

Appendix F

Stormwater Pollution
Prevention Plan



STORMWATER POLLUTION PREVENTION PLAN

For

**STATELINE RETAIL CENTER
Town of Southeast, New York**

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NOTE: This report in conjunction with the project plans make up the complete Stormwater Pollution Prevention Plan

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- Figure 1: Location Map
- Figure 2: Pre-Development Drainage Map
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PROJECT PLANS

The project plans are as follows:

- SP-1 “Overall Site Plan”
- SP-2.1 to SP-2.2 “Layout and Landscape Plan”
- SP-3.1 to SP-3.2 “Grading and Utilities Plan”
- SP-4.1 “Overall Phasing Plan”
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- PR-1 “Profiles and Cross Sections”
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1.0 INTRODUCTION

1.1 Project Description

The subject project is a 44± acre parcel located along U.S. Route 6 in the Town of Southeast. The project parcel is located between Interstate 84 and U.S. Route 6. The attached location map (Figure 1) delineates the subject property and its surroundings. The subject parcel is located in the GC-2 zoning district and is designated as Tax Map Number 68.-2-48.

The subject project is located in the East Branch Reservoir Basin. The on-site ground cover is characterized as a mixture of woods and meadow throughout the majority of the site. The property ranges in elevation from a high point of 534 in the central portion of the site adjacent to the southern property line, to elevation 442, in the Town regulated wetland on the northeastern portion of the site. The slopes throughout the proposed project range from flat to generally steep slopes. Soil types on the property vary from very deep, well-drained soils to moderately drained soils. Figures 2 and 3 provide a breakdown of the soil types and a listing of these soils in accordance with the *Soils Survey of Putnam and Westchester Counties*.

Additional physical features of the property include two (2) Town-regulated wetlands. One (1) Town-regulated wetland is located in the northwestern portion of the site. An intermittent watercourse and reservoir stem are located within this Town-regulated wetland. The second Town-regulated wetland is located on the eastern portion of the site. Stormwater runoff from Interstate 84 is discharged to an un-named stream that flows through the Town-regulated wetland on the eastern portion of the site. The un-named stream crosses under U.S. Route 6 and discharges to the East Branch Reservoir Basin.

The subject property is proposed to be developed with approximately 184,800 s.f. of retail and 14,800 s.f. of office buildings and associated access roads, parking and landscaping. The development will include stormwater improvements, which will convey runoff to and through a series of stormwater management practices. The proposed practices will treat the stormwater runoff created by the development of the site.

There are no known enforcement actions, including lawsuits or administrative proceedings, commenced against the applicant, or any principle affiliate of the applicant, for any alleged violations of law related to the applicant of the site, in the five years preceding this application.

1.2 Existing Stormwater Runoff Conditions

The subject property is a mixture of woods and meadow throughout the property. Currently the stormwater runoff from the property flows overland from the high point in the central portion of the site along the southern property line to the Town-regulated wetlands. A ridge in the central portion of the property divides the flow of the stormwater runoff between the two (2) onsite Town-regulated wetlands. An un-named stream tributary to the East Branch Reservoir Basin passes through the eastern portion of the site and originates from the discharge of the stormwater runoff from Interstate 84. The un-named stream crosses under U.S. Route 6 and discharges in the East Branch Reservoir. An intermittent watercourse and reservoir stem are located in the Town-regulated wetland in the northwestern portion of the site. Ultimately the stormwater runoff drains to the East Branch Reservoir. A design line, and two design points were chosen to analyze the existing stormwater conditions of the site. The existing drainage area boundaries for the stormwater runoff can be seen on Figure 2.

1.3 Proposed Stormwater Runoff Conditions

The design line and points have been analyzed for the stormwater runoff produced from the proposed development of the property. The design line / points were chosen to analyze the stormwater runoff both qualitatively and quantitatively. Design Line 1 runs north to south along an existing wetland edge on the eastern portion of the property. Design Point 2 is located at the culvert in the Town-regulated wetland in the northwestern portion of the property. Design Point 3 is located at a culvert crossing north of US Route 6, and was analyzed to evaluate increases in impervious surfaces associated with the US Route 6 improvements. The design line / points are shown on Figure 3. The stormwater runoff from the proposed development will be collected and discharged to proposed stormwater management basins via a proposed stormwater collection system. Two (2) stormwater management basins and one (1) low gradient grass swale with check dams are proposed to treat stormwater for Design Line 1, three (3)

stormwater management basins and two (2) low gradient grass swales with check dams are proposed for Design Point 2, and one (1) stormwater management basin is proposed for Design Point 3. In general, the drainage patterns will remain the same from the existing conditions to the proposed conditions.

The proposed subsurface sewage treatment system (SSTS) for the bulk of development is located on the eastern portion of the site. This portion of the property is currently meadow, and will be maintained as meadow after construction. Thus, there is no change in land cover and this area will generate a zero net increase in peak flows and pollutant loadings at Design Line 1. As a result, the proposed Lot 2 SSTS area has been omitted from the stormwater quantity and quality analyses.

2.0 STORMWATER MANAGEMENT

The stormwater management for the subject project requires compliance with several regulatory agencies and codes. To meet the requirements of the New York City Department of Environmental Protection (NYCDEP), and the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-08-001, several publications were referenced to design the stormwater management systems' quantity and quality components. The publications include *Reducing the Impacts of Stormwater Runoff from New Development*, April 1992 (Impacts), *Fundamentals of Urban Runoff Management: Technical and Institutional Issues* produced by the Terrene Institute, and the *New York State Stormwater Management Design Manual*, August 2003 (NYSSMM), including *Chapter 10, Enhanced Phosphorus Removal Standards*.

Water quality on this project has been addressed to meet the requirements of both the NYCDEP and NYSDEC. In order to address the water quality requirements of the NYSDEC, a series of stormwater management basins have been designed to capture and treat the volume of runoff generated by the 1-year 24-hour storm. To meet the water quality standards for the NYCDEP, the stormwater management basins have been designed in series to provide 24-hour plug flow detention of the 2-year 24-hour storm. In addition, to provide a final polishing of runoff, stormwater management basins 1.1P, 2.1P, and 2.2P will discharge to low gradient grass swales with check dams. Also incorporated into the Stateline Retail Center Stormwater Pollution Prevention Plan (SWPPP), but not modeled in the quantity / quality analyses are several adjunct practices. The intent of these practices, which includes rain gardens, pervious pavement, deep sump catch basins, and an irrigation system supplied by stormwater, is two fold. First the adjunct practices will further aid in water quality treatment, and secondly the adjunct practices will assist in maximizing the lifespan of the stormwater management system through Source Control and Better Site Design techniques.

To meet NYSDEC Stream Channel Protection requirements, 24-hour center of mass detention time of the 1-year, 24-hour storm event has been provided.

The stormwater management system has also been designed to attenuate post development peak flow rates from the 10 and 100-year storm events to predevelopment levels satisfying the NYSDEC requirements for Overbank and Extreme Flood Control.

2.1 Quantitative Analysis

The "HydroCAD" Stormwater Modeling System," by HydroCAD Software Solutions LLC of Tamworth, New Hampshire, was used to model and assess the stormwater flows for the subject project. HydroCAD is a computer-aided design program for modeling the hydrology and hydraulics of stormwater runoff. It is based primarily on hydrology techniques developed by the United States Department of Agriculture, Soil Conservation Service (USDA, SCS) TR-20 method combined with standard hydraulic calculations. The program was used to analyze the 1-year, 2-year, 10-year, 25-year and 100-year, 24-hour design storms. Peak flows were calculated for both the pre-development condition and the post-development condition. The input requirements for the HydroCAD computer program are as follows:

Subcatchments (contributing watershed/sub-watersheds)

- Design storm rainfall in inches
- CN (runoff curve number) values which are based on soil type and land use/ground cover
- Tc (time of concentration) flow path information

Stormwater Management Basins

- Surface area at appropriate elevations

- Flood elevation
- Outlet structure information

The following is a general description of the input data used to calculate the pre- and post-development stormwater runoff values. For detailed information for each subcatchment and pond, see Appendices A & B.

The precipitation values for the various design storms analyzed were obtained from the local County Soil and Water Conservation District office and the Northeast Regional Climate center. The values provided are for 24-hour design storms in the project locale.

Design Storm	24-Hour Rainfall
1-Year	3.2"
2-Year	3.5"
10-Year	5.5"
25-Year	6.0"
100-Year	10.0"

The CN (runoff curve number) values utilized in this report were referenced from the USDA, SCS publication *Urban Hydrology for Small Watersheds*. The following is a summary of the various land uses/ground covers and their associated CN values utilized in this report.

Land Use/Ground Cover	CN Value
Woods, A Soil	30
Woods/Grass, A Soil	32
Meadow, A Soil	30
>75% Grass Cover, A Soil	39
Urban Commercial, 85% Imp, A Soil	89
Woods, C Soil	70
Woods/Grass, C Soil	72
Meadow, C Soil	71
>75% Grass Cover, C Soil	74
Urban Commercial, 85% Imp, C Soil	94
Paved Parking and Roofs	98
Pervious Pavement	70

The hydrologic soils groups for the majority of the project consist of mainly A and C soils. The soils on the site consist of Chatfield – Charlton complex (CsD), Fredon silt loam (Fr), Knickerbocker fine sandy loam (KnB, KnC), Leicester loam (LcB), Paxton fine sandy loam (PnB, PnC), Ridgebury loam (RgB) and Sun loam (Sh).

The quantitative analysis performed for the subject project involves the assessment of a design line and two design points as shown on Figure 2 and Figure 3. Design Line 1 represents the western edge of the Town Regulated Wetland and evaluates the effects the proposed development of the site may have on the adjacent wetland while minimizing the amount of off site area accounted for in the analysis. Design points 2 and 3 represent culvert crossings to which portions of the site discharge too. There are two

existing drainage ditches located along the south side of US Route 6 to which the majority of the Design Line 1 and Design Point 2 drain to. It should be noted, the tributary areas to these two drainage ditches will be significantly reduced in the post-development scenario as a result of diverting runoff to the stormwater management basins. Based on the reduction in tributary area combined with the fact the post-development peak flows have been attenuated to pre-development levels at Design Line 1/Design Point 2, the capacity in the existing drainage ditches will be adequate to accommodate the proposed flows.

The only developed portion of the site not modeled in the quantitative/qualitative analysis is the eastern SSTS area. This is because the land area is currently maintained as meadow, and will remain as meadow upon project completion. Therefore, no change in land cover is proposed, and subsequently no change in the pre to post-development curve number will occur. Also the minor regrading proposed in the SSTS area will not effect the time of concentration. As there is no change in curve number or the time of concentration, there will be no change between the pre-development and post-development quantity/quality values. The following table summarizes the calculated pre-development and post-development peak stormwater runoff flows at the design line / points:

PEAK FLOW SUMMARY (C.F.S.)

24-HOUR DESIGN STORM								
	2-YEAR		10-YEAR		25-YEAR		100-YEAR	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Design Line 1	0.21	0.21	4.77	3.47	7.05	4.94	35.35	27.64
Design Point 2	9.00	6.76	27.97	20.79	33.37	25.76	81.12	77.67
Design Point 3	0.60	0.19	3.12	1.27	3.94	1.74	11.80	10.48

As seen in the table above, the post development peak flows at Design Line 1, Design Point 2, and Design Point 3 have been attenuated to equal or less than predevelopment levels.

2.2. Qualitative Analysis

Estimates of pre-development and post-development discharges of BOD, TP, TN, and TSS have been calculated for the subject project. The pollutant loading coefficient method was utilized to calculate the annual export of the above-mentioned pollutants. The New York State Department of Environmental Conservation (NYSDEC) publication *Reducing the Impacts of Stormwater Runoff from New Development* was referenced to determine appropriate loading rates for BOD. The publication *Fundamentals of Urban Runoff Management: Technical and Institutional Issues* produced by the Terrene Institute was referenced to determine appropriate loading rates for TP, TN and TSS. The appropriate loading rates were then utilized to calculate the annual pollutant export values. Variables involved with this calculation include soil type and land use/ground cover characteristics. The following table summarizes the pollutant loading rates utilized for the subject project.

SUMMARY OF POLLUTANT LOADING RATES (LBS/ACRE/YEAR)

Land Use/Ground Cover	BOD	TP	TN	TSS
Forest	7.0	0.10	1.8	76.5
Pasture	32.0	0.11	3.7	305.3
Grass	6.0	0.12	3.7	308.0
Commercial	163.0	0.71	4.6	716.5
Road	113.0	0.98	2.1	446.8

The primary treatment for stormwater runoff discharging from the subject project will be six (6) stormwater basins. For the commercial development on the eastern portion of the property two sets of stormwater basins (4 total) are proposed. In addition to the two sets, another stormwater basin located on the western portion of the property has been designed to treat runoff from the proposed office on Lot #1. Finally, a sixth stormwater basin is proposed north of the site to treat runoff associated with the proposed improvements to US Route 6. Stormwater runoff from all the stormwater basins proposed south of US Route 6 will be directed to the existing drainage ditches along US Route 6. In order to provide a final polishing of runoff these ditches will be converted into low gradient grass swales with stone check dams. In addition to providing a final polishing to the runoff discharged from the stormwater management basins, the low gradient grass swales with stone check dams will also provide treatment for approximately 0.5 acres of impervious surfaces associated with the western site entrance on Lot #2, and the site entrance on Lot #1.

The following pollutant removal efficiencies are referenced from the publication *Reducing the Impacts of Stormwater Runoff from New Development*, prepared by the NYSDEC.

LONG TERM POLLUTANT REMOVAL EFFICIENCIES

Treatment Method	BOD	TP	TN	TSS
Grass Swale	20%-40%	20%-40%	20%-40%	20%-40%
Design 2 Extended Detention Pond	40%-60%	40%-60%	20%-40%	80%-100%

The following table summarizes the estimated pre-development and post-development annual pollutant loads (calculated in Appendix C) calculated for the subject project.

ANNUAL POLLUTANT SUMMARY TO DESIGN LINE 1

	Annual Loads (lb/yr)			
	BOD	TP	TN	TSS
Pre-Development Annual Pollutant Loads	442.8	2.69	51.5	3808.9
Post-Development Annual Pollutant Loads	650.1 to 265.7	3.48 to 1.69	44.5 to 25.0	1092.5 to 648.6

ANNUAL POLLUTANT SUMMARY TO DESIGN POINT 2

	Annual Loads (lb/yr)			
	BOD	TP	TN	TSS
Pre-Development Annual Pollutant Loads	237.1	2.10	34.8	2072.7
Post-Development Annual Pollutant Loads	441.9 to 255.0	2.74 to 1.88	35.4 to 25.9	1906.2 to 1493.1

ANNUAL POLLUTANT SUMMARY TO DESIGN POINT 3

	Annual Loads (lb/yr)			
	BOD	TP	TN	TSS
Pre-Development Annual Pollutant Loads	174.1	1.61	7.5	847.8
Post-Development Annual Pollutant Loads	107.4 to 74.4	1.01 to 0.71	6.3 to 5.2	241.5 to 91.8

As seen in the previous summaries, the post-development pollutant loads are within or below the range of the pre-development loads for the pollutants of concern as required by the NYCDEP regulations in all instances with one exception, BOD at Design Point 2. Relative to the exception, the receiving watercourses and wetlands associated with Design Point 2 are large enough to assimilate the minimal increase in the BOD discharging from the site. With respect to phosphorus, which is the pollutant of concern in the subject watershed (East Branch Reservoir), the SWPPP for the project has been designed in accordance with the *Enhanced Phosphorus Removal Standards*. Through compliance with the *Enhanced Phosphorus Removal Standards* it is expected to achieve better than the calculated mean removal efficiencies, however no additional credit was taken in the stormwater treatment calculations. In order to ensure optimum pollutant removal efficiencies are maintained several adjuncts not incorporated into the stormwater quality analysis are proposed at the site. These adjuncts include low gradient grass swales with check dams to further polish runoff; catch basins with deep sumps, sections of pervious pavement, an irrigation system supplied by stormwater runoff (will periodically decrease runoff flows), and rain gardens. The project will therefore not impact the Town of Southeast’s ability to achieve the established East Branch Reservoir TMDL, and the SWPPP does propose stormwater measures to reduce phosphorus loading to the maximum extent practicable.

The burden for reducing current phosphorous loading to achieve the TMDL presently lies with the Town of Southeast and its regional partners. The program for phosphorous reduction has been established in the NYSDEC document entitled *Croton Watershed Phase II Phosphorous TMDL Nonpoint Source Implementation Plan* (TMDL Implementation Plan) dated January 14, 2009. This plan clearly states that for simplicity and ease of local government administration the plan is largely structured to use existing programs to achieve reductions. These programs include:

- Potential additional point source reductions.
- NYSDEC SPDES General Permit for Stormwater Discharges for Municipal Separate Stormwater Sewer Systems (MS4s) Permit No. GP-0-08-002.
- State and regional source control and agricultural programs.
- US EPA Filtration Avoidance Determination Program.
- Putnam County “Croton Plan”.

- NYCDEP “Croton Strategy”.
- NYCDEP EOH Water Quality Investment Funds, including the Putnam County Septic Repair Program.
- New York State non point source programs.
- NYSDEC – NYCDEP Coordinated Stormwater Enforcement Protocol.

The subject project is consistent with the TMDL Implementation Plan and applicable portions of the above-cited programs.

The NYSDEC SPDES General Permit GP-0-08-001 requires that the Water Quality Volume (WQ_v) be treated in order to provide pollutant removal. Since the project is located in the NYC East-of-Hudson Watershed treatment of the Water Quality Volume is intended to improve water quality by capturing and treating the 1-year, 24-hour design storm runoff volume. The water quality volume is directly related to the amount of impervious cover proposed on the project area. Stormwater management basins will be utilized to meet the NYSDEC water quality treatment requirements. Stormwater management basins 1.0P and 1.1P, will be designed as P-1 Micropool Extended Detention Pond as defined in the *NYS Stormwater Management Design Manual*. Stormwater management basins 2.0P, 2.2P and 3.0P will be designed as W-4 Pocket Wetlands as defined in the *NYS Stormwater Management Design Manual*.

In order to provide further water quality treatment as required by the NYCDEP stormwater management basins 2.1P has been placed in series with stormwater management basins 2.0P. This stormwater management basin has been designed as a Design 2 Extended Detention Pond as outlined in *Reducing the Impacts of Stormwater Runoff from New Development*. 2.1P has been located second in the treatment series to allow the settlement of suspended particles in the preceding permanent pool of 2.0P.

3.0 STORMWATER CONVEYANCE SYSTEM

The stormwater conveyance systems for the project consist of drain inlets, catch basins and HDPE pipe. The systems will be sized utilizing the Rational Method. The Rational Method is a standard method used by engineers to develop flow rates for sizing conveyance systems. The Rational Method calculates flows based on a one-hour design storm. In accordance with the Town of Southeast *Road and Drainage Specifications*, the conveyance systems have been sized to convey, at a minimum, the 10-year design storm. Refer to Appendix F for sizing calculations.

It should be noted that all drains anticipated to intercept groundwater are to be piped separately from the stormwater collection system. Particularly this applies to the drains associated with the retaining walls south of the proposed buildings and located in cut slopes. For the retaining walls proposed in the northern portion of the site adjacent to US Route 6, groundwater is not anticipated to be intercepted. This is because these walls are to be located in fill sections. Weep holes will be provided in the northern retaining walls minimizing unnecessary piping and disturbance.

4.0 EROSION AND SEDIMENT CONTROL

Erosion and sediment control will be accomplished by three basic principles: containment of sediment, treatment of dirty water, and stabilization of disturbed areas. Sediment will be contained with the use of silt fence at the toe of disturbed slopes and excavation of temporary sediment basins. Disturbed areas will be permanently stabilized within 14 days of final grading to limit the required length of time that the temporary facilities must be utilized.

4.1 Temporary Erosion and Sediment Control Facilities

Temporary erosion and sediment control facilities will be installed and maintained as required to reduce the impacts to off-site properties. In general, the following temporary methods and materials will be used to control erosion and sedimentation from the project site:

- Stabilized Construction Entrance
- Silt Fence Barriers
- Stone Check Dams
- Storm Drain Inlet Protection

- Sediment Traps

A stabilized construction entrance will be installed at the entrances to the site as shown on the plan. The design drawings will include details to guide the contractor in the construction of this entrance. The intent of the stabilized construction entrance is to prevent the “tracking” of soil from the site. Dust control will be accomplished with water sprinkling trucks if required. During dry periods, sprinkler trucks will wet all exposed earth surfaces as required to prevent the transport of air-borne particles to adjoining properties.

Siltation barriers constructed of geosynthetic filter cloth will be installed liberally at the toe of all disturbed slopes. The intent of these barriers is to contain silt and sediment at the source and inhibit its transport by stormwater runoff. The siltation barriers will also help reduce the rate of runoff by creating numerous filters through which the stormwater must pass. Siltation barriers will also be installed around catch basins and drain inlets. The intent of these barriers is to prevent silt and sedimentation from entering the stormwater collection system.

The stormwater management basins will also act as temporary sediment traps during construction of the proposed building pad and utilities. Most stormwater runoff from disturbed areas will be directed to the traps. These traps will be sized in accordance with the publication, *New York Standards and Specifications for Erosion & Sediment Control*, printed by the Empire State Chapter Soil and Water Conservation Society.

In addition to the temporary sediment and erosion control measures listed above, pollution prevention measures on the site will also be accomplished by the use of a dumpster. All waste and scrap building materials on site shall be disposed of in the dumpster, with no waste being buried or improperly discarded. The site should be cleaned daily of all site litter and construction debris. Portable toilets will be provided on site during construction for wastemanagment. No construction chemicals are anticipated to be used or stored on site during and after construction.

4.2 Permanent Erosion and Sediment Control Facilities

Permanent erosion and sediment control will be accomplished by diverting stormwater runoff from steep slopes, controlling/reducing stormwater runoff velocities and volumes, and vegetative and structural surface stabilization. All of the permanent facilities are relatively maintenance free and only require periodic inspections.

The temporary sediment traps will be cleaned of all sediment and debris, excavated to their final elevations and dimensions and stabilized with the vegetation as indicated on the plans. Rip rap aprons will be used at the discharge end of all piped drainage systems. Runoff velocities will be reduced to levels that are non-erosive to the receiving waterbodies through use of these aprons.

Other than the actual buildings and driveway surfaces, the primary method for permanently stabilizing disturbed surfaces at the subject site is with vegetation. The vegetation will control stormwater runoff by preventing soil erosion, reducing runoff volume and velocities, and providing a filter medium. Permanent seeding should optimally be undertaken in the spring from March 21st through May 20th and in late summer from August 15th to October 15th. The stormwater basins will allow for settlement of suspended sediment that is generated by stormwater runoff from the site. These facilities provide a central collection area for sediment deposition and eventual disposal.

5.0 MAINTENANCE AND IMPLEMENTATION

5.1 Construction Phase

Details associated with the implementation and maintenance of the proposed stormwater facilities and erosion control measures during construction will be shown on the project plans. A construction sequence will be provided to guide the contractor in the installation of the erosion control measures as well as the site plan features. The erosion control plan includes associated details and notes to aid the contractor in implementing the plan.

During construction, a Site Log Book is required to be kept per NYSDEC SPDES General Permit GP-0-08-001. Erosion and sediment control inspections are required to be conducted once a week, and an updated logbook is required to be kept on site for the duration of the construction activities. The Construction Site Log Book is an appendix taken from the *New York Standards and Specifications for Erosion and Sediment Control* (Blue Book).

The stormwater management basins have been designed to limit the routine maintenance requirements. Initially the basins will require regular maintenance until the permanent vegetation is established. Permanent vegetation is considered established when 80% of the final plant density is established. Vegetation should be inspected every 30 days and after every major storm event until established, after which inspections should take place on a quarterly basis and after every large storm event. Damaged areas should be immediately re-seeded and re-mulched. The floor of the ponds will be planted with a seed mixture that contains plants tolerant of occasional flooding. The seed mixtures contain several plant species that vary slightly in their needs for survival. It is expected that not all of the species will survive due to variations within each basin such as water, nutrients, and light. During the initial year of planting, the plants may require watering to germinate and become established. Note that several seedings may be required during the first year to completely establish vegetation within the ponds. After the initial year of establishment, the ponds do not need to be fertilized or watered. A natural selection process will occur over the first few years, such that the species within the seed mixture most suitable to the conditions will survive.

5.2 Long Term Maintenance Plan

The stormwater facilities for the subject project have been designed to minimize the required maintenance. This section discusses the minimum maintenance requirements to insure long term performance of the stormwater facilities. Initially the stormwater facilities will require an increased maintenance and inspection schedule until all portions of the site are stable. Generally the stormwater facilities consist of either collection/conveyance components or treatment components.

The stormwater collection and conveyance systems are composed of concrete drain inlets with cast iron frames and grates, and high-density polyethylene pipe. Minimal maintenance is typically required for these facilities. Each spring the paved areas will be cleaned to remove the winter's accumulation of traction sand. After this is completed, all catch basin sumps will be cleaned. All pipes will be checked for debris and blockages and cleaned as required. During the cleaning process, the catch basins and pipes will be inspected for structural integrity and overall condition; repairs and/or replacement will be made as required.

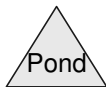
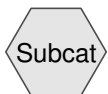
Once the desired vegetative cover is established in the ponds, only limited maintenance is required. The basins and outlet structures should be inspected after major storm events and semi-annually. During the inspections, the following should be checked:

- Evidence of clogging of outlet structure.
- Erosion of the flow path through the pond.
- Subsidence, erosion, cracking or tree growth on the embankment/berm.
- Condition of the emergency spillway.
- Accumulation of sediment around the outlet structure.
- Adequacy of upstream/downstream channel erosion control measures.
- Erosion of the basin bed and banks.
- Sources of erosion in the contributory drainage, which should be stabilized.

Access to the ponds will be through stabilized pond accesses. The accesses are proposed to be graded to final grades and seeded and mulched in accordance with the Erosion & Sediment Control Notes. The graded pond accesses and the side slopes and berms of the ponds should be mowed annually to prevent the establishment of woody plants within the swales, accesses, or pond berms. The bottoms of the ponds should not be mowed. During the mowing operations, debris and litter should be removed from all parts of the swales, accesses, and ponds. Accumulated sediment is anticipated to need to be removed from the swales and ponds approximately every 10 to 20 years, or when 50 percent of their capacity has been reached.

In addition to the guidelines specified above all operation, maintenance, management, and inspections of the stormwater management basins shall be performed in accordance with the *Maintenance, and Management Checklists* printed in the *New York State Stormwater Management Design Manual*, and contained in Appendix D of this SWPPP.

APPENDIX A
Pre-Development Computer Data



Drainage Diagram for Stateline Retail Center Pre-development 040809

Prepared by Insite Engineering, Surveying, and Landscape Architecture, P.C., Printed 5/5/2009

HydroCAD® 8.50 s/n 002171 © 2007 HydroCAD Software Solutions LLC

Stateline Retail Center Pre-development 040809

Prepared by Insite Engineering, Surveying, and Landscape Architecture, P.C.
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Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Subcatchment PRE 1:

Runoff = 0.11 cfs @ 15.68 hrs, Volume= 0.070 af, Depth= 0.04"

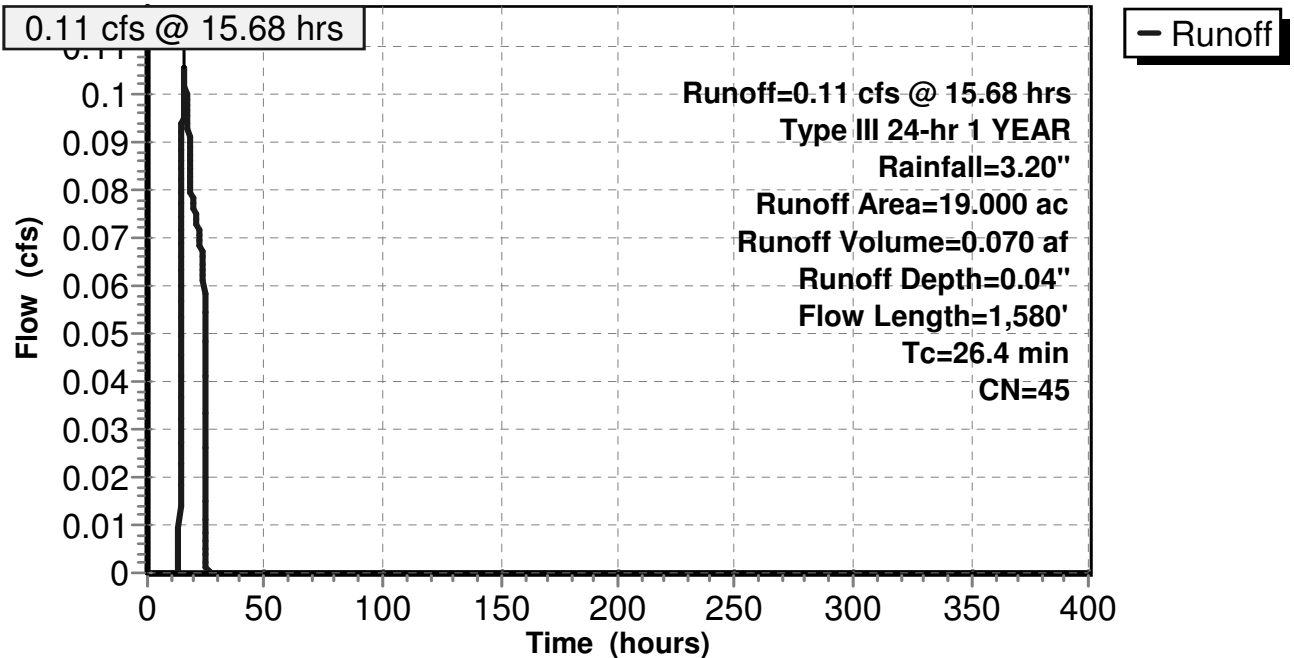
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 1 YEAR Rainfall=3.20"

Area (ac)	CN	Description
0.800	98	Paved parking & roofs
8.600	30	Meadow, non-grazed, HSG A
0.400	71	Meadow, non-grazed, HSG C
3.700	30	Woods, Good, HSG A
5.500	70	Woods, Good, HSG C
19.000	45	Weighted Average
18.200		Pervious Area
0.800		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0550	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	120	0.1570	1.98		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.2	520	0.0400	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.5	840	0.0400	2.56	1.23	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=0.20' Z= 2.0 ' / Top.W=2.80' n= 0.035
26.4	1,580	Total			

Subcatchment PRE 1:

Hydrograph



Stateline Retail Center Pre-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Subcatchment PRE 1:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.20	0.04	0.00	330.00	3.20	0.04	0.00
2.50	0.08	0.00	0.00	167.50	3.20	0.04	0.00	332.50	3.20	0.04	0.00
5.00	0.18	0.00	0.00	170.00	3.20	0.04	0.00	335.00	3.20	0.04	0.00
7.50	0.33	0.00	0.00	172.50	3.20	0.04	0.00	337.50	3.20	0.04	0.00
10.00	0.60	0.00	0.00	175.00	3.20	0.04	0.00	340.00	3.20	0.04	0.00
12.50	2.25	0.00	0.00	177.50	3.20	0.04	0.00	342.50	3.20	0.04	0.00
15.00	2.73	0.01	0.10	180.00	3.20	0.04	0.00	345.00	3.20	0.04	0.00
17.50	2.94	0.02	0.09	182.50	3.20	0.04	0.00	347.50	3.20	0.04	0.00
20.00	3.06	0.03	0.08	185.00	3.20	0.04	0.00	350.00	3.20	0.04	0.00
22.50	3.16	0.04	0.07	187.50	3.20	0.04	0.00	352.50	3.20	0.04	0.00
25.00	3.20	0.04	0.00	190.00	3.20	0.04	0.00	355.00	3.20	0.04	0.00
27.50	3.20	0.04	0.00	192.50	3.20	0.04	0.00	357.50	3.20	0.04	0.00
30.00	3.20	0.04	0.00	195.00	3.20	0.04	0.00	360.00	3.20	0.04	0.00
32.50	3.20	0.04	0.00	197.50	3.20	0.04	0.00	362.50	3.20	0.04	0.00
35.00	3.20	0.04	0.00	200.00	3.20	0.04	0.00	365.00	3.20	0.04	0.00
37.50	3.20	0.04	0.00	202.50	3.20	0.04	0.00	367.50	3.20	0.04	0.00
40.00	3.20	0.04	0.00	205.00	3.20	0.04	0.00	370.00	3.20	0.04	0.00
42.50	3.20	0.04	0.00	207.50	3.20	0.04	0.00	372.50	3.20	0.04	0.00
45.00	3.20	0.04	0.00	210.00	3.20	0.04	0.00	375.00	3.20	0.04	0.00
47.50	3.20	0.04	0.00	212.50	3.20	0.04	0.00	377.50	3.20	0.04	0.00
50.00	3.20	0.04	0.00	215.00	3.20	0.04	0.00	380.00	3.20	0.04	0.00
52.50	3.20	0.04	0.00	217.50	3.20	0.04	0.00	382.50	3.20	0.04	0.00
55.00	3.20	0.04	0.00	220.00	3.20	0.04	0.00	385.00	3.20	0.04	0.00
57.50	3.20	0.04	0.00	222.50	3.20	0.04	0.00	387.50	3.20	0.04	0.00
60.00	3.20	0.04	0.00	225.00	3.20	0.04	0.00	390.00	3.20	0.04	0.00
62.50	3.20	0.04	0.00	227.50	3.20	0.04	0.00	392.50	3.20	0.04	0.00
65.00	3.20	0.04	0.00	230.00	3.20	0.04	0.00	395.00	3.20	0.04	0.00
67.50	3.20	0.04	0.00	232.50	3.20	0.04	0.00	397.50	3.20	0.04	0.00
70.00	3.20	0.04	0.00	235.00	3.20	0.04	0.00	400.00	3.20	0.04	0.00
72.50	3.20	0.04	0.00	237.50	3.20	0.04	0.00				
75.00	3.20	0.04	0.00	240.00	3.20	0.04	0.00				
77.50	3.20	0.04	0.00	242.50	3.20	0.04	0.00				
80.00	3.20	0.04	0.00	245.00	3.20	0.04	0.00				
82.50	3.20	0.04	0.00	247.50	3.20	0.04	0.00				
85.00	3.20	0.04	0.00	250.00	3.20	0.04	0.00				
87.50	3.20	0.04	0.00	252.50	3.20	0.04	0.00				
90.00	3.20	0.04	0.00	255.00	3.20	0.04	0.00				
92.50	3.20	0.04	0.00	257.50	3.20	0.04	0.00				
95.00	3.20	0.04	0.00	260.00	3.20	0.04	0.00				
97.50	3.20	0.04	0.00	262.50	3.20	0.04	0.00				
100.00	3.20	0.04	0.00	265.00	3.20	0.04	0.00				
102.50	3.20	0.04	0.00	267.50	3.20	0.04	0.00				
105.00	3.20	0.04	0.00	270.00	3.20	0.04	0.00				
107.50	3.20	0.04	0.00	272.50	3.20	0.04	0.00				
110.00	3.20	0.04	0.00	275.00	3.20	0.04	0.00				
112.50	3.20	0.04	0.00	277.50	3.20	0.04	0.00				
115.00	3.20	0.04	0.00	280.00	3.20	0.04	0.00				
117.50	3.20	0.04	0.00	282.50	3.20	0.04	0.00				
120.00	3.20	0.04	0.00	285.00	3.20	0.04	0.00				
122.50	3.20	0.04	0.00	287.50	3.20	0.04	0.00				
125.00	3.20	0.04	0.00	290.00	3.20	0.04	0.00				
127.50	3.20	0.04	0.00	292.50	3.20	0.04	0.00				
130.00	3.20	0.04	0.00	295.00	3.20	0.04	0.00				
132.50	3.20	0.04	0.00	297.50	3.20	0.04	0.00				
135.00	3.20	0.04	0.00	300.00	3.20	0.04	0.00				
137.50	3.20	0.04	0.00	302.50	3.20	0.04	0.00				
140.00	3.20	0.04	0.00	305.00	3.20	0.04	0.00				
142.50	3.20	0.04	0.00	307.50	3.20	0.04	0.00				
145.00	3.20	0.04	0.00	310.00	3.20	0.04	0.00				
147.50	3.20	0.04	0.00	312.50	3.20	0.04	0.00				
150.00	3.20	0.04	0.00	315.00	3.20	0.04	0.00				
152.50	3.20	0.04	0.00	317.50	3.20	0.04	0.00				
155.00	3.20	0.04	0.00	320.00	3.20	0.04	0.00				
157.50	3.20	0.04	0.00	322.50	3.20	0.04	0.00				
160.00	3.20	0.04	0.00	325.00	3.20	0.04	0.00				
162.50	3.20	0.04	0.00	327.50	3.20	0.04	0.00				

Stateline Retail Center Pre-development 040809

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Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Subcatchment PRE 2:

Runoff = 6.74 cfs @ 12.25 hrs, Volume= 0.816 af, Depth= 0.60"

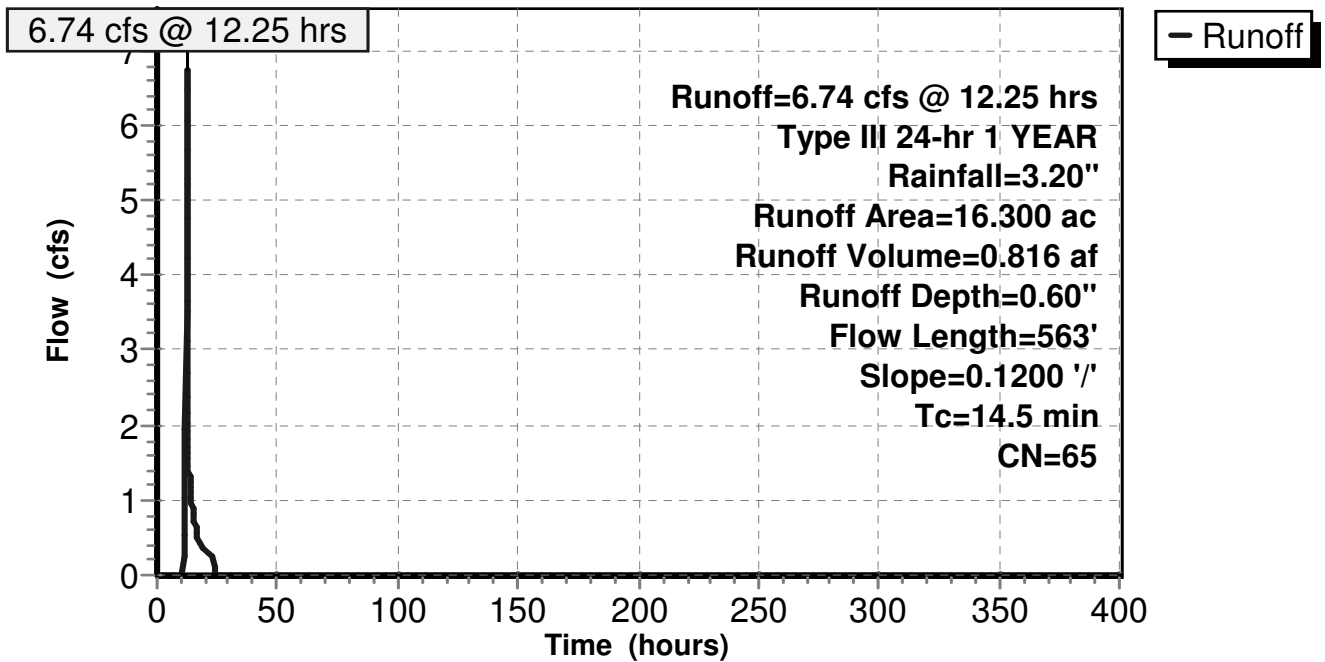
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 1 YEAR Rainfall=3.20"

Area (ac)	CN	Description
10.700	70	Woods, Good, HSG C
2.800	71	Meadow, non-grazed, HSG C
0.500	98	Paved parking & roofs
2.300	30	Woods, Good, HSG A
16.300	65	Weighted Average
15.800		Pervious Area
0.500		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.1200	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
4.5	463	0.1200	1.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.5	563	Total			

Subcatchment PRE 2:

Hydrograph



Stateline Retail Center Pre-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Subcatchment PRE 2:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.20	0.60	0.00	330.00	3.20	0.60	0.00
2.50	0.08	0.00	0.00	167.50	3.20	0.60	0.00	332.50	3.20	0.60	0.00
5.00	0.18	0.00	0.00	170.00	3.20	0.60	0.00	335.00	3.20	0.60	0.00
7.50	0.33	0.00	0.00	172.50	3.20	0.60	0.00	337.50	3.20	0.60	0.00
10.00	0.60	0.00	0.00	175.00	3.20	0.60	0.00	340.00	3.20	0.60	0.00
12.50	2.25	0.21	4.74	177.50	3.20	0.60	0.00	342.50	3.20	0.60	0.00
15.00	2.73	0.39	0.87	180.00	3.20	0.60	0.00	345.00	3.20	0.60	0.00
17.50	2.94	0.48	0.46	182.50	3.20	0.60	0.00	347.50	3.20	0.60	0.00
20.00	3.06	0.53	0.33	185.00	3.20	0.60	0.00	350.00	3.20	0.60	0.00
22.50	3.16	0.58	0.26	187.50	3.20	0.60	0.00	352.50	3.20	0.60	0.00
25.00	3.20	0.60	0.00	190.00	3.20	0.60	0.00	355.00	3.20	0.60	0.00
27.50	3.20	0.60	0.00	192.50	3.20	0.60	0.00	357.50	3.20	0.60	0.00
30.00	3.20	0.60	0.00	195.00	3.20	0.60	0.00	360.00	3.20	0.60	0.00
32.50	3.20	0.60	0.00	197.50	3.20	0.60	0.00	362.50	3.20	0.60	0.00
35.00	3.20	0.60	0.00	200.00	3.20	0.60	0.00	365.00	3.20	0.60	0.00
37.50	3.20	0.60	0.00	202.50	3.20	0.60	0.00	367.50	3.20	0.60	0.00
40.00	3.20	0.60	0.00	205.00	3.20	0.60	0.00	370.00	3.20	0.60	0.00
42.50	3.20	0.60	0.00	207.50	3.20	0.60	0.00	372.50	3.20	0.60	0.00
45.00	3.20	0.60	0.00	210.00	3.20	0.60	0.00	375.00	3.20	0.60	0.00
47.50	3.20	0.60	0.00	212.50	3.20	0.60	0.00	377.50	3.20	0.60	0.00
50.00	3.20	0.60	0.00	215.00	3.20	0.60	0.00	380.00	3.20	0.60	0.00
52.50	3.20	0.60	0.00	217.50	3.20	0.60	0.00	382.50	3.20	0.60	0.00
55.00	3.20	0.60	0.00	220.00	3.20	0.60	0.00	385.00	3.20	0.60	0.00
57.50	3.20	0.60	0.00	222.50	3.20	0.60	0.00	387.50	3.20	0.60	0.00
60.00	3.20	0.60	0.00	225.00	3.20	0.60	0.00	390.00	3.20	0.60	0.00
62.50	3.20	0.60	0.00	227.50	3.20	0.60	0.00	392.50	3.20	0.60	0.00
65.00	3.20	0.60	0.00	230.00	3.20	0.60	0.00	395.00	3.20	0.60	0.00
67.50	3.20	0.60	0.00	232.50	3.20	0.60	0.00	397.50	3.20	0.60	0.00
70.00	3.20	0.60	0.00	235.00	3.20	0.60	0.00	400.00	3.20	0.60	0.00
72.50	3.20	0.60	0.00	237.50	3.20	0.60	0.00				
75.00	3.20	0.60	0.00	240.00	3.20	0.60	0.00				
77.50	3.20	0.60	0.00	242.50	3.20	0.60	0.00				
80.00	3.20	0.60	0.00	245.00	3.20	0.60	0.00				
82.50	3.20	0.60	0.00	247.50	3.20	0.60	0.00				
85.00	3.20	0.60	0.00	250.00	3.20	0.60	0.00				
87.50	3.20	0.60	0.00	252.50	3.20	0.60	0.00				
90.00	3.20	0.60	0.00	255.00	3.20	0.60	0.00				
92.50	3.20	0.60	0.00	257.50	3.20	0.60	0.00				
95.00	3.20	0.60	0.00	260.00	3.20	0.60	0.00				
97.50	3.20	0.60	0.00	262.50	3.20	0.60	0.00				
100.00	3.20	0.60	0.00	265.00	3.20	0.60	0.00				
102.50	3.20	0.60	0.00	267.50	3.20	0.60	0.00				
105.00	3.20	0.60	0.00	270.00	3.20	0.60	0.00				
107.50	3.20	0.60	0.00	272.50	3.20	0.60	0.00				
110.00	3.20	0.60	0.00	275.00	3.20	0.60	0.00				
112.50	3.20	0.60	0.00	277.50	3.20	0.60	0.00				
115.00	3.20	0.60	0.00	280.00	3.20	0.60	0.00				
117.50	3.20	0.60	0.00	282.50	3.20	0.60	0.00				
120.00	3.20	0.60	0.00	285.00	3.20	0.60	0.00				
122.50	3.20	0.60	0.00	287.50	3.20	0.60	0.00				
125.00	3.20	0.60	0.00	290.00	3.20	0.60	0.00				
127.50	3.20	0.60	0.00	292.50	3.20	0.60	0.00				
130.00	3.20	0.60	0.00	295.00	3.20	0.60	0.00				
132.50	3.20	0.60	0.00	297.50	3.20	0.60	0.00				
135.00	3.20	0.60	0.00	300.00	3.20	0.60	0.00				
137.50	3.20	0.60	0.00	302.50	3.20	0.60	0.00				
140.00	3.20	0.60	0.00	305.00	3.20	0.60	0.00				
142.50	3.20	0.60	0.00	307.50	3.20	0.60	0.00				
145.00	3.20	0.60	0.00	310.00	3.20	0.60	0.00				
147.50	3.20	0.60	0.00	312.50	3.20	0.60	0.00				
150.00	3.20	0.60	0.00	315.00	3.20	0.60	0.00				
152.50	3.20	0.60	0.00	317.50	3.20	0.60	0.00				
155.00	3.20	0.60	0.00	320.00	3.20	0.60	0.00				
157.50	3.20	0.60	0.00	322.50	3.20	0.60	0.00				
160.00	3.20	0.60	0.00	325.00	3.20	0.60	0.00				
162.50	3.20	0.60	0.00	327.50	3.20	0.60	0.00				

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Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Subcatchment PRE 3:

Runoff = 0.37 cfs @ 12.56 hrs, Volume= 0.086 af, Depth= 0.28"

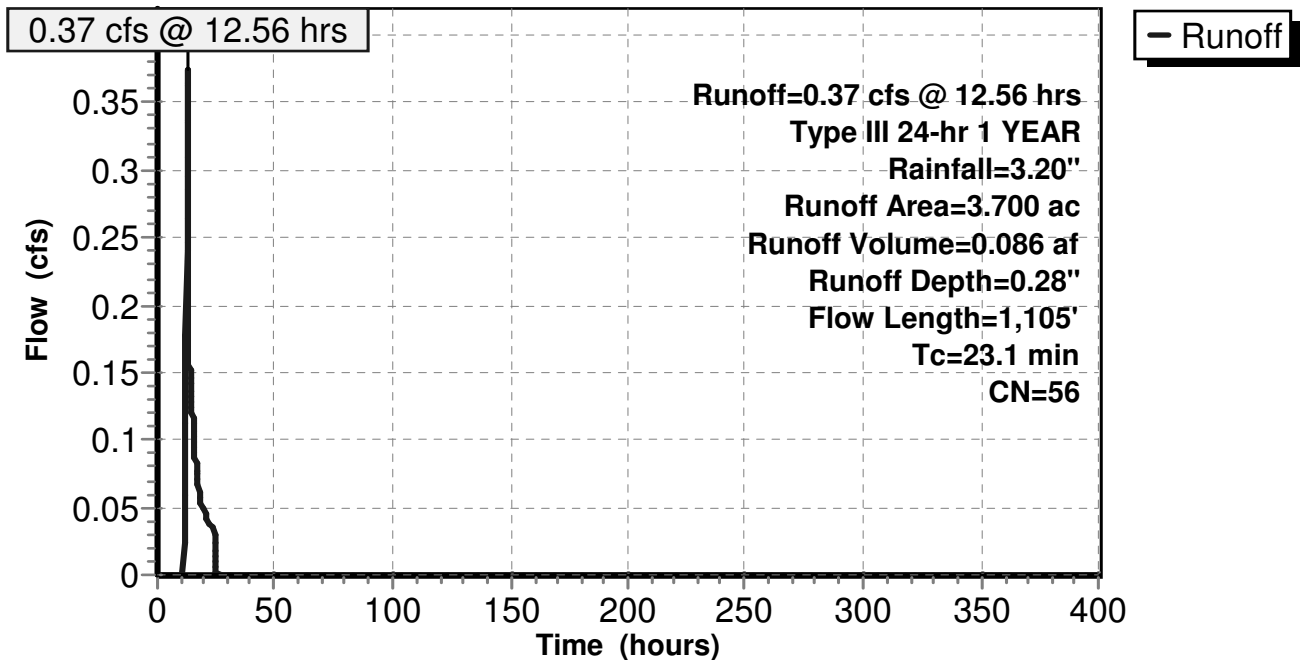
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YEAR Rainfall=3.20"

Area (ac)	CN	Description
1.400	98	Paved parking & roofs
0.200	39	>75% Grass cover, Good, HSG A
2.100	30	Woods, Good, HSG A
3.700	56	Weighted Average
2.300		Pervious Area
1.400		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
6.5	90	0.0400	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
0.8	65	0.0400	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.5	530	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.1	410	0.0200	2.18	2.61	Channel Flow, Area= 1.2 sf Perim= 5.5' r= 0.22' n= 0.035
23.1	1,105	Total			

Subcatchment PRE 3:

Hydrograph



Stateline Retail Center Pre-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Subcatchment PRE 3:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.20	0.28	0.00	330.00	3.20	0.28	0.00
2.50	0.08	0.00	0.00	167.50	3.20	0.28	0.00	332.50	3.20	0.28	0.00
5.00	0.18	0.00	0.00	170.00	3.20	0.28	0.00	335.00	3.20	0.28	0.00
7.50	0.33	0.00	0.00	172.50	3.20	0.28	0.00	337.50	3.20	0.28	0.00
10.00	0.60	0.00	0.00	175.00	3.20	0.28	0.00	340.00	3.20	0.28	0.00
12.50	2.25	0.05	0.36	177.50	3.20	0.28	0.00	342.50	3.20	0.28	0.00
15.00	2.73	0.15	0.12	180.00	3.20	0.28	0.00	345.00	3.20	0.28	0.00
17.50	2.94	0.20	0.07	182.50	3.20	0.28	0.00	347.50	3.20	0.28	0.00
20.00	3.06	0.24	0.05	185.00	3.20	0.28	0.00	350.00	3.20	0.28	0.00
22.50	3.16	0.27	0.04	187.50	3.20	0.28	0.00	352.50	3.20	0.28	0.00
25.00	3.20	0.28	0.00	190.00	3.20	0.28	0.00	355.00	3.20	0.28	0.00
27.50	3.20	0.28	0.00	192.50	3.20	0.28	0.00	357.50	3.20	0.28	0.00
30.00	3.20	0.28	0.00	195.00	3.20	0.28	0.00	360.00	3.20	0.28	0.00
32.50	3.20	0.28	0.00	197.50	3.20	0.28	0.00	362.50	3.20	0.28	0.00
35.00	3.20	0.28	0.00	200.00	3.20	0.28	0.00	365.00	3.20	0.28	0.00
37.50	3.20	0.28	0.00	202.50	3.20	0.28	0.00	367.50	3.20	0.28	0.00
40.00	3.20	0.28	0.00	205.00	3.20	0.28	0.00	370.00	3.20	0.28	0.00
42.50	3.20	0.28	0.00	207.50	3.20	0.28	0.00	372.50	3.20	0.28	0.00
45.00	3.20	0.28	0.00	210.00	3.20	0.28	0.00	375.00	3.20	0.28	0.00
47.50	3.20	0.28	0.00	212.50	3.20	0.28	0.00	377.50	3.20	0.28	0.00
50.00	3.20	0.28	0.00	215.00	3.20	0.28	0.00	380.00	3.20	0.28	0.00
52.50	3.20	0.28	0.00	217.50	3.20	0.28	0.00	382.50	3.20	0.28	0.00
55.00	3.20	0.28	0.00	220.00	3.20	0.28	0.00	385.00	3.20	0.28	0.00
57.50	3.20	0.28	0.00	222.50	3.20	0.28	0.00	387.50	3.20	0.28	0.00
60.00	3.20	0.28	0.00	225.00	3.20	0.28	0.00	390.00	3.20	0.28	0.00
62.50	3.20	0.28	0.00	227.50	3.20	0.28	0.00	392.50	3.20	0.28	0.00
65.00	3.20	0.28	0.00	230.00	3.20	0.28	0.00	395.00	3.20	0.28	0.00
67.50	3.20	0.28	0.00	232.50	3.20	0.28	0.00	397.50	3.20	0.28	0.00
70.00	3.20	0.28	0.00	235.00	3.20	0.28	0.00	400.00	3.20	0.28	0.00
72.50	3.20	0.28	0.00	237.50	3.20	0.28	0.00				
75.00	3.20	0.28	0.00	240.00	3.20	0.28	0.00				
77.50	3.20	0.28	0.00	242.50	3.20	0.28	0.00				
80.00	3.20	0.28	0.00	245.00	3.20	0.28	0.00				
82.50	3.20	0.28	0.00	247.50	3.20	0.28	0.00				
85.00	3.20	0.28	0.00	250.00	3.20	0.28	0.00				
87.50	3.20	0.28	0.00	252.50	3.20	0.28	0.00				
90.00	3.20	0.28	0.00	255.00	3.20	0.28	0.00				
92.50	3.20	0.28	0.00	257.50	3.20	0.28	0.00				
95.00	3.20	0.28	0.00	260.00	3.20	0.28	0.00				
97.50	3.20	0.28	0.00	262.50	3.20	0.28	0.00				
100.00	3.20	0.28	0.00	265.00	3.20	0.28	0.00				
102.50	3.20	0.28	0.00	267.50	3.20	0.28	0.00				
105.00	3.20	0.28	0.00	270.00	3.20	0.28	0.00				
107.50	3.20	0.28	0.00	272.50	3.20	0.28	0.00				
110.00	3.20	0.28	0.00	275.00	3.20	0.28	0.00				
112.50	3.20	0.28	0.00	277.50	3.20	0.28	0.00				
115.00	3.20	0.28	0.00	280.00	3.20	0.28	0.00				
117.50	3.20	0.28	0.00	282.50	3.20	0.28	0.00				
120.00	3.20	0.28	0.00	285.00	3.20	0.28	0.00				
122.50	3.20	0.28	0.00	287.50	3.20	0.28	0.00				
125.00	3.20	0.28	0.00	290.00	3.20	0.28	0.00				
127.50	3.20	0.28	0.00	292.50	3.20	0.28	0.00				
130.00	3.20	0.28	0.00	295.00	3.20	0.28	0.00				
132.50	3.20	0.28	0.00	297.50	3.20	0.28	0.00				
135.00	3.20	0.28	0.00	300.00	3.20	0.28	0.00				
137.50	3.20	0.28	0.00	302.50	3.20	0.28	0.00				
140.00	3.20	0.28	0.00	305.00	3.20	0.28	0.00				
142.50	3.20	0.28	0.00	307.50	3.20	0.28	0.00				
145.00	3.20	0.28	0.00	310.00	3.20	0.28	0.00				
147.50	3.20	0.28	0.00	312.50	3.20	0.28	0.00				
150.00	3.20	0.28	0.00	315.00	3.20	0.28	0.00				
152.50	3.20	0.28	0.00	317.50	3.20	0.28	0.00				
155.00	3.20	0.28	0.00	320.00	3.20	0.28	0.00				
157.50	3.20	0.28	0.00	322.50	3.20	0.28	0.00				
160.00	3.20	0.28	0.00	325.00	3.20	0.28	0.00				
162.50	3.20	0.28	0.00	327.50	3.20	0.28	0.00				

Stateline Retail Center Pre-development 040809

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Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Subcatchment PRE 1:

Runoff = 0.21 cfs @ 15.05 hrs, Volume= 0.133 af, Depth= 0.08"

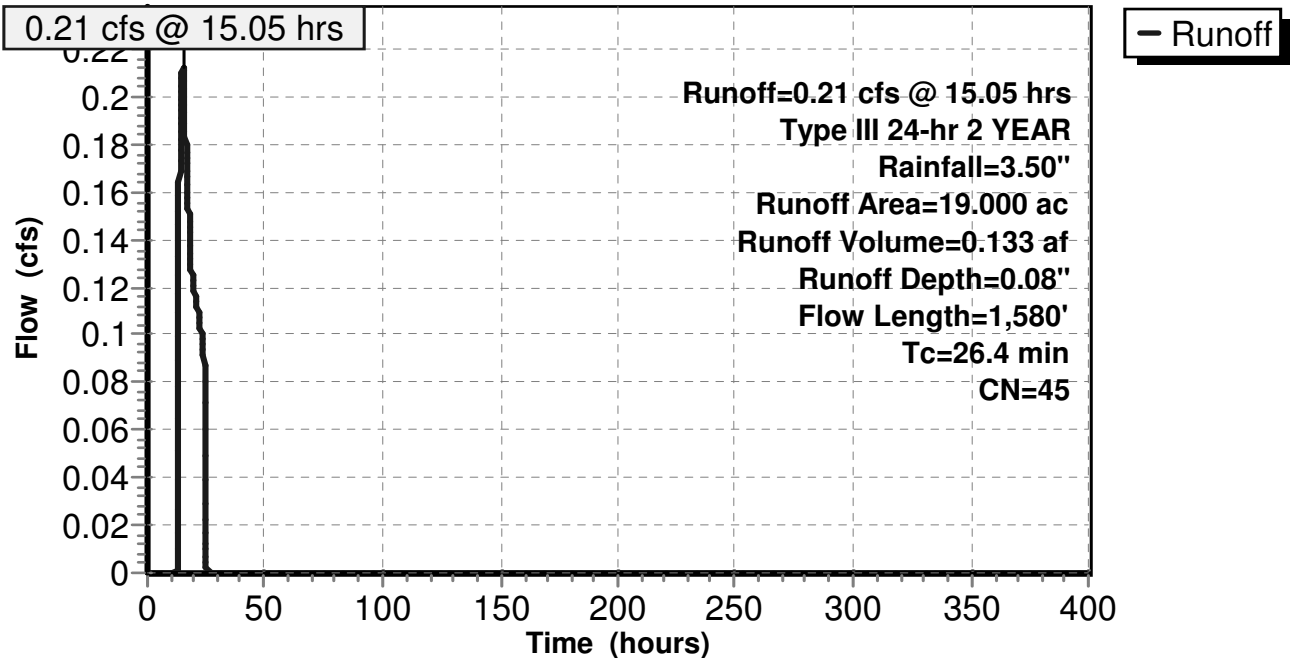
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YEAR Rainfall=3.50"

Area (ac)	CN	Description
0.800	98	Paved parking & roofs
8.600	30	Meadow, non-grazed, HSG A
0.400	71	Meadow, non-grazed, HSG C
3.700	30	Woods, Good, HSG A
5.500	70	Woods, Good, HSG C
19.000	45	Weighted Average
18.200		Pervious Area
0.800		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0550	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	120	0.1570	1.98		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.2	520	0.0400	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.5	840	0.0400	2.56	1.23	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=0.20' Z= 2.0 ' / Top.W=2.80' n= 0.035
26.4	1,580	Total			

Subcatchment PRE 1:

Hydrograph



Stateline Retail Center Pre-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Subcatchment PRE 1:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.50	0.08	0.00	330.00	3.50	0.08	0.00
2.50	0.09	0.00	0.00	167.50	3.50	0.08	0.00	332.50	3.50	0.08	0.00
5.00	0.20	0.00	0.00	170.00	3.50	0.08	0.00	335.00	3.50	0.08	0.00
7.50	0.36	0.00	0.00	172.50	3.50	0.08	0.00	337.50	3.50	0.08	0.00
10.00	0.66	0.00	0.00	175.00	3.50	0.08	0.00	340.00	3.50	0.08	0.00
12.50	2.46	0.00	0.00	177.50	3.50	0.08	0.00	342.50	3.50	0.08	0.00
15.00	2.99	0.02	0.21	180.00	3.50	0.08	0.00	345.00	3.50	0.08	0.00
17.50	3.22	0.05	0.15	182.50	3.50	0.08	0.00	347.50	3.50	0.08	0.00
20.00	3.35	0.06	0.12	185.00	3.50	0.08	0.00	350.00	3.50	0.08	0.00
22.50	3.45	0.08	0.10	187.50	3.50	0.08	0.00	352.50	3.50	0.08	0.00
25.00	3.50	0.08	0.00	190.00	3.50	0.08	0.00	355.00	3.50	0.08	0.00
27.50	3.50	0.08	0.00	192.50	3.50	0.08	0.00	357.50	3.50	0.08	0.00
30.00	3.50	0.08	0.00	195.00	3.50	0.08	0.00	360.00	3.50	0.08	0.00
32.50	3.50	0.08	0.00	197.50	3.50	0.08	0.00	362.50	3.50	0.08	0.00
35.00	3.50	0.08	0.00	200.00	3.50	0.08	0.00	365.00	3.50	0.08	0.00
37.50	3.50	0.08	0.00	202.50	3.50	0.08	0.00	367.50	3.50	0.08	0.00
40.00	3.50	0.08	0.00	205.00	3.50	0.08	0.00	370.00	3.50	0.08	0.00
42.50	3.50	0.08	0.00	207.50	3.50	0.08	0.00	372.50	3.50	0.08	0.00
45.00	3.50	0.08	0.00	210.00	3.50	0.08	0.00	375.00	3.50	0.08	0.00
47.50	3.50	0.08	0.00	212.50	3.50	0.08	0.00	377.50	3.50	0.08	0.00
50.00	3.50	0.08	0.00	215.00	3.50	0.08	0.00	380.00	3.50	0.08	0.00
52.50	3.50	0.08	0.00	217.50	3.50	0.08	0.00	382.50	3.50	0.08	0.00
55.00	3.50	0.08	0.00	220.00	3.50	0.08	0.00	385.00	3.50	0.08	0.00
57.50	3.50	0.08	0.00	222.50	3.50	0.08	0.00	387.50	3.50	0.08	0.00
60.00	3.50	0.08	0.00	225.00	3.50	0.08	0.00	390.00	3.50	0.08	0.00
62.50	3.50	0.08	0.00	227.50	3.50	0.08	0.00	392.50	3.50	0.08	0.00
65.00	3.50	0.08	0.00	230.00	3.50	0.08	0.00	395.00	3.50	0.08	0.00
67.50	3.50	0.08	0.00	232.50	3.50	0.08	0.00	397.50	3.50	0.08	0.00
70.00	3.50	0.08	0.00	235.00	3.50	0.08	0.00	400.00	3.50	0.08	0.00
72.50	3.50	0.08	0.00	237.50	3.50	0.08	0.00				
75.00	3.50	0.08	0.00	240.00	3.50	0.08	0.00				
77.50	3.50	0.08	0.00	242.50	3.50	0.08	0.00				
80.00	3.50	0.08	0.00	245.00	3.50	0.08	0.00				
82.50	3.50	0.08	0.00	247.50	3.50	0.08	0.00				
85.00	3.50	0.08	0.00	250.00	3.50	0.08	0.00				
87.50	3.50	0.08	0.00	252.50	3.50	0.08	0.00				
90.00	3.50	0.08	0.00	255.00	3.50	0.08	0.00				
92.50	3.50	0.08	0.00	257.50	3.50	0.08	0.00				
95.00	3.50	0.08	0.00	260.00	3.50	0.08	0.00				
97.50	3.50	0.08	0.00	262.50	3.50	0.08	0.00				
100.00	3.50	0.08	0.00	265.00	3.50	0.08	0.00				
102.50	3.50	0.08	0.00	267.50	3.50	0.08	0.00				
105.00	3.50	0.08	0.00	270.00	3.50	0.08	0.00				
107.50	3.50	0.08	0.00	272.50	3.50	0.08	0.00				
110.00	3.50	0.08	0.00	275.00	3.50	0.08	0.00				
112.50	3.50	0.08	0.00	277.50	3.50	0.08	0.00				
115.00	3.50	0.08	0.00	280.00	3.50	0.08	0.00				
117.50	3.50	0.08	0.00	282.50	3.50	0.08	0.00				
120.00	3.50	0.08	0.00	285.00	3.50	0.08	0.00				
122.50	3.50	0.08	0.00	287.50	3.50	0.08	0.00				
125.00	3.50	0.08	0.00	290.00	3.50	0.08	0.00				
127.50	3.50	0.08	0.00	292.50	3.50	0.08	0.00				
130.00	3.50	0.08	0.00	295.00	3.50	0.08	0.00				
132.50	3.50	0.08	0.00	297.50	3.50	0.08	0.00				
135.00	3.50	0.08	0.00	300.00	3.50	0.08	0.00				
137.50	3.50	0.08	0.00	302.50	3.50	0.08	0.00				
140.00	3.50	0.08	0.00	305.00	3.50	0.08	0.00				
142.50	3.50	0.08	0.00	307.50	3.50	0.08	0.00				
145.00	3.50	0.08	0.00	310.00	3.50	0.08	0.00				
147.50	3.50	0.08	0.00	312.50	3.50	0.08	0.00				
150.00	3.50	0.08	0.00	315.00	3.50	0.08	0.00				
152.50	3.50	0.08	0.00	317.50	3.50	0.08	0.00				
155.00	3.50	0.08	0.00	320.00	3.50	0.08	0.00				
157.50	3.50	0.08	0.00	322.50	3.50	0.08	0.00				
160.00	3.50	0.08	0.00	325.00	3.50	0.08	0.00				
162.50	3.50	0.08	0.00	327.50	3.50	0.08	0.00				

Stateline Retail Center Pre-development 040809

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Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Subcatchment PRE 2:

Runoff = 9.00 cfs @ 12.24 hrs, Volume= 1.021 af, Depth= 0.75"

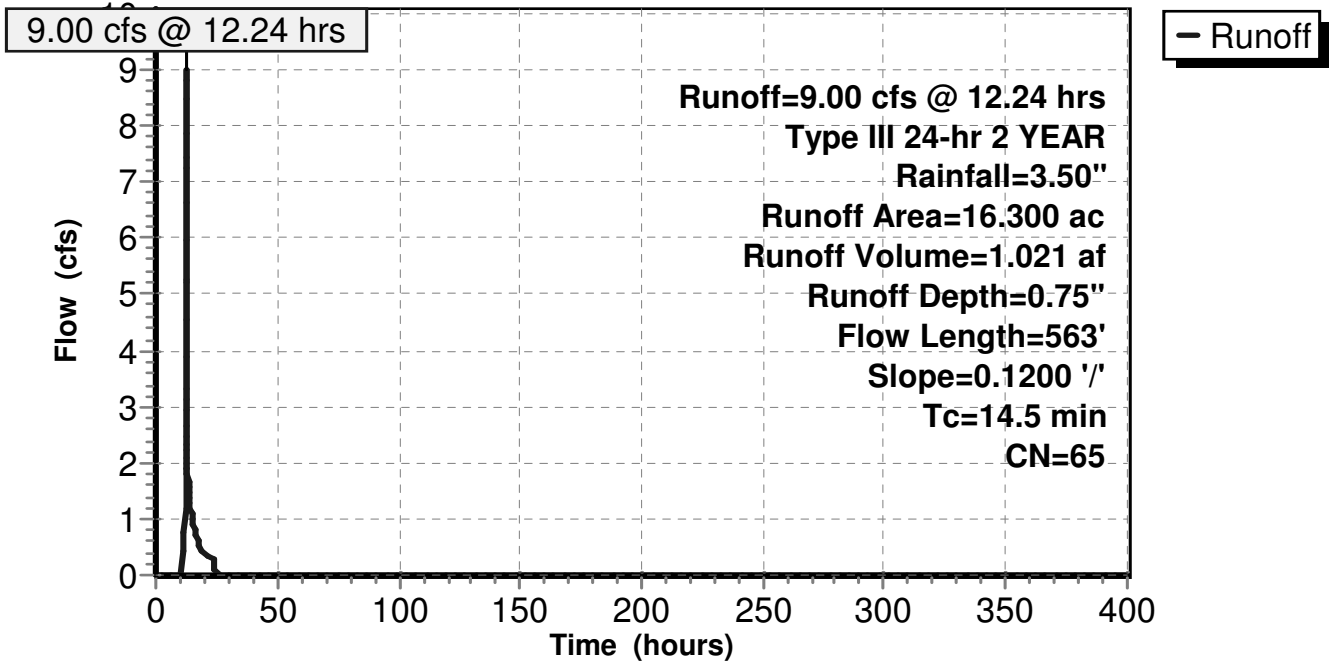
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YEAR Rainfall=3.50"

Area (ac)	CN	Description
10.700	70	Woods, Good, HSG C
2.800	71	Meadow, non-grazed, HSG C
0.500	98	Paved parking & roofs
2.300	30	Woods, Good, HSG A
16.300	65	Weighted Average
15.800		Pervious Area
0.500		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.1200	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
4.5	463	0.1200	1.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.5	563	Total			

Subcatchment PRE 2:

