010.74	448	390
1,009.72	185	67	1,010.76	453	399
1,009.74	191	71	1,010.78	458	408
1,009.76	196	74	1,010.80	463	417
1,009.78	201	78	1,010.82	469	426
1,009.80	206	82	1,010.84	474	436
1,009.82	211	87	1,010.86	479	445
1,009.84	216	91	1,010.88	484	455
1,009.86	221	95	1,010.90	489	465
1,009.88	227	100	1,010.92	494	475
1,009.90	232	104	1,010.94	500	485
1,009.92	237	109	1,010.96	505	495
1,009.94	242	114	1,010.98	510	505
1,009.96	247	119	1,011.00	**515**	**515**
1,009.98	252	124			
1,010.00	258	129			
1,010.02	263	134			

Summary for Pond RG1: RG #1

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 5.16" for 100-Year event				
Inflow =	0.21 cfs @	11.92 hrs, Volume=	0.010 af		
Outflow =	0.21 cfs @	11.93 hrs, Volume=	0.009 af, Atten= 2%, Lag= 0.5 min		
Discarded =	0.00 cfs @	11.93 hrs, Volume=	0.003 af		
Primary =	0.21 cfs @	11.93 hrs, Volume=	0.006 af		

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,014.06' @ 11.93 hrs Surf.Area= 192 sf Storage= 84 cf

Plug-Flow detention time= 113.4 min calculated for 0.009 af (85% of inflow)
Center-of-Mass det. time= 45.1 min (783.8 - 738.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,012.20'	113 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

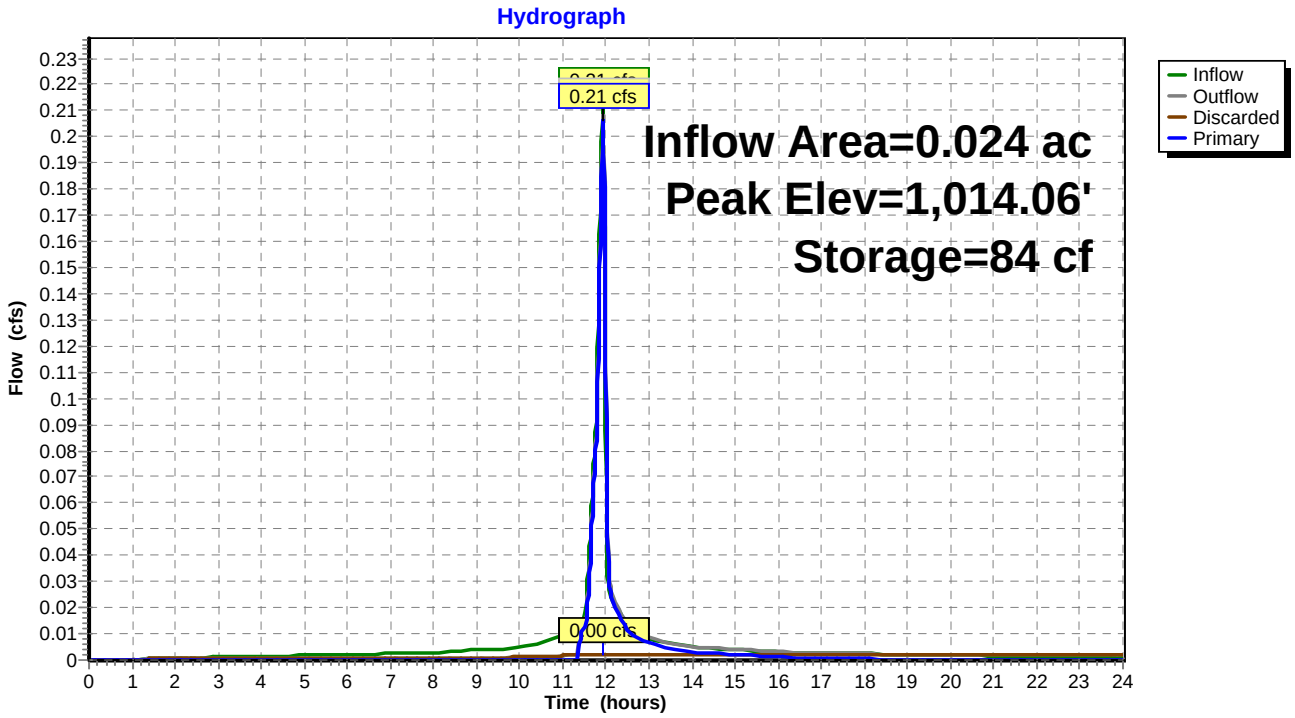
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,012.20	78	0.0	0	0
1,013.70	78	30.0	35	35
1,014.20	234	100.0	78	113

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,012.20'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,014.00'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,014.06' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.20 cfs @ 11.93 hrs HW=1,014.06' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.20 cfs @ 0.63 fps)

Pond RG1: RG #1


Hydrograph
Inflow
Outflow
Discarded
Primary
0.21 cfs
0.00 cfs
Inflow Area=0.024 ac
Peak Elev=1,014.06'
Storage=84 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG1: RG #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,012.20	78	0
1,012.22	78	0
1,012.24	78	1
1,012.26	78	1
1,012.28	78	2
1,012.30	78	2
1,012.32	78	3
1,012.34	78	3
1,012.36	78	4
1,012.38	78	4
1,012.40	78	5
1,012.42	78	5
1,012.44	78	6
1,012.46	78	6
1,012.48	78	7
1,012.50	78	7
1,012.52	78	7
1,012.54	78	8
1,012.56	78	8
1,012.58	78	9
1,012.60	78	9
1,012.62	78	10
1,012.64	78	10
1,012.66	78	11
1,012.68	78	11
1,012.70	78	12
1,012.72	78	12
1,012.74	78	13
1,012.76	78	13
1,012.78	78	14
1,012.80	78	14
1,012.82	78	15
1,012.84	78	15
1,012.86	78	15
1,012.88	78	16
1,012.90	78	16
1,012.92	78	17
1,012.94	78	17
1,012.96	78	18
1,012.98	78	18
1,013.00	78	19
1,013.02	78	19
1,013.04	78	20
1,013.06	78	20
1,013.08	78	21
1,013.10	78	21
1,013.12	78	22
1,013.14	78	22
1,013.16	78	22
1,013.18	78	23
1,013.20	78	23
1,013.22	78	24
1,013.24	78	24
1,013.26	78	25
1,013.28	78	25
1,013.30	78	26
1,013.32	78	26
1,013.34	78	27
1,013.36	78	27
1,013.38	78	28
1,013.40	78	28
1,013.42	78	29
1,013.44	78	29
1,013.46	78	29
1,013.48	78	30
1,013.50	78	30
1,013.52	78	31
1,013.54	78	31
1,013.56	78	32
1,013.58	78	32
1,013.60	78	33
1,013.62	78	33
1,013.64	78	34
1,013.66	78	34
1,013.68	78	35
1,013.70	78	35
1,013.72	84	37
1,013.74	90	38
1,013.76	97	40
1,013.78	103	42
1,013.80	109	44
1,013.82	115	47
1,013.84	122	49
1,013.86	128	52
1,013.88	134	54
1,013.90	140	57
1,013.92	147	60
1,013.94	153	63
1,013.96	159	66
1,013.98	165	69
1,014.00	172	73
1,014.02	178	76
1,014.04	184	80
1,014.06	190	83
1,014.08	197	87
1,014.10	203	91
1,014.12	209	95
1,014.14	215	100
1,014.16	222	104
1,014.18	228	108
1,014.20	**234**	**113**

Summary for Pond RG2: RG #2

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 5.16" for 100-Year event				
Inflow =	0.21 cfs @	11.92 hrs,	Volume=	0.010 af	
Outflow =	0.21 cfs @	11.93 hrs,	Volume=	0.009 af,	Atten= 2%, Lag= 0.5 min
Discarded =	0.00 cfs @	11.93 hrs,	Volume=	0.003 af	
Primary =	0.21 cfs @	11.93 hrs,	Volume=	0.006 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,013.56' @ 11.93 hrs Surf.Area= 182 sf Storage= 95 cf

Plug-Flow detention time= 127.2 min calculated for 0.009 af (83% of inflow)
Center-of-Mass det. time= 52.1 min (790.8 - 738.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.50'	122 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

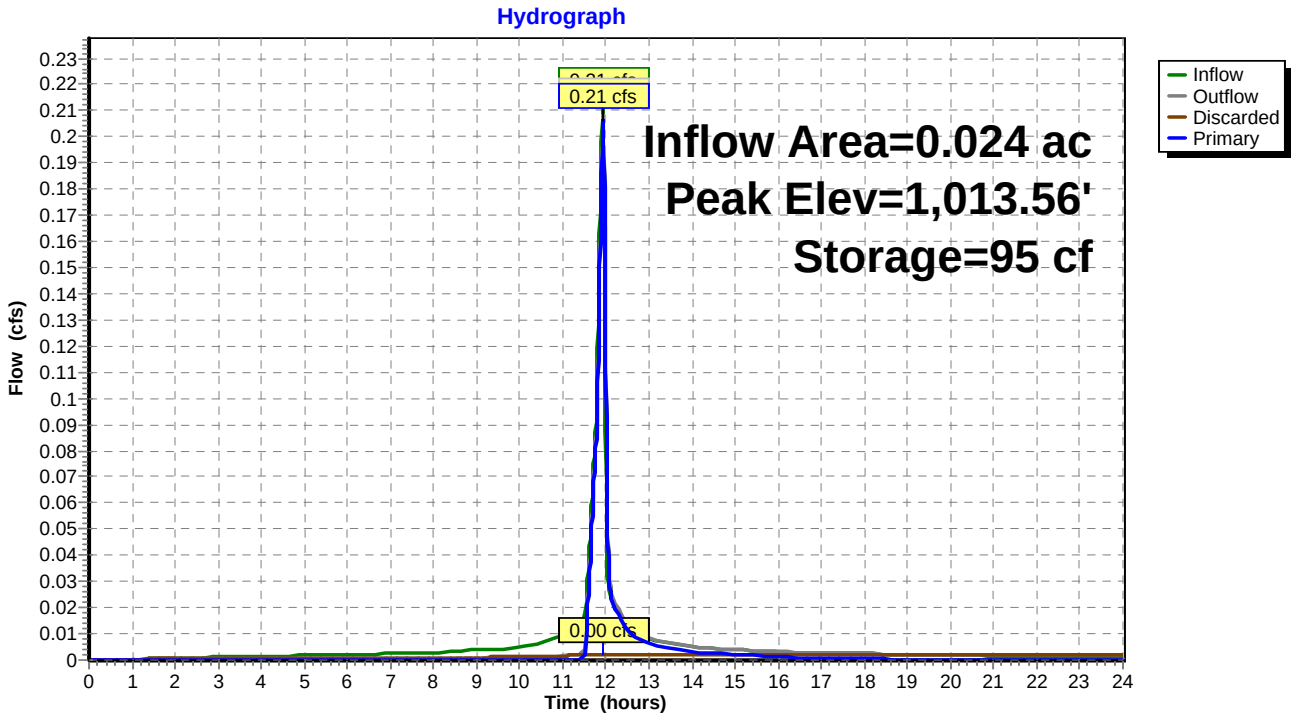
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,011.50	60	0.0	0	0
1,013.00	60	30.0	27	27
1,013.70	211	100.0	95	122

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,011.50'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,013.50'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,013.56' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.20 cfs @ 11.93 hrs HW=1,013.56' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.20 cfs @ 0.63 fps)

Pond RG2: RG #2


Hydrograph
Inflow
Outflow
Discarded
Primary
0.21 cfs
0.00 cfs
Inflow Area=0.024 ac
Peak Elev=1,013.56'
Storage=95 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG2: RG #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,011.50	60	0
1,011.55	60	1
1,011.60	60	2
1,011.65	60	3
1,011.70	60	4
1,011.75	60	5
1,011.80	60	5
1,011.85	60	6
1,011.90	60	7
1,011.95	60	8
1,012.00	60	9
1,012.05	60	10
1,012.10	60	11
1,012.15	60	12
1,012.20	60	13
1,012.25	60	14
1,012.30	60	14
1,012.35	60	15
1,012.40	60	16
1,012.45	60	17
1,012.50	60	18
1,012.55	60	19
1,012.60	60	20
1,012.65	60	21
1,012.70	60	22
1,012.75	60	23
1,012.80	60	23
1,012.85	60	24
1,012.90	60	25
1,012.95	60	26
1,013.00	60	27
1,013.05	71	30
1,013.10	82	34
1,013.15	92	38
1,013.20	103	43
1,013.25	114	49
1,013.30	125	55
1,013.35	136	61
1,013.40	146	68
1,013.45	157	76
1,013.50	168	84
1,013.55	179	93
1,013.60	189	102
1,013.65	200	112
1,013.70	**211**	**122**

Summary for Pond RG3: RG#3

Inflow Area =	0.073 ac,100.00% Impervious, Inflow Depth > 5.16" for 100-Year event				
Inflow =	0.64 cfs @	11.92 hrs, Volume=	0.032 af		
Outflow =	0.63 cfs @	11.93 hrs, Volume=	0.028 af, Atten= 1%, Lag= 0.5 min		
Discarded =	0.00 cfs @	11.93 hrs, Volume=	0.004 af		
Primary =	0.63 cfs @	11.93 hrs, Volume=	0.024 af		

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,012.44' @ 11.93 hrs Surf.Area= 227 sf Storage= 179 cf

Plug-Flow detention time= 97.2 min calculated for 0.028 af (89% of inflow)
Center-of-Mass det. time= 41.3 min (780.1 - 738.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	194 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

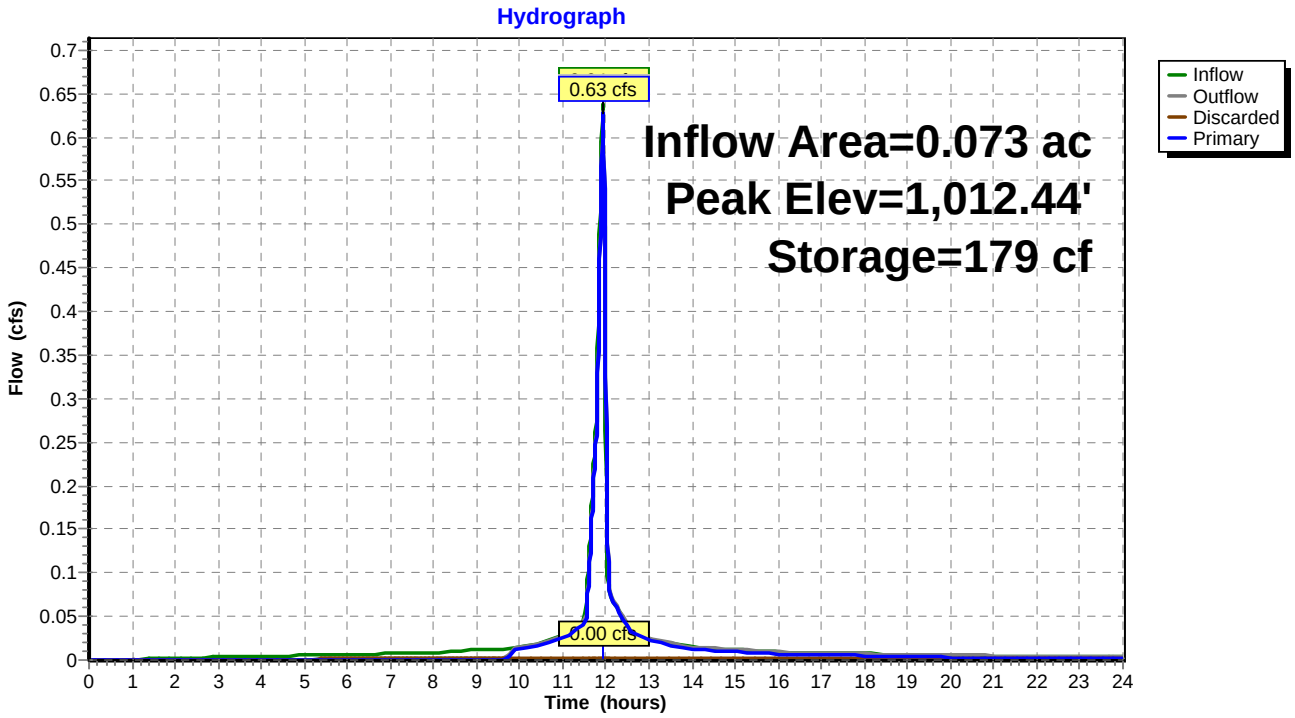
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	79	0.0	0	0
1,011.50	79	30.0	36	36
1,012.50	237	100.0	158	194