Hydrograph



Stateline Retail Center Pre-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Subcatchment PRE 2:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.50	0.75	0.00	330.00	3.50	0.75	0.00
2.50	0.09	0.00	0.00	167.50	3.50	0.75	0.00	332.50	3.50	0.75	0.00
5.00	0.20	0.00	0.00	170.00	3.50	0.75	0.00	335.00	3.50	0.75	0.00
7.50	0.36	0.00	0.00	172.50	3.50	0.75	0.00	337.50	3.50	0.75	0.00
10.00	0.66	0.00	0.00	175.00	3.50	0.75	0.00	340.00	3.50	0.75	0.00
12.50	2.46	0.28	5.97	177.50	3.50	0.75	0.00	342.50	3.50	0.75	0.00
15.00	2.99	0.50	1.04	180.00	3.50	0.75	0.00	345.00	3.50	0.75	0.00
17.50	3.22	0.61	0.55	182.50	3.50	0.75	0.00	347.50	3.50	0.75	0.00
20.00	3.35	0.67	0.39	185.00	3.50	0.75	0.00	350.00	3.50	0.75	0.00
22.50	3.45	0.73	0.31	187.50	3.50	0.75	0.00	352.50	3.50	0.75	0.00
25.00	3.50	0.75	0.00	190.00	3.50	0.75	0.00	355.00	3.50	0.75	0.00
27.50	3.50	0.75	0.00	192.50	3.50	0.75	0.00	357.50	3.50	0.75	0.00
30.00	3.50	0.75	0.00	195.00	3.50	0.75	0.00	360.00	3.50	0.75	0.00
32.50	3.50	0.75	0.00	197.50	3.50	0.75	0.00	362.50	3.50	0.75	0.00
35.00	3.50	0.75	0.00	200.00	3.50	0.75	0.00	365.00	3.50	0.75	0.00
37.50	3.50	0.75	0.00	202.50	3.50	0.75	0.00	367.50	3.50	0.75	0.00
40.00	3.50	0.75	0.00	205.00	3.50	0.75	0.00	370.00	3.50	0.75	0.00
42.50	3.50	0.75	0.00	207.50	3.50	0.75	0.00	372.50	3.50	0.75	0.00
45.00	3.50	0.75	0.00	210.00	3.50	0.75	0.00	375.00	3.50	0.75	0.00
47.50	3.50	0.75	0.00	212.50	3.50	0.75	0.00	377.50	3.50	0.75	0.00
50.00	3.50	0.75	0.00	215.00	3.50	0.75	0.00	380.00	3.50	0.75	0.00
52.50	3.50	0.75	0.00	217.50	3.50	0.75	0.00	382.50	3.50	0.75	0.00
55.00	3.50	0.75	0.00	220.00	3.50	0.75	0.00	385.00	3.50	0.75	0.00
57.50	3.50	0.75	0.00	222.50	3.50	0.75	0.00	387.50	3.50	0.75	0.00
60.00	3.50	0.75	0.00	225.00	3.50	0.75	0.00	390.00	3.50	0.75	0.00
62.50	3.50	0.75	0.00	227.50	3.50	0.75	0.00	392.50	3.50	0.75	0.00
65.00	3.50	0.75	0.00	230.00	3.50	0.75	0.00	395.00	3.50	0.75	0.00
67.50	3.50	0.75	0.00	232.50	3.50	0.75	0.00	397.50	3.50	0.75	0.00
70.00	3.50	0.75	0.00	235.00	3.50	0.75	0.00	400.00	3.50	0.75	0.00
72.50	3.50	0.75	0.00	237.50	3.50	0.75	0.00				
75.00	3.50	0.75	0.00	240.00	3.50	0.75	0.00				
77.50	3.50	0.75	0.00	242.50	3.50	0.75	0.00				
80.00	3.50	0.75	0.00	245.00	3.50	0.75	0.00				
82.50	3.50	0.75	0.00	247.50	3.50	0.75	0.00				
85.00	3.50	0.75	0.00	250.00	3.50	0.75	0.00				
87.50	3.50	0.75	0.00	252.50	3.50	0.75	0.00				
90.00	3.50	0.75	0.00	255.00	3.50	0.75	0.00				
92.50	3.50	0.75	0.00	257.50	3.50	0.75	0.00				
95.00	3.50	0.75	0.00	260.00	3.50	0.75	0.00				
97.50	3.50	0.75	0.00	262.50	3.50	0.75	0.00				
100.00	3.50	0.75	0.00	265.00	3.50	0.75	0.00				
102.50	3.50	0.75	0.00	267.50	3.50	0.75	0.00				
105.00	3.50	0.75	0.00	270.00	3.50	0.75	0.00				
107.50	3.50	0.75	0.00	272.50	3.50	0.75	0.00				
110.00	3.50	0.75	0.00	275.00	3.50	0.75	0.00				
112.50	3.50	0.75	0.00	277.50	3.50	0.75	0.00				
115.00	3.50	0.75	0.00	280.00	3.50	0.75	0.00				
117.50	3.50	0.75	0.00	282.50	3.50	0.75	0.00				
120.00	3.50	0.75	0.00	285.00	3.50	0.75	0.00				
122.50	3.50	0.75	0.00	287.50	3.50	0.75	0.00				
125.00	3.50	0.75	0.00	290.00	3.50	0.75	0.00				
127.50	3.50	0.75	0.00	292.50	3.50	0.75	0.00				
130.00	3.50	0.75	0.00	295.00	3.50	0.75	0.00				
132.50	3.50	0.75	0.00	297.50	3.50	0.75	0.00				
135.00	3.50	0.75	0.00	300.00	3.50	0.75	0.00				
137.50	3.50	0.75	0.00	302.50	3.50	0.75	0.00				
140.00	3.50	0.75	0.00	305.00	3.50	0.75	0.00				
142.50	3.50	0.75	0.00	307.50	3.50	0.75	0.00				
145.00	3.50	0.75	0.00	310.00	3.50	0.75	0.00				
147.50	3.50	0.75	0.00	312.50	3.50	0.75	0.00				
150.00	3.50	0.75	0.00	315.00	3.50	0.75	0.00				
152.50	3.50	0.75	0.00	317.50	3.50	0.75	0.00				
155.00	3.50	0.75	0.00	320.00	3.50	0.75	0.00				
157.50	3.50	0.75	0.00	322.50	3.50	0.75	0.00				
160.00	3.50	0.75	0.00	325.00	3.50	0.75	0.00				
162.50	3.50	0.75	0.00	327.50	3.50	0.75	0.00				

Stateline Retail Center Pre-development 040809

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Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Subcatchment PRE 3:

Runoff = 0.60 cfs @ 12.52 hrs, Volume= 0.117 af, Depth= 0.38"

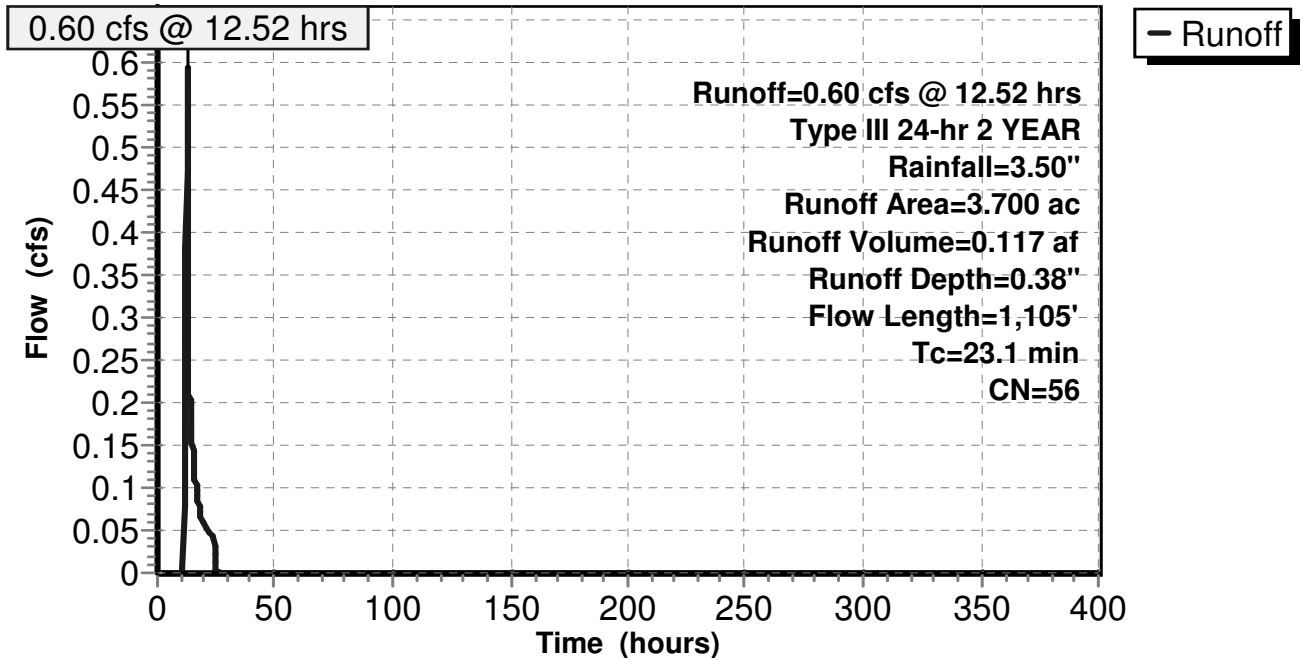
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YEAR Rainfall=3.50"

Area (ac)	CN	Description
1.400	98	Paved parking & roofs
0.200	39	>75% Grass cover, Good, HSG A
2.100	30	Woods, Good, HSG A
3.700	56	Weighted Average
2.300		Pervious Area
1.400		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
6.5	90	0.0400	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
0.8	65	0.0400	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.5	530	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.1	410	0.0200	2.18	2.61	Channel Flow, Area= 1.2 sf Perim= 5.5' r= 0.22' n= 0.035
23.1	1,105	Total			

Subcatchment PRE 3:

Hydrograph



Stateline Retail Center Pre-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Subcatchment PRE 3:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.50	0.38	0.00	330.00	3.50	0.38	0.00
2.50	0.09	0.00	0.00	167.50	3.50	0.38	0.00	332.50	3.50	0.38	0.00
5.00	0.20	0.00	0.00	170.00	3.50	0.38	0.00	335.00	3.50	0.38	0.00
7.50	0.36	0.00	0.00	172.50	3.50	0.38	0.00	337.50	3.50	0.38	0.00
10.00	0.66	0.00	0.00	175.00	3.50	0.38	0.00	340.00	3.50	0.38	0.00
12.50	2.46	0.09	0.59	177.50	3.50	0.38	0.00	342.50	3.50	0.38	0.00
15.00	2.99	0.22	0.15	180.00	3.50	0.38	0.00	345.00	3.50	0.38	0.00
17.50	3.22	0.29	0.08	182.50	3.50	0.38	0.00	347.50	3.50	0.38	0.00
20.00	3.35	0.33	0.06	185.00	3.50	0.38	0.00	350.00	3.50	0.38	0.00
22.50	3.45	0.36	0.05	187.50	3.50	0.38	0.00	352.50	3.50	0.38	0.00
25.00	3.50	0.38	0.00	190.00	3.50	0.38	0.00	355.00	3.50	0.38	0.00
27.50	3.50	0.38	0.00	192.50	3.50	0.38	0.00	357.50	3.50	0.38	0.00
30.00	3.50	0.38	0.00	195.00	3.50	0.38	0.00	360.00	3.50	0.38	0.00
32.50	3.50	0.38	0.00	197.50	3.50	0.38	0.00	362.50	3.50	0.38	0.00
35.00	3.50	0.38	0.00	200.00	3.50	0.38	0.00	365.00	3.50	0.38	0.00
37.50	3.50	0.38	0.00	202.50	3.50	0.38	0.00	367.50	3.50	0.38	0.00
40.00	3.50	0.38	0.00	205.00	3.50	0.38	0.00	370.00	3.50	0.38	0.00
42.50	3.50	0.38	0.00	207.50	3.50	0.38	0.00	372.50	3.50	0.38	0.00
45.00	3.50	0.38	0.00	210.00	3.50	0.38	0.00	375.00	3.50	0.38	0.00
47.50	3.50	0.38	0.00	212.50	3.50	0.38	0.00	377.50	3.50	0.38	0.00
50.00	3.50	0.38	0.00	215.00	3.50	0.38	0.00	380.00	3.50	0.38	0.00
52.50	3.50	0.38	0.00	217.50	3.50	0.38	0.00	382.50	3.50	0.38	0.00
55.00	3.50	0.38	0.00	220.00	3.50	0.38	0.00	385.00	3.50	0.38	0.00
57.50	3.50	0.38	0.00	222.50	3.50	0.38	0.00	387.50	3.50	0.38	0.00
60.00	3.50	0.38	0.00	225.00	3.50	0.38	0.00	390.00	3.50	0.38	0.00
62.50	3.50	0.38	0.00	227.50	3.50	0.38	0.00	392.50	3.50	0.38	0.00
65.00	3.50	0.38	0.00	230.00	3.50	0.38	0.00	395.00	3.50	0.38	0.00
67.50	3.50	0.38	0.00	232.50	3.50	0.38	0.00	397.50	3.50	0.38	0.00
70.00	3.50	0.38	0.00	235.00	3.50	0.38	0.00	400.00	3.50	0.38	0.00
72.50	3.50	0.38	0.00	237.50	3.50	0.38	0.00				
75.00	3.50	0.38	0.00	240.00	3.50	0.38	0.00				
77.50	3.50	0.38	0.00	242.50	3.50	0.38	0.00				
80.00	3.50	0.38	0.00	245.00	3.50	0.38	0.00				
82.50	3.50	0.38	0.00	247.50	3.50	0.38	0.00				
85.00	3.50	0.38	0.00	250.00	3.50	0.38	0.00				
87.50	3.50	0.38	0.00	252.50	3.50	0.38	0.00				
90.00	3.50	0.38	0.00	255.00	3.50	0.38	0.00				
92.50	3.50	0.38	0.00	257.50	3.50	0.38	0.00				
95.00	3.50	0.38	0.00	260.00	3.50	0.38	0.00				
97.50	3.50	0.38	0.00	262.50	3.50	0.38	0.00				
100.00	3.50	0.38	0.00	265.00	3.50	0.38	0.00				
102.50	3.50	0.38	0.00	267.50	3.50	0.38	0.00				
105.00	3.50	0.38	0.00	270.00	3.50	0.38	0.00				
107.50	3.50	0.38	0.00	272.50	3.50	0.38	0.00				
110.00	3.50	0.38	0.00	275.00	3.50	0.38	0.00				
112.50	3.50	0.38	0.00	277.50	3.50	0.38	0.00				
115.00	3.50	0.38	0.00	280.00	3.50	0.38	0.00				
117.50	3.50	0.38	0.00	282.50	3.50	0.38	0.00				
120.00	3.50	0.38	0.00	285.00	3.50	0.38	0.00				
122.50	3.50	0.38	0.00	287.50	3.50	0.38	0.00				
125.00	3.50	0.38	0.00	290.00	3.50	0.38	0.00				
127.50	3.50	0.38	0.00	292.50	3.50	0.38	0.00				
130.00	3.50	0.38	0.00	295.00	3.50	0.38	0.00				
132.50	3.50	0.38	0.00	297.50	3.50	0.38	0.00				
135.00	3.50	0.38	0.00	300.00	3.50	0.38	0.00				
137.50	3.50	0.38	0.00	302.50	3.50	0.38	0.00				
140.00	3.50	0.38	0.00	305.00	3.50	0.38	0.00				
142.50	3.50	0.38	0.00	307.50	3.50	0.38	0.00				
145.00	3.50	0.38	0.00	310.00	3.50	0.38	0.00				
147.50	3.50	0.38	0.00	312.50	3.50	0.38	0.00				
150.00	3.50	0.38	0.00	315.00	3.50	0.38	0.00				
152.50	3.50	0.38	0.00	317.50	3.50	0.38	0.00				
155.00	3.50	0.38	0.00	320.00	3.50	0.38	0.00				
157.50	3.50	0.38	0.00	322.50	3.50	0.38	0.00				
160.00	3.50	0.38	0.00	325.00	3.50	0.38	0.00				
162.50	3.50	0.38	0.00	327.50	3.50	0.38	0.00				

Summary for Subcatchment PRE 1:

Runoff = 4.77 cfs @ 12.56 hrs, Volume= 0.968 af, Depth= 0.61"

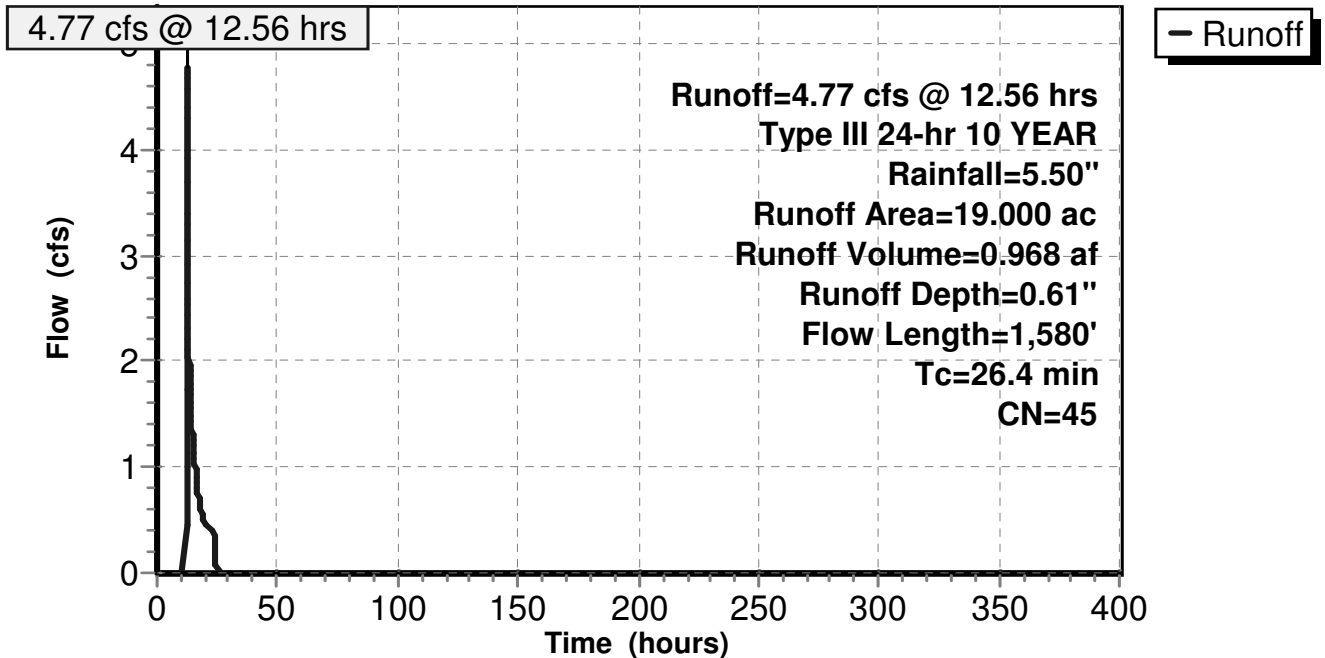
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=5.50"

Area (ac)	CN	Description
0.800	98	Paved parking & roofs
8.600	30	Meadow, non-grazed, HSG A
0.400	71	Meadow, non-grazed, HSG C
3.700	30	Woods, Good, HSG A
5.500	70	Woods, Good, HSG C
19.000	45	Weighted Average
18.200		Pervious Area
0.800		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0550	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	120	0.1570	1.98		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.2	520	0.0400	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.5	840	0.0400	2.56	1.23	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=0.20' Z= 2.0 ' /' Top.W=2.80' n= 0.035
26.4	1,580	Total			

Subcatchment PRE 1:

Hydrograph



Hydrograph for Subcatchment PRE 1:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	5.50	0.61	0.00	330.00	5.50	0.61	0.00
2.50	0.14	0.00	0.00	167.50	5.50	0.61	0.00	332.50	5.50	0.61	0.00
5.00	0.31	0.00	0.00	170.00	5.50	0.61	0.00	335.00	5.50	0.61	0.00
7.50	0.56	0.00	0.00	172.50	5.50	0.61	0.00	337.50	5.50	0.61	0.00
10.00	1.04	0.00	0.00	175.00	5.50	0.61	0.00	340.00	5.50	0.61	0.00
12.50	3.86	0.15	4.68	177.50	5.50	0.61	0.00	342.50	5.50	0.61	0.00
15.00	4.70	0.35	1.24	180.00	5.50	0.61	0.00	345.00	5.50	0.61	0.00
17.50	5.06	0.46	0.69	182.50	5.50	0.61	0.00	347.50	5.50	0.61	0.00
20.00	5.26	0.53	0.48	185.00	5.50	0.61	0.00	350.00	5.50	0.61	0.00
22.50	5.42	0.58	0.39	187.50	5.50	0.61	0.00	352.50	5.50	0.61	0.00
25.00	5.50	0.61	0.00	190.00	5.50	0.61	0.00	355.00	5.50	0.61	0.00
27.50	5.50	0.61	0.00	192.50	5.50	0.61	0.00	357.50	5.50	0.61	0.00
30.00	5.50	0.61	0.00	195.00	5.50	0.61	0.00	360.00	5.50	0.61	0.00
32.50	5.50	0.61	0.00	197.50	5.50	0.61	0.00	362.50	5.50	0.61	0.00
35.00	5.50	0.61	0.00	200.00	5.50	0.61	0.00	365.00	5.50	0.61	0.00
37.50	5.50	0.61	0.00	202.50	5.50	0.61	0.00	367.50	5.50	0.61	0.00
40.00	5.50	0.61	0.00	205.00	5.50	0.61	0.00	370.00	5.50	0.61	0.00
42.50	5.50	0.61	0.00	207.50	5.50	0.61	0.00	372.50	5.50	0.61	0.00
45.00	5.50	0.61	0.00	210.00	5.50	0.61	0.00	375.00	5.50	0.61	0.00
47.50	5.50	0.61	0.00	212.50	5.50	0.61	0.00	377.50	5.50	0.61	0.00
50.00	5.50	0.61	0.00	215.00	5.50	0.61	0.00	380.00	5.50	0.61	0.00
52.50	5.50	0.61	0.00	217.50	5.50	0.61	0.00	382.50	5.50	0.61	0.00
55.00	5.50	0.61	0.00	220.00	5.50	0.61	0.00	385.00	5.50	0.61	0.00
57.50	5.50	0.61	0.00	222.50	5.50	0.61	0.00	387.50	5.50	0.61	0.00
60.00	5.50	0.61	0.00	225.00	5.50	0.61	0.00	390.00	5.50	0.61	0.00
62.50	5.50	0.61	0.00	227.50	5.50	0.61	0.00	392.50	5.50	0.61	0.00
65.00	5.50	0.61	0.00	230.00	5.50	0.61	0.00	395.00	5.50	0.61	0.00
67.50	5.50	0.61	0.00	232.50	5.50	0.61	0.00	397.50	5.50	0.61	0.00
70.00	5.50	0.61	0.00	235.00	5.50	0.61	0.00	400.00	5.50	0.61	0.00
72.50	5.50	0.61	0.00	237.50	5.50	0.61	0.00				
75.00	5.50	0.61	0.00	240.00	5.50	0.61	0.00				
77.50	5.50	0.61	0.00	242.50	5.50	0.61	0.00				
80.00	5.50	0.61	0.00	245.00	5.50	0.61	0.00				
82.50	5.50	0.61	0.00	247.50	5.50	0.61	0.00				
85.00	5.50	0.61	0.00	250.00	5.50	0.61	0.00				
87.50	5.50	0.61	0.00	252.50	5.50	0.61	0.00				
90.00	5.50	0.61	0.00	255.00	5.50	0.61	0.00				
92.50	5.50	0.61	0.00	257.50	5.50	0.61	0.00				
95.00	5.50	0.61	0.00	260.00	5.50	0.61	0.00				
97.50	5.50	0.61	0.00	262.50	5.50	0.61	0.00				
100.00	5.50	0.61	0.00	265.00	5.50	0.61	0.00				
102.50	5.50	0.61	0.00	267.50	5.50	0.61	0.00				
105.00	5.50	0.61	0.00	270.00	5.50	0.61	0.00				
107.50	5.50	0.61	0.00	272.50	5.50	0.61	0.00				
110.00	5.50	0.61	0.00	275.00	5.50	0.61	0.00				
112.50	5.50	0.61	0.00	277.50	5.50	0.61	0.00				
115.00	5.50	0.61	0.00	280.00	5.50	0.61	0.00				
117.50	5.50	0.61	0.00	282.50	5.50	0.61	0.00				
120.00	5.50	0.61	0.00	285.00	5.50	0.61	0.00				
122.50	5.50	0.61	0.00	287.50	5.50	0.61	0.00				
125.00	5.50	0.61	0.00	290.00	5.50	0.61	0.00				
127.50	5.50	0.61	0.00	292.50	5.50	0.61	0.00				
130.00	5.50	0.61	0.00	295.00	5.50	0.61	0.00				
132.50	5.50	0.61	0.00	297.50	5.50	0.61	0.00				
135.00	5.50	0.61	0.00	300.00	5.50	0.61	0.00				
137.50	5.50	0.61	0.00	302.50	5.50	0.61	0.00				
140.00	5.50	0.61	0.00	305.00	5.50	0.61	0.00				
142.50	5.50	0.61	0.00	307.50	5.50	0.61	0.00				
145.00	5.50	0.61	0.00	310.00	5.50	0.61	0.00				
147.50	5.50	0.61	0.00	312.50	5.50	0.61	0.00				
150.00	5.50	0.61	0.00	315.00	5.50	0.61	0.00				
152.50	5.50	0.61	0.00	317.50	5.50	0.61	0.00				
155.00	5.50	0.61	0.00	320.00	5.50	0.61	0.00				
157.50	5.50	0.61	0.00	322.50	5.50	0.61	0.00				
160.00	5.50	0.61	0.00	325.00	5.50	0.61	0.00				
162.50	5.50	0.61	0.00	327.50	5.50	0.61	0.00				

Stateline Retail Center Pre-development 040809

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Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Subcatchment PRE 2:

Runoff = 27.97 cfs @ 12.21 hrs, Volume= 2.709 af, Depth= 1.99"

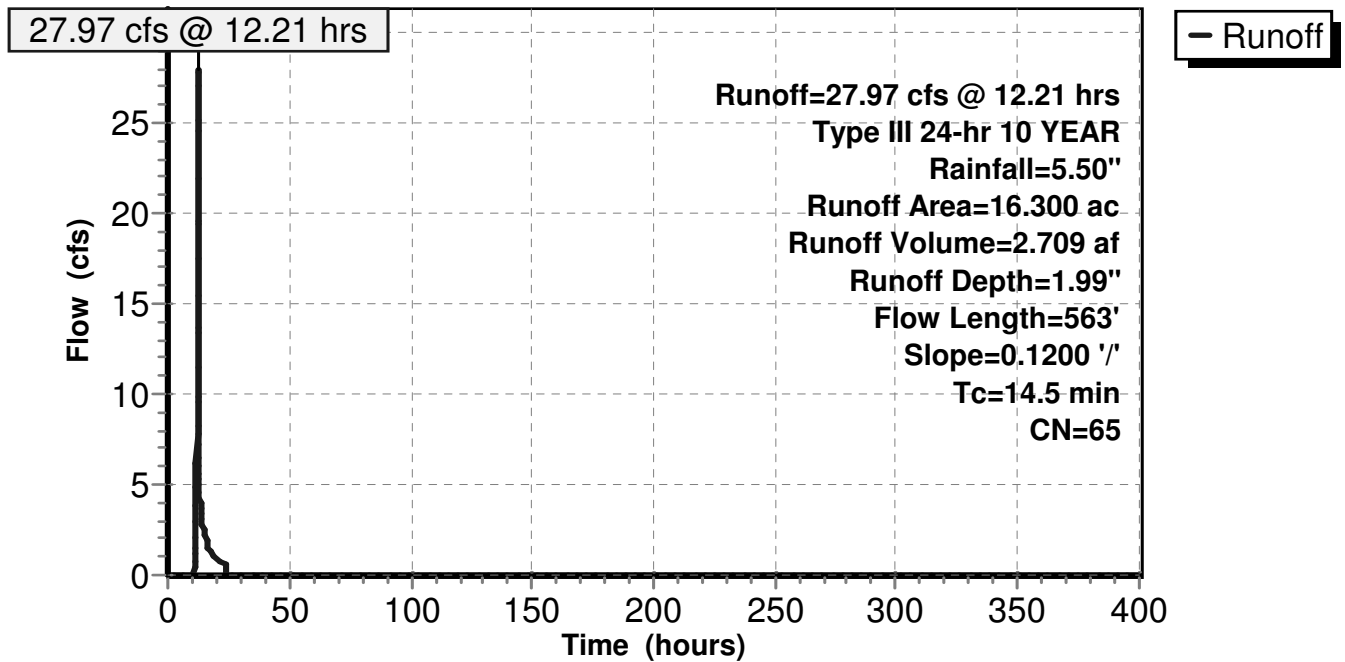
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 YEAR Rainfall=5.50"

Area (ac)	CN	Description
10.700	70	Woods, Good, HSG C
2.800	71	Meadow, non-grazed, HSG C
0.500	98	Paved parking & roofs
2.300	30	Woods, Good, HSG A
16.300	65	Weighted Average
15.800		Pervious Area
0.500		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.1200	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
4.5	463	0.1200	1.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.5	563	Total			

Subcatchment PRE 2:

Hydrograph



Stateline Retail Center Pre-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Subcatchment PRE 2:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	5.50	1.99	0.00	330.00	5.50	1.99	0.00
2.50	0.14	0.00	0.00	167.50	5.50	1.99	0.00	332.50	5.50	1.99	0.00
5.00	0.31	0.00	0.00	170.00	5.50	1.99	0.00	335.00	5.50	1.99	0.00
7.50	0.56	0.00	0.00	172.50	5.50	1.99	0.00	337.50	5.50	1.99	0.00
10.00	1.04	0.00	0.00	175.00	5.50	1.99	0.00	340.00	5.50	1.99	0.00
12.50	3.86	0.95	15.46	177.50	5.50	1.99	0.00	342.50	5.50	1.99	0.00
15.00	4.70	1.46	2.31	180.00	5.50	1.99	0.00	345.00	5.50	1.99	0.00
17.50	5.06	1.69	1.18	182.50	5.50	1.99	0.00	347.50	5.50	1.99	0.00
20.00	5.26	1.83	0.82	185.00	5.50	1.99	0.00	350.00	5.50	1.99	0.00
22.50	5.42	1.94	0.65	187.50	5.50	1.99	0.00	352.50	5.50	1.99	0.00
25.00	5.50	1.99	0.00	190.00	5.50	1.99	0.00	355.00	5.50	1.99	0.00
27.50	5.50	1.99	0.00	192.50	5.50	1.99	0.00	357.50	5.50	1.99	0.00
30.00	5.50	1.99	0.00	195.00	5.50	1.99	0.00	360.00	5.50	1.99	0.00
32.50	5.50	1.99	0.00	197.50	5.50	1.99	0.00	362.50	5.50	1.99	0.00
35.00	5.50	1.99	0.00	200.00	5.50	1.99	0.00	365.00	5.50	1.99	0.00
37.50	5.50	1.99	0.00	202.50	5.50	1.99	0.00	367.50	5.50	1.99	0.00
40.00	5.50	1.99	0.00	205.00	5.50	1.99	0.00	370.00	5.50	1.99	0.00
42.50	5.50	1.99	0.00	207.50	5.50	1.99	0.00	372.50	5.50	1.99	0.00
45.00	5.50	1.99	0.00	210.00	5.50	1.99	0.00	375.00	5.50	1.99	0.00
47.50	5.50	1.99	0.00	212.50	5.50	1.99	0.00	377.50	5.50	1.99	0.00
50.00	5.50	1.99	0.00	215.00	5.50	1.99	0.00	380.00	5.50	1.99	0.00
52.50	5.50	1.99	0.00	217.50	5.50	1.99	0.00	382.50	5.50	1.99	0.00
55.00	5.50	1.99	0.00	220.00	5.50	1.99	0.00	385.00	5.50	1.99	0.00
57.50	5.50	1.99	0.00	222.50	5.50	1.99	0.00	387.50	5.50	1.99	0.00
60.00	5.50	1.99	0.00	225.00	5.50	1.99	0.00	390.00	5.50	1.99	0.00
62.50	5.50	1.99	0.00	227.50	5.50	1.99	0.00	392.50	5.50	1.99	0.00
65.00	5.50	1.99	0.00	230.00	5.50	1.99	0.00	395.00	5.50	1.99	0.00
67.50	5.50	1.99	0.00	232.50	5.50	1.99	0.00	397.50	5.50	1.99	0.00
70.00	5.50	1.99	0.00	235.00	5.50	1.99	0.00	400.00	5.50	1.99	0.00
72.50	5.50	1.99	0.00	237.50	5.50	1.99	0.00				
75.00	5.50	1.99	0.00	240.00	5.50	1.99	0.00				
77.50	5.50	1.99	0.00	242.50	5.50	1.99	0.00				
80.00	5.50	1.99	0.00	245.00	5.50	1.99	0.00				
82.50	5.50	1.99	0.00	247.50	5.50	1.99	0.00				
85.00	5.50	1.99	0.00	250.00	5.50	1.99	0.00				
87.50	5.50	1.99	0.00	252.50	5.50	1.99	0.00				
90.00	5.50	1.99	0.00	255.00	5.50	1.99	0.00				
92.50	5.50	1.99	0.00	257.50	5.50	1.99	0.00				
95.00	5.50	1.99	0.00	260.00	5.50	1.99	0.00				
97.50	5.50	1.99	0.00	262.50	5.50	1.99	0.00				
100.00	5.50	1.99	0.00	265.00	5.50	1.99	0.00				
102.50	5.50	1.99	0.00	267.50	5.50	1.99	0.00				
105.00	5.50	1.99	0.00	270.00	5.50	1.99	0.00				
107.50	5.50	1.99	0.00	272.50	5.50	1.99	0.00				
110.00	5.50	1.99	0.00	275.00	5.50	1.99	0.00				
112.50	5.50	1.99	0.00	277.50	5.50	1.99	0.00				
115.00	5.50	1.99	0.00	280.00	5.50	1.99	0.00				
117.50	5.50	1.99	0.00	282.50	5.50	1.99	0.00				
120.00	5.50	1.99	0.00	285.00	5.50	1.99	0.00				
122.50	5.50	1.99	0.00	287.50	5.50	1.99	0.00				
125.00	5.50	1.99	0.00	290.00	5.50	1.99	0.00				
127.50	5.50	1.99	0.00	292.50	5.50	1.99	0.00				
130.00	5.50	1.99	0.00	295.00	5.50	1.99	0.00				
132.50	5.50	1.99	0.00	297.50	5.50	1.99	0.00				
135.00	5.50	1.99	0.00	300.00	5.50	1.99	0.00				
137.50	5.50	1.99	0.00	302.50	5.50	1.99	0.00				
140.00	5.50	1.99	0.00	305.00	5.50	1.99	0.00				
142.50	5.50	1.99	0.00	307.50	5.50	1.99	0.00				
145.00	5.50	1.99	0.00	310.00	5.50	1.99	0.00				
147.50	5.50	1.99	0.00	312.50	5.50	1.99	0.00				
150.00	5.50	1.99	0.00	315.00	5.50	1.99	0.00				
152.50	5.50	1.99	0.00	317.50	5.50	1.99	0.00				
155.00	5.50	1.99	0.00	320.00	5.50	1.99	0.00				
157.50	5.50	1.99	0.00	322.50	5.50	1.99	0.00				
160.00	5.50	1.99	0.00	325.00	5.50	1.99	0.00				
162.50	5.50	1.99	0.00	327.50	5.50	1.99	0.00				

Stateline Retail Center Pre-development 040809

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Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Subcatchment PRE 3:

Runoff = 3.12 cfs @ 12.37 hrs, Volume= 0.404 af, Depth= 1.31"

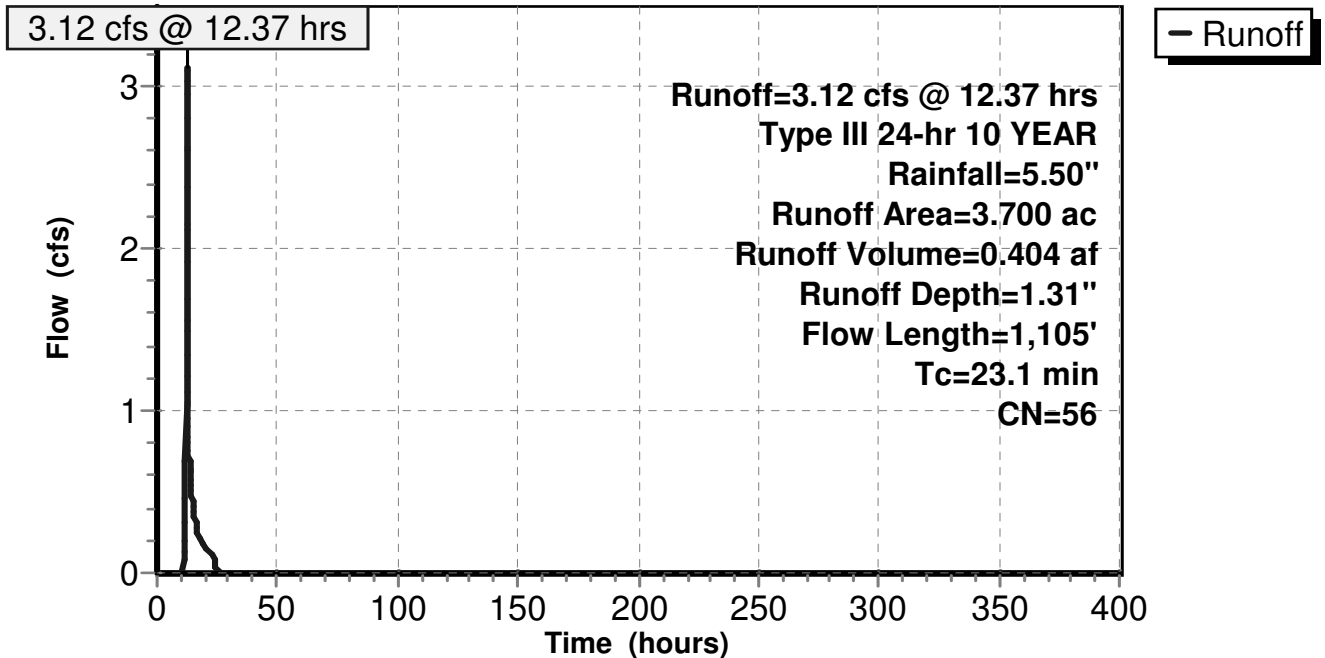
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 YEAR Rainfall=5.50"

Area (ac)	CN	Description
1.400	98	Paved parking & roofs
0.200	39	>75% Grass cover, Good, HSG A
2.100	30	Woods, Good, HSG A
3.700	56	Weighted Average
2.300		Pervious Area
1.400		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
6.5	90	0.0400	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
0.8	65	0.0400	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.5	530	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.1	410	0.0200	2.18	2.61	Channel Flow, Area= 1.2 sf Perim= 5.5' r= 0.22' n= 0.035
23.1	1,105	Total			

Subcatchment PRE 3:

Hydrograph



Stateline Retail Center Pre-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Subcatchment PRE 3:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	5.50	1.31	0.00	330.00	5.50	1.31	0.00
2.50	0.14	0.00	0.00	167.50	5.50	1.31	0.00	332.50	5.50	1.31	0.00
5.00	0.31	0.00	0.00	170.00	5.50	1.31	0.00	335.00	5.50	1.31	0.00
7.50	0.56	0.00	0.00	172.50	5.50	1.31	0.00	337.50	5.50	1.31	0.00
10.00	1.04	0.00	0.00	175.00	5.50	1.31	0.00	340.00	5.50	1.31	0.00
12.50	3.86	0.52	2.80	177.50	5.50	1.31	0.00	342.50	5.50	1.31	0.00
15.00	4.70	0.89	0.41	180.00	5.50	1.31	0.00	345.00	5.50	1.31	0.00
17.50	5.06	1.07	0.22	182.50	5.50	1.31	0.00	347.50	5.50	1.31	0.00
20.00	5.26	1.18	0.15	185.00	5.50	1.31	0.00	350.00	5.50	1.31	0.00
22.50	5.42	1.27	0.12	187.50	5.50	1.31	0.00	352.50	5.50	1.31	0.00
25.00	5.50	1.31	0.00	190.00	5.50	1.31	0.00	355.00	5.50	1.31	0.00
27.50	5.50	1.31	0.00	192.50	5.50	1.31	0.00	357.50	5.50	1.31	0.00
30.00	5.50	1.31	0.00	195.00	5.50	1.31	0.00	360.00	5.50	1.31	0.00
32.50	5.50	1.31	0.00	197.50	5.50	1.31	0.00	362.50	5.50	1.31	0.00
35.00	5.50	1.31	0.00	200.00	5.50	1.31	0.00	365.00	5.50	1.31	0.00
37.50	5.50	1.31	0.00	202.50	5.50	1.31	0.00	367.50	5.50	1.31	0.00
40.00	5.50	1.31	0.00	205.00	5.50	1.31	0.00	370.00	5.50	1.31	0.00
42.50	5.50	1.31	0.00	207.50	5.50	1.31	0.00	372.50	5.50	1.31	0.00
45.00	5.50	1.31	0.00	210.00	5.50	1.31	0.00	375.00	5.50	1.31	0.00
47.50	5.50	1.31	0.00	212.50	5.50	1.31	0.00	377.50	5.50	1.31	0.00
50.00	5.50	1.31	0.00	215.00	5.50	1.31	0.00	380.00	5.50	1.31	0.00
52.50	5.50	1.31	0.00	217.50	5.50	1.31	0.00	382.50	5.50	1.31	0.00
55.00	5.50	1.31	0.00	220.00	5.50	1.31	0.00	385.00	5.50	1.31	0.00
57.50	5.50	1.31	0.00	222.50	5.50	1.31	0.00	387.50	5.50	1.31	0.00
60.00	5.50	1.31	0.00	225.00	5.50	1.31	0.00	390.00	5.50	1.31	0.00
62.50	5.50	1.31	0.00	227.50	5.50	1.31	0.00	392.50	5.50	1.31	0.00
65.00	5.50	1.31	0.00	230.00	5.50	1.31	0.00	395.00	5.50	1.31	0.00
67.50	5.50	1.31	0.00	232.50	5.50	1.31	0.00	397.50	5.50	1.31	0.00
70.00	5.50	1.31	0.00	235.00	5.50	1.31	0.00	400.00	5.50	1.31	0.00
72.50	5.50	1.31	0.00	237.50	5.50	1.31	0.00				
75.00	5.50	1.31	0.00	240.00	5.50	1.31	0.00				
77.50	5.50	1.31	0.00	242.50	5.50	1.31	0.00				
80.00	5.50	1.31	0.00	245.00	5.50	1.31	0.00				
82.50	5.50	1.31	0.00	247.50	5.50	1.31	0.00				
85.00	5.50	1.31	0.00	250.00	5.50	1.31	0.00				
87.50	5.50	1.31	0.00	252.50	5.50	1.31	0.00				
90.00	5.50	1.31	0.00	255.00	5.50	1.31	0.00				
92.50	5.50	1.31	0.00	257.50	5.50	1.31	0.00				
95.00	5.50	1.31	0.00	260.00	5.50	1.31	0.00				
97.50	5.50	1.31	0.00	262.50	5.50	1.31	0.00				
100.00	5.50	1.31	0.00	265.00	5.50	1.31	0.00				
102.50	5.50	1.31	0.00	267.50	5.50	1.31	0.00				
105.00	5.50	1.31	0.00	270.00	5.50	1.31	0.00				
107.50	5.50	1.31	0.00	272.50	5.50	1.31	0.00				
110.00	5.50	1.31	0.00	275.00	5.50	1.31	0.00				
112.50	5.50	1.31	0.00	277.50	5.50	1.31	0.00				
115.00	5.50	1.31	0.00	280.00	5.50	1.31	0.00				
117.50	5.50	1.31	0.00	282.50	5.50	1.31	0.00				
120.00	5.50	1.31	0.00	285.00	5.50	1.31	0.00				
122.50	5.50	1.31	0.00	287.50	5.50	1.31	0.00				
125.00	5.50	1.31	0.00	290.00	5.50	1.31	0.00				
127.50	5.50	1.31	0.00	292.50	5.50	1.31	0.00				
130.00	5.50	1.31	0.00	295.00	5.50	1.31	0.00				
132.50	5.50	1.31	0.00	297.50	5.50	1.31	0.00				
135.00	5.50	1.31	0.00	300.00	5.50	1.31	0.00				
137.50	5.50	1.31	0.00	302.50	5.50	1.31	0.00				
140.00	5.50	1.31	0.00	305.00	5.50	1.31	0.00				
142.50	5.50	1.31	0.00	307.50	5.50	1.31	0.00				
145.00	5.50	1.31	0.00	310.00	5.50	1.31	0.00				
147.50	5.50	1.31	0.00	312.50	5.50	1.31	0.00				
150.00	5.50	1.31	0.00	315.00	5.50	1.31	0.00				
152.50	5.50	1.31	0.00	317.50	5.50	1.31	0.00				
155.00	5.50	1.31	0.00	320.00	5.50	1.31	0.00				
157.50	5.50	1.31	0.00	322.50	5.50	1.31	0.00				
160.00	5.50	1.31	0.00	325.00	5.50	1.31	0.00				
162.50	5.50	1.31	0.00	327.50	5.50	1.31	0.00				

Summary for Subcatchment PRE 1:

Runoff = 7.05 cfs @ 12.52 hrs, Volume= 1.269 af, Depth= 0.80"

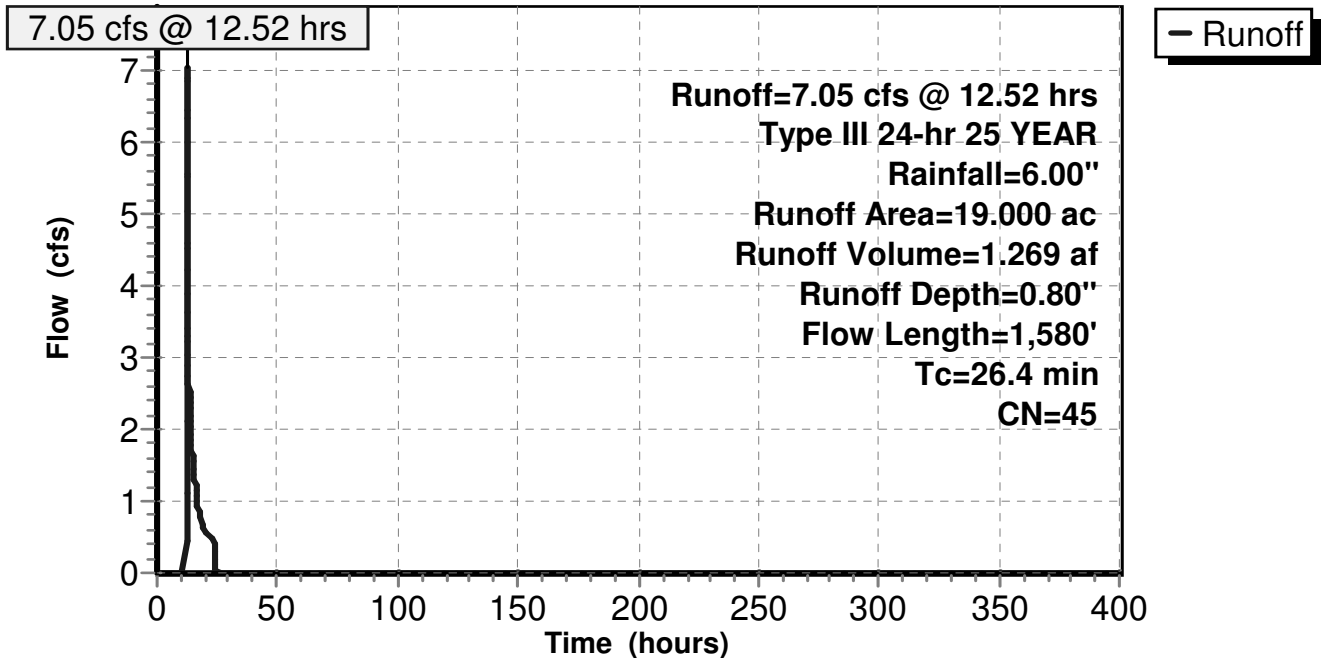
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=6.00"

Area (ac)	CN	Description
0.800	98	Paved parking & roofs
8.600	30	Meadow, non-grazed, HSG A
0.400	71	Meadow, non-grazed, HSG C
3.700	30	Woods, Good, HSG A
5.500	70	Woods, Good, HSG C
19.000	45	Weighted Average
18.200		Pervious Area
0.800		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0550	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	120	0.1570	1.98		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.2	520	0.0400	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.5	840	0.0400	2.56	1.23	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=0.20' Z= 2.0 ' Top.W=2.80' n= 0.035
26.4	1,580	Total			

Subcatchment PRE 1:

Hydrograph



Stateline Retail Center Pre-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Subcatchment PRE 1:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	6.00	0.80	0.00	330.00	6.00	0.80	0.00
2.50	0.15	0.00	0.00	167.50	6.00	0.80	0.00	332.50	6.00	0.80	0.00
5.00	0.34	0.00	0.00	170.00	6.00	0.80	0.00	335.00	6.00	0.80	0.00
7.50	0.61	0.00	0.00	172.50	6.00	0.80	0.00	337.50	6.00	0.80	0.00
10.00	1.13	0.00	0.00	175.00	6.00	0.80	0.00	340.00	6.00	0.80	0.00
12.50	4.21	0.22	7.03	177.50	6.00	0.80	0.00	342.50	6.00	0.80	0.00
15.00	5.13	0.48	1.54	180.00	6.00	0.80	0.00	345.00	6.00	0.80	0.00
17.50	5.52	0.62	0.84	182.50	6.00	0.80	0.00	347.50	6.00	0.80	0.00
20.00	5.74	0.70	0.59	185.00	6.00	0.80	0.00	350.00	6.00	0.80	0.00
22.50	5.92	0.77	0.48	187.50	6.00	0.80	0.00	352.50	6.00	0.80	0.00
25.00	6.00	0.80	0.01	190.00	6.00	0.80	0.00	355.00	6.00	0.80	0.00
27.50	6.00	0.80	0.00	192.50	6.00	0.80	0.00	357.50	6.00	0.80	0.00
30.00	6.00	0.80	0.00	195.00	6.00	0.80	0.00	360.00	6.00	0.80	0.00
32.50	6.00	0.80	0.00	197.50	6.00	0.80	0.00	362.50	6.00	0.80	0.00
35.00	6.00	0.80	0.00	200.00	6.00	0.80	0.00	365.00	6.00	0.80	0.00
37.50	6.00	0.80	0.00	202.50	6.00	0.80	0.00	367.50	6.00	0.80	0.00
40.00	6.00	0.80	0.00	205.00	6.00	0.80	0.00	370.00	6.00	0.80	0.00
42.50	6.00	0.80	0.00	207.50	6.00	0.80	0.00	372.50	6.00	0.80	0.00
45.00	6.00	0.80	0.00	210.00	6.00	0.80	0.00	375.00	6.00	0.80	0.00
47.50	6.00	0.80	0.00	212.50	6.00	0.80	0.00	377.50	6.00	0.80	0.00
50.00	6.00	0.80	0.00	215.00	6.00	0.80	0.00	380.00	6.00	0.80	0.00
52.50	6.00	0.80	0.00	217.50	6.00	0.80	0.00	382.50	6.00	0.80	0.00
55.00	6.00	0.80	0.00	220.00	6.00	0.80	0.00	385.00	6.00	0.80	0.00
57.50	6.00	0.80	0.00	222.50	6.00	0.80	0.00	387.50	6.00	0.80	0.00
60.00	6.00	0.80	0.00	225.00	6.00	0.80	0.00	390.00	6.00	0.80	0.00
62.50	6.00	0.80	0.00	227.50	6.00	0.80	0.00	392.50	6.00	0.80	0.00
65.00	6.00	0.80	0.00	230.00	6.00	0.80	0.00	395.00	6.00	0.80	0.00
67.50	6.00	0.80	0.00	232.50	6.00	0.80	0.00	397.50	6.00	0.80	0.00
70.00	6.00	0.80	0.00	235.00	6.00	0.80	0.00	400.00	6.00	0.80	0.00
72.50	6.00	0.80	0.00	237.50	6.00	0.80	0.00				
75.00	6.00	0.80	0.00	240.00	6.00	0.80	0.00				
77.50	6.00	0.80	0.00	242.50	6.00	0.80	0.00				
80.00	6.00	0.80	0.00	245.00	6.00	0.80	0.00				
82.50	6.00	0.80	0.00	247.50	6.00	0.80	0.00				
85.00	6.00	0.80	0.00	250.00	6.00	0.80	0.00				
87.50	6.00	0.80	0.00	252.50	6.00	0.80	0.00				
90.00	6.00	0.80	0.00	255.00	6.00	0.80	0.00				
92.50	6.00	0.80	0.00	257.50	6.00	0.80	0.00				
95.00	6.00	0.80	0.00	260.00	6.00	0.80	0.00				
97.50	6.00	0.80	0.00	262.50	6.00	0.80	0.00				
100.00	6.00	0.80	0.00	265.00	6.00	0.80	0.00				
102.50	6.00	0.80	0.00	267.50	6.00	0.80	0.00				
105.00	6.00	0.80	0.00	270.00	6.00	0.80	0.00				
107.50	6.00	0.80	0.00	272.50	6.00	0.80	0.00				
110.00	6.00	0.80	0.00	275.00	6.00	0.80	0.00				
112.50	6.00	0.80	0.00	277.50	6.00	0.80	0.00				
115.00	6.00	0.80	0.00	280.00	6.00	0.80	0.00				
117.50	6.00	0.80	0.00	282.50	6.00	0.80	0.00				
120.00	6.00	0.80	0.00	285.00	6.00	0.80	0.00				
122.50	6.00	0.80	0.00	287.50	6.00	0.80	0.00				
125.00	6.00	0.80	0.00	290.00	6.00	0.80	0.00				
127.50	6.00	0.80	0.00	292.50	6.00	0.80	0.00				
130.00	6.00	0.80	0.00	295.00	6.00	0.80	0.00				
132.50	6.00	0.80	0.00	297.50	6.00	0.80	0.00				
135.00	6.00	0.80	0.00	300.00	6.00	0.80	0.00				
137.50	6.00	0.80	0.00	302.50	6.00	0.80	0.00				
140.00	6.00	0.80	0.00	305.00	6.00	0.80	0.00				
142.50	6.00	0.80	0.00	307.50	6.00	0.80	0.00				
145.00	6.00	0.80	0.00	310.00	6.00	0.80	0.00				
147.50	6.00	0.80	0.00	312.50	6.00	0.80	0.00				
150.00	6.00	0.80	0.00	315.00	6.00	0.80	0.00				
152.50	6.00	0.80	0.00	317.50	6.00	0.80	0.00				
155.00	6.00	0.80	0.00	320.00	6.00	0.80	0.00				
157.50	6.00	0.80	0.00	322.50	6.00	0.80	0.00				
160.00	6.00	0.80	0.00	325.00	6.00	0.80	0.00				
162.50	6.00	0.80	0.00	327.50	6.00	0.80	0.00				

Stateline Retail Center Pre-development 040809

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Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Subcatchment PRE 2:

Runoff = 33.37 cfs @ 12.21 hrs, Volume= 3.194 af, Depth= 2.35"

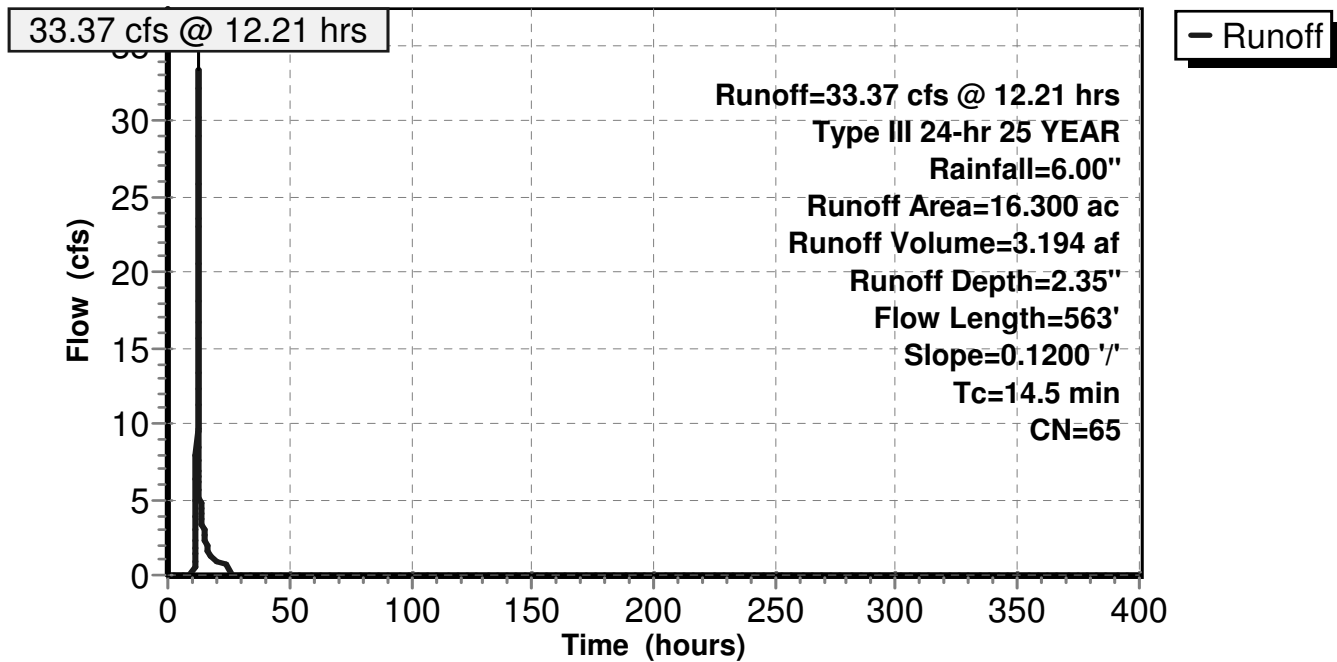
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YEAR Rainfall=6.00"

Area (ac)	CN	Description
10.700	70	Woods, Good, HSG C
2.800	71	Meadow, non-grazed, HSG C
0.500	98	Paved parking & roofs
2.300	30	Woods, Good, HSG A
16.300	65	Weighted Average
15.800		Pervious Area
0.500		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.1200	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
4.5	463	0.1200	1.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.5	563	Total			

Subcatchment PRE 2:

Hydrograph



Stateline Retail Center Pre-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Subcatchment PRE 2:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	6.00	2.35	0.00	330.00	6.00	2.35	0.00
2.50	0.15	0.00	0.00	167.50	6.00	2.35	0.00	332.50	6.00	2.35	0.00
5.00	0.34	0.00	0.00	170.00	6.00	2.35	0.00	335.00	6.00	2.35	0.00
7.50	0.61	0.00	0.00	172.50	6.00	2.35	0.00	337.50	6.00	2.35	0.00
10.00	1.13	0.00	0.01	175.00	6.00	2.35	0.00	340.00	6.00	2.35	0.00
12.50	4.21	1.15	18.06	177.50	6.00	2.35	0.00	342.50	6.00	2.35	0.00
15.00	5.13	1.74	2.65	180.00	6.00	2.35	0.00	345.00	6.00	2.35	0.00
17.50	5.52	2.01	1.35	182.50	6.00	2.35	0.00	347.50	6.00	2.35	0.00
20.00	5.74	2.17	0.94	185.00	6.00	2.35	0.00	350.00	6.00	2.35	0.00
22.50	5.92	2.29	0.74	187.50	6.00	2.35	0.00	352.50	6.00	2.35	0.00
25.00	6.00	2.35	0.00	190.00	6.00	2.35	0.00	355.00	6.00	2.35	0.00
27.50	6.00	2.35	0.00	192.50	6.00	2.35	0.00	357.50	6.00	2.35	0.00
30.00	6.00	2.35	0.00	195.00	6.00	2.35	0.00	360.00	6.00	2.35	0.00
32.50	6.00	2.35	0.00	197.50	6.00	2.35	0.00	362.50	6.00	2.35	0.00
35.00	6.00	2.35	0.00	200.00	6.00	2.35	0.00	365.00	6.00	2.35	0.00
37.50	6.00	2.35	0.00	202.50	6.00	2.35	0.00	367.50	6.00	2.35	0.00
40.00	6.00	2.35	0.00	205.00	6.00	2.35	0.00	370.00	6.00	2.35	0.00
42.50	6.00	2.35	0.00	207.50	6.00	2.35	0.00	372.50	6.00	2.35	0.00
45.00	6.00	2.35	0.00	210.00	6.00	2.35	0.00	375.00	6.00	2.35	0.00
47.50	6.00	2.35	0.00	212.50	6.00	2.35	0.00	377.50	6.00	2.35	0.00
50.00	6.00	2.35	0.00	215.00	6.00	2.35	0.00	380.00	6.00	2.35	0.00
52.50	6.00	2.35	0.00	217.50	6.00	2.35	0.00	382.50	6.00	2.35	0.00
55.00	6.00	2.35	0.00	220.00	6.00	2.35	0.00	385.00	6.00	2.35	0.00
57.50	6.00	2.35	0.00	222.50	6.00	2.35	0.00	387.50	6.00	2.35	0.00
60.00	6.00	2.35	0.00	225.00	6.00	2.35	0.00	390.00	6.00	2.35	0.00
62.50	6.00	2.35	0.00	227.50	6.00	2.35	0.00	392.50	6.00	2.35	0.00
65.00	6.00	2.35	0.00	230.00	6.00	2.35	0.00	395.00	6.00	2.35	0.00
67.50	6.00	2.35	0.00	232.50	6.00	2.35	0.00	397.50	6.00	2.35	0.00
70.00	6.00	2.35	0.00	235.00	6.00	2.35	0.00	400.00	6.00	2.35	0.00
72.50	6.00	2.35	0.00	237.50	6.00	2.35	0.00				
75.00	6.00	2.35	0.00	240.00	6.00	2.35	0.00				
77.50	6.00	2.35	0.00	242.50	6.00	2.35	0.00				
80.00	6.00	2.35	0.00	245.00	6.00	2.35	0.00				
82.50	6.00	2.35	0.00	247.50	6.00	2.35	0.00				
85.00	6.00	2.35	0.00	250.00	6.00	2.35	0.00				
87.50	6.00	2.35	0.00	252.50	6.00	2.35	0.00				
90.00	6.00	2.35	0.00	255.00	6.00	2.35	0.00				
92.50	6.00	2.35	0.00	257.50	6.00	2.35	0.00				
95.00	6.00	2.35	0.00	260.00	6.00	2.35	0.00				
97.50	6.00	2.35	0.00	262.50	6.00	2.35	0.00				
100.00	6.00	2.35	0.00	265.00	6.00	2.35	0.00				
102.50	6.00	2.35	0.00	267.50	6.00	2.35	0.00				
105.00	6.00	2.35	0.00	270.00	6.00	2.35	0.00				
107.50	6.00	2.35	0.00	272.50	6.00	2.35	0.00				
110.00	6.00	2.35	0.00	275.00	6.00	2.35	0.00				
112.50	6.00	2.35	0.00	277.50	6.00	2.35	0.00				
115.00	6.00	2.35	0.00	280.00	6.00	2.35	0.00				
117.50	6.00	2.35	0.00	282.50	6.00	2.35	0.00				
120.00	6.00	2.35	0.00	285.00	6.00	2.35	0.00				
122.50	6.00	2.35	0.00	287.50	6.00	2.35	0.00				
125.00	6.00	2.35	0.00	290.00	6.00	2.35	0.00				
127.50	6.00	2.35	0.00	292.50	6.00	2.35	0.00				
130.00	6.00	2.35	0.00	295.00	6.00	2.35	0.00				
132.50	6.00	2.35	0.00	297.50	6.00	2.35	0.00				
135.00	6.00	2.35	0.00	300.00	6.00	2.35	0.00				
137.50	6.00	2.35	0.00	302.50	6.00	2.35	0.00				
140.00	6.00	2.35	0.00	305.00	6.00	2.35	0.00				
142.50	6.00	2.35	0.00	307.50	6.00	2.35	0.00				
145.00	6.00	2.35	0.00	310.00	6.00	2.35	0.00				
147.50	6.00	2.35	0.00	312.50	6.00	2.35	0.00				
150.00	6.00	2.35	0.00	315.00	6.00	2.35	0.00				
152.50	6.00	2.35	0.00	317.50	6.00	2.35	0.00				
155.00	6.00	2.35	0.00	320.00	6.00	2.35	0.00				
157.50	6.00	2.35	0.00	322.50	6.00	2.35	0.00				
160.00	6.00	2.35	0.00	325.00	6.00	2.35	0.00				
162.50	6.00	2.35	0.00	327.50	6.00	2.35	0.00				

Stateline Retail Center Pre-development 040809

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Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Subcatchment PRE 3:

Runoff = 3.94 cfs @ 12.36 hrs, Volume= 0.492 af, Depth= 1.60"

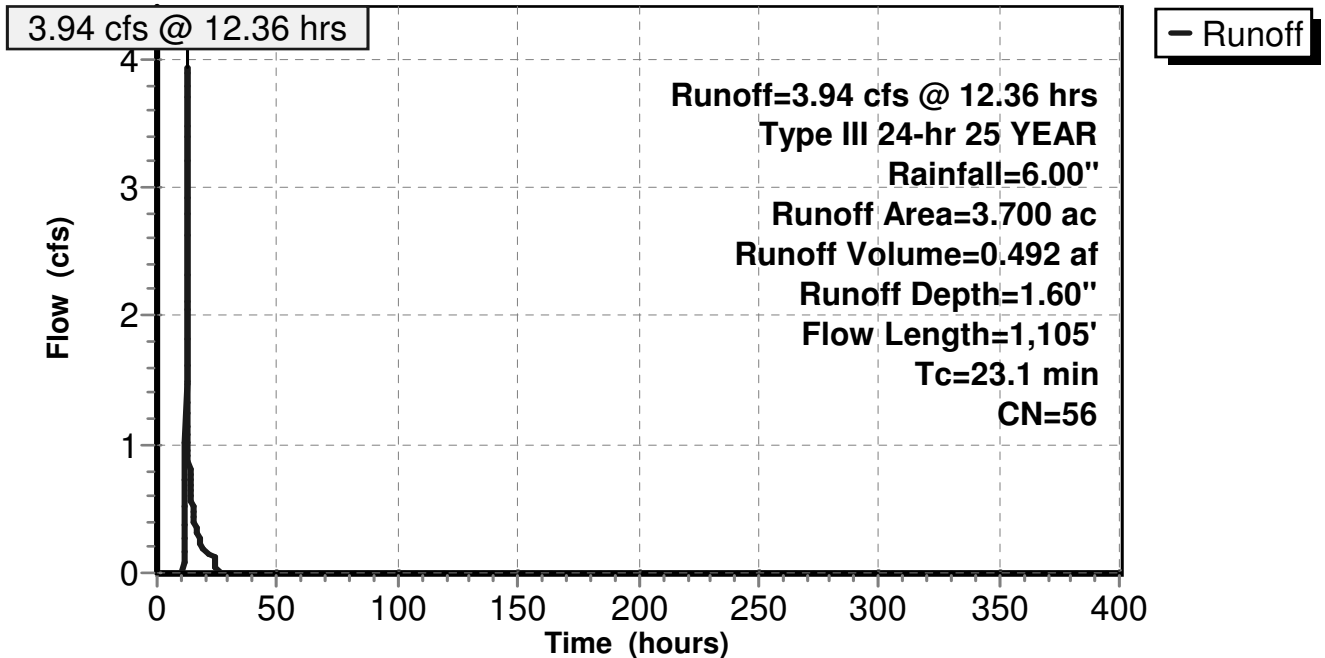
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YEAR Rainfall=6.00"

Area (ac)	CN	Description
1.400	98	Paved parking & roofs
0.200	39	>75% Grass cover, Good, HSG A
2.100	30	Woods, Good, HSG A
3.700	56	Weighted Average
2.300		Pervious Area
1.400		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
6.5	90	0.0400	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
0.8	65	0.0400	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.5	530	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.1	410	0.0200	2.18	2.61	Channel Flow, Area= 1.2 sf Perim= 5.5' r= 0.22' n= 0.035
23.1	1,105	Total			

Subcatchment PRE 3:

Hydrograph



Stateline Retail Center Pre-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Subcatchment PRE 3:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	6.00	1.60	0.00	330.00	6.00	1.60	0.00
2.50	0.15	0.00	0.00	167.50	6.00	1.60	0.00	332.50	6.00	1.60	0.00
5.00	0.34	0.00	0.00	170.00	6.00	1.60	0.00	335.00	6.00	1.60	0.00
7.50	0.61	0.00	0.00	172.50	6.00	1.60	0.00	337.50	6.00	1.60	0.00
10.00	1.13	0.00	0.00	175.00	6.00	1.60	0.00	340.00	6.00	1.60	0.00
12.50	4.21	0.66	3.47	177.50	6.00	1.60	0.00	342.50	6.00	1.60	0.00
15.00	5.13	1.11	0.48	180.00	6.00	1.60	0.00	345.00	6.00	1.60	0.00
17.50	5.52	1.32	0.25	182.50	6.00	1.60	0.00	347.50	6.00	1.60	0.00
20.00	5.74	1.45	0.17	185.00	6.00	1.60	0.00	350.00	6.00	1.60	0.00
22.50	5.92	1.55	0.14	187.50	6.00	1.60	0.00	352.50	6.00	1.60	0.00
25.00	6.00	1.60	0.00	190.00	6.00	1.60	0.00	355.00	6.00	1.60	0.00
27.50	6.00	1.60	0.00	192.50	6.00	1.60	0.00	357.50	6.00	1.60	0.00
30.00	6.00	1.60	0.00	195.00	6.00	1.60	0.00	360.00	6.00	1.60	0.00
32.50	6.00	1.60	0.00	197.50	6.00	1.60	0.00	362.50	6.00	1.60	0.00
35.00	6.00	1.60	0.00	200.00	6.00	1.60	0.00	365.00	6.00	1.60	0.00
37.50	6.00	1.60	0.00	202.50	6.00	1.60	0.00	367.50	6.00	1.60	0.00
40.00	6.00	1.60	0.00	205.00	6.00	1.60	0.00	370.00	6.00	1.60	0.00
42.50	6.00	1.60	0.00	207.50	6.00	1.60	0.00	372.50	6.00	1.60	0.00
45.00	6.00	1.60	0.00	210.00	6.00	1.60	0.00	375.00	6.00	1.60	0.00
47.50	6.00	1.60	0.00	212.50	6.00	1.60	0.00	377.50	6.00	1.60	0.00
50.00	6.00	1.60	0.00	215.00	6.00	1.60	0.00	380.00	6.00	1.60	0.00
52.50	6.00	1.60	0.00	217.50	6.00	1.60	0.00	382.50	6.00	1.60	0.00
55.00	6.00	1.60	0.00	220.00	6.00	1.60	0.00	385.00	6.00	1.60	0.00
57.50	6.00	1.60	0.00	222.50	6.00	1.60	0.00	387.50	6.00	1.60	0.00
60.00	6.00	1.60	0.00	225.00	6.00	1.60	0.00	390.00	6.00	1.60	0.00
62.50	6.00	1.60	0.00	227.50	6.00	1.60	0.00	392.50	6.00	1.60	0.00
65.00	6.00	1.60	0.00	230.00	6.00	1.60	0.00	395.00	6.00	1.60	0.00
67.50	6.00	1.60	0.00	232.50	6.00	1.60	0.00	397.50	6.00	1.60	0.00
70.00	6.00	1.60	0.00	235.00	6.00	1.60	0.00	400.00	6.00	1.60	0.00
72.50	6.00	1.60	0.00	237.50	6.00	1.60	0.00				
75.00	6.00	1.60	0.00	240.00	6.00	1.60	0.00				
77.50	6.00	1.60	0.00	242.50	6.00	1.60	0.00				
80.00	6.00	1.60	0.00	245.00	6.00	1.60	0.00				
82.50	6.00	1.60	0.00	247.50	6.00	1.60	0.00				
85.00	6.00	1.60	0.00	250.00	6.00	1.60	0.00				
87.50	6.00	1.60	0.00	252.50	6.00	1.60	0.00				
90.00	6.00	1.60	0.00	255.00	6.00	1.60	0.00				
92.50	6.00	1.60	0.00	257.50	6.00	1.60	0.00				
95.00	6.00	1.60	0.00	260.00	6.00	1.60	0.00				
97.50	6.00	1.60	0.00	262.50	6.00	1.60	0.00				
100.00	6.00	1.60	0.00	265.00	6.00	1.60	0.00				
102.50	6.00	1.60	0.00	267.50	6.00	1.60	0.00				
105.00	6.00	1.60	0.00	270.00	6.00	1.60	0.00				
107.50	6.00	1.60	0.00	272.50	6.00	1.60	0.00				
110.00	6.00	1.60	0.00	275.00	6.00	1.60	0.00				
112.50	6.00	1.60	0.00	277.50	6.00	1.60	0.00				
115.00	6.00	1.60	0.00	280.00	6.00	1.60	0.00				
117.50	6.00	1.60	0.00	282.50	6.00	1.60	0.00				
120.00	6.00	1.60	0.00	285.00	6.00	1.60	0.00				
122.50	6.00	1.60	0.00	287.50	6.00	1.60	0.00				
125.00	6.00	1.60	0.00	290.00	6.00	1.60	0.00				
127.50	6.00	1.60	0.00	292.50	6.00	1.60	0.00				
130.00	6.00	1.60	0.00	295.00	6.00	1.60	0.00				
132.50	6.00	1.60	0.00	297.50	6.00	1.60	0.00				
135.00	6.00	1.60	0.00	300.00	6.00	1.60	0.00				
137.50	6.00	1.60	0.00	302.50	6.00	1.60	0.00				
140.00	6.00	1.60	0.00	305.00	6.00	1.60	0.00				
142.50	6.00	1.60	0.00	307.50	6.00	1.60	0.00				
145.00	6.00	1.60	0.00	310.00	6.00	1.60	0.00				
147.50	6.00	1.60	0.00	312.50	6.00	1.60	0.00				
150.00	6.00	1.60	0.00	315.00	6.00	1.60	0.00				
152.50	6.00	1.60	0.00	317.50	6.00	1.60	0.00				
155.00	6.00	1.60	0.00	320.00	6.00	1.60	0.00				
157.50	6.00	1.60	0.00	322.50	6.00	1.60	0.00				
160.00	6.00	1.60	0.00	325.00	6.00	1.60	0.00				
162.50	6.00	1.60	0.00	327.50	6.00	1.60	0.00				

Summary for Subcatchment PRE 1:

Runoff = 35.35 cfs @ 12.41 hrs, Volume= 4.570 af, Depth= 2.89"