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,012.44' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.62 cfs @ 11.93 hrs HW=1,012.44' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.62 cfs @ 0.92 fps)

Pond RG3: RG#3


Hydrograph
Inflow
Outflow
Discarded
Primary
0.63 cfs
0.00 cfs
Inflow Area=0.073 ac
Peak Elev=1,012.44'
Storage=179 cf
Flow (cfs)
Time (hours)
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Area-Storage for Pond RG3: RG#3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	79	0
1,010.05	79	1
1,010.10	79	2
1,010.15	79	4
1,010.20	79	5
1,010.25	79	6
1,010.30	79	7
1,010.35	79	8
1,010.40	79	9
1,010.45	79	11
1,010.50	79	12
1,010.55	79	13
1,010.60	79	14
1,010.65	79	15
1,010.70	79	17
1,010.75	79	18
1,010.80	79	19
1,010.85	79	20
1,010.90	79	21
1,010.95	79	23
1,011.00	79	24
1,011.05	79	25
1,011.10	79	26
1,011.15	79	27
1,011.20	79	28
1,011.25	79	30
1,011.30	79	31
1,011.35	79	32
1,011.40	79	33
1,011.45	79	34
1,011.50	79	36
1,011.55	87	40
1,011.60	95	44
1,011.65	103	49
1,011.70	111	55
1,011.75	119	60
1,011.80	126	66
1,011.85	134	73
1,011.90	142	80
1,011.95	150	87
1,012.00	158	95
1,012.05	166	103
1,012.10	174	111
1,012.15	182	120
1,012.20	190	130
1,012.25	198	139
1,012.30	205	149
1,012.35	213	160
1,012.40	221	171
1,012.45	229	182
1,012.50	**237**	**194**

Summary for Pond RG4: RG #4

Inflow Area =	0.024 ac,100.00% Impervious, Inflow Depth > 5.16" for 100-Year event				
Inflow =	0.21 cfs @	11.92 hrs,	Volume=	0.010 af	
Outflow =	0.21 cfs @	11.93 hrs,	Volume=	0.007 af,	Atten= 2%, Lag= 0.6 min
Discarded =	0.00 cfs @	11.93 hrs,	Volume=	0.003 af	
Primary =	0.21 cfs @	11.93 hrs,	Volume=	0.004 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,012.36' @ 11.93 hrs Surf.Area= 207 sf Storage= 166 cf

Plug-Flow detention time= 171.9 min calculated for 0.007 af (69% of inflow)
Center-of-Mass det. time= 72.7 min (811.4 - 738.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	196 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

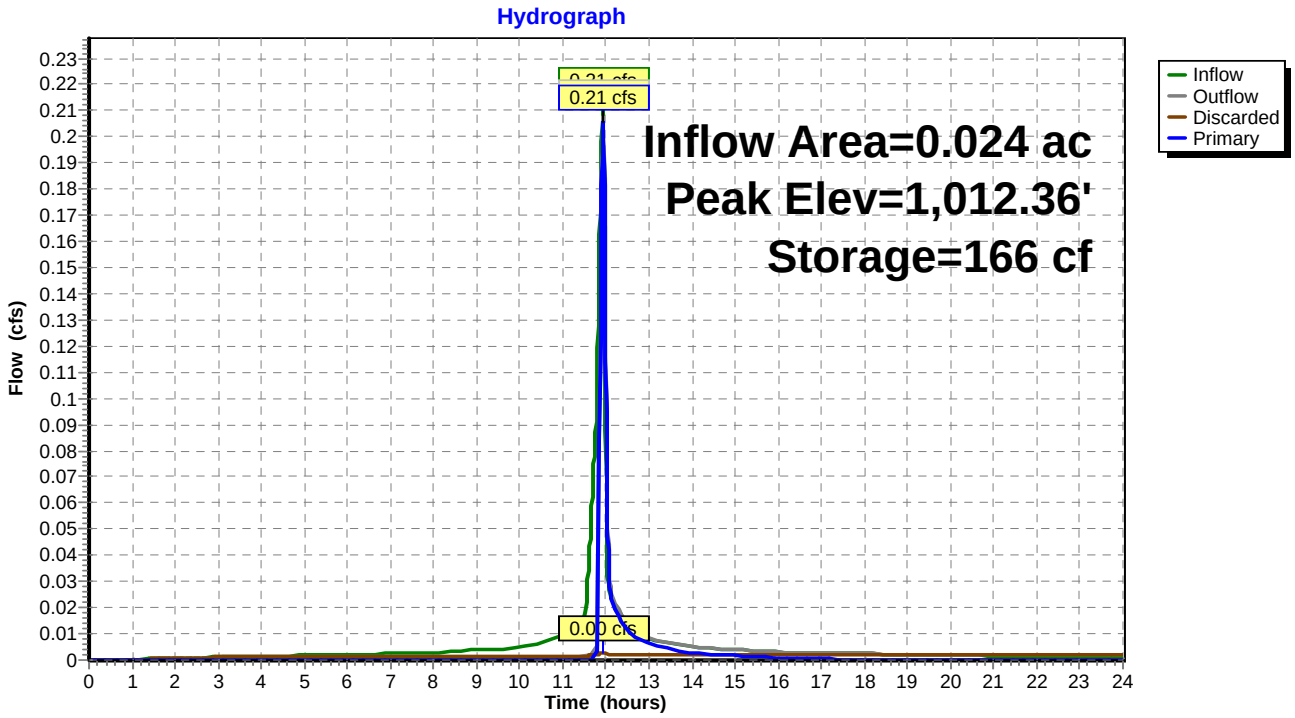
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	87	0.0	0	0
1,011.50	87	30.0	39	39
1,012.50	226	100.0	157	196

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,012.36' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.20 cfs @ 11.93 hrs HW=1,012.36' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.20 cfs @ 0.63 fps)

Pond RG4: RG #4


Hydrograph
Inflow
Outflow
Discarded
Primary
0.21 cfs
0.00 cfs
Inflow Area=0.024 ac
Peak Elev=1,012.36'
Storage=166 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG4: RG #4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	87	0
1,010.05	87	1
1,010.10	87	3
1,010.15	87	4
1,010.20	87	5
1,010.25	87	7
1,010.30	87	8
1,010.35	87	9
1,010.40	87	10
1,010.45	87	12
1,010.50	87	13
1,010.55	87	14
1,010.60	87	16
1,010.65	87	17
1,010.70	87	18
1,010.75	87	20
1,010.80	87	21
1,010.85	87	22
1,010.90	87	23
1,010.95	87	25
1,011.00	87	26
1,011.05	87	27
1,011.10	87	29
1,011.15	87	30
1,011.20	87	31
1,011.25	87	33
1,011.30	87	34
1,011.35	87	35
1,011.40	87	37
1,011.45	87	38
1,011.50	87	39
1,011.55	94	44
1,011.60	101	49
1,011.65	108	54
1,011.70	115	59
1,011.75	122	65
1,011.80	129	72
1,011.85	136	78
1,011.90	143	85
1,011.95	150	92
1,012.00	157	100
1,012.05	163	108
1,012.10	170	116
1,012.15	177	125
1,012.20	184	134
1,012.25	191	143
1,012.30	198	153
1,012.35	205	163
1,012.40	212	174
1,012.45	219	185
1,012.50	**226**	**196**

Summary for Pond RG5: RG #5

Inflow Area =	0.049 ac,100.00% Impervious, Inflow Depth > 5.16" for 100-Year event				
Inflow =	0.42 cfs @	11.92 hrs, Volume=	0.021 af		
Outflow =	0.42 cfs @	11.93 hrs, Volume=	0.018 af, Atten= 1%, Lag= 0.4 min		
Discarded =	0.00 cfs @	11.93 hrs, Volume=	0.004 af		
Primary =	0.42 cfs @	11.93 hrs, Volume=	0.015 af		

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,011.90' @ 11.93 hrs Surf.Area= 176 sf Storage= 135 cf

Plug-Flow detention time= 105.2 min calculated for 0.018 af (87% of inflow)
Center-of-Mass det. time= 42.5 min (781.2 - 738.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	153 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

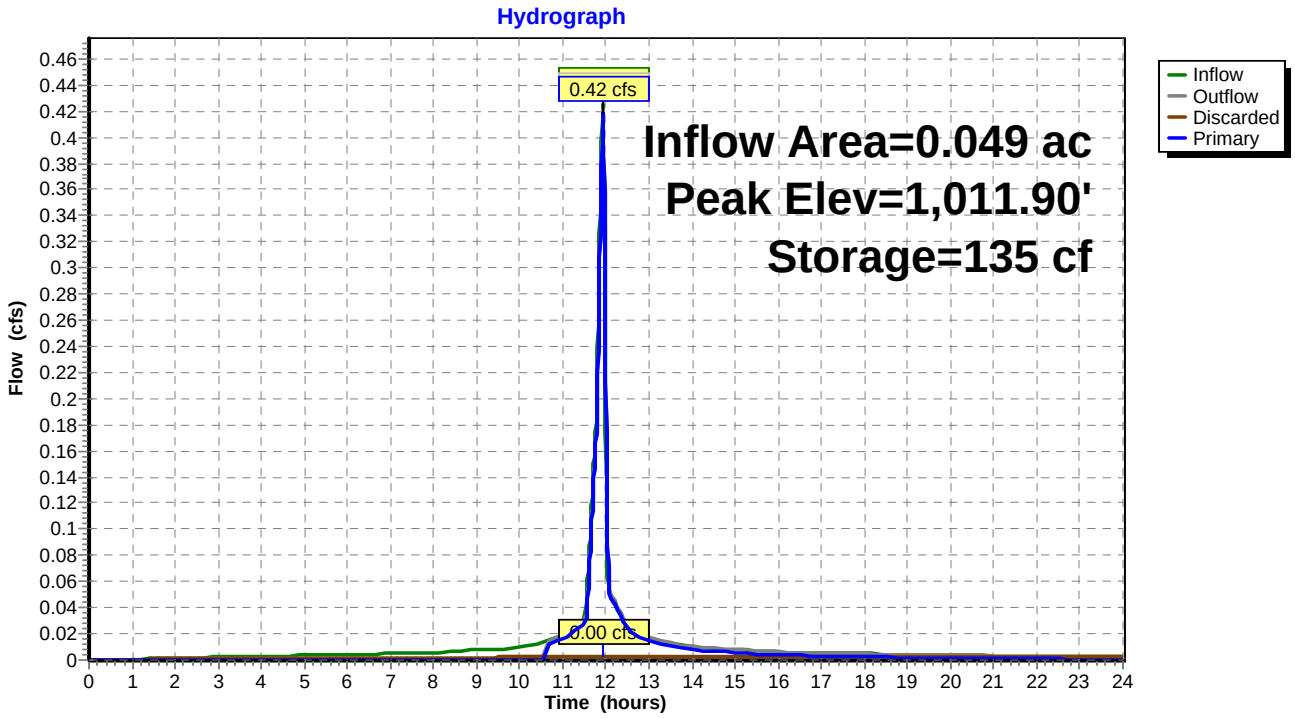
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.50	62	0.0	0	0
1,011.00	62	30.0	28	28
1,012.00	188	100.0	125	153

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.50'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1,006.00'
#2	Primary	1,011.80'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.93 hrs HW=1,011.90' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.42 cfs @ 11.93 hrs HW=1,011.90' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.42 cfs @ 0.80 fps)

Pond RG5: RG #5


Hydrograph
Inflow
Outflow
Discarded
Primary
0.42 cfs
0.00 cfs
Inflow Area=0.049 ac
Peak Elev=1,011.90'
Storage=135 cf
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG5: RG #5

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.50	62	0
1,009.55	62	1
1,009.60	62	2
1,009.65	62	3
1,009.70	62	4
1,009.75	62	5
1,009.80	62	6
1,009.85	62	7
1,009.90	62	7
1,009.95	62	8
1,010.00	62	9
1,010.05	62	10
1,010.10	62	11
1,010.15	62	12
1,010.20	62	13
1,010.25	62	14
1,010.30	62	15
1,010.35	62	16
1,010.40	62	17
1,010.45	62	18
1,010.50	62	19
1,010.55	62	20
1,010.60	62	20
1,010.65	62	21
1,010.70	62	22
1,010.75	62	23
1,010.80	62	24
1,010.85	62	25
1,010.90	62	26
1,010.95	62	27
1,011.00	62	28
1,011.05	68	31
1,011.10	75	35
1,011.15	81	39
1,011.20	87	43
1,011.25	94	47
1,011.30	100	52
1,011.35	106	57
1,011.40	112	63
1,011.45	119	69
1,011.50	125	75
1,011.55	131	81
1,011.60	138	88
1,011.65	144	95
1,011.70	150	102
1,011.75	157	110
1,011.80	163	118
1,011.85	169	126
1,011.90	175	135
1,011.95	182	144
1,012.00	**188**	**153**

Summary for Pond RG6: RG #6

Inflow Area =	0.100 ac,100.00% Impervious, Inflow Depth > 3.85" for 100-Year event				
Inflow =	0.86 cfs @	11.93 hrs,	Volume=	0.032 af	
Outflow =	0.85 cfs @	11.94 hrs,	Volume=	0.029 af,	Atten= 1%, Lag= 0.5 min
Discarded =	0.00 cfs @	11.94 hrs,	Volume=	0.004 af	
Primary =	0.84 cfs @	11.94 hrs,	Volume=	0.025 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,011.47' @ 11.94 hrs Surf.Area= 263 sf Storage= 193 cf

Plug-Flow detention time= 61.0 min calculated for 0.029 af (89% of inflow)
Center-of-Mass det. time= 20.0 min (768.2 - 748.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.10'	202 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

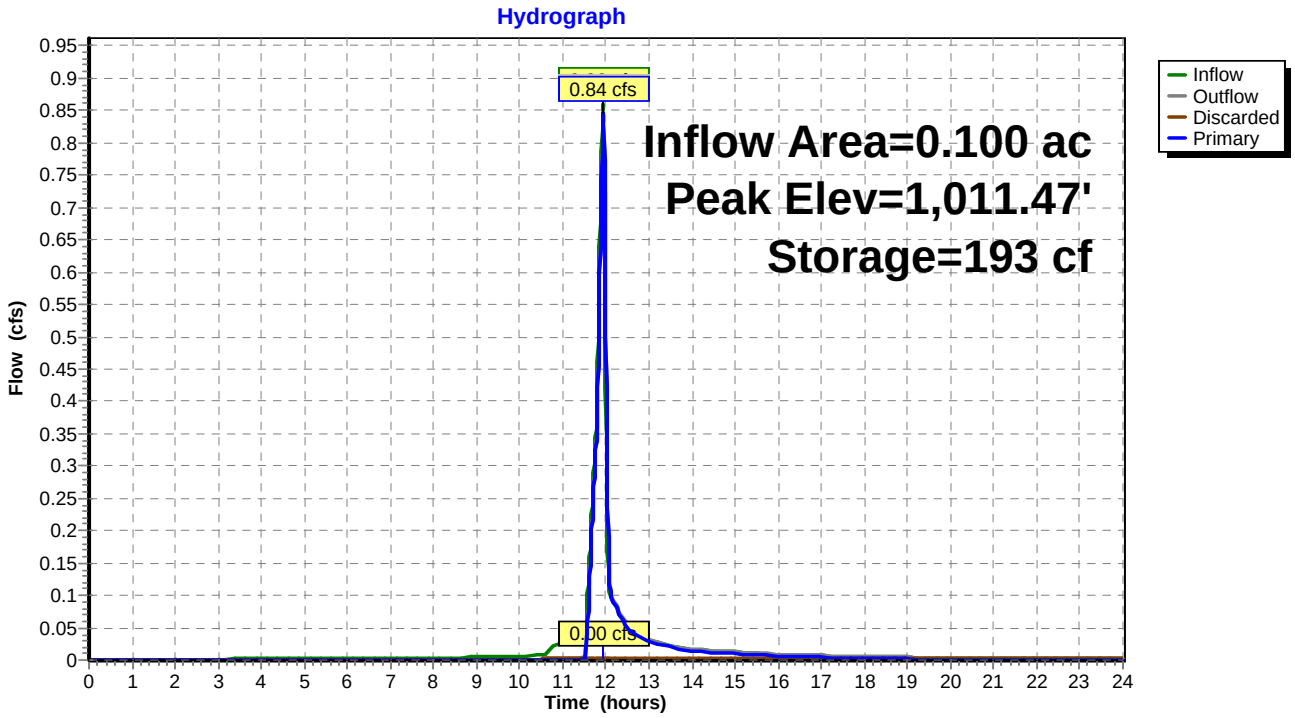
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.10	90	0.0	0	0
1,010.60	90	30.0	41	41
1,011.50	270	100.0	162	202

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.10'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,011.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.94 hrs HW=1,011.47' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.84 cfs @ 11.94 hrs HW=1,011.47' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.84 cfs @ 1.01 fps)

Pond RG6: RG #6


Hydrograph
0.84 cfs
0.00 cfs
Inflow Area=0.100 ac
Peak Elev=1,011.47'
Storage=193 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG6: RG #6

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.10	90	0
1,009.15	90	1
1,009.20	90	3
1,009.25	90	4
1,009.30	90	5
1,009.35	90	7
1,009.40	90	8
1,009.45	90	9
1,009.50	90	11
1,009.55	90	12
1,009.60	90	14
1,009.65	90	15
1,009.70	90	16
1,009.75	90	18
1,009.80	90	19
1,009.85	90	20
1,009.90	90	22
1,009.95	90	23
1,010.00	90	24
1,010.05	90	26
1,010.10	90	27
1,010.15	90	28
1,010.20	90	30
1,010.25	90	31
1,010.30	90	32
1,010.35	90	34
1,010.40	90	35
1,010.45	90	36
1,010.50	90	38
1,010.55	90	39
1,010.60	90	41
1,010.65	100	45
1,010.70	110	51
1,010.75	120	56
1,010.80	130	63
1,010.85	140	69
1,010.90	150	76
1,010.95	160	84
1,011.00	170	92
1,011.05	180	101
1,011.10	190	111
1,011.15	200	120
1,011.20	210	131
1,011.25	220	141
1,011.30	230	153
1,011.35	240	164
1,011.40	250	176
1,011.45	260	189
1,011.50	**270**	**202**

Summary for Pond RG7: RG #7

Inflow Area =	0.047 ac,100.00% Impervious, Inflow Depth > 3.53" for 100-Year event				
Inflow =	0.40 cfs @	11.93 hrs, Volume=	0.014 af		
Outflow =	0.17 cfs @	12.01 hrs, Volume=	0.009 af, Atten= 57%, Lag= 4.8 min		
Discarded =	0.00 cfs @	12.01 hrs, Volume=	0.005 af		
Primary =	0.17 cfs @	12.01 hrs, Volume=	0.004 af		

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,012.36' @ 12.01 hrs Surf.Area= 329 sf Storage= 286 cf

Plug-Flow detention time= 179.9 min calculated for 0.009 af (63% of inflow)
Center-of-Mass det. time= 94.9 min (836.6 - 741.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,010.00'	335 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

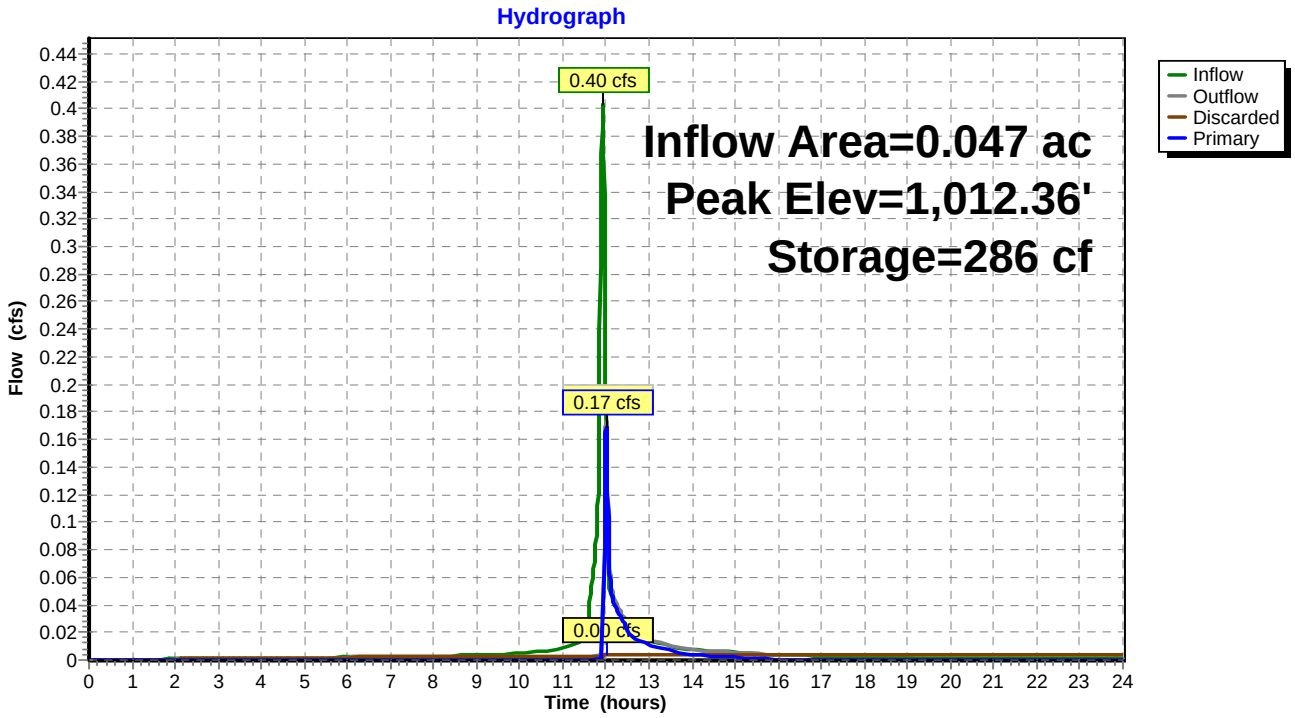
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,010.00	165	0.0	0	0
1,011.50	165	30.0	74	74
1,012.50	356	100.0	261	335

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,010.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,012.30'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 12.01 hrs HW=1,012.36' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.17 cfs @ 12.01 hrs HW=1,012.36' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.17 cfs @ 0.59 fps)

Pond RG7: RG #7


Hydrograph
Inflow Area=0.047 ac
Peak Elev=1,012.36'
Storage=286 cf
0.40 cfs
0.17 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG7: RG #7

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,010.00	165	0
1,010.05	165	2
1,010.10	165	5
1,010.15	165	7
1,010.20	165	10
1,010.25	165	12
1,010.30	165	15
1,010.35	165	17
1,010.40	165	20
1,010.45	165	22
1,010.50	165	25
1,010.55	165	27
1,010.60	165	30
1,010.65	165	32
1,010.70	165	35
1,010.75	165	37
1,010.80	165	40
1,010.85	165	42
1,010.90	165	45
1,010.95	165	47
1,011.00	165	50
1,011.05	165	52
1,011.10	165	54
1,011.15	165	57
1,011.20	165	59
1,011.25	165	62
1,011.30	165	64
1,011.35	165	67
1,011.40	165	69
1,011.45	165	72
1,011.50	165	74
1,011.55	175	83
1,011.60	184	92
1,011.65	194	101
1,011.70	203	111
1,011.75	213	121
1,011.80	222	132
1,011.85	232	144
1,011.90	241	156
1,011.95	251	168
1,012.00	261	181
1,012.05	270	194
1,012.10	280	208
1,012.15	289	222
1,012.20	299	237
1,012.25	308	252
1,012.30	318	267
1,012.35	327	283
1,012.40	337	300
1,012.45	346	317
1,012.50	**356**	**335**

Summary for Pond RG8: RG #8

Inflow Area =	0.100 ac,100.00% Impervious, Inflow Depth = 3.00" for 100-Year event				
Inflow =	0.84 cfs @	11.94 hrs,	Volume=	0.025 af	
Outflow =	0.84 cfs @	11.94 hrs,	Volume=	0.024 af,	Atten= 1%, Lag= 0.3 min
Discarded =	0.00 cfs @	11.94 hrs,	Volume=	0.002 af	
Primary =	0.84 cfs @	11.94 hrs,	Volume=	0.022 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,010.97' @ 11.94 hrs Surf.Area= 169 sf Storage= 95 cf

Plug-Flow detention time= 28.8 min calculated for 0.024 af (96% of inflow)
Center-of-Mass det. time= 15.7 min (764.3 - 748.6)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.10'	212 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

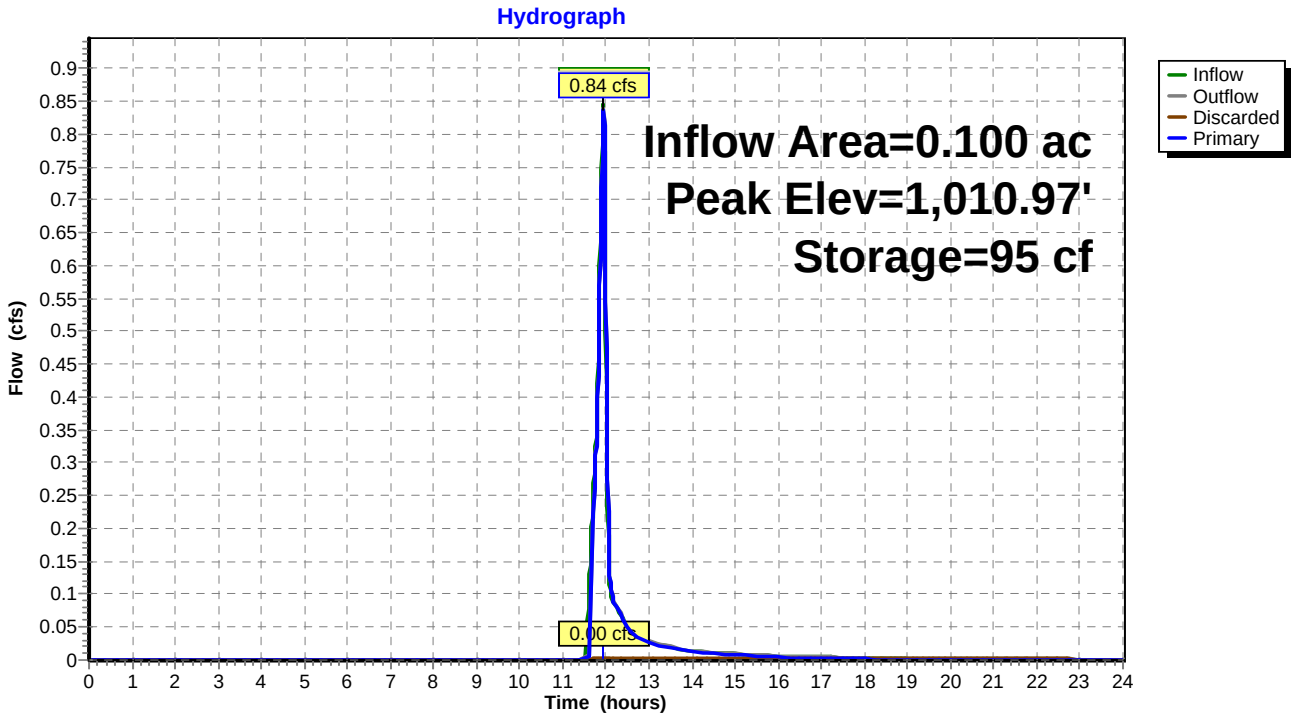
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,009.10	102	0.0	0	0
1,010.60	102	30.0	46	46
1,011.50	267	100.0	166	212

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,009.10'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'
#2	Primary	1,010.80'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 11.94 hrs HW=1,010.97' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.83 cfs @ 11.94 hrs HW=1,010.97' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.83 cfs @ 1.01 fps)

Pond RG8: RG #8


Hydrograph
0.84 cfs
0.00 cfs
Inflow Area=0.100 ac
Peak Elev=1,010.97'
Storage=95 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Stage-Area-Storage for Pond RG8: RG #8