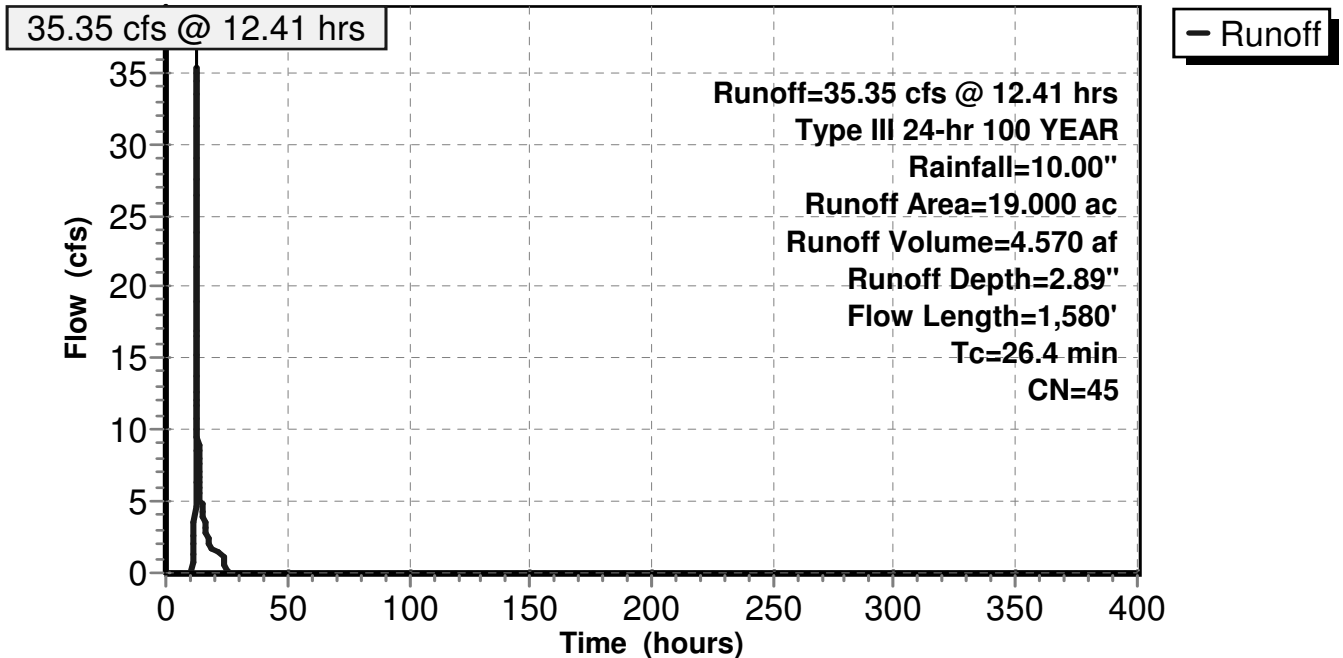
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YEAR Rainfall=10.00"

Area (ac)	CN	Description
0.800	98	Paved parking & roofs
8.600	30	Meadow, non-grazed, HSG A
0.400	71	Meadow, non-grazed, HSG C
3.700	30	Woods, Good, HSG A
5.500	70	Woods, Good, HSG C
19.000	45	Weighted Average
18.200		Pervious Area
0.800		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0550	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	120	0.1570	1.98		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.2	520	0.0400	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.5	840	0.0400	2.56	1.23	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=0.20' Z= 2.0 ' Top.W=2.80' n= 0.035
26.4	1,580	Total			

Subcatchment PRE 1:

Hydrograph



Stateline Retail Center Pre-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Subcatchment PRE 1:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	10.00	2.89	0.00	330.00	10.00	2.89	0.00
2.50	0.25	0.00	0.00	167.50	10.00	2.89	0.00	332.50	10.00	2.89	0.00
5.00	0.57	0.00	0.00	170.00	10.00	2.89	0.00	335.00	10.00	2.89	0.00
7.50	1.02	0.00	0.00	172.50	10.00	2.89	0.00	337.50	10.00	2.89	0.00
10.00	1.89	0.00	0.00	175.00	10.00	2.89	0.00	340.00	10.00	2.89	0.00
12.50	7.02	1.25	33.39	177.50	10.00	2.89	0.00	342.50	10.00	2.89	0.00
15.00	8.54	2.03	4.42	180.00	10.00	2.89	0.00	345.00	10.00	2.89	0.00
17.50	9.19	2.40	2.29	182.50	10.00	2.89	0.00	347.50	10.00	2.89	0.00
20.00	9.57	2.62	1.56	185.00	10.00	2.89	0.00	350.00	10.00	2.89	0.00
22.50	9.86	2.80	1.25	187.50	10.00	2.89	0.00	352.50	10.00	2.89	0.00
25.00	10.00	2.89	0.01	190.00	10.00	2.89	0.00	355.00	10.00	2.89	0.00
27.50	10.00	2.89	0.00	192.50	10.00	2.89	0.00	357.50	10.00	2.89	0.00
30.00	10.00	2.89	0.00	195.00	10.00	2.89	0.00	360.00	10.00	2.89	0.00
32.50	10.00	2.89	0.00	197.50	10.00	2.89	0.00	362.50	10.00	2.89	0.00
35.00	10.00	2.89	0.00	200.00	10.00	2.89	0.00	365.00	10.00	2.89	0.00
37.50	10.00	2.89	0.00	202.50	10.00	2.89	0.00	367.50	10.00	2.89	0.00
40.00	10.00	2.89	0.00	205.00	10.00	2.89	0.00	370.00	10.00	2.89	0.00
42.50	10.00	2.89	0.00	207.50	10.00	2.89	0.00	372.50	10.00	2.89	0.00
45.00	10.00	2.89	0.00	210.00	10.00	2.89	0.00	375.00	10.00	2.89	0.00
47.50	10.00	2.89	0.00	212.50	10.00	2.89	0.00	377.50	10.00	2.89	0.00
50.00	10.00	2.89	0.00	215.00	10.00	2.89	0.00	380.00	10.00	2.89	0.00
52.50	10.00	2.89	0.00	217.50	10.00	2.89	0.00	382.50	10.00	2.89	0.00
55.00	10.00	2.89	0.00	220.00	10.00	2.89	0.00	385.00	10.00	2.89	0.00
57.50	10.00	2.89	0.00	222.50	10.00	2.89	0.00	387.50	10.00	2.89	0.00
60.00	10.00	2.89	0.00	225.00	10.00	2.89	0.00	390.00	10.00	2.89	0.00
62.50	10.00	2.89	0.00	227.50	10.00	2.89	0.00	392.50	10.00	2.89	0.00
65.00	10.00	2.89	0.00	230.00	10.00	2.89	0.00	395.00	10.00	2.89	0.00
67.50	10.00	2.89	0.00	232.50	10.00	2.89	0.00	397.50	10.00	2.89	0.00
70.00	10.00	2.89	0.00	235.00	10.00	2.89	0.00	400.00	10.00	2.89	0.00
72.50	10.00	2.89	0.00	237.50	10.00	2.89	0.00				
75.00	10.00	2.89	0.00	240.00	10.00	2.89	0.00				
77.50	10.00	2.89	0.00	242.50	10.00	2.89	0.00				
80.00	10.00	2.89	0.00	245.00	10.00	2.89	0.00				
82.50	10.00	2.89	0.00	247.50	10.00	2.89	0.00				
85.00	10.00	2.89	0.00	250.00	10.00	2.89	0.00				
87.50	10.00	2.89	0.00	252.50	10.00	2.89	0.00				
90.00	10.00	2.89	0.00	255.00	10.00	2.89	0.00				
92.50	10.00	2.89	0.00	257.50	10.00	2.89	0.00				
95.00	10.00	2.89	0.00	260.00	10.00	2.89	0.00				
97.50	10.00	2.89	0.00	262.50	10.00	2.89	0.00				
100.00	10.00	2.89	0.00	265.00	10.00	2.89	0.00				
102.50	10.00	2.89	0.00	267.50	10.00	2.89	0.00				
105.00	10.00	2.89	0.00	270.00	10.00	2.89	0.00				
107.50	10.00	2.89	0.00	272.50	10.00	2.89	0.00				
110.00	10.00	2.89	0.00	275.00	10.00	2.89	0.00				
112.50	10.00	2.89	0.00	277.50	10.00	2.89	0.00				
115.00	10.00	2.89	0.00	280.00	10.00	2.89	0.00				
117.50	10.00	2.89	0.00	282.50	10.00	2.89	0.00				
120.00	10.00	2.89	0.00	285.00	10.00	2.89	0.00				
122.50	10.00	2.89	0.00	287.50	10.00	2.89	0.00				
125.00	10.00	2.89	0.00	290.00	10.00	2.89	0.00				
127.50	10.00	2.89	0.00	292.50	10.00	2.89	0.00				
130.00	10.00	2.89	0.00	295.00	10.00	2.89	0.00				
132.50	10.00	2.89	0.00	297.50	10.00	2.89	0.00				
135.00	10.00	2.89	0.00	300.00	10.00	2.89	0.00				
137.50	10.00	2.89	0.00	302.50	10.00	2.89	0.00				
140.00	10.00	2.89	0.00	305.00	10.00	2.89	0.00				
142.50	10.00	2.89	0.00	307.50	10.00	2.89	0.00				
145.00	10.00	2.89	0.00	310.00	10.00	2.89	0.00				
147.50	10.00	2.89	0.00	312.50	10.00	2.89	0.00				
150.00	10.00	2.89	0.00	315.00	10.00	2.89	0.00				
152.50	10.00	2.89	0.00	317.50	10.00	2.89	0.00				
155.00	10.00	2.89	0.00	320.00	10.00	2.89	0.00				
157.50	10.00	2.89	0.00	322.50	10.00	2.89	0.00				
160.00	10.00	2.89	0.00	325.00	10.00	2.89	0.00				
162.50	10.00	2.89	0.00	327.50	10.00	2.89	0.00				

Summary for Subcatchment PRE 2:

Runoff = 81.12 cfs @ 12.20 hrs, Volume= 7.559 af, Depth= 5.56"

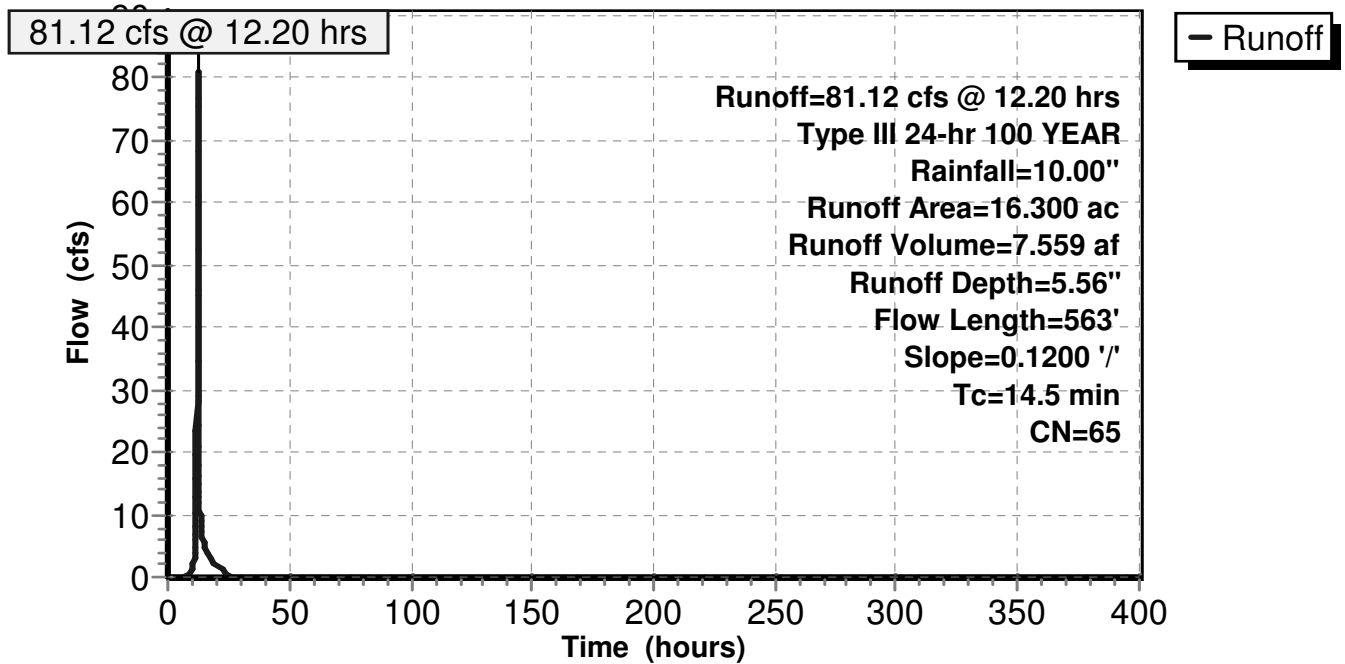
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YEAR Rainfall=10.00"

Area (ac)	CN	Description
10.700	70	Woods, Good, HSG C
2.800	71	Meadow, non-grazed, HSG C
0.500	98	Paved parking & roofs
2.300	30	Woods, Good, HSG A
16.300	65	Weighted Average
15.800		Pervious Area
0.500		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.1200	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
4.5	463	0.1200	1.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.5	563	Total			

Subcatchment PRE 2:

Hydrograph



Stateline Retail Center Pre-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Subcatchment PRE 2:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	10.00	5.56	0.00	330.00	10.00	5.56	0.00
2.50	0.25	0.00	0.00	167.50	10.00	5.56	0.00	332.50	10.00	5.56	0.00
5.00	0.57	0.00	0.00	170.00	10.00	5.56	0.00	335.00	10.00	5.56	0.00
7.50	1.02	0.00	0.00	172.50	10.00	5.56	0.00	337.50	10.00	5.56	0.00
10.00	1.89	0.11	1.67	175.00	10.00	5.56	0.00	340.00	10.00	5.56	0.00
12.50	7.02	3.12	40.22	177.50	10.00	5.56	0.00	342.50	10.00	5.56	0.00
15.00	8.54	4.34	5.41	180.00	10.00	5.56	0.00	345.00	10.00	5.56	0.00
17.50	9.19	4.88	2.71	182.50	10.00	5.56	0.00	347.50	10.00	5.56	0.00
20.00	9.57	5.20	1.86	185.00	10.00	5.56	0.00	350.00	10.00	5.56	0.00
22.50	9.86	5.44	1.47	187.50	10.00	5.56	0.00	352.50	10.00	5.56	0.00
25.00	10.00	5.56	0.00	190.00	10.00	5.56	0.00	355.00	10.00	5.56	0.00
27.50	10.00	5.56	0.00	192.50	10.00	5.56	0.00	357.50	10.00	5.56	0.00
30.00	10.00	5.56	0.00	195.00	10.00	5.56	0.00	360.00	10.00	5.56	0.00
32.50	10.00	5.56	0.00	197.50	10.00	5.56	0.00	362.50	10.00	5.56	0.00
35.00	10.00	5.56	0.00	200.00	10.00	5.56	0.00	365.00	10.00	5.56	0.00
37.50	10.00	5.56	0.00	202.50	10.00	5.56	0.00	367.50	10.00	5.56	0.00
40.00	10.00	5.56	0.00	205.00	10.00	5.56	0.00	370.00	10.00	5.56	0.00
42.50	10.00	5.56	0.00	207.50	10.00	5.56	0.00	372.50	10.00	5.56	0.00
45.00	10.00	5.56	0.00	210.00	10.00	5.56	0.00	375.00	10.00	5.56	0.00
47.50	10.00	5.56	0.00	212.50	10.00	5.56	0.00	377.50	10.00	5.56	0.00
50.00	10.00	5.56	0.00	215.00	10.00	5.56	0.00	380.00	10.00	5.56	0.00
52.50	10.00	5.56	0.00	217.50	10.00	5.56	0.00	382.50	10.00	5.56	0.00
55.00	10.00	5.56	0.00	220.00	10.00	5.56	0.00	385.00	10.00	5.56	0.00
57.50	10.00	5.56	0.00	222.50	10.00	5.56	0.00	387.50	10.00	5.56	0.00
60.00	10.00	5.56	0.00	225.00	10.00	5.56	0.00	390.00	10.00	5.56	0.00
62.50	10.00	5.56	0.00	227.50	10.00	5.56	0.00	392.50	10.00	5.56	0.00
65.00	10.00	5.56	0.00	230.00	10.00	5.56	0.00	395.00	10.00	5.56	0.00
67.50	10.00	5.56	0.00	232.50	10.00	5.56	0.00	397.50	10.00	5.56	0.00
70.00	10.00	5.56	0.00	235.00	10.00	5.56	0.00	400.00	10.00	5.56	0.00
72.50	10.00	5.56	0.00	237.50	10.00	5.56	0.00				
75.00	10.00	5.56	0.00	240.00	10.00	5.56	0.00				
77.50	10.00	5.56	0.00	242.50	10.00	5.56	0.00				
80.00	10.00	5.56	0.00	245.00	10.00	5.56	0.00				
82.50	10.00	5.56	0.00	247.50	10.00	5.56	0.00				
85.00	10.00	5.56	0.00	250.00	10.00	5.56	0.00				
87.50	10.00	5.56	0.00	252.50	10.00	5.56	0.00				
90.00	10.00	5.56	0.00	255.00	10.00	5.56	0.00				
92.50	10.00	5.56	0.00	257.50	10.00	5.56	0.00				
95.00	10.00	5.56	0.00	260.00	10.00	5.56	0.00				
97.50	10.00	5.56	0.00	262.50	10.00	5.56	0.00				
100.00	10.00	5.56	0.00	265.00	10.00	5.56	0.00				
102.50	10.00	5.56	0.00	267.50	10.00	5.56	0.00				
105.00	10.00	5.56	0.00	270.00	10.00	5.56	0.00				
107.50	10.00	5.56	0.00	272.50	10.00	5.56	0.00				
110.00	10.00	5.56	0.00	275.00	10.00	5.56	0.00				
112.50	10.00	5.56	0.00	277.50	10.00	5.56	0.00				
115.00	10.00	5.56	0.00	280.00	10.00	5.56	0.00				
117.50	10.00	5.56	0.00	282.50	10.00	5.56	0.00				
120.00	10.00	5.56	0.00	285.00	10.00	5.56	0.00				
122.50	10.00	5.56	0.00	287.50	10.00	5.56	0.00				
125.00	10.00	5.56	0.00	290.00	10.00	5.56	0.00				
127.50	10.00	5.56	0.00	292.50	10.00	5.56	0.00				
130.00	10.00	5.56	0.00	295.00	10.00	5.56	0.00				
132.50	10.00	5.56	0.00	297.50	10.00	5.56	0.00				
135.00	10.00	5.56	0.00	300.00	10.00	5.56	0.00				
137.50	10.00	5.56	0.00	302.50	10.00	5.56	0.00				
140.00	10.00	5.56	0.00	305.00	10.00	5.56	0.00				
142.50	10.00	5.56	0.00	307.50	10.00	5.56	0.00				
145.00	10.00	5.56	0.00	310.00	10.00	5.56	0.00				
147.50	10.00	5.56	0.00	312.50	10.00	5.56	0.00				
150.00	10.00	5.56	0.00	315.00	10.00	5.56	0.00				
152.50	10.00	5.56	0.00	317.50	10.00	5.56	0.00				
155.00	10.00	5.56	0.00	320.00	10.00	5.56	0.00				
157.50	10.00	5.56	0.00	322.50	10.00	5.56	0.00				
160.00	10.00	5.56	0.00	325.00	10.00	5.56	0.00				
162.50	10.00	5.56	0.00	327.50	10.00	5.56	0.00				

Summary for Subcatchment PRE 3:

Runoff = 11.80 cfs @ 12.33 hrs, Volume= 1.345 af, Depth= 4.36"

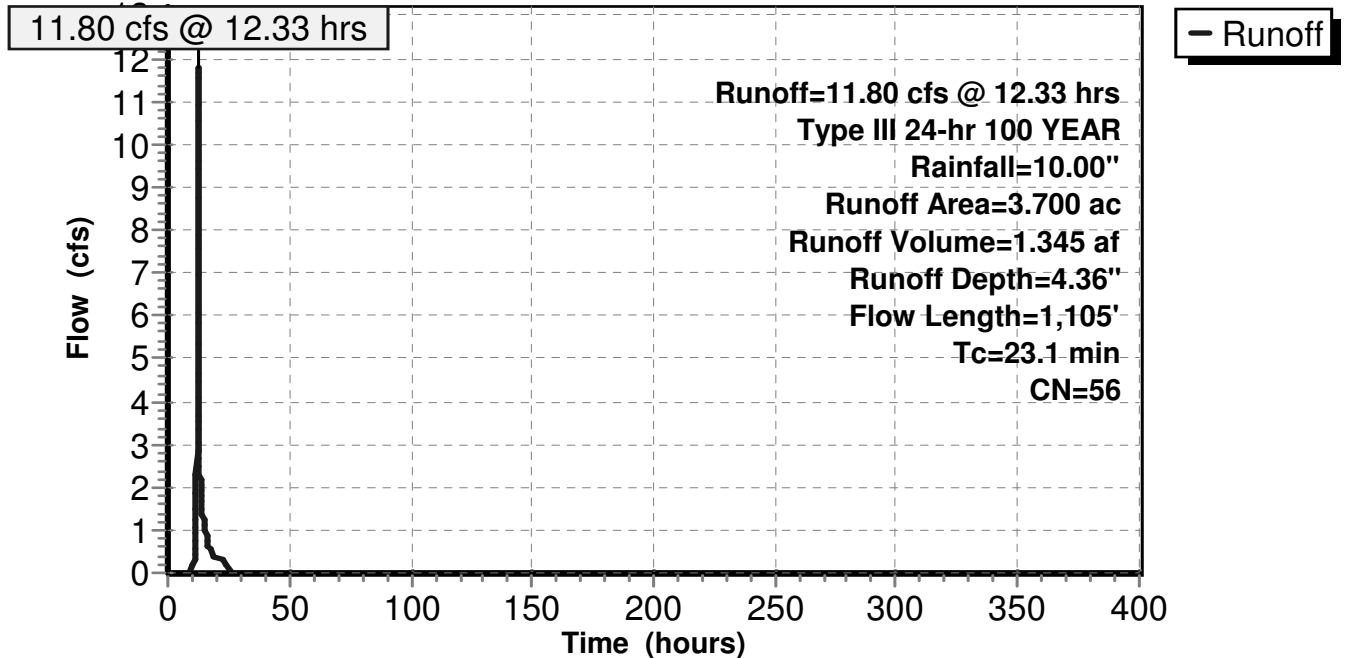
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YEAR Rainfall=10.00"

Area (ac)	CN	Description
1.400	98	Paved parking & roofs
0.200	39	>75% Grass cover, Good, HSG A
2.100	30	Woods, Good, HSG A
3.700	56	Weighted Average
2.300		Pervious Area
1.400		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
6.5	90	0.0400	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
0.8	65	0.0400	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.5	530	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.1	410	0.0200	2.18	2.61	Channel Flow, Area= 1.2 sf Perim= 5.5' r= 0.22' n= 0.035
23.1	1,105				Total

Subcatchment PRE 3:

Hydrograph



Stateline Retail Center Pre-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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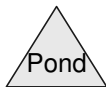
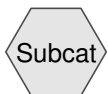
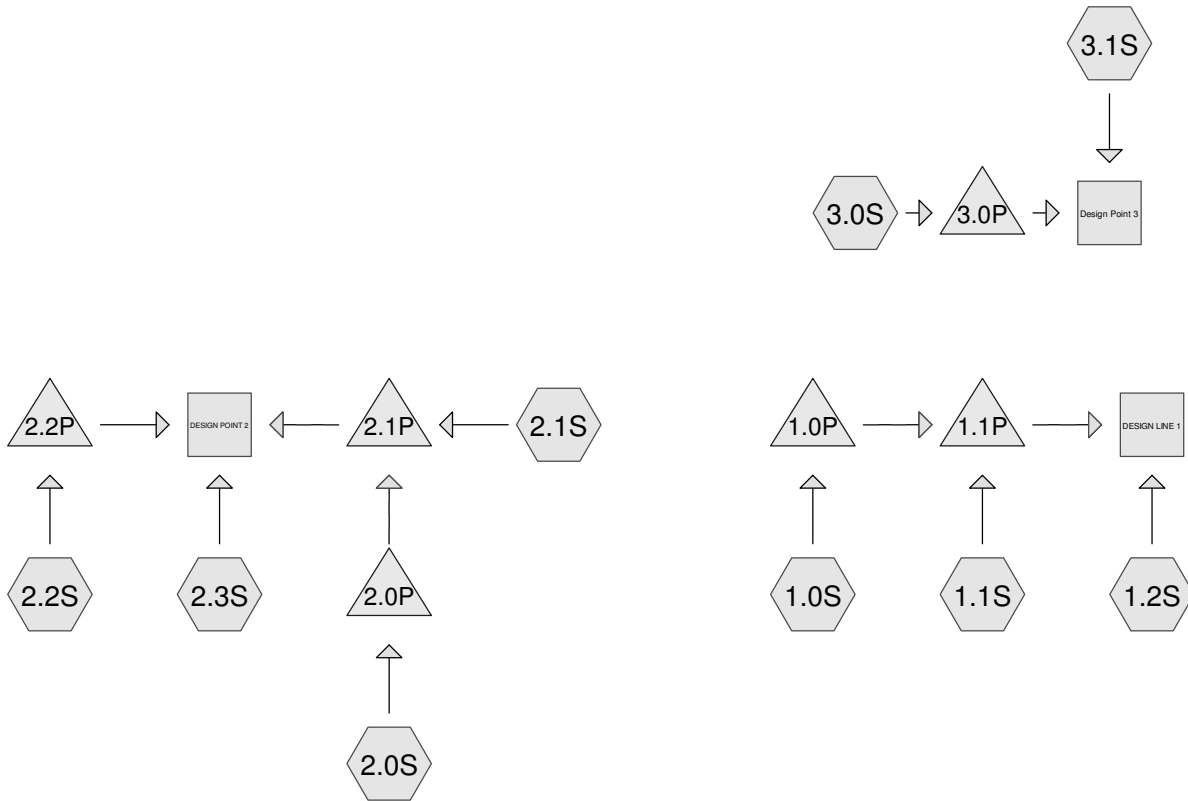
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Hydrograph for Subcatchment PRE 3:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	10.00	4.36	0.00	330.00	10.00	4.36	0.00
2.50	0.25	0.00	0.00	167.50	10.00	4.36	0.00	332.50	10.00	4.36	0.00
5.00	0.57	0.00	0.00	170.00	10.00	4.36	0.00	335.00	10.00	4.36	0.00
7.50	1.02	0.00	0.00	172.50	10.00	4.36	0.00	337.50	10.00	4.36	0.00
10.00	1.89	0.01	0.07	175.00	10.00	4.36	0.00	340.00	10.00	4.36	0.00
12.50	7.02	2.23	9.64	177.50	10.00	4.36	0.00	342.50	10.00	4.36	0.00
15.00	8.54	3.28	1.11	180.00	10.00	4.36	0.00	345.00	10.00	4.36	0.00
17.50	9.19	3.75	0.56	182.50	10.00	4.36	0.00	347.50	10.00	4.36	0.00
20.00	9.57	4.03	0.38	185.00	10.00	4.36	0.00	350.00	10.00	4.36	0.00
22.50	9.86	4.25	0.30	187.50	10.00	4.36	0.00	352.50	10.00	4.36	0.00
25.00	10.00	4.36	0.00	190.00	10.00	4.36	0.00	355.00	10.00	4.36	0.00
27.50	10.00	4.36	0.00	192.50	10.00	4.36	0.00	357.50	10.00	4.36	0.00
30.00	10.00	4.36	0.00	195.00	10.00	4.36	0.00	360.00	10.00	4.36	0.00
32.50	10.00	4.36	0.00	197.50	10.00	4.36	0.00	362.50	10.00	4.36	0.00
35.00	10.00	4.36	0.00	200.00	10.00	4.36	0.00	365.00	10.00	4.36	0.00
37.50	10.00	4.36	0.00	202.50	10.00	4.36	0.00	367.50	10.00	4.36	0.00
40.00	10.00	4.36	0.00	205.00	10.00	4.36	0.00	370.00	10.00	4.36	0.00
42.50	10.00	4.36	0.00	207.50	10.00	4.36	0.00	372.50	10.00	4.36	0.00
45.00	10.00	4.36	0.00	210.00	10.00	4.36	0.00	375.00	10.00	4.36	0.00
47.50	10.00	4.36	0.00	212.50	10.00	4.36	0.00	377.50	10.00	4.36	0.00
50.00	10.00	4.36	0.00	215.00	10.00	4.36	0.00	380.00	10.00	4.36	0.00
52.50	10.00	4.36	0.00	217.50	10.00	4.36	0.00	382.50	10.00	4.36	0.00
55.00	10.00	4.36	0.00	220.00	10.00	4.36	0.00	385.00	10.00	4.36	0.00
57.50	10.00	4.36	0.00	222.50	10.00	4.36	0.00	387.50	10.00	4.36	0.00
60.00	10.00	4.36	0.00	225.00	10.00	4.36	0.00	390.00	10.00	4.36	0.00
62.50	10.00	4.36	0.00	227.50	10.00	4.36	0.00	392.50	10.00	4.36	0.00
65.00	10.00	4.36	0.00	230.00	10.00	4.36	0.00	395.00	10.00	4.36	0.00
67.50	10.00	4.36	0.00	232.50	10.00	4.36	0.00	397.50	10.00	4.36	0.00
70.00	10.00	4.36	0.00	235.00	10.00	4.36	0.00	400.00	10.00	4.36	0.00
72.50	10.00	4.36	0.00	237.50	10.00	4.36	0.00				
75.00	10.00	4.36	0.00	240.00	10.00	4.36	0.00				
77.50	10.00	4.36	0.00	242.50	10.00	4.36	0.00				
80.00	10.00	4.36	0.00	245.00	10.00	4.36	0.00				
82.50	10.00	4.36	0.00	247.50	10.00	4.36	0.00				
85.00	10.00	4.36	0.00	250.00	10.00	4.36	0.00				
87.50	10.00	4.36	0.00	252.50	10.00	4.36	0.00				
90.00	10.00	4.36	0.00	255.00	10.00	4.36	0.00				
92.50	10.00	4.36	0.00	257.50	10.00	4.36	0.00				
95.00	10.00	4.36	0.00	260.00	10.00	4.36	0.00				
97.50	10.00	4.36	0.00	262.50	10.00	4.36	0.00				
100.00	10.00	4.36	0.00	265.00	10.00	4.36	0.00				
102.50	10.00	4.36	0.00	267.50	10.00	4.36	0.00				
105.00	10.00	4.36	0.00	270.00	10.00	4.36	0.00				
107.50	10.00	4.36	0.00	272.50	10.00	4.36	0.00				
110.00	10.00	4.36	0.00	275.00	10.00	4.36	0.00				
112.50	10.00	4.36	0.00	277.50	10.00	4.36	0.00				
115.00	10.00	4.36	0.00	280.00	10.00	4.36	0.00				
117.50	10.00	4.36	0.00	282.50	10.00	4.36	0.00				
120.00	10.00	4.36	0.00	285.00	10.00	4.36	0.00				
122.50	10.00	4.36	0.00	287.50	10.00	4.36	0.00				
125.00	10.00	4.36	0.00	290.00	10.00	4.36	0.00				
127.50	10.00	4.36	0.00	292.50	10.00	4.36	0.00				
130.00	10.00	4.36	0.00	295.00	10.00	4.36	0.00				
132.50	10.00	4.36	0.00	297.50	10.00	4.36	0.00				
135.00	10.00	4.36	0.00	300.00	10.00	4.36	0.00				
137.50	10.00	4.36	0.00	302.50	10.00	4.36	0.00				
140.00	10.00	4.36	0.00	305.00	10.00	4.36	0.00				
142.50	10.00	4.36	0.00	307.50	10.00	4.36	0.00				
145.00	10.00	4.36	0.00	310.00	10.00	4.36	0.00				
147.50	10.00	4.36	0.00	312.50	10.00	4.36	0.00				
150.00	10.00	4.36	0.00	315.00	10.00	4.36	0.00				
152.50	10.00	4.36	0.00	317.50	10.00	4.36	0.00				
155.00	10.00	4.36	0.00	320.00	10.00	4.36	0.00				
157.50	10.00	4.36	0.00	322.50	10.00	4.36	0.00				
160.00	10.00	4.36	0.00	325.00	10.00	4.36	0.00				
162.50	10.00	4.36	0.00	327.50	10.00	4.36	0.00				

APPENDIX B
Post-Development Computer Data



Drainage Diagram for Stateline Retail Center Post-development 040809

Prepared by Insite Engineering, Surveying, and Landscape Architecture, P.C., Printed 5/5/2009

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Stateline Retail Center Post-development 040809

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Type III 24-hr 1 YEAR Rainfall=3.20"

Printed 5/5/2009

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Summary for Subcatchment 1.0S:

Runoff = 25.65 cfs @ 12.07 hrs, Volume= 1.752 af, Depth= 1.68"

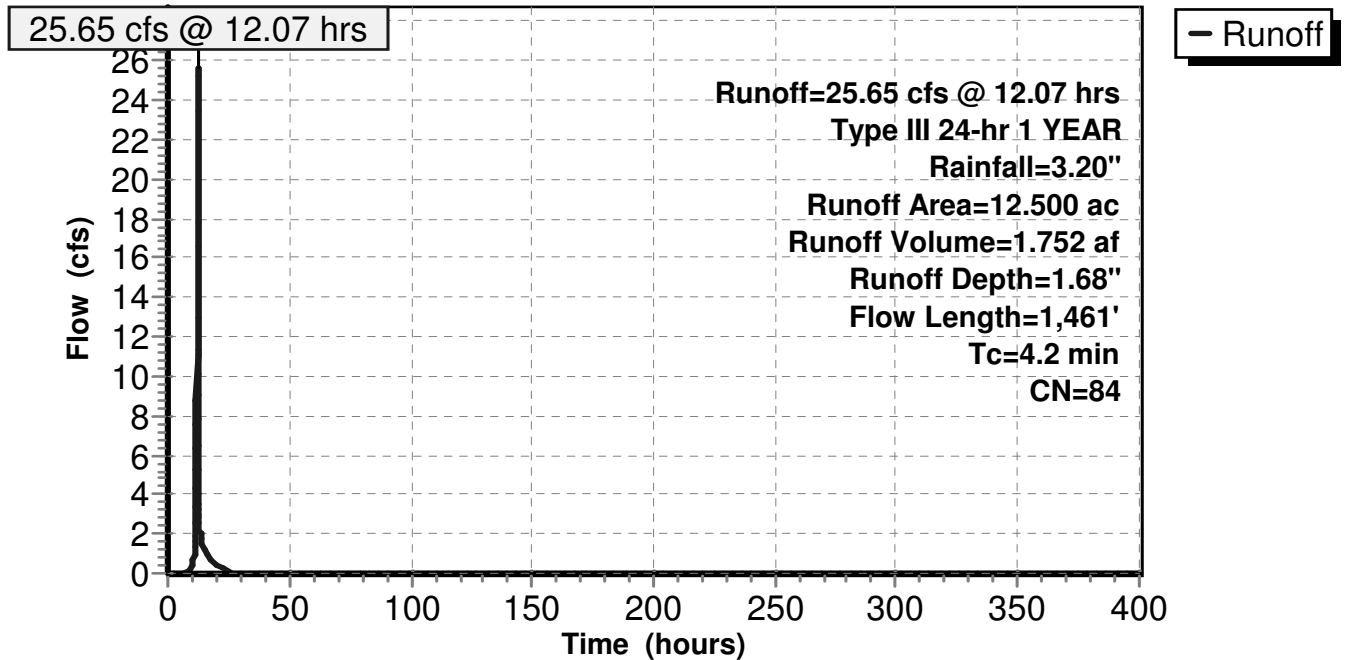
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YEAR Rainfall=3.20"

Area (ac)	CN	Description
1.200	39	>75% Grass cover, Good, HSG A
7.200	89	Urban commercial, 85% imp, HSG A
3.400	94	Urban commercial, 85% imp, HSG C
* 0.700	70	Pervious Pavment
12.500	84	Weighted Average
3.490		Pervious Area
9.010		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	96	0.0100	1.08		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
0.6	214	0.0121	6.27	7.70	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
1.1	601	0.0130	8.89	27.94	Circular Channel (pipe), Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
1.0	550	0.0080	9.14	64.63	Circular Channel (pipe), Diam= 36.0" Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012
4.2	1,461	Total			

Subcatchment 1.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Subcatchment 1.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.20	1.68	0.00	330.00	3.20	1.68	0.00
2.50	0.08	0.00	0.00	167.50	3.20	1.68	0.00	332.50	3.20	1.68	0.00
5.00	0.18	0.00	0.00	170.00	3.20	1.68	0.00	335.00	3.20	1.68	0.00
7.50	0.33	0.00	0.00	172.50	3.20	1.68	0.00	337.50	3.20	1.68	0.00
10.00	0.60	0.02	0.37	175.00	3.20	1.68	0.00	340.00	3.20	1.68	0.00
12.50	2.25	0.92	5.26	177.50	3.20	1.68	0.00	342.50	3.20	1.68	0.00
15.00	2.73	1.30	1.23	180.00	3.20	1.68	0.00	345.00	3.20	1.68	0.00
17.50	2.94	1.47	0.62	182.50	3.20	1.68	0.00	347.50	3.20	1.68	0.00
20.00	3.06	1.57	0.44	185.00	3.20	1.68	0.00	350.00	3.20	1.68	0.00
22.50	3.16	1.64	0.35	187.50	3.20	1.68	0.00	352.50	3.20	1.68	0.00
25.00	3.20	1.68	0.00	190.00	3.20	1.68	0.00	355.00	3.20	1.68	0.00
27.50	3.20	1.68	0.00	192.50	3.20	1.68	0.00	357.50	3.20	1.68	0.00
30.00	3.20	1.68	0.00	195.00	3.20	1.68	0.00	360.00	3.20	1.68	0.00
32.50	3.20	1.68	0.00	197.50	3.20	1.68	0.00	362.50	3.20	1.68	0.00
35.00	3.20	1.68	0.00	200.00	3.20	1.68	0.00	365.00	3.20	1.68	0.00
37.50	3.20	1.68	0.00	202.50	3.20	1.68	0.00	367.50	3.20	1.68	0.00
40.00	3.20	1.68	0.00	205.00	3.20	1.68	0.00	370.00	3.20	1.68	0.00
42.50	3.20	1.68	0.00	207.50	3.20	1.68	0.00	372.50	3.20	1.68	0.00
45.00	3.20	1.68	0.00	210.00	3.20	1.68	0.00	375.00	3.20	1.68	0.00
47.50	3.20	1.68	0.00	212.50	3.20	1.68	0.00	377.50	3.20	1.68	0.00
50.00	3.20	1.68	0.00	215.00	3.20	1.68	0.00	380.00	3.20	1.68	0.00
52.50	3.20	1.68	0.00	217.50	3.20	1.68	0.00	382.50	3.20	1.68	0.00
55.00	3.20	1.68	0.00	220.00	3.20	1.68	0.00	385.00	3.20	1.68	0.00
57.50	3.20	1.68	0.00	222.50	3.20	1.68	0.00	387.50	3.20	1.68	0.00
60.00	3.20	1.68	0.00	225.00	3.20	1.68	0.00	390.00	3.20	1.68	0.00
62.50	3.20	1.68	0.00	227.50	3.20	1.68	0.00	392.50	3.20	1.68	0.00
65.00	3.20	1.68	0.00	230.00	3.20	1.68	0.00	395.00	3.20	1.68	0.00
67.50	3.20	1.68	0.00	232.50	3.20	1.68	0.00	397.50	3.20	1.68	0.00
70.00	3.20	1.68	0.00	235.00	3.20	1.68	0.00	400.00	3.20	1.68	0.00
72.50	3.20	1.68	0.00	237.50	3.20	1.68	0.00				
75.00	3.20	1.68	0.00	240.00	3.20	1.68	0.00				
77.50	3.20	1.68	0.00	242.50	3.20	1.68	0.00				
80.00	3.20	1.68	0.00	245.00	3.20	1.68	0.00				
82.50	3.20	1.68	0.00	247.50	3.20	1.68	0.00				
85.00	3.20	1.68	0.00	250.00	3.20	1.68	0.00				
87.50	3.20	1.68	0.00	252.50	3.20	1.68	0.00				
90.00	3.20	1.68	0.00	255.00	3.20	1.68	0.00				
92.50	3.20	1.68	0.00	257.50	3.20	1.68	0.00				
95.00	3.20	1.68	0.00	260.00	3.20	1.68	0.00				
97.50	3.20	1.68	0.00	262.50	3.20	1.68	0.00				
100.00	3.20	1.68	0.00	265.00	3.20	1.68	0.00				
102.50	3.20	1.68	0.00	267.50	3.20	1.68	0.00				
105.00	3.20	1.68	0.00	270.00	3.20	1.68	0.00				
107.50	3.20	1.68	0.00	272.50	3.20	1.68	0.00				
110.00	3.20	1.68	0.00	275.00	3.20	1.68	0.00				
112.50	3.20	1.68	0.00	277.50	3.20	1.68	0.00				
115.00	3.20	1.68	0.00	280.00	3.20	1.68	0.00				
117.50	3.20	1.68	0.00	282.50	3.20	1.68	0.00				
120.00	3.20	1.68	0.00	285.00	3.20	1.68	0.00				
122.50	3.20	1.68	0.00	287.50	3.20	1.68	0.00				
125.00	3.20	1.68	0.00	290.00	3.20	1.68	0.00				
127.50	3.20	1.68	0.00	292.50	3.20	1.68	0.00				
130.00	3.20	1.68	0.00	295.00	3.20	1.68	0.00				
132.50	3.20	1.68	0.00	297.50	3.20	1.68	0.00				
135.00	3.20	1.68	0.00	300.00	3.20	1.68	0.00				
137.50	3.20	1.68	0.00	302.50	3.20	1.68	0.00				
140.00	3.20	1.68	0.00	305.00	3.20	1.68	0.00				
142.50	3.20	1.68	0.00	307.50	3.20	1.68	0.00				
145.00	3.20	1.68	0.00	310.00	3.20	1.68	0.00				
147.50	3.20	1.68	0.00	312.50	3.20	1.68	0.00				
150.00	3.20	1.68	0.00	315.00	3.20	1.68	0.00				
152.50	3.20	1.68	0.00	317.50	3.20	1.68	0.00				
155.00	3.20	1.68	0.00	320.00	3.20	1.68	0.00				
157.50	3.20	1.68	0.00	322.50	3.20	1.68	0.00				
160.00	3.20	1.68	0.00	325.00	3.20	1.68	0.00				
162.50	3.20	1.68	0.00	327.50	3.20	1.68	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Subcatchment 1.1S:

Runoff = 0.28 cfs @ 12.38 hrs, Volume= 0.059 af, Depth= 0.25"

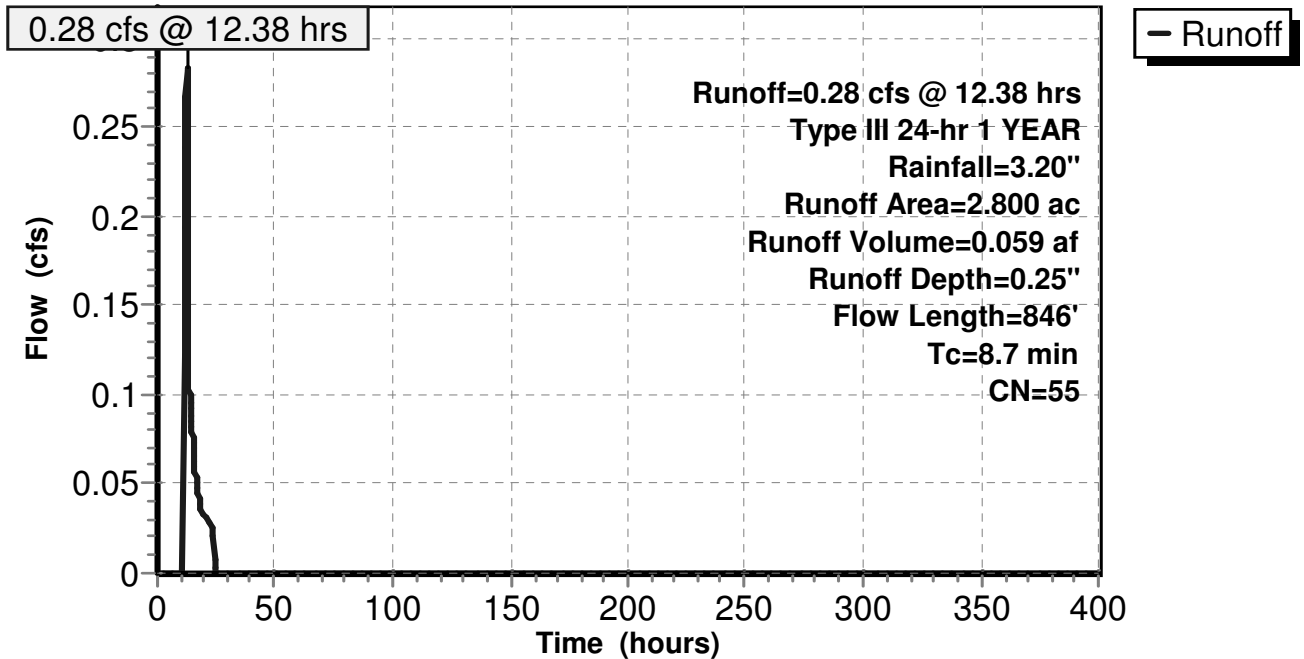
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 1 YEAR Rainfall=3.20"

Area (ac)	CN	Description
2.000	39	>75% Grass cover, Good, HSG A
0.400	89	Urban commercial, 85% imp, HSG A
0.400	98	Paved parking & roofs
2.800	55	Weighted Average
2.060		Pervious Area
0.740		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0100	1.09		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
7.0	652	0.0170	1.55	0.43	Trap/Vee/Rect Channel Flow, Bot.W=1.00' D=0.20' Z= 2.0 ' Top.W=1.80' n= 0.035 Earth, dense weeds
0.2	94	0.0290	9.71	11.92	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
8.7	846	Total			

Subcatchment 1.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Subcatchment 1.1S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.20	0.25	0.00	330.00	3.20	0.25	0.00
2.50	0.08	0.00	0.00	167.50	3.20	0.25	0.00	332.50	3.20	0.25	0.00
5.00	0.18	0.00	0.00	170.00	3.20	0.25	0.00	335.00	3.20	0.25	0.00
7.50	0.33	0.00	0.00	172.50	3.20	0.25	0.00	337.50	3.20	0.25	0.00
10.00	0.60	0.00	0.00	175.00	3.20	0.25	0.00	340.00	3.20	0.25	0.00
12.50	2.25	0.04	0.25	177.50	3.20	0.25	0.00	342.50	3.20	0.25	0.00
15.00	2.73	0.13	0.08	180.00	3.20	0.25	0.00	345.00	3.20	0.25	0.00
17.50	2.94	0.18	0.04	182.50	3.20	0.25	0.00	347.50	3.20	0.25	0.00
20.00	3.06	0.21	0.03	185.00	3.20	0.25	0.00	350.00	3.20	0.25	0.00
22.50	3.16	0.24	0.03	187.50	3.20	0.25	0.00	352.50	3.20	0.25	0.00
25.00	3.20	0.25	0.00	190.00	3.20	0.25	0.00	355.00	3.20	0.25	0.00
27.50	3.20	0.25	0.00	192.50	3.20	0.25	0.00	357.50	3.20	0.25	0.00
30.00	3.20	0.25	0.00	195.00	3.20	0.25	0.00	360.00	3.20	0.25	0.00
32.50	3.20	0.25	0.00	197.50	3.20	0.25	0.00	362.50	3.20	0.25	0.00
35.00	3.20	0.25	0.00	200.00	3.20	0.25	0.00	365.00	3.20	0.25	0.00
37.50	3.20	0.25	0.00	202.50	3.20	0.25	0.00	367.50	3.20	0.25	0.00
40.00	3.20	0.25	0.00	205.00	3.20	0.25	0.00	370.00	3.20	0.25	0.00
42.50	3.20	0.25	0.00	207.50	3.20	0.25	0.00	372.50	3.20	0.25	0.00
45.00	3.20	0.25	0.00	210.00	3.20	0.25	0.00	375.00	3.20	0.25	0.00
47.50	3.20	0.25	0.00	212.50	3.20	0.25	0.00	377.50	3.20	0.25	0.00
50.00	3.20	0.25	0.00	215.00	3.20	0.25	0.00	380.00	3.20	0.25	0.00
52.50	3.20	0.25	0.00	217.50	3.20	0.25	0.00	382.50	3.20	0.25	0.00
55.00	3.20	0.25	0.00	220.00	3.20	0.25	0.00	385.00	3.20	0.25	0.00
57.50	3.20	0.25	0.00	222.50	3.20	0.25	0.00	387.50	3.20	0.25	0.00
60.00	3.20	0.25	0.00	225.00	3.20	0.25	0.00	390.00	3.20	0.25	0.00
62.50	3.20	0.25	0.00	227.50	3.20	0.25	0.00	392.50	3.20	0.25	0.00
65.00	3.20	0.25	0.00	230.00	3.20	0.25	0.00	395.00	3.20	0.25	0.00
67.50	3.20	0.25	0.00	232.50	3.20	0.25	0.00	397.50	3.20	0.25	0.00
70.00	3.20	0.25	0.00	235.00	3.20	0.25	0.00	400.00	3.20	0.25	0.00
72.50	3.20	0.25	0.00	237.50	3.20	0.25	0.00				
75.00	3.20	0.25	0.00	240.00	3.20	0.25	0.00				
77.50	3.20	0.25	0.00	242.50	3.20	0.25	0.00				
80.00	3.20	0.25	0.00	245.00	3.20	0.25	0.00				
82.50	3.20	0.25	0.00	247.50	3.20	0.25	0.00				
85.00	3.20	0.25	0.00	250.00	3.20	0.25	0.00				
87.50	3.20	0.25	0.00	252.50	3.20	0.25	0.00				
90.00	3.20	0.25	0.00	255.00	3.20	0.25	0.00				
92.50	3.20	0.25	0.00	257.50	3.20	0.25	0.00				
95.00	3.20	0.25	0.00	260.00	3.20	0.25	0.00				
97.50	3.20	0.25	0.00	262.50	3.20	0.25	0.00				
100.00	3.20	0.25	0.00	265.00	3.20	0.25	0.00				
102.50	3.20	0.25	0.00	267.50	3.20	0.25	0.00				
105.00	3.20	0.25	0.00	270.00	3.20	0.25	0.00				
107.50	3.20	0.25	0.00	272.50	3.20	0.25	0.00				
110.00	3.20	0.25	0.00	275.00	3.20	0.25	0.00				
112.50	3.20	0.25	0.00	277.50	3.20	0.25	0.00				
115.00	3.20	0.25	0.00	280.00	3.20	0.25	0.00				
117.50	3.20	0.25	0.00	282.50	3.20	0.25	0.00				
120.00	3.20	0.25	0.00	285.00	3.20	0.25	0.00				
122.50	3.20	0.25	0.00	287.50	3.20	0.25	0.00				
125.00	3.20	0.25	0.00	290.00	3.20	0.25	0.00				
127.50	3.20	0.25	0.00	292.50	3.20	0.25	0.00				
130.00	3.20	0.25	0.00	295.00	3.20	0.25	0.00				
132.50	3.20	0.25	0.00	297.50	3.20	0.25	0.00				
135.00	3.20	0.25	0.00	300.00	3.20	0.25	0.00				
137.50	3.20	0.25	0.00	302.50	3.20	0.25	0.00				
140.00	3.20	0.25	0.00	305.00	3.20	0.25	0.00				
142.50	3.20	0.25	0.00	307.50	3.20	0.25	0.00				
145.00	3.20	0.25	0.00	310.00	3.20	0.25	0.00				
147.50	3.20	0.25	0.00	312.50	3.20	0.25	0.00				
150.00	3.20	0.25	0.00	315.00	3.20	0.25	0.00				
152.50	3.20	0.25	0.00	317.50	3.20	0.25	0.00				
155.00	3.20	0.25	0.00	320.00	3.20	0.25	0.00				
157.50	3.20	0.25	0.00	322.50	3.20	0.25	0.00				
160.00	3.20	0.25	0.00	325.00	3.20	0.25	0.00				
162.50	3.20	0.25	0.00	327.50	3.20	0.25	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Subcatchment 1.2S:

Runoff = 0.06 cfs @ 13.80 hrs, Volume= 0.036 af, Depth= 0.11"

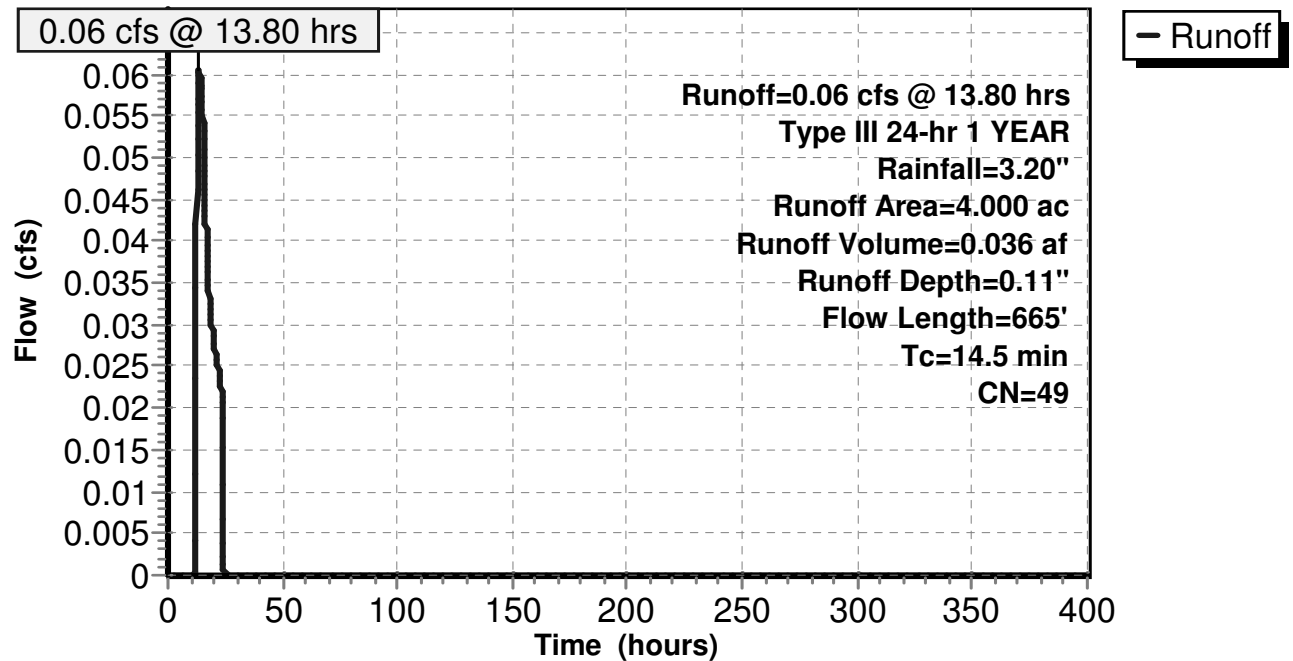
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 1 YEAR Rainfall=3.20"

Area (ac)	CN	Description
1.000	39	>75% Grass cover, Good, HSG A
0.300	98	Paved parking & roofs
1.500	30	Woods, Good, HSG A
1.200	70	Woods, Good, HSG C
4.000	49	Weighted Average
3.700		Pervious Area
0.300		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.1500	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	315	0.0790	3.60	1.73	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=0.20' Z= 2.0 ' Top.W=2.80' n= 0.035
3.8	250	0.0480	1.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.5	665	Total			

Subcatchment 1.2S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Subcatchment 1.2S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.20	0.11	0.00	330.00	3.20	0.11	0.00
2.50	0.08	0.00	0.00	167.50	3.20	0.11	0.00	332.50	3.20	0.11	0.00
5.00	0.18	0.00	0.00	170.00	3.20	0.11	0.00	335.00	3.20	0.11	0.00
7.50	0.33	0.00	0.00	172.50	3.20	0.11	0.00	337.50	3.20	0.11	0.00
10.00	0.60	0.00	0.00	175.00	3.20	0.11	0.00	340.00	3.20	0.11	0.00
12.50	2.25	0.00	0.02	177.50	3.20	0.11	0.00	342.50	3.20	0.11	0.00
15.00	2.73	0.04	0.06	180.00	3.20	0.11	0.00	345.00	3.20	0.11	0.00
17.50	2.94	0.07	0.04	182.50	3.20	0.11	0.00	347.50	3.20	0.11	0.00
20.00	3.06	0.08	0.03	185.00	3.20	0.11	0.00	350.00	3.20	0.11	0.00
22.50	3.16	0.10	0.02	187.50	3.20	0.11	0.00	352.50	3.20	0.11	0.00
25.00	3.20	0.11	0.00	190.00	3.20	0.11	0.00	355.00	3.20	0.11	0.00
27.50	3.20	0.11	0.00	192.50	3.20	0.11	0.00	357.50	3.20	0.11	0.00
30.00	3.20	0.11	0.00	195.00	3.20	0.11	0.00	360.00	3.20	0.11	0.00
32.50	3.20	0.11	0.00	197.50	3.20	0.11	0.00	362.50	3.20	0.11	0.00
35.00	3.20	0.11	0.00	200.00	3.20	0.11	0.00	365.00	3.20	0.11	0.00
37.50	3.20	0.11	0.00	202.50	3.20	0.11	0.00	367.50	3.20	0.11	0.00
40.00	3.20	0.11	0.00	205.00	3.20	0.11	0.00	370.00	3.20	0.11	0.00
42.50	3.20	0.11	0.00	207.50	3.20	0.11	0.00	372.50	3.20	0.11	0.00
45.00	3.20	0.11	0.00	210.00	3.20	0.11	0.00	375.00	3.20	0.11	0.00
47.50	3.20	0.11	0.00	212.50	3.20	0.11	0.00	377.50	3.20	0.11	0.00
50.00	3.20	0.11	0.00	215.00	3.20	0.11	0.00	380.00	3.20	0.11	0.00
52.50	3.20	0.11	0.00	217.50	3.20	0.11	0.00	382.50	3.20	0.11	0.00
55.00	3.20	0.11	0.00	220.00	3.20	0.11	0.00	385.00	3.20	0.11	0.00
57.50	3.20	0.11	0.00	222.50	3.20	0.11	0.00	387.50	3.20	0.11	0.00
60.00	3.20	0.11	0.00	225.00	3.20	0.11	0.00	390.00	3.20	0.11	0.00
62.50	3.20	0.11	0.00	227.50	3.20	0.11	0.00	392.50	3.20	0.11	0.00
65.00	3.20	0.11	0.00	230.00	3.20	0.11	0.00	395.00	3.20	0.11	0.00
67.50	3.20	0.11	0.00	232.50	3.20	0.11	0.00	397.50	3.20	0.11	0.00
70.00	3.20	0.11	0.00	235.00	3.20	0.11	0.00	400.00	3.20	0.11	0.00
72.50	3.20	0.11	0.00	237.50	3.20	0.11	0.00				
75.00	3.20	0.11	0.00	240.00	3.20	0.11	0.00				
77.50	3.20	0.11	0.00	242.50	3.20	0.11	0.00				
80.00	3.20	0.11	0.00	245.00	3.20	0.11	0.00				
82.50	3.20	0.11	0.00	247.50	3.20	0.11	0.00				
85.00	3.20	0.11	0.00	250.00	3.20	0.11	0.00				
87.50	3.20	0.11	0.00	252.50	3.20	0.11	0.00				
90.00	3.20	0.11	0.00	255.00	3.20	0.11	0.00				
92.50	3.20	0.11	0.00	257.50	3.20	0.11	0.00				
95.00	3.20	0.11	0.00	260.00	3.20	0.11	0.00				
97.50	3.20	0.11	0.00	262.50	3.20	0.11	0.00				
100.00	3.20	0.11	0.00	265.00	3.20	0.11	0.00				
102.50	3.20	0.11	0.00	267.50	3.20	0.11	0.00				
105.00	3.20	0.11	0.00	270.00	3.20	0.11	0.00				
107.50	3.20	0.11	0.00	272.50	3.20	0.11	0.00				
110.00	3.20	0.11	0.00	275.00	3.20	0.11	0.00				
112.50	3.20	0.11	0.00	277.50	3.20	0.11	0.00				
115.00	3.20	0.11	0.00	280.00	3.20	0.11	0.00				
117.50	3.20	0.11	0.00	282.50	3.20	0.11	0.00				
120.00	3.20	0.11	0.00	285.00	3.20	0.11	0.00				
122.50	3.20	0.11	0.00	287.50	3.20	0.11	0.00				
125.00	3.20	0.11	0.00	290.00	3.20	0.11	0.00				
127.50	3.20	0.11	0.00	292.50	3.20	0.11	0.00				
130.00	3.20	0.11	0.00	295.00	3.20	0.11	0.00				
132.50	3.20	0.11	0.00	297.50	3.20	0.11	0.00				
135.00	3.20	0.11	0.00	300.00	3.20	0.11	0.00				
137.50	3.20	0.11	0.00	302.50	3.20	0.11	0.00				
140.00	3.20	0.11	0.00	305.00	3.20	0.11	0.00				
142.50	3.20	0.11	0.00	307.50	3.20	0.11	0.00				
145.00	3.20	0.11	0.00	310.00	3.20	0.11	0.00				
147.50	3.20	0.11	0.00	312.50	3.20	0.11	0.00				
150.00	3.20	0.11	0.00	315.00	3.20	0.11	0.00				
152.50	3.20	0.11	0.00	317.50	3.20	0.11	0.00				
155.00	3.20	0.11	0.00	320.00	3.20	0.11	0.00				
157.50	3.20	0.11	0.00	322.50	3.20	0.11	0.00				
160.00	3.20	0.11	0.00	325.00	3.20	0.11	0.00				
162.50	3.20	0.11	0.00	327.50	3.20	0.11	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Subcatchment 2.0S:

Runoff = 11.09 cfs @ 12.11 hrs, Volume= 0.849 af, Depth= 2.00"

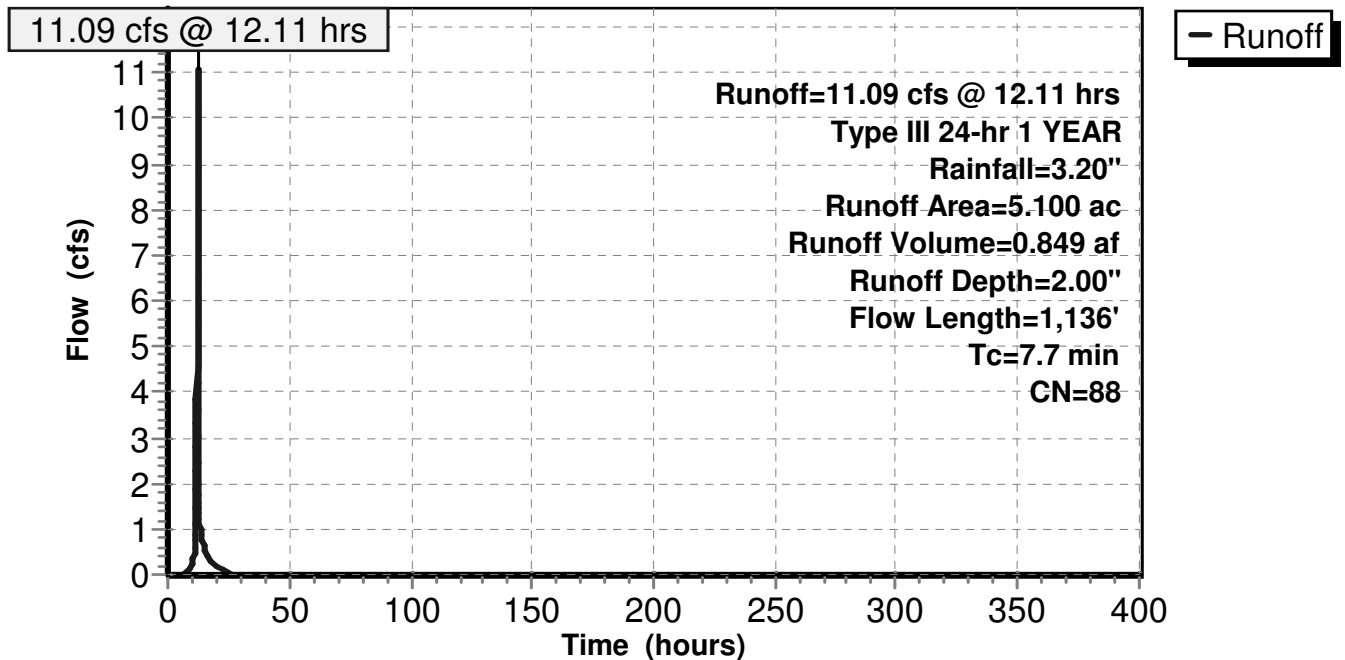
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YEAR Rainfall=3.20"

Area (ac)	CN	Description
0.200	39	>75% Grass cover, Good, HSG A
0.300	74	>75% Grass cover, Good, HSG C
0.300	70	Woods, Good, HSG C
3.700	94	Urban commercial, 85% imp, HSG C
0.400	89	Urban commercial, 85% imp, HSG A
* 0.200	70	Pervious Pavment
5.100	88	Weighted Average
1.615		Pervious Area
3.485		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.0400	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
1.1	85	0.0350	1.31		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.0	797	0.0140	6.75	8.28	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	172	0.0120	7.05	12.47	Circular Channel (pipe), Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.1	32	0.0094	7.56	23.76	Circular Channel (pipe), Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
7.7	1,136	Total			

Subcatchment 2.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Subcatchment 2.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.20	2.00	0.00	330.00	3.20	2.00	0.00
2.50	0.08	0.00	0.00	167.50	3.20	2.00	0.00	332.50	3.20	2.00	0.00
5.00	0.18	0.00	0.00	170.00	3.20	2.00	0.00	335.00	3.20	2.00	0.00
7.50	0.33	0.00	0.02	172.50	3.20	2.00	0.00	337.50	3.20	2.00	0.00
10.00	0.60	0.07	0.27	175.00	3.20	2.00	0.00	340.00	3.20	2.00	0.00
12.50	2.25	1.17	3.04	177.50	3.20	2.00	0.00	342.50	3.20	2.00	0.00
15.00	2.73	1.58	0.56	180.00	3.20	2.00	0.00	345.00	3.20	2.00	0.00
17.50	2.94	1.77	0.28	182.50	3.20	2.00	0.00	347.50	3.20	2.00	0.00
20.00	3.06	1.87	0.19	185.00	3.20	2.00	0.00	350.00	3.20	2.00	0.00
22.50	3.16	1.96	0.15	187.50	3.20	2.00	0.00	352.50	3.20	2.00	0.00
25.00	3.20	2.00	0.00	190.00	3.20	2.00	0.00	355.00	3.20	2.00	0.00
27.50	3.20	2.00	0.00	192.50	3.20	2.00	0.00	357.50	3.20	2.00	0.00
30.00	3.20	2.00	0.00	195.00	3.20	2.00	0.00	360.00	3.20	2.00	0.00
32.50	3.20	2.00	0.00	197.50	3.20	2.00	0.00	362.50	3.20	2.00	0.00
35.00	3.20	2.00	0.00	200.00	3.20	2.00	0.00	365.00	3.20	2.00	0.00
37.50	3.20	2.00	0.00	202.50	3.20	2.00	0.00	367.50	3.20	2.00	0.00
40.00	3.20	2.00	0.00	205.00	3.20	2.00	0.00	370.00	3.20	2.00	0.00
42.50	3.20	2.00	0.00	207.50	3.20	2.00	0.00	372.50	3.20	2.00	0.00
45.00	3.20	2.00	0.00	210.00	3.20	2.00	0.00	375.00	3.20	2.00	0.00
47.50	3.20	2.00	0.00	212.50	3.20	2.00	0.00	377.50	3.20	2.00	0.00
50.00	3.20	2.00	0.00	215.00	3.20	2.00	0.00	380.00	3.20	2.00	0.00
52.50	3.20	2.00	0.00	217.50	3.20	2.00	0.00	382.50	3.20	2.00	0.00
55.00	3.20	2.00	0.00	220.00	3.20	2.00	0.00	385.00	3.20	2.00	0.00
57.50	3.20	2.00	0.00	222.50	3.20	2.00	0.00	387.50	3.20	2.00	0.00
60.00	3.20	2.00	0.00	225.00	3.20	2.00	0.00	390.00	3.20	2.00	0.00
62.50	3.20	2.00	0.00	227.50	3.20	2.00	0.00	392.50	3.20	2.00	0.00
65.00	3.20	2.00	0.00	230.00	3.20	2.00	0.00	395.00	3.20	2.00	0.00
67.50	3.20	2.00	0.00	232.50	3.20	2.00	0.00	397.50	3.20	2.00	0.00
70.00	3.20	2.00	0.00	235.00	3.20	2.00	0.00	400.00	3.20	2.00	0.00
72.50	3.20	2.00	0.00	237.50	3.20	2.00	0.00				
75.00	3.20	2.00	0.00	240.00	3.20	2.00	0.00				
77.50	3.20	2.00	0.00	242.50	3.20	2.00	0.00				
80.00	3.20	2.00	0.00	245.00	3.20	2.00	0.00				
82.50	3.20	2.00	0.00	247.50	3.20	2.00	0.00				
85.00	3.20	2.00	0.00	250.00	3.20	2.00	0.00				
87.50	3.20	2.00	0.00	252.50	3.20	2.00	0.00				
90.00	3.20	2.00	0.00	255.00	3.20	2.00	0.00				
92.50	3.20	2.00	0.00	257.50	3.20	2.00	0.00				
95.00	3.20	2.00	0.00	260.00	3.20	2.00	0.00				
97.50	3.20	2.00	0.00	262.50	3.20	2.00	0.00				
100.00	3.20	2.00	0.00	265.00	3.20	2.00	0.00				
102.50	3.20	2.00	0.00	267.50	3.20	2.00	0.00				
105.00	3.20	2.00	0.00	270.00	3.20	2.00	0.00				
107.50	3.20	2.00	0.00	272.50	3.20	2.00	0.00				
110.00	3.20	2.00	0.00	275.00	3.20	2.00	0.00				
112.50	3.20	2.00	0.00	277.50	3.20	2.00	0.00				
115.00	3.20	2.00	0.00	280.00	3.20	2.00	0.00				
117.50	3.20	2.00	0.00	282.50	3.20	2.00	0.00				
120.00	3.20	2.00	0.00	285.00	3.20	2.00	0.00				
122.50	3.20	2.00	0.00	287.50	3.20	2.00	0.00				
125.00	3.20	2.00	0.00	290.00	3.20	2.00	0.00				
127.50	3.20	2.00	0.00	292.50	3.20	2.00	0.00				
130.00	3.20	2.00	0.00	295.00	3.20	2.00	0.00				
132.50	3.20	2.00	0.00	297.50	3.20	2.00	0.00				
135.00	3.20	2.00	0.00	300.00	3.20	2.00	0.00				
137.50	3.20	2.00	0.00	302.50	3.20	2.00	0.00				
140.00	3.20	2.00	0.00	305.00	3.20	2.00	0.00				
142.50	3.20	2.00	0.00	307.50	3.20	2.00	0.00				
145.00	3.20	2.00	0.00	310.00	3.20	2.00	0.00				
147.50	3.20	2.00	0.00	312.50	3.20	2.00	0.00				
150.00	3.20	2.00	0.00	315.00	3.20	2.00	0.00				
152.50	3.20	2.00	0.00	317.50	3.20	2.00	0.00				
155.00	3.20	2.00	0.00	320.00	3.20	2.00	0.00				
157.50	3.20	2.00	0.00	322.50	3.20	2.00	0.00				
160.00	3.20	2.00	0.00	325.00	3.20	2.00	0.00				
162.50	3.20	2.00	0.00	327.50	3.20	2.00	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Subcatchment 2.1S:

Runoff = 0.00 cfs @ 15.31 hrs, Volume= 0.003 af, Depth= 0.04"

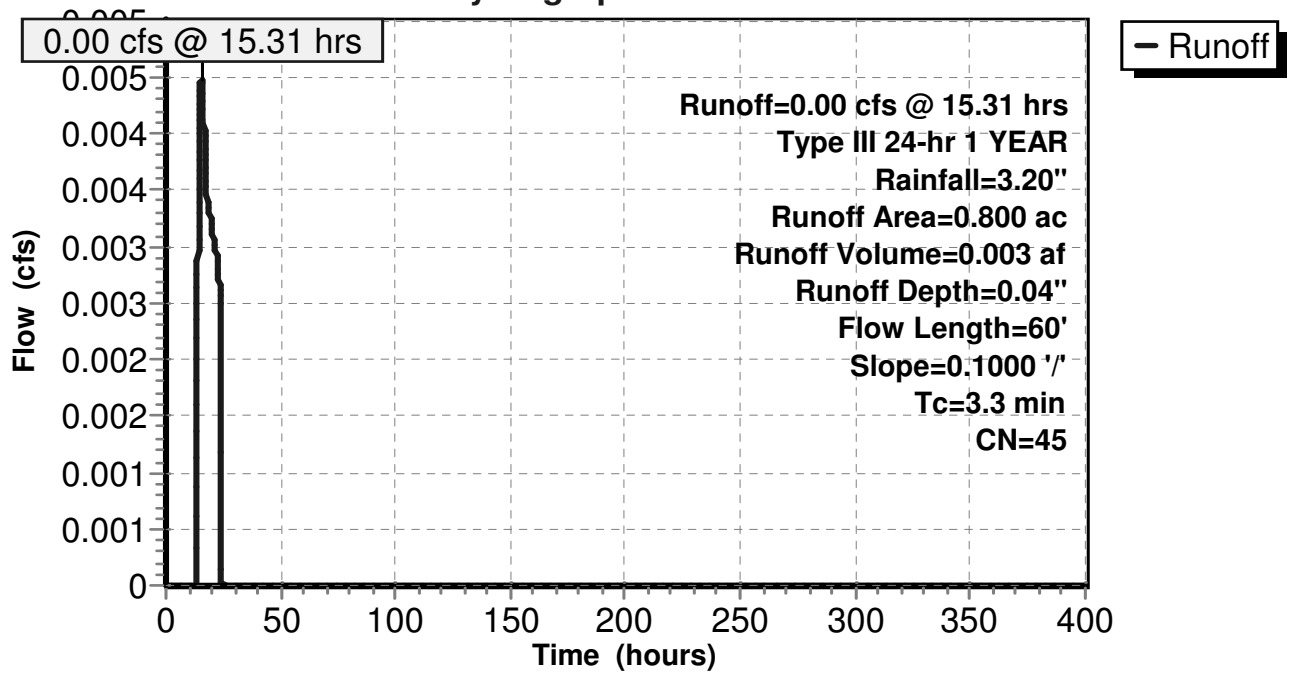
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 1 YEAR Rainfall=3.20"

Area (ac)	CN	Description
0.700	39	>75% Grass cover, Good, HSG A
0.100	89	Urban commercial, 85% imp, HSG A
0.800	45	Weighted Average
0.715		Pervious Area
0.085		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	60	0.1000	0.31		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"

Subcatchment 2.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Subcatchment 2.1S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.20	0.04	0.00	330.00	3.20	0.04	0.00
2.50	0.08	0.00	0.00	167.50	3.20	0.04	0.00	332.50	3.20	0.04	0.00
5.00	0.18	0.00	0.00	170.00	3.20	0.04	0.00	335.00	3.20	0.04	0.00
7.50	0.33	0.00	0.00	172.50	3.20	0.04	0.00	337.50	3.20	0.04	0.00
10.00	0.60	0.00	0.00	175.00	3.20	0.04	0.00	340.00	3.20	0.04	0.00
12.50	2.25	0.00	0.00	177.50	3.20	0.04	0.00	342.50	3.20	0.04	0.00
15.00	2.73	0.01	0.00	180.00	3.20	0.04	0.00	345.00	3.20	0.04	0.00
17.50	2.94	0.02	0.00	182.50	3.20	0.04	0.00	347.50	3.20	0.04	0.00
20.00	3.06	0.03	0.00	185.00	3.20	0.04	0.00	350.00	3.20	0.04	0.00
22.50	3.16	0.04	0.00	187.50	3.20	0.04	0.00	352.50	3.20	0.04	0.00
25.00	3.20	0.04	0.00	190.00	3.20	0.04	0.00	355.00	3.20	0.04	0.00
27.50	3.20	0.04	0.00	192.50	3.20	0.04	0.00	357.50	3.20	0.04	0.00
30.00	3.20	0.04	0.00	195.00	3.20	0.04	0.00	360.00	3.20	0.04	0.00
32.50	3.20	0.04	0.00	197.50	3.20	0.04	0.00	362.50	3.20	0.04	0.00
35.00	3.20	0.04	0.00	200.00	3.20	0.04	0.00	365.00	3.20	0.04	0.00
37.50	3.20	0.04	0.00	202.50	3.20	0.04	0.00	367.50	3.20	0.04	0.00
40.00	3.20	0.04	0.00	205.00	3.20	0.04	0.00	370.00	3.20	0.04	0.00
42.50	3.20	0.04	0.00	207.50	3.20	0.04	0.00	372.50	3.20	0.04	0.00
45.00	3.20	0.04	0.00	210.00	3.20	0.04	0.00	375.00	3.20	0.04	0.00
47.50	3.20	0.04	0.00	212.50	3.20	0.04	0.00	377.50	3.20	0.04	0.00
50.00	3.20	0.04	0.00	215.00	3.20	0.04	0.00	380.00	3.20	0.04	0.00
52.50	3.20	0.04	0.00	217.50	3.20	0.04	0.00	382.50	3.20	0.04	0.00
55.00	3.20	0.04	0.00	220.00	3.20	0.04	0.00	385.00	3.20	0.04	0.00
57.50	3.20	0.04	0.00	222.50	3.20	0.04	0.00	387.50	3.20	0.04	0.00
60.00	3.20	0.04	0.00	225.00	3.20	0.04	0.00	390.00	3.20	0.04	0.00
62.50	3.20	0.04	0.00	227.50	3.20	0.04	0.00	392.50	3.20	0.04	0.00
65.00	3.20	0.04	0.00	230.00	3.20	0.04	0.00	395.00	3.20	0.04	0.00
67.50	3.20	0.04	0.00	232.50	3.20	0.04	0.00	397.50	3.20	0.04	0.00
70.00	3.20	0.04	0.00	235.00	3.20	0.04	0.00	400.00	3.20	0.04	0.00
72.50	3.20	0.04	0.00	237.50	3.20	0.04	0.00				
75.00	3.20	0.04	0.00	240.00	3.20	0.04	0.00				
77.50	3.20	0.04	0.00	242.50	3.20	0.04	0.00				
80.00	3.20	0.04	0.00	245.00	3.20	0.04	0.00				
82.50	3.20	0.04	0.00	247.50	3.20	0.04	0.00				
85.00	3.20	0.04	0.00	250.00	3.20	0.04	0.00				
87.50	3.20	0.04	0.00	252.50	3.20	0.04	0.00				
90.00	3.20	0.04	0.00	255.00	3.20	0.04	0.00				
92.50	3.20	0.04	0.00	257.50	3.20	0.04	0.00				
95.00	3.20	0.04	0.00	260.00	3.20	0.04	0.00				
97.50	3.20	0.04	0.00	262.50	3.20	0.04	0.00				
100.00	3.20	0.04	0.00	265.00	3.20	0.04	0.00				
102.50	3.20	0.04	0.00	267.50	3.20	0.04	0.00				
105.00	3.20	0.04	0.00	270.00	3.20	0.04	0.00				
107.50	3.20	0.04	0.00	272.50	3.20	0.04	0.00				
110.00	3.20	0.04	0.00	275.00	3.20	0.04	0.00				
112.50	3.20	0.04	0.00	277.50	3.20	0.04	0.00				
115.00	3.20	0.04	0.00	280.00	3.20	0.04	0.00				
117.50	3.20	0.04	0.00	282.50	3.20	0.04	0.00				
120.00	3.20	0.04	0.00	285.00	3.20	0.04	0.00				
122.50	3.20	0.04	0.00	287.50	3.20	0.04	0.00				
125.00	3.20	0.04	0.00	290.00	3.20	0.04	0.00				
127.50	3.20	0.04	0.00	292.50	3.20	0.04	0.00				
130.00	3.20	0.04	0.00	295.00	3.20	0.04	0.00				
132.50	3.20	0.04	0.00	297.50	3.20	0.04	0.00				
135.00	3.20	0.04	0.00	300.00	3.20	0.04	0.00				
137.50	3.20	0.04	0.00	302.50	3.20	0.04	0.00				
140.00	3.20	0.04	0.00	305.00	3.20	0.04	0.00				
142.50	3.20	0.04	0.00	307.50	3.20	0.04	0.00				
145.00	3.20	0.04	0.00	310.00	3.20	0.04	0.00				
147.50	3.20	0.04	0.00	312.50	3.20	0.04	0.00				
150.00	3.20	0.04	0.00	315.00	3.20	0.04	0.00				
152.50	3.20	0.04	0.00	317.50	3.20	0.04	0.00				
155.00	3.20	0.04	0.00	320.00	3.20	0.04	0.00				
157.50	3.20	0.04	0.00	322.50	3.20	0.04	0.00				
160.00	3.20	0.04	0.00	325.00	3.20	0.04	0.00				
162.50	3.20	0.04	0.00	327.50	3.20	0.04	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Subcatchment 2.2S:

Runoff = 3.20 cfs @ 12.17 hrs, Volume= 0.282 af, Depth= 1.61"

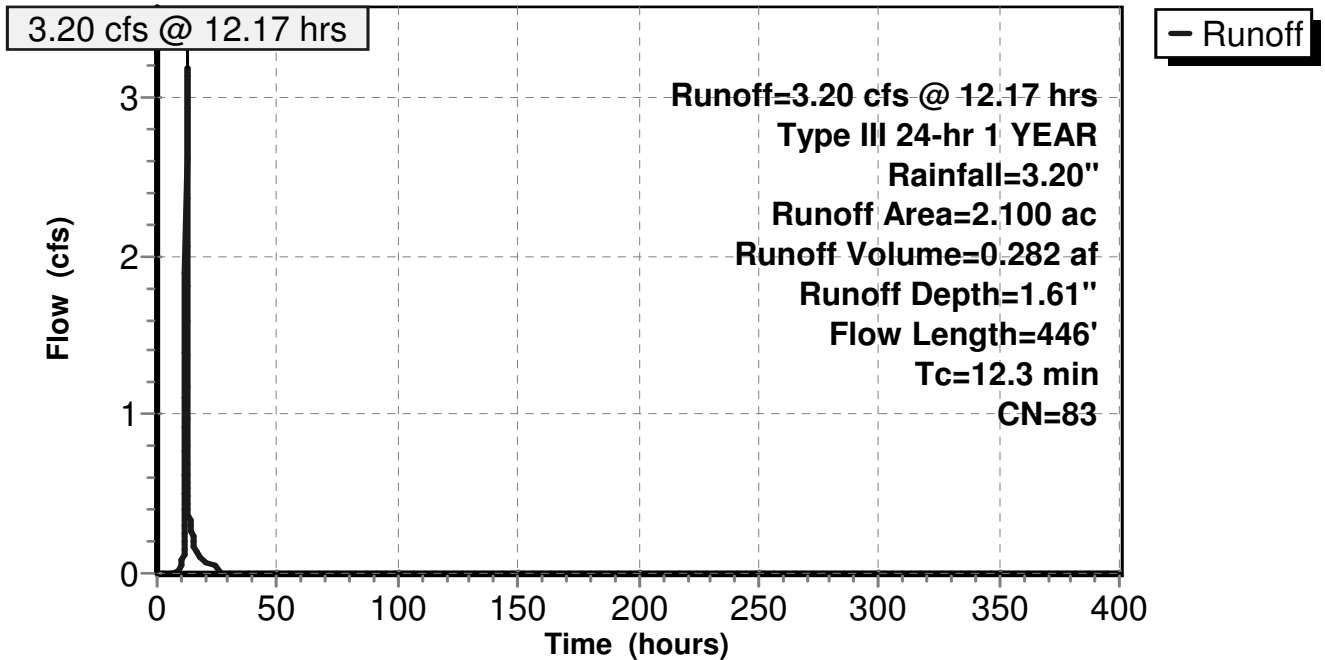
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 1 YEAR Rainfall=3.20"

Area (ac)	CN	Description
1.000	94	Urban commercial, 85% imp, HSG C
0.700	74	>75% Grass cover, Good, HSG C
0.300	71	Meadow, non-grazed, HSG C
* 0.100	70	Pervious Pavement
2.100	83	Weighted Average
1.250		Pervious Area
0.850		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	157	0.1400	2.62		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	140	0.0930	6.19		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	49	0.0290	9.71	11.92	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
12.3	446	Total			

Subcatchment 2.2S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Subcatchment 2.2S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.20	1.61	0.00	330.00	3.20	1.61	0.00
2.50	0.08	0.00	0.00	167.50	3.20	1.61	0.00	332.50	3.20	1.61	0.00
5.00	0.18	0.00	0.00	170.00	3.20	1.61	0.00	335.00	3.20	1.61	0.00
7.50	0.33	0.00	0.00	172.50	3.20	1.61	0.00	337.50	3.20	1.61	0.00
10.00	0.60	0.02	0.05	175.00	3.20	1.61	0.00	340.00	3.20	1.61	0.00
12.50	2.25	0.87	1.38	177.50	3.20	1.61	0.00	342.50	3.20	1.61	0.00
15.00	2.73	1.24	0.21	180.00	3.20	1.61	0.00	345.00	3.20	1.61	0.00
17.50	2.94	1.40	0.11	182.50	3.20	1.61	0.00	347.50	3.20	1.61	0.00
20.00	3.06	1.50	0.07	185.00	3.20	1.61	0.00	350.00	3.20	1.61	0.00
22.50	3.16	1.57	0.06	187.50	3.20	1.61	0.00	352.50	3.20	1.61	0.00
25.00	3.20	1.61	0.00	190.00	3.20	1.61	0.00	355.00	3.20	1.61	0.00
27.50	3.20	1.61	0.00	192.50	3.20	1.61	0.00	357.50	3.20	1.61	0.00
30.00	3.20	1.61	0.00	195.00	3.20	1.61	0.00	360.00	3.20	1.61	0.00
32.50	3.20	1.61	0.00	197.50	3.20	1.61	0.00	362.50	3.20	1.61	0.00
35.00	3.20	1.61	0.00	200.00	3.20	1.61	0.00	365.00	3.20	1.61	0.00
37.50	3.20	1.61	0.00	202.50	3.20	1.61	0.00	367.50	3.20	1.61	0.00
40.00	3.20	1.61	0.00	205.00	3.20	1.61	0.00	370.00	3.20	1.61	0.00
42.50	3.20	1.61	0.00	207.50	3.20	1.61	0.00	372.50	3.20	1.61	0.00
45.00	3.20	1.61	0.00	210.00	3.20	1.61	0.00	375.00	3.20	1.61	0.00
47.50	3.20	1.61	0.00	212.50	3.20	1.61	0.00	377.50	3.20	1.61	0.00
50.00	3.20	1.61	0.00	215.00	3.20	1.61	0.00	380.00	3.20	1.61	0.00
52.50	3.20	1.61	0.00	217.50	3.20	1.61	0.00	382.50	3.20	1.61	0.00
55.00	3.20	1.61	0.00	220.00	3.20	1.61	0.00	385.00	3.20	1.61	0.00
57.50	3.20	1.61	0.00	222.50	3.20	1.61	0.00	387.50	3.20	1.61	0.00
60.00	3.20	1.61	0.00	225.00	3.20	1.61	0.00	390.00	3.20	1.61	0.00
62.50	3.20	1.61	0.00	227.50	3.20	1.61	0.00	392.50	3.20	1.61	0.00
65.00	3.20	1.61	0.00	230.00	3.20	1.61	0.00	395.00	3.20	1.61	0.00
67.50	3.20	1.61	0.00	232.50	3.20	1.61	0.00	397.50	3.20	1.61	0.00
70.00	3.20	1.61	0.00	235.00	3.20	1.61	0.00	400.00	3.20	1.61	0.00
72.50	3.20	1.61	0.00	237.50	3.20	1.61	0.00				
75.00	3.20	1.61	0.00	240.00	3.20	1.61	0.00				
77.50	3.20	1.61	0.00	242.50	3.20	1.61	0.00				
80.00	3.20	1.61	0.00	245.00	3.20	1.61	0.00				
82.50	3.20	1.61	0.00	247.50	3.20	1.61	0.00				
85.00	3.20	1.61	0.00	250.00	3.20	1.61	0.00				
87.50	3.20	1.61	0.00	252.50	3.20	1.61	0.00				
90.00	3.20	1.61	0.00	255.00	3.20	1.61	0.00				
92.50	3.20	1.61	0.00	257.50	3.20	1.61	0.00				
95.00	3.20	1.61	0.00	260.00	3.20	1.61	0.00				
97.50	3.20	1.61	0.00	262.50	3.20	1.61	0.00				
100.00	3.20	1.61	0.00	265.00	3.20	1.61	0.00				
102.50	3.20	1.61	0.00	267.50	3.20	1.61	0.00				
105.00	3.20	1.61	0.00	270.00	3.20	1.61	0.00				
107.50	3.20	1.61	0.00	272.50	3.20	1.61	0.00				
110.00	3.20	1.61	0.00	275.00	3.20	1.61	0.00				
112.50	3.20	1.61	0.00	277.50	3.20	1.61	0.00				
115.00	3.20	1.61	0.00	280.00	3.20	1.61	0.00				
117.50	3.20	1.61	0.00	282.50	3.20	1.61	0.00				
120.00	3.20	1.61	0.00	285.00	3.20	1.61	0.00				
122.50	3.20	1.61	0.00	287.50	3.20	1.61	0.00				
125.00	3.20	1.61	0.00	290.00	3.20	1.61	0.00				
127.50	3.20	1.61	0.00	292.50	3.20	1.61	0.00				
130.00	3.20	1.61	0.00	295.00	3.20	1.61	0.00				
132.50	3.20	1.61	0.00	297.50	3.20	1.61	0.00				
135.00	3.20	1.61	0.00	300.00	3.20	1.61	0.00				
137.50	3.20	1.61	0.00	302.50	3.20	1.61	0.00				
140.00	3.20	1.61	0.00	305.00	3.20	1.61	0.00				
142.50	3.20	1.61	0.00	307.50	3.20	1.61	0.00				
145.00	3.20	1.61	0.00	310.00	3.20	1.61	0.00				
147.50	3.20	1.61	0.00	312.50	3.20	1.61	0.00				
150.00	3.20	1.61	0.00	315.00	3.20	1.61	0.00				
152.50	3.20	1.61	0.00	317.50	3.20	1.61	0.00				
155.00	3.20	1.61	0.00	320.00	3.20	1.61	0.00				
157.50	3.20	1.61	0.00	322.50	3.20	1.61	0.00				
160.00	3.20	1.61	0.00	325.00	3.20	1.61	0.00				
162.50	3.20	1.61	0.00	327.50	3.20	1.61	0.00				

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Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Subcatchment 2.3S:

Runoff = 5.34 cfs @ 12.22 hrs, Volume= 0.552 af, Depth= 0.83"

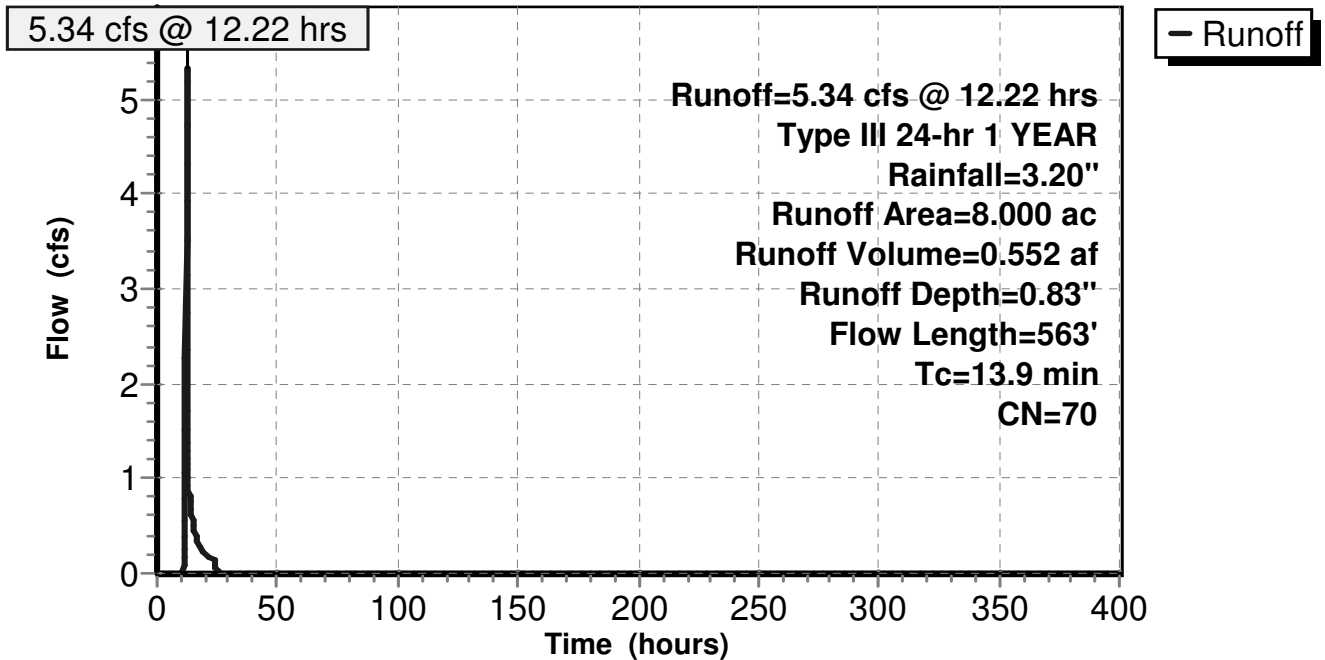
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 1 YEAR Rainfall=3.20"

Area (ac)	CN	Description
5.500	70	Woods, Good, HSG C
0.200	39	>75% Grass cover, Good, HSG A
0.500	98	Paved parking & roofs
0.500	71	Meadow, non-grazed, HSG C
0.900	74	>75% Grass cover, Good, HSG C
0.300	30	Woods, Good, HSG A
0.050	94	Urban commercial, 85% imp, HSG C
0.050	89	Urban commercial, 85% imp, HSG A
8.000	70	Weighted Average
7.415		Pervious Area
0.585		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
4.5	463	0.1200	1.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.9	563	Total			

Subcatchment 2.3S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Subcatchment 2.3S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.20	0.83	0.00	330.00	3.20	0.83	0.00
2.50	0.08	0.00	0.00	167.50	3.20	0.83	0.00	332.50	3.20	0.83	0.00
5.00	0.18	0.00	0.00	170.00	3.20	0.83	0.00	335.00	3.20	0.83	0.00
7.50	0.33	0.00	0.00	172.50	3.20	0.83	0.00	337.50	3.20	0.83	0.00
10.00	0.60	0.00	0.00	175.00	3.20	0.83	0.00	340.00	3.20	0.83	0.00
12.50	2.25	0.34	3.16	177.50	3.20	0.83	0.00	342.50	3.20	0.83	0.00
15.00	2.73	0.57	0.53	180.00	3.20	0.83	0.00	345.00	3.20	0.83	0.00
17.50	2.94	0.68	0.28	182.50	3.20	0.83	0.00	347.50	3.20	0.83	0.00
20.00	3.06	0.75	0.19	185.00	3.20	0.83	0.00	350.00	3.20	0.83	0.00
22.50	3.16	0.80	0.15	187.50	3.20	0.83	0.00	352.50	3.20	0.83	0.00
25.00	3.20	0.83	0.00	190.00	3.20	0.83	0.00	355.00	3.20	0.83	0.00
27.50	3.20	0.83	0.00	192.50	3.20	0.83	0.00	357.50	3.20	0.83	0.00
30.00	3.20	0.83	0.00	195.00	3.20	0.83	0.00	360.00	3.20	0.83	0.00
32.50	3.20	0.83	0.00	197.50	3.20	0.83	0.00	362.50	3.20	0.83	0.00
35.00	3.20	0.83	0.00	200.00	3.20	0.83	0.00	365.00	3.20	0.83	0.00
37.50	3.20	0.83	0.00	202.50	3.20	0.83	0.00	367.50	3.20	0.83	0.00
40.00	3.20	0.83	0.00	205.00	3.20	0.83	0.00	370.00	3.20	0.83	0.00
42.50	3.20	0.83	0.00	207.50	3.20	0.83	0.00	372.50	3.20	0.83	0.00
45.00	3.20	0.83	0.00	210.00	3.20	0.83	0.00	375.00	3.20	0.83	0.00
47.50	3.20	0.83	0.00	212.50	3.20	0.83	0.00	377.50	3.20	0.83	0.00
50.00	3.20	0.83	0.00	215.00	3.20	0.83	0.00	380.00	3.20	0.83	0.00
52.50	3.20	0.83	0.00	217.50	3.20	0.83	0.00	382.50	3.20	0.83	0.00
55.00	3.20	0.83	0.00	220.00	3.20	0.83	0.00	385.00	3.20	0.83	0.00
57.50	3.20	0.83	0.00	222.50	3.20	0.83	0.00	387.50	3.20	0.83	0.00
60.00	3.20	0.83	0.00	225.00	3.20	0.83	0.00	390.00	3.20	0.83	0.00
62.50	3.20	0.83	0.00	227.50	3.20	0.83	0.00	392.50	3.20	0.83	0.00
65.00	3.20	0.83	0.00	230.00	3.20	0.83	0.00	395.00	3.20	0.83	0.00
67.50	3.20	0.83	0.00	232.50	3.20	0.83	0.00	397.50	3.20	0.83	0.00
70.00	3.20	0.83	0.00	235.00	3.20	0.83	0.00	400.00	3.20	0.83	0.00
72.50	3.20	0.83	0.00	237.50	3.20	0.83	0.00				
75.00	3.20	0.83	0.00	240.00	3.20	0.83	0.00				
77.50	3.20	0.83	0.00	242.50	3.20	0.83	0.00				
80.00	3.20	0.83	0.00	245.00	3.20	0.83	0.00				
82.50	3.20	0.83	0.00	247.50	3.20	0.83	0.00				
85.00	3.20	0.83	0.00	250.00	3.20	0.83	0.00				
87.50	3.20	0.83	0.00	252.50	3.20	0.83	0.00				
90.00	3.20	0.83	0.00	255.00	3.20	0.83	0.00				
92.50	3.20	0.83	0.00	257.50	3.20	0.83	0.00				
95.00	3.20	0.83	0.00	260.00	3.20	0.83	0.00				
97.50	3.20	0.83	0.00	262.50	3.20	0.83	0.00				
100.00	3.20	0.83	0.00	265.00	3.20	0.83	0.00				
102.50	3.20	0.83	0.00	267.50	3.20	0.83	0.00				
105.00	3.20	0.83	0.00	270.00	3.20	0.83	0.00				
107.50	3.20	0.83	0.00	272.50	3.20	0.83	0.00				
110.00	3.20	0.83	0.00	275.00	3.20	0.83	0.00				
112.50	3.20	0.83	0.00	277.50	3.20	0.83	0.00				
115.00	3.20	0.83	0.00	280.00	3.20	0.83	0.00				
117.50	3.20	0.83	0.00	282.50	3.20	0.83	0.00				
120.00	3.20	0.83	0.00	285.00	3.20	0.83	0.00				
122.50	3.20	0.83	0.00	287.50	3.20	0.83	0.00				
125.00	3.20	0.83	0.00	290.00	3.20	0.83	0.00				
127.50	3.20	0.83	0.00	292.50	3.20	0.83	0.00				
130.00	3.20	0.83	0.00	295.00	3.20	0.83	0.00				
132.50	3.20	0.83	0.00	297.50	3.20	0.83	0.00				
135.00	3.20	0.83	0.00	300.00	3.20	0.83	0.00				
137.50	3.20	0.83	0.00	302.50	3.20	0.83	0.00				
140.00	3.20	0.83	0.00	305.00	3.20	0.83	0.00				
142.50	3.20	0.83	0.00	307.50	3.20	0.83	0.00				
145.00	3.20	0.83	0.00	310.00	3.20	0.83	0.00				
147.50	3.20	0.83	0.00	312.50	3.20	0.83	0.00				
150.00	3.20	0.83	0.00	315.00	3.20	0.83	0.00				
152.50	3.20	0.83	0.00	317.50	3.20	0.83	0.00				
155.00	3.20	0.83	0.00	320.00	3.20	0.83	0.00				
157.50	3.20	0.83	0.00	322.50	3.20	0.83	0.00				
160.00	3.20	0.83	0.00	325.00	3.20	0.83	0.00				
162.50	3.20	0.83	0.00	327.50	3.20	0.83	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Subcatchment 3.0S:

Runoff = 0.64 cfs @ 12.24 hrs, Volume= 0.082 af, Depth= 0.52"

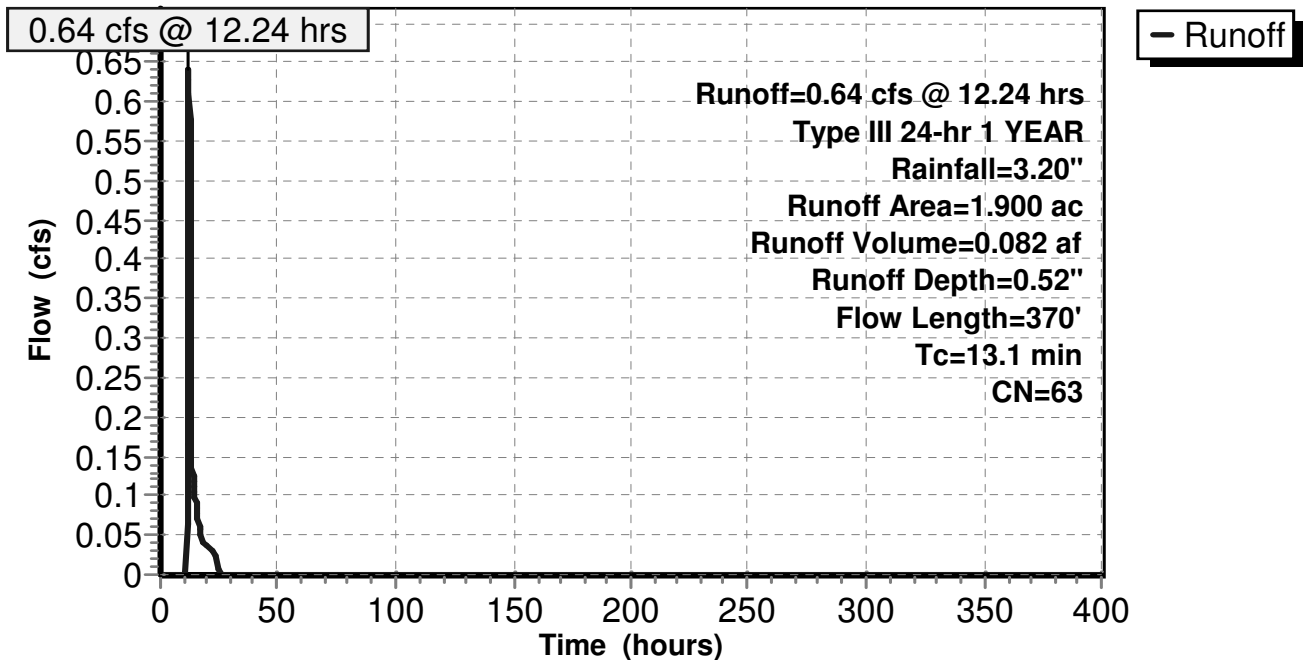
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 1 YEAR Rainfall=3.20"

Area (ac)	CN	Description
0.900	98	Paved parking & roofs
0.800	30	Woods, Good, HSG A
0.200	39	>75% Grass cover, Good, HSG A
1.900	63	Weighted Average
1.000		Pervious Area
0.900		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
6.5	90	0.0400	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
6.4	270	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.1	370	Total			

Subcatchment 3.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Subcatchment 3.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.20	0.52	0.00	330.00	3.20	0.52	0.00
2.50	0.08	0.00	0.00	167.50	3.20	0.52	0.00	332.50	3.20	0.52	0.00
5.00	0.18	0.00	0.00	170.00	3.20	0.52	0.00	335.00	3.20	0.52	0.00
7.50	0.33	0.00	0.00	172.50	3.20	0.52	0.00	337.50	3.20	0.52	0.00
10.00	0.60	0.00	0.00	175.00	3.20	0.52	0.00	340.00	3.20	0.52	0.00
12.50	2.25	0.17	0.45	177.50	3.20	0.52	0.00	342.50	3.20	0.52	0.00
15.00	2.73	0.33	0.09	180.00	3.20	0.52	0.00	345.00	3.20	0.52	0.00
17.50	2.94	0.41	0.05	182.50	3.20	0.52	0.00	347.50	3.20	0.52	0.00
20.00	3.06	0.46	0.03	185.00	3.20	0.52	0.00	350.00	3.20	0.52	0.00
22.50	3.16	0.50	0.03	187.50	3.20	0.52	0.00	352.50	3.20	0.52	0.00
25.00	3.20	0.52	0.00	190.00	3.20	0.52	0.00	355.00	3.20	0.52	0.00
27.50	3.20	0.52	0.00	192.50	3.20	0.52	0.00	357.50	3.20	0.52	0.00
30.00	3.20	0.52	0.00	195.00	3.20	0.52	0.00	360.00	3.20	0.52	0.00
32.50	3.20	0.52	0.00	197.50	3.20	0.52	0.00	362.50	3.20	0.52	0.00
35.00	3.20	0.52	0.00	200.00	3.20	0.52	0.00	365.00	3.20	0.52	0.00
37.50	3.20	0.52	0.00	202.50	3.20	0.52	0.00	367.50	3.20	0.52	0.00
40.00	3.20	0.52	0.00	205.00	3.20	0.52	0.00	370.00	3.20	0.52	0.00
42.50	3.20	0.52	0.00	207.50	3.20	0.52	0.00	372.50	3.20	0.52	0.00
45.00	3.20	0.52	0.00	210.00	3.20	0.52	0.00	375.00	3.20	0.52	0.00
47.50	3.20	0.52	0.00	212.50	3.20	0.52	0.00	377.50	3.20	0.52	0.00
50.00	3.20	0.52	0.00	215.00	3.20	0.52	0.00	380.00	3.20	0.52	0.00
52.50	3.20	0.52	0.00	217.50	3.20	0.52	0.00	382.50	3.20	0.52	0.00
55.00	3.20	0.52	0.00	220.00	3.20	0.52	0.00	385.00	3.20	0.52	0.00
57.50	3.20	0.52	0.00	222.50	3.20	0.52	0.00	387.50	3.20	0.52	0.00
60.00	3.20	0.52	0.00	225.00	3.20	0.52	0.00	390.00	3.20	0.52	0.00
62.50	3.20	0.52	0.00	227.50	3.20	0.52	0.00	392.50	3.20	0.52	0.00
65.00	3.20	0.52	0.00	230.00	3.20	0.52	0.00	395.00	3.20	0.52	0.00
67.50	3.20	0.52	0.00	232.50	3.20	0.52	0.00	397.50	3.20	0.52	0.00
70.00	3.20	0.52	0.00	235.00	3.20	0.52	0.00	400.00	3.20	0.52	0.00
72.50	3.20	0.52	0.00	237.50	3.20	0.52	0.00				
75.00	3.20	0.52	0.00	240.00	3.20	0.52	0.00				
77.50	3.20	0.52	0.00	242.50	3.20	0.52	0.00				
80.00	3.20	0.52	0.00	245.00	3.20	0.52	0.00				
82.50	3.20	0.52	0.00	247.50	3.20	0.52	0.00				
85.00	3.20	0.52	0.00	250.00	3.20	0.52	0.00				
87.50	3.20	0.52	0.00	252.50	3.20	0.52	0.00				
90.00	3.20	0.52	0.00	255.00	3.20	0.52	0.00				
92.50	3.20	0.52	0.00	257.50	3.20	0.52	0.00				
95.00	3.20	0.52	0.00	260.00	3.20	0.52	0.00				
97.50	3.20	0.52	0.00	262.50	3.20	0.52	0.00				
100.00	3.20	0.52	0.00	265.00	3.20	0.52	0.00				
102.50	3.20	0.52	0.00	267.50	3.20	0.52	0.00				
105.00	3.20	0.52	0.00	270.00	3.20	0.52	0.00				
107.50	3.20	0.52	0.00	272.50	3.20	0.52	0.00				
110.00	3.20	0.52	0.00	275.00	3.20	0.52	0.00				
112.50	3.20	0.52	0.00	277.50	3.20	0.52	0.00				
115.00	3.20	0.52	0.00	280.00	3.20	0.52	0.00				
117.50	3.20	0.52	0.00	282.50	3.20	0.52	0.00				
120.00	3.20	0.52	0.00	285.00	3.20	0.52	0.00				
122.50	3.20	0.52	0.00	287.50	3.20	0.52	0.00				
125.00	3.20	0.52	0.00	290.00	3.20	0.52	0.00				
127.50	3.20	0.52	0.00	292.50	3.20	0.52	0.00				
130.00	3.20	0.52	0.00	295.00	3.20	0.52	0.00				
132.50	3.20	0.52	0.00	297.50	3.20	0.52	0.00				
135.00	3.20	0.52	0.00	300.00	3.20	0.52	0.00				
137.50	3.20	0.52	0.00	302.50	3.20	0.52	0.00				
140.00	3.20	0.52	0.00	305.00	3.20	0.52	0.00				
142.50	3.20	0.52	0.00	307.50	3.20	0.52	0.00				
145.00	3.20	0.52	0.00	310.00	3.20	0.52	0.00				
147.50	3.20	0.52	0.00	312.50	3.20	0.52	0.00				
150.00	3.20	0.52	0.00	315.00	3.20	0.52	0.00				
152.50	3.20	0.52	0.00	317.50	3.20	0.52	0.00				
155.00	3.20	0.52	0.00	320.00	3.20	0.52	0.00				
157.50	3.20	0.52	0.00	322.50	3.20	0.52	0.00				
160.00	3.20	0.52	0.00	325.00	3.20	0.52	0.00				
162.50	3.20	0.52	0.00	327.50	3.20	0.52	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Subcatchment 3.1S:

Runoff = 0.10 cfs @ 12.60 hrs, Volume= 0.030 af, Depth= 0.20"

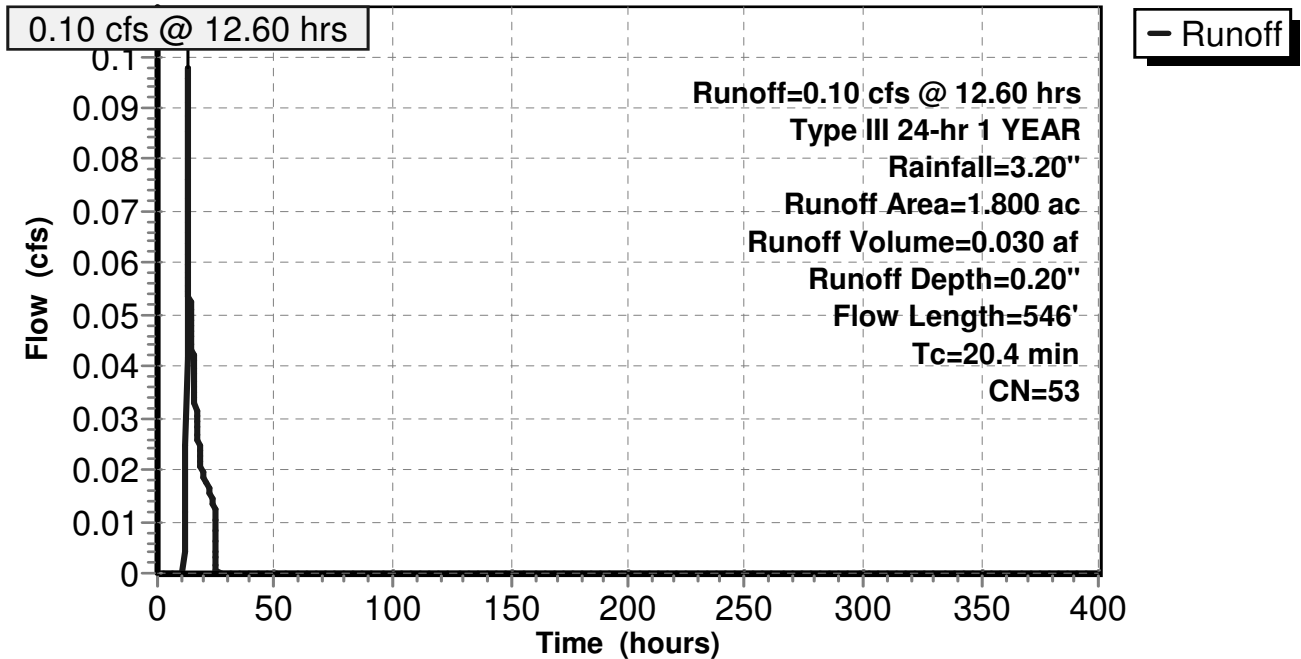
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 1 YEAR Rainfall=3.20"

Area (ac)	CN	Description
0.600	98	Paved parking & roofs
1.200	30	Woods, Good, HSG A
1.800	53	Weighted Average
1.200		Pervious Area
0.600		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
16.0	90	0.0300	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.7	126	0.0600	1.22		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.5	320	0.0200	2.18	2.61	Channel Flow, Area= 1.2 sf Perim= 5.5' r= 0.22' n= 0.035
20.4	546	Total			

Subcatchment 3.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Subcatchment 3.1S:

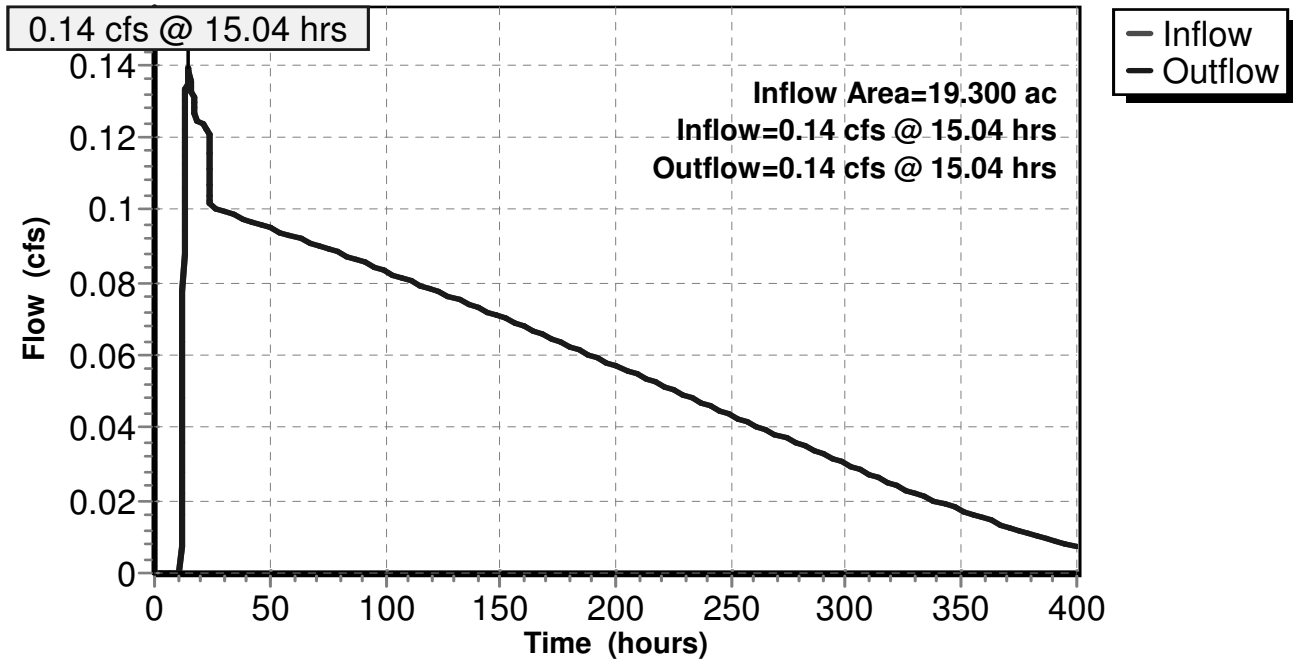
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.20	0.20	0.00	330.00	3.20	0.20	0.00
2.50	0.08	0.00	0.00	167.50	3.20	0.20	0.00	332.50	3.20	0.20	0.00
5.00	0.18	0.00	0.00	170.00	3.20	0.20	0.00	335.00	3.20	0.20	0.00
7.50	0.33	0.00	0.00	172.50	3.20	0.20	0.00	337.50	3.20	0.20	0.00
10.00	0.60	0.00	0.00	175.00	3.20	0.20	0.00	340.00	3.20	0.20	0.00
12.50	2.25	0.02	0.09	177.50	3.20	0.20	0.00	342.50	3.20	0.20	0.00
15.00	2.73	0.09	0.04	180.00	3.20	0.20	0.00	345.00	3.20	0.20	0.00
17.50	2.94	0.14	0.03	182.50	3.20	0.20	0.00	347.50	3.20	0.20	0.00
20.00	3.06	0.16	0.02	185.00	3.20	0.20	0.00	350.00	3.20	0.20	0.00
22.50	3.16	0.19	0.02	187.50	3.20	0.20	0.00	352.50	3.20	0.20	0.00
25.00	3.20	0.20	0.00	190.00	3.20	0.20	0.00	355.00	3.20	0.20	0.00
27.50	3.20	0.20	0.00	192.50	3.20	0.20	0.00	357.50	3.20	0.20	0.00
30.00	3.20	0.20	0.00	195.00	3.20	0.20	0.00	360.00	3.20	0.20	0.00
32.50	3.20	0.20	0.00	197.50	3.20	0.20	0.00	362.50	3.20	0.20	0.00
35.00	3.20	0.20	0.00	200.00	3.20	0.20	0.00	365.00	3.20	0.20	0.00
37.50	3.20	0.20	0.00	202.50	3.20	0.20	0.00	367.50	3.20	0.20	0.00
40.00	3.20	0.20	0.00	205.00	3.20	0.20	0.00	370.00	3.20	0.20	0.00
42.50	3.20	0.20	0.00	207.50	3.20	0.20	0.00	372.50	3.20	0.20	0.00
45.00	3.20	0.20	0.00	210.00	3.20	0.20	0.00	375.00	3.20	0.20	0.00
47.50	3.20	0.20	0.00	212.50	3.20	0.20	0.00	377.50	3.20	0.20	0.00
50.00	3.20	0.20	0.00	215.00	3.20	0.20	0.00	380.00	3.20	0.20	0.00
52.50	3.20	0.20	0.00	217.50	3.20	0.20	0.00	382.50	3.20	0.20	0.00
55.00	3.20	0.20	0.00	220.00	3.20	0.20	0.00	385.00	3.20	0.20	0.00
57.50	3.20	0.20	0.00	222.50	3.20	0.20	0.00	387.50	3.20	0.20	0.00
60.00	3.20	0.20	0.00	225.00	3.20	0.20	0.00	390.00	3.20	0.20	0.00
62.50	3.20	0.20	0.00	227.50	3.20	0.20	0.00	392.50	3.20	0.20	0.00
65.00	3.20	0.20	0.00	230.00	3.20	0.20	0.00	395.00	3.20	0.20	0.00
67.50	3.20	0.20	0.00	232.50	3.20	0.20	0.00	397.50	3.20	0.20	0.00
70.00	3.20	0.20	0.00	235.00	3.20	0.20	0.00	400.00	3.20	0.20	0.00
72.50	3.20	0.20	0.00	237.50	3.20	0.20	0.00				
75.00	3.20	0.20	0.00	240.00	3.20	0.20	0.00				
77.50	3.20	0.20	0.00	242.50	3.20	0.20	0.00				
80.00	3.20	0.20	0.00	245.00	3.20	0.20	0.00				
82.50	3.20	0.20	0.00	247.50	3.20	0.20	0.00				
85.00	3.20	0.20	0.00	250.00	3.20	0.20	0.00				
87.50	3.20	0.20	0.00	252.50	3.20	0.20	0.00				
90.00	3.20	0.20	0.00	255.00	3.20	0.20	0.00				
92.50	3.20	0.20	0.00	257.50	3.20	0.20	0.00				
95.00	3.20	0.20	0.00	260.00	3.20	0.20	0.00				
97.50	3.20	0.20	0.00	262.50	3.20	0.20	0.00				
100.00	3.20	0.20	0.00	265.00	3.20	0.20	0.00				
102.50	3.20	0.20	0.00	267.50	3.20	0.20	0.00				
105.00	3.20	0.20	0.00	270.00	3.20	0.20	0.00				
107.50	3.20	0.20	0.00	272.50	3.20	0.20	0.00				
110.00	3.20	0.20	0.00	275.00	3.20	0.20	0.00				
112.50	3.20	0.20	0.00	277.50	3.20	0.20	0.00				
115.00	3.20	0.20	0.00	280.00	3.20	0.20	0.00				
117.50	3.20	0.20	0.00	282.50	3.20	0.20	0.00				
120.00	3.20	0.20	0.00	285.00	3.20	0.20	0.00				
122.50	3.20	0.20	0.00	287.50	3.20	0.20	0.00				
125.00	3.20	0.20	0.00	290.00	3.20	0.20	0.00				
127.50	3.20	0.20	0.00	292.50	3.20	0.20	0.00				
130.00	3.20	0.20	0.00	295.00	3.20	0.20	0.00				
132.50	3.20	0.20	0.00	297.50	3.20	0.20	0.00				
135.00	3.20	0.20	0.00	300.00	3.20	0.20	0.00				
137.50	3.20	0.20	0.00	302.50	3.20	0.20	0.00				
140.00	3.20	0.20	0.00	305.00	3.20	0.20	0.00				
142.50	3.20	0.20	0.00	307.50	3.20	0.20	0.00				
145.00	3.20	0.20	0.00	310.00	3.20	0.20	0.00				
147.50	3.20	0.20	0.00	312.50	3.20	0.20	0.00				
150.00	3.20	0.20	0.00	315.00	3.20	0.20	0.00				
152.50	3.20	0.20	0.00	317.50	3.20	0.20	0.00				
155.00	3.20	0.20	0.00	320.00	3.20	0.20	0.00				
157.50	3.20	0.20	0.00	322.50	3.20	0.20	0.00				
160.00	3.20	0.20	0.00	325.00	3.20	0.20	0.00				
162.50	3.20	0.20	0.00	327.50	3.20	0.20	0.00				

Summary for Reach DESIGN LINE 1:

Inflow Area = 19.300 ac, 52.07% Impervious, Inflow Depth > 1.11" for 1 YEAR event
Inflow = 0.14 cfs @ 15.04 hrs, Volume= 1.785 af
Outflow = 0.14 cfs @ 15.04 hrs, Volume= 1.785 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

**Reach DESIGN LINE 1:
Hydrograph**



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Reach DESIGN LINE 1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.07		0.07	330.00	0.02		0.02
2.50	0.00		0.00	167.50	0.07		0.07	332.50	0.02		0.02
5.00	0.00		0.00	170.00	0.07		0.07	335.00	0.02		0.02
7.50	0.00		0.00	172.50	0.06		0.06	337.50	0.02		0.02
10.00	0.00		0.00	175.00	0.06		0.06	340.00	0.02		0.02
12.50	0.06		0.06	177.50	0.06		0.06	342.50	0.02		0.02
15.00	0.14		0.14	180.00	0.06		0.06	345.00	0.02		0.02
17.50	0.13		0.13	182.50	0.06		0.06	347.50	0.02		0.02
20.00	0.12		0.12	185.00	0.06		0.06	350.00	0.02		0.02
22.50	0.12		0.12	187.50	0.06		0.06	352.50	0.02		0.02
25.00	0.10		0.10	190.00	0.06		0.06	355.00	0.02		0.02
27.50	0.10		0.10	192.50	0.06		0.06	357.50	0.02		0.02
30.00	0.10		0.10	195.00	0.06		0.06	360.00	0.01		0.01
32.50	0.10		0.10	197.50	0.06		0.06	362.50	0.01		0.01
35.00	0.10		0.10	200.00	0.06		0.06	365.00	0.01		0.01
37.50	0.10		0.10	202.50	0.06		0.06	367.50	0.01		0.01
40.00	0.10		0.10	205.00	0.06		0.06	370.00	0.01		0.01
42.50	0.10		0.10	207.50	0.06		0.06	372.50	0.01		0.01
45.00	0.10		0.10	210.00	0.05		0.05	375.00	0.01		0.01
47.50	0.10		0.10	212.50	0.05		0.05	377.50	0.01		0.01
50.00	0.09		0.09	215.00	0.05		0.05	380.00	0.01		0.01
52.50	0.09		0.09	217.50	0.05		0.05	382.50	0.01		0.01
55.00	0.09		0.09	220.00	0.05		0.05	385.00	0.01		0.01
57.50	0.09		0.09	222.50	0.05		0.05	387.50	0.01		0.01
60.00	0.09		0.09	225.00	0.05		0.05	390.00	0.01		0.01
62.50	0.09		0.09	227.50	0.05		0.05	392.50	0.01		0.01
65.00	0.09		0.09	230.00	0.05		0.05	395.00	0.01		0.01
67.50	0.09		0.09	232.50	0.05		0.05	397.50	0.01		0.01
70.00	0.09		0.09	235.00	0.05		0.05	400.00	0.01		0.01
72.50	0.09		0.09	237.50	0.05		0.05				
75.00	0.09		0.09	240.00	0.05		0.05				
77.50	0.09		0.09	242.50	0.05		0.05				
80.00	0.09		0.09	245.00	0.04		0.04				
82.50	0.09		0.09	247.50	0.04		0.04				
85.00	0.09		0.09	250.00	0.04		0.04				
87.50	0.09		0.09	252.50	0.04		0.04				
90.00	0.09		0.09	255.00	0.04		0.04				
92.50	0.08		0.08	257.50	0.04		0.04				
95.00	0.08		0.08	260.00	0.04		0.04				
97.50	0.08		0.08	262.50	0.04		0.04				
100.00	0.08		0.08	265.00	0.04		0.04				
102.50	0.08		0.08	267.50	0.04		0.04				
105.00	0.08		0.08	270.00	0.04		0.04				
107.50	0.08		0.08	272.50	0.04		0.04				
110.00	0.08		0.08	275.00	0.04		0.04				
112.50	0.08		0.08	277.50	0.04		0.04				
115.00	0.08		0.08	280.00	0.04		0.04				
117.50	0.08		0.08	282.50	0.03		0.03				
120.00	0.08		0.08	285.00	0.03		0.03				
122.50	0.08		0.08	287.50	0.03		0.03				
125.00	0.08		0.08	290.00	0.03		0.03				
127.50	0.08		0.08	292.50	0.03		0.03				
130.00	0.08		0.08	295.00	0.03		0.03				
132.50	0.07		0.07	297.50	0.03		0.03				
135.00	0.07		0.07	300.00	0.03		0.03				
137.50	0.07		0.07	302.50	0.03		0.03				
140.00	0.07		0.07	305.00	0.03		0.03				
142.50	0.07		0.07	307.50	0.03		0.03				
145.00	0.07		0.07	310.00	0.03		0.03				
147.50	0.07		0.07	312.50	0.03		0.03				
150.00	0.07		0.07	315.00	0.03		0.03				
152.50	0.07		0.07	317.50	0.03		0.03				
155.00	0.07		0.07	320.00	0.02		0.02				
157.50	0.07		0.07	322.50	0.02		0.02				
160.00	0.07		0.07	325.00	0.02		0.02				
162.50	0.07		0.07	327.50	0.02		0.02				

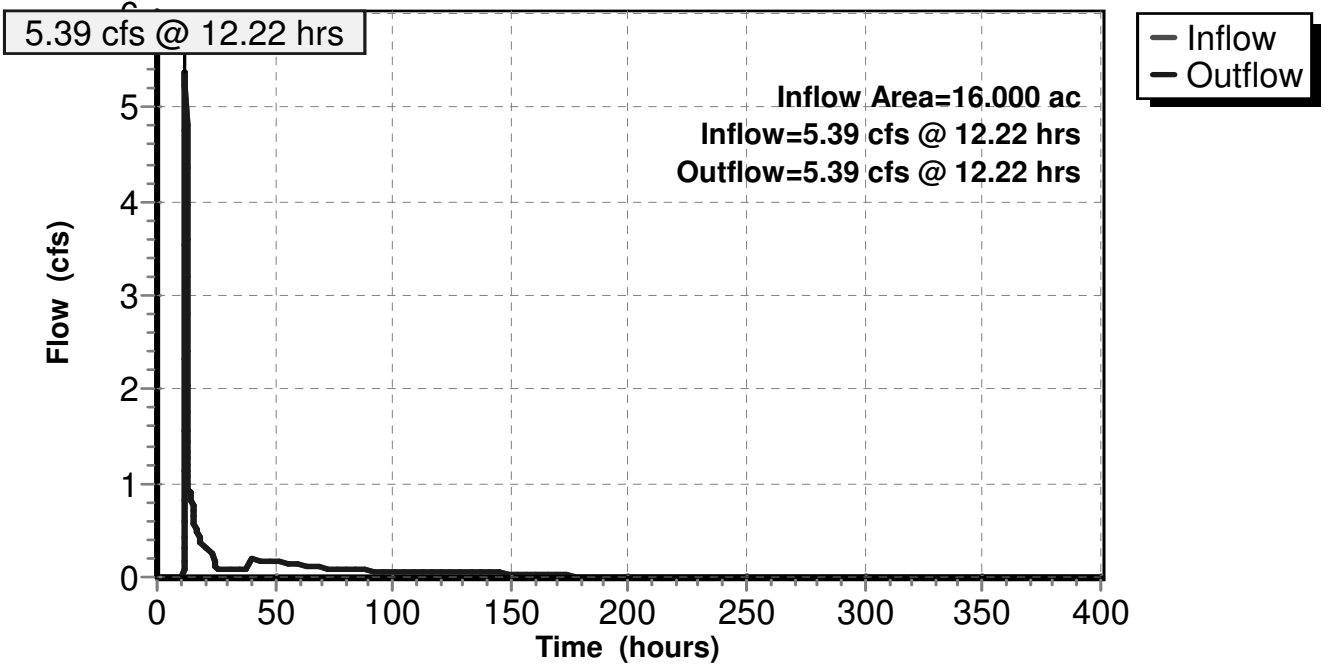
Summary for Reach DESIGN POINT 2:

Inflow Area = 16.000 ac, 31.28% Impervious, Inflow Depth = 1.26" for 1 YEAR event
Inflow = 5.39 cfs @ 12.22 hrs, Volume= 1.683 af
Outflow = 5.39 cfs @ 12.22 hrs, Volume= 1.683 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

Reach DESIGN POINT 2:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Reach DESIGN POINT 2:

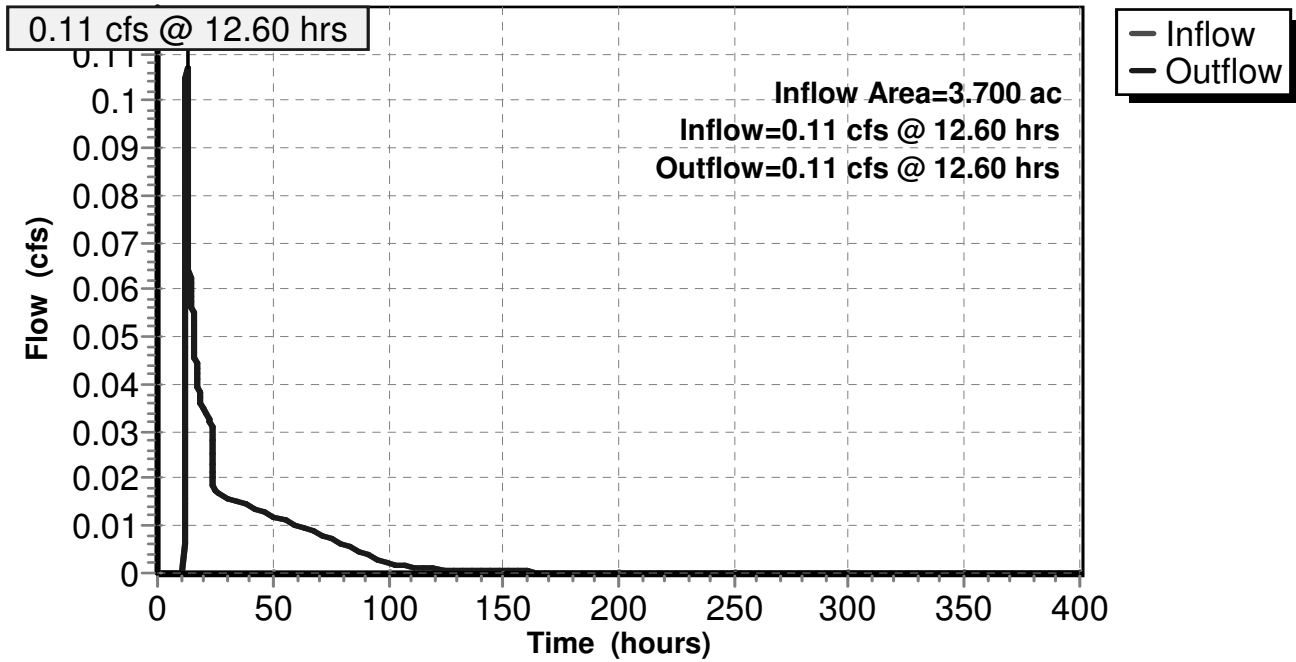
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.03		0.03	330.00	0.00		0.00
2.50	0.00		0.00	167.50	0.03		0.03	332.50	0.00		0.00
5.00	0.00		0.00	170.00	0.03		0.03	335.00	0.00		0.00
7.50	0.00		0.00	172.50	0.03		0.03	337.50	0.00		0.00
10.00	0.01		0.01	175.00	0.03		0.03	340.00	0.00		0.00
12.50	3.21		3.21	177.50	0.00		0.00	342.50	0.00		0.00
15.00	0.79		0.79	180.00	0.00		0.00	345.00	0.00		0.00
17.50	0.43		0.43	182.50	0.00		0.00	347.50	0.00		0.00
20.00	0.31		0.31	185.00	0.00		0.00	350.00	0.00		0.00
22.50	0.26		0.26	187.50	0.00		0.00	352.50	0.00		0.00
25.00	0.08		0.08	190.00	0.00		0.00	355.00	0.00		0.00
27.50	0.08		0.08	192.50	0.00		0.00	357.50	0.00		0.00
30.00	0.08		0.08	195.00	0.00		0.00	360.00	0.00		0.00
32.50	0.08		0.08	197.50	0.00		0.00	362.50	0.00		0.00
35.00	0.08		0.08	200.00	0.00		0.00	365.00	0.00		0.00
37.50	0.13		0.13	202.50	0.00		0.00	367.50	0.00		0.00
40.00	0.19		0.19	205.00	0.00		0.00	370.00	0.00		0.00
42.50	0.19		0.19	207.50	0.00		0.00	372.50	0.00		0.00
45.00	0.18		0.18	210.00	0.00		0.00	375.00	0.00		0.00
47.50	0.17		0.17	212.50	0.00		0.00	377.50	0.00		0.00
50.00	0.16		0.16	215.00	0.00		0.00	380.00	0.00		0.00
52.50	0.15		0.15	217.50	0.00		0.00	382.50	0.00		0.00
55.00	0.15		0.15	220.00	0.00		0.00	385.00	0.00		0.00
57.50	0.14		0.14	222.50	0.00		0.00	387.50	0.00		0.00
60.00	0.13		0.13	225.00	0.00		0.00	390.00	0.00		0.00
62.50	0.12		0.12	227.50	0.00		0.00	392.50	0.00		0.00
65.00	0.11		0.11	230.00	0.00		0.00	395.00	0.00		0.00
67.50	0.10		0.10	232.50	0.00		0.00	397.50	0.00		0.00
70.00	0.10		0.10	235.00	0.00		0.00	400.00	0.00		0.00
72.50	0.09		0.09	237.50	0.00		0.00				
75.00	0.08		0.08	240.00	0.00		0.00				
77.50	0.08		0.08	242.50	0.00		0.00				
80.00	0.07		0.07	245.00	0.00		0.00				
82.50	0.07		0.07	247.50	0.00		0.00				
85.00	0.07		0.07	250.00	0.00		0.00				
87.50	0.07		0.07	252.50	0.00		0.00				
90.00	0.07		0.07	255.00	0.00		0.00				
92.50	0.07		0.07	257.50	0.00		0.00				
95.00	0.07		0.07	260.00	0.00		0.00				
97.50	0.07		0.07	262.50	0.00		0.00				
100.00	0.07		0.07	265.00	0.00		0.00				
102.50	0.07		0.07	267.50	0.00		0.00				
105.00	0.06		0.06	270.00	0.00		0.00				
107.50	0.06		0.06	272.50	0.00		0.00				
110.00	0.06		0.06	275.00	0.00		0.00				
112.50	0.06		0.06	277.50	0.00		0.00				
115.00	0.06		0.06	280.00	0.00		0.00				
117.50	0.06		0.06	282.50	0.00		0.00				
120.00	0.06		0.06	285.00	0.00		0.00				
122.50	0.06		0.06	287.50	0.00		0.00				
125.00	0.05		0.05	290.00	0.00		0.00				
127.50	0.05		0.05	292.50	0.00		0.00				
130.00	0.05		0.05	295.00	0.00		0.00				
132.50	0.05		0.05	297.50	0.00		0.00				
135.00	0.05		0.05	300.00	0.00		0.00				
137.50	0.05		0.05	302.50	0.00		0.00				
140.00	0.05		0.05	305.00	0.00		0.00				
142.50	0.05		0.05	307.50	0.00		0.00				
145.00	0.04		0.04	310.00	0.00		0.00				
147.50	0.04		0.04	312.50	0.00		0.00				
150.00	0.04		0.04	315.00	0.00		0.00				
152.50	0.04		0.04	317.50	0.00		0.00				
155.00	0.04		0.04	320.00	0.00		0.00				
157.50	0.04		0.04	322.50	0.00		0.00				
160.00	0.04		0.04	325.00	0.00		0.00				
162.50	0.04		0.04	327.50	0.00		0.00				

Summary for Reach Design Point 3:

Inflow Area = 3.700 ac, 40.54% Impervious, Inflow Depth > 0.36" for 1 YEAR event
Inflow = 0.11 cfs @ 12.60 hrs, Volume= 0.111 af
Outflow = 0.11 cfs @ 12.60 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

**Reach Design Point 3:
Hydrograph**



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Reach Design Point 3:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.00		0.00	330.00	0.00		0.00
2.50	0.00		0.00	167.50	0.00		0.00	332.50	0.00		0.00
5.00	0.00		0.00	170.00	0.00		0.00	335.00	0.00		0.00
7.50	0.00		0.00	172.50	0.00		0.00	337.50	0.00		0.00
10.00	0.00		0.00	175.00	0.00		0.00	340.00	0.00		0.00
12.50	0.10		0.10	177.50	0.00		0.00	342.50	0.00		0.00
15.00	0.06		0.06	180.00	0.00		0.00	345.00	0.00		0.00
17.50	0.04		0.04	182.50	0.00		0.00	347.50	0.00		0.00
20.00	0.04		0.04	185.00	0.00		0.00	350.00	0.00		0.00
22.50	0.03		0.03	187.50	0.00		0.00	352.50	0.00		0.00
25.00	0.02		0.02	190.00	0.00		0.00	355.00	0.00		0.00
27.50	0.02		0.02	192.50	0.00		0.00	357.50	0.00		0.00
30.00	0.02		0.02	195.00	0.00		0.00	360.00	0.00		0.00
32.50	0.02		0.02	197.50	0.00		0.00	362.50	0.00		0.00
35.00	0.02		0.02	200.00	0.00		0.00	365.00	0.00		0.00
37.50	0.01		0.01	202.50	0.00		0.00	367.50	0.00		0.00
40.00	0.01		0.01	205.00	0.00		0.00	370.00	0.00		0.00
42.50	0.01		0.01	207.50	0.00		0.00	372.50	0.00		0.00
45.00	0.01		0.01	210.00	0.00		0.00	375.00	0.00		0.00
47.50	0.01		0.01	212.50	0.00		0.00	377.50	0.00		0.00
50.00	0.01		0.01	215.00	0.00		0.00	380.00	0.00		0.00
52.50	0.01		0.01	217.50	0.00		0.00	382.50	0.00		0.00
55.00	0.01		0.01	220.00	0.00		0.00	385.00	0.00		0.00
57.50	0.01		0.01	222.50	0.00		0.00	387.50	0.00		0.00
60.00	0.01		0.01	225.00	0.00		0.00	390.00	0.00		0.00
62.50	0.01		0.01	227.50	0.00		0.00	392.50	0.00		0.00
65.00	0.01		0.01	230.00	0.00		0.00	395.00	0.00		0.00
67.50	0.01		0.01	232.50	0.00		0.00	397.50	0.00		0.00
70.00	0.01		0.01	235.00	0.00		0.00	400.00	0.00		0.00
72.50	0.01		0.01	237.50	0.00		0.00				
75.00	0.01		0.01	240.00	0.00		0.00				
77.50	0.01		0.01	242.50	0.00		0.00				
80.00	0.01		0.01	245.00	0.00		0.00				
82.50	0.01		0.01	247.50	0.00		0.00				
85.00	0.01		0.01	250.00	0.00		0.00				
87.50	0.00		0.00	252.50	0.00		0.00				
90.00	0.00		0.00	255.00	0.00		0.00				
92.50	0.00		0.00	257.50	0.00		0.00				
95.00	0.00		0.00	260.00	0.00		0.00				
97.50	0.00		0.00	262.50	0.00		0.00				
100.00	0.00		0.00	265.00	0.00		0.00				
102.50	0.00		0.00	267.50	0.00		0.00				
105.00	0.00		0.00	270.00	0.00		0.00				
107.50	0.00		0.00	272.50	0.00		0.00				
110.00	0.00		0.00	275.00	0.00		0.00				
112.50	0.00		0.00	277.50	0.00		0.00				
115.00	0.00		0.00	280.00	0.00		0.00				
117.50	0.00		0.00	282.50	0.00		0.00				
120.00	0.00		0.00	285.00	0.00		0.00				
122.50	0.00		0.00	287.50	0.00		0.00				
125.00	0.00		0.00	290.00	0.00		0.00				
127.50	0.00		0.00	292.50	0.00		0.00				
130.00	0.00		0.00	295.00	0.00		0.00				
132.50	0.00		0.00	297.50	0.00		0.00				
135.00	0.00		0.00	300.00	0.00		0.00				
137.50	0.00		0.00	302.50	0.00		0.00				
140.00	0.00		0.00	305.00	0.00		0.00				
142.50	0.00		0.00	307.50	0.00		0.00				
145.00	0.00		0.00	310.00	0.00		0.00				
147.50	0.00		0.00	312.50	0.00		0.00				
150.00	0.00		0.00	315.00	0.00		0.00				
152.50	0.00		0.00	317.50	0.00		0.00				
155.00	0.00		0.00	320.00	0.00		0.00				
157.50	0.00		0.00	322.50	0.00		0.00				
160.00	0.00		0.00	325.00	0.00		0.00				
162.50	0.00		0.00	327.50	0.00		0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Pond 1.0P:

Inflow Area = 12.500 ac, 72.08% Impervious, Inflow Depth = 1.68" for 1 YEAR event
 Inflow = 25.65 cfs @ 12.07 hrs, Volume= 1.752 af
 Outflow = 6.70 cfs @ 12.44 hrs, Volume= 1.716 af, Atten= 74%, Lag= 22.8 min
 Primary = 6.70 cfs @ 12.44 hrs, Volume= 1.716 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 473.00' Surf.Area= 21,200 sf Storage= 38,250 cf
 Peak Elev= 474.33' @ 12.44 hrs Surf.Area= 28,987 sf Storage= 71,620 cf (33,370 cf above start)
 Flood Elev= 476.00' Surf.Area= 39,000 sf Storage= 128,350 cf (90,100 cf above start)

Plug-Flow detention time= 5,501.3 min calculated for 0.838 af (48% of inflow)
 Center-of-Mass det. time= 2,619.7 min (3,447.6 - 827.9)

Volume	Invert	Avail.Storage	Storage Description
#1	468.00'	170,400 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