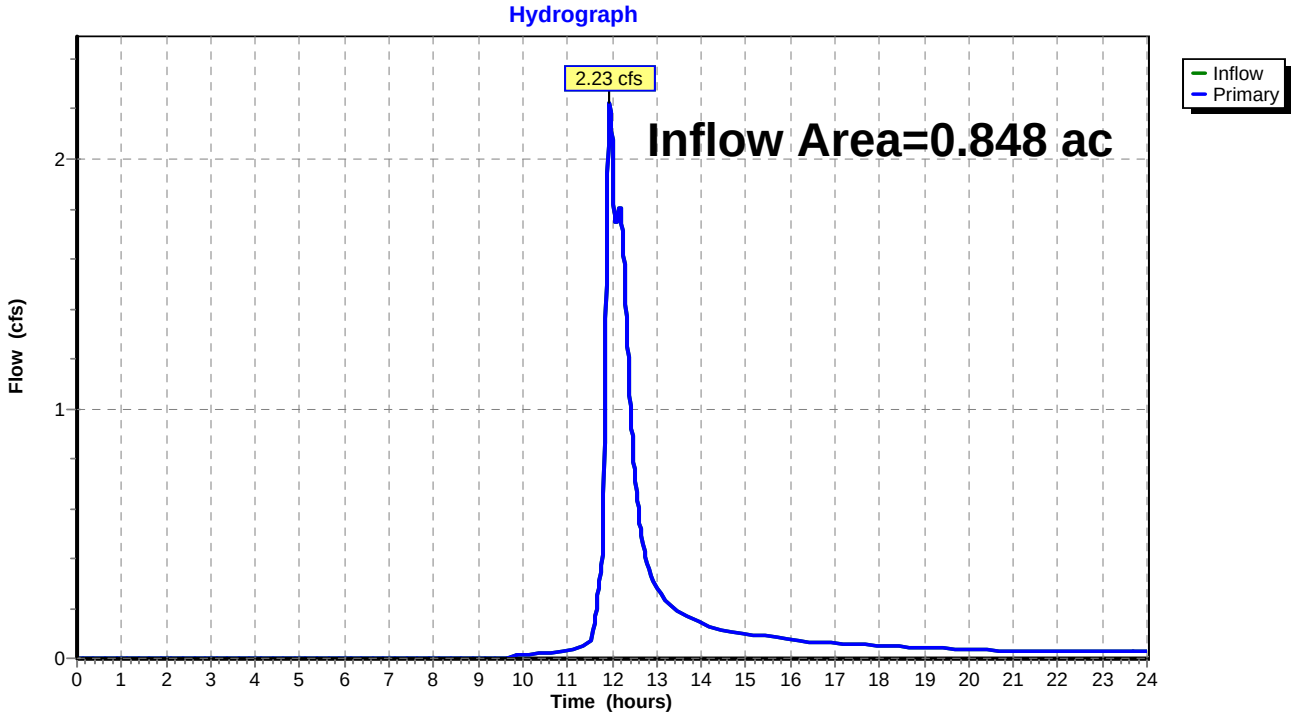
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
1,009.10	102	0
1,009.15	102	2
1,009.20	102	3
1,009.25	102	5
1,009.30	102	6
1,009.35	102	8
1,009.40	102	9
1,009.45	102	11
1,009.50	102	12
1,009.55	102	14
1,009.60	102	15
1,009.65	102	17
1,009.70	102	18
1,009.75	102	20
1,009.80	102	21
1,009.85	102	23
1,009.90	102	24
1,009.95	102	26
1,010.00	102	28
1,010.05	102	29
1,010.10	102	31
1,010.15	102	32
1,010.20	102	34
1,010.25	102	35
1,010.30	102	37
1,010.35	102	38
1,010.40	102	40
1,010.45	102	41
1,010.50	102	43
1,010.55	102	44
1,010.60	102	46
1,010.65	111	51
1,010.70	120	57
1,010.75	129	63
1,010.80	139	70
1,010.85	148	77
1,010.90	157	85
1,010.95	166	93
1,011.00	175	101
1,011.05	185	110
1,011.10	194	120
1,011.15	203	130
1,011.20	212	140
1,011.25	221	151
1,011.30	230	162
1,011.35	240	174
1,011.40	249	186
1,011.45	258	199
1,011.50	**267**	**212**

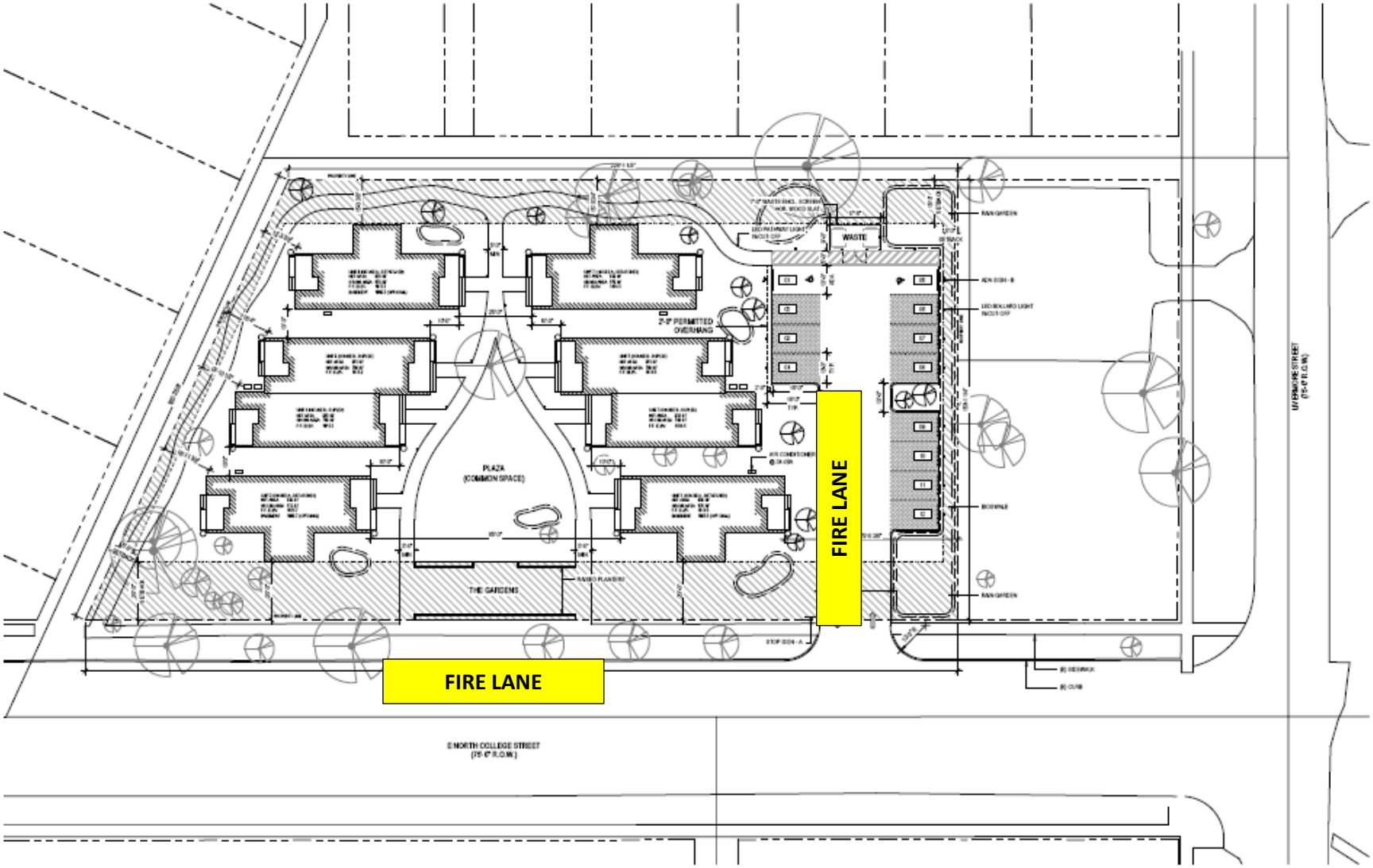
Summary for Link Q: Site Discharge

Inflow Area = 0.848 ac, 28.93% Impervious, Inflow Depth > 2.49" for 100-Year event
Inflow = 2.23 cfs @ 11.95 hrs, Volume= 0.176 af
Primary = 2.23 cfs @ 11.95 hrs, Volume= 0.176 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Q: Site Discharge




FIRE LANE
FIRE LANE
PLAZA
(COMMON SPACE)
THE GARDENS
WASTE
2'-0" PERMITTED
OVERHANG
RAIN GARDEN
BIOSWALE
RAISED PLANTERS
STOP SIGN - A
(E) SIDEWALK
(E) CURB
E NORTH COLLEGE STREET
(75'-0" R.O.W.)
UNNAMED STREET
(75'-0" R.O.W.)

1 SITE PLAN

DECLARATION OF COVENANTS, CONDITIONS AND, RESTRICTIONS

ACV SMALL PILOT DEVELOPMENT, LLC, an Ohio limited liability company ("Declarant"), is the Owner in fee simple of certain real property located in the Village of Yellow Springs, Greene County, Ohio, known by official plat description as Antioch College Village, pursuant to a record plan filed for record on _____, 2018 in Plat Book __, Page __, of the Greene County, Ohio Plat Records (the "Subdivision”), the legal description of which real property is attached hereto as Exhibit A.

For the purpose of enhancing and protecting the value, attractiveness, and desirability of the PND, Declarant hereby declares that all of the real property described above together with such additional property as may be added to the Subdivision pursuant to Article VIII of the Declaration, and each part thereof shall be held, sold, and conveyed subject to the following easements, covenants, conditions, and restrictions, which shall constitute covenants running with the land and shall be binding on all parties having any right, title, or interest in the above-described property or any part thereof, their heirs, successors, and assigns, and shall inure to the benefit of each Owner thereof.

Definitions

The terms used in this document shall have these meanings, unless the context requires otherwise:

1. "Articles" and "Articles of Incorporation" mean the articles, filed with the Secretary of State of Ohio, incorporating ACV Owners' Association as a corporation not-for-profit under the provisions of Chapter 1702 of the Revised Code of Ohio, as the same may be lawfully amended from time to time. A true copy of the Articles are attached hereto as Exhibit B.

2. "Association" and "ACV Owners' Association" mean the corporation not for-profit created by the filing of the Articles.

3. "Association Organizational Documents" means these Covenants, Declaration, and the Articles and Bylaws of the Association.

4. "Board" and "Board of Directors" mean those persons who, as a group, serve as the board of directors of the Association.

5. "Bylaws" mean the by-laws of the Association, as the same may be lawfully amended.

6. "Common Elements" means any property, whether it be real or personal, owned or leased by the Association, or in which the Association and or the members have an easement to use, or which the Association has an obligation to maintain.

7. "Declarant" means ACV Small Pilot Development, LLC, an Ohio limited liability company, and its successors and assigns, provided that the rights specifically reserved to Declarant under these Covenants, or under any other Association Organizational Documents shall accrue only to such successors and assigns as are designated in writing by Declarant as successors and assigns of such rights.

8. "Declaration" or "Covenants" means this instrument.

9. "Director" and "Directors" mean that person or those persons serving, at the time pertinent, as a director or directors of the Association.

10. "Eligible holder of a first mortgage lien" means the holder of a valid recorded first mortgage on a Lot, which holder has given written notice to the Association stating the holder's name, address and Lot or Lots subject to its mortgage.

11. "Lot" or "Lots" mean one or more of Lots numbered 1 through and including 8 of , as such Lots are numbered and delineated on the recorded plat thereof, of record in Plat Book 25, Page 60 in the Recorder's Office, Miami County, Ohio, and the portion of any later phase of Antioch College Village, which portions have been submitted by the Declarant to the jurisdiction of these restrictions.

12. "Lot owner" and "Lot owners" mean that person or those persons owning a leasehold interest in a Lot or Lots, each of whom is also a "member" of the Association, as defined in Ohio's non-profit corporation statutory act.

13. "Occupant" means a person or entity lawfully residing in a dwelling on a Lot, regardless of whether that person is a Lot owner, and any agents, guests, invitees, customers, officers or employees of an Occupant.

14. "Person" means a natural individual, corporation, partnership, director, or other legal entity capable of holding title to real property.

15. "Planned Community Act" means the statutory Law of the State of Ohio relating to the creation and operation of planned communities and is presently Chapter 5312 of the Revised Code of Ohio.

16. "Subdivision" means the portion of Antioch College Village, as shown on the recorded plat thereof (the "Plat"), of record in Plat Book 38, Page300B-301A, in the Recorder's Office, Greene County, Ohio, and the portion of any later phase of Antioch College Village, which portions have been submitted by the Declarant to the jurisdiction of these restrictions.

17. "Turnover Date" means the date selected by the Declarant, in its sole discretion but no later than the date required pursuant to Section 7.2©, below, for the Declarant to relinquish control over the selection and removal of the Association's Directors.

ARTICLE I. RESTRICTIONS

The lots shall be subject to the following restrictions:

l.l Applicability of Zoning Regulations and Ordinances. Land use of all Lots is governed by applicable Zoning Regulations and other ordinances for the Village of Yellow Springs, Ohio and/or Greene County, Ohio as presently enacted or hereafter amended. Such governmental regulations and ordinances may in certain respects be more strict or stringent than these covenants and restrictions, and these covenants and restrictions shall not be deemed to relieve the Owner of obligations to comply with any applicable governmental regulations and ordinances.

1.2 Residential Purposes. All Lots in the Subdivision shall be used exclusively for single family residential purposes.

1.3 Lot Subdivision and Building Sites. None of the Lots shall at any time be divided into more than one building site and no building site shall be less in area than the area of the smallest Lot platted in the Subdivision. A single Lot shall be used for one building site. No Lot may be further subdivided.

1.4 Building Setbacks. Building setbacks shall be observed as provided on the Plat that is filed of record with the Recorder of Greene County, Ohio, with respect to each individual Lot in the Subdivision.

1.5 Lot Maintenance.

(a) All Lots, whether occupied or unoccupied, shall at all times be maintained in a neat and attractive condition and in such manner as to prevent their becoming unsightly by reason of unattractive growth on such Lot or the accumulation of rubbish or debris thereon. In order to implement effective control of this provision, there is reserved to the Association for itself and its agents, the right, but not the obligation, after ten (10) days notice to any Lot Owner, to enter upon any residential Lot

with such equipment and devices as may be necessary for the purpose of mowing, removing, cleaning or cutting underbrush, weeds or other unsightly growth and trash which in the opinion of the Association detracts from the overall beauty or safety of the Subdivision.

(b) Entrance upon such property for such purposes shall not constitute a trespass. The Association may charge the Owner a reasonable cost for such services, which charge shall constitute a lien upon the Lot enforceable by appropriate proceedings at law or equity; provided, however, that the lien shall be subordinate to the lien of any first mortgage or deed of trust encumbering the Lot. The provisions of this section shall not be construed as an obligation on the part of the Association to mow, clear, cut, or prune any Lot, nor to provide garbage or trash removal services.

1.6 Garbage Containers. Garbage containers, if any, shall be kept in a clean and sanitary condition, and shall be so placed or screened by shrubbery, fencing, or other appropriate means so as not to be visible from any road, or within sight distance of the Lot at any time except during refuse collection.

1.7 Fuel Containers. Exterior containers for storage of home heating oil or propane gas (except for cooking grills) for use by the individual property Owner shall not be permitted.

1.8 Signs, billboards, and advertising structures of any kind are prohibited with the following exceptions:

(a) Builder and contractor signs during construction periods.

(b) One professional sign of not more than four square feet to advertise a Lot for sale during a sales period.

(c) Declarant's sign or signs advertising the Subdivision.

1.9 Utilities. Except for above ground electric lines around the perimeter of the Subdivision, all utilities shall be installed underground.

1.10 Landscaping. Plans for initial landscaping must be submitted to the Association for approval within ninety (90) days after completion of construction. Landscape work must be completed within six (6) months of occupancy. The Association may require sod or other erosion protection as a condition of approval.

1.11 Completion of Construction.

(a) Construction of a residence building on any Lot is to be completed within one (1) year from the date of the original purchase from Declarant. Declarant reserves the right to repurchase any Lot in the Subdivision upon which the construction of the residential building has not been completed within one (1) years from the date of the original sale from Declarant.

(b) In the event the Declarant exercises the repurchase right set forth in section 1.11(a), Declarant shall give written notice to the then Owner of record of the Lot or Lots, the notice to be by certified mail addressed to the mailing address for tax purposes. The repurchase price which the Declarant shall pay for such Lot, in the event of such repurchase, shall be the sales price of such Lot upon its original sale, without interest or allowance for appreciation in value. Declarant, at its sole discretion, may waive its right to repurchase any Lot or Lots in the Subdivision. In no event shall the Declarant be entitled to exercise the repurchase right after two (2) years from the original sale. The Owner shall transfer the Lot or Lots to Declarant by limited warranty deed free and clear of any liens and encumbrances arising subsequent to the date of the closing of the purchase of Lot or Lots from Declarant.

1.12 Fences. All fence designs and location shall be in keeping with the architectural character of the structure and shall be approved by the Association. No chain link fencing, barbed wire, wire field fencing, metal fencing, or similar fencing shall be permitted. No fence or hedge greater than four feet in height shall be placed or allowed to remain nearer to the street than the minimum setback line.

1.13 Drainage. Drainage of surface water, storm water and/or foundation drains shall not be connected to sanitary sewers.