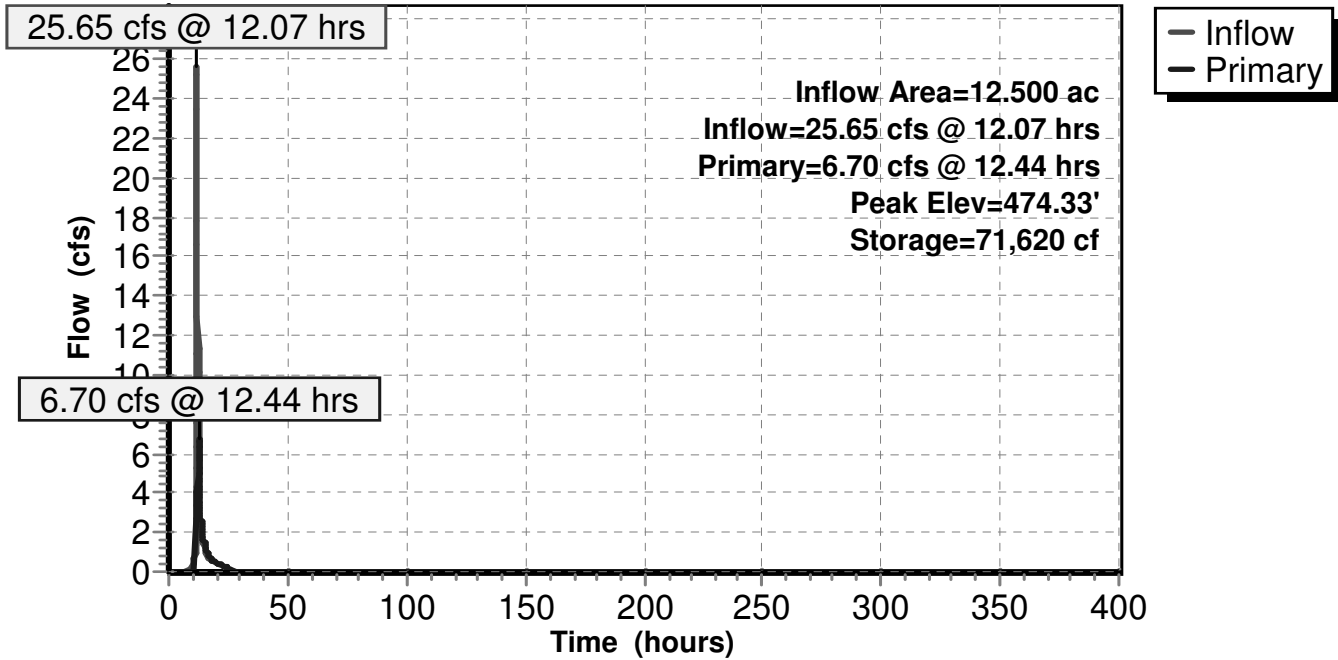
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
468.00	1,700	0	0
470.00	4,200	5,900	5,900
472.00	11,700	15,900	21,800
473.00	21,200	16,450	38,250
474.00	27,000	24,100	62,350
476.00	39,000	66,000	128,350
477.00	45,100	42,050	170,400

Device	Routing	Invert	Outlet Devices
#1	Primary	467.00'	36.0" x 142.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 462.50' S= 0.0317 '/' Cc= 0.900 n= 0.012
#2	Device 1	473.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	473.90'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=6.69 cfs @ 12.44 hrs HW=474.33' TW=452.43' (Dynamic Tailwater)
 ↑ **1=Culvert** (Passes 6.69 cfs of 82.18 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.47 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 6.66 cfs @ 1.93 fps)

Pond 1.0P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Pond 1.0P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	38,250	473.00	0.00	330.00	0.00	41,528	473.15	0.01
5.00	0.00	38,250	473.00	0.00	335.00	0.00	41,374	473.14	0.01
10.00	0.37	39,227	473.05	0.00	340.00	0.00	41,225	473.14	0.01
15.00	1.23	63,998	474.06	1.47	345.00	0.00	41,081	473.13	0.01
20.00	0.44	61,666	473.97	0.48	350.00	0.00	40,942	473.12	0.01
25.00	0.00	60,454	473.93	0.14	355.00	0.00	40,809	473.12	0.01
30.00	0.00	59,597	473.90	0.02	360.00	0.00	40,680	473.11	0.01
35.00	0.00	59,162	473.88	0.02	365.00	0.00	40,556	473.11	0.01
40.00	0.00	58,731	473.86	0.02	370.00	0.00	40,438	473.10	0.01
45.00	0.00	58,304	473.85	0.02	375.00	0.00	40,325	473.10	0.01
50.00	0.00	57,882	473.83	0.02	380.00	0.00	40,216	473.09	0.01
55.00	0.00	57,464	473.82	0.02	385.00	0.00	40,113	473.09	0.01
60.00	0.00	57,050	473.80	0.02	390.00	0.00	40,015	473.08	0.01
65.00	0.00	56,641	473.78	0.02	395.00	0.00	39,922	473.08	0.01
70.00	0.00	56,236	473.77	0.02	400.00	0.00	39,834	473.07	0.00
75.00	0.00	55,836	473.75	0.02					
80.00	0.00	55,439	473.74	0.02					
85.00	0.00	55,047	473.72	0.02					
90.00	0.00	54,660	473.71	0.02					
95.00	0.00	54,277	473.69	0.02					
100.00	0.00	53,898	473.68	0.02					
105.00	0.00	53,524	473.66	0.02					
110.00	0.00	53,154	473.65	0.02					
115.00	0.00	52,789	473.63	0.02					
120.00	0.00	52,428	473.62	0.02					
125.00	0.00	52,072	473.60	0.02					
130.00	0.00	51,721	473.59	0.02					
135.00	0.00	51,373	473.57	0.02					
140.00	0.00	51,031	473.56	0.02					
145.00	0.00	50,693	473.55	0.02					
150.00	0.00	50,359	473.53	0.02					
155.00	0.00	50,030	473.52	0.02					
160.00	0.00	49,706	473.51	0.02					
165.00	0.00	49,387	473.49	0.02					
170.00	0.00	49,072	473.48	0.02					
175.00	0.00	48,761	473.47	0.02					
180.00	0.00	48,456	473.45	0.02					
185.00	0.00	48,155	473.44	0.02					
190.00	0.00	47,859	473.43	0.02					
195.00	0.00	47,567	473.42	0.02					
200.00	0.00	47,280	473.40	0.02					
205.00	0.00	46,998	473.39	0.02					
210.00	0.00	46,721	473.38	0.02					
215.00	0.00	46,448	473.37	0.02					
220.00	0.00	46,181	473.36	0.01					
225.00	0.00	45,918	473.35	0.01					
230.00	0.00	45,660	473.33	0.01					
235.00	0.00	45,406	473.32	0.01					
240.00	0.00	45,158	473.31	0.01					
245.00	0.00	44,914	473.30	0.01					
250.00	0.00	44,676	473.29	0.01					
255.00	0.00	44,442	473.28	0.01					
260.00	0.00	44,213	473.27	0.01					
265.00	0.00	43,989	473.26	0.01					
270.00	0.00	43,770	473.25	0.01					
275.00	0.00	43,556	473.24	0.01					
280.00	0.00	43,346	473.23	0.01					
285.00	0.00	43,142	473.22	0.01					
290.00	0.00	42,943	473.22	0.01					
295.00	0.00	42,749	473.21	0.01					
300.00	0.00	42,559	473.20	0.01					
305.00	0.00	42,375	473.19	0.01					
310.00	0.00	42,196	473.18	0.01					
315.00	0.00	42,021	473.17	0.01					
320.00	0.00	41,852	473.17	0.01					
325.00	0.00	41,688	473.16	0.01					

Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Pond 1.1P:

Inflow Area = 15.300 ac, 63.73% Impervious, Inflow Depth > 1.39" for 1 YEAR event
 Inflow = 6.97 cfs @ 12.44 hrs, Volume= 1.775 af
 Outflow = 0.10 cfs @ 25.42 hrs, Volume= 1.748 af, Atten= 99%, Lag= 778.9 min
 Primary = 0.10 cfs @ 25.42 hrs, Volume= 1.748 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 452.00' Surf.Area= 14,600 sf Storage= 47,550 cf
 Peak Elev= 454.95' @ 25.42 hrs Surf.Area= 21,270 sf Storage= 100,196 cf (52,646 cf above start)
 Flood Elev= 460.00' Surf.Area= 34,600 sf Storage= 240,350 cf (192,800 cf above start)

Plug-Flow detention time= 14,319.1 min calculated for 0.657 af (37% of inflow)
 Center-of-Mass det. time= 5,527.6 min (8,893.0 - 3,365.4)

Volume	Invert	Avail.Storage	Storage Description
#1	444.00'	276,450 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
444.00	1,000	0	0
446.00	3,600	4,600	4,600
448.00	5,200	8,800	13,400
450.00	7,100	12,300	25,700
451.00	11,000	9,050	34,750
452.00	14,600	12,800	47,550
454.00	19,000	33,600	81,150
456.00	23,800	42,800	123,950
458.00	29,000	52,800	176,750
460.00	34,600	63,600	240,350
461.00	37,600	36,100	276,450

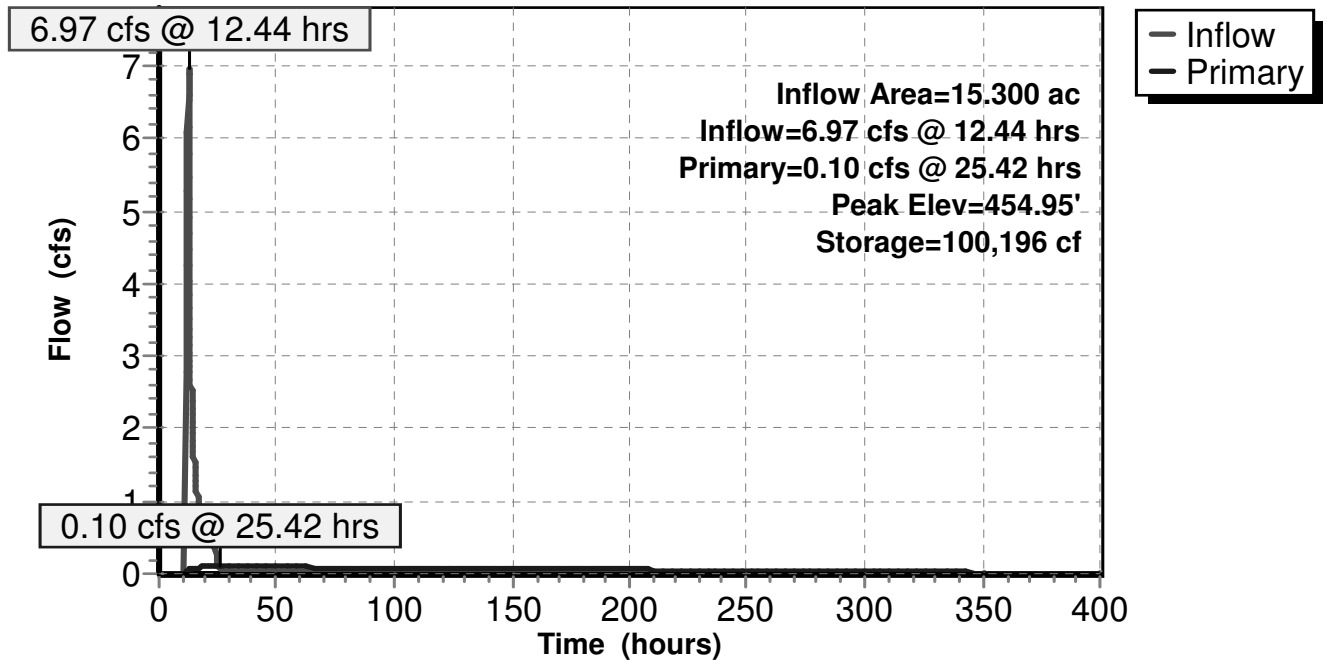
Device	Routing	Invert	Outlet Devices
#1	Primary	452.00'	36.0" x 76.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 451.20' S= 0.0105 '/' Cc= 0.900 n= 0.012
#2	Device 1	452.00'	1.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	455.90'	1.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.10 cfs @ 25.42 hrs HW=454.95' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 0.10 cfs of 40.62 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.10 cfs @ 8.18 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1.1P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Pond 1.1P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	47,550	452.00	0.00	330.00	0.01	50,523	452.20	0.02
5.00	0.00	47,550	452.00	0.00	335.00	0.01	50,293	452.19	0.02
10.00	0.00	47,553	452.00	0.00	340.00	0.01	50,081	452.17	0.02
15.00	1.55	81,136	454.00	0.08	345.00	0.01	49,885	452.16	0.02
20.00	0.51	95,018	454.70	0.10	350.00	0.01	49,706	452.15	0.02
25.00	0.14	100,171	454.94	0.10	355.00	0.01	49,543	452.14	0.02
30.00	0.02	99,227	454.90	0.10	360.00	0.01	49,395	452.13	0.01
35.00	0.02	97,881	454.84	0.10	365.00	0.01	49,261	452.12	0.01
40.00	0.02	96,550	454.77	0.10	370.00	0.01	49,141	452.11	0.01
45.00	0.02	95,236	454.71	0.10	375.00	0.01	49,038	452.10	0.01
50.00	0.02	93,938	454.65	0.09	380.00	0.01	48,948	452.10	0.01
55.00	0.02	92,657	454.58	0.09	385.00	0.01	48,870	452.09	0.01
60.00	0.02	91,392	454.52	0.09	390.00	0.01	48,802	452.09	0.01
65.00	0.02	90,144	454.46	0.09	395.00	0.01	48,742	452.08	0.01
70.00	0.02	88,912	454.40	0.09	400.00	0.00	48,688	452.08	0.01
75.00	0.02	87,698	454.34	0.09					
80.00	0.02	86,501	454.28	0.09					
85.00	0.02	85,321	454.22	0.09					
90.00	0.02	84,158	454.16	0.09					
95.00	0.02	83,013	454.10	0.08					
100.00	0.02	81,886	454.04	0.08					
105.00	0.02	80,776	453.98	0.08					
110.00	0.02	79,684	453.92	0.08					
115.00	0.02	78,610	453.87	0.08					
120.00	0.02	77,554	453.81	0.08					
125.00	0.02	76,516	453.75	0.08					
130.00	0.02	75,496	453.70	0.08					
135.00	0.02	74,495	453.64	0.07					
140.00	0.02	73,512	453.59	0.07					
145.00	0.02	72,548	453.53	0.07					
150.00	0.02	71,603	453.48	0.07					
155.00	0.02	70,676	453.43	0.07					
160.00	0.02	69,768	453.38	0.07					
165.00	0.02	68,880	453.33	0.07					
170.00	0.02	68,010	453.28	0.07					
175.00	0.02	67,159	453.23	0.06					
180.00	0.02	66,328	453.18	0.06					
185.00	0.02	65,516	453.13	0.06					
190.00	0.02	64,724	453.09	0.06					
195.00	0.02	63,951	453.04	0.06					
200.00	0.02	63,197	453.00	0.06					
205.00	0.02	62,463	452.95	0.06					
210.00	0.02	61,749	452.91	0.05					
215.00	0.02	61,055	452.87	0.05					
220.00	0.01	60,380	452.83	0.05					
225.00	0.01	59,725	452.79	0.05					
230.00	0.01	59,090	452.75	0.05					
235.00	0.01	58,475	452.71	0.05					
240.00	0.01	57,880	452.67	0.05					
245.00	0.01	57,304	452.64	0.04					
250.00	0.01	56,749	452.60	0.04					
255.00	0.01	56,214	452.57	0.04					
260.00	0.01	55,698	452.54	0.04					
265.00	0.01	55,202	452.50	0.04					
270.00	0.01	54,726	452.47	0.04					
275.00	0.01	54,270	452.45	0.04					
280.00	0.01	53,833	452.42	0.04					
285.00	0.01	53,416	452.39	0.03					
290.00	0.01	53,019	452.36	0.03					
295.00	0.01	52,641	452.34	0.03					
300.00	0.01	52,282	452.32	0.03					
305.00	0.01	51,942	452.29	0.03					
310.00	0.01	51,622	452.27	0.03					
315.00	0.01	51,319	452.25	0.03					
320.00	0.01	51,036	452.23	0.02					
325.00	0.01	50,770	452.22	0.02					

Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Pond 2.0P:

Inflow Area = 5.100 ac, 68.33% Impervious, Inflow Depth = 2.00" for 1 YEAR event
 Inflow = 11.09 cfs @ 12.11 hrs, Volume= 0.849 af
 Outflow = 0.21 cfs @ 19.24 hrs, Volume= 0.847 af, Atten= 98%, Lag= 427.6 min
 Primary = 0.21 cfs @ 19.24 hrs, Volume= 0.847 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 478.00' Surf.Area= 14,500 sf Storage= 29,775 cf
 Peak Elev= 479.74' @ 19.24 hrs Surf.Area= 18,324 sf Storage= 58,304 cf (28,529 cf above start)
 Flood Elev= 481.25' Surf.Area= 21,775 sf Storage= 88,597 cf (58,822 cf above start)

Plug-Flow detention time= 4,315.3 min calculated for 0.163 af (19% of inflow)
 Center-of-Mass det. time= 1,764.8 min (2,581.5 - 816.6)

Volume	Invert	Avail.Storage	Storage Description
#1	472.00'	105,575 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

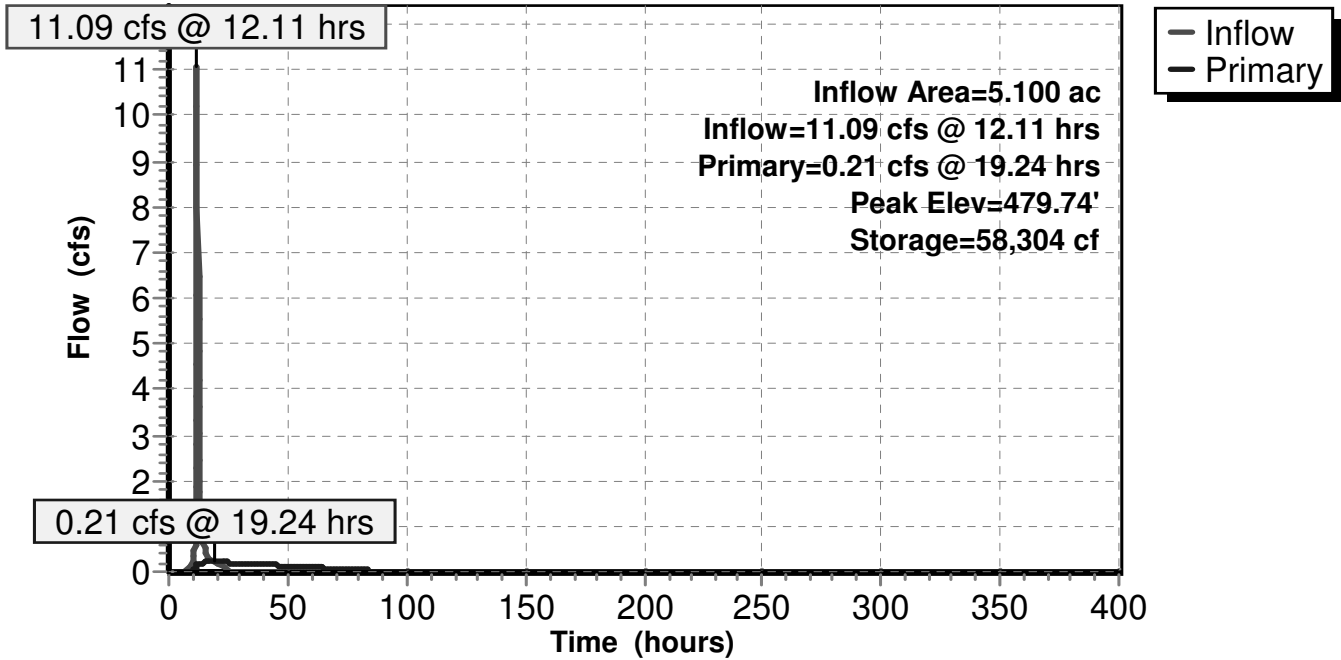
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
472.00	2,000	0	0
474.00	3,100	5,100	5,100
476.00	4,400	7,500	12,600
476.50	5,200	2,400	15,000
478.00	14,500	14,775	29,775
480.00	18,900	33,400	63,175
482.00	23,500	42,400	105,575

Device	Routing	Invert	Outlet Devices
#1	Primary	473.40'	36.0" x 117.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 472.10' S= 0.0111 '/' Cc= 0.900 n= 0.012
#2	Device 1	478.00'	2.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	480.10'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.21 cfs @ 19.24 hrs HW=479.74' TW=473.74' (Dynamic Tailwater)
 ↑ **1=Culvert** (Passes 0.21 cfs of 74.86 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.21 cfs @ 6.16 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2.0P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Pond 2.0P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	29,775	478.00	0.00	330.00	0.00	29,887	478.01	0.00
5.00	0.00	29,775	478.00	0.00	335.00	0.00	29,885	478.01	0.00
10.00	0.27	30,844	478.07	0.01	340.00	0.00	29,883	478.01	0.00
15.00	0.56	56,504	479.64	0.20	345.00	0.00	29,881	478.01	0.00
20.00	0.19	58,281	479.74	0.21	350.00	0.00	29,879	478.01	0.00
25.00	0.00	56,897	479.66	0.20	355.00	0.00	29,877	478.01	0.00
30.00	0.00	53,331	479.46	0.19	360.00	0.00	29,875	478.01	0.00
35.00	0.00	50,012	479.27	0.18	365.00	0.00	29,874	478.01	0.00
40.00	0.00	46,946	479.09	0.16	370.00	0.00	29,872	478.01	0.00
45.00	0.00	44,137	478.93	0.15	375.00	0.00	29,870	478.01	0.00
50.00	0.00	41,593	478.77	0.13	380.00	0.00	29,869	478.01	0.00
55.00	0.00	39,317	478.63	0.12	385.00	0.00	29,867	478.01	0.00
60.00	0.00	37,317	478.50	0.10	390.00	0.00	29,866	478.01	0.00
65.00	0.00	35,596	478.39	0.09	395.00	0.00	29,864	478.01	0.00
70.00	0.00	34,160	478.30	0.07	400.00	0.00	29,863	478.01	0.00
75.00	0.00	33,011	478.22	0.06					
80.00	0.00	32,154	478.16	0.04					
85.00	0.00	31,585	478.12	0.03					
90.00	0.00	31,212	478.10	0.02					
95.00	0.00	30,957	478.08	0.01					
100.00	0.00	30,773	478.07	0.01					
105.00	0.00	30,637	478.06	0.01					
110.00	0.00	30,532	478.05	0.01					
115.00	0.00	30,449	478.05	0.00					
120.00	0.00	30,381	478.04	0.00					
125.00	0.00	30,326	478.04	0.00					
130.00	0.00	30,280	478.03	0.00					
135.00	0.00	30,240	478.03	0.00					
140.00	0.00	30,206	478.03	0.00					
145.00	0.00	30,177	478.03	0.00					
150.00	0.00	30,151	478.03	0.00					
155.00	0.00	30,129	478.02	0.00					
160.00	0.00	30,109	478.02	0.00					
165.00	0.00	30,091	478.02	0.00					
170.00	0.00	30,074	478.02	0.00					
175.00	0.00	30,060	478.02	0.00					
180.00	0.00	30,046	478.02	0.00					
185.00	0.00	30,034	478.02	0.00					
190.00	0.00	30,023	478.02	0.00					
195.00	0.00	30,013	478.02	0.00					
200.00	0.00	30,004	478.02	0.00					
205.00	0.00	29,995	478.02	0.00					
210.00	0.00	29,987	478.01	0.00					
215.00	0.00	29,979	478.01	0.00					
220.00	0.00	29,972	478.01	0.00					
225.00	0.00	29,966	478.01	0.00					
230.00	0.00	29,960	478.01	0.00					
235.00	0.00	29,954	478.01	0.00					
240.00	0.00	29,949	478.01	0.00					
245.00	0.00	29,943	478.01	0.00					
250.00	0.00	29,939	478.01	0.00					
255.00	0.00	29,934	478.01	0.00					
260.00	0.00	29,930	478.01	0.00					
265.00	0.00	29,926	478.01	0.00					
270.00	0.00	29,922	478.01	0.00					
275.00	0.00	29,918	478.01	0.00					
280.00	0.00	29,915	478.01	0.00					
285.00	0.00	29,911	478.01	0.00					
290.00	0.00	29,908	478.01	0.00					
295.00	0.00	29,905	478.01	0.00					
300.00	0.00	29,902	478.01	0.00					
305.00	0.00	29,900	478.01	0.00					
310.00	0.00	29,897	478.01	0.00					
315.00	0.00	29,894	478.01	0.00					
320.00	0.00	29,892	478.01	0.00					
325.00	0.00	29,890	478.01	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Pond 2.1P:

Inflow Area = 5.900 ac, 60.51% Impervious, Inflow Depth > 1.73" for 1 YEAR event
 Inflow = 0.21 cfs @ 18.93 hrs, Volume= 0.850 af
 Outflow = 0.16 cfs @ 39.41 hrs, Volume= 0.850 af, Atten= 23%, Lag= 1,229.0 min
 Primary = 0.16 cfs @ 39.41 hrs, Volume= 0.850 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 471.00' Surf.Area= 30 sf Storage= 8 cf
 Peak Elev= 475.54' @ 39.41 hrs Surf.Area= 6,924 sf Storage= 14,059 cf (14,051 cf above start)
 Flood Elev= 477.00' Surf.Area= 9,380 sf Storage= 25,945 cf (25,937 cf above start)

Plug-Flow detention time= 2,322.6 min calculated for 0.849 af (100% of inflow)
 Center-of-Mass det. time= 2,316.9 min (4,893.2 - 2,576.4)

Volume	Invert	Avail.Storage	Storage Description
#1	470.30'	20 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 51 cf Overall x 40.0% Voids
#2	472.00'	36,100 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		36,120 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
470.30	30	0	0
472.00	30	51	51

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
472.00	1,300	0	0
474.00	4,200	5,500	5,500
476.00	7,700	11,900	17,400
478.00	11,000	18,700	36,100

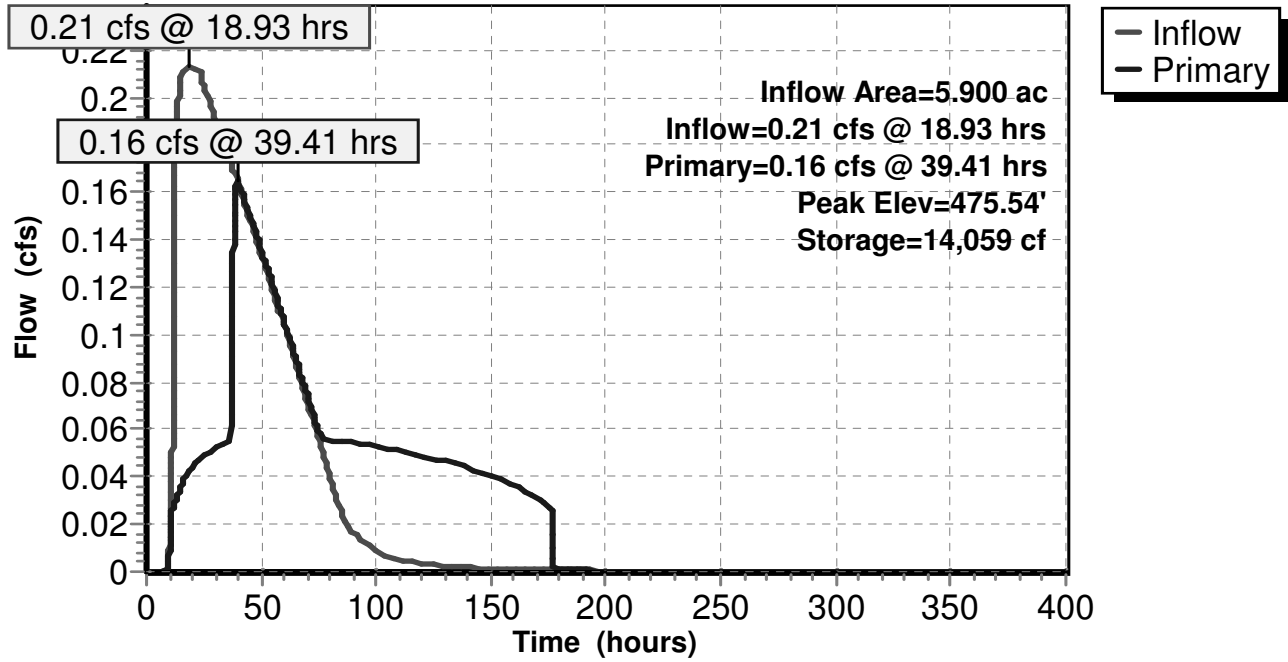
Device	Routing	Invert	Outlet Devices
#1	Primary	471.00'	24.0" x 147.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 469.50' S= 0.0102 '/' Cc= 0.900 n= 0.012
#2	Device 1	471.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	475.50'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.16 cfs @ 39.41 hrs HW=475.54' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 0.16 cfs of 28.46 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.06 cfs @ 10.21 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 0.11 cfs @ 0.56 fps)

Pond 2.1P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Pond 2.1P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	8	471.00	0.00	330.00	0.00	9	471.01	0.00
5.00	0.00	8	471.00	0.00	335.00	0.00	9	471.01	0.00
10.00	0.01	10	471.15	0.01	340.00	0.00	9	471.01	0.00
15.00	0.21	1,856	472.93	0.04	345.00	0.00	9	471.01	0.00
20.00	0.21	4,945	473.86	0.04	350.00	0.00	9	471.01	0.00
25.00	0.20	7,896	474.51	0.05	355.00	0.00	9	471.01	0.00
30.00	0.19	10,549	474.99	0.05	360.00	0.00	9	471.01	0.00
35.00	0.18	12,906	475.37	0.05	365.00	0.00	9	471.01	0.00
40.00	0.16	14,058	475.54	0.16	370.00	0.00	9	471.01	0.00
45.00	0.15	14,034	475.54	0.15	375.00	0.00	9	471.01	0.00
50.00	0.13	14,008	475.53	0.14	380.00	0.00	8	471.01	0.00
55.00	0.12	13,979	475.53	0.12	385.00	0.00	9	471.01	0.00
60.00	0.10	13,948	475.52	0.11	390.00	0.00	8	471.01	0.00
65.00	0.09	13,913	475.52	0.09	395.00	0.00	8	471.01	0.00
70.00	0.07	13,872	475.51	0.07	400.00	0.00	8	471.01	0.00
75.00	0.06	13,819	475.50	0.06					
80.00	0.04	13,667	475.48	0.06					
85.00	0.03	13,243	475.42	0.05					
90.00	0.02	12,632	475.33	0.05					
95.00	0.01	11,915	475.21	0.05					
100.00	0.01	11,139	475.09	0.05					
105.00	0.01	10,333	474.96	0.05					
110.00	0.01	9,511	474.81	0.05					
115.00	0.00	8,685	474.66	0.05					
120.00	0.00	7,863	474.50	0.05					
125.00	0.00	7,049	474.34	0.05					
130.00	0.00	6,248	474.17	0.05					
135.00	0.00	5,464	473.99	0.05					
140.00	0.00	4,700	473.80	0.04					
145.00	0.00	3,958	473.60	0.04					
150.00	0.00	3,243	473.39	0.04					
155.00	0.00	2,558	473.18	0.04					
160.00	0.00	1,906	472.95	0.04					
165.00	0.00	1,292	472.70	0.03					
170.00	0.00	724	472.44	0.03					
175.00	0.00	211	472.14	0.03					
180.00	0.00	9	471.02	0.00					
185.00	0.00	9	471.02	0.00					
190.00	0.00	9	471.02	0.00					
195.00	0.00	9	471.02	0.00					
200.00	0.00	9	471.02	0.00					
205.00	0.00	9	471.02	0.00					
210.00	0.00	9	471.02	0.00					
215.00	0.00	9	471.02	0.00					
220.00	0.00	9	471.02	0.00					
225.00	0.00	9	471.02	0.00					
230.00	0.00	9	471.02	0.00					
235.00	0.00	9	471.02	0.00					
240.00	0.00	9	471.02	0.00					
245.00	0.00	9	471.01	0.00					
250.00	0.00	9	471.01	0.00					
255.00	0.00	9	471.01	0.00					
260.00	0.00	9	471.01	0.00					
265.00	0.00	9	471.01	0.00					
270.00	0.00	9	471.01	0.00					
275.00	0.00	9	471.01	0.00					
280.00	0.00	9	471.01	0.00					
285.00	0.00	9	471.01	0.00					
290.00	0.00	9	471.01	0.00					
295.00	0.00	9	471.01	0.00					
300.00	0.00	9	471.01	0.00					
305.00	0.00	9	471.01	0.00					
310.00	0.00	9	471.01	0.00					
315.00	0.00	9	471.01	0.00					
320.00	0.00	9	471.01	0.00					
325.00	0.00	9	471.01	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Pond 2.2P:

Inflow Area = 2.100 ac, 40.48% Impervious, Inflow Depth = 1.61" for 1 YEAR event
 Inflow = 3.20 cfs @ 12.17 hrs, Volume= 0.282 af
 Outflow = 0.25 cfs @ 14.31 hrs, Volume= 0.281 af, Atten= 92%, Lag= 128.5 min
 Primary = 0.25 cfs @ 14.31 hrs, Volume= 0.281 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 471.00' Surf.Area= 4,300 sf Storage= 6,560 cf
 Peak Elev= 472.55' @ 14.31 hrs Surf.Area= 6,245 sf Storage= 14,585 cf (8,025 cf above start)
 Flood Elev= 473.25' Surf.Area= 7,338 sf Storage= 19,371 cf (12,811 cf above start)

Plug-Flow detention time= 4,247.6 min calculated for 0.131 af (46% of inflow)
 Center-of-Mass det. time= 2,189.9 min (3,028.7 - 838.8)

Volume	Invert	Avail.Storage	Storage Description
#1	465.00'	25,310 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

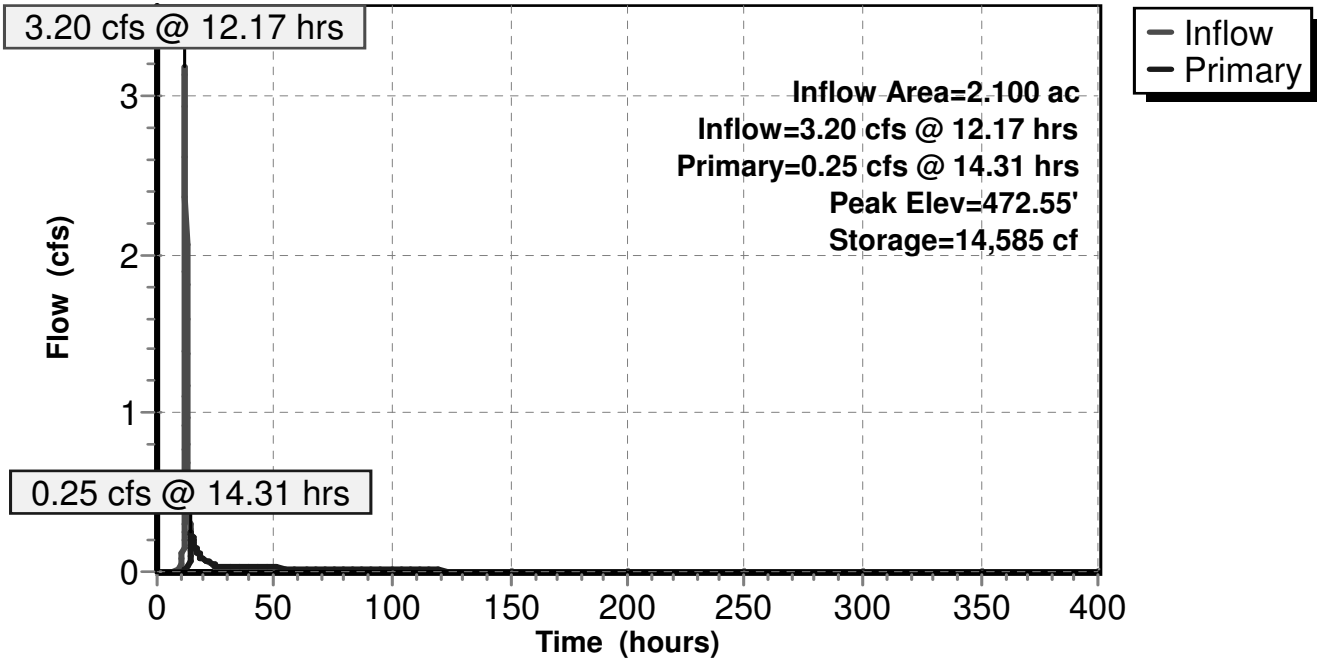
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
465.00	70	0	0
466.00	200	135	135
468.00	600	800	935
469.50	1,300	1,425	2,360
471.00	4,300	4,200	6,560
472.00	5,400	4,850	11,410
474.00	8,500	13,900	25,310

Device	Routing	Invert	Outlet Devices
#1	Primary	469.00'	24.0" x 95.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 467.00' S= 0.0211 '/' Cc= 0.900 n= 0.012
#2	Device 1	471.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	472.50'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.25 cfs @ 14.31 hrs HW=472.55' TW=0.00' (Dynamic Tailwater)
 ↑ **1=Culvert** (Passes 0.25 cfs of 24.13 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.90 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 0.22 cfs @ 0.60 fps)

Pond 2.2P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Pond 2.2P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	6,560	471.00	0.00	330.00	0.00	6,580	471.00	0.00
5.00	0.00	6,560	471.00	0.00	335.00	0.00	6,579	471.00	0.00
10.00	0.05	6,655	471.02	0.00	340.00	0.00	6,579	471.00	0.00
15.00	0.21	14,562	472.54	0.22	345.00	0.00	6,578	471.00	0.00
20.00	0.07	14,401	472.52	0.08	350.00	0.00	6,578	471.00	0.00
25.00	0.00	14,257	472.49	0.03	355.00	0.00	6,578	471.00	0.00
30.00	0.00	13,697	472.40	0.03	360.00	0.00	6,577	471.00	0.00
35.00	0.00	13,155	472.31	0.03	365.00	0.00	6,577	471.00	0.00
40.00	0.00	12,633	472.22	0.03	370.00	0.00	6,576	471.00	0.00
45.00	0.00	12,130	472.13	0.03	375.00	0.00	6,576	471.00	0.00
50.00	0.00	11,646	472.04	0.03	380.00	0.00	6,576	471.00	0.00
55.00	0.00	11,183	471.96	0.03	385.00	0.00	6,575	471.00	0.00
60.00	0.00	10,741	471.87	0.02	390.00	0.00	6,575	471.00	0.00
65.00	0.00	10,321	471.79	0.02	395.00	0.00	6,575	471.00	0.00
70.00	0.00	9,922	471.72	0.02	400.00	0.00	6,575	471.00	0.00
75.00	0.00	9,544	471.64	0.02					
80.00	0.00	9,189	471.57	0.02					
85.00	0.00	8,857	471.50	0.02					
90.00	0.00	8,548	471.44	0.02					
95.00	0.00	8,262	471.38	0.02					
100.00	0.00	8,000	471.32	0.01					
105.00	0.00	7,762	471.27	0.01					
110.00	0.00	7,548	471.22	0.01					
115.00	0.00	7,359	471.18	0.01					
120.00	0.00	7,195	471.14	0.01					
125.00	0.00	7,055	471.11	0.01					
130.00	0.00	6,941	471.09	0.01					
135.00	0.00	6,852	471.07	0.00					
140.00	0.00	6,790	471.05	0.00					
145.00	0.00	6,746	471.04	0.00					
150.00	0.00	6,715	471.04	0.00					
155.00	0.00	6,693	471.03	0.00					
160.00	0.00	6,675	471.03	0.00					
165.00	0.00	6,662	471.02	0.00					
170.00	0.00	6,651	471.02	0.00					
175.00	0.00	6,642	471.02	0.00					
180.00	0.00	6,635	471.02	0.00					
185.00	0.00	6,629	471.02	0.00					
190.00	0.00	6,624	471.01	0.00					
195.00	0.00	6,619	471.01	0.00					
200.00	0.00	6,615	471.01	0.00					
205.00	0.00	6,612	471.01	0.00					
210.00	0.00	6,609	471.01	0.00					
215.00	0.00	6,606	471.01	0.00					
220.00	0.00	6,603	471.01	0.00					
225.00	0.00	6,601	471.01	0.00					
230.00	0.00	6,599	471.01	0.00					
235.00	0.00	6,597	471.01	0.00					
240.00	0.00	6,596	471.01	0.00					
245.00	0.00	6,594	471.01	0.00					
250.00	0.00	6,593	471.01	0.00					
255.00	0.00	6,592	471.01	0.00					
260.00	0.00	6,590	471.01	0.00					
265.00	0.00	6,589	471.01	0.00					
270.00	0.00	6,588	471.01	0.00					
275.00	0.00	6,587	471.01	0.00					
280.00	0.00	6,586	471.01	0.00					
285.00	0.00	6,585	471.01	0.00					
290.00	0.00	6,585	471.01	0.00					
295.00	0.00	6,584	471.01	0.00					
300.00	0.00	6,583	471.01	0.00					
305.00	0.00	6,583	471.01	0.00					
310.00	0.00	6,582	471.01	0.00					
315.00	0.00	6,581	471.00	0.00					
320.00	0.00	6,581	471.00	0.00					
325.00	0.00	6,580	471.00	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Summary for Pond 3.0P:

Inflow Area = 1.900 ac, 47.37% Impervious, Inflow Depth = 0.52" for 1 YEAR event
 Inflow = 0.64 cfs @ 12.24 hrs, Volume= 0.082 af
 Outflow = 0.02 cfs @ 24.14 hrs, Volume= 0.082 af, Atten= 97%, Lag= 713.8 min
 Primary = 0.02 cfs @ 24.14 hrs, Volume= 0.082 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 461.25' Surf.Area= 5,900 sf Storage= 8,213 cf
 Peak Elev= 461.72' @ 24.14 hrs Surf.Area= 6,587 sf Storage= 11,135 cf (2,923 cf above start)
 Flood Elev= 463.00' Surf.Area= 8,750 sf Storage= 20,925 cf (12,713 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= 2,269.9 min (3,181.0 - 911.1)

Volume	Invert	Avail.Storage	Storage Description
#1	457.25'	30,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
457.25	400	0	0
458.00	700	413	413
459.75	1,700	2,100	2,513
461.25	5,900	5,700	8,213
462.00	7,000	4,838	13,050
464.00	10,500	17,500	30,550

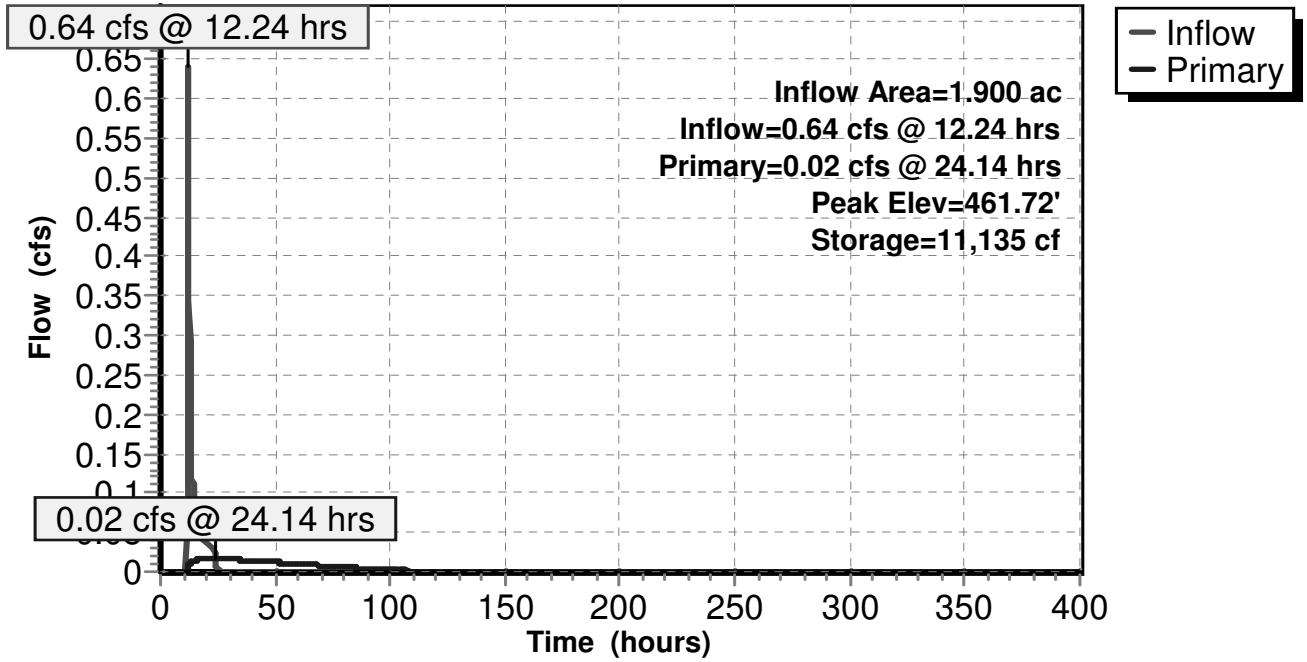
Device	Routing	Invert	Outlet Devices
#1	Primary	461.25'	15.0" x 28.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 460.90' S= 0.0125 '/' Cc= 0.900 n= 0.012
#2	Device 1	461.25'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	462.00'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.02 cfs @ 24.14 hrs HW=461.72' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 0.02 cfs of 0.98 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 3.14 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3.0P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 1 YEAR Rainfall=3.20"

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Hydrograph for Pond 3.0P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	8,213	461.25	0.00	330.00	0.00	8,242	461.26	0.00
5.00	0.00	8,213	461.25	0.00	335.00	0.00	8,242	461.25	0.00
10.00	0.00	8,213	461.25	0.00	340.00	0.00	8,241	461.25	0.00
15.00	0.09	10,285	461.59	0.01	345.00	0.00	8,241	461.25	0.00
20.00	0.03	10,953	461.69	0.02	350.00	0.00	8,240	461.25	0.00
25.00	0.00	11,089	461.71	0.02	355.00	0.00	8,240	461.25	0.00
30.00	0.00	10,791	461.67	0.02	360.00	0.00	8,239	461.25	0.00
35.00	0.00	10,510	461.62	0.02	365.00	0.00	8,239	461.25	0.00
40.00	0.00	10,247	461.58	0.01	370.00	0.00	8,238	461.25	0.00
45.00	0.00	10,002	461.54	0.01	375.00	0.00	8,238	461.25	0.00
50.00	0.00	9,774	461.51	0.01	380.00	0.00	8,237	461.25	0.00
55.00	0.00	9,564	461.47	0.01	385.00	0.00	8,237	461.25	0.00
60.00	0.00	9,371	461.44	0.01	390.00	0.00	8,236	461.25	0.00
65.00	0.00	9,197	461.41	0.01	395.00	0.00	8,236	461.25	0.00
70.00	0.00	9,041	461.39	0.01	400.00	0.00	8,236	461.25	0.00
75.00	0.00	8,904	461.37	0.01					
80.00	0.00	8,785	461.35	0.01					
85.00	0.00	8,684	461.33	0.01					
90.00	0.00	8,602	461.32	0.00					
95.00	0.00	8,539	461.30	0.00					
100.00	0.00	8,491	461.30	0.00					
105.00	0.00	8,454	461.29	0.00					
110.00	0.00	8,424	461.29	0.00					
115.00	0.00	8,401	461.28	0.00					
120.00	0.00	8,382	461.28	0.00					
125.00	0.00	8,366	461.28	0.00					
130.00	0.00	8,353	461.27	0.00					
135.00	0.00	8,342	461.27	0.00					
140.00	0.00	8,332	461.27	0.00					
145.00	0.00	8,324	461.27	0.00					
150.00	0.00	8,317	461.27	0.00					
155.00	0.00	8,310	461.27	0.00					
160.00	0.00	8,305	461.27	0.00					
165.00	0.00	8,299	461.26	0.00					
170.00	0.00	8,295	461.26	0.00					
175.00	0.00	8,291	461.26	0.00					
180.00	0.00	8,287	461.26	0.00					
185.00	0.00	8,284	461.26	0.00					
190.00	0.00	8,280	461.26	0.00					
195.00	0.00	8,278	461.26	0.00					
200.00	0.00	8,275	461.26	0.00					
205.00	0.00	8,273	461.26	0.00					
210.00	0.00	8,270	461.26	0.00					
215.00	0.00	8,268	461.26	0.00					
220.00	0.00	8,266	461.26	0.00					
225.00	0.00	8,264	461.26	0.00					
230.00	0.00	8,263	461.26	0.00					
235.00	0.00	8,261	461.26	0.00					
240.00	0.00	8,260	461.26	0.00					
245.00	0.00	8,258	461.26	0.00					
250.00	0.00	8,257	461.26	0.00					
255.00	0.00	8,255	461.26	0.00					
260.00	0.00	8,254	461.26	0.00					
265.00	0.00	8,253	461.26	0.00					
270.00	0.00	8,252	461.26	0.00					
275.00	0.00	8,251	461.26	0.00					
280.00	0.00	8,250	461.26	0.00					
285.00	0.00	8,249	461.26	0.00					
290.00	0.00	8,248	461.26	0.00					
295.00	0.00	8,247	461.26	0.00					
300.00	0.00	8,246	461.26	0.00					
305.00	0.00	8,246	461.26	0.00					
310.00	0.00	8,245	461.26	0.00					
315.00	0.00	8,244	461.26	0.00					
320.00	0.00	8,244	461.26	0.00					
325.00	0.00	8,243	461.26	0.00					

Stateline Retail Center Post-development 040809

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Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Subcatchment 1.0S:

Runoff = 29.55 cfs @ 12.06 hrs, Volume= 2.017 af, Depth= 1.94"

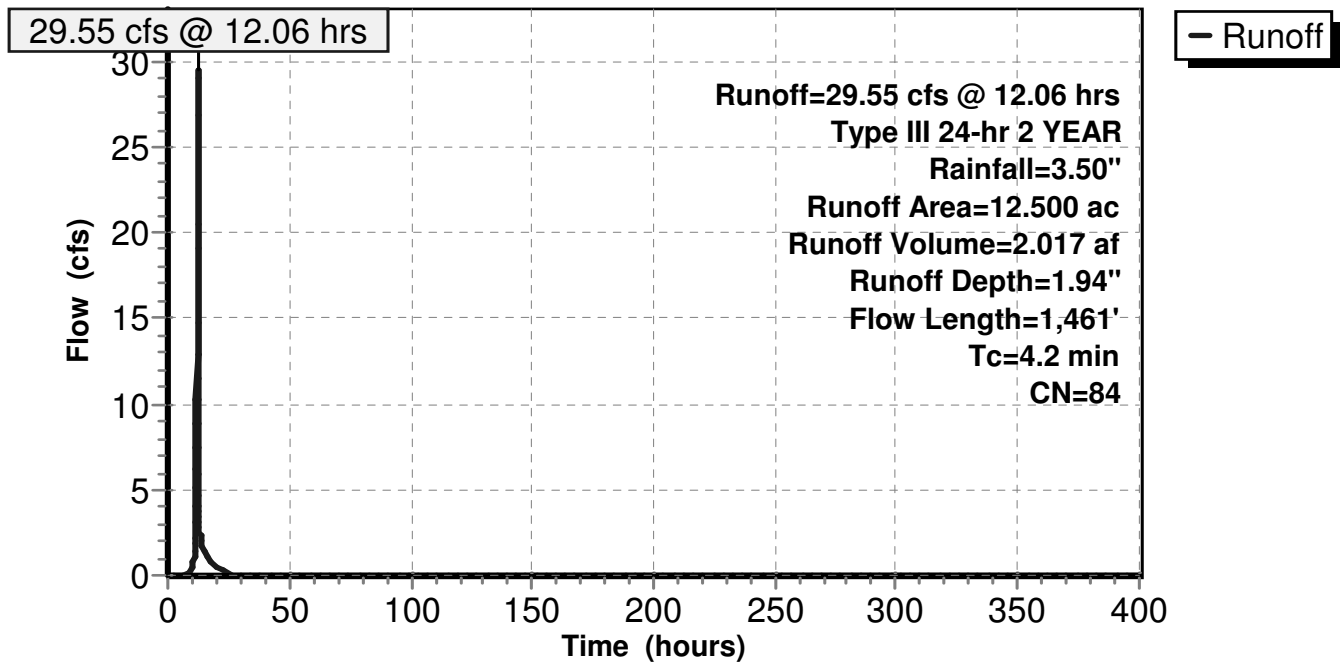
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.50"

Area (ac)	CN	Description
1.200	39	>75% Grass cover, Good, HSG A
7.200	89	Urban commercial, 85% imp, HSG A
3.400	94	Urban commercial, 85% imp, HSG C
* 0.700	70	Pervious Pavment
12.500	84	Weighted Average
3.490		Pervious Area
9.010		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	96	0.0100	1.08		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
0.6	214	0.0121	6.27	7.70	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
1.1	601	0.0130	8.89	27.94	Circular Channel (pipe), Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
1.0	550	0.0080	9.14	64.63	Circular Channel (pipe), Diam= 36.0" Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012
4.2	1,461	Total			

Subcatchment 1.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Subcatchment 1.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.50	1.94	0.00	330.00	3.50	1.94	0.00
2.50	0.09	0.00	0.00	167.50	3.50	1.94	0.00	332.50	3.50	1.94	0.00
5.00	0.20	0.00	0.00	170.00	3.50	1.94	0.00	335.00	3.50	1.94	0.00
7.50	0.36	0.00	0.00	172.50	3.50	1.94	0.00	337.50	3.50	1.94	0.00
10.00	0.66	0.04	0.50	175.00	3.50	1.94	0.00	340.00	3.50	1.94	0.00
12.50	2.46	1.08	5.96	177.50	3.50	1.94	0.00	342.50	3.50	1.94	0.00
15.00	2.99	1.51	1.39	180.00	3.50	1.94	0.00	345.00	3.50	1.94	0.00
17.50	3.22	1.70	0.70	182.50	3.50	1.94	0.00	347.50	3.50	1.94	0.00
20.00	3.35	1.81	0.49	185.00	3.50	1.94	0.00	350.00	3.50	1.94	0.00
22.50	3.45	1.89	0.39	187.50	3.50	1.94	0.00	352.50	3.50	1.94	0.00
25.00	3.50	1.94	0.00	190.00	3.50	1.94	0.00	355.00	3.50	1.94	0.00
27.50	3.50	1.94	0.00	192.50	3.50	1.94	0.00	357.50	3.50	1.94	0.00
30.00	3.50	1.94	0.00	195.00	3.50	1.94	0.00	360.00	3.50	1.94	0.00
32.50	3.50	1.94	0.00	197.50	3.50	1.94	0.00	362.50	3.50	1.94	0.00
35.00	3.50	1.94	0.00	200.00	3.50	1.94	0.00	365.00	3.50	1.94	0.00
37.50	3.50	1.94	0.00	202.50	3.50	1.94	0.00	367.50	3.50	1.94	0.00
40.00	3.50	1.94	0.00	205.00	3.50	1.94	0.00	370.00	3.50	1.94	0.00
42.50	3.50	1.94	0.00	207.50	3.50	1.94	0.00	372.50	3.50	1.94	0.00
45.00	3.50	1.94	0.00	210.00	3.50	1.94	0.00	375.00	3.50	1.94	0.00
47.50	3.50	1.94	0.00	212.50	3.50	1.94	0.00	377.50	3.50	1.94	0.00
50.00	3.50	1.94	0.00	215.00	3.50	1.94	0.00	380.00	3.50	1.94	0.00
52.50	3.50	1.94	0.00	217.50	3.50	1.94	0.00	382.50	3.50	1.94	0.00
55.00	3.50	1.94	0.00	220.00	3.50	1.94	0.00	385.00	3.50	1.94	0.00
57.50	3.50	1.94	0.00	222.50	3.50	1.94	0.00	387.50	3.50	1.94	0.00
60.00	3.50	1.94	0.00	225.00	3.50	1.94	0.00	390.00	3.50	1.94	0.00
62.50	3.50	1.94	0.00	227.50	3.50	1.94	0.00	392.50	3.50	1.94	0.00
65.00	3.50	1.94	0.00	230.00	3.50	1.94	0.00	395.00	3.50	1.94	0.00
67.50	3.50	1.94	0.00	232.50	3.50	1.94	0.00	397.50	3.50	1.94	0.00
70.00	3.50	1.94	0.00	235.00	3.50	1.94	0.00	400.00	3.50	1.94	0.00
72.50	3.50	1.94	0.00	237.50	3.50	1.94	0.00				
75.00	3.50	1.94	0.00	240.00	3.50	1.94	0.00				
77.50	3.50	1.94	0.00	242.50	3.50	1.94	0.00				
80.00	3.50	1.94	0.00	245.00	3.50	1.94	0.00				
82.50	3.50	1.94	0.00	247.50	3.50	1.94	0.00				
85.00	3.50	1.94	0.00	250.00	3.50	1.94	0.00				
87.50	3.50	1.94	0.00	252.50	3.50	1.94	0.00				
90.00	3.50	1.94	0.00	255.00	3.50	1.94	0.00				
92.50	3.50	1.94	0.00	257.50	3.50	1.94	0.00				
95.00	3.50	1.94	0.00	260.00	3.50	1.94	0.00				
97.50	3.50	1.94	0.00	262.50	3.50	1.94	0.00				
100.00	3.50	1.94	0.00	265.00	3.50	1.94	0.00				
102.50	3.50	1.94	0.00	267.50	3.50	1.94	0.00				
105.00	3.50	1.94	0.00	270.00	3.50	1.94	0.00				
107.50	3.50	1.94	0.00	272.50	3.50	1.94	0.00				
110.00	3.50	1.94	0.00	275.00	3.50	1.94	0.00				
112.50	3.50	1.94	0.00	277.50	3.50	1.94	0.00				
115.00	3.50	1.94	0.00	280.00	3.50	1.94	0.00				
117.50	3.50	1.94	0.00	282.50	3.50	1.94	0.00				
120.00	3.50	1.94	0.00	285.00	3.50	1.94	0.00				
122.50	3.50	1.94	0.00	287.50	3.50	1.94	0.00				
125.00	3.50	1.94	0.00	290.00	3.50	1.94	0.00				
127.50	3.50	1.94	0.00	292.50	3.50	1.94	0.00				
130.00	3.50	1.94	0.00	295.00	3.50	1.94	0.00				
132.50	3.50	1.94	0.00	297.50	3.50	1.94	0.00				
135.00	3.50	1.94	0.00	300.00	3.50	1.94	0.00				
137.50	3.50	1.94	0.00	302.50	3.50	1.94	0.00				
140.00	3.50	1.94	0.00	305.00	3.50	1.94	0.00				
142.50	3.50	1.94	0.00	307.50	3.50	1.94	0.00				
145.00	3.50	1.94	0.00	310.00	3.50	1.94	0.00				
147.50	3.50	1.94	0.00	312.50	3.50	1.94	0.00				
150.00	3.50	1.94	0.00	315.00	3.50	1.94	0.00				
152.50	3.50	1.94	0.00	317.50	3.50	1.94	0.00				
155.00	3.50	1.94	0.00	320.00	3.50	1.94	0.00				
157.50	3.50	1.94	0.00	322.50	3.50	1.94	0.00				
160.00	3.50	1.94	0.00	325.00	3.50	1.94	0.00				
162.50	3.50	1.94	0.00	327.50	3.50	1.94	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Subcatchment 1.1S:

Runoff = 0.46 cfs @ 12.31 hrs, Volume= 0.081 af, Depth= 0.35"

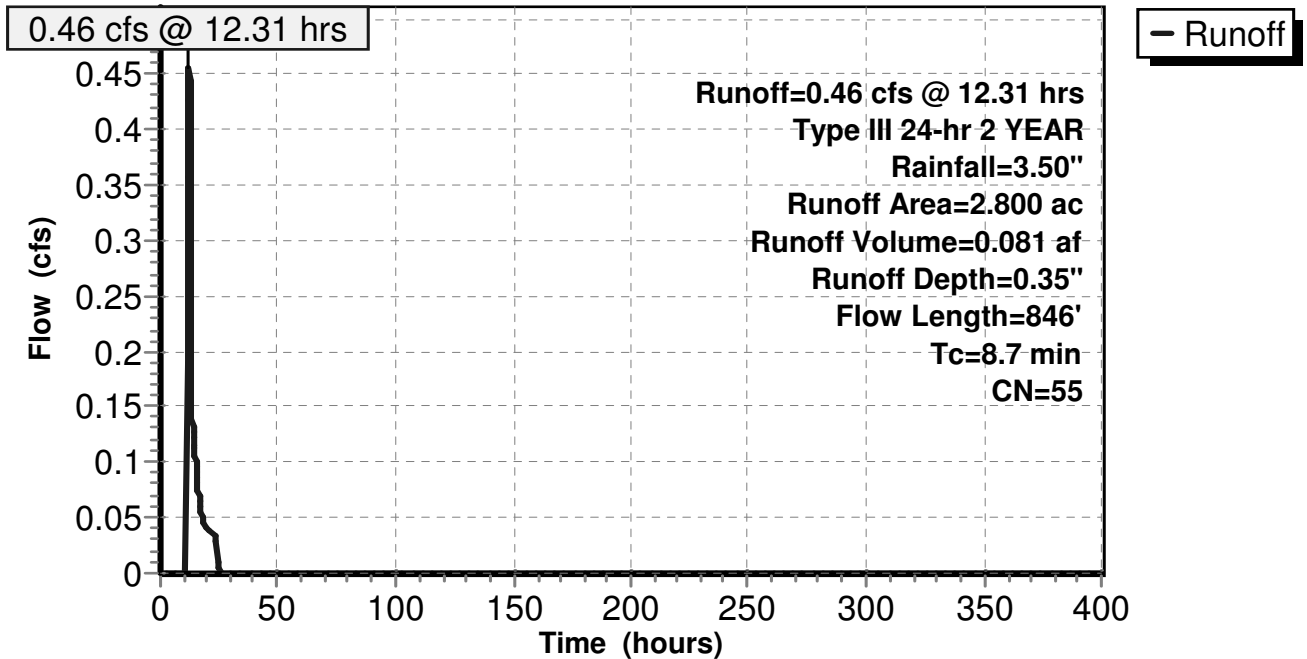
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.50"

Area (ac)	CN	Description
2.000	39	>75% Grass cover, Good, HSG A
0.400	89	Urban commercial, 85% imp, HSG A
0.400	98	Paved parking & roofs
2.800	55	Weighted Average
2.060		Pervious Area
0.740		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0100	1.09		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
7.0	652	0.0170	1.55	0.43	Trap/Vee/Rect Channel Flow, Bot.W=1.00' D=0.20' Z= 2.0 ' /' Top.W=1.80' n= 0.035 Earth, dense weeds
0.2	94	0.0290	9.71	11.92	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
8.7	846	Total			

Subcatchment 1.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Subcatchment 1.1S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.50	0.35	0.00	330.00	3.50	0.35	0.00
2.50	0.09	0.00	0.00	167.50	3.50	0.35	0.00	332.50	3.50	0.35	0.00
5.00	0.20	0.00	0.00	170.00	3.50	0.35	0.00	335.00	3.50	0.35	0.00
7.50	0.36	0.00	0.00	172.50	3.50	0.35	0.00	337.50	3.50	0.35	0.00
10.00	0.66	0.00	0.00	175.00	3.50	0.35	0.00	340.00	3.50	0.35	0.00
12.50	2.46	0.07	0.36	177.50	3.50	0.35	0.00	342.50	3.50	0.35	0.00
15.00	2.99	0.19	0.10	180.00	3.50	0.35	0.00	345.00	3.50	0.35	0.00
17.50	3.22	0.26	0.06	182.50	3.50	0.35	0.00	347.50	3.50	0.35	0.00
20.00	3.35	0.30	0.04	185.00	3.50	0.35	0.00	350.00	3.50	0.35	0.00
22.50	3.45	0.33	0.03	187.50	3.50	0.35	0.00	352.50	3.50	0.35	0.00
25.00	3.50	0.35	0.00	190.00	3.50	0.35	0.00	355.00	3.50	0.35	0.00
27.50	3.50	0.35	0.00	192.50	3.50	0.35	0.00	357.50	3.50	0.35	0.00
30.00	3.50	0.35	0.00	195.00	3.50	0.35	0.00	360.00	3.50	0.35	0.00
32.50	3.50	0.35	0.00	197.50	3.50	0.35	0.00	362.50	3.50	0.35	0.00
35.00	3.50	0.35	0.00	200.00	3.50	0.35	0.00	365.00	3.50	0.35	0.00
37.50	3.50	0.35	0.00	202.50	3.50	0.35	0.00	367.50	3.50	0.35	0.00
40.00	3.50	0.35	0.00	205.00	3.50	0.35	0.00	370.00	3.50	0.35	0.00
42.50	3.50	0.35	0.00	207.50	3.50	0.35	0.00	372.50	3.50	0.35	0.00
45.00	3.50	0.35	0.00	210.00	3.50	0.35	0.00	375.00	3.50	0.35	0.00
47.50	3.50	0.35	0.00	212.50	3.50	0.35	0.00	377.50	3.50	0.35	0.00
50.00	3.50	0.35	0.00	215.00	3.50	0.35	0.00	380.00	3.50	0.35	0.00
52.50	3.50	0.35	0.00	217.50	3.50	0.35	0.00	382.50	3.50	0.35	0.00
55.00	3.50	0.35	0.00	220.00	3.50	0.35	0.00	385.00	3.50	0.35	0.00
57.50	3.50	0.35	0.00	222.50	3.50	0.35	0.00	387.50	3.50	0.35	0.00
60.00	3.50	0.35	0.00	225.00	3.50	0.35	0.00	390.00	3.50	0.35	0.00
62.50	3.50	0.35	0.00	227.50	3.50	0.35	0.00	392.50	3.50	0.35	0.00
65.00	3.50	0.35	0.00	230.00	3.50	0.35	0.00	395.00	3.50	0.35	0.00
67.50	3.50	0.35	0.00	232.50	3.50	0.35	0.00	397.50	3.50	0.35	0.00
70.00	3.50	0.35	0.00	235.00	3.50	0.35	0.00	400.00	3.50	0.35	0.00
72.50	3.50	0.35	0.00	237.50	3.50	0.35	0.00				
75.00	3.50	0.35	0.00	240.00	3.50	0.35	0.00				
77.50	3.50	0.35	0.00	242.50	3.50	0.35	0.00				
80.00	3.50	0.35	0.00	245.00	3.50	0.35	0.00				
82.50	3.50	0.35	0.00	247.50	3.50	0.35	0.00				
85.00	3.50	0.35	0.00	250.00	3.50	0.35	0.00				
87.50	3.50	0.35	0.00	252.50	3.50	0.35	0.00				
90.00	3.50	0.35	0.00	255.00	3.50	0.35	0.00				
92.50	3.50	0.35	0.00	257.50	3.50	0.35	0.00				
95.00	3.50	0.35	0.00	260.00	3.50	0.35	0.00				
97.50	3.50	0.35	0.00	262.50	3.50	0.35	0.00				
100.00	3.50	0.35	0.00	265.00	3.50	0.35	0.00				
102.50	3.50	0.35	0.00	267.50	3.50	0.35	0.00				
105.00	3.50	0.35	0.00	270.00	3.50	0.35	0.00				
107.50	3.50	0.35	0.00	272.50	3.50	0.35	0.00				
110.00	3.50	0.35	0.00	275.00	3.50	0.35	0.00				
112.50	3.50	0.35	0.00	277.50	3.50	0.35	0.00				
115.00	3.50	0.35	0.00	280.00	3.50	0.35	0.00				
117.50	3.50	0.35	0.00	282.50	3.50	0.35	0.00				
120.00	3.50	0.35	0.00	285.00	3.50	0.35	0.00				
122.50	3.50	0.35	0.00	287.50	3.50	0.35	0.00				
125.00	3.50	0.35	0.00	290.00	3.50	0.35	0.00				
127.50	3.50	0.35	0.00	292.50	3.50	0.35	0.00				
130.00	3.50	0.35	0.00	295.00	3.50	0.35	0.00				
132.50	3.50	0.35	0.00	297.50	3.50	0.35	0.00				
135.00	3.50	0.35	0.00	300.00	3.50	0.35	0.00				
137.50	3.50	0.35	0.00	302.50	3.50	0.35	0.00				
140.00	3.50	0.35	0.00	305.00	3.50	0.35	0.00				
142.50	3.50	0.35	0.00	307.50	3.50	0.35	0.00				
145.00	3.50	0.35	0.00	310.00	3.50	0.35	0.00				
147.50	3.50	0.35	0.00	312.50	3.50	0.35	0.00				
150.00	3.50	0.35	0.00	315.00	3.50	0.35	0.00				
152.50	3.50	0.35	0.00	317.50	3.50	0.35	0.00				
155.00	3.50	0.35	0.00	320.00	3.50	0.35	0.00				
157.50	3.50	0.35	0.00	322.50	3.50	0.35	0.00				
160.00	3.50	0.35	0.00	325.00	3.50	0.35	0.00				
162.50	3.50	0.35	0.00	327.50	3.50	0.35	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Subcatchment 1.2S:

Runoff = 0.15 cfs @ 12.56 hrs, Volume= 0.057 af, Depth= 0.17"

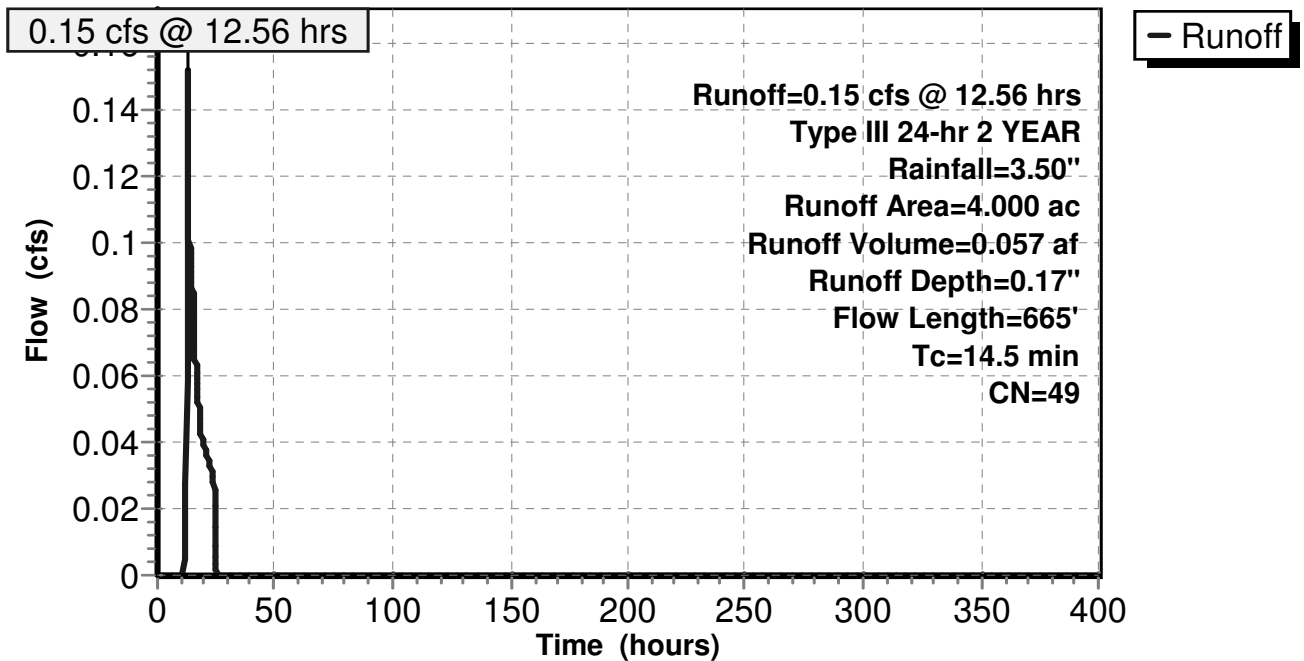
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YEAR Rainfall=3.50"

Area (ac)	CN	Description
1.000	39	>75% Grass cover, Good, HSG A
0.300	98	Paved parking & roofs
1.500	30	Woods, Good, HSG A
1.200	70	Woods, Good, HSG C
4.000	49	Weighted Average
3.700		Pervious Area
0.300		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.1500	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	315	0.0790	3.60	1.73	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=0.20' Z= 2.0 ' Top.W=2.80' n= 0.035
3.8	250	0.0480	1.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.5	665	Total			