1.14 Animals. No animals, livestock or poultry of any kind or description shall be raised, kept, or bred on any Lot in the Subdivision. Notwithstanding the foregoing, dogs (up to but not exceeding two (2) per Lot), cats, or other usual household pets may be kept on any Lot, provided that no such household pet may be kept on any Lot for commercial purposes and provided further that no dog which constitutes a threat, danger or nuisance to any Owner or other individual may be kept on any Lot at any time. The determination as to whether any dog constitutes a threat, danger or nuisance shall be made within the sole discretion of the Declarant or the Association. The permitting of animals in the Subdivision shall be subject to such rules and regulations as the Board may from time to time promulgate, including, without limitation the right to levy fines and enforcement charges

against persons who do not clean up after their pet. The right of an occupant to maintain an animal shall be subject to termination if the Board, in its full and complete discretion, determines that maintenance of the animal constitutes a nuisance or creates a detrimental effect on the Subdivision or other Lot owners or occupants.

1.15 Outbuildings and Structures. The installation of outbuildings and detached structures are not permitted.

1.16 Sidewalks. Sidewalks required to be installed by any governmental entity shall be installed by the Association pursuant to the architect’s plans. Declarant reserves the right to establish plans and specifications for any such sidewalks, and the Association shall comply with any such plans and specifications. If the Association refuses or fails to install the sidewalks promptly upon demand by the Declarant or by any governmental entity, the Declarant shall have the right to install the sidewalks, and the Association shall promptly reimburse Declarant for all costs and expenses incurred in connection with the installation of the sidewalks, which costs and expenses shall constitute a lien upon the Lot enforceable by appropriate proceedings at law or equity.

1.17 Vehicles. No boat, boat trailer, house trailer, camper, van, recreational vehicle, tent, or equipment or vehicle of a similar nature shall be parked or stored on any road, street, driveway, yard, or Lot in the Subdivision for any period of time. No truck of any size greater than a pickup truck shall be parked on any part of the Subdivision at any time except such limited period as may be necessary to service any part of the Subdivision. No inoperable motor vehicle shall be parked on any part of the Subdivision at any time. No Owner shall repair any motor vehicle, boat, trailer, or other vehicle on any portion of any Lot, or on any street in the Subdivision, except for emergency repairs, and then only to the extent necessary to enable movement thereof to a proper repair facility.

1.18 Parking. On-street parking on any street in the Subdivision shall be restricted to occasional parking for special occasions only, not to exceed twenty-four (24) hours.

1.19 Association Responsibility. Neither the Association nor Declarant nor their representative agents shall be responsible for defects in plans or specifications submitted, revised, or approved in accordance with the foregoing provisions, nor for any structural or other defect in any work done according to such plans and specifications.

1.20 Size of Residence. Each one-story single family residential

structure erected on any building site shall have not more than 1ess than 750 gross (exterior) square feet and not more than 1000 gross (exterior) square feet of finished area. The square footage shall exclude garage space and basement, decking, patios and porches.

1.21 Solar Panels. The use of solar panels may be permitted provided that Association approval is obtained in writing with respect to the placement and type of solar panels to be installed prior to installation.

1.22 Antennas and Satellite Dishes. No exposed or exterior radio or television transmission or receiving antennas, and no satellite dishes which exceed 24 inches in diameter shall be erected, placed, or maintained on any part of the Subdivision.

1.23 Vents. Vents protruding through the roof should be placed on rear roof surfaces when possible and must be painted a color to blend with roof coloring.

1.24 Swimming Pools. No swimming pools shall be permitted in the Subdivision.

1.25 Mailboxes. The Association may designate a mailbox design which must be used by each Lot Owner. The mailbox erected by the Lot Owner shall meet U.S. Postal Service specifications and applicable Miami County or Concord Township ordinances.

1.26 Driveways. All driveways shall be concrete, asphalt, or non-asphalit hard surface pavement and should extend from the garage door to the rear of the sidewalk and shall be approved by the Association. The driveway approach shall be concrete pavement from the curb to the sidewalk and shall be constructed in accordance with applicable Village of Yellow Springs or Greene County specifications.

1.27 Clothes Lines. The use of exterior clothes lines shall not be permitted.

1.28 Basketball Goals. No basketball goals shall be permitted to be attached to any residential structure; however, freestanding basketball goals may be permitted provided that Association approval is obtained with respect to the placement and type of basketball goal and supporting structures.

1.29 Nuisances. No noxious or offensive activity which would constitute a nuisance shall be carried on in any Lot.

1.30 Repairs. Each Owner shall, at his sole cost and expense, repair his residence, keeping the same in a condition comparable

to the condition of the residence at the time of its initial construction, normal wear and tear excepted. The Association may agree to be responsible for any repairs required under this paragraph, with the cost of such repair work being included in homeowner's Association fees.

1.31 Trees Prohibited. No trees shall be planted between the curb and sidewalks required to be installed by any governmental entity, and no trees shall be planted within a public right of way or within a public easement.

1.32 Common Elements Uses. Common Elements owned by the Association or over which the Association has an easement, shall be held and operated for the benefit of the Declarant and the Lot owners and occupants and their agents, servants, customers, invitees and licensees, subject to such rules and regulations as may from time to time be promulgated by the Board.

1.33 Sex Offenders. No person who:

(a) is adjudicated or designated to be a sexual predator or a habitual sex offender by an appropriate court or law enforcement agency, and

(b) is required to register with a designated registering agency under the laws of the State of Ohio pursuant to the Ohio Sex Offenders Act, or any similar laws or ordinances of the State of Ohio, any other state or federal jurisdiction, or any political subdivision of any of the foregoing, as the same may be, from time to time amended may reside in or occupy a Lot for any length of time, nor enter upon a Lot as a guest, visitor, employee or contractor of a Lot Owner or Occupant. The Association may enforce the provisions of this section by commencing an action to enjoin such person from occupying a Lot and/or from coming on a Lot; or to evict such person (in an action commenced in the name of the Lot owner); or to levy enforcement charges for the violation of this section; or any combination of the foregoing; and all costs in connection therewith, including attorneys and paralegal fees, shall be charged to the Lot, and the Owner of the Lot, in which such person resides or of which such person is a guest, visitor, employee or contractor, as an Special Individual Unit Assessment, enforceable in accordance with the provisions of this Declaration.

1.34 Conveyances. Each Lot shall be conveyed subject to the terms, conditions and provisions of this Declaration. Conveyance includes any assignment of an Owner's lease rights. To enable the Association to maintain accurate records of the names and addresses of Lot owners, each Lot owner agrees to notify the Association, in writing, within five days after an interest in

that Lot owner's Lot has been transferred to another person, identifying the name and address of each new Owner. In addition, each Lot owner agrees to provide to a purchaser of that owner's Lot a copy of the Association Organizational Documents and all effective rules and regulations.

1.35 Architectural Control. No building, fence, wall, sign, structure, driveway, drainage improvement, grade of the property or other improvements shall be commenced, erected or maintained upon a Lot, or any part thereof, nor shall any exterior addition to or change or alteration therein be made, until the plans and specifications showing the nature, kind, shape, height, materials, color and location of the same shall have been submitted to and approved in writing by the Declarant until the Turnover Date, and thereafter, by the Board or its designated representative, as to appropriateness and as to harmony of external design, color and location in relation to surrounding structures and topography. Notwithstanding any other provision of this Declaration to the contrary, the Declarant or Board shall have the authority, exercisable in its sole discretion, to approve any structure, improvement or feature, even though the same is not similar to those constructed or approved for other Lots, and such approval shall not be considered as a waiver of the requirements of this paragraph, nor shall it be considered as a precedent binding the Declarant or the Board to approve similar structures, improvements or features for any other Lot. In the event the Declarant or the Board fails to approve or disapprove such plans and specifications within thirty (30) days after they have been submitted to them, approval will not be required and these provisions will be deemed to have been fully complied with. Subject to the Declarant's discretion set forth above, all buildings shall be of similar or compatible style, construction and materials. The Board may, in addition to all other costs, charges and Special Individual Lot Assessments levied against a Lot for failure to comply and for the cost of causing compliance with the restrictions contained in this paragraph, levy an additional Special Individual Lot Assessment against any Lot, for up to $100, for each day that such violations continue until corrected. The Board may establish rules consistent with the standards set forth on this Declaration to govern the construction of any improvements, landscaping, additions, or changes on Lots in the Subdivision.

1.36 Arbitration. The interpretation of the Declarant as to the application of these restrictions or any rule or regulation promulgated by the Board, shall be binding upon all Lot owners until the Declarant has sold and conveyed all lots. Thereafter, in the event of any dispute between Lot owners as to the application of these restrictions or any rule or regulation promulgated by the Board, the party aggrieved shall submit a

complaint in writing to the Board specifying the dispute. The Board shall set a time, date and place for a hearing within sixty (60) days thereafter, and give written notice to each party no less than three days in advance of the hearing. The Board shall hear such evidence on the dispute as the Board deems proper and render a written decision on the matter within thirty (30) days of the hearing. No action at law may be instituted by either party to such a dispute unless arbitration pursuant hereto has first been had.

ARTICLE II. OWNERS' ASSOCIATION

2.1 Establishment of Association. The Association has been formed to be and to serve as the Lot owners' association for the Subdivision. The Declarant is presently the sole member of the Association.

2.2 Membership. Membership in the Association shall be limited to the Declarant and the Lot owners. Every person or entity who is or becomes a record owner of a Lot is a Lot owner and shall be a member of the Association. The foregoing is not intended to include persons or entities who hold an interest merely as security for the performance of an obligation. Membership shall be appurtenant to and may not be separated from ownership of any Lot, and transfer of a Lot shall automatically transfer membership to the transferee.

2.3 Voting Rights. Prior to the Turnover Date, all voting power in the Association shall be vested in the Declarant. From and after the Turnover Date, each Lot owner, including the Declarant, shall be entitled to one vote for each Lot owned.

2.4 Board of Directors. The Board initially shall be those three persons named as the initial Directors pursuant to the provisions of the Articles, or such other person or persons as may from time to time be substituted by Declarant. The Declarant shall continue to control the makeup of the Board until the Turnover Date selected by the Declarant. From and after the Turnover Date, there shall be __ Directors elected by the Lot owners, which Lot owners shall include the Declarant as the owner of any unsold Lots. Such Directors must be owners, the spouses of owners, or the principal, member, partner, director, officer, trustee or employee of an owner which is not an individual, or any other party which Ohio law permits to be a member of the Board. The terms of the directors shall be staggered so that the terms of one-third of the Directors will expire and successors be elected at each annual meeting of the Association. Thereafter, at such annual meetings, successors to the two directors whose terms then expire shall be elected to serve three-year terms.

2.5 Authority. The Board shall have all authority to manage, maintain, repair, replace, alter and improve, and, with the approval of Owners of Lots holding a majority of the voting power of the Association, convey, any Common Elements and do all things, and exercise all rights provided by the Association Organizational Documents and permitted by Ohio Law that are not specifically reserved to Lot owners, and to assess and collect funds for the payment of all costs and expenses incurred in connection therewith. The Board shall have the authority to borrow funds, as needed, and pledge such security and rights of the Association as might be necessary or desirable to obtain any such loan including, without limitation, the conveyance of a security interest in the Common Elements and the assignment of the right of the Association to levy assessments upon Lots in the Subdivision, without requirement for approval by the members. Prior to the Turnover Date, the Board shall not enter into any contract affecting the Association after the Turnover Date, unless terminable without penalty on thirty-day notice.

2.6 Indemnification. The association shall indemnify every person who is or has been a Director, officer, agent or employee of the Association and those persons' respective heirs, legal representatives, successors and assigns, against expenses, including attorneys' fees, and judgments, decrees, fines, penalties and amounts paid in settlement actually and reasonably incurred in connection with any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, and whether in an action or proceeding by or in the right of the Association, or otherwise, in which such person was or is a party or is threatened to be made a party by reason of the fact that person was a Director, officer, employee or agent of the Association, or is or was serving in such capacity at the request of the Association, provided that person (a) acted in good faith and in a manner that person believed to be in, or not opposed to, the best interests of the Association, and (b) in any matter the subject of a criminal action or proceeding, had no reasonable cause to believe the questioned conduct was unlawful, but provided that in the case of any threatened, pending, or completed action or suit by or in the right of the Association to procure a judgment in its favor against any such person by reason of that person serving in such capacity, no indemnification shall be made in respect of any claim, issue, or matter as to which such person shall have been adjudged to be liable for gross negligence or willful and wanton misconduct in the performance of a duty to the Association unless and only to the extent that the court in which such action was brought shall determine upon application that in view of all the circumstances of the case that person is fairly and reasonably entitled to indemnity for such expenses as the court shall deem proper. Unless ordered by a court, the

determination of indemnification, pursuant to the foregoing criteria, shall be made: (a) by a majority vote of a quorum of Directors of the Association who were not and are not parties to or threatened with any such action, suit, or proceeding; or (b) if such a quorum is not obtainable, or if a majority of a quorum of disinterested Directors so direct, in a written opinion by independent legal counsel other than an attorney, or a firm having associated with an attorney, who has been retained by or who has performed services for the Association or any person to be indemnified within the past five years; or (c) by the Lot owners; or (d) by the court in which such action, suit or proceeding was brought. Any such indemnification shall not be deemed exclusive of any other rights to which such person may be entitled under law, any agreement, or any insurance purchased by the Association, or by vote of Lot owners, or otherwise.

ARTICLE III. MAINTENANCE AND REPAIR

3.1 Common Elements. The Common Elements include (but are not necessarily limited to) storm water retention ponds, lakes and/or basins, any dry basin detention, any area containing entry signs for the Subdivision or other decorative signs, and green space and other landscaping and improvements within any portion of the Common Elements.

3.2 Maintenance of Common Elements by the Association. Except as provided herein, the Association shall have the right to maintain, repair and replace all Common Elements to the extent that the Board, in the exercise of its duty to use ordinary care and prudence in the management of the property and affairs of the Association, allocates funds therefore, including, without limitation, the maintenance of Common Elements owned by the Association, and the maintenance and landscaping of any entrance features constructed by the Declarant or the Association
The Association shall maintain the Common Elements in such manner to allow storm water to accumulate in and/or discharge regularly from the storm water retention and detention facilities. The maintenance responsibilities of the Association shall include, but are not limited to, the following:

(a) The Association shall be responsible for the removal of any debris and sediment in the storm water retention facility.

(b) The Association shall be responsible for keeping any inflow and discharge pipes associated with any such facility free from obstruction.

(c) The Association shall be responsible for routine mowing and maintenance of the grounds within the Common Elements not covered with water.

(d) The Association shall have the power and duty to keep the Common Elements free from debris and obstructions, to remove any obstruction which may be placed in the Common Elements and to take such other corrective action as may be necessary to permit proper drainage, retention and detention of storm water through the Subdivision.

(e) The Association shall be responsible for the maintenance of all improvements within the Common Elements, including, but not limited to, fountain equipment, playground equipment, picnic shelter, basketball court, trees, and landscaping, walking paths and signs identifying the subdivision.

(f) The Association shall have the power and duty to keep the Common Elements (including the streets located within the Subdivision prior to the application of the final coat of asphalt) free from debris and obstructions, to remove any obstruction which may be placed in the Common Elements and to take such other corrective action as may be necessary.

3.3 Governmental Maintenance. Authorized representatives of the Village of Yellow Springs shall have the right, but not the responsibility, to enter upon any Lot in the Subdivision to inspect and monitor any storm water detention basin areas or drainage facilities constructed in the Subdivision. In the event that the facilities are not properly constructed or maintained, upon the failure of the Declarant or the Association to take corrective action after being duly notified in writing by the City, the City shall have the right, but not the obligation to take whatever action is necessary to correct any improper construction or to maintain storm water detention basin areas and drainage facilities; provided, however, that the Declarant and/or the Association shall first have a reasonable period of time, taking into account the urgency of the matter, to take corrective action. Any cost incurred by the applicable governmental entity for such maintenance may be assessed to the Association or, if the Association has ceased to exist, against individual Lots in accordance with the Declaration. Storm water drainage restrictions shall run with the land, and shall bind the Owners, successors, and assigns unless and until a modification is agreed to and approved by the applicable governmental entity.

3.4 Regulations of Common Elements. The Association shall have the right to establish rules regarding the use of any portion of the Common Elements, provided such rules are not in conflict with any provision contained in this Declaration, and are reasonably established to protect the safety and welfare of the Owners and their guests, or are established to assure the continued service of the Common Elements for the purpose for which they were

designed.

3.5 Lot Owners' Responsibility. The owners of Lots shall be responsible for the maintenance of their respective Lots and all improvements thereon which are not designated as Common Elements.

ARTICLE IV. UTILITY SERVICES

4.1 The Association shall arrange for the provision of utility services to the Common Elements under its control, and shall pay the costs of such services separately metered to the Association by the utility company.

ARTICLE V. INSURANCE

5.1 Fire and Extended Coverage Insurance. The Board shall have the authority to and shall obtain appropriate property insurance for Common Elements which are owned by the Association, and any entrance features constructed by the Declarant or the Association, against loss as are ordinarily insured against by standard extended coverage endorsements, and all other perils which are customarily covered with respect to projects similar in construction, location and use, in amounts as determined appropriate by the Board. This insurance shall contain a waiver of subrogation of rights by the carrier as to the Association, its officers and Directors, and all Lot Owners and occupants, and the rights of the various parties to collect pursuant to such insurance shall not be prejudiced by the acts or failure to act of any Lot Owner, Director or Officer of the Association, or any person under the control of the Association.

5.2 Liability Insurance. The Board shall have the authority to and shall obtain appropriate general liability insurance regarding occurrences on property in the control of the Association with such limits as the Board may determine. This insurance shall contain a "severability of interest" endorsement which shall preclude the insurer from denying the claim of a Lot owner because of negligent acts of the Association, the Board, or other Lot owners and shall include, without limitation, coverage for legal liability of the insured for property damage, bodily injuries and deaths of persons in connection with the operation, maintenance or use of any Common Elements, and legal liability arising out oflawsuits related to employment contracts of the Association.

5.3 Other Association Insurance. In addition, the Board shall purchase Directors and Officers liability insurance, provided the same is available at reasonable cost, and may purchase and such other insurance as the Board may determine.

5.4 Cost oflnsurance a Common Expense. The cost of insurance obtained by the Association shall be a common expense, payable by the Association. Certificates evidencing such insurance shall be issued to each Lot Owner and mortgagee upon request.

ARTICLE VI. GRANTS AND RESERVATIONS OF RIGHTS AND EASEMENTS

6.1 Right of Entry for Repair, Maintenance and Restoration. The Association shall have an easement and right of entry and access to, over, upon and through all of the Lots to enable the Association to perform its obligations, rights and duties pursuant hereto with regard to maintenance, repair, and replacement of any property owned by the Association or which the Association is obligated to maintain.

6.2 Easements for Utilities and Landscaping. There is hereby created upon, over and under all of the Lots, easements to the Association for ingress and egress to the Lots, and for the installation, replacing, repairing and maintaining of all utility lines and equipment thereon. It shall be expressly permissible for the Association to grant to the providing company permission to construct and maintain the necessary poles and equipment, wires, circuits and conduits on, above, across and under the Lots so long as such poles, equipment, wires, circuits and conduits do not unreasonably interfere with the use and enjoyment of the Lots. Should any utility company furnishing a service request a specific easement by separate recordable document, the Board shall have the right to grant such easement without conflicting with the terms hereof. Easements for the installation and maintenance of utilities, landscaping and drainage facilities are reserved as shown on the plat of the Subdivision. No structure or other materials or improvements, including fencing, that may damage or interfere with the installation and maintenance of utilities or landscaping shall be placed or permitted to remain within these easements. The easement area of each Lot shall be maintained continuously by the Owner of the Lot, except for those improvements for which a public authority or utility are responsible.

6.3 Easement for Maintenance. The Association shall have an easement over, under, and through all Lots and Common Elements, for ingress and egress and to allow the Association to perform its maintenance duties and other obligations and exercise its rights as set forth in this Declaration.

6.4 Signage Area Easement. Every Owner or Lot on which signage is located hereby grants, conveys, and assigns to the Association an easement and right-of-way over the Lot for purposes of access to signage and for performing any landscaping, maintenance, and/or repair to such signage and signage area.

6.5 Power of Attorney. Each Lot owner, by acceptance of a deed to a Lot, hereby irrevocably appoints the President of the Association, as his, her or its attorney-in-fact, to execute, deliver, acknowledge and record, for and in the name of such Lot owner, such deeds of easement and other instruments as may be necessary or desirable, in the sole discretion of the Board, to further establish or effectuate the foregoing easements. This power is for the benefit of each and every Lot owner, the Association, and the real estate to which it is applicable, runs with the land, is coupled with an interest, and is irrevocable.
6.6 General. The easements and grants provided herein shall in no way affect any other recorded grant or easement.

ARTICLE VII. ASSESSMENTS AND ASSESSMENT LIENS

7.1 Types of Assessments. The Declarant, for each Lot, hereby covenants, and each Lot owner, by acceptance of a deed to a Lot, (whether or not it shall be so expressed in such deed), is deemed to covenant and agree to pay to the Association:

(a) annual operating assessments,

(b) special assessments for capital improvements, and

(c) special individual Lot assessments, all of such assessments to be established and collected as hereinafter provided.

7.2 Annual Operating Assessments Prior to Turnover Date.

(a) Following the filing of this Declaration in the Recorder's Office, Greene County, Ohio, through the Turnover Date, the owners of all Lots which have been conveyed by the Declarant shall pay annual installments of operating assessments in such amounts as are determined by the Board from time to time, in advance, on or before the first day of each year. The amount of the initial annual operating assessments shall be $____ but such assessment amount shall be subject to change in the sole discretion of the Board.

(b) Until such Turnover Date, the Declarant shall not pay any assessments with respect to such Lots owned by it or conveyed by it to persons or entities affiliated with the Declarant or one of Declarant's members or to entities in which a member of the Declarant owns an equity interest.

(c) The Turnover Date shall be that date on or prior to the conveyance to purchasers of 100% of all lots submitted to the jurisdiction of this Declaration, selected by the Declarant. The Turnover Date shall be communicated to the Association in writing

by the Declarant, as the date after which control of the Association, and the right to select, remove and replace Directors, will be turned over to the owners of Lots.

7.3 Annual Operating Assessments After the Turnover Date.

(a) Promptly after the Turnover Date, and thereafter, prior to the beginning of each fiscal year of the Association, the Board shall estimate the expenses of the Association consisting of the following:

(i) the estimated next fiscal year's cost of the maintenance, repair, replacement, and other services to be provided by the Association;

(ii) the estimated next fiscal year's costs for insurance and bond premiums to be provided and paid for by the Association;

(iii) the estimated next fiscal year's costs for utility services charged to or otherwise properly payable by the Association;

(iv) the estimated next fiscal year's costs for the operation, management and administration of the Association, including, but not limited to, fees for property management, fees for legal and accounting services, costs of mailing, postage, supplies and materials for operating the Association, and the salaries, wages, payroll charges and other costs to perform these services, and any other costs constituting common expenses not otherwise herein specifically excluded;

(v) the estimated amount required to be collected to maintain a general operating reserve to assure availability of funds for normal operations of the Association, in an amount deemed adequate by the Board; and

(vi) an amount deemed adequate by the Board to maintain a reserve for the cost of unexpected repairs and replacements of major capital items in the normal course of operations without the necessity of a special assessment, unless owners exercising a majority of the voting power of the Association waive the reserve requirement for the year in question.

(vii) the estimated next fiscal year's cost of any taxes to be paid by the Association

(b) The Board shall thereupon allocate the remaining expenses among all Lots which have been conveyed by the Declarant or, if

not yet conveyed, are occupied by residents. As a Lot is conveyed such purchaser shall, on the first day of the first month following such conveyance, commence paying assessments equal to those being charged to the owners of other Lots conveyed pro rated for the remainder of the year.

(c) The annual operating assessment appurtenant to a Lot shall be payable in advance, in such installments as determined by the Board. The due dates of any such installments shall be established by the Board.

(d) If the amounts so collected are, at any time, insufficient to meet all obligations for which those funds are to be used, the deficiency shall be assessed by the Board among the Lots in proportion to the regular assessments.

(e) If assessments collected during any fiscal year are in excess of the funds necessary to meet the anticipated expenses for which the same have been collected, the excess shall be retained as reserves, and shall in no event be deemed profits nor available, except on dissolution of the Association, for distribution to Lot owners.

7.4 Special Assessments for Capital Improvements.

(a) In addition to the annual operating assessments, the Board may levy, in any fiscal year, special assessments to construct, reconstruct or replace capital improvements on or constituting a part of the Common Elements required to be replaced by the Association, to the extent that reserves therefore are insufficient.

(b) Any such assessment shall be divided equally among all Lots and shall become due and payable on such date or dates as the Board determines following written notice to the Lot owners.

7.5 Special Individual Lot Assessments.

(a) In addition to Annual Operating Assessments and Special Assessments for Capital Improvements, the Board may levy an assessment against an individual Lot, or Lots for any of the following:

(i) Enforcement assessments and individual assessments for utility service that are imposed or levied in accordance with this Declaration, as well as expenses the board incurs in collecting those assessments;

(ii) Costs of maintenance, repair, or replacement incurred due to the willful or negligent act of an Owner or occupant

of a Lot or their family, tenants, guests, or invitees, including, but not limited to, attorney's fees, court costs, and other expenses;

(iii) Costs associated with the enforcement of the Declaration or the rules and regulations of the Association, including, but not limited to, attorney's fees, court costs, and other expenses;

(iv) Costs or charges the Declaration or Bylaws permit.

7.6 Procedures for Levying Charge for Damages or Enforcement Assessment.

(a) Notice. Prior to imposing charges for damages to the Common Elements or other property, or assessments for the enforcement of violations of the provisions of the Declaration, Bylaws or rules and regulations of the Association, the Board shall give the Owner of the Lot written notice containing all of the following:

(i) A description of the property damaged or the violation;

(ii) The amount of the proposed charge or assessment;

(iii) A statement that the Owner has a right to a hearing before the Board to contest the proposed charge or assessment;

(iv) A statement setting forth the procedures to request a hearing; and

(v) A reasonable date by which the Lot Owner must cure the violation to avoid the proposed charge or assessment, if such an opportunity to cure is applicable.

(b) Hearing. A Lot Owner may request a hearing by delivering written notice of such request no later than the tenth day after receiving the notice provided in Subsection 7.6(a) of this Section. If the Lot Owners fail to make a timely request for a hearing, the right to such hearing shall be considered waived, and the Board may immediately impose a charge for damages or an enforcement assessment referenced in the notice provided in Subsection 7.6(a) of this Article, or may allow a reasonable time to cure the violation before imposing a charge or assessment. If a Lot Owner requests a hearing, the Board shall not levy the charge or assessment before holding a hearing, and will, at least seven days prior to the hearing, provide the Lot Owner with a written notice of the date, time and location of the hearing. Within 30 days following a hearing at which the Board imposes a charge or assessment, the Board shall deliver a written notice of

the charge or assessment to the Lot Owner.

(c) Manner of Notice. Any notice required under this Section to be served:

(i) upon the Lot Owners shall be delivered personally to the Lot Owner or any Occupant of the dwelling unit on the Lot, or mailed by certified mail, return receipt requested, or by regular mail, to the Owner at the address of the Lot, provided that if the Owner has provided the Association with an alternate address, all such notices shall be mailed by certified mail, return receipt requested, or ordinary mail to the Owner at such alternative address.

(ii) upon the Association shall be delivered personally to the President or Secretary of the Association; or mailed by certified mail, return receipt requested, to the President or Secretary of the Association.

7.7 Effective Date of Assessments. Any assessment created pursuant to this Declaration shall be effective on the date determined by the Board. Written notice of the amount of any assessment shall be sent by the Board to the Lot owner subject thereto at least ten days prior to the due date thereof, or the due date of the first installment thereof, if to be paid in installments. Written notice shall be mailed or delivered to a Lot owner's Lot unless the Lot owner has delivered written notice to the Board of a different address for such notices, in which event the Board shall mail such notice to the last designated address. Failure of the Association to provide such notice within the above-described time periods, or failure of the Lot Owner to receive such notice, for whatever reason, shall not be a defense to the Lot owner's obligation to pay such assessment.

7.8 Effect of Nonpayment of Assessment: Remedies of the Association.

(a) If any assessment or any installment of any assessment is not paid within ten (10) days after the same has become due, the Board, at its option, without demand or notice, may (I) declare the entire unpaid balance of the assessment immediately due and payable; (ii) charge interest on the entire unpaid balance, (or on an overdue installment, alone, if it hasn't exercised its option to declare the entire unpaid balance due and payable), at the highest rate of interest then permitted by law, or at such lower rate as the Board may from time to time determine: (iii) charge reasonable return check charges and late fees, as determined from time to time by the Board: and (iv) restrict voting privileges and the use of any recreational facilities by

the Owners and Occupants of the Lot. Such privileges and use may be restricted until the assessments with respect to the Lot have been paid.

(b) Annual operating and both types of special assessments, together with interest, late charges and costs, shall be a charge and a continuing, perfected lien in favor of the Association upon the Lot against which each such assessment is made. (Whenever the term "costs" is used herein, it shall include, without limitation, reasonable attorneys' fees incurred by the Association, to the extent that the recovery of such fees is not prohibited by Ohio law.) Such lien shall be considered to be perfected upon the date levied by the Board, and shall run with the land until paid.

(c) At any time after an installment of an assessment levied pursuant hereto remains unpaid for ten (10) or more days after the same has become due and payable, a certificate of lien may be filed with the Recorder of Greene County, Ohio, pursuant to authorization given by the Board. The certificate shall contain a description of the Lot for which Assessments are unpaid, the name or names of the record owner or owners thereof, and the amount of the unpaid portion of the assessments, interest, late charges and costs, and shall be signed by the president or other officer of the Association.

(d) Each such assessment together with interest, late charges and costs, shall also be the joint and several personal obligation of the Lot owners who owned the Lot at the time when the assessment fell due. The obligation for delinquent assessments, interest, late charges and costs shall not be the personal obligation of that owner or owners' successors in title unless expressly assumed by the successors, provided, however, that the right of the Association to any lien upon the Lot for non-payment of Assessments, and the right of the Association to suspend the voting privileges and restrict the use of Common Elements by the Owners and Occupants of such Lot shall not be impaired or abridged by reason of the transfer.

(e) The Association, as authorized by the Board, may pursue any other remedy available to the Association pursuant to Ohio law, and without limiting the generality of the foregoing, may bring an action at law against the owner or owners personally ob1igated to pay the same, and an action to foreclose a lien, or any one or more of these or other remedies. In any foreclosure action, the owners and Occupants shall be required to pay a reasonable rental for that Lot during the pendency of such action, and the Association, in any such action, shall be entitled to become a purchaser at the foreclosure sale.

(f) No owner may waive or otherwise escape liability for the assessments provided for in this Declaration by non-use of any facilities of the Association, or by abandonment of his, her or its Lot.

7.9 Priority of Lien. The lien of the assessments and charges provided for herein is prior to any lien or encumbrance subsequently arising or created, except liens for real estate taxes and assessments of political subdivisions and liens of first mortgages that have been filed for record prior to the recording of the lien, and may be foreclosed in the same manner as a mortgage on real property in an action brought by the Association.