Subcatchment 1.2S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Subcatchment 1.2S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.50	0.17	0.00	330.00	3.50	0.17	0.00
2.50	0.09	0.00	0.00	167.50	3.50	0.17	0.00	332.50	3.50	0.17	0.00
5.00	0.20	0.00	0.00	170.00	3.50	0.17	0.00	335.00	3.50	0.17	0.00
7.50	0.36	0.00	0.00	172.50	3.50	0.17	0.00	337.50	3.50	0.17	0.00
10.00	0.66	0.00	0.00	175.00	3.50	0.17	0.00	340.00	3.50	0.17	0.00
12.50	2.46	0.01	0.14	177.50	3.50	0.17	0.00	342.50	3.50	0.17	0.00
15.00	2.99	0.07	0.08	180.00	3.50	0.17	0.00	345.00	3.50	0.17	0.00
17.50	3.22	0.11	0.05	182.50	3.50	0.17	0.00	347.50	3.50	0.17	0.00
20.00	3.35	0.14	0.04	185.00	3.50	0.17	0.00	350.00	3.50	0.17	0.00
22.50	3.45	0.16	0.03	187.50	3.50	0.17	0.00	352.50	3.50	0.17	0.00
25.00	3.50	0.17	0.00	190.00	3.50	0.17	0.00	355.00	3.50	0.17	0.00
27.50	3.50	0.17	0.00	192.50	3.50	0.17	0.00	357.50	3.50	0.17	0.00
30.00	3.50	0.17	0.00	195.00	3.50	0.17	0.00	360.00	3.50	0.17	0.00
32.50	3.50	0.17	0.00	197.50	3.50	0.17	0.00	362.50	3.50	0.17	0.00
35.00	3.50	0.17	0.00	200.00	3.50	0.17	0.00	365.00	3.50	0.17	0.00
37.50	3.50	0.17	0.00	202.50	3.50	0.17	0.00	367.50	3.50	0.17	0.00
40.00	3.50	0.17	0.00	205.00	3.50	0.17	0.00	370.00	3.50	0.17	0.00
42.50	3.50	0.17	0.00	207.50	3.50	0.17	0.00	372.50	3.50	0.17	0.00
45.00	3.50	0.17	0.00	210.00	3.50	0.17	0.00	375.00	3.50	0.17	0.00
47.50	3.50	0.17	0.00	212.50	3.50	0.17	0.00	377.50	3.50	0.17	0.00
50.00	3.50	0.17	0.00	215.00	3.50	0.17	0.00	380.00	3.50	0.17	0.00
52.50	3.50	0.17	0.00	217.50	3.50	0.17	0.00	382.50	3.50	0.17	0.00
55.00	3.50	0.17	0.00	220.00	3.50	0.17	0.00	385.00	3.50	0.17	0.00
57.50	3.50	0.17	0.00	222.50	3.50	0.17	0.00	387.50	3.50	0.17	0.00
60.00	3.50	0.17	0.00	225.00	3.50	0.17	0.00	390.00	3.50	0.17	0.00
62.50	3.50	0.17	0.00	227.50	3.50	0.17	0.00	392.50	3.50	0.17	0.00
65.00	3.50	0.17	0.00	230.00	3.50	0.17	0.00	395.00	3.50	0.17	0.00
67.50	3.50	0.17	0.00	232.50	3.50	0.17	0.00	397.50	3.50	0.17	0.00
70.00	3.50	0.17	0.00	235.00	3.50	0.17	0.00	400.00	3.50	0.17	0.00
72.50	3.50	0.17	0.00	237.50	3.50	0.17	0.00				
75.00	3.50	0.17	0.00	240.00	3.50	0.17	0.00				
77.50	3.50	0.17	0.00	242.50	3.50	0.17	0.00				
80.00	3.50	0.17	0.00	245.00	3.50	0.17	0.00				
82.50	3.50	0.17	0.00	247.50	3.50	0.17	0.00				
85.00	3.50	0.17	0.00	250.00	3.50	0.17	0.00				
87.50	3.50	0.17	0.00	252.50	3.50	0.17	0.00				
90.00	3.50	0.17	0.00	255.00	3.50	0.17	0.00				
92.50	3.50	0.17	0.00	257.50	3.50	0.17	0.00				
95.00	3.50	0.17	0.00	260.00	3.50	0.17	0.00				
97.50	3.50	0.17	0.00	262.50	3.50	0.17	0.00				
100.00	3.50	0.17	0.00	265.00	3.50	0.17	0.00				
102.50	3.50	0.17	0.00	267.50	3.50	0.17	0.00				
105.00	3.50	0.17	0.00	270.00	3.50	0.17	0.00				
107.50	3.50	0.17	0.00	272.50	3.50	0.17	0.00				
110.00	3.50	0.17	0.00	275.00	3.50	0.17	0.00				
112.50	3.50	0.17	0.00	277.50	3.50	0.17	0.00				
115.00	3.50	0.17	0.00	280.00	3.50	0.17	0.00				
117.50	3.50	0.17	0.00	282.50	3.50	0.17	0.00				
120.00	3.50	0.17	0.00	285.00	3.50	0.17	0.00				
122.50	3.50	0.17	0.00	287.50	3.50	0.17	0.00				
125.00	3.50	0.17	0.00	290.00	3.50	0.17	0.00				
127.50	3.50	0.17	0.00	292.50	3.50	0.17	0.00				
130.00	3.50	0.17	0.00	295.00	3.50	0.17	0.00				
132.50	3.50	0.17	0.00	297.50	3.50	0.17	0.00				
135.00	3.50	0.17	0.00	300.00	3.50	0.17	0.00				
137.50	3.50	0.17	0.00	302.50	3.50	0.17	0.00				
140.00	3.50	0.17	0.00	305.00	3.50	0.17	0.00				
142.50	3.50	0.17	0.00	307.50	3.50	0.17	0.00				
145.00	3.50	0.17	0.00	310.00	3.50	0.17	0.00				
147.50	3.50	0.17	0.00	312.50	3.50	0.17	0.00				
150.00	3.50	0.17	0.00	315.00	3.50	0.17	0.00				
152.50	3.50	0.17	0.00	317.50	3.50	0.17	0.00				
155.00	3.50	0.17	0.00	320.00	3.50	0.17	0.00				
157.50	3.50	0.17	0.00	322.50	3.50	0.17	0.00				
160.00	3.50	0.17	0.00	325.00	3.50	0.17	0.00				
162.50	3.50	0.17	0.00	327.50	3.50	0.17	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Subcatchment 2.0S:

Runoff = 12.56 cfs @ 12.11 hrs, Volume= 0.964 af, Depth= 2.27"

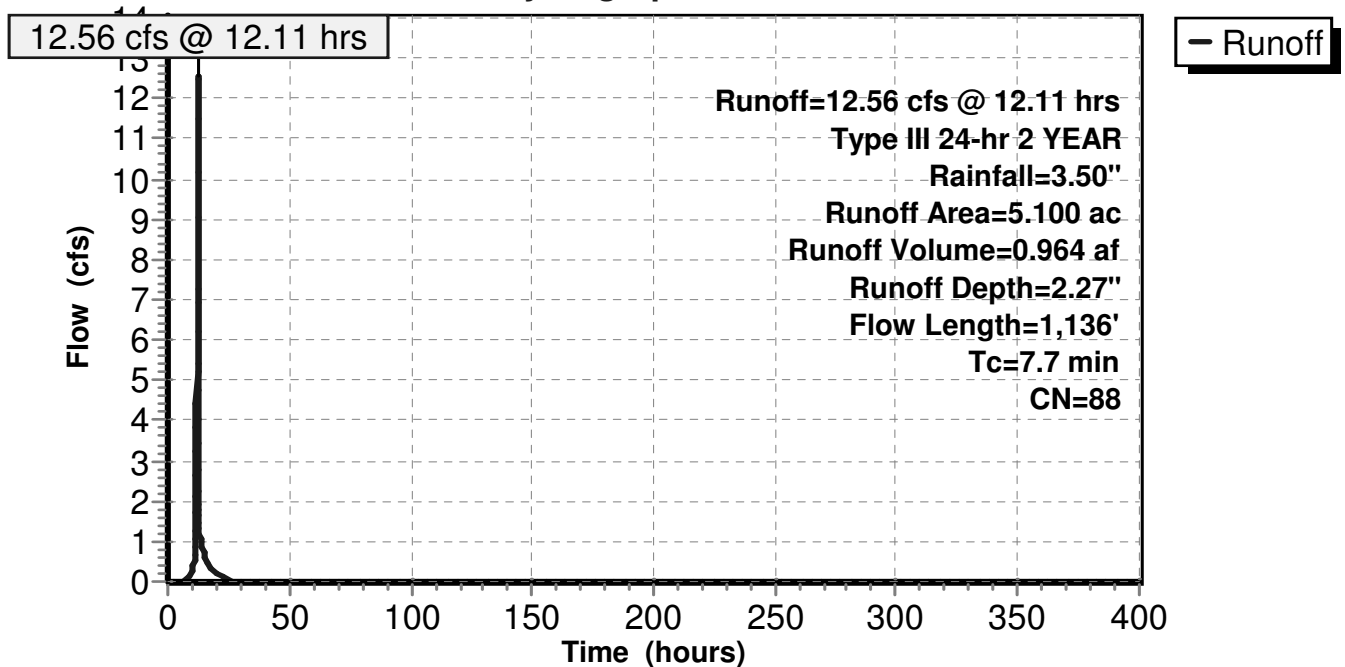
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YEAR Rainfall=3.50"

Area (ac)	CN	Description
0.200	39	>75% Grass cover, Good, HSG A
0.300	74	>75% Grass cover, Good, HSG C
0.300	70	Woods, Good, HSG C
3.700	94	Urban commercial, 85% imp, HSG C
0.400	89	Urban commercial, 85% imp, HSG A
* 0.200	70	Pervious Pavment
5.100	88	Weighted Average
1.615		Pervious Area
3.485		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.0400	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
1.1	85	0.0350	1.31		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.0	797	0.0140	6.75	8.28	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	172	0.0120	7.05	12.47	Circular Channel (pipe), Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.1	32	0.0094	7.56	23.76	Circular Channel (pipe), Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
7.7	1,136	Total			

Subcatchment 2.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Subcatchment 2.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.50	2.27	0.00	330.00	3.50	2.27	0.00
2.50	0.09	0.00	0.00	167.50	3.50	2.27	0.00	332.50	3.50	2.27	0.00
5.00	0.20	0.00	0.00	170.00	3.50	2.27	0.00	335.00	3.50	2.27	0.00
7.50	0.36	0.00	0.04	172.50	3.50	2.27	0.00	337.50	3.50	2.27	0.00
10.00	0.66	0.09	0.33	175.00	3.50	2.27	0.00	340.00	3.50	2.27	0.00
12.50	2.46	1.34	3.40	177.50	3.50	2.27	0.00	342.50	3.50	2.27	0.00
15.00	2.99	1.81	0.62	180.00	3.50	2.27	0.00	345.00	3.50	2.27	0.00
17.50	3.22	2.01	0.31	182.50	3.50	2.27	0.00	347.50	3.50	2.27	0.00
20.00	3.35	2.13	0.21	185.00	3.50	2.27	0.00	350.00	3.50	2.27	0.00
22.50	3.45	2.22	0.17	187.50	3.50	2.27	0.00	352.50	3.50	2.27	0.00
25.00	3.50	2.27	0.00	190.00	3.50	2.27	0.00	355.00	3.50	2.27	0.00
27.50	3.50	2.27	0.00	192.50	3.50	2.27	0.00	357.50	3.50	2.27	0.00
30.00	3.50	2.27	0.00	195.00	3.50	2.27	0.00	360.00	3.50	2.27	0.00
32.50	3.50	2.27	0.00	197.50	3.50	2.27	0.00	362.50	3.50	2.27	0.00
35.00	3.50	2.27	0.00	200.00	3.50	2.27	0.00	365.00	3.50	2.27	0.00
37.50	3.50	2.27	0.00	202.50	3.50	2.27	0.00	367.50	3.50	2.27	0.00
40.00	3.50	2.27	0.00	205.00	3.50	2.27	0.00	370.00	3.50	2.27	0.00
42.50	3.50	2.27	0.00	207.50	3.50	2.27	0.00	372.50	3.50	2.27	0.00
45.00	3.50	2.27	0.00	210.00	3.50	2.27	0.00	375.00	3.50	2.27	0.00
47.50	3.50	2.27	0.00	212.50	3.50	2.27	0.00	377.50	3.50	2.27	0.00
50.00	3.50	2.27	0.00	215.00	3.50	2.27	0.00	380.00	3.50	2.27	0.00
52.50	3.50	2.27	0.00	217.50	3.50	2.27	0.00	382.50	3.50	2.27	0.00
55.00	3.50	2.27	0.00	220.00	3.50	2.27	0.00	385.00	3.50	2.27	0.00
57.50	3.50	2.27	0.00	222.50	3.50	2.27	0.00	387.50	3.50	2.27	0.00
60.00	3.50	2.27	0.00	225.00	3.50	2.27	0.00	390.00	3.50	2.27	0.00
62.50	3.50	2.27	0.00	227.50	3.50	2.27	0.00	392.50	3.50	2.27	0.00
65.00	3.50	2.27	0.00	230.00	3.50	2.27	0.00	395.00	3.50	2.27	0.00
67.50	3.50	2.27	0.00	232.50	3.50	2.27	0.00	397.50	3.50	2.27	0.00
70.00	3.50	2.27	0.00	235.00	3.50	2.27	0.00	400.00	3.50	2.27	0.00
72.50	3.50	2.27	0.00	237.50	3.50	2.27	0.00				
75.00	3.50	2.27	0.00	240.00	3.50	2.27	0.00				
77.50	3.50	2.27	0.00	242.50	3.50	2.27	0.00				
80.00	3.50	2.27	0.00	245.00	3.50	2.27	0.00				
82.50	3.50	2.27	0.00	247.50	3.50	2.27	0.00				
85.00	3.50	2.27	0.00	250.00	3.50	2.27	0.00				
87.50	3.50	2.27	0.00	252.50	3.50	2.27	0.00				
90.00	3.50	2.27	0.00	255.00	3.50	2.27	0.00				
92.50	3.50	2.27	0.00	257.50	3.50	2.27	0.00				
95.00	3.50	2.27	0.00	260.00	3.50	2.27	0.00				
97.50	3.50	2.27	0.00	262.50	3.50	2.27	0.00				
100.00	3.50	2.27	0.00	265.00	3.50	2.27	0.00				
102.50	3.50	2.27	0.00	267.50	3.50	2.27	0.00				
105.00	3.50	2.27	0.00	270.00	3.50	2.27	0.00				
107.50	3.50	2.27	0.00	272.50	3.50	2.27	0.00				
110.00	3.50	2.27	0.00	275.00	3.50	2.27	0.00				
112.50	3.50	2.27	0.00	277.50	3.50	2.27	0.00				
115.00	3.50	2.27	0.00	280.00	3.50	2.27	0.00				
117.50	3.50	2.27	0.00	282.50	3.50	2.27	0.00				
120.00	3.50	2.27	0.00	285.00	3.50	2.27	0.00				
122.50	3.50	2.27	0.00	287.50	3.50	2.27	0.00				
125.00	3.50	2.27	0.00	290.00	3.50	2.27	0.00				
127.50	3.50	2.27	0.00	292.50	3.50	2.27	0.00				
130.00	3.50	2.27	0.00	295.00	3.50	2.27	0.00				
132.50	3.50	2.27	0.00	297.50	3.50	2.27	0.00				
135.00	3.50	2.27	0.00	300.00	3.50	2.27	0.00				
137.50	3.50	2.27	0.00	302.50	3.50	2.27	0.00				
140.00	3.50	2.27	0.00	305.00	3.50	2.27	0.00				
142.50	3.50	2.27	0.00	307.50	3.50	2.27	0.00				
145.00	3.50	2.27	0.00	310.00	3.50	2.27	0.00				
147.50	3.50	2.27	0.00	312.50	3.50	2.27	0.00				
150.00	3.50	2.27	0.00	315.00	3.50	2.27	0.00				
152.50	3.50	2.27	0.00	317.50	3.50	2.27	0.00				
155.00	3.50	2.27	0.00	320.00	3.50	2.27	0.00				
157.50	3.50	2.27	0.00	322.50	3.50	2.27	0.00				
160.00	3.50	2.27	0.00	325.00	3.50	2.27	0.00				
162.50	3.50	2.27	0.00	327.50	3.50	2.27	0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Subcatchment 2.1S:

Runoff = 0.01 cfs @ 14.70 hrs, Volume= 0.006 af, Depth= 0.08"

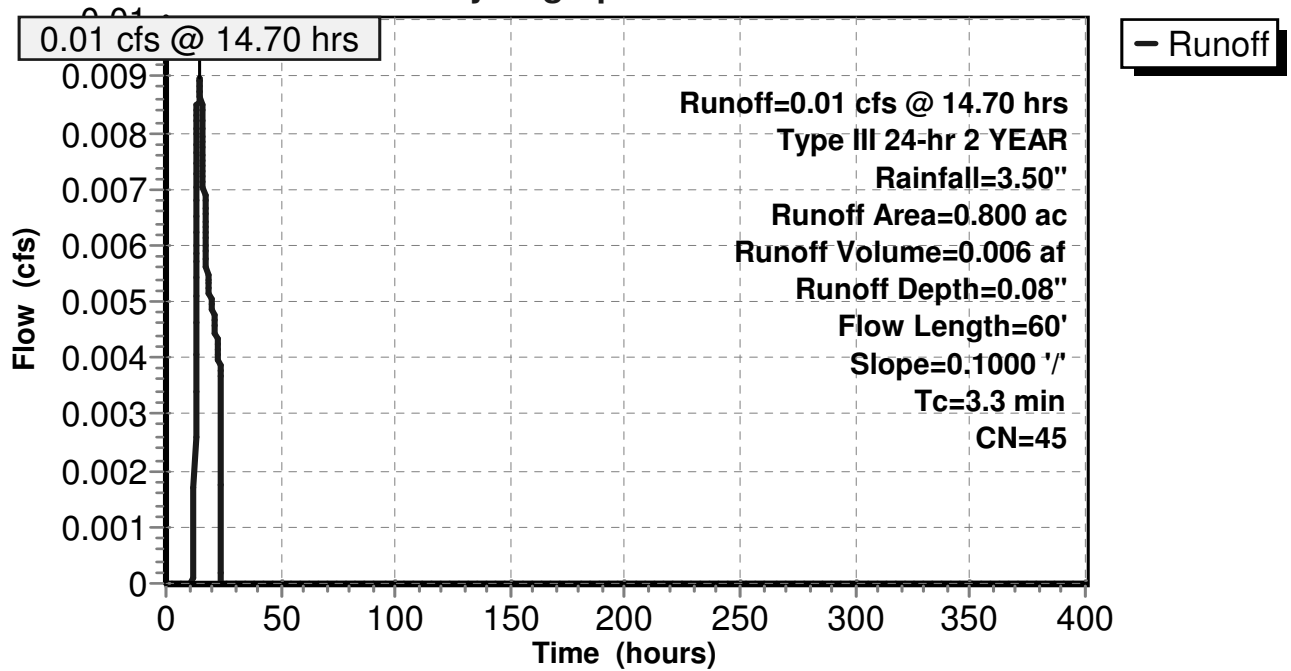
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.50"

Area (ac)	CN	Description
0.700	39	>75% Grass cover, Good, HSG A
0.100	89	Urban commercial, 85% imp, HSG A
0.800	45	Weighted Average
0.715		Pervious Area
0.085		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	60	0.1000	0.31		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"

Subcatchment 2.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

Prepared by Insite Engineering, Surveying, and Landscape Architecture, P.C.
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Hydrograph for Subcatchment 2.1S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.50	0.08	0.00	330.00	3.50	0.08	0.00
2.50	0.09	0.00	0.00	167.50	3.50	0.08	0.00	332.50	3.50	0.08	0.00
5.00	0.20	0.00	0.00	170.00	3.50	0.08	0.00	335.00	3.50	0.08	0.00
7.50	0.36	0.00	0.00	172.50	3.50	0.08	0.00	337.50	3.50	0.08	0.00
10.00	0.66	0.00	0.00	175.00	3.50	0.08	0.00	340.00	3.50	0.08	0.00
12.50	2.46	0.00	0.00	177.50	3.50	0.08	0.00	342.50	3.50	0.08	0.00
15.00	2.99	0.02	0.01	180.00	3.50	0.08	0.00	345.00	3.50	0.08	0.00
17.50	3.22	0.05	0.01	182.50	3.50	0.08	0.00	347.50	3.50	0.08	0.00
20.00	3.35	0.06	0.00	185.00	3.50	0.08	0.00	350.00	3.50	0.08	0.00
22.50	3.45	0.08	0.00	187.50	3.50	0.08	0.00	352.50	3.50	0.08	0.00
25.00	3.50	0.08	0.00	190.00	3.50	0.08	0.00	355.00	3.50	0.08	0.00
27.50	3.50	0.08	0.00	192.50	3.50	0.08	0.00	357.50	3.50	0.08	0.00
30.00	3.50	0.08	0.00	195.00	3.50	0.08	0.00	360.00	3.50	0.08	0.00
32.50	3.50	0.08	0.00	197.50	3.50	0.08	0.00	362.50	3.50	0.08	0.00
35.00	3.50	0.08	0.00	200.00	3.50	0.08	0.00	365.00	3.50	0.08	0.00
37.50	3.50	0.08	0.00	202.50	3.50	0.08	0.00	367.50	3.50	0.08	0.00
40.00	3.50	0.08	0.00	205.00	3.50	0.08	0.00	370.00	3.50	0.08	0.00
42.50	3.50	0.08	0.00	207.50	3.50	0.08	0.00	372.50	3.50	0.08	0.00
45.00	3.50	0.08	0.00	210.00	3.50	0.08	0.00	375.00	3.50	0.08	0.00
47.50	3.50	0.08	0.00	212.50	3.50	0.08	0.00	377.50	3.50	0.08	0.00
50.00	3.50	0.08	0.00	215.00	3.50	0.08	0.00	380.00	3.50	0.08	0.00
52.50	3.50	0.08	0.00	217.50	3.50	0.08	0.00	382.50	3.50	0.08	0.00
55.00	3.50	0.08	0.00	220.00	3.50	0.08	0.00	385.00	3.50	0.08	0.00
57.50	3.50	0.08	0.00	222.50	3.50	0.08	0.00	387.50	3.50	0.08	0.00
60.00	3.50	0.08	0.00	225.00	3.50	0.08	0.00	390.00	3.50	0.08	0.00
62.50	3.50	0.08	0.00	227.50	3.50	0.08	0.00	392.50	3.50	0.08	0.00
65.00	3.50	0.08	0.00	230.00	3.50	0.08	0.00	395.00	3.50	0.08	0.00
67.50	3.50	0.08	0.00	232.50	3.50	0.08	0.00	397.50	3.50	0.08	0.00
70.00	3.50	0.08	0.00	235.00	3.50	0.08	0.00	400.00	3.50	0.08	0.00
72.50	3.50	0.08	0.00	237.50	3.50	0.08	0.00				
75.00	3.50	0.08	0.00	240.00	3.50	0.08	0.00				
77.50	3.50	0.08	0.00	242.50	3.50	0.08	0.00				
80.00	3.50	0.08	0.00	245.00	3.50	0.08	0.00				
82.50	3.50	0.08	0.00	247.50	3.50	0.08	0.00				
85.00	3.50	0.08	0.00	250.00	3.50	0.08	0.00				
87.50	3.50	0.08	0.00	252.50	3.50	0.08	0.00				
90.00	3.50	0.08	0.00	255.00	3.50	0.08	0.00				
92.50	3.50	0.08	0.00	257.50	3.50	0.08	0.00				
95.00	3.50	0.08	0.00	260.00	3.50	0.08	0.00				
97.50	3.50	0.08	0.00	262.50	3.50	0.08	0.00				
100.00	3.50	0.08	0.00	265.00	3.50	0.08	0.00				
102.50	3.50	0.08	0.00	267.50	3.50	0.08	0.00				
105.00	3.50	0.08	0.00	270.00	3.50	0.08	0.00				
107.50	3.50	0.08	0.00	272.50	3.50	0.08	0.00				
110.00	3.50	0.08	0.00	275.00	3.50	0.08	0.00				
112.50	3.50	0.08	0.00	277.50	3.50	0.08	0.00				
115.00	3.50	0.08	0.00	280.00	3.50	0.08	0.00				
117.50	3.50	0.08	0.00	282.50	3.50	0.08	0.00				
120.00	3.50	0.08	0.00	285.00	3.50	0.08	0.00				
122.50	3.50	0.08	0.00	287.50	3.50	0.08	0.00				
125.00	3.50	0.08	0.00	290.00	3.50	0.08	0.00				
127.50	3.50	0.08	0.00	292.50	3.50	0.08	0.00				
130.00	3.50	0.08	0.00	295.00	3.50	0.08	0.00				
132.50	3.50	0.08	0.00	297.50	3.50	0.08	0.00				
135.00	3.50	0.08	0.00	300.00	3.50	0.08	0.00				
137.50	3.50	0.08	0.00	302.50	3.50	0.08	0.00				
140.00	3.50	0.08	0.00	305.00	3.50	0.08	0.00				
142.50	3.50	0.08	0.00	307.50	3.50	0.08	0.00				
145.00	3.50	0.08	0.00	310.00	3.50	0.08	0.00				
147.50	3.50	0.08	0.00	312.50	3.50	0.08	0.00				
150.00	3.50	0.08	0.00	315.00	3.50	0.08	0.00				
152.50	3.50	0.08	0.00	317.50	3.50	0.08	0.00				
155.00	3.50	0.08	0.00	320.00	3.50	0.08	0.00				
157.50	3.50	0.08	0.00	322.50	3.50	0.08	0.00				
160.00	3.50	0.08	0.00	325.00	3.50	0.08	0.00				
162.50	3.50	0.08	0.00	327.50	3.50	0.08	0.00				

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Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Subcatchment 2.2S:

Runoff = 3.70 cfs @ 12.17 hrs, Volume= 0.325 af, Depth= 1.86"

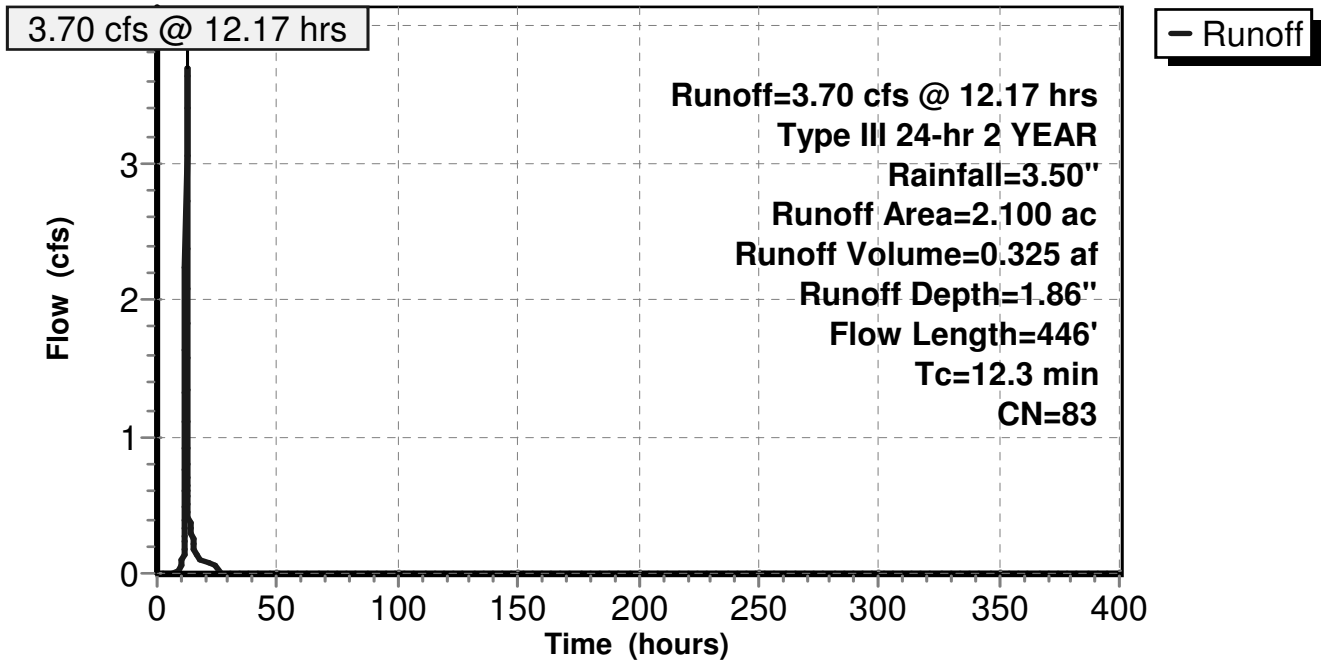
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YEAR Rainfall=3.50"

Area (ac)	CN	Description
1.000	94	Urban commercial, 85% imp, HSG C
0.700	74	>75% Grass cover, Good, HSG C
0.300	71	Meadow, non-grazed, HSG C
* 0.100	70	Pervious Pavement
2.100	83	Weighted Average
1.250		Pervious Area
0.850		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	157	0.1400	2.62		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	140	0.0930	6.19		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	49	0.0290	9.71	11.92	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
12.3	446	Total			

Subcatchment 2.2S:

Hydrograph



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Hydrograph for Subcatchment 2.2S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.50	1.86	0.00	330.00	3.50	1.86	0.00
2.50	0.09	0.00	0.00	167.50	3.50	1.86	0.00	332.50	3.50	1.86	0.00
5.00	0.20	0.00	0.00	170.00	3.50	1.86	0.00	335.00	3.50	1.86	0.00
7.50	0.36	0.00	0.00	172.50	3.50	1.86	0.00	337.50	3.50	1.86	0.00
10.00	0.66	0.03	0.06	175.00	3.50	1.86	0.00	340.00	3.50	1.86	0.00
12.50	2.46	1.02	1.58	177.50	3.50	1.86	0.00	342.50	3.50	1.86	0.00
15.00	2.99	1.44	0.24	180.00	3.50	1.86	0.00	345.00	3.50	1.86	0.00
17.50	3.22	1.62	0.12	182.50	3.50	1.86	0.00	347.50	3.50	1.86	0.00
20.00	3.35	1.73	0.08	185.00	3.50	1.86	0.00	350.00	3.50	1.86	0.00
22.50	3.45	1.82	0.06	187.50	3.50	1.86	0.00	352.50	3.50	1.86	0.00
25.00	3.50	1.86	0.00	190.00	3.50	1.86	0.00	355.00	3.50	1.86	0.00
27.50	3.50	1.86	0.00	192.50	3.50	1.86	0.00	357.50	3.50	1.86	0.00
30.00	3.50	1.86	0.00	195.00	3.50	1.86	0.00	360.00	3.50	1.86	0.00
32.50	3.50	1.86	0.00	197.50	3.50	1.86	0.00	362.50	3.50	1.86	0.00
35.00	3.50	1.86	0.00	200.00	3.50	1.86	0.00	365.00	3.50	1.86	0.00
37.50	3.50	1.86	0.00	202.50	3.50	1.86	0.00	367.50	3.50	1.86	0.00
40.00	3.50	1.86	0.00	205.00	3.50	1.86	0.00	370.00	3.50	1.86	0.00
42.50	3.50	1.86	0.00	207.50	3.50	1.86	0.00	372.50	3.50	1.86	0.00
45.00	3.50	1.86	0.00	210.00	3.50	1.86	0.00	375.00	3.50	1.86	0.00
47.50	3.50	1.86	0.00	212.50	3.50	1.86	0.00	377.50	3.50	1.86	0.00
50.00	3.50	1.86	0.00	215.00	3.50	1.86	0.00	380.00	3.50	1.86	0.00
52.50	3.50	1.86	0.00	217.50	3.50	1.86	0.00	382.50	3.50	1.86	0.00
55.00	3.50	1.86	0.00	220.00	3.50	1.86	0.00	385.00	3.50	1.86	0.00
57.50	3.50	1.86	0.00	222.50	3.50	1.86	0.00	387.50	3.50	1.86	0.00
60.00	3.50	1.86	0.00	225.00	3.50	1.86	0.00	390.00	3.50	1.86	0.00
62.50	3.50	1.86	0.00	227.50	3.50	1.86	0.00	392.50	3.50	1.86	0.00
65.00	3.50	1.86	0.00	230.00	3.50	1.86	0.00	395.00	3.50	1.86	0.00
67.50	3.50	1.86	0.00	232.50	3.50	1.86	0.00	397.50	3.50	1.86	0.00
70.00	3.50	1.86	0.00	235.00	3.50	1.86	0.00	400.00	3.50	1.86	0.00
72.50	3.50	1.86	0.00	237.50	3.50	1.86	0.00				
75.00	3.50	1.86	0.00	240.00	3.50	1.86	0.00				
77.50	3.50	1.86	0.00	242.50	3.50	1.86	0.00				
80.00	3.50	1.86	0.00	245.00	3.50	1.86	0.00				
82.50	3.50	1.86	0.00	247.50	3.50	1.86	0.00				
85.00	3.50	1.86	0.00	250.00	3.50	1.86	0.00				
87.50	3.50	1.86	0.00	252.50	3.50	1.86	0.00				
90.00	3.50	1.86	0.00	255.00	3.50	1.86	0.00				
92.50	3.50	1.86	0.00	257.50	3.50	1.86	0.00				
95.00	3.50	1.86	0.00	260.00	3.50	1.86	0.00				
97.50	3.50	1.86	0.00	262.50	3.50	1.86	0.00				
100.00	3.50	1.86	0.00	265.00	3.50	1.86	0.00				
102.50	3.50	1.86	0.00	267.50	3.50	1.86	0.00				
105.00	3.50	1.86	0.00	270.00	3.50	1.86	0.00				
107.50	3.50	1.86	0.00	272.50	3.50	1.86	0.00				
110.00	3.50	1.86	0.00	275.00	3.50	1.86	0.00				
112.50	3.50	1.86	0.00	277.50	3.50	1.86	0.00				
115.00	3.50	1.86	0.00	280.00	3.50	1.86	0.00				
117.50	3.50	1.86	0.00	282.50	3.50	1.86	0.00				
120.00	3.50	1.86	0.00	285.00	3.50	1.86	0.00				
122.50	3.50	1.86	0.00	287.50	3.50	1.86	0.00				
125.00	3.50	1.86	0.00	290.00	3.50	1.86	0.00				
127.50	3.50	1.86	0.00	292.50	3.50	1.86	0.00				
130.00	3.50	1.86	0.00	295.00	3.50	1.86	0.00				
132.50	3.50	1.86	0.00	297.50	3.50	1.86	0.00				
135.00	3.50	1.86	0.00	300.00	3.50	1.86	0.00				
137.50	3.50	1.86	0.00	302.50	3.50	1.86	0.00				
140.00	3.50	1.86	0.00	305.00	3.50	1.86	0.00				
142.50	3.50	1.86	0.00	307.50	3.50	1.86	0.00				
145.00	3.50	1.86	0.00	310.00	3.50	1.86	0.00				
147.50	3.50	1.86	0.00	312.50	3.50	1.86	0.00				
150.00	3.50	1.86	0.00	315.00	3.50	1.86	0.00				
152.50	3.50	1.86	0.00	317.50	3.50	1.86	0.00				
155.00	3.50	1.86	0.00	320.00	3.50	1.86	0.00				
157.50	3.50	1.86	0.00	322.50	3.50	1.86	0.00				
160.00	3.50	1.86	0.00	325.00	3.50	1.86	0.00				
162.50	3.50	1.86	0.00	327.50	3.50	1.86	0.00				

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Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Subcatchment 2.3S:

Runoff = 6.70 cfs @ 12.21 hrs, Volume= 0.672 af, Depth= 1.01"

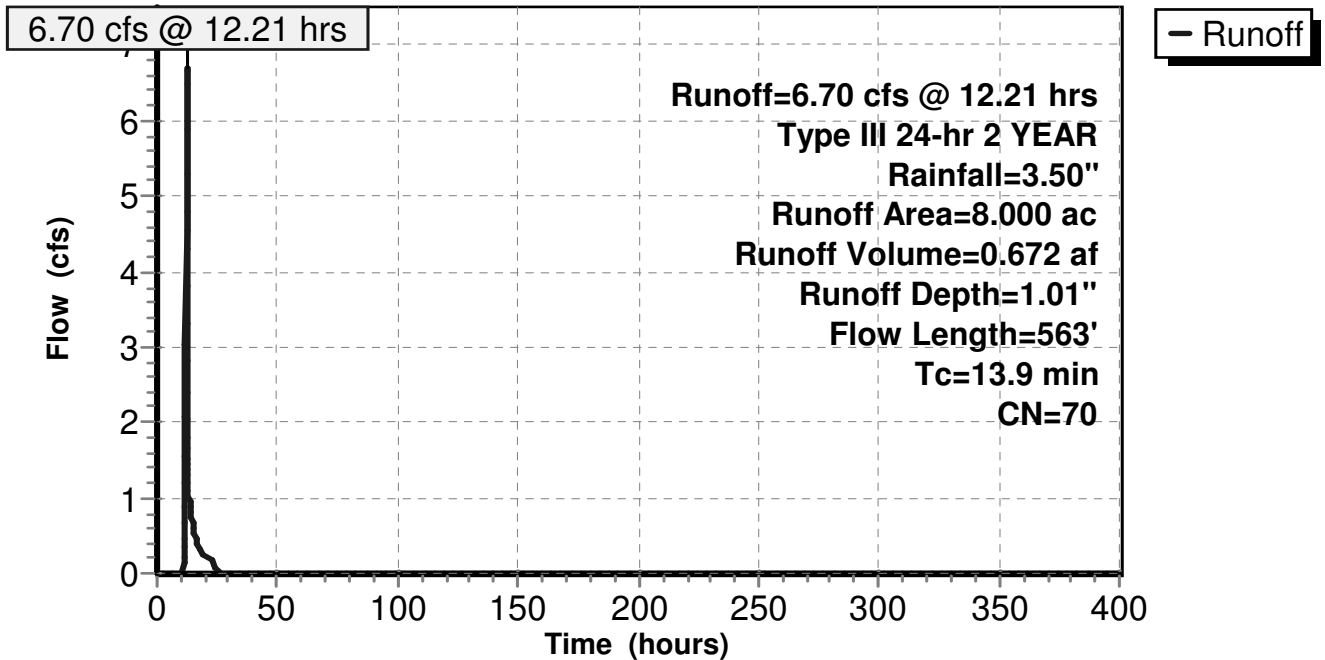
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YEAR Rainfall=3.50"

Area (ac)	CN	Description
5.500	70	Woods, Good, HSG C
0.200	39	>75% Grass cover, Good, HSG A
0.500	98	Paved parking & roofs
0.500	71	Meadow, non-grazed, HSG C
0.900	74	>75% Grass cover, Good, HSG C
0.300	30	Woods, Good, HSG A
0.050	94	Urban commercial, 85% imp, HSG C
0.050	89	Urban commercial, 85% imp, HSG A
8.000	70	Weighted Average
7.415		Pervious Area
0.585		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
4.5	463	0.1200	1.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.9	563	Total			

Subcatchment 2.3S:

Hydrograph



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Hydrograph for Subcatchment 2.3S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.50	1.01	0.00	330.00	3.50	1.01	0.00
2.50	0.09	0.00	0.00	167.50	3.50	1.01	0.00	332.50	3.50	1.01	0.00
5.00	0.20	0.00	0.00	170.00	3.50	1.01	0.00	335.00	3.50	1.01	0.00
7.50	0.36	0.00	0.00	172.50	3.50	1.01	0.00	337.50	3.50	1.01	0.00
10.00	0.66	0.00	0.00	175.00	3.50	1.01	0.00	340.00	3.50	1.01	0.00
12.50	2.46	0.43	3.82	177.50	3.50	1.01	0.00	342.50	3.50	1.01	0.00
15.00	2.99	0.71	0.62	180.00	3.50	1.01	0.00	345.00	3.50	1.01	0.00
17.50	3.22	0.84	0.32	182.50	3.50	1.01	0.00	347.50	3.50	1.01	0.00
20.00	3.35	0.92	0.23	185.00	3.50	1.01	0.00	350.00	3.50	1.01	0.00
22.50	3.45	0.98	0.18	187.50	3.50	1.01	0.00	352.50	3.50	1.01	0.00
25.00	3.50	1.01	0.00	190.00	3.50	1.01	0.00	355.00	3.50	1.01	0.00
27.50	3.50	1.01	0.00	192.50	3.50	1.01	0.00	357.50	3.50	1.01	0.00
30.00	3.50	1.01	0.00	195.00	3.50	1.01	0.00	360.00	3.50	1.01	0.00
32.50	3.50	1.01	0.00	197.50	3.50	1.01	0.00	362.50	3.50	1.01	0.00
35.00	3.50	1.01	0.00	200.00	3.50	1.01	0.00	365.00	3.50	1.01	0.00
37.50	3.50	1.01	0.00	202.50	3.50	1.01	0.00	367.50	3.50	1.01	0.00
40.00	3.50	1.01	0.00	205.00	3.50	1.01	0.00	370.00	3.50	1.01	0.00
42.50	3.50	1.01	0.00	207.50	3.50	1.01	0.00	372.50	3.50	1.01	0.00
45.00	3.50	1.01	0.00	210.00	3.50	1.01	0.00	375.00	3.50	1.01	0.00
47.50	3.50	1.01	0.00	212.50	3.50	1.01	0.00	377.50	3.50	1.01	0.00
50.00	3.50	1.01	0.00	215.00	3.50	1.01	0.00	380.00	3.50	1.01	0.00
52.50	3.50	1.01	0.00	217.50	3.50	1.01	0.00	382.50	3.50	1.01	0.00
55.00	3.50	1.01	0.00	220.00	3.50	1.01	0.00	385.00	3.50	1.01	0.00
57.50	3.50	1.01	0.00	222.50	3.50	1.01	0.00	387.50	3.50	1.01	0.00
60.00	3.50	1.01	0.00	225.00	3.50	1.01	0.00	390.00	3.50	1.01	0.00
62.50	3.50	1.01	0.00	227.50	3.50	1.01	0.00	392.50	3.50	1.01	0.00
65.00	3.50	1.01	0.00	230.00	3.50	1.01	0.00	395.00	3.50	1.01	0.00
67.50	3.50	1.01	0.00	232.50	3.50	1.01	0.00	397.50	3.50	1.01	0.00
70.00	3.50	1.01	0.00	235.00	3.50	1.01	0.00	400.00	3.50	1.01	0.00
72.50	3.50	1.01	0.00	237.50	3.50	1.01	0.00				
75.00	3.50	1.01	0.00	240.00	3.50	1.01	0.00				
77.50	3.50	1.01	0.00	242.50	3.50	1.01	0.00				
80.00	3.50	1.01	0.00	245.00	3.50	1.01	0.00				
82.50	3.50	1.01	0.00	247.50	3.50	1.01	0.00				
85.00	3.50	1.01	0.00	250.00	3.50	1.01	0.00				
87.50	3.50	1.01	0.00	252.50	3.50	1.01	0.00				
90.00	3.50	1.01	0.00	255.00	3.50	1.01	0.00				
92.50	3.50	1.01	0.00	257.50	3.50	1.01	0.00				
95.00	3.50	1.01	0.00	260.00	3.50	1.01	0.00				
97.50	3.50	1.01	0.00	262.50	3.50	1.01	0.00				
100.00	3.50	1.01	0.00	265.00	3.50	1.01	0.00				
102.50	3.50	1.01	0.00	267.50	3.50	1.01	0.00				
105.00	3.50	1.01	0.00	270.00	3.50	1.01	0.00				
107.50	3.50	1.01	0.00	272.50	3.50	1.01	0.00				
110.00	3.50	1.01	0.00	275.00	3.50	1.01	0.00				
112.50	3.50	1.01	0.00	277.50	3.50	1.01	0.00				
115.00	3.50	1.01	0.00	280.00	3.50	1.01	0.00				
117.50	3.50	1.01	0.00	282.50	3.50	1.01	0.00				
120.00	3.50	1.01	0.00	285.00	3.50	1.01	0.00				
122.50	3.50	1.01	0.00	287.50	3.50	1.01	0.00				
125.00	3.50	1.01	0.00	290.00	3.50	1.01	0.00				
127.50	3.50	1.01	0.00	292.50	3.50	1.01	0.00				
130.00	3.50	1.01	0.00	295.00	3.50	1.01	0.00				
132.50	3.50	1.01	0.00	297.50	3.50	1.01	0.00				
135.00	3.50	1.01	0.00	300.00	3.50	1.01	0.00				
137.50	3.50	1.01	0.00	302.50	3.50	1.01	0.00				
140.00	3.50	1.01	0.00	305.00	3.50	1.01	0.00				
142.50	3.50	1.01	0.00	307.50	3.50	1.01	0.00				
145.00	3.50	1.01	0.00	310.00	3.50	1.01	0.00				
147.50	3.50	1.01	0.00	312.50	3.50	1.01	0.00				
150.00	3.50	1.01	0.00	315.00	3.50	1.01	0.00				
152.50	3.50	1.01	0.00	317.50	3.50	1.01	0.00				
155.00	3.50	1.01	0.00	320.00	3.50	1.01	0.00				
157.50	3.50	1.01	0.00	322.50	3.50	1.01	0.00				
160.00	3.50	1.01	0.00	325.00	3.50	1.01	0.00				
162.50	3.50	1.01	0.00	327.50	3.50	1.01	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Subcatchment 3.0S:

Runoff = 0.90 cfs @ 12.22 hrs, Volume= 0.104 af, Depth= 0.66"

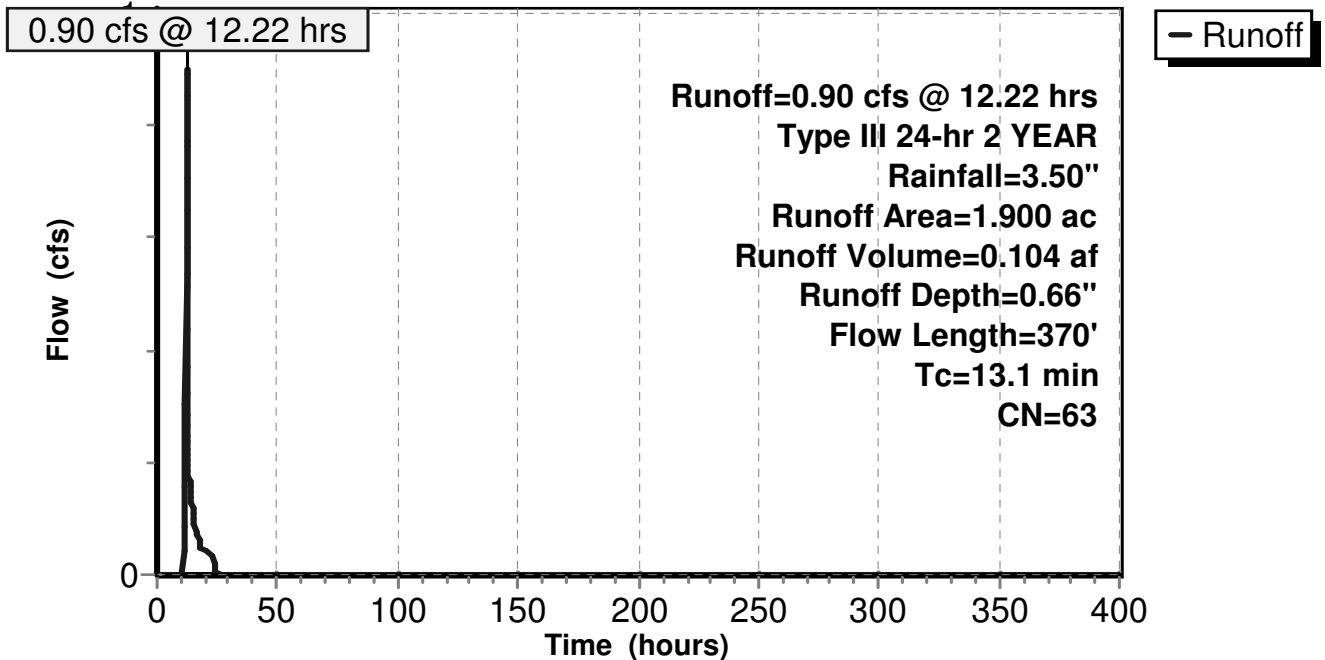
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YEAR Rainfall=3.50"

Area (ac)	CN	Description
0.900	98	Paved parking & roofs
0.800	30	Woods, Good, HSG A
0.200	39	>75% Grass cover, Good, HSG A
1.900	63	Weighted Average
1.000		Pervious Area
0.900		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
6.5	90	0.0400	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
6.4	270	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.1	370	Total			

Subcatchment 3.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Subcatchment 3.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.50	0.66	0.00	330.00	3.50	0.66	0.00
2.50	0.09	0.00	0.00	167.50	3.50	0.66	0.00	332.50	3.50	0.66	0.00
5.00	0.20	0.00	0.00	170.00	3.50	0.66	0.00	335.00	3.50	0.66	0.00
7.50	0.36	0.00	0.00	172.50	3.50	0.66	0.00	337.50	3.50	0.66	0.00
10.00	0.66	0.00	0.00	175.00	3.50	0.66	0.00	340.00	3.50	0.66	0.00
12.50	2.46	0.23	0.58	177.50	3.50	0.66	0.00	342.50	3.50	0.66	0.00
15.00	2.99	0.43	0.11	180.00	3.50	0.66	0.00	345.00	3.50	0.66	0.00
17.50	3.22	0.53	0.06	182.50	3.50	0.66	0.00	347.50	3.50	0.66	0.00
20.00	3.35	0.59	0.04	185.00	3.50	0.66	0.00	350.00	3.50	0.66	0.00
22.50	3.45	0.64	0.03	187.50	3.50	0.66	0.00	352.50	3.50	0.66	0.00
25.00	3.50	0.66	0.00	190.00	3.50	0.66	0.00	355.00	3.50	0.66	0.00
27.50	3.50	0.66	0.00	192.50	3.50	0.66	0.00	357.50	3.50	0.66	0.00
30.00	3.50	0.66	0.00	195.00	3.50	0.66	0.00	360.00	3.50	0.66	0.00
32.50	3.50	0.66	0.00	197.50	3.50	0.66	0.00	362.50	3.50	0.66	0.00
35.00	3.50	0.66	0.00	200.00	3.50	0.66	0.00	365.00	3.50	0.66	0.00
37.50	3.50	0.66	0.00	202.50	3.50	0.66	0.00	367.50	3.50	0.66	0.00
40.00	3.50	0.66	0.00	205.00	3.50	0.66	0.00	370.00	3.50	0.66	0.00
42.50	3.50	0.66	0.00	207.50	3.50	0.66	0.00	372.50	3.50	0.66	0.00
45.00	3.50	0.66	0.00	210.00	3.50	0.66	0.00	375.00	3.50	0.66	0.00
47.50	3.50	0.66	0.00	212.50	3.50	0.66	0.00	377.50	3.50	0.66	0.00
50.00	3.50	0.66	0.00	215.00	3.50	0.66	0.00	380.00	3.50	0.66	0.00
52.50	3.50	0.66	0.00	217.50	3.50	0.66	0.00	382.50	3.50	0.66	0.00
55.00	3.50	0.66	0.00	220.00	3.50	0.66	0.00	385.00	3.50	0.66	0.00
57.50	3.50	0.66	0.00	222.50	3.50	0.66	0.00	387.50	3.50	0.66	0.00
60.00	3.50	0.66	0.00	225.00	3.50	0.66	0.00	390.00	3.50	0.66	0.00
62.50	3.50	0.66	0.00	227.50	3.50	0.66	0.00	392.50	3.50	0.66	0.00
65.00	3.50	0.66	0.00	230.00	3.50	0.66	0.00	395.00	3.50	0.66	0.00
67.50	3.50	0.66	0.00	232.50	3.50	0.66	0.00	397.50	3.50	0.66	0.00
70.00	3.50	0.66	0.00	235.00	3.50	0.66	0.00	400.00	3.50	0.66	0.00
72.50	3.50	0.66	0.00	237.50	3.50	0.66	0.00				
75.00	3.50	0.66	0.00	240.00	3.50	0.66	0.00				
77.50	3.50	0.66	0.00	242.50	3.50	0.66	0.00				
80.00	3.50	0.66	0.00	245.00	3.50	0.66	0.00				
82.50	3.50	0.66	0.00	247.50	3.50	0.66	0.00				
85.00	3.50	0.66	0.00	250.00	3.50	0.66	0.00				
87.50	3.50	0.66	0.00	252.50	3.50	0.66	0.00				
90.00	3.50	0.66	0.00	255.00	3.50	0.66	0.00				
92.50	3.50	0.66	0.00	257.50	3.50	0.66	0.00				
95.00	3.50	0.66	0.00	260.00	3.50	0.66	0.00				
97.50	3.50	0.66	0.00	262.50	3.50	0.66	0.00				
100.00	3.50	0.66	0.00	265.00	3.50	0.66	0.00				
102.50	3.50	0.66	0.00	267.50	3.50	0.66	0.00				
105.00	3.50	0.66	0.00	270.00	3.50	0.66	0.00				
107.50	3.50	0.66	0.00	272.50	3.50	0.66	0.00				
110.00	3.50	0.66	0.00	275.00	3.50	0.66	0.00				
112.50	3.50	0.66	0.00	277.50	3.50	0.66	0.00				
115.00	3.50	0.66	0.00	280.00	3.50	0.66	0.00				
117.50	3.50	0.66	0.00	282.50	3.50	0.66	0.00				
120.00	3.50	0.66	0.00	285.00	3.50	0.66	0.00				
122.50	3.50	0.66	0.00	287.50	3.50	0.66	0.00				
125.00	3.50	0.66	0.00	290.00	3.50	0.66	0.00				
127.50	3.50	0.66	0.00	292.50	3.50	0.66	0.00				
130.00	3.50	0.66	0.00	295.00	3.50	0.66	0.00				
132.50	3.50	0.66	0.00	297.50	3.50	0.66	0.00				
135.00	3.50	0.66	0.00	300.00	3.50	0.66	0.00				
137.50	3.50	0.66	0.00	302.50	3.50	0.66	0.00				
140.00	3.50	0.66	0.00	305.00	3.50	0.66	0.00				
142.50	3.50	0.66	0.00	307.50	3.50	0.66	0.00				
145.00	3.50	0.66	0.00	310.00	3.50	0.66	0.00				
147.50	3.50	0.66	0.00	312.50	3.50	0.66	0.00				
150.00	3.50	0.66	0.00	315.00	3.50	0.66	0.00				
152.50	3.50	0.66	0.00	317.50	3.50	0.66	0.00				
155.00	3.50	0.66	0.00	320.00	3.50	0.66	0.00				
157.50	3.50	0.66	0.00	322.50	3.50	0.66	0.00				
160.00	3.50	0.66	0.00	325.00	3.50	0.66	0.00				
162.50	3.50	0.66	0.00	327.50	3.50	0.66	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Subcatchment 3.1S:

Runoff = 0.18 cfs @ 12.55 hrs, Volume= 0.042 af, Depth= 0.28"

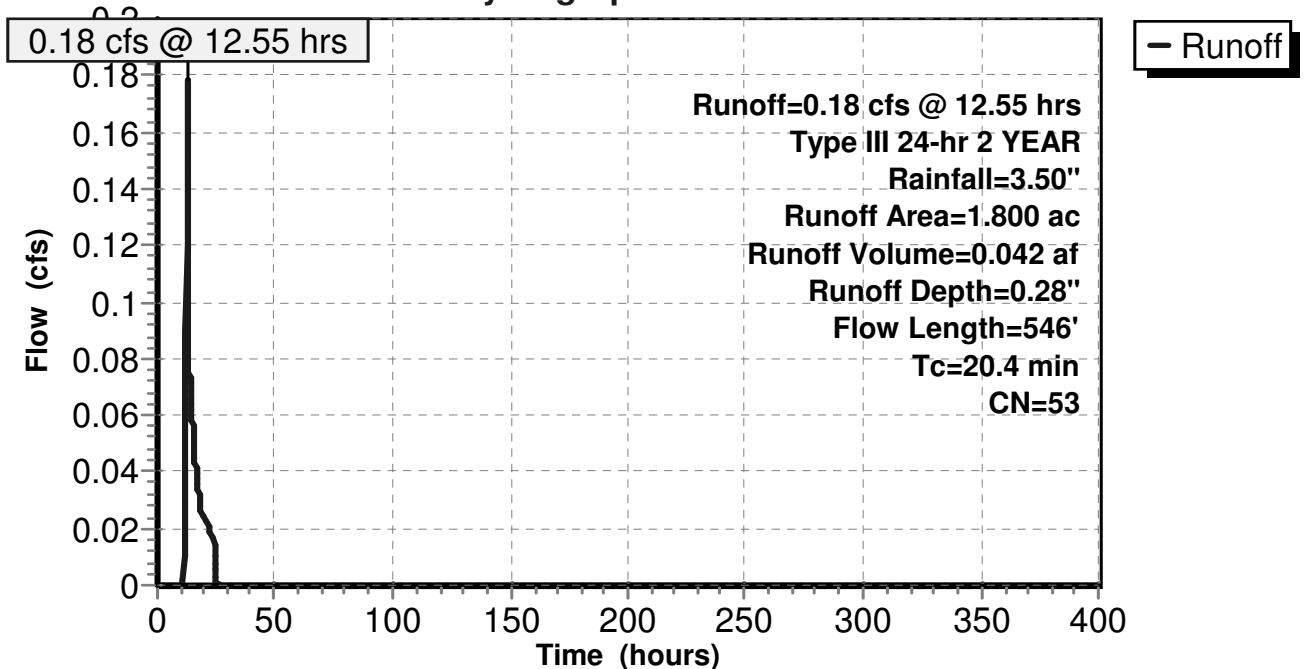
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 YEAR Rainfall=3.50"

Area (ac)	CN	Description
0.600	98	Paved parking & roofs
1.200	30	Woods, Good, HSG A
1.800	53	Weighted Average
1.200		Pervious Area
0.600		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
16.0	90	0.0300	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.7	126	0.0600	1.22		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.5	320	0.0200	2.18	2.61	Channel Flow, Area= 1.2 sf Perim= 5.5' r= 0.22' n= 0.035
20.4	546	Total			

Subcatchment 3.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Subcatchment 3.1S:

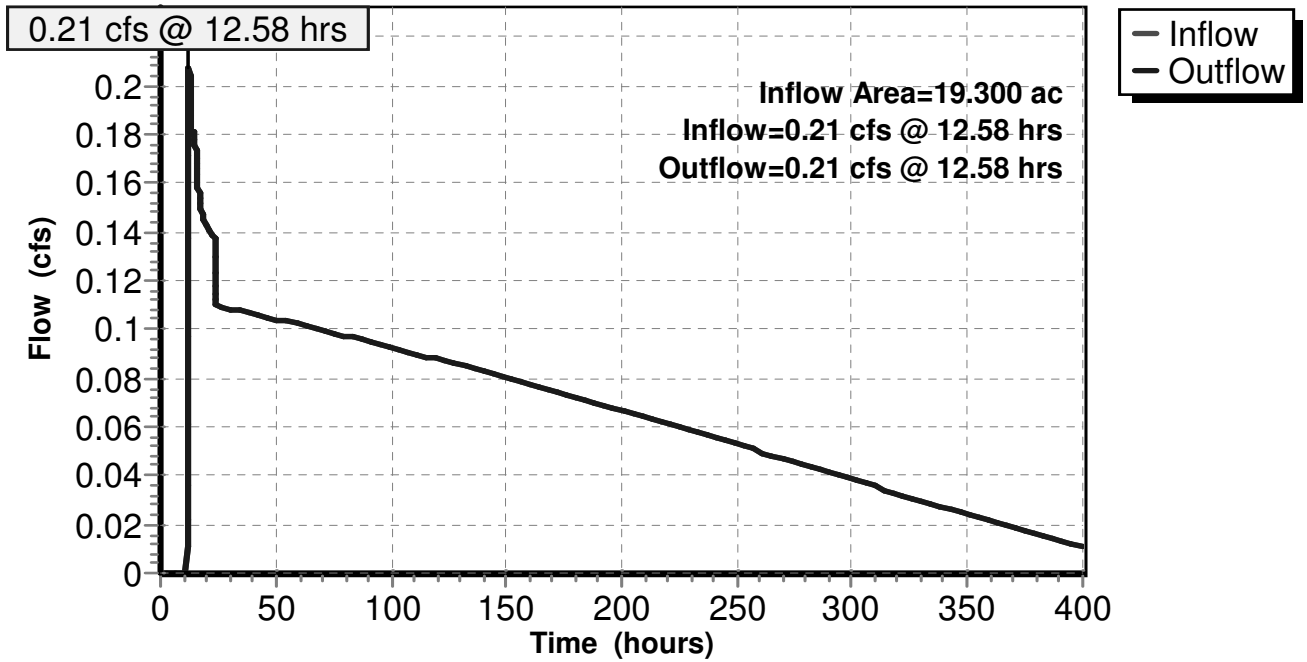
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	3.50	0.28	0.00	330.00	3.50	0.28	0.00
2.50	0.09	0.00	0.00	167.50	3.50	0.28	0.00	332.50	3.50	0.28	0.00
5.00	0.20	0.00	0.00	170.00	3.50	0.28	0.00	335.00	3.50	0.28	0.00
7.50	0.36	0.00	0.00	172.50	3.50	0.28	0.00	337.50	3.50	0.28	0.00
10.00	0.66	0.00	0.00	175.00	3.50	0.28	0.00	340.00	3.50	0.28	0.00
12.50	2.46	0.05	0.18	177.50	3.50	0.28	0.00	342.50	3.50	0.28	0.00
15.00	2.99	0.15	0.06	180.00	3.50	0.28	0.00	345.00	3.50	0.28	0.00
17.50	3.22	0.20	0.03	182.50	3.50	0.28	0.00	347.50	3.50	0.28	0.00
20.00	3.35	0.24	0.02	185.00	3.50	0.28	0.00	350.00	3.50	0.28	0.00
22.50	3.45	0.27	0.02	187.50	3.50	0.28	0.00	352.50	3.50	0.28	0.00
25.00	3.50	0.28	0.00	190.00	3.50	0.28	0.00	355.00	3.50	0.28	0.00
27.50	3.50	0.28	0.00	192.50	3.50	0.28	0.00	357.50	3.50	0.28	0.00
30.00	3.50	0.28	0.00	195.00	3.50	0.28	0.00	360.00	3.50	0.28	0.00
32.50	3.50	0.28	0.00	197.50	3.50	0.28	0.00	362.50	3.50	0.28	0.00
35.00	3.50	0.28	0.00	200.00	3.50	0.28	0.00	365.00	3.50	0.28	0.00
37.50	3.50	0.28	0.00	202.50	3.50	0.28	0.00	367.50	3.50	0.28	0.00
40.00	3.50	0.28	0.00	205.00	3.50	0.28	0.00	370.00	3.50	0.28	0.00
42.50	3.50	0.28	0.00	207.50	3.50	0.28	0.00	372.50	3.50	0.28	0.00
45.00	3.50	0.28	0.00	210.00	3.50	0.28	0.00	375.00	3.50	0.28	0.00
47.50	3.50	0.28	0.00	212.50	3.50	0.28	0.00	377.50	3.50	0.28	0.00
50.00	3.50	0.28	0.00	215.00	3.50	0.28	0.00	380.00	3.50	0.28	0.00
52.50	3.50	0.28	0.00	217.50	3.50	0.28	0.00	382.50	3.50	0.28	0.00
55.00	3.50	0.28	0.00	220.00	3.50	0.28	0.00	385.00	3.50	0.28	0.00
57.50	3.50	0.28	0.00	222.50	3.50	0.28	0.00	387.50	3.50	0.28	0.00
60.00	3.50	0.28	0.00	225.00	3.50	0.28	0.00	390.00	3.50	0.28	0.00
62.50	3.50	0.28	0.00	227.50	3.50	0.28	0.00	392.50	3.50	0.28	0.00
65.00	3.50	0.28	0.00	230.00	3.50	0.28	0.00	395.00	3.50	0.28	0.00
67.50	3.50	0.28	0.00	232.50	3.50	0.28	0.00	397.50	3.50	0.28	0.00
70.00	3.50	0.28	0.00	235.00	3.50	0.28	0.00	400.00	3.50	0.28	0.00
72.50	3.50	0.28	0.00	237.50	3.50	0.28	0.00				
75.00	3.50	0.28	0.00	240.00	3.50	0.28	0.00				
77.50	3.50	0.28	0.00	242.50	3.50	0.28	0.00				
80.00	3.50	0.28	0.00	245.00	3.50	0.28	0.00				
82.50	3.50	0.28	0.00	247.50	3.50	0.28	0.00				
85.00	3.50	0.28	0.00	250.00	3.50	0.28	0.00				
87.50	3.50	0.28	0.00	252.50	3.50	0.28	0.00				
90.00	3.50	0.28	0.00	255.00	3.50	0.28	0.00				
92.50	3.50	0.28	0.00	257.50	3.50	0.28	0.00				
95.00	3.50	0.28	0.00	260.00	3.50	0.28	0.00				
97.50	3.50	0.28	0.00	262.50	3.50	0.28	0.00				
100.00	3.50	0.28	0.00	265.00	3.50	0.28	0.00				
102.50	3.50	0.28	0.00	267.50	3.50	0.28	0.00				
105.00	3.50	0.28	0.00	270.00	3.50	0.28	0.00				
107.50	3.50	0.28	0.00	272.50	3.50	0.28	0.00				
110.00	3.50	0.28	0.00	275.00	3.50	0.28	0.00				
112.50	3.50	0.28	0.00	277.50	3.50	0.28	0.00				
115.00	3.50	0.28	0.00	280.00	3.50	0.28	0.00				
117.50	3.50	0.28	0.00	282.50	3.50	0.28	0.00				
120.00	3.50	0.28	0.00	285.00	3.50	0.28	0.00				
122.50	3.50	0.28	0.00	287.50	3.50	0.28	0.00				
125.00	3.50	0.28	0.00	290.00	3.50	0.28	0.00				
127.50	3.50	0.28	0.00	292.50	3.50	0.28	0.00				
130.00	3.50	0.28	0.00	295.00	3.50	0.28	0.00				
132.50	3.50	0.28	0.00	297.50	3.50	0.28	0.00				
135.00	3.50	0.28	0.00	300.00	3.50	0.28	0.00				
137.50	3.50	0.28	0.00	302.50	3.50	0.28	0.00				
140.00	3.50	0.28	0.00	305.00	3.50	0.28	0.00				
142.50	3.50	0.28	0.00	307.50	3.50	0.28	0.00				
145.00	3.50	0.28	0.00	310.00	3.50	0.28	0.00				
147.50	3.50	0.28	0.00	312.50	3.50	0.28	0.00				
150.00	3.50	0.28	0.00	315.00	3.50	0.28	0.00				
152.50	3.50	0.28	0.00	317.50	3.50	0.28	0.00				
155.00	3.50	0.28	0.00	320.00	3.50	0.28	0.00				
157.50	3.50	0.28	0.00	322.50	3.50	0.28	0.00				
160.00	3.50	0.28	0.00	325.00	3.50	0.28	0.00				
162.50	3.50	0.28	0.00	327.50	3.50	0.28	0.00				

Summary for Reach DESIGN LINE 1:

Inflow Area = 19.300 ac, 52.07% Impervious, Inflow Depth > 1.30" for 2 YEAR event
Inflow = 0.21 cfs @ 12.58 hrs, Volume= 2.086 af
Outflow = 0.21 cfs @ 12.58 hrs, Volume= 2.086 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

**Reach DESIGN LINE 1:
Hydrograph**



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Reach DESIGN LINE 1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.08		0.08	330.00	0.03		0.03
2.50	0.00		0.00	167.50	0.08		0.08	332.50	0.03		0.03
5.00	0.00		0.00	170.00	0.08		0.08	335.00	0.03		0.03
7.50	0.00		0.00	172.50	0.07		0.07	337.50	0.03		0.03
10.00	0.00		0.00	175.00	0.07		0.07	340.00	0.03		0.03
12.50	0.20		0.20	177.50	0.07		0.07	342.50	0.03		0.03
15.00	0.18		0.18	180.00	0.07		0.07	345.00	0.03		0.03
17.50	0.15		0.15	182.50	0.07		0.07	347.50	0.02		0.02
20.00	0.14		0.14	185.00	0.07		0.07	350.00	0.02		0.02
22.50	0.14		0.14	187.50	0.07		0.07	352.50	0.02		0.02
25.00	0.11		0.11	190.00	0.07		0.07	355.00	0.02		0.02
27.50	0.11		0.11	192.50	0.07		0.07	357.50	0.02		0.02
30.00	0.11		0.11	195.00	0.07		0.07	360.00	0.02		0.02
32.50	0.11		0.11	197.50	0.07		0.07	362.50	0.02		0.02
35.00	0.11		0.11	200.00	0.07		0.07	365.00	0.02		0.02
37.50	0.11		0.11	202.50	0.07		0.07	367.50	0.02		0.02
40.00	0.11		0.11	205.00	0.07		0.07	370.00	0.02		0.02
42.50	0.11		0.11	207.50	0.06		0.06	372.50	0.02		0.02
45.00	0.11		0.11	210.00	0.06		0.06	375.00	0.02		0.02
47.50	0.10		0.10	212.50	0.06		0.06	377.50	0.02		0.02
50.00	0.10		0.10	215.00	0.06		0.06	380.00	0.02		0.02
52.50	0.10		0.10	217.50	0.06		0.06	382.50	0.01		0.01
55.00	0.10		0.10	220.00	0.06		0.06	385.00	0.01		0.01
57.50	0.10		0.10	222.50	0.06		0.06	387.50	0.01		0.01
60.00	0.10		0.10	225.00	0.06		0.06	390.00	0.01		0.01
62.50	0.10		0.10	227.50	0.06		0.06	392.50	0.01		0.01
65.00	0.10		0.10	230.00	0.06		0.06	395.00	0.01		0.01
67.50	0.10		0.10	232.50	0.06		0.06	397.50	0.01		0.01
70.00	0.10		0.10	235.00	0.06		0.06	400.00	0.01		0.01
72.50	0.10		0.10	237.50	0.06		0.06				
75.00	0.10		0.10	240.00	0.06		0.06				
77.50	0.10		0.10	242.50	0.06		0.06				
80.00	0.10		0.10	245.00	0.05		0.05				
82.50	0.10		0.10	247.50	0.05		0.05				
85.00	0.10		0.10	250.00	0.05		0.05				
87.50	0.10		0.10	252.50	0.05		0.05				
90.00	0.10		0.10	255.00	0.05		0.05				
92.50	0.09		0.09	257.50	0.05		0.05				
95.00	0.09		0.09	260.00	0.05		0.05				
97.50	0.09		0.09	262.50	0.05		0.05				
100.00	0.09		0.09	265.00	0.05		0.05				
102.50	0.09		0.09	267.50	0.05		0.05				
105.00	0.09		0.09	270.00	0.05		0.05				
107.50	0.09		0.09	272.50	0.05		0.05				
110.00	0.09		0.09	275.00	0.05		0.05				
112.50	0.09		0.09	277.50	0.04		0.04				
115.00	0.09		0.09	280.00	0.04		0.04				
117.50	0.09		0.09	282.50	0.04		0.04				
120.00	0.09		0.09	285.00	0.04		0.04				
122.50	0.09		0.09	287.50	0.04		0.04				
125.00	0.09		0.09	290.00	0.04		0.04				
127.50	0.09		0.09	292.50	0.04		0.04				
130.00	0.09		0.09	295.00	0.04		0.04				
132.50	0.08		0.08	297.50	0.04		0.04				
135.00	0.08		0.08	300.00	0.04		0.04				
137.50	0.08		0.08	302.50	0.04		0.04				
140.00	0.08		0.08	305.00	0.04		0.04				
142.50	0.08		0.08	307.50	0.04		0.04				
145.00	0.08		0.08	310.00	0.04		0.04				
147.50	0.08		0.08	312.50	0.03		0.03				
150.00	0.08		0.08	315.00	0.03		0.03				
152.50	0.08		0.08	317.50	0.03		0.03				
155.00	0.08		0.08	320.00	0.03		0.03				
157.50	0.08		0.08	322.50	0.03		0.03				
160.00	0.08		0.08	325.00	0.03		0.03				
162.50	0.08		0.08	327.50	0.03		0.03				