7.10 Certificate Regarding Assessments. The Board shall, upon demand, for a reasonable charge, furnish a certificate signed by the president, treasurer, secretary or other designated representative of the Association, setting forth whether the assessments on a specified Lot have been paid. This certificate shall be conclusive evidence of payment of any assessment therein stated to have been paid.

7.11 Advancements By Declarant. Declarant recognizes that until a sufficient number of Lots are conveyed to Owners, the expenses of the Association to maintain the Common Elements may be greater than the amount assessed. Declarant, at its option, may advance funds to the Association in such amounts as are appropriate to pay the maintenance expenses of the Association. Such advances shall be recognized by the Board of Trustees of the Association as a loan repayable at such time and in such installment amounts, together with reasonable interest, as Declarant shall determine; it being Declarant's intention to permit the Association to operate and maintain the Common Elements for the benefit of all Members in the early phases of the Subdivision.

ARTICLE VIII. ANNEXATION OF ADDITIONAL PROPERTY

8.1 Future Annexation by Declarant. Declarant reserves the right at any time, and from time to time, to add real property which may hereafter be acquired by Declarant to this Declaration so that such additional property will become in all respects part of the Subdivision.

8.2 Reservation of Right to Amend Declaration. Declarant hereby reserves the right at any time, and from time to time, to amend this Declaration in such respects as Declarant may deem advisable so as to include any real property hereafter acquired by the Declarant and the improvements constructed thereon as part of the Subdivision. Declarant further reserves the right from time to time to amend this Declaration in such respects as

Declarant may deem advisable so as to add additional property to the definition of "Common Elements," so that such additional Common Elements will become subject to all of the terms and conditions of this Declaration, including those terms governing the maintenance and control of Common Elements by the Association.

8.3 Consent and Approval for Annexation Amendments. Declarant on its own behalf as the Owner of all Lots in the Subdivision and on behalf of all subsequent Owners, hereby consents and approves, and each Owner and each Owner's Mortgagee by accepting of a deed conveying such Ownership, or a Mortgage encumbering such interest, as the case may be, hereby consents and approves the provisions of this Article and each Owner and the respective Mortgagees by the acceptance of a deed conveying such Ownership or a Mortgage encumbering such interest, as the case may be, hereby irrevocably appoints Declarant their Attorney-in-Fact, coupled with an interest, and authorizes, directs, and empowers such Attorney, at the option of the Attorney in the event that the Declarant exercises the rights reserved above to add to the Subdivision additional property to execute, acknowledge, and record for and in the name of such Owner an amendment of this Declaration for such purpose and for and in the name of such respective Mortgagees a consent to such amendment.

ARTICLE IX ENFORCEMENT

9.1 In the event of an actual or threatened violation or breach of any of these restrictions, or any amendments or supplement to them, by any Lot Owner or by any person or entity using or occupying any Lot, then Declarant, the Association, or any Lot Owner or Owners shall have the right to compel compliance with the terms and conditions of this Declaration, by any proceeding at law or in equity in and by any other course of action or use of any other legal remedies which may be appropriate. No delay or failure on the part of an aggrieved party to invoke any available remedy shall be held to be a waiver of any right or remedy available to the party upon the recurrence or continuation of the violation. Nothing herein shall be construed to require the Declarant, the Association, or any Lot Owner or Owners to take any action contemplated in this Article to enforce the restrictions.

9.2 All costs, expenses, and attorney fees incurred by the Declarant or the Association in connection with their efforts to compel compliance with the terms and conditions of this Declaration shall be paid by the Owner or Owners against whom such compliance is sought and all such costs, expenses, and

attorney fees shall constitute a lien upon the Owner's Lot which lien shall be enforceable by appropriate proceedings at law or equity.

9.3 The Owner or grantee of any Lot which is subject to these restrictions, by acceptance of a deed or other instrument conveying title to the Lot, shall agree, and shall be deemed to have agreed to the filing of a certificate or affidavit of lien in the Office of the Recorder of Miami County, Ohio which shall constitute a lien upon the Owner's Lot for any and all unpaid assessments and any and all costs incurred by the Declarant or the Association in connection with their efforts to compel compliance with the terms and conditions of this Declaration, together with interest, costs and attorney fees incurred by the Declarant or the Association to collect such assessments or in connection with the enforcement of this Declaration. The Owner or grantee of any Lot shall agree, and shall be deemed to have agreed that the filing of the affidavit or certificate of lien shall constitute a lien upon the Lot for a period of five (5) years from the date of filing, unless sooner released or satisfied in the same manner provided by law for the release and satisfaction of mortgages on real property. The Owner or grantee of any Lot shall agree, and shall be deemed to have agreed, that such lien shall be prior to any lien or encumbrance subsequently arising or created, except liens for real estate taxes and assessments, and may be foreclosed in the same manner as a mortgage on real property in an action brought by the Declarant or on behalf of the Association.

ARTICLE X AMENDMENTS

10.l Power to Amend. This Declaration may be amended only by the sole act of Declarant up to the time Declarant relinquishes control of the Association. Thereafter, amendment of this Declaration (or the Articles of the Association or Bylaws) shall require the consent of Lot owners exercising not less than seventy five percent (75%) of the voting power of Lot owners. Notwithstanding the foregoing the consent of all Lot owners shall be required for any amendment effecting a change in:

(a) the method of allocating liability for common expenses; or

(b) the number of votes in the Association appertaining to any Lot;

(c) to terminate the applicability of the Declaration and dissolve the Association;

10.2 Method to Amend. An amendment to this Declaration, adopted with the consents hereinbefore provided, shall be executed with

the same formalities as this Declaration by two officers of the Association and shall contain their certification that the amendment was duly adopted in accordance with the foregoing provisions. Any amendment adopted by the Declarant or a duly empowered successor Declarant pursuant to authority granted it pursuant to this Declaration shall be duly executed by them with the same formalities as the execution of this Declaration and shall contain the certification of such signors that such amendment is made pursuant to authority vested in the Declarant or any duly empowered successor Declarant by this Declaration. Any amendment duly adopted and executed in accordance with the foregoing provisions shall be effective upon the filing of the same with the Recorder of Greene County, Ohio.

ARTICLE XI. LOT OWNER ACCEPTANCE

11.1 The Owner or grantee of any Lot which is subject to this Declaration, by acceptance of the deed or other instrument conveying title to the Lot, or by the execution of a contract of the purchase of the Lot, whether from Declarant or from a subsequent Owner of the Lot, shall accept, and shall be deemed to have accepted, the deed or other contract upon and subject to the restrictions contained in this Declaration, all of them being covenants running with the land.

ARTICLE XII. SEVERABILITY

12.1 Each restriction is hereby declared to be independent from the remainder of the restrictions.

ARTICLE XII. MISCELLANEOUS PROVISIONS

13.1 Covenants Running With the Land. The covenants, conditions, restrictions, easements, reservations, liens and charges created hereunder or hereby shall run with and bind the land, and each part thereof, and shall be binding upon and inure to the benefit of all parties having any right, title or interest in or to all or any part of the Subdivision, and the Association and the Declarant and their respective heirs, executors, administrators, successors and assigns.

13.2 Enforcement. In addition to any other remedies provided in this Declaration, the Declarant, the Association, and each Lot owner, shall have the right to enforce, by any proceeding at law or in equity, all restrictions, conditions, covenants, easements, reservations, liens and charges set forth herein or in the Articles or Bylaws or now or hereafter imposed by or through the Association's rules and regulations. Failure by Declarant, the Association or by any Lot owner to proceed with such enforcement shall in no event be deemed a waiver of the right to enforce at a later date the original violation or a subsequent

violation, nor shall the doctrine of laches nor any statute of limitations bar the enforcement of any such restriction, condition, covenant, reservation, easement, lien or charge. Further, the Association and each Lot owner shall have rights of action against each other, and the Declarant shall have a right of action against each Lot owner, for failure to comply with the provisions of the Association Organizational Documents, rules and regulations, and applicable law, and with respect to decisions made pursuant to authority granted thereunder, and the Association and the Declarant shall have the right to assess reasonable charges against a Lot owner who fails to comply with the same, including the right to assess charges for the costs of enforcement and arbitration (including, without limitation, attorneys' fees not prohibited by law).

13.3 Captions. The captions of the various provisions ofthis Declaration are not part of the context hereof, but are merely labels to assist in locating the various provisions hereof.
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13.4 Finality of Association and Declarant Decisions. In all matters involving the interpretation and construction of the terms and provisions of this Declaration, the decisions of the Association and/or the Declarant shall be final and in no event be deemed arbitrary or capricious.

13.5 Non-Liability. Neither the Declarant nor the Association, nor any of their members, agents, employees, contractors, successors or assigns, shall be liable to any Owner or any other party for loss, claims, or demands asserted on account of their administration of the Association or these restrictions or the performance of their duties hereunder or any failure or defect in such administration and performance.

13.6 Rights of Declarant. Nothing in this Declaration shall be understood or construed to prevent Declarant or the employees, contractors, or subcontractors of Declarant from:

(a) Doing on any part or parts of the Subdivision property owned or controlled by Declarant, or its representative, whatever it determines may be reasonably necessary or advisable in connection with the completion of the work of developing "the Lots within the Subdivision, of establishing the Subdivision as a residential community, or of disposing of the Lots;

(b) Constructing and maintaining on any part or parts of the Subdivision property owned or controlled by Declarant, or its representative, such structures as may be reasonably necessary for the completion of such work, the establishment of the Subdivision as a residential community, and the disposition of Lots by sale, lease, or otherwise;

(c) Maintaining such sign or signs on any of the Lots owned or controlled by any of them as may be necessary in connection with the sale of Subdivision Lots.

IN WITNESS WHEREOF, the undersigned Declarant has caused this instrument to be executed on its behalf on this __ day of August, 2018.

STATE OF OHIO
COUNTY OF GREENE, SS:

Before me, a notary public, personally appeared_____, the Manager of ACV Small Pilot Development, LLC, an Ohio Limited Liability Company, the Declarant, who acknowledged the execution of this instrument to be his free act and deed, on behalf of the Declarant, for the uses and purposes set forth herein.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal on this ___ day of August, 2018.

_____
Notary Public

This instrument prepared by:

Barry P. Reich, Esq.
COLE ACTON HARMON DUNN
333 North Limestone Street
Springfield, OH 45503
937-322-0891

EXHIBIT_A

DESCRIPTION

EXHIBIT B

HOA ARTICLES OF INCORPORATION ADDENDUM

ARTICLE III. (Continued)
Purpose and Powers
In connection with the creation of the Association, the undersigned is filing a Declaration of Covenants, Easements Restrictions and Assessment Lien (the "Declaration") and Bylaws of the Association ("Bylaws") under the provisions of Chapter 5312 of the Revised Code of Ohio, for "Antioch College Village" (the "Subdivision"). The purposes for which the Association is formed are to be and act as the homeowners' association for the Subdivision as a Planned Community, to provide for the maintenance of Common Elements, and the preservation and architectural control of the Subdivision, and to promote the health, safety and welfare of the owners, residents and occupants of the Subdivision, and for purposes to:

a) exercise all of the powers and privileges and perform all of the duties and obligations of the Association as set forth in these Articles of Incorporation, ("the Articles"); and the Declaration and Bylaws;

b) fix, levy, collect and enforce payment by any lawful means, all charges or assessments pursuant to the terms of the Declaration, and pay all expenses in connection therewith and all office and other expenses incident to the conduct of the business of the Association;

c) acquire (by gift, purchase or otherwise), own, hold, improve, build upon, operate, maintain, convey, sell, lease, transfer, or otherwise dispose of real or personal property in connection with the affairs of the Association;

d) borrow money to fulfill its purposes and to pledge assets of the Association (including, without limitation, the right of the Association to levy assessments) as security for such borrowing;

e) administer and enforce terms, conditions, covenants, restrictions and regulations upon, under and subject to which the Subdivision or any part thereof may now or hereafter be used, and fix and provide any such terms, conditions, covenants, restrictions and regulations, and administer, enforce, alter, amend, change, add to, extend, waive, or terminate, in whole or in part, any of the same;

f) provide the residents, occupants and Lot Owners of the Subdivision with Common Element maintenance service;

g) be, function and act as the homeowners' association of the Subdivision as a Planned Community, under the provisions of Chapter 5312 of the Revised Code of Ohio, and delegate such authority as it desires to a managing agent;

h) have and exercise any and all powers, rights and privileges which a corporation organized under Chapter 1702 may now or hereafter have or exercise by Jaw; and

I) take any action necessary, expedient, incidental, appropriate or convenient to the carrying out of the foregoing purposes. The Association shall not do any act or enter into any agreement or enter into any transaction in a manner which would violate any provision of Chapter 1702 or Chapter 5312 of the Ohio Revised Code or the provisions of these Articles, the Declaration, or the By-Laws.

ARTICLE IV.
Initial Directors
The following are the names and addresses of the individuals who are to serve as initial Directors:

INSERT NAMES AND ADDRESSES OF THREE INDIVIDUALS

ARTICLE V.
Board of Directors
The number, qualifications, manner and time of selection of successor Directors, and their terms of office, shall be as set forth in the Declaration and By-Laws. The Board of Directors shall be and act as the board of Directors of the Homeowners' Association and shall have all of the powers and all of the duties of the Board of Directors as defined in Chapter 5312 of the Revised Code of Ohio and of the Board of Directors as defined in Chapter 1702 of the Revised Code of Ohio, except as such powers may be limited or expanded by the provisions of these Articles, the Declaration or the By-Laws.

ARTICLE VI.
Membership
Every person or entity who is a record owner of a Lot shall be a member of the Association, and is herein called "a Lot Owner". The foregoing is not intended to include persons or entities who hold an interest merely as security for the performance of an obligation. Membership shall be appurtenant to and may not be separated from ownership of a Lot, and transfer of a Lot shall automatically transfer membership to the transferee. Voting rights of members shall be as set forth in the Declaration and By-Laws. (The latter of which shall also be and serve as the Association's Code of Regulations).

ARTICLE VIL
Notice and Quorum
Notice and quorum requirements shall be in accordance with the provisions of the By-Laws.

ARTICLE VIII.
Indemnification
(a) The Association shall indemnify every person who is or has been a Director, officer, agent or employee of the Association and those persons' respective heirs, legal representatives, successors and assigns, against expenses, including attorneys' fees, and judgments, decrees, fines, penalties and amounts paid in settlement actually and reasonably incurred in connection with any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, and whether in an action or proceeding by or in the right of the Association, or·otherwise, in which such person was or is a party or is threatened to be made a party by reason of the fact that person was a Director, officer, employee or agent of the Association, or is or was serving in such capacity at the request of the Association, provided that person (I) acted in good faith and in a manner that person believed to be in, or not opposed to, the best interests of the Association, and (ii) in any matter the subject of a criminal action or proceeding, had no reasonable cause to believe the questioned conduct was unlawful, but provided that in the case of any threatened, pending, or completed action or suit by or in the right of the Association to procure a judgment in its favor against any such person by reason of that person serving in such capacity, no indemnification shall be made in respect of any claim, issue, or matter as to which such person shall have been adjudged to be liable for gross negligence or willful and wanton misconduct in the performance of a duty to the Association unless and only to the extent that the court in which such action was brought shall determine upon application that in view of all the circumstances of the case that person is fairly and reasonably entitled to indemnity for such expenses as the court shall deem proper.