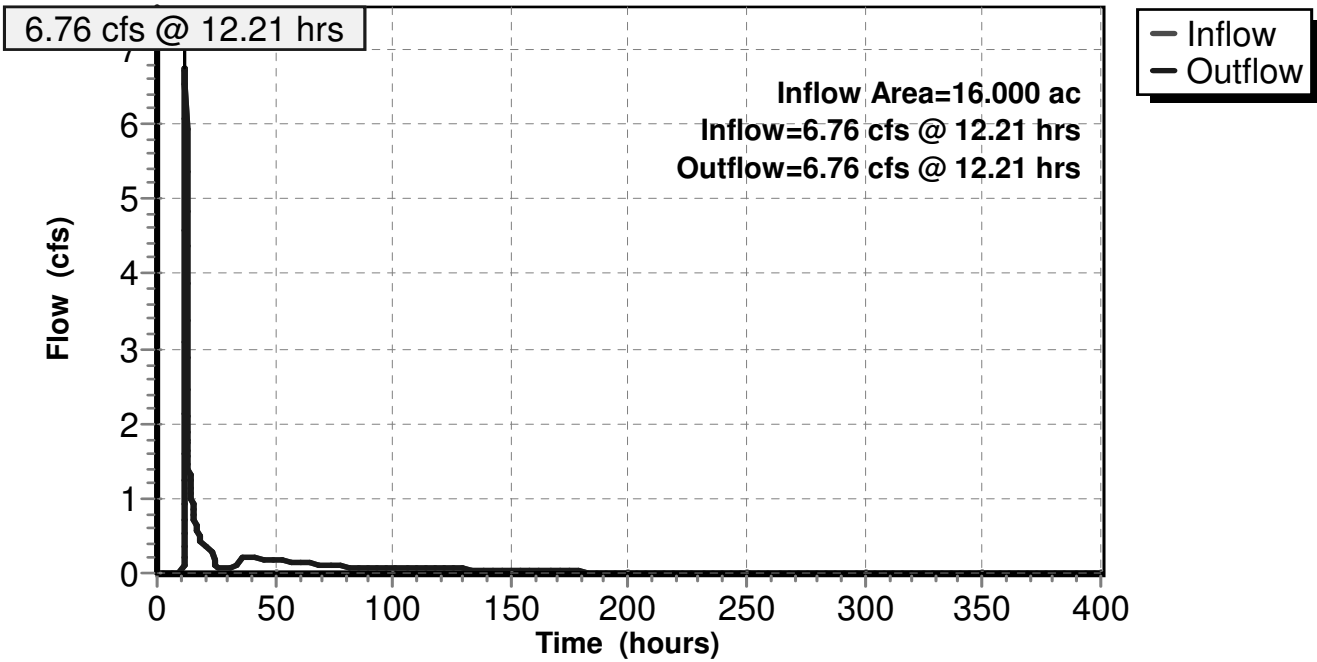
Summary for Reach DESIGN POINT 2:

Inflow Area = 16.000 ac, 31.28% Impervious, Inflow Depth = 1.47" for 2 YEAR event
Inflow = 6.76 cfs @ 12.21 hrs, Volume= 1.965 af
Outflow = 6.76 cfs @ 12.21 hrs, Volume= 1.965 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

Reach DESIGN POINT 2:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Reach DESIGN POINT 2:

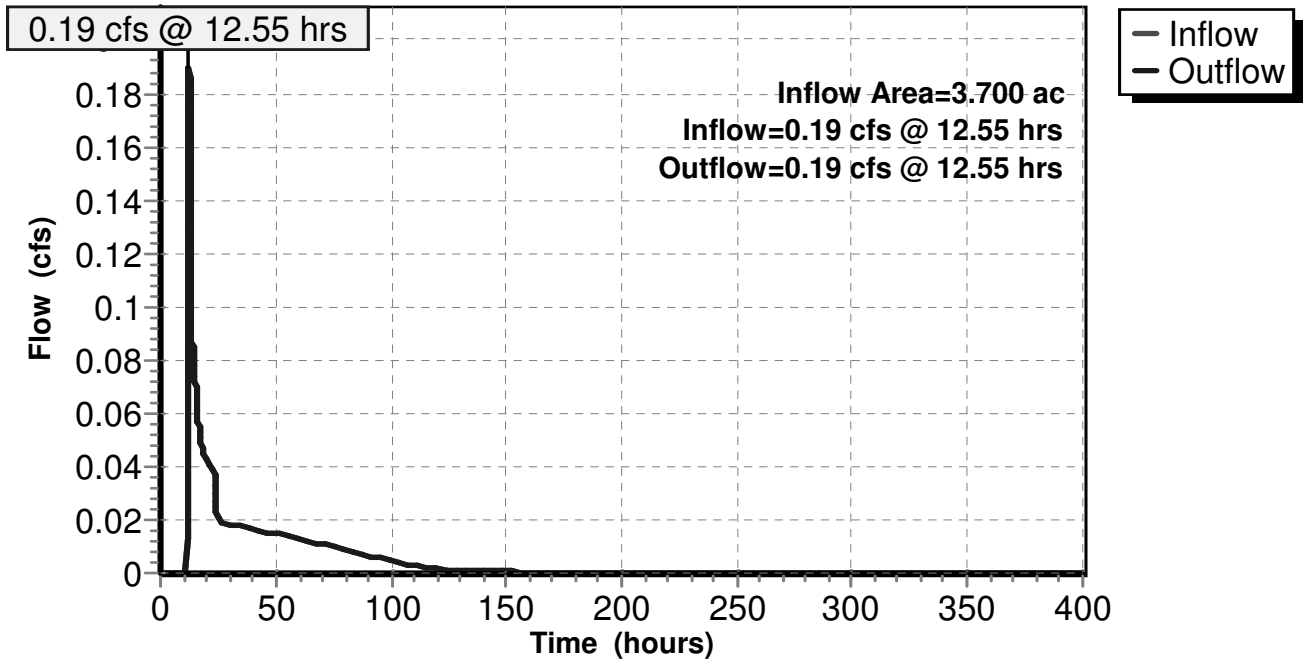
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.04		0.04	330.00	0.00		0.00
2.50	0.00		0.00	167.50	0.04		0.04	332.50	0.00		0.00
5.00	0.00		0.00	170.00	0.03		0.03	335.00	0.00		0.00
7.50	0.00		0.00	172.50	0.03		0.03	337.50	0.00		0.00
10.00	0.02		0.02	175.00	0.03		0.03	340.00	0.00		0.00
12.50	3.88		3.88	177.50	0.03		0.03	342.50	0.00		0.00
15.00	0.91		0.91	180.00	0.03		0.03	345.00	0.00		0.00
17.50	0.49		0.49	182.50	0.03		0.03	347.50	0.00		0.00
20.00	0.36		0.36	185.00	0.00		0.00	350.00	0.00		0.00
22.50	0.30		0.30	187.50	0.00		0.00	352.50	0.00		0.00
25.00	0.08		0.08	190.00	0.00		0.00	355.00	0.00		0.00
27.50	0.08		0.08	192.50	0.00		0.00	357.50	0.00		0.00
30.00	0.08		0.08	195.00	0.00		0.00	360.00	0.00		0.00
32.50	0.08		0.08	197.50	0.00		0.00	362.50	0.00		0.00
35.00	0.19		0.19	200.00	0.00		0.00	365.00	0.00		0.00
37.50	0.22		0.22	202.50	0.00		0.00	367.50	0.00		0.00
40.00	0.21		0.21	205.00	0.00		0.00	370.00	0.00		0.00
42.50	0.20		0.20	207.50	0.00		0.00	372.50	0.00		0.00
45.00	0.19		0.19	210.00	0.00		0.00	375.00	0.00		0.00
47.50	0.19		0.19	212.50	0.00		0.00	377.50	0.00		0.00
50.00	0.18		0.18	215.00	0.00		0.00	380.00	0.00		0.00
52.50	0.17		0.17	217.50	0.00		0.00	382.50	0.00		0.00
55.00	0.16		0.16	220.00	0.00		0.00	385.00	0.00		0.00
57.50	0.15		0.15	222.50	0.00		0.00	387.50	0.00		0.00
60.00	0.15		0.15	225.00	0.00		0.00	390.00	0.00		0.00
62.50	0.14		0.14	227.50	0.00		0.00	392.50	0.00		0.00
65.00	0.13		0.13	230.00	0.00		0.00	395.00	0.00		0.00
67.50	0.12		0.12	232.50	0.00		0.00	397.50	0.00		0.00
70.00	0.11		0.11	235.00	0.00		0.00	400.00	0.00		0.00
72.50	0.10		0.10	237.50	0.00		0.00				
75.00	0.10		0.10	240.00	0.00		0.00				
77.50	0.09		0.09	242.50	0.00		0.00				
80.00	0.08		0.08	245.00	0.00		0.00				
82.50	0.07		0.07	247.50	0.00		0.00				
85.00	0.07		0.07	250.00	0.00		0.00				
87.50	0.07		0.07	252.50	0.00		0.00				
90.00	0.07		0.07	255.00	0.00		0.00				
92.50	0.07		0.07	257.50	0.00		0.00				
95.00	0.07		0.07	260.00	0.00		0.00				
97.50	0.07		0.07	262.50	0.00		0.00				
100.00	0.07		0.07	265.00	0.00		0.00				
102.50	0.07		0.07	267.50	0.00		0.00				
105.00	0.07		0.07	270.00	0.00		0.00				
107.50	0.06		0.06	272.50	0.00		0.00				
110.00	0.06		0.06	275.00	0.00		0.00				
112.50	0.06		0.06	277.50	0.00		0.00				
115.00	0.06		0.06	280.00	0.00		0.00				
117.50	0.06		0.06	282.50	0.00		0.00				
120.00	0.06		0.06	285.00	0.00		0.00				
122.50	0.06		0.06	287.50	0.00		0.00				
125.00	0.06		0.06	290.00	0.00		0.00				
127.50	0.05		0.05	292.50	0.00		0.00				
130.00	0.05		0.05	295.00	0.00		0.00				
132.50	0.05		0.05	297.50	0.00		0.00				
135.00	0.05		0.05	300.00	0.00		0.00				
137.50	0.05		0.05	302.50	0.00		0.00				
140.00	0.05		0.05	305.00	0.00		0.00				
142.50	0.05		0.05	307.50	0.00		0.00				
145.00	0.05		0.05	310.00	0.00		0.00				
147.50	0.04		0.04	312.50	0.00		0.00				
150.00	0.04		0.04	315.00	0.00		0.00				
152.50	0.04		0.04	317.50	0.00		0.00				
155.00	0.04		0.04	320.00	0.00		0.00				
157.50	0.04		0.04	322.50	0.00		0.00				
160.00	0.04		0.04	325.00	0.00		0.00				
162.50	0.04		0.04	327.50	0.00		0.00				

Summary for Reach Design Point 3:

Inflow Area = 3.700 ac, 40.54% Impervious, Inflow Depth > 0.47" for 2 YEAR event
Inflow = 0.19 cfs @ 12.55 hrs, Volume= 0.146 af
Outflow = 0.19 cfs @ 12.55 hrs, Volume= 0.146 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

**Reach Design Point 3:
Hydrograph**



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Reach Design Point 3:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.00		0.00	330.00	0.00		0.00
2.50	0.00		0.00	167.50	0.00		0.00	332.50	0.00		0.00
5.00	0.00		0.00	170.00	0.00		0.00	335.00	0.00		0.00
7.50	0.00		0.00	172.50	0.00		0.00	337.50	0.00		0.00
10.00	0.00		0.00	175.00	0.00		0.00	340.00	0.00		0.00
12.50	0.19		0.19	177.50	0.00		0.00	342.50	0.00		0.00
15.00	0.07		0.07	180.00	0.00		0.00	345.00	0.00		0.00
17.50	0.05		0.05	182.50	0.00		0.00	347.50	0.00		0.00
20.00	0.04		0.04	185.00	0.00		0.00	350.00	0.00		0.00
22.50	0.04		0.04	187.50	0.00		0.00	352.50	0.00		0.00
25.00	0.02		0.02	190.00	0.00		0.00	355.00	0.00		0.00
27.50	0.02		0.02	192.50	0.00		0.00	357.50	0.00		0.00
30.00	0.02		0.02	195.00	0.00		0.00	360.00	0.00		0.00
32.50	0.02		0.02	197.50	0.00		0.00	362.50	0.00		0.00
35.00	0.02		0.02	200.00	0.00		0.00	365.00	0.00		0.00
37.50	0.02		0.02	202.50	0.00		0.00	367.50	0.00		0.00
40.00	0.02		0.02	205.00	0.00		0.00	370.00	0.00		0.00
42.50	0.02		0.02	207.50	0.00		0.00	372.50	0.00		0.00
45.00	0.02		0.02	210.00	0.00		0.00	375.00	0.00		0.00
47.50	0.02		0.02	212.50	0.00		0.00	377.50	0.00		0.00
50.00	0.01		0.01	215.00	0.00		0.00	380.00	0.00		0.00
52.50	0.01		0.01	217.50	0.00		0.00	382.50	0.00		0.00
55.00	0.01		0.01	220.00	0.00		0.00	385.00	0.00		0.00
57.50	0.01		0.01	222.50	0.00		0.00	387.50	0.00		0.00
60.00	0.01		0.01	225.00	0.00		0.00	390.00	0.00		0.00
62.50	0.01		0.01	227.50	0.00		0.00	392.50	0.00		0.00
65.00	0.01		0.01	230.00	0.00		0.00	395.00	0.00		0.00
67.50	0.01		0.01	232.50	0.00		0.00	397.50	0.00		0.00
70.00	0.01		0.01	235.00	0.00		0.00	400.00	0.00		0.00
72.50	0.01		0.01	237.50	0.00		0.00				
75.00	0.01		0.01	240.00	0.00		0.00				
77.50	0.01		0.01	242.50	0.00		0.00				
80.00	0.01		0.01	245.00	0.00		0.00				
82.50	0.01		0.01	247.50	0.00		0.00				
85.00	0.01		0.01	250.00	0.00		0.00				
87.50	0.01		0.01	252.50	0.00		0.00				
90.00	0.01		0.01	255.00	0.00		0.00				
92.50	0.01		0.01	257.50	0.00		0.00				
95.00	0.01		0.01	260.00	0.00		0.00				
97.50	0.01		0.01	262.50	0.00		0.00				
100.00	0.00		0.00	265.00	0.00		0.00				
102.50	0.00		0.00	267.50	0.00		0.00				
105.00	0.00		0.00	270.00	0.00		0.00				
107.50	0.00		0.00	272.50	0.00		0.00				
110.00	0.00		0.00	275.00	0.00		0.00				
112.50	0.00		0.00	277.50	0.00		0.00				
115.00	0.00		0.00	280.00	0.00		0.00				
117.50	0.00		0.00	282.50	0.00		0.00				
120.00	0.00		0.00	285.00	0.00		0.00				
122.50	0.00		0.00	287.50	0.00		0.00				
125.00	0.00		0.00	290.00	0.00		0.00				
127.50	0.00		0.00	292.50	0.00		0.00				
130.00	0.00		0.00	295.00	0.00		0.00				
132.50	0.00		0.00	297.50	0.00		0.00				
135.00	0.00		0.00	300.00	0.00		0.00				
137.50	0.00		0.00	302.50	0.00		0.00				
140.00	0.00		0.00	305.00	0.00		0.00				
142.50	0.00		0.00	307.50	0.00		0.00				
145.00	0.00		0.00	310.00	0.00		0.00				
147.50	0.00		0.00	312.50	0.00		0.00				
150.00	0.00		0.00	315.00	0.00		0.00				
152.50	0.00		0.00	317.50	0.00		0.00				
155.00	0.00		0.00	320.00	0.00		0.00				
157.50	0.00		0.00	322.50	0.00		0.00				
160.00	0.00		0.00	325.00	0.00		0.00				
162.50	0.00		0.00	327.50	0.00		0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Pond 1.0P:

Inflow Area = 12.500 ac, 72.08% Impervious, Inflow Depth = 1.94" for 2 YEAR event
 Inflow = 29.55 cfs @ 12.06 hrs, Volume= 2.017 af
 Outflow = 9.38 cfs @ 12.38 hrs, Volume= 1.981 af, Atten= 68%, Lag= 19.0 min
 Primary = 9.38 cfs @ 12.38 hrs, Volume= 1.981 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 473.00' Surf.Area= 21,200 sf Storage= 38,250 cf
 Peak Elev= 474.43' @ 12.38 hrs Surf.Area= 29,584 sf Storage= 74,534 cf (36,284 cf above start)
 Flood Elev= 476.00' Surf.Area= 39,000 sf Storage= 128,350 cf (90,100 cf above start)

Plug-Flow detention time= 4,240.2 min calculated for 1.103 af (55% of inflow)
 Center-of-Mass det. time= 2,276.4 min (3,100.2 - 823.8)

Volume	Invert	Avail.Storage	Storage Description
#1	468.00'	170,400 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

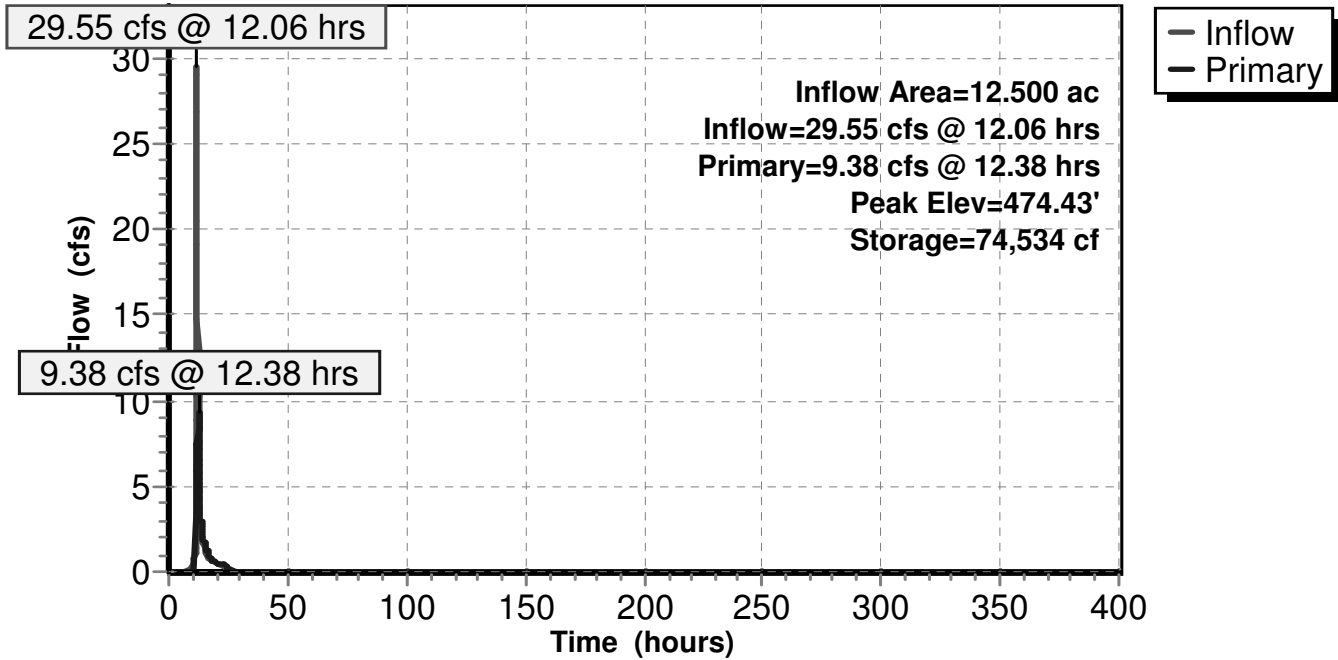
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
468.00	1,700	0	0
470.00	4,200	5,900	5,900
472.00	11,700	15,900	21,800
473.00	21,200	16,450	38,250
474.00	27,000	24,100	62,350
476.00	39,000	66,000	128,350
477.00	45,100	42,050	170,400

Device	Routing	Invert	Outlet Devices
#1	Primary	467.00'	36.0" x 142.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 462.50' S= 0.0317 '/' Cc= 0.900 n= 0.012
#2	Device 1	473.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	473.90'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=9.36 cfs @ 12.38 hrs HW=474.43' TW=452.57' (Dynamic Tailwater)
 ↑ **1=Culvert** (Passes 9.36 cfs of 82.88 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.67 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 9.33 cfs @ 2.20 fps)

Pond 1.0P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Pond 1.0P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	38,250	473.00	0.00	330.00	0.00	41,532	473.15	0.01
5.00	0.00	38,250	473.00	0.00	335.00	0.00	41,377	473.14	0.01
10.00	0.50	39,760	473.07	0.00	340.00	0.00	41,228	473.14	0.01
15.00	1.39	64,340	474.07	1.64	345.00	0.00	41,084	473.13	0.01
20.00	0.49	61,825	473.98	0.54	350.00	0.00	40,945	473.12	0.01
25.00	0.00	60,505	473.93	0.15	355.00	0.00	40,811	473.12	0.01
30.00	0.00	59,605	473.90	0.02	360.00	0.00	40,682	473.11	0.01
35.00	0.00	59,170	473.88	0.02	365.00	0.00	40,559	473.11	0.01
40.00	0.00	58,739	473.86	0.02	370.00	0.00	40,440	473.10	0.01
45.00	0.00	58,313	473.85	0.02	375.00	0.00	40,327	473.10	0.01
50.00	0.00	57,890	473.83	0.02	380.00	0.00	40,218	473.09	0.01
55.00	0.00	57,472	473.82	0.02	385.00	0.00	40,115	473.09	0.01
60.00	0.00	57,059	473.80	0.02	390.00	0.00	40,017	473.08	0.01
65.00	0.00	56,649	473.78	0.02	395.00	0.00	39,924	473.08	0.01
70.00	0.00	56,244	473.77	0.02	400.00	0.00	39,835	473.07	0.00
75.00	0.00	55,843	473.75	0.02					
80.00	0.00	55,447	473.74	0.02					
85.00	0.00	55,055	473.72	0.02					
90.00	0.00	54,668	473.71	0.02					
95.00	0.00	54,284	473.69	0.02					
100.00	0.00	53,906	473.68	0.02					
105.00	0.00	53,532	473.66	0.02					
110.00	0.00	53,162	473.65	0.02					
115.00	0.00	52,796	473.63	0.02					
120.00	0.00	52,436	473.62	0.02					
125.00	0.00	52,079	473.60	0.02					
130.00	0.00	51,727	473.59	0.02					
135.00	0.00	51,380	473.57	0.02					
140.00	0.00	51,038	473.56	0.02					
145.00	0.00	50,699	473.55	0.02					
150.00	0.00	50,366	473.53	0.02					
155.00	0.00	50,037	473.52	0.02					
160.00	0.00	49,713	473.51	0.02					
165.00	0.00	49,393	473.49	0.02					
170.00	0.00	49,078	473.48	0.02					
175.00	0.00	48,767	473.47	0.02					
180.00	0.00	48,462	473.45	0.02					
185.00	0.00	48,161	473.44	0.02					
190.00	0.00	47,864	473.43	0.02					
195.00	0.00	47,573	473.42	0.02					
200.00	0.00	47,286	473.40	0.02					
205.00	0.00	47,004	473.39	0.02					
210.00	0.00	46,726	473.38	0.02					
215.00	0.00	46,454	473.37	0.02					
220.00	0.00	46,186	473.36	0.01					
225.00	0.00	45,923	473.35	0.01					
230.00	0.00	45,665	473.33	0.01					
235.00	0.00	45,411	473.32	0.01					
240.00	0.00	45,163	473.31	0.01					
245.00	0.00	44,919	473.30	0.01					
250.00	0.00	44,680	473.29	0.01					
255.00	0.00	44,447	473.28	0.01					
260.00	0.00	44,218	473.27	0.01					
265.00	0.00	43,993	473.26	0.01					
270.00	0.00	43,774	473.25	0.01					
275.00	0.00	43,560	473.24	0.01					
280.00	0.00	43,351	473.23	0.01					
285.00	0.00	43,146	473.22	0.01					
290.00	0.00	42,947	473.22	0.01					
295.00	0.00	42,752	473.21	0.01					
300.00	0.00	42,563	473.20	0.01					
305.00	0.00	42,378	473.19	0.01					
310.00	0.00	42,199	473.18	0.01					
315.00	0.00	42,025	473.17	0.01					
320.00	0.00	41,855	473.17	0.01					
325.00	0.00	41,691	473.16	0.01					

Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Pond 1.1P:

Inflow Area = 15.300 ac, 63.73% Impervious, Inflow Depth > 1.62" for 2 YEAR event
 Inflow = 9.83 cfs @ 12.38 hrs, Volume= 2.061 af
 Outflow = 0.11 cfs @ 25.40 hrs, Volume= 2.029 af, Atten= 99%, Lag= 781.3 min
 Primary = 0.11 cfs @ 25.40 hrs, Volume= 2.029 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 452.00' Surf.Area= 14,600 sf Storage= 47,550 cf
 Peak Elev= 455.49' @ 25.40 hrs Surf.Area= 22,584 sf Storage= 112,196 cf (64,646 cf above start)
 Flood Elev= 460.00' Surf.Area= 34,600 sf Storage= 240,350 cf (192,800 cf above start)

Plug-Flow detention time= 13,786.9 min calculated for 0.938 af (45% of inflow)
 Center-of-Mass det. time= 6,239.7 min (9,255.4 - 3,015.7)

Volume	Invert	Avail.Storage	Storage Description
#1	444.00'	276,450 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
444.00	1,000	0	0
446.00	3,600	4,600	4,600
448.00	5,200	8,800	13,400
450.00	7,100	12,300	25,700
451.00	11,000	9,050	34,750
452.00	14,600	12,800	47,550
454.00	19,000	33,600	81,150
456.00	23,800	42,800	123,950
458.00	29,000	52,800	176,750
460.00	34,600	63,600	240,350
461.00	37,600	36,100	276,450

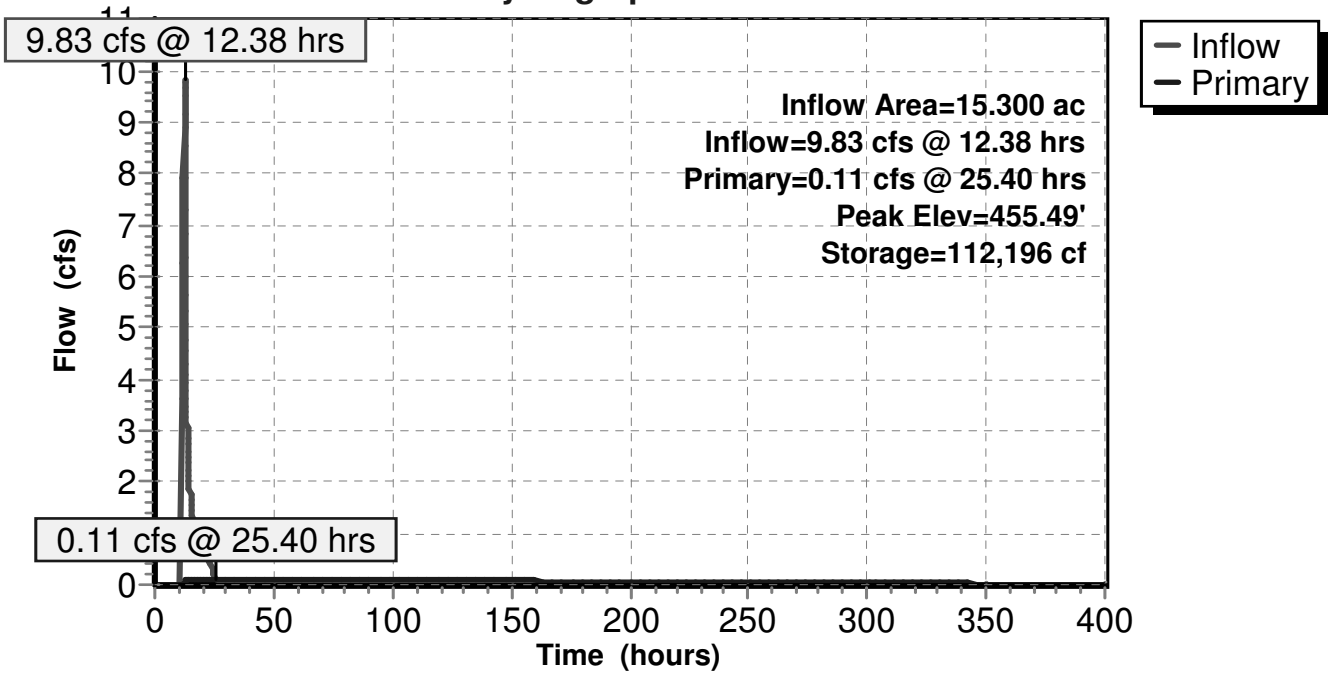
Device	Routing	Invert	Outlet Devices
#1	Primary	452.00'	36.0" x 76.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 451.20' S= 0.0105 '/' Cc= 0.900 n= 0.012
#2	Device 1	452.00'	1.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	455.90'	1.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.11 cfs @ 25.40 hrs HW=455.49' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 0.11 cfs of 48.05 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.11 cfs @ 8.92 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1.1P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Pond 1.1P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	47,550	452.00	0.00	330.00	0.01	52,248	452.31	0.03
5.00	0.00	47,550	452.00	0.00	335.00	0.01	51,881	452.29	0.03
10.00	0.00	47,557	452.00	0.00	340.00	0.01	51,536	452.27	0.03
15.00	1.74	90,703	454.49	0.09	345.00	0.01	51,211	452.25	0.03
20.00	0.58	106,338	455.23	0.11	350.00	0.01	50,907	452.23	0.02
25.00	0.15	112,170	455.49	0.11	355.00	0.01	50,624	452.21	0.02
30.00	0.02	111,105	455.44	0.11	360.00	0.01	50,360	452.19	0.02
35.00	0.02	109,594	455.38	0.11	365.00	0.01	50,117	452.17	0.02
40.00	0.02	108,098	455.31	0.11	370.00	0.01	49,894	452.16	0.02
45.00	0.02	106,618	455.24	0.11	375.00	0.01	49,690	452.14	0.02
50.00	0.02	105,153	455.18	0.10	380.00	0.01	49,504	452.13	0.02
55.00	0.02	103,705	455.11	0.10	385.00	0.01	49,338	452.12	0.01
60.00	0.02	102,272	455.04	0.10	390.00	0.01	49,188	452.11	0.01
65.00	0.02	100,856	454.98	0.10	395.00	0.01	49,058	452.10	0.01
70.00	0.02	99,455	454.91	0.10	400.00	0.00	48,946	452.09	0.01
75.00	0.02	98,071	454.85	0.10					
80.00	0.02	96,704	454.78	0.10					
85.00	0.02	95,353	454.72	0.10					
90.00	0.02	94,019	454.65	0.10					
95.00	0.02	92,702	454.59	0.09					
100.00	0.02	91,401	454.52	0.09					
105.00	0.02	90,118	454.46	0.09					
110.00	0.02	88,853	454.40	0.09					
115.00	0.02	87,604	454.33	0.09					
120.00	0.02	86,374	454.27	0.09					
125.00	0.02	85,161	454.21	0.09					
130.00	0.02	83,966	454.15	0.09					
135.00	0.02	82,789	454.09	0.08					
140.00	0.02	81,630	454.03	0.08					
145.00	0.02	80,490	453.97	0.08					
150.00	0.02	79,368	453.91	0.08					
155.00	0.02	78,264	453.85	0.08					
160.00	0.02	77,179	453.79	0.08					
165.00	0.02	76,114	453.73	0.08					
170.00	0.02	75,067	453.67	0.08					
175.00	0.02	74,039	453.62	0.07					
180.00	0.02	73,030	453.56	0.07					
185.00	0.02	72,041	453.51	0.07					
190.00	0.02	71,072	453.45	0.07					
195.00	0.02	70,122	453.40	0.07					
200.00	0.02	69,191	453.35	0.07					
205.00	0.02	68,281	453.29	0.07					
210.00	0.02	67,391	453.24	0.06					
215.00	0.02	66,520	453.19	0.06					
220.00	0.01	65,670	453.14	0.06					
225.00	0.01	64,840	453.09	0.06					
230.00	0.01	64,031	453.05	0.06					
235.00	0.01	63,242	453.00	0.06					
240.00	0.01	62,474	452.95	0.06					
245.00	0.01	61,726	452.91	0.05					
250.00	0.01	60,999	452.86	0.05					
255.00	0.01	60,293	452.82	0.05					
260.00	0.01	59,608	452.78	0.05					
265.00	0.01	58,945	452.74	0.05					
270.00	0.01	58,302	452.70	0.05					
275.00	0.01	57,680	452.66	0.05					
280.00	0.01	57,080	452.62	0.04					
285.00	0.01	56,501	452.59	0.04					
290.00	0.01	55,943	452.55	0.04					
295.00	0.01	55,407	452.52	0.04					
300.00	0.01	54,891	452.49	0.04					
305.00	0.01	54,398	452.45	0.04					
310.00	0.01	53,925	452.42	0.04					
315.00	0.01	53,474	452.39	0.03					
320.00	0.01	53,044	452.37	0.03					
325.00	0.01	52,635	452.34	0.03					

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Summary for Pond 2.0P:

Inflow Area = 5.100 ac, 68.33% Impervious, Inflow Depth = 2.27" for 2 YEAR event
 Inflow = 12.56 cfs @ 12.11 hrs, Volume= 0.964 af
 Outflow = 0.22 cfs @ 19.61 hrs, Volume= 0.962 af, Atten= 98%, Lag= 450.1 min
 Primary = 0.22 cfs @ 19.61 hrs, Volume= 0.962 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 478.00' Surf.Area= 14,500 sf Storage= 29,775 cf
 Peak Elev= 479.97' @ 19.61 hrs Surf.Area= 18,829 sf Storage= 62,569 cf (32,794 cf above start)
 Flood Elev= 481.25' Surf.Area= 21,775 sf Storage= 88,597 cf (58,822 cf above start)

Plug-Flow detention time= 3,931.6 min calculated for 0.279 af (29% of inflow)
 Center-of-Mass det. time= 1,863.7 min (2,676.7 - 813.0)

Volume	Invert	Avail.Storage	Storage Description
#1	472.00'	105,575 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

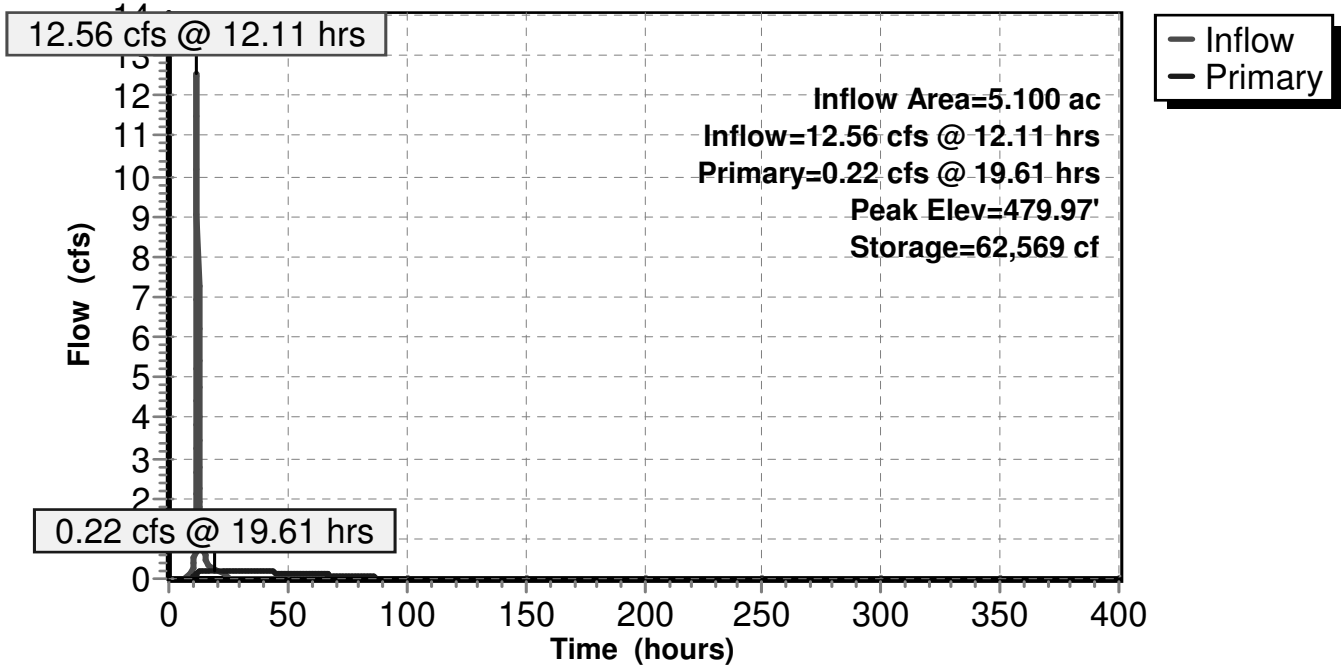
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
472.00	2,000	0	0
474.00	3,100	5,100	5,100
476.00	4,400	7,500	12,600
476.50	5,200	2,400	15,000
478.00	14,500	14,775	29,775
480.00	18,900	33,400	63,175
482.00	23,500	42,400	105,575

Device	Routing	Invert	Outlet Devices
#1	Primary	473.40'	36.0" x 117.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 472.10' S= 0.0111 '/' Cc= 0.900 n= 0.012
#2	Device 1	478.00'	2.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	480.10'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.22 cfs @ 19.61 hrs HW=479.97' TW=473.93' (Dynamic Tailwater)
 ↑ **1=Culvert** (Passes 0.22 cfs of 76.62 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.22 cfs @ 6.57 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2.0P:

Hydrograph



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Hydrograph for Pond 2.0P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	29,775	478.00	0.00	330.00	0.00	29,890	478.01	0.00
5.00	0.00	29,775	478.00	0.00	335.00	0.00	29,888	478.01	0.00
10.00	0.33	31,194	478.10	0.02	340.00	0.00	29,885	478.01	0.00
15.00	0.62	60,421	479.85	0.22	345.00	0.00	29,883	478.01	0.00
20.00	0.21	62,562	479.97	0.22	350.00	0.00	29,881	478.01	0.00
25.00	0.00	61,176	479.89	0.22	355.00	0.00	29,879	478.01	0.00
30.00	0.00	57,342	479.69	0.21	360.00	0.00	29,877	478.01	0.00
35.00	0.00	53,747	479.49	0.19	365.00	0.00	29,876	478.01	0.00
40.00	0.00	50,398	479.30	0.18	370.00	0.00	29,874	478.01	0.00
45.00	0.00	47,301	479.11	0.16	375.00	0.00	29,872	478.01	0.00
50.00	0.00	44,461	478.95	0.15	380.00	0.00	29,871	478.01	0.00
55.00	0.00	41,884	478.79	0.14	385.00	0.00	29,869	478.01	0.00
60.00	0.00	39,576	478.64	0.12	390.00	0.00	29,867	478.01	0.00
65.00	0.00	37,543	478.52	0.11	395.00	0.00	29,866	478.01	0.00
70.00	0.00	35,788	478.40	0.09	400.00	0.00	29,864	478.01	0.00
75.00	0.00	34,317	478.31	0.07					
80.00	0.00	33,134	478.23	0.06					
85.00	0.00	32,240	478.17	0.04					
90.00	0.00	31,641	478.13	0.03					
95.00	0.00	31,249	478.10	0.02					
100.00	0.00	30,983	478.08	0.01					
105.00	0.00	30,793	478.07	0.01					
110.00	0.00	30,651	478.06	0.01					
115.00	0.00	30,543	478.05	0.01					
120.00	0.00	30,458	478.05	0.00					
125.00	0.00	30,389	478.04	0.00					
130.00	0.00	30,332	478.04	0.00					
135.00	0.00	30,285	478.04	0.00					
140.00	0.00	30,245	478.03	0.00					
145.00	0.00	30,210	478.03	0.00					
150.00	0.00	30,180	478.03	0.00					
155.00	0.00	30,154	478.03	0.00					
160.00	0.00	30,131	478.02	0.00					
165.00	0.00	30,111	478.02	0.00					
170.00	0.00	30,093	478.02	0.00					
175.00	0.00	30,076	478.02	0.00					
180.00	0.00	30,061	478.02	0.00					
185.00	0.00	30,048	478.02	0.00					
190.00	0.00	30,036	478.02	0.00					
195.00	0.00	30,025	478.02	0.00					
200.00	0.00	30,014	478.02	0.00					
205.00	0.00	30,005	478.02	0.00					
210.00	0.00	29,996	478.02	0.00					
215.00	0.00	29,988	478.01	0.00					
220.00	0.00	29,980	478.01	0.00					
225.00	0.00	29,973	478.01	0.00					
230.00	0.00	29,967	478.01	0.00					
235.00	0.00	29,960	478.01	0.00					
240.00	0.00	29,955	478.01	0.00					
245.00	0.00	29,949	478.01	0.00					
250.00	0.00	29,944	478.01	0.00					
255.00	0.00	29,939	478.01	0.00					
260.00	0.00	29,935	478.01	0.00					
265.00	0.00	29,930	478.01	0.00					
270.00	0.00	29,926	478.01	0.00					
275.00	0.00	29,922	478.01	0.00					
280.00	0.00	29,919	478.01	0.00					
285.00	0.00	29,915	478.01	0.00					
290.00	0.00	29,912	478.01	0.00					
295.00	0.00	29,909	478.01	0.00					
300.00	0.00	29,906	478.01	0.00					
305.00	0.00	29,903	478.01	0.00					
310.00	0.00	29,900	478.01	0.00					
315.00	0.00	29,897	478.01	0.00					
320.00	0.00	29,895	478.01	0.00					
325.00	0.00	29,892	478.01	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Pond 2.1P:

Inflow Area = 5.900 ac, 60.51% Impervious, Inflow Depth > 1.97" for 2 YEAR event
 Inflow = 0.23 cfs @ 17.38 hrs, Volume= 0.968 af
 Outflow = 0.19 cfs @ 36.52 hrs, Volume= 0.968 af, Atten= 18%, Lag= 1,148.0 min
 Primary = 0.19 cfs @ 36.52 hrs, Volume= 0.968 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 471.00' Surf.Area= 30 sf Storage= 8 cf
 Peak Elev= 475.54' @ 36.52 hrs Surf.Area= 6,934 sf Storage= 14,097 cf (14,089 cf above start)
 Flood Elev= 477.00' Surf.Area= 9,380 sf Storage= 25,945 cf (25,937 cf above start)

Plug-Flow detention time= 2,176.8 min calculated for 0.967 af (100% of inflow)
 Center-of-Mass det. time= 2,171.6 min (4,838.9 - 2,667.3)

Volume	Invert	Avail.Storage	Storage Description
#1	470.30'	20 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 51 cf Overall x 40.0% Voids
#2	472.00'	36,100 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		36,120 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
470.30	30	0	0
472.00	30	51	51

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
472.00	1,300	0	0
474.00	4,200	5,500	5,500
476.00	7,700	11,900	17,400
478.00	11,000	18,700	36,100

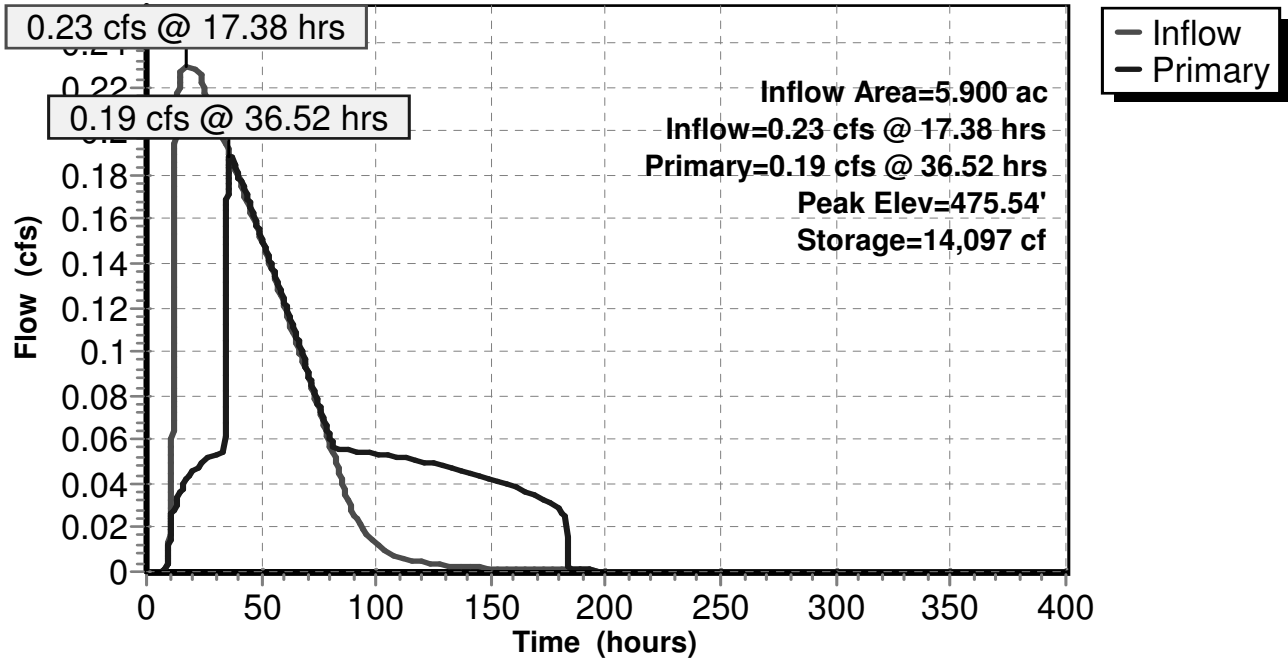
Device	Routing	Invert	Outlet Devices
#1	Primary	471.00'	24.0" x 147.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 469.50' S= 0.0102 '/' Cc= 0.900 n= 0.012
#2	Device 1	471.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	475.50'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.19 cfs @ 36.52 hrs HW=475.54' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 0.19 cfs of 28.48 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.06 cfs @ 10.22 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 0.13 cfs @ 0.59 fps)

Pond 2.1P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Pond 2.1P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	8	471.00	0.00	330.00	0.00	9	471.01	0.00
5.00	0.00	8	471.00	0.00	335.00	0.00	9	471.01	0.00
10.00	0.02	12	471.33	0.01	340.00	0.00	9	471.01	0.00
15.00	0.23	2,099	473.02	0.04	345.00	0.00	9	471.01	0.00
20.00	0.23	5,471	473.99	0.05	350.00	0.00	9	471.01	0.00
25.00	0.22	8,686	474.66	0.05	355.00	0.00	9	471.01	0.00
30.00	0.21	11,589	475.16	0.05	360.00	0.00	9	471.01	0.00
35.00	0.19	14,045	475.54	0.16	365.00	0.00	9	471.01	0.00
40.00	0.18	14,084	475.54	0.18	370.00	0.00	9	471.01	0.00
45.00	0.16	14,061	475.54	0.17	375.00	0.00	9	471.01	0.00
50.00	0.15	14,037	475.54	0.15	380.00	0.00	9	471.01	0.00
55.00	0.14	14,011	475.53	0.14	385.00	0.00	8	471.01	0.00
60.00	0.12	13,983	475.53	0.12	390.00	0.00	9	471.01	0.00
65.00	0.11	13,952	475.52	0.11	395.00	0.00	9	471.01	0.00
70.00	0.09	13,918	475.52	0.09	400.00	0.00	8	471.01	0.00
75.00	0.07	13,878	475.51	0.08					
80.00	0.06	13,827	475.51	0.06					
85.00	0.04	13,700	475.49	0.06					
90.00	0.03	13,306	475.43	0.06					
95.00	0.02	12,712	475.34	0.05					
100.00	0.01	12,005	475.23	0.05					
105.00	0.01	11,235	475.11	0.05					
110.00	0.01	10,431	474.97	0.05					
115.00	0.01	9,610	474.83	0.05					
120.00	0.00	8,785	474.68	0.05					
125.00	0.00	7,961	474.52	0.05					
130.00	0.00	7,146	474.36	0.05					
135.00	0.00	6,344	474.19	0.05					
140.00	0.00	5,557	474.01	0.05					
145.00	0.00	4,790	473.82	0.04					
150.00	0.00	4,046	473.62	0.04					
155.00	0.00	3,328	473.42	0.04					
160.00	0.00	2,638	473.20	0.04					
165.00	0.00	1,982	472.98	0.04					
170.00	0.00	1,364	472.73	0.03					
175.00	0.00	789	472.47	0.03					
180.00	0.00	269	472.17	0.03					
185.00	0.00	9	471.02	0.00					
190.00	0.00	9	471.02	0.00					
195.00	0.00	9	471.02	0.00					
200.00	0.00	9	471.02	0.00					
205.00	0.00	9	471.02	0.00					
210.00	0.00	9	471.02	0.00					
215.00	0.00	9	471.02	0.00					
220.00	0.00	9	471.02	0.00					
225.00	0.00	9	471.02	0.00					
230.00	0.00	9	471.02	0.00					
235.00	0.00	9	471.02	0.00					
240.00	0.00	9	471.02	0.00					
245.00	0.00	9	471.02	0.00					
250.00	0.00	9	471.01	0.00					
255.00	0.00	9	471.01	0.00					
260.00	0.00	9	471.01	0.00					
265.00	0.00	9	471.01	0.00					
270.00	0.00	9	471.01	0.00					
275.00	0.00	9	471.01	0.00					
280.00	0.00	9	471.01	0.00					
285.00	0.00	9	471.01	0.00					
290.00	0.00	9	471.01	0.00					
295.00	0.00	9	471.01	0.00					
300.00	0.00	9	471.01	0.00					
305.00	0.00	9	471.01	0.00					
310.00	0.00	9	471.01	0.00					
315.00	0.00	9	471.01	0.00					
320.00	0.00	9	471.01	0.00					
325.00	0.00	9	471.01	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Pond 2.2P:

Inflow Area = 2.100 ac, 40.48% Impervious, Inflow Depth = 1.86" for 2 YEAR event
 Inflow = 3.70 cfs @ 12.17 hrs, Volume= 0.325 af
 Outflow = 0.42 cfs @ 13.22 hrs, Volume= 0.325 af, Atten= 89%, Lag= 62.5 min
 Primary = 0.42 cfs @ 13.22 hrs, Volume= 0.325 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 471.00' Surf.Area= 4,300 sf Storage= 6,560 cf
 Peak Elev= 472.57' @ 13.22 hrs Surf.Area= 6,279 sf Storage= 14,723 cf (8,163 cf above start)
 Flood Elev= 473.25' Surf.Area= 7,338 sf Storage= 19,371 cf (12,811 cf above start)

Plug-Flow detention time= 3,521.9 min calculated for 0.174 af (54% of inflow)
 Center-of-Mass det. time= 1,906.2 min (2,740.8 - 834.6)

Volume	Invert	Avail.Storage	Storage Description
#1	465.00'	25,310 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

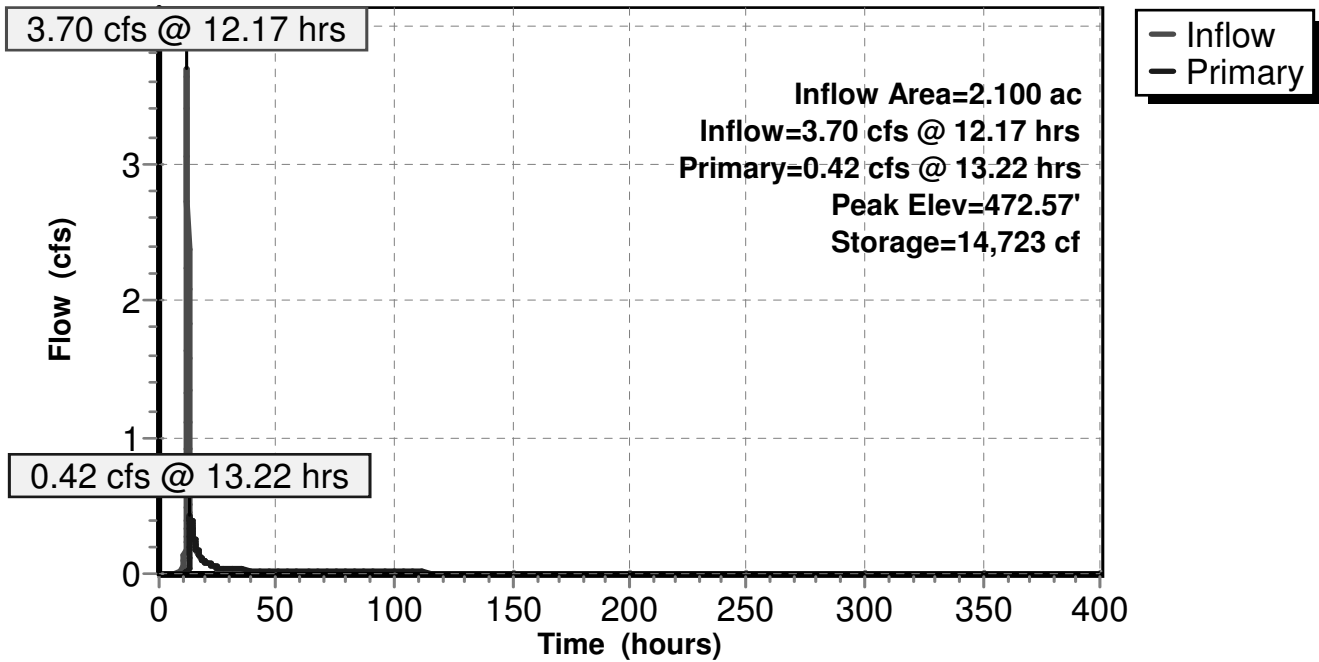
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
465.00	70	0	0
466.00	200	135	135
468.00	600	800	935
469.50	1,300	1,425	2,360
471.00	4,300	4,200	6,560
472.00	5,400	4,850	11,410
474.00	8,500	13,900	25,310

Device	Routing	Invert	Outlet Devices
#1	Primary	469.00'	24.0" x 95.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 467.00' S= 0.0211 '/' Cc= 0.900 n= 0.012
#2	Device 1	471.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	472.50'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.42 cfs @ 13.22 hrs HW=472.57' TW=0.00' (Dynamic Tailwater)
 ↑ **1=Culvert** (Passes 0.42 cfs of 24.24 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.95 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 0.39 cfs @ 0.73 fps)

Pond 2.2P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Pond 2.2P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	6,560	471.00	0.00	330.00	0.00	6,580	471.00	0.00
5.00	0.00	6,560	471.00	0.00	335.00	0.00	6,579	471.00	0.00
10.00	0.06	6,722	471.04	0.00	340.00	0.00	6,579	471.00	0.00
15.00	0.24	14,588	472.55	0.25	345.00	0.00	6,578	471.00	0.00
20.00	0.08	14,414	472.52	0.09	350.00	0.00	6,578	471.00	0.00
25.00	0.00	14,264	472.49	0.03	355.00	0.00	6,578	471.00	0.00
30.00	0.00	13,703	472.40	0.03	360.00	0.00	6,577	471.00	0.00
35.00	0.00	13,162	472.31	0.03	365.00	0.00	6,577	471.00	0.00
40.00	0.00	12,639	472.22	0.03	370.00	0.00	6,576	471.00	0.00
45.00	0.00	12,135	472.13	0.03	375.00	0.00	6,576	471.00	0.00
50.00	0.00	11,652	472.04	0.03	380.00	0.00	6,576	471.00	0.00
55.00	0.00	11,189	471.96	0.03	385.00	0.00	6,575	471.00	0.00
60.00	0.00	10,746	471.88	0.02	390.00	0.00	6,575	471.00	0.00
65.00	0.00	10,325	471.79	0.02	395.00	0.00	6,575	471.00	0.00
70.00	0.00	9,926	471.72	0.02	400.00	0.00	6,575	471.00	0.00
75.00	0.00	9,549	471.64	0.02					
80.00	0.00	9,193	471.57	0.02					
85.00	0.00	8,861	471.50	0.02					
90.00	0.00	8,552	471.44	0.02					
95.00	0.00	8,266	471.38	0.02					
100.00	0.00	8,003	471.32	0.01					
105.00	0.00	7,765	471.27	0.01					
110.00	0.00	7,551	471.22	0.01					
115.00	0.00	7,361	471.18	0.01					
120.00	0.00	7,196	471.15	0.01					
125.00	0.00	7,057	471.11	0.01					
130.00	0.00	6,942	471.09	0.01					
135.00	0.00	6,853	471.07	0.00					
140.00	0.00	6,790	471.05	0.00					
145.00	0.00	6,747	471.04	0.00					
150.00	0.00	6,716	471.04	0.00					
155.00	0.00	6,693	471.03	0.00					
160.00	0.00	6,676	471.03	0.00					
165.00	0.00	6,662	471.02	0.00					
170.00	0.00	6,651	471.02	0.00					
175.00	0.00	6,642	471.02	0.00					
180.00	0.00	6,635	471.02	0.00					
185.00	0.00	6,629	471.02	0.00					
190.00	0.00	6,624	471.01	0.00					
195.00	0.00	6,619	471.01	0.00					
200.00	0.00	6,615	471.01	0.00					
205.00	0.00	6,612	471.01	0.00					
210.00	0.00	6,609	471.01	0.00					
215.00	0.00	6,606	471.01	0.00					
220.00	0.00	6,603	471.01	0.00					
225.00	0.00	6,601	471.01	0.00					
230.00	0.00	6,599	471.01	0.00					
235.00	0.00	6,597	471.01	0.00					
240.00	0.00	6,596	471.01	0.00					
245.00	0.00	6,594	471.01	0.00					
250.00	0.00	6,593	471.01	0.00					
255.00	0.00	6,592	471.01	0.00					
260.00	0.00	6,590	471.01	0.00					
265.00	0.00	6,589	471.01	0.00					
270.00	0.00	6,588	471.01	0.00					
275.00	0.00	6,587	471.01	0.00					
280.00	0.00	6,586	471.01	0.00					
285.00	0.00	6,585	471.01	0.00					
290.00	0.00	6,585	471.01	0.00					
295.00	0.00	6,584	471.01	0.00					
300.00	0.00	6,583	471.01	0.00					
305.00	0.00	6,583	471.01	0.00					
310.00	0.00	6,582	471.01	0.00					
315.00	0.00	6,581	471.00	0.00					
320.00	0.00	6,581	471.00	0.00					
325.00	0.00	6,580	471.00	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Summary for Pond 3.0P:

Inflow Area = 1.900 ac, 47.37% Impervious, Inflow Depth = 0.66" for 2 YEAR event
 Inflow = 0.90 cfs @ 12.22 hrs, Volume= 0.104 af
 Outflow = 0.02 cfs @ 24.14 hrs, Volume= 0.104 af, Atten= 98%, Lag= 715.3 min
 Primary = 0.02 cfs @ 24.14 hrs, Volume= 0.104 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 461.25' Surf.Area= 5,900 sf Storage= 8,213 cf
 Peak Elev= 461.85' @ 24.14 hrs Surf.Area= 6,776 sf Storage= 12,000 cf (3,787 cf above start)
 Flood Elev= 463.00' Surf.Area= 8,750 sf Storage= 20,925 cf (12,713 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= 2,473.5 min (3,375.1 - 901.7)

Volume	Invert	Avail.Storage	Storage Description
#1	457.25'	30,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
457.25	400	0	0
458.00	700	413	413
459.75	1,700	2,100	2,513
461.25	5,900	5,700	8,213
462.00	7,000	4,838	13,050
464.00	10,500	17,500	30,550

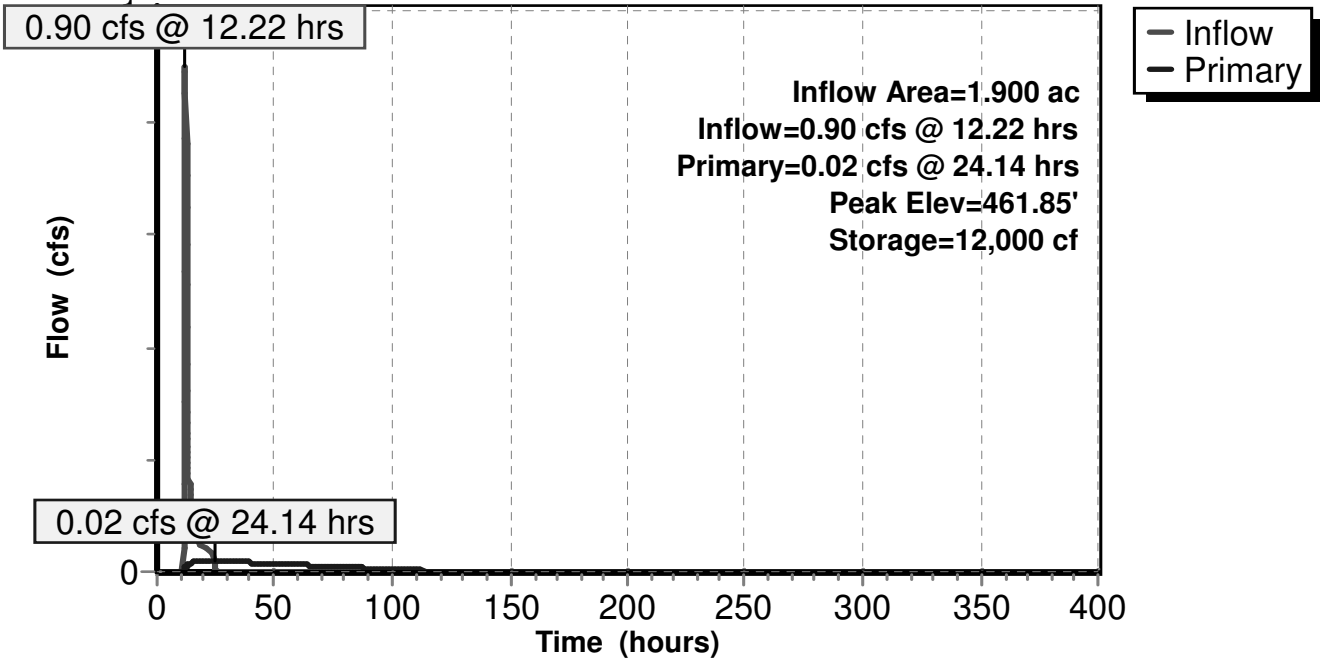
Device	Routing	Invert	Outlet Devices
#1	Primary	461.25'	15.0" x 28.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 460.90' S= 0.0125 '/' Cc= 0.900 n= 0.012
#2	Device 1	461.25'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	462.00'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.02 cfs @ 24.14 hrs HW=461.85' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 0.02 cfs of 1.49 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 3.59 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3.0P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 2 YEAR Rainfall=3.50"

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Hydrograph for Pond 3.0P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	8,213	461.25	0.00	330.00	0.00	8,244	461.26	0.00
5.00	0.00	8,213	461.25	0.00	335.00	0.00	8,243	461.26	0.00
10.00	0.00	8,213	461.25	0.00	340.00	0.00	8,243	461.26	0.00
15.00	0.11	10,949	461.69	0.02	345.00	0.00	8,242	461.26	0.00
20.00	0.04	11,770	461.81	0.02	350.00	0.00	8,241	461.25	0.00
25.00	0.00	11,947	461.84	0.02	355.00	0.00	8,241	461.25	0.00
30.00	0.00	11,605	461.79	0.02	360.00	0.00	8,240	461.25	0.00
35.00	0.00	11,280	461.74	0.02	365.00	0.00	8,240	461.25	0.00
40.00	0.00	10,972	461.69	0.02	370.00	0.00	8,239	461.25	0.00
45.00	0.00	10,681	461.65	0.02	375.00	0.00	8,239	461.25	0.00
50.00	0.00	10,407	461.61	0.01	380.00	0.00	8,238	461.25	0.00
55.00	0.00	10,151	461.57	0.01	385.00	0.00	8,238	461.25	0.00
60.00	0.00	9,912	461.53	0.01	390.00	0.00	8,237	461.25	0.00
65.00	0.00	9,691	461.49	0.01	395.00	0.00	8,237	461.25	0.00
70.00	0.00	9,488	461.46	0.01	400.00	0.00	8,237	461.25	0.00
75.00	0.00	9,302	461.43	0.01					
80.00	0.00	9,135	461.40	0.01					
85.00	0.00	8,986	461.38	0.01					
90.00	0.00	8,856	461.36	0.01					
95.00	0.00	8,744	461.34	0.01					
100.00	0.00	8,650	461.32	0.00					
105.00	0.00	8,575	461.31	0.00					
110.00	0.00	8,519	461.30	0.00					
115.00	0.00	8,475	461.29	0.00					
120.00	0.00	8,442	461.29	0.00					
125.00	0.00	8,415	461.28	0.00					
130.00	0.00	8,393	461.28	0.00					
135.00	0.00	8,376	461.28	0.00					
140.00	0.00	8,361	461.28	0.00					
145.00	0.00	8,349	461.27	0.00					
150.00	0.00	8,338	461.27	0.00					
155.00	0.00	8,329	461.27	0.00					
160.00	0.00	8,321	461.27	0.00					
165.00	0.00	8,314	461.27	0.00					
170.00	0.00	8,308	461.27	0.00					
175.00	0.00	8,303	461.27	0.00					
180.00	0.00	8,298	461.26	0.00					
185.00	0.00	8,293	461.26	0.00					
190.00	0.00	8,289	461.26	0.00					
195.00	0.00	8,286	461.26	0.00					
200.00	0.00	8,282	461.26	0.00					
205.00	0.00	8,279	461.26	0.00					
210.00	0.00	8,277	461.26	0.00					
215.00	0.00	8,274	461.26	0.00					
220.00	0.00	8,272	461.26	0.00					
225.00	0.00	8,269	461.26	0.00					
230.00	0.00	8,267	461.26	0.00					
235.00	0.00	8,265	461.26	0.00					
240.00	0.00	8,264	461.26	0.00					
245.00	0.00	8,262	461.26	0.00					
250.00	0.00	8,260	461.26	0.00					
255.00	0.00	8,259	461.26	0.00					
260.00	0.00	8,258	461.26	0.00					
265.00	0.00	8,256	461.26	0.00					
270.00	0.00	8,255	461.26	0.00					
275.00	0.00	8,254	461.26	0.00					
280.00	0.00	8,253	461.26	0.00					
285.00	0.00	8,252	461.26	0.00					
290.00	0.00	8,251	461.26	0.00					
295.00	0.00	8,250	461.26	0.00					
300.00	0.00	8,249	461.26	0.00					
305.00	0.00	8,248	461.26	0.00					
310.00	0.00	8,247	461.26	0.00					
315.00	0.00	8,246	461.26	0.00					
320.00	0.00	8,245	461.26	0.00					
325.00	0.00	8,245	461.26	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Subcatchment 1.0S:

Runoff = 56.30 cfs @ 12.06 hrs, Volume= 3.886 af, Depth= 3.73"

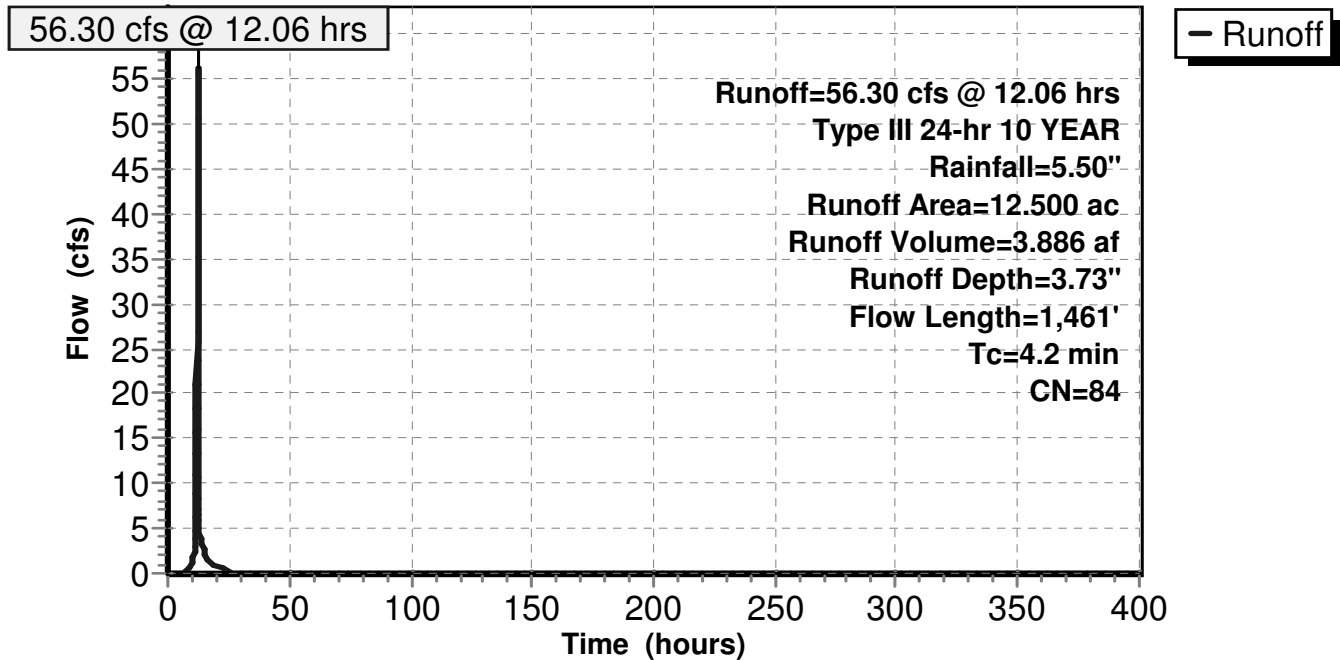
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=5.50"

Area (ac)	CN	Description
1.200	39	>75% Grass cover, Good, HSG A
7.200	89	Urban commercial, 85% imp, HSG A
3.400	94	Urban commercial, 85% imp, HSG C
* 0.700	70	Pervious Pavment
12.500	84	Weighted Average
3.490		Pervious Area
9.010		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	96	0.0100	1.08		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
0.6	214	0.0121	6.27	7.70	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
1.1	601	0.0130	8.89	27.94	Circular Channel (pipe), Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
1.0	550	0.0080	9.14	64.63	Circular Channel (pipe), Diam= 36.0" Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012
4.2	1,461	Total			