(b) Unless ordered by a court, the determination of indemnification, pursuant to the foregoing criteria, shall be made: (I) by a majority vote of a quorum of Directors of the Association who were not and are not parties to or threatened with any such action, suit, or proceeding; or (ii) if such a quorum is not obtainable, or if a majority of a quorum of disinterested Directors so direct, in a written opinion by independent legal counsel other than an attorney, or a firm having associated with an attorney, who has been retained by or who has performed services for the Association or any person to be indemnified within the past five years; or (iii) by the Lot

Owners; or (iv) by the court in which such action, suit or proceeding was brought.

(c) Any such indemnification shall not be deemed exclusive of any other rights to which such person may be entitled under law, any agreement, or any insurance purchased by the Association, or by vote of Lot Owners, or otherwise.

ARTICLE IX.
Duration
The Association shall exist in perpetuity unless terminated in the manner provided in the Declaration.

ARTICLE X.
Dissolution
The Association may be dissolved only as provided in the Declaration.

ARTICLE XI.
Definitions
All terms used herein shall have the same meanings as set forth in the Declaration.

ARTICLE XII.
Amendments
The Articles may be amended only under the same terms and conditions, and with the same approvals; as are provided in the Declaration for its amendment.

EXHIBIT C

BYLAWS

ACV SMALL PILOT HOME OWNERS’S ASSOCIATION

ARTICLE I.
NAME AND LOCATION
The name of the Association is Antioch College Village Owners' Association, ("the Association"), which corporation, not-for-profit, is created pursuant to the provisions of Chapter 1702 of the Revised Code of Ohio. The principal office of the Association shall be as set forth in its Articles of Incorporation ("the Articles"), and the place of meetings of members and of the Directors of the Association shall be at Yellow Springs, Ohio, or at such place in Greene County, Ohio, as the Board of Directors ("the Board"), may from time to time designate.

ARTICLE II.
DEFINITIONS
All of the terms used herein shall have the same meanings as set forth in the Articles of the Association and in the Declaration of Covenants, Easements, Restrictions and Assessment Lien, (the "Declaration") encumbering the Lots, as that term is defined in the Declaration.

ARTICLE III.
MEMBERS
Section I. Composition. Each owner of a Lot, as that term is defined in the Declaration, is a member of the Association.

Section 2. Voting Rights. Members shall be entitled to one vote for each Lot owned. When more than one person holds an interest in a given Lot, all such persons shall be members and the vote for such Lot shall be exercised as they may determine among themselves. However, in no event shall more than one vote be cast with respect to any Lot.

Section 3. Annual Meetings. Regular annual meetings of the Members shall be held in the first calendar quarter of each year hereafter, on a date and at an hour established, from time to time, by the Board.

Section 4. Special Meetings. Special meetings of the Members may be called at any time by the president, by a majority of the Board, or upon written request of Members entitled to exercise one-fourth (1/4) or more of the voting power of Members.
Section 5. Notice of Meetings. Written notice of each meeting of

Members shall be given by, or at the direction of, the secretary or person authorized to call the meeting, by mailing a copy of such notice, postage prepaid, at least five days before such meeting, to each Member entitled to vote thereat, addressed to the Member's address last appearing on the books of the Association, or supplied by such Member to the Association for the purpose of notice, or by delivering a copy of that notice at such address at least five (5) days before the meeting. The notice shall specify the place, day and hour of the meeting, and, in the case of a special meeting, the purpose of the meeting.

Section 6. Quorum. The Members present, in person or by proxy, at any duly called and noticed meeting of Members, shall constitute a quorum for such meeting. Members entitled to exercise a majority of the voting power of Members represented at a meeting may, at any time, adjourn such meeting. If any meeting is so adjourned, notice of such adjournment need not be given if the time and place to which such meeting is adjourned are fixed and announced at such meeting.

Section 7. Proxies. At any meeting of Members, a Member may vote in person or by proxy. All proxies shall be in writing and filed with the secretary prior to the meeting. Every proxy shall be revocable and shall automatically cease upon conveyance by a Member of his, her or its Lot.

Section 8. Voting Power. Except as otherwise provided in the Articles, the Declaration, or by law, a majority of the voting power of Members voting on any matter that may be determined by the Members at a duly called and noticed meeting shall be sufficient to determine that matter. Roberts Rules of Order shall apply to the conduct of all meetings of Members except as otherwise specifically provided in the Articles, Declaration, or by law.

Section 9. Action In Writing Without Meeting. Any action that could be taken by Members at a meeting may be taken without a meeting with the affirmative vote or approval, in a writing or writings, of Members having not less than a majority of the voting power of Members, or such greater proportion of the voting power as may be required by the-Articles, Declaration, or by law.

ARTICLE IV.
BOARD OF DIRECTORS

Section I. Initial Directors. The initial Directors shall be those three persons named as the initial Directors in the

Articles, or such other person or persons as may from time to time be substituted by ACV Small Pilot Development, LLC, (the "Declarant").

Section 2. Successor Directors. The number, times of election, and terms of office of those who will serve as Directors of the Association to succeed the initial Directors, shall be as provided in the Declaration and these By-Laws.

Section 3. Removal. Excepting only Directors named in the Articles or selected by the Declarant, any Director may be removed from the Board with or without cause, by a majority vote of the Members. In the event of the death, resignation or removal of a Director other than one named in the Articles or a substitute selected by the Declarant, that Director's successor shall be selected by the remaining members of the Board and shall serve until the next annual meeting of Members, when a Director shall be elected to complete the term of such deceased, resigned or removed Director. The Declarant shall have the sole right to remove, with or without cause, any Director designated in the Articles, or a substitute selected by the Declarant, and select the successor of any Director so selected who dies, resigns, is removed or leaves office for any reason before the election of Directors by all of the Members as provided in the Declaration.
Section 4. Nomination. Nominations for the election of Directors to be elected by the Members shall be made by a nominating committee. Nominations may also be made from the floor at the meetings. The nominating committee shall consist of the members of the Board. The nominating committee shall make as many nominations for election to the Board as it shall, in its discretion, determine, but no less than the number of vacancies that are to be filled.

Section 5. Election. Election to the Board by the Members shall be by secret written ballot. At such elections, the Members or their proxies may cast, in respect to each vacancy, such voting power as they are entitled to exercise under the provisions of the Declaration. The persons receiving the largest number of votes shall be elected, and likewise, those receiving the largest number of votes shall be elected to the longest terms. Cumulative voting is not permitted.

Section 6. Compensation. Unless otherwise determined by the Members at a meeting duly called and noticed for such purpose, no Director shall receive compensation for any service rendered to the Association as a Director. However, any Director may be reimbursed for his or her actual expenses incurred in the performance of duties.

Section 7. Regular Meetings. Regular meetings of the Board shall be held no less than annually, without notice, on such date and at such place and hour as may be fixed from time to time by resolution of the Board.

Section 8. Special Meetings. Special meetings of the Board shall be held when called by the President or by a majority of the Board, after not less than three days notice to each Director.

Section 9. Quorum. The presence at any duly called and noticed meeting, in person or by proxy, of Directors entitled to cast a majority of the voting power of Directors shall constitute a quorum for such meeting.

Section 10. Method of Meetings. The Board may hold a meeting by any method of communication, including electronic or telephonic communication, provided that each member of the Board can hear or read in real time and participate and respond to every other member of the board.

Section 11. Attendance by Others. No owner other than a Director may attend or participate in any discussion or deliberation of a meeting of the Board of directors unless the board expressly authorizes that owner to attend or participate.

Section 12. Voting Power. Except as otherwise provided in the Articles, the Declaration, or by law, vote of a majority of the Directors voting on any matter that may be determined by the Board at a duly called and noticed meeting at which a quorum is present shall be sufficient to determine that matter.

Section 13. Action In Writing Without Meeting. Any action that could be taken by the Board at a meeting may be taken without a meeting with the affirmative vote or approval, in a writing or writings, of all of the Directors.

Section 14. Powers. The Board shall exercise all powers and authority, under law, and under the provisions of the Declaration, Articles and these Bylaws, that are not specifically and exclusively reserved to the Members by other provisions thereof or by law. Without limiting the generality of the foregoing, the Board shall have the right, power and authority to:

(a) Hire and fire managing agents, attorneys, accountants, and other independent professionals and employees that the Board determines are necessary or desirable in the management of the Subdivision and the Association;

(b) Commence, defend, intervene in, settle, or compromise any civil, criminal, or administrative action or proceeding that is in the name of, or threatened against, the Association, the Board, or the Subdivision, or that involves two or more Owners and relates to matters affecting the Subdivision;

(c) Enter into contracts and incur liabilities relating to the operation of the Subdivision;

(d) Enforce all provisions of the Declaration, Articles, and these Bylaws, governing the Lots and/or Common elements;
(e) Adopt and enforce rules that regulate the maintenance, repair, replacement, modification, and appearance of Common elements, the conduct of members, occupants and their guests thereon, and any other rules as the Declaration, Articles or these Bylaws provide;

(f) Acquire, encumber, and convey or otherwise transfer real and personal property, subject only to the requirement that conveyances of Common elements be approved by the Owners of Lots holding a majority of the voting power of the Association;

(g) Hold in the name of the Association, real property and personal property;

(h) Grant easements, leases, licenses, and concessions through or over the Common elements;

(i) Levy and collect fees or other charges for the use, rental, or operation of the Common Elements or for services provided to Ovmers or Occupants;

(j) Levy the following charges and assessments:

(1) Interest and charges for the late payment of assessments;

(2) Returned check charges;

(3) Enforcement assessments for violations of the Declaration, Articles these Bylaws, or the rules and regulations promulgated by the Board;

(4) Charges for damage to the Common elements or other property.

(k) Adopt and amend rules that regulate the collection of delinquent assessments and the application of payments of delinquent assessments;

(1) Impose reasonable charges for preparing, recording, or copying the Declaration, Articles, Bylaws, or rules and

regulations promulgated by the Board (including amendments to any of the foregoing), resale certificates, or statements of unpaid assessments;
(m) Authorize entry to any portion of the Subdivision by designated individuals when conditions exist that involve an imminent risk of damage or harm to Common elements, another dwelling, or to the health or safety of the Occupants of that dwelling or another dwelling;

(n) Borrow money, pledge an interest in real or personal property, and assign the right to levy common assessments or other future income to a lender as security for a loan to the Association, all without the requirement of approval by the members;

(o) Suspend the voting privileges and use of recreational facilities of an Owner and the Occupants of the dwelling located on such Owner's Lot, who is delinquent in the payment of assessments for more than thirty days;

(p) Purchase insurance and fidelity bonds (in addition to those coverages required by Chapter 5312 of the Ohio Revised Code) the directors consider appropriate and necessary;

(q) Invest excess funds in investments that meet standards for fiduciary investments under the laws of this state;
(r) Exercise powers that are any of the following:

(1) Conferred by the Declaration, Articles or Bylaws;

(2) Permitted to be exercised in this state by a nonprofit corporation;

(3) Necessary and proper for the government and operation of the owners association.

Section 15. Duties. It shall be the duty of the Board to:

(a) Cause to be kept: (i) a correct and complete books and records of account that specify the receipts and expenditures relating to the common elements and other common receipts and expenses; (ii) records showing the collection of the common expenses from the Owners; (iii) minutes of the meetings of the Association and the Board; and (d) records of the names and addresses of the Owners.

(b) Supervise all officers, agents and employees of the Association and see that their duties are properly performed;

(c) Annually adopt and amend an estimated budget for revenues and expenditures as provided in the Declaration. Any budget shall include reserves in an amount adequate to repair and replace major capital items for which the Association is responsible, in the normal course of operations without the necessity of special assessments, unless the Owners, exercising not less than a majority of the voting power of the Owners, waive the reserve requirement annually.

(d) Collect assessments for common expenses from the Owners in accordance with the provisions of the Declaration and Ohio Jaw.

(e) Issue, or to cause an appropriate representative to issue, upon demand by any person, a certificate setting forth whether or not any assessment has been paid;

(f) Procure and maintain insurance and bonds as provided in the Articles, the Declaration, and these By-Laws and as the Board deems advisable;

(g) Cause the property subject to the Association's jurisdiction to be maintained within the scope of authority provided in the Articles, the Declaration, and these By-Laws;

(h) Repair, maintain and improve any property owned by the Association;

(i) Cause the restrictions created by the Declaration, Articles, Bylaws and rules and regulations promulgated by the Board to be enforced; and

(j) Take all other actions required to comply with all requirements of law, the Declaration, Articles and these By-Laws.

ARTICLE V.
OFFICERS
Section I. Enumeration of Offices. The officers of this Association shall be a president, a secretary, a treasurer and such other officers as the Board may from time to time determine. Such officers must be members of the Board.

Section 2. Selection and Term. Except as otherwise specifically provided in the Articles or by law, the officers of the Association shall be selected by the Board, from time to time, to serve until the Board selects their successors.

Section 3. Special Appointments. The Board may elect such other officers as the affairs of the Association may require, each of

whom shall hold office for such period, have such authority, and perform such duties as the Board may, from time to time, determine.

Section 4. Resignation and Removal. Any officer may be removed from office, with or without cause, by the Board. Any officer may resign at any time by giving written notice to the Board, the president, or the secretary. Such resignation shall take effect on the date of receipt of such notice or at any later time specified therein, and the acceptance of such resignation shall not be necessary to make it effective.

Section 5. Duties. The duties of the officers shall be as the Board may from time to time determine. Unless the Board otherwise determines, the duties of the officers shall be as follows:

(a) President. The president shall preside at all meetings of the Board, shall have the authority to see that orders and resolutions of the Board are carried out~ and shall sign all legal instruments on behalf of the Association.

(b) Secretary. The secretary shall record the votes and keep the minutes and proceedings of meetings of the Board and of the Members, serve notice of meetings of the Board and of the Members, keep appropriate current records showing the names of Members of the Association together with their addresses, and shall act in the place and stead of the president in the event of the president's absence or refusal to act.

(c) Treasurer. The treasurer shall assume responsibility for the receipt and deposit in such bank accounts and investment of funds in such vehicles, as the Board directs, the disbursement of such funds as directed by the Board, the keeping of proper books of account, the preparation of an annual budget and a statement of income and expenditures to be presented to the Members at annual meetings, and the delivery or mailing of a copy of each to each of the Members.

ARTICLE VI.
COMMITTEES
The Board may appoint such committees as it deems appropriate in carrying out its purposes.

ARTICLE VII.
BOOKS AND RECORDS
The books, records and financial statements of the Association, including annual audited financial statements when such are prepared, shall be available upon request to the Association, for inspection and copying (at reasonable charges for reimbursement of the Association's costs) by Members, the holders, insurers and

guarantors of first mortgages on Lots, and by prospective purchasers of Lots. Likewise, during normal business hours or under other reasonable circumstances, the Association shall have available for inspection by Members, holders, insurers and guarantors of first mortgages on Lots, and prospective purchasers, current copies of the Articles, the Declaration, and these By-Laws, and the rules and regulations promulgated by the Board.

ARTICLE VIII.
AUDITS
The Board shall cause the preparation and furnishing of an reviewed financial statement for the immediately preceding fiscal year, within a reasonable time following request (provided that no such statement need be furnished earlier than ninety days following the end of such fiscal year), to each requesting Member, at the expense of the Association, upon the affirmative vote of Members exercising a majority of the voting power of Members.

ARTICLE IX
FISCAL YEAR
Unless otherwise changed by the Board, the fiscal year of the Association shall begin on the first day of January and end on the 31st day of December of every year, except that the first fiscal year shall begin on the date of incorporation of this Association.

ARTICLE X.
AMENDMENTS
Any modification or amendment of these By-Laws shall be made only in the same manner, and subject to the approvals, terms and conditions, as is required for an Amendment of the Declaration, and shall be effective upon the recording of such Amendment with the Recorder of Greene County, Ohio.