Subcatchment 1.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Subcatchment 1.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	5.50	3.73	0.00	330.00	5.50	3.73	0.00
2.50	0.14	0.00	0.00	167.50	5.50	3.73	0.00	332.50	5.50	3.73	0.00
5.00	0.31	0.00	0.00	170.00	5.50	3.73	0.00	335.00	5.50	3.73	0.00
7.50	0.56	0.02	0.25	172.50	5.50	3.73	0.00	337.50	5.50	3.73	0.00
10.00	1.04	0.17	1.47	175.00	5.50	3.73	0.00	340.00	5.50	3.73	0.00
12.50	3.86	2.25	10.65	177.50	5.50	3.73	0.00	342.50	5.50	3.73	0.00
15.00	4.70	3.00	2.40	180.00	5.50	3.73	0.00	345.00	5.50	3.73	0.00
17.50	5.06	3.32	1.20	182.50	5.50	3.73	0.00	347.50	5.50	3.73	0.00
20.00	5.26	3.51	0.84	185.00	5.50	3.73	0.00	350.00	5.50	3.73	0.00
22.50	5.42	3.66	0.66	187.50	5.50	3.73	0.00	352.50	5.50	3.73	0.00
25.00	5.50	3.73	0.00	190.00	5.50	3.73	0.00	355.00	5.50	3.73	0.00
27.50	5.50	3.73	0.00	192.50	5.50	3.73	0.00	357.50	5.50	3.73	0.00
30.00	5.50	3.73	0.00	195.00	5.50	3.73	0.00	360.00	5.50	3.73	0.00
32.50	5.50	3.73	0.00	197.50	5.50	3.73	0.00	362.50	5.50	3.73	0.00
35.00	5.50	3.73	0.00	200.00	5.50	3.73	0.00	365.00	5.50	3.73	0.00
37.50	5.50	3.73	0.00	202.50	5.50	3.73	0.00	367.50	5.50	3.73	0.00
40.00	5.50	3.73	0.00	205.00	5.50	3.73	0.00	370.00	5.50	3.73	0.00
42.50	5.50	3.73	0.00	207.50	5.50	3.73	0.00	372.50	5.50	3.73	0.00
45.00	5.50	3.73	0.00	210.00	5.50	3.73	0.00	375.00	5.50	3.73	0.00
47.50	5.50	3.73	0.00	212.50	5.50	3.73	0.00	377.50	5.50	3.73	0.00
50.00	5.50	3.73	0.00	215.00	5.50	3.73	0.00	380.00	5.50	3.73	0.00
52.50	5.50	3.73	0.00	217.50	5.50	3.73	0.00	382.50	5.50	3.73	0.00
55.00	5.50	3.73	0.00	220.00	5.50	3.73	0.00	385.00	5.50	3.73	0.00
57.50	5.50	3.73	0.00	222.50	5.50	3.73	0.00	387.50	5.50	3.73	0.00
60.00	5.50	3.73	0.00	225.00	5.50	3.73	0.00	390.00	5.50	3.73	0.00
62.50	5.50	3.73	0.00	227.50	5.50	3.73	0.00	392.50	5.50	3.73	0.00
65.00	5.50	3.73	0.00	230.00	5.50	3.73	0.00	395.00	5.50	3.73	0.00
67.50	5.50	3.73	0.00	232.50	5.50	3.73	0.00	397.50	5.50	3.73	0.00
70.00	5.50	3.73	0.00	235.00	5.50	3.73	0.00	400.00	5.50	3.73	0.00
72.50	5.50	3.73	0.00	237.50	5.50	3.73	0.00				
75.00	5.50	3.73	0.00	240.00	5.50	3.73	0.00				
77.50	5.50	3.73	0.00	242.50	5.50	3.73	0.00				
80.00	5.50	3.73	0.00	245.00	5.50	3.73	0.00				
82.50	5.50	3.73	0.00	247.50	5.50	3.73	0.00				
85.00	5.50	3.73	0.00	250.00	5.50	3.73	0.00				
87.50	5.50	3.73	0.00	252.50	5.50	3.73	0.00				
90.00	5.50	3.73	0.00	255.00	5.50	3.73	0.00				
92.50	5.50	3.73	0.00	257.50	5.50	3.73	0.00				
95.00	5.50	3.73	0.00	260.00	5.50	3.73	0.00				
97.50	5.50	3.73	0.00	262.50	5.50	3.73	0.00				
100.00	5.50	3.73	0.00	265.00	5.50	3.73	0.00				
102.50	5.50	3.73	0.00	267.50	5.50	3.73	0.00				
105.00	5.50	3.73	0.00	270.00	5.50	3.73	0.00				
107.50	5.50	3.73	0.00	272.50	5.50	3.73	0.00				
110.00	5.50	3.73	0.00	275.00	5.50	3.73	0.00				
112.50	5.50	3.73	0.00	277.50	5.50	3.73	0.00				
115.00	5.50	3.73	0.00	280.00	5.50	3.73	0.00				
117.50	5.50	3.73	0.00	282.50	5.50	3.73	0.00				
120.00	5.50	3.73	0.00	285.00	5.50	3.73	0.00				
122.50	5.50	3.73	0.00	287.50	5.50	3.73	0.00				
125.00	5.50	3.73	0.00	290.00	5.50	3.73	0.00				
127.50	5.50	3.73	0.00	292.50	5.50	3.73	0.00				
130.00	5.50	3.73	0.00	295.00	5.50	3.73	0.00				
132.50	5.50	3.73	0.00	297.50	5.50	3.73	0.00				
135.00	5.50	3.73	0.00	300.00	5.50	3.73	0.00				
137.50	5.50	3.73	0.00	302.50	5.50	3.73	0.00				
140.00	5.50	3.73	0.00	305.00	5.50	3.73	0.00				
142.50	5.50	3.73	0.00	307.50	5.50	3.73	0.00				
145.00	5.50	3.73	0.00	310.00	5.50	3.73	0.00				
147.50	5.50	3.73	0.00	312.50	5.50	3.73	0.00				
150.00	5.50	3.73	0.00	315.00	5.50	3.73	0.00				
152.50	5.50	3.73	0.00	317.50	5.50	3.73	0.00				
155.00	5.50	3.73	0.00	320.00	5.50	3.73	0.00				
157.50	5.50	3.73	0.00	322.50	5.50	3.73	0.00				
160.00	5.50	3.73	0.00	325.00	5.50	3.73	0.00				
162.50	5.50	3.73	0.00	327.50	5.50	3.73	0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Subcatchment 1.1S:

Runoff = 3.09 cfs @ 12.15 hrs, Volume= 0.289 af, Depth= 1.24"

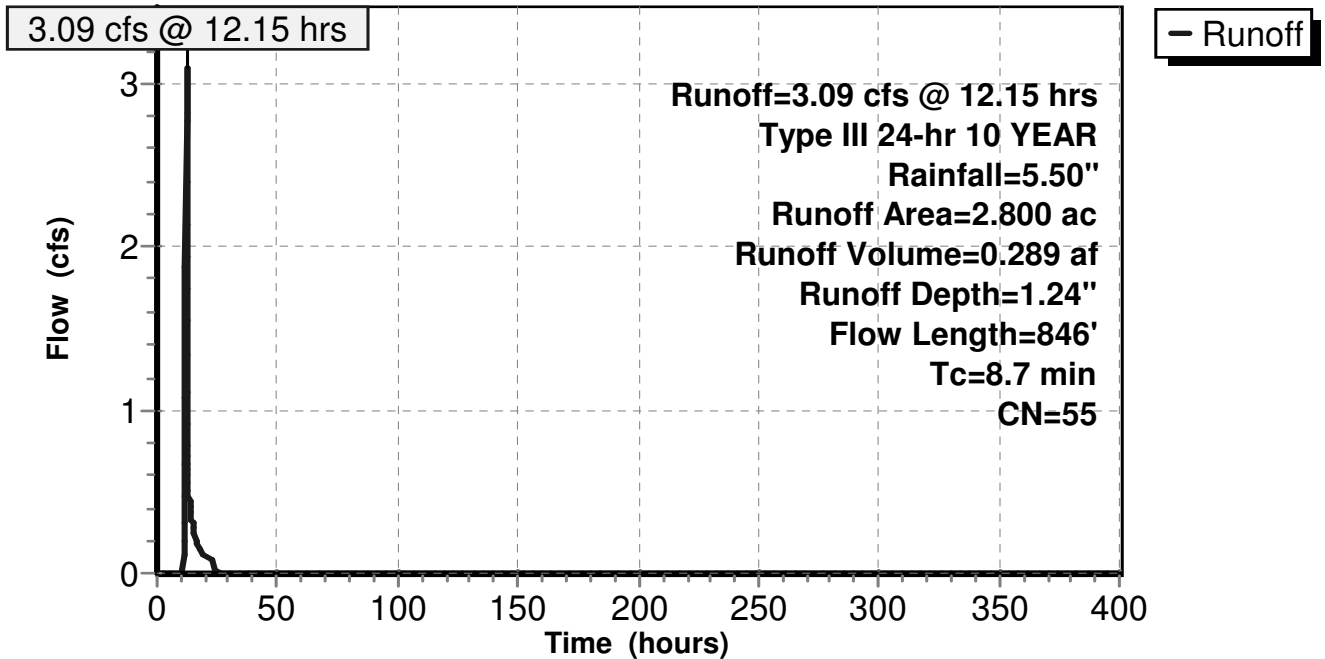
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=5.50"

Area (ac)	CN	Description
2.000	39	>75% Grass cover, Good, HSG A
0.400	89	Urban commercial, 85% imp, HSG A
0.400	98	Paved parking & roofs
2.800	55	Weighted Average
2.060		Pervious Area
0.740		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0100	1.09		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
7.0	652	0.0170	1.55	0.43	Trap/Vee/Rect Channel Flow, Bot.W=1.00' D=0.20' Z= 2.0 ' /' Top.W=1.80' n= 0.035 Earth, dense weeds
0.2	94	0.0290	9.71	11.92	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
8.7	846	Total			

Subcatchment 1.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Subcatchment 1.1S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	5.50	1.24	0.00	330.00	5.50	1.24	0.00
2.50	0.14	0.00	0.00	167.50	5.50	1.24	0.00	332.50	5.50	1.24	0.00
5.00	0.31	0.00	0.00	170.00	5.50	1.24	0.00	335.00	5.50	1.24	0.00
7.50	0.56	0.00	0.00	172.50	5.50	1.24	0.00	337.50	5.50	1.24	0.00
10.00	1.04	0.00	0.00	175.00	5.50	1.24	0.00	340.00	5.50	1.24	0.00
12.50	3.86	0.48	1.33	177.50	5.50	1.24	0.00	342.50	5.50	1.24	0.00
15.00	4.70	0.83	0.28	180.00	5.50	1.24	0.00	345.00	5.50	1.24	0.00
17.50	5.06	1.01	0.15	182.50	5.50	1.24	0.00	347.50	5.50	1.24	0.00
20.00	5.26	1.11	0.11	185.00	5.50	1.24	0.00	350.00	5.50	1.24	0.00
22.50	5.42	1.20	0.09	187.50	5.50	1.24	0.00	352.50	5.50	1.24	0.00
25.00	5.50	1.24	0.00	190.00	5.50	1.24	0.00	355.00	5.50	1.24	0.00
27.50	5.50	1.24	0.00	192.50	5.50	1.24	0.00	357.50	5.50	1.24	0.00
30.00	5.50	1.24	0.00	195.00	5.50	1.24	0.00	360.00	5.50	1.24	0.00
32.50	5.50	1.24	0.00	197.50	5.50	1.24	0.00	362.50	5.50	1.24	0.00
35.00	5.50	1.24	0.00	200.00	5.50	1.24	0.00	365.00	5.50	1.24	0.00
37.50	5.50	1.24	0.00	202.50	5.50	1.24	0.00	367.50	5.50	1.24	0.00
40.00	5.50	1.24	0.00	205.00	5.50	1.24	0.00	370.00	5.50	1.24	0.00
42.50	5.50	1.24	0.00	207.50	5.50	1.24	0.00	372.50	5.50	1.24	0.00
45.00	5.50	1.24	0.00	210.00	5.50	1.24	0.00	375.00	5.50	1.24	0.00
47.50	5.50	1.24	0.00	212.50	5.50	1.24	0.00	377.50	5.50	1.24	0.00
50.00	5.50	1.24	0.00	215.00	5.50	1.24	0.00	380.00	5.50	1.24	0.00
52.50	5.50	1.24	0.00	217.50	5.50	1.24	0.00	382.50	5.50	1.24	0.00
55.00	5.50	1.24	0.00	220.00	5.50	1.24	0.00	385.00	5.50	1.24	0.00
57.50	5.50	1.24	0.00	222.50	5.50	1.24	0.00	387.50	5.50	1.24	0.00
60.00	5.50	1.24	0.00	225.00	5.50	1.24	0.00	390.00	5.50	1.24	0.00
62.50	5.50	1.24	0.00	227.50	5.50	1.24	0.00	392.50	5.50	1.24	0.00
65.00	5.50	1.24	0.00	230.00	5.50	1.24	0.00	395.00	5.50	1.24	0.00
67.50	5.50	1.24	0.00	232.50	5.50	1.24	0.00	397.50	5.50	1.24	0.00
70.00	5.50	1.24	0.00	235.00	5.50	1.24	0.00	400.00	5.50	1.24	0.00
72.50	5.50	1.24	0.00	237.50	5.50	1.24	0.00				
75.00	5.50	1.24	0.00	240.00	5.50	1.24	0.00				
77.50	5.50	1.24	0.00	242.50	5.50	1.24	0.00				
80.00	5.50	1.24	0.00	245.00	5.50	1.24	0.00				
82.50	5.50	1.24	0.00	247.50	5.50	1.24	0.00				
85.00	5.50	1.24	0.00	250.00	5.50	1.24	0.00				
87.50	5.50	1.24	0.00	252.50	5.50	1.24	0.00				
90.00	5.50	1.24	0.00	255.00	5.50	1.24	0.00				
92.50	5.50	1.24	0.00	257.50	5.50	1.24	0.00				
95.00	5.50	1.24	0.00	260.00	5.50	1.24	0.00				
97.50	5.50	1.24	0.00	262.50	5.50	1.24	0.00				
100.00	5.50	1.24	0.00	265.00	5.50	1.24	0.00				
102.50	5.50	1.24	0.00	267.50	5.50	1.24	0.00				
105.00	5.50	1.24	0.00	270.00	5.50	1.24	0.00				
107.50	5.50	1.24	0.00	272.50	5.50	1.24	0.00				
110.00	5.50	1.24	0.00	275.00	5.50	1.24	0.00				
112.50	5.50	1.24	0.00	277.50	5.50	1.24	0.00				
115.00	5.50	1.24	0.00	280.00	5.50	1.24	0.00				
117.50	5.50	1.24	0.00	282.50	5.50	1.24	0.00				
120.00	5.50	1.24	0.00	285.00	5.50	1.24	0.00				
122.50	5.50	1.24	0.00	287.50	5.50	1.24	0.00				
125.00	5.50	1.24	0.00	290.00	5.50	1.24	0.00				
127.50	5.50	1.24	0.00	292.50	5.50	1.24	0.00				
130.00	5.50	1.24	0.00	295.00	5.50	1.24	0.00				
132.50	5.50	1.24	0.00	297.50	5.50	1.24	0.00				
135.00	5.50	1.24	0.00	300.00	5.50	1.24	0.00				
137.50	5.50	1.24	0.00	302.50	5.50	1.24	0.00				
140.00	5.50	1.24	0.00	305.00	5.50	1.24	0.00				
142.50	5.50	1.24	0.00	307.50	5.50	1.24	0.00				
145.00	5.50	1.24	0.00	310.00	5.50	1.24	0.00				
147.50	5.50	1.24	0.00	312.50	5.50	1.24	0.00				
150.00	5.50	1.24	0.00	315.00	5.50	1.24	0.00				
152.50	5.50	1.24	0.00	317.50	5.50	1.24	0.00				
155.00	5.50	1.24	0.00	320.00	5.50	1.24	0.00				
157.50	5.50	1.24	0.00	322.50	5.50	1.24	0.00				
160.00	5.50	1.24	0.00	325.00	5.50	1.24	0.00				
162.50	5.50	1.24	0.00	327.50	5.50	1.24	0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Subcatchment 1.2S:

Runoff = 2.06 cfs @ 12.27 hrs, Volume= 0.282 af, Depth= 0.85"

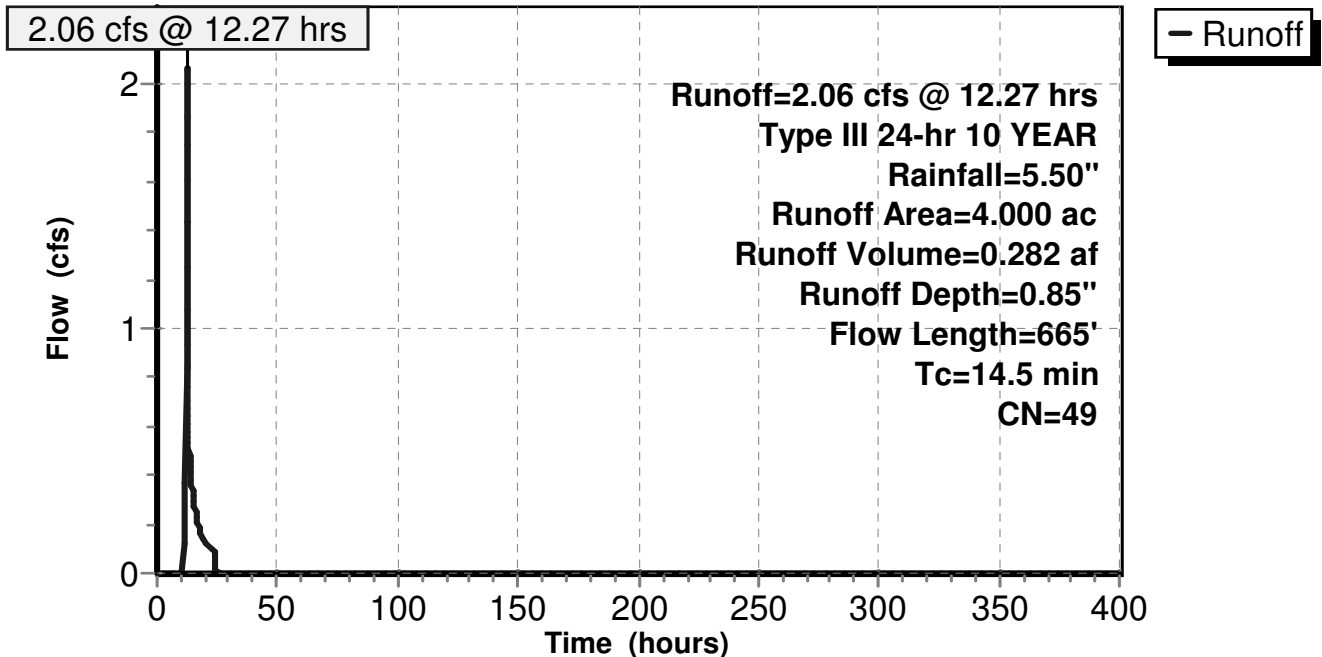
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=5.50"

Area (ac)	CN	Description
1.000	39	>75% Grass cover, Good, HSG A
0.300	98	Paved parking & roofs
1.500	30	Woods, Good, HSG A
1.200	70	Woods, Good, HSG C
4.000	49	Weighted Average
3.700		Pervious Area
0.300		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.1500	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	315	0.0790	3.60	1.73	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=0.20' Z= 2.0 ' / Top.W=2.80' n= 0.035
3.8	250	0.0480	1.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.5	665	Total			

Subcatchment 1.2S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Subcatchment 1.2S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	5.50	0.85	0.00	330.00	5.50	0.85	0.00
2.50	0.14	0.00	0.00	167.50	5.50	0.85	0.00	332.50	5.50	0.85	0.00
5.00	0.31	0.00	0.00	170.00	5.50	0.85	0.00	335.00	5.50	0.85	0.00
7.50	0.56	0.00	0.00	172.50	5.50	0.85	0.00	337.50	5.50	0.85	0.00
10.00	1.04	0.00	0.00	175.00	5.50	0.85	0.00	340.00	5.50	0.85	0.00
12.50	3.86	0.26	1.60	177.50	5.50	0.85	0.00	342.50	5.50	0.85	0.00
15.00	4.70	0.53	0.32	180.00	5.50	0.85	0.00	345.00	5.50	0.85	0.00
17.50	5.06	0.66	0.17	182.50	5.50	0.85	0.00	347.50	5.50	0.85	0.00
20.00	5.26	0.74	0.12	185.00	5.50	0.85	0.00	350.00	5.50	0.85	0.00
22.50	5.42	0.81	0.10	187.50	5.50	0.85	0.00	352.50	5.50	0.85	0.00
25.00	5.50	0.85	0.00	190.00	5.50	0.85	0.00	355.00	5.50	0.85	0.00
27.50	5.50	0.85	0.00	192.50	5.50	0.85	0.00	357.50	5.50	0.85	0.00
30.00	5.50	0.85	0.00	195.00	5.50	0.85	0.00	360.00	5.50	0.85	0.00
32.50	5.50	0.85	0.00	197.50	5.50	0.85	0.00	362.50	5.50	0.85	0.00
35.00	5.50	0.85	0.00	200.00	5.50	0.85	0.00	365.00	5.50	0.85	0.00
37.50	5.50	0.85	0.00	202.50	5.50	0.85	0.00	367.50	5.50	0.85	0.00
40.00	5.50	0.85	0.00	205.00	5.50	0.85	0.00	370.00	5.50	0.85	0.00
42.50	5.50	0.85	0.00	207.50	5.50	0.85	0.00	372.50	5.50	0.85	0.00
45.00	5.50	0.85	0.00	210.00	5.50	0.85	0.00	375.00	5.50	0.85	0.00
47.50	5.50	0.85	0.00	212.50	5.50	0.85	0.00	377.50	5.50	0.85	0.00
50.00	5.50	0.85	0.00	215.00	5.50	0.85	0.00	380.00	5.50	0.85	0.00
52.50	5.50	0.85	0.00	217.50	5.50	0.85	0.00	382.50	5.50	0.85	0.00
55.00	5.50	0.85	0.00	220.00	5.50	0.85	0.00	385.00	5.50	0.85	0.00
57.50	5.50	0.85	0.00	222.50	5.50	0.85	0.00	387.50	5.50	0.85	0.00
60.00	5.50	0.85	0.00	225.00	5.50	0.85	0.00	390.00	5.50	0.85	0.00
62.50	5.50	0.85	0.00	227.50	5.50	0.85	0.00	392.50	5.50	0.85	0.00
65.00	5.50	0.85	0.00	230.00	5.50	0.85	0.00	395.00	5.50	0.85	0.00
67.50	5.50	0.85	0.00	232.50	5.50	0.85	0.00	397.50	5.50	0.85	0.00
70.00	5.50	0.85	0.00	235.00	5.50	0.85	0.00	400.00	5.50	0.85	0.00
72.50	5.50	0.85	0.00	237.50	5.50	0.85	0.00				
75.00	5.50	0.85	0.00	240.00	5.50	0.85	0.00				
77.50	5.50	0.85	0.00	242.50	5.50	0.85	0.00				
80.00	5.50	0.85	0.00	245.00	5.50	0.85	0.00				
82.50	5.50	0.85	0.00	247.50	5.50	0.85	0.00				
85.00	5.50	0.85	0.00	250.00	5.50	0.85	0.00				
87.50	5.50	0.85	0.00	252.50	5.50	0.85	0.00				
90.00	5.50	0.85	0.00	255.00	5.50	0.85	0.00				
92.50	5.50	0.85	0.00	257.50	5.50	0.85	0.00				
95.00	5.50	0.85	0.00	260.00	5.50	0.85	0.00				
97.50	5.50	0.85	0.00	262.50	5.50	0.85	0.00				
100.00	5.50	0.85	0.00	265.00	5.50	0.85	0.00				
102.50	5.50	0.85	0.00	267.50	5.50	0.85	0.00				
105.00	5.50	0.85	0.00	270.00	5.50	0.85	0.00				
107.50	5.50	0.85	0.00	272.50	5.50	0.85	0.00				
110.00	5.50	0.85	0.00	275.00	5.50	0.85	0.00				
112.50	5.50	0.85	0.00	277.50	5.50	0.85	0.00				
115.00	5.50	0.85	0.00	280.00	5.50	0.85	0.00				
117.50	5.50	0.85	0.00	282.50	5.50	0.85	0.00				
120.00	5.50	0.85	0.00	285.00	5.50	0.85	0.00				
122.50	5.50	0.85	0.00	287.50	5.50	0.85	0.00				
125.00	5.50	0.85	0.00	290.00	5.50	0.85	0.00				
127.50	5.50	0.85	0.00	292.50	5.50	0.85	0.00				
130.00	5.50	0.85	0.00	295.00	5.50	0.85	0.00				
132.50	5.50	0.85	0.00	297.50	5.50	0.85	0.00				
135.00	5.50	0.85	0.00	300.00	5.50	0.85	0.00				
137.50	5.50	0.85	0.00	302.50	5.50	0.85	0.00				
140.00	5.50	0.85	0.00	305.00	5.50	0.85	0.00				
142.50	5.50	0.85	0.00	307.50	5.50	0.85	0.00				
145.00	5.50	0.85	0.00	310.00	5.50	0.85	0.00				
147.50	5.50	0.85	0.00	312.50	5.50	0.85	0.00				
150.00	5.50	0.85	0.00	315.00	5.50	0.85	0.00				
152.50	5.50	0.85	0.00	317.50	5.50	0.85	0.00				
155.00	5.50	0.85	0.00	320.00	5.50	0.85	0.00				
157.50	5.50	0.85	0.00	322.50	5.50	0.85	0.00				
160.00	5.50	0.85	0.00	325.00	5.50	0.85	0.00				
162.50	5.50	0.85	0.00	327.50	5.50	0.85	0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Subcatchment 2.0S:

Runoff = 22.45 cfs @ 12.11 hrs, Volume= 1.762 af, Depth= 4.15"

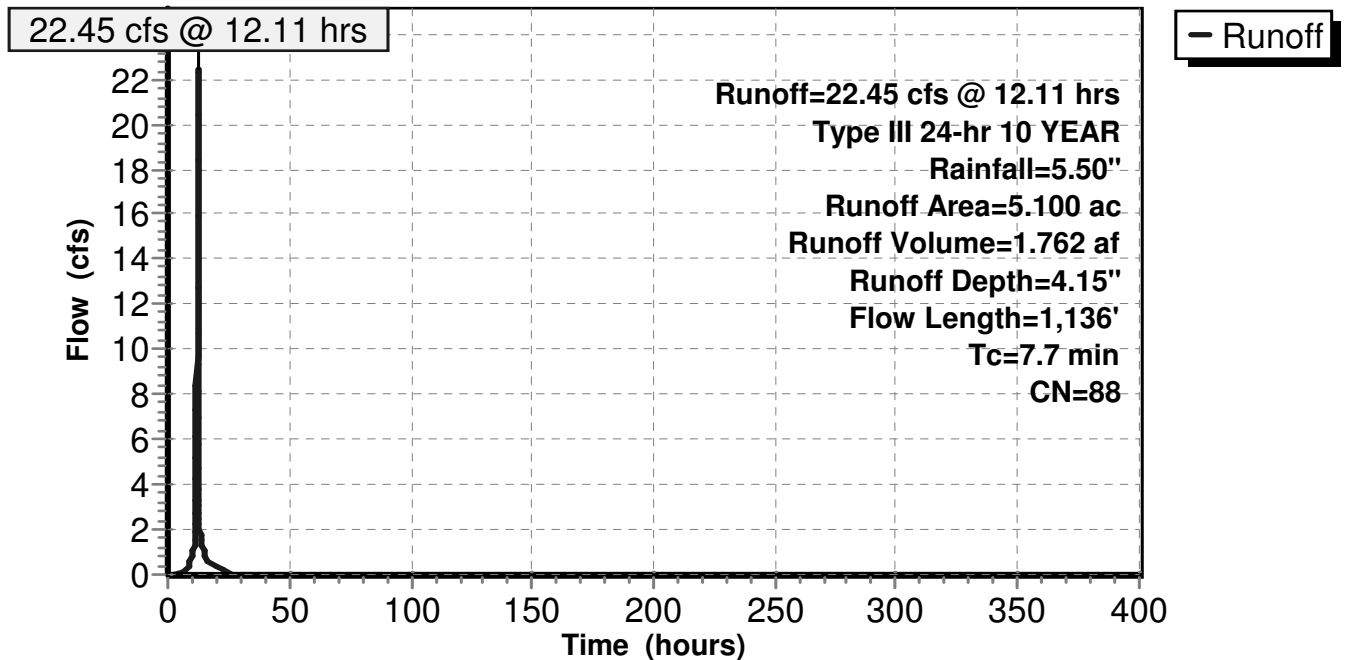
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=5.50"

Area (ac)	CN	Description
0.200	39	>75% Grass cover, Good, HSG A
0.300	74	>75% Grass cover, Good, HSG C
0.300	70	Woods, Good, HSG C
3.700	94	Urban commercial, 85% imp, HSG C
0.400	89	Urban commercial, 85% imp, HSG A
* 0.200	70	Pervious Pavment
5.100	88	Weighted Average
1.615		Pervious Area
3.485		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.0400	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
1.1	85	0.0350	1.31		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.0	797	0.0140	6.75	8.28	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	172	0.0120	7.05	12.47	Circular Channel (pipe), Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.1	32	0.0094	7.56	23.76	Circular Channel (pipe), Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
7.7	1,136	Total			

Subcatchment 2.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Subcatchment 2.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	5.50	4.15	0.00	330.00	5.50	4.15	0.00
2.50	0.14	0.00	0.00	167.50	5.50	4.15	0.00	332.50	5.50	4.15	0.00
5.00	0.31	0.00	0.02	170.00	5.50	4.15	0.00	335.00	5.50	4.15	0.00
7.50	0.56	0.05	0.20	172.50	5.50	4.15	0.00	337.50	5.50	4.15	0.00
10.00	1.04	0.28	0.78	175.00	5.50	4.15	0.00	340.00	5.50	4.15	0.00
12.50	3.86	2.60	5.82	177.50	5.50	4.15	0.00	342.50	5.50	4.15	0.00
15.00	4.70	3.38	1.04	180.00	5.50	4.15	0.00	345.00	5.50	4.15	0.00
17.50	5.06	3.72	0.51	182.50	5.50	4.15	0.00	347.50	5.50	4.15	0.00
20.00	5.26	3.92	0.36	185.00	5.50	4.15	0.00	350.00	5.50	4.15	0.00
22.50	5.42	4.07	0.28	187.50	5.50	4.15	0.00	352.50	5.50	4.15	0.00
25.00	5.50	4.15	0.00	190.00	5.50	4.15	0.00	355.00	5.50	4.15	0.00
27.50	5.50	4.15	0.00	192.50	5.50	4.15	0.00	357.50	5.50	4.15	0.00
30.00	5.50	4.15	0.00	195.00	5.50	4.15	0.00	360.00	5.50	4.15	0.00
32.50	5.50	4.15	0.00	197.50	5.50	4.15	0.00	362.50	5.50	4.15	0.00
35.00	5.50	4.15	0.00	200.00	5.50	4.15	0.00	365.00	5.50	4.15	0.00
37.50	5.50	4.15	0.00	202.50	5.50	4.15	0.00	367.50	5.50	4.15	0.00
40.00	5.50	4.15	0.00	205.00	5.50	4.15	0.00	370.00	5.50	4.15	0.00
42.50	5.50	4.15	0.00	207.50	5.50	4.15	0.00	372.50	5.50	4.15	0.00
45.00	5.50	4.15	0.00	210.00	5.50	4.15	0.00	375.00	5.50	4.15	0.00
47.50	5.50	4.15	0.00	212.50	5.50	4.15	0.00	377.50	5.50	4.15	0.00
50.00	5.50	4.15	0.00	215.00	5.50	4.15	0.00	380.00	5.50	4.15	0.00
52.50	5.50	4.15	0.00	217.50	5.50	4.15	0.00	382.50	5.50	4.15	0.00
55.00	5.50	4.15	0.00	220.00	5.50	4.15	0.00	385.00	5.50	4.15	0.00
57.50	5.50	4.15	0.00	222.50	5.50	4.15	0.00	387.50	5.50	4.15	0.00
60.00	5.50	4.15	0.00	225.00	5.50	4.15	0.00	390.00	5.50	4.15	0.00
62.50	5.50	4.15	0.00	227.50	5.50	4.15	0.00	392.50	5.50	4.15	0.00
65.00	5.50	4.15	0.00	230.00	5.50	4.15	0.00	395.00	5.50	4.15	0.00
67.50	5.50	4.15	0.00	232.50	5.50	4.15	0.00	397.50	5.50	4.15	0.00
70.00	5.50	4.15	0.00	235.00	5.50	4.15	0.00	400.00	5.50	4.15	0.00
72.50	5.50	4.15	0.00	237.50	5.50	4.15	0.00				
75.00	5.50	4.15	0.00	240.00	5.50	4.15	0.00				
77.50	5.50	4.15	0.00	242.50	5.50	4.15	0.00				
80.00	5.50	4.15	0.00	245.00	5.50	4.15	0.00				
82.50	5.50	4.15	0.00	247.50	5.50	4.15	0.00				
85.00	5.50	4.15	0.00	250.00	5.50	4.15	0.00				
87.50	5.50	4.15	0.00	252.50	5.50	4.15	0.00				
90.00	5.50	4.15	0.00	255.00	5.50	4.15	0.00				
92.50	5.50	4.15	0.00	257.50	5.50	4.15	0.00				
95.00	5.50	4.15	0.00	260.00	5.50	4.15	0.00				
97.50	5.50	4.15	0.00	262.50	5.50	4.15	0.00				
100.00	5.50	4.15	0.00	265.00	5.50	4.15	0.00				
102.50	5.50	4.15	0.00	267.50	5.50	4.15	0.00				
105.00	5.50	4.15	0.00	270.00	5.50	4.15	0.00				
107.50	5.50	4.15	0.00	272.50	5.50	4.15	0.00				
110.00	5.50	4.15	0.00	275.00	5.50	4.15	0.00				
112.50	5.50	4.15	0.00	277.50	5.50	4.15	0.00				
115.00	5.50	4.15	0.00	280.00	5.50	4.15	0.00				
117.50	5.50	4.15	0.00	282.50	5.50	4.15	0.00				
120.00	5.50	4.15	0.00	285.00	5.50	4.15	0.00				
122.50	5.50	4.15	0.00	287.50	5.50	4.15	0.00				
125.00	5.50	4.15	0.00	290.00	5.50	4.15	0.00				
127.50	5.50	4.15	0.00	292.50	5.50	4.15	0.00				
130.00	5.50	4.15	0.00	295.00	5.50	4.15	0.00				
132.50	5.50	4.15	0.00	297.50	5.50	4.15	0.00				
135.00	5.50	4.15	0.00	300.00	5.50	4.15	0.00				
137.50	5.50	4.15	0.00	302.50	5.50	4.15	0.00				
140.00	5.50	4.15	0.00	305.00	5.50	4.15	0.00				
142.50	5.50	4.15	0.00	307.50	5.50	4.15	0.00				
145.00	5.50	4.15	0.00	310.00	5.50	4.15	0.00				
147.50	5.50	4.15	0.00	312.50	5.50	4.15	0.00				
150.00	5.50	4.15	0.00	315.00	5.50	4.15	0.00				
152.50	5.50	4.15	0.00	317.50	5.50	4.15	0.00				
155.00	5.50	4.15	0.00	320.00	5.50	4.15	0.00				
157.50	5.50	4.15	0.00	322.50	5.50	4.15	0.00				
160.00	5.50	4.15	0.00	325.00	5.50	4.15	0.00				
162.50	5.50	4.15	0.00	327.50	5.50	4.15	0.00				

Summary for Subcatchment 2.1S:

Runoff = 0.31 cfs @ 12.11 hrs, Volume= 0.041 af, Depth= 0.61"

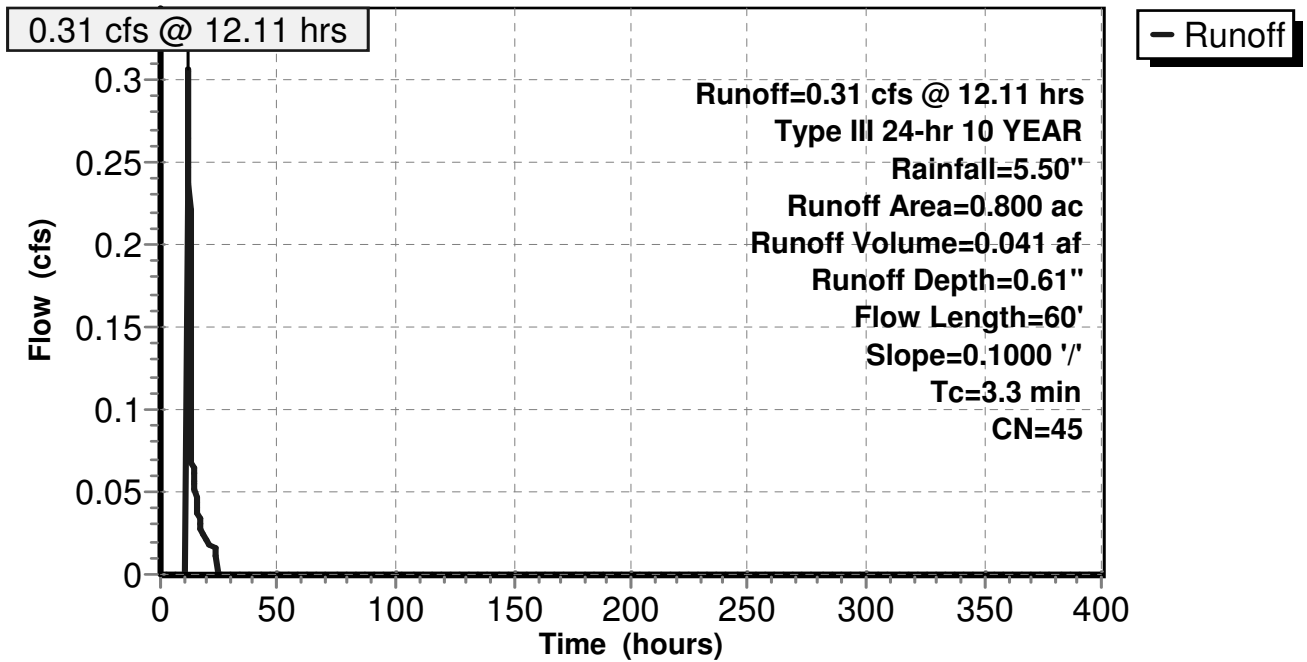
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 YEAR Rainfall=5.50"

Area (ac)	CN	Description
0.700	39	>75% Grass cover, Good, HSG A
0.100	89	Urban commercial, 85% imp, HSG A
0.800	45	Weighted Average
0.715		Pervious Area
0.085		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	60	0.1000	0.31		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"

Subcatchment 2.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Subcatchment 2.1S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	5.50	0.61	0.00	330.00	5.50	0.61	0.00
2.50	0.14	0.00	0.00	167.50	5.50	0.61	0.00	332.50	5.50	0.61	0.00
5.00	0.31	0.00	0.00	170.00	5.50	0.61	0.00	335.00	5.50	0.61	0.00
7.50	0.56	0.00	0.00	172.50	5.50	0.61	0.00	337.50	5.50	0.61	0.00
10.00	1.04	0.00	0.00	175.00	5.50	0.61	0.00	340.00	5.50	0.61	0.00
12.50	3.86	0.15	0.14	177.50	5.50	0.61	0.00	342.50	5.50	0.61	0.00
15.00	4.70	0.35	0.05	180.00	5.50	0.61	0.00	345.00	5.50	0.61	0.00
17.50	5.06	0.46	0.03	182.50	5.50	0.61	0.00	347.50	5.50	0.61	0.00
20.00	5.26	0.53	0.02	185.00	5.50	0.61	0.00	350.00	5.50	0.61	0.00
22.50	5.42	0.58	0.02	187.50	5.50	0.61	0.00	352.50	5.50	0.61	0.00
25.00	5.50	0.61	0.00	190.00	5.50	0.61	0.00	355.00	5.50	0.61	0.00
27.50	5.50	0.61	0.00	192.50	5.50	0.61	0.00	357.50	5.50	0.61	0.00
30.00	5.50	0.61	0.00	195.00	5.50	0.61	0.00	360.00	5.50	0.61	0.00
32.50	5.50	0.61	0.00	197.50	5.50	0.61	0.00	362.50	5.50	0.61	0.00
35.00	5.50	0.61	0.00	200.00	5.50	0.61	0.00	365.00	5.50	0.61	0.00
37.50	5.50	0.61	0.00	202.50	5.50	0.61	0.00	367.50	5.50	0.61	0.00
40.00	5.50	0.61	0.00	205.00	5.50	0.61	0.00	370.00	5.50	0.61	0.00
42.50	5.50	0.61	0.00	207.50	5.50	0.61	0.00	372.50	5.50	0.61	0.00
45.00	5.50	0.61	0.00	210.00	5.50	0.61	0.00	375.00	5.50	0.61	0.00
47.50	5.50	0.61	0.00	212.50	5.50	0.61	0.00	377.50	5.50	0.61	0.00
50.00	5.50	0.61	0.00	215.00	5.50	0.61	0.00	380.00	5.50	0.61	0.00
52.50	5.50	0.61	0.00	217.50	5.50	0.61	0.00	382.50	5.50	0.61	0.00
55.00	5.50	0.61	0.00	220.00	5.50	0.61	0.00	385.00	5.50	0.61	0.00
57.50	5.50	0.61	0.00	222.50	5.50	0.61	0.00	387.50	5.50	0.61	0.00
60.00	5.50	0.61	0.00	225.00	5.50	0.61	0.00	390.00	5.50	0.61	0.00
62.50	5.50	0.61	0.00	227.50	5.50	0.61	0.00	392.50	5.50	0.61	0.00
65.00	5.50	0.61	0.00	230.00	5.50	0.61	0.00	395.00	5.50	0.61	0.00
67.50	5.50	0.61	0.00	232.50	5.50	0.61	0.00	397.50	5.50	0.61	0.00
70.00	5.50	0.61	0.00	235.00	5.50	0.61	0.00	400.00	5.50	0.61	0.00
72.50	5.50	0.61	0.00	237.50	5.50	0.61	0.00				
75.00	5.50	0.61	0.00	240.00	5.50	0.61	0.00				
77.50	5.50	0.61	0.00	242.50	5.50	0.61	0.00				
80.00	5.50	0.61	0.00	245.00	5.50	0.61	0.00				
82.50	5.50	0.61	0.00	247.50	5.50	0.61	0.00				
85.00	5.50	0.61	0.00	250.00	5.50	0.61	0.00				
87.50	5.50	0.61	0.00	252.50	5.50	0.61	0.00				
90.00	5.50	0.61	0.00	255.00	5.50	0.61	0.00				
92.50	5.50	0.61	0.00	257.50	5.50	0.61	0.00				
95.00	5.50	0.61	0.00	260.00	5.50	0.61	0.00				
97.50	5.50	0.61	0.00	262.50	5.50	0.61	0.00				
100.00	5.50	0.61	0.00	265.00	5.50	0.61	0.00				
102.50	5.50	0.61	0.00	267.50	5.50	0.61	0.00				
105.00	5.50	0.61	0.00	270.00	5.50	0.61	0.00				
107.50	5.50	0.61	0.00	272.50	5.50	0.61	0.00				
110.00	5.50	0.61	0.00	275.00	5.50	0.61	0.00				
112.50	5.50	0.61	0.00	277.50	5.50	0.61	0.00				
115.00	5.50	0.61	0.00	280.00	5.50	0.61	0.00				
117.50	5.50	0.61	0.00	282.50	5.50	0.61	0.00				
120.00	5.50	0.61	0.00	285.00	5.50	0.61	0.00				
122.50	5.50	0.61	0.00	287.50	5.50	0.61	0.00				
125.00	5.50	0.61	0.00	290.00	5.50	0.61	0.00				
127.50	5.50	0.61	0.00	292.50	5.50	0.61	0.00				
130.00	5.50	0.61	0.00	295.00	5.50	0.61	0.00				
132.50	5.50	0.61	0.00	297.50	5.50	0.61	0.00				
135.00	5.50	0.61	0.00	300.00	5.50	0.61	0.00				
137.50	5.50	0.61	0.00	302.50	5.50	0.61	0.00				
140.00	5.50	0.61	0.00	305.00	5.50	0.61	0.00				
142.50	5.50	0.61	0.00	307.50	5.50	0.61	0.00				
145.00	5.50	0.61	0.00	310.00	5.50	0.61	0.00				
147.50	5.50	0.61	0.00	312.50	5.50	0.61	0.00				
150.00	5.50	0.61	0.00	315.00	5.50	0.61	0.00				
152.50	5.50	0.61	0.00	317.50	5.50	0.61	0.00				
155.00	5.50	0.61	0.00	320.00	5.50	0.61	0.00				
157.50	5.50	0.61	0.00	322.50	5.50	0.61	0.00				
160.00	5.50	0.61	0.00	325.00	5.50	0.61	0.00				
162.50	5.50	0.61	0.00	327.50	5.50	0.61	0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Subcatchment 2.2S:

Runoff = 7.19 cfs @ 12.17 hrs, Volume= 0.635 af, Depth= 3.63"

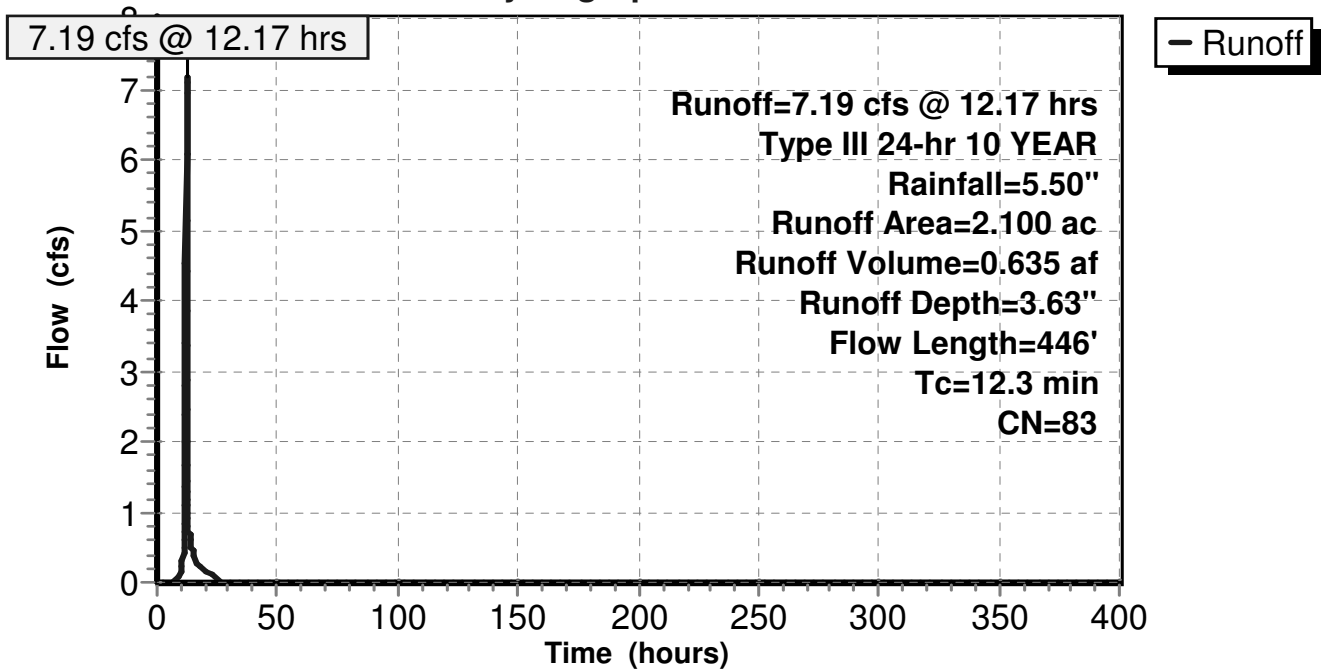
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=5.50"

Area (ac)	CN	Description
1.000	94	Urban commercial, 85% imp, HSG C
0.700	74	>75% Grass cover, Good, HSG C
0.300	71	Meadow, non-grazed, HSG C
* 0.100	70	Pervious Pavement
2.100	83	Weighted Average
1.250		Pervious Area
0.850		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	157	0.1400	2.62		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	140	0.0930	6.19		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	49	0.0290	9.71	11.92	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
12.3	446	Total			

Subcatchment 2.2S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Subcatchment 2.2S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	5.50	3.63	0.00	330.00	5.50	3.63	0.00
2.50	0.14	0.00	0.00	167.50	5.50	3.63	0.00	332.50	5.50	3.63	0.00
5.00	0.31	0.00	0.00	170.00	5.50	3.63	0.00	335.00	5.50	3.63	0.00
7.50	0.56	0.01	0.03	172.50	5.50	3.63	0.00	337.50	5.50	3.63	0.00
10.00	1.04	0.15	0.21	175.00	5.50	3.63	0.00	340.00	5.50	3.63	0.00
12.50	3.86	2.17	2.89	177.50	5.50	3.63	0.00	342.50	5.50	3.63	0.00
15.00	4.70	2.90	0.41	180.00	5.50	3.63	0.00	345.00	5.50	3.63	0.00
17.50	5.06	3.23	0.21	182.50	5.50	3.63	0.00	347.50	5.50	3.63	0.00
20.00	5.26	3.41	0.14	185.00	5.50	3.63	0.00	350.00	5.50	3.63	0.00
22.50	5.42	3.56	0.11	187.50	5.50	3.63	0.00	352.50	5.50	3.63	0.00
25.00	5.50	3.63	0.00	190.00	5.50	3.63	0.00	355.00	5.50	3.63	0.00
27.50	5.50	3.63	0.00	192.50	5.50	3.63	0.00	357.50	5.50	3.63	0.00
30.00	5.50	3.63	0.00	195.00	5.50	3.63	0.00	360.00	5.50	3.63	0.00
32.50	5.50	3.63	0.00	197.50	5.50	3.63	0.00	362.50	5.50	3.63	0.00
35.00	5.50	3.63	0.00	200.00	5.50	3.63	0.00	365.00	5.50	3.63	0.00
37.50	5.50	3.63	0.00	202.50	5.50	3.63	0.00	367.50	5.50	3.63	0.00
40.00	5.50	3.63	0.00	205.00	5.50	3.63	0.00	370.00	5.50	3.63	0.00
42.50	5.50	3.63	0.00	207.50	5.50	3.63	0.00	372.50	5.50	3.63	0.00
45.00	5.50	3.63	0.00	210.00	5.50	3.63	0.00	375.00	5.50	3.63	0.00
47.50	5.50	3.63	0.00	212.50	5.50	3.63	0.00	377.50	5.50	3.63	0.00
50.00	5.50	3.63	0.00	215.00	5.50	3.63	0.00	380.00	5.50	3.63	0.00
52.50	5.50	3.63	0.00	217.50	5.50	3.63	0.00	382.50	5.50	3.63	0.00
55.00	5.50	3.63	0.00	220.00	5.50	3.63	0.00	385.00	5.50	3.63	0.00
57.50	5.50	3.63	0.00	222.50	5.50	3.63	0.00	387.50	5.50	3.63	0.00
60.00	5.50	3.63	0.00	225.00	5.50	3.63	0.00	390.00	5.50	3.63	0.00
62.50	5.50	3.63	0.00	227.50	5.50	3.63	0.00	392.50	5.50	3.63	0.00
65.00	5.50	3.63	0.00	230.00	5.50	3.63	0.00	395.00	5.50	3.63	0.00
67.50	5.50	3.63	0.00	232.50	5.50	3.63	0.00	397.50	5.50	3.63	0.00
70.00	5.50	3.63	0.00	235.00	5.50	3.63	0.00	400.00	5.50	3.63	0.00
72.50	5.50	3.63	0.00	237.50	5.50	3.63	0.00				
75.00	5.50	3.63	0.00	240.00	5.50	3.63	0.00				
77.50	5.50	3.63	0.00	242.50	5.50	3.63	0.00				
80.00	5.50	3.63	0.00	245.00	5.50	3.63	0.00				
82.50	5.50	3.63	0.00	247.50	5.50	3.63	0.00				
85.00	5.50	3.63	0.00	250.00	5.50	3.63	0.00				
87.50	5.50	3.63	0.00	252.50	5.50	3.63	0.00				
90.00	5.50	3.63	0.00	255.00	5.50	3.63	0.00				
92.50	5.50	3.63	0.00	257.50	5.50	3.63	0.00				
95.00	5.50	3.63	0.00	260.00	5.50	3.63	0.00				
97.50	5.50	3.63	0.00	262.50	5.50	3.63	0.00				
100.00	5.50	3.63	0.00	265.00	5.50	3.63	0.00				
102.50	5.50	3.63	0.00	267.50	5.50	3.63	0.00				
105.00	5.50	3.63	0.00	270.00	5.50	3.63	0.00				
107.50	5.50	3.63	0.00	272.50	5.50	3.63	0.00				
110.00	5.50	3.63	0.00	275.00	5.50	3.63	0.00				
112.50	5.50	3.63	0.00	277.50	5.50	3.63	0.00				
115.00	5.50	3.63	0.00	280.00	5.50	3.63	0.00				
117.50	5.50	3.63	0.00	282.50	5.50	3.63	0.00				
120.00	5.50	3.63	0.00	285.00	5.50	3.63	0.00				
122.50	5.50	3.63	0.00	287.50	5.50	3.63	0.00				
125.00	5.50	3.63	0.00	290.00	5.50	3.63	0.00				
127.50	5.50	3.63	0.00	292.50	5.50	3.63	0.00				
130.00	5.50	3.63	0.00	295.00	5.50	3.63	0.00				
132.50	5.50	3.63	0.00	297.50	5.50	3.63	0.00				
135.00	5.50	3.63	0.00	300.00	5.50	3.63	0.00				
137.50	5.50	3.63	0.00	302.50	5.50	3.63	0.00				
140.00	5.50	3.63	0.00	305.00	5.50	3.63	0.00				
142.50	5.50	3.63	0.00	307.50	5.50	3.63	0.00				
145.00	5.50	3.63	0.00	310.00	5.50	3.63	0.00				
147.50	5.50	3.63	0.00	312.50	5.50	3.63	0.00				
150.00	5.50	3.63	0.00	315.00	5.50	3.63	0.00				
152.50	5.50	3.63	0.00	317.50	5.50	3.63	0.00				
155.00	5.50	3.63	0.00	320.00	5.50	3.63	0.00				
157.50	5.50	3.63	0.00	322.50	5.50	3.63	0.00				
160.00	5.50	3.63	0.00	325.00	5.50	3.63	0.00				
162.50	5.50	3.63	0.00	327.50	5.50	3.63	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Subcatchment 2.3S:

Runoff = 17.30 cfs @ 12.20 hrs, Volume= 1.610 af, Depth= 2.41"

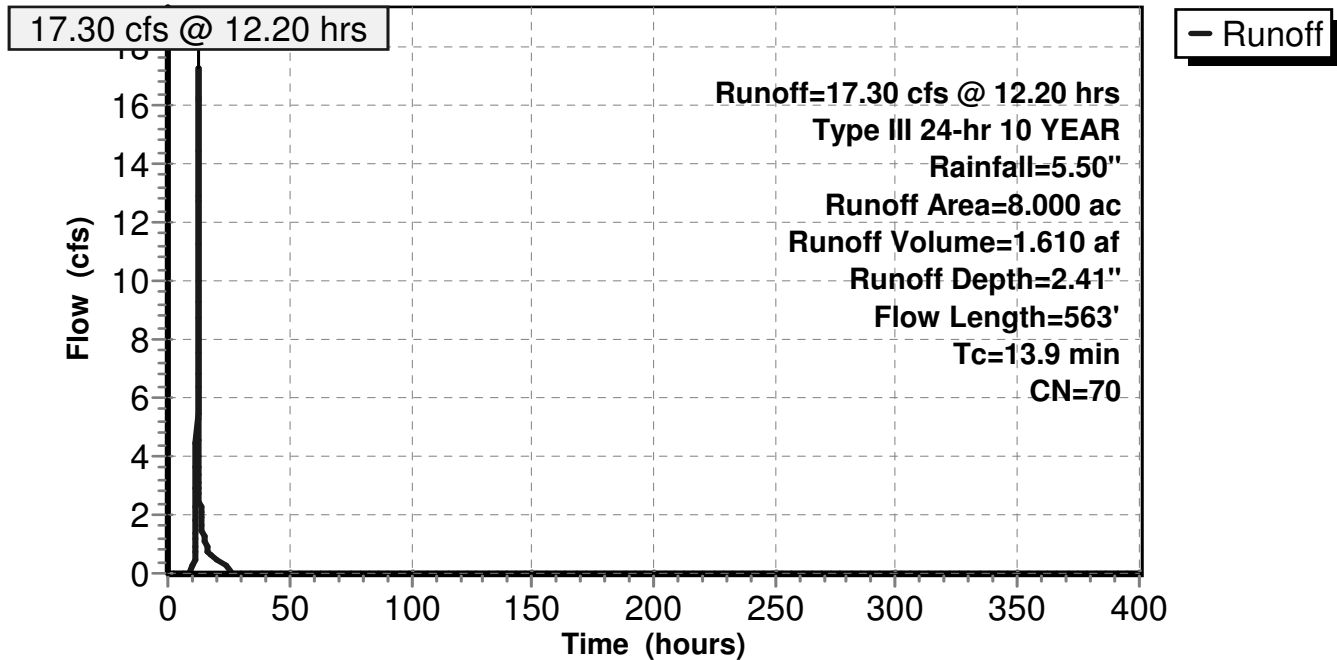
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=5.50"

Area (ac)	CN	Description
5.500	70	Woods, Good, HSG C
0.200	39	>75% Grass cover, Good, HSG A
0.500	98	Paved parking & roofs
0.500	71	Meadow, non-grazed, HSG C
0.900	74	>75% Grass cover, Good, HSG C
0.300	30	Woods, Good, HSG A
0.050	94	Urban commercial, 85% imp, HSG C
0.050	89	Urban commercial, 85% imp, HSG A
8.000	70	Weighted Average
7.415		Pervious Area
0.585		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
4.5	463	0.1200	1.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.9	563	Total			

Subcatchment 2.3S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Subcatchment 2.3S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	5.50	2.41	0.00	330.00	5.50	2.41	0.00
2.50	0.14	0.00	0.00	167.50	5.50	2.41	0.00	332.50	5.50	2.41	0.00
5.00	0.31	0.00	0.00	170.00	5.50	2.41	0.00	335.00	5.50	2.41	0.00
7.50	0.56	0.00	0.00	172.50	5.50	2.41	0.00	337.50	5.50	2.41	0.00
10.00	1.04	0.01	0.12	175.00	5.50	2.41	0.00	340.00	5.50	2.41	0.00
12.50	3.86	1.24	8.73	177.50	5.50	2.41	0.00	342.50	5.50	2.41	0.00
15.00	4.70	1.82	1.27	180.00	5.50	2.41	0.00	345.00	5.50	2.41	0.00
17.50	5.06	2.08	0.65	182.50	5.50	2.41	0.00	347.50	5.50	2.41	0.00
20.00	5.26	2.23	0.45	185.00	5.50	2.41	0.00	350.00	5.50	2.41	0.00
22.50	5.42	2.36	0.35	187.50	5.50	2.41	0.00	352.50	5.50	2.41	0.00
25.00	5.50	2.41	0.00	190.00	5.50	2.41	0.00	355.00	5.50	2.41	0.00
27.50	5.50	2.41	0.00	192.50	5.50	2.41	0.00	357.50	5.50	2.41	0.00
30.00	5.50	2.41	0.00	195.00	5.50	2.41	0.00	360.00	5.50	2.41	0.00
32.50	5.50	2.41	0.00	197.50	5.50	2.41	0.00	362.50	5.50	2.41	0.00
35.00	5.50	2.41	0.00	200.00	5.50	2.41	0.00	365.00	5.50	2.41	0.00
37.50	5.50	2.41	0.00	202.50	5.50	2.41	0.00	367.50	5.50	2.41	0.00
40.00	5.50	2.41	0.00	205.00	5.50	2.41	0.00	370.00	5.50	2.41	0.00
42.50	5.50	2.41	0.00	207.50	5.50	2.41	0.00	372.50	5.50	2.41	0.00
45.00	5.50	2.41	0.00	210.00	5.50	2.41	0.00	375.00	5.50	2.41	0.00
47.50	5.50	2.41	0.00	212.50	5.50	2.41	0.00	377.50	5.50	2.41	0.00
50.00	5.50	2.41	0.00	215.00	5.50	2.41	0.00	380.00	5.50	2.41	0.00
52.50	5.50	2.41	0.00	217.50	5.50	2.41	0.00	382.50	5.50	2.41	0.00
55.00	5.50	2.41	0.00	220.00	5.50	2.41	0.00	385.00	5.50	2.41	0.00
57.50	5.50	2.41	0.00	222.50	5.50	2.41	0.00	387.50	5.50	2.41	0.00
60.00	5.50	2.41	0.00	225.00	5.50	2.41	0.00	390.00	5.50	2.41	0.00
62.50	5.50	2.41	0.00	227.50	5.50	2.41	0.00	392.50	5.50	2.41	0.00
65.00	5.50	2.41	0.00	230.00	5.50	2.41	0.00	395.00	5.50	2.41	0.00
67.50	5.50	2.41	0.00	232.50	5.50	2.41	0.00	397.50	5.50	2.41	0.00
70.00	5.50	2.41	0.00	235.00	5.50	2.41	0.00	400.00	5.50	2.41	0.00
72.50	5.50	2.41	0.00	237.50	5.50	2.41	0.00				
75.00	5.50	2.41	0.00	240.00	5.50	2.41	0.00				
77.50	5.50	2.41	0.00	242.50	5.50	2.41	0.00				
80.00	5.50	2.41	0.00	245.00	5.50	2.41	0.00				
82.50	5.50	2.41	0.00	247.50	5.50	2.41	0.00				
85.00	5.50	2.41	0.00	250.00	5.50	2.41	0.00				
87.50	5.50	2.41	0.00	252.50	5.50	2.41	0.00				
90.00	5.50	2.41	0.00	255.00	5.50	2.41	0.00				
92.50	5.50	2.41	0.00	257.50	5.50	2.41	0.00				
95.00	5.50	2.41	0.00	260.00	5.50	2.41	0.00				
97.50	5.50	2.41	0.00	262.50	5.50	2.41	0.00				
100.00	5.50	2.41	0.00	265.00	5.50	2.41	0.00				
102.50	5.50	2.41	0.00	267.50	5.50	2.41	0.00				
105.00	5.50	2.41	0.00	270.00	5.50	2.41	0.00				
107.50	5.50	2.41	0.00	272.50	5.50	2.41	0.00				
110.00	5.50	2.41	0.00	275.00	5.50	2.41	0.00				
112.50	5.50	2.41	0.00	277.50	5.50	2.41	0.00				
115.00	5.50	2.41	0.00	280.00	5.50	2.41	0.00				
117.50	5.50	2.41	0.00	282.50	5.50	2.41	0.00				
120.00	5.50	2.41	0.00	285.00	5.50	2.41	0.00				
122.50	5.50	2.41	0.00	287.50	5.50	2.41	0.00				
125.00	5.50	2.41	0.00	290.00	5.50	2.41	0.00				
127.50	5.50	2.41	0.00	292.50	5.50	2.41	0.00				
130.00	5.50	2.41	0.00	295.00	5.50	2.41	0.00				
132.50	5.50	2.41	0.00	297.50	5.50	2.41	0.00				
135.00	5.50	2.41	0.00	300.00	5.50	2.41	0.00				
137.50	5.50	2.41	0.00	302.50	5.50	2.41	0.00				
140.00	5.50	2.41	0.00	305.00	5.50	2.41	0.00				
142.50	5.50	2.41	0.00	307.50	5.50	2.41	0.00				
145.00	5.50	2.41	0.00	310.00	5.50	2.41	0.00				
147.50	5.50	2.41	0.00	312.50	5.50	2.41	0.00				
150.00	5.50	2.41	0.00	315.00	5.50	2.41	0.00				
152.50	5.50	2.41	0.00	317.50	5.50	2.41	0.00				
155.00	5.50	2.41	0.00	320.00	5.50	2.41	0.00				
157.50	5.50	2.41	0.00	322.50	5.50	2.41	0.00				
160.00	5.50	2.41	0.00	325.00	5.50	2.41	0.00				
162.50	5.50	2.41	0.00	327.50	5.50	2.41	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Subcatchment 3.0S:

Runoff = 3.06 cfs @ 12.20 hrs, Volume= 0.290 af, Depth= 1.83"

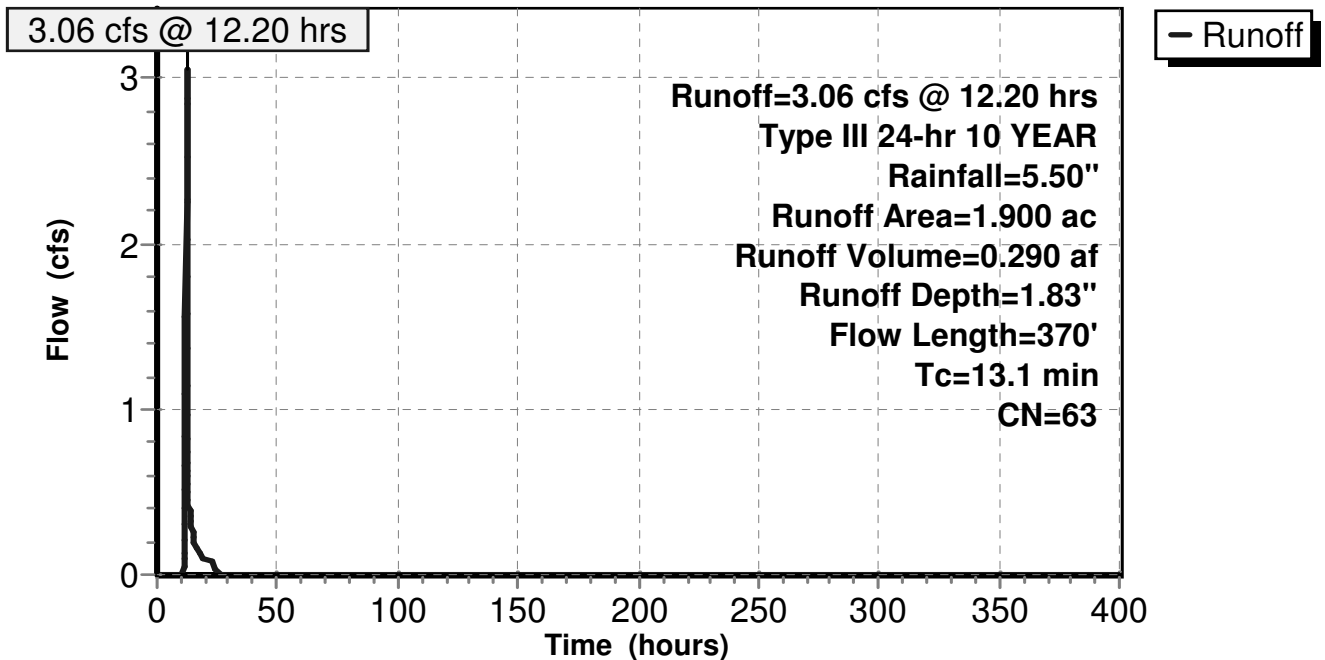
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10 YEAR Rainfall=5.50"

Area (ac)	CN	Description
0.900	98	Paved parking & roofs
0.800	30	Woods, Good, HSG A
0.200	39	>75% Grass cover, Good, HSG A
1.900	63	Weighted Average
1.000		Pervious Area
0.900		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
6.5	90	0.0400	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
6.4	270	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.1	370	Total			

Subcatchment 3.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Subcatchment 3.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	5.50	1.83	0.00	330.00	5.50	1.83	0.00
2.50	0.14	0.00	0.00	167.50	5.50	1.83	0.00	332.50	5.50	1.83	0.00
5.00	0.31	0.00	0.00	170.00	5.50	1.83	0.00	335.00	5.50	1.83	0.00
7.50	0.56	0.00	0.00	172.50	5.50	1.83	0.00	337.50	5.50	1.83	0.00
10.00	1.04	0.00	0.00	175.00	5.50	1.83	0.00	340.00	5.50	1.83	0.00
12.50	3.86	0.84	1.58	177.50	5.50	1.83	0.00	342.50	5.50	1.83	0.00
15.00	4.70	1.32	0.25	180.00	5.50	1.83	0.00	345.00	5.50	1.83	0.00
17.50	5.06	1.54	0.13	182.50	5.50	1.83	0.00	347.50	5.50	1.83	0.00
20.00	5.26	1.68	0.09	185.00	5.50	1.83	0.00	350.00	5.50	1.83	0.00
22.50	5.42	1.78	0.07	187.50	5.50	1.83	0.00	352.50	5.50	1.83	0.00
25.00	5.50	1.83	0.00	190.00	5.50	1.83	0.00	355.00	5.50	1.83	0.00
27.50	5.50	1.83	0.00	192.50	5.50	1.83	0.00	357.50	5.50	1.83	0.00
30.00	5.50	1.83	0.00	195.00	5.50	1.83	0.00	360.00	5.50	1.83	0.00
32.50	5.50	1.83	0.00	197.50	5.50	1.83	0.00	362.50	5.50	1.83	0.00
35.00	5.50	1.83	0.00	200.00	5.50	1.83	0.00	365.00	5.50	1.83	0.00
37.50	5.50	1.83	0.00	202.50	5.50	1.83	0.00	367.50	5.50	1.83	0.00
40.00	5.50	1.83	0.00	205.00	5.50	1.83	0.00	370.00	5.50	1.83	0.00
42.50	5.50	1.83	0.00	207.50	5.50	1.83	0.00	372.50	5.50	1.83	0.00
45.00	5.50	1.83	0.00	210.00	5.50	1.83	0.00	375.00	5.50	1.83	0.00
47.50	5.50	1.83	0.00	212.50	5.50	1.83	0.00	377.50	5.50	1.83	0.00
50.00	5.50	1.83	0.00	215.00	5.50	1.83	0.00	380.00	5.50	1.83	0.00
52.50	5.50	1.83	0.00	217.50	5.50	1.83	0.00	382.50	5.50	1.83	0.00
55.00	5.50	1.83	0.00	220.00	5.50	1.83	0.00	385.00	5.50	1.83	0.00
57.50	5.50	1.83	0.00	222.50	5.50	1.83	0.00	387.50	5.50	1.83	0.00
60.00	5.50	1.83	0.00	225.00	5.50	1.83	0.00	390.00	5.50	1.83	0.00
62.50	5.50	1.83	0.00	227.50	5.50	1.83	0.00	392.50	5.50	1.83	0.00
65.00	5.50	1.83	0.00	230.00	5.50	1.83	0.00	395.00	5.50	1.83	0.00
67.50	5.50	1.83	0.00	232.50	5.50	1.83	0.00	397.50	5.50	1.83	0.00
70.00	5.50	1.83	0.00	235.00	5.50	1.83	0.00	400.00	5.50	1.83	0.00
72.50	5.50	1.83	0.00	237.50	5.50	1.83	0.00				
75.00	5.50	1.83	0.00	240.00	5.50	1.83	0.00				
77.50	5.50	1.83	0.00	242.50	5.50	1.83	0.00				
80.00	5.50	1.83	0.00	245.00	5.50	1.83	0.00				
82.50	5.50	1.83	0.00	247.50	5.50	1.83	0.00				
85.00	5.50	1.83	0.00	250.00	5.50	1.83	0.00				
87.50	5.50	1.83	0.00	252.50	5.50	1.83	0.00				
90.00	5.50	1.83	0.00	255.00	5.50	1.83	0.00				
92.50	5.50	1.83	0.00	257.50	5.50	1.83	0.00				
95.00	5.50	1.83	0.00	260.00	5.50	1.83	0.00				
97.50	5.50	1.83	0.00	262.50	5.50	1.83	0.00				
100.00	5.50	1.83	0.00	265.00	5.50	1.83	0.00				
102.50	5.50	1.83	0.00	267.50	5.50	1.83	0.00				
105.00	5.50	1.83	0.00	270.00	5.50	1.83	0.00				
107.50	5.50	1.83	0.00	272.50	5.50	1.83	0.00				
110.00	5.50	1.83	0.00	275.00	5.50	1.83	0.00				
112.50	5.50	1.83	0.00	277.50	5.50	1.83	0.00				
115.00	5.50	1.83	0.00	280.00	5.50	1.83	0.00				
117.50	5.50	1.83	0.00	282.50	5.50	1.83	0.00				
120.00	5.50	1.83	0.00	285.00	5.50	1.83	0.00				
122.50	5.50	1.83	0.00	287.50	5.50	1.83	0.00				
125.00	5.50	1.83	0.00	290.00	5.50	1.83	0.00				
127.50	5.50	1.83	0.00	292.50	5.50	1.83	0.00				
130.00	5.50	1.83	0.00	295.00	5.50	1.83	0.00				
132.50	5.50	1.83	0.00	297.50	5.50	1.83	0.00				
135.00	5.50	1.83	0.00	300.00	5.50	1.83	0.00				
137.50	5.50	1.83	0.00	302.50	5.50	1.83	0.00				
140.00	5.50	1.83	0.00	305.00	5.50	1.83	0.00				
142.50	5.50	1.83	0.00	307.50	5.50	1.83	0.00				
145.00	5.50	1.83	0.00	310.00	5.50	1.83	0.00				
147.50	5.50	1.83	0.00	312.50	5.50	1.83	0.00				
150.00	5.50	1.83	0.00	315.00	5.50	1.83	0.00				
152.50	5.50	1.83	0.00	317.50	5.50	1.83	0.00				
155.00	5.50	1.83	0.00	320.00	5.50	1.83	0.00				
157.50	5.50	1.83	0.00	322.50	5.50	1.83	0.00				
160.00	5.50	1.83	0.00	325.00	5.50	1.83	0.00				
162.50	5.50	1.83	0.00	327.50	5.50	1.83	0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Subcatchment 3.1S:

Runoff = 1.25 cfs @ 12.35 hrs, Volume= 0.165 af, Depth= 1.10"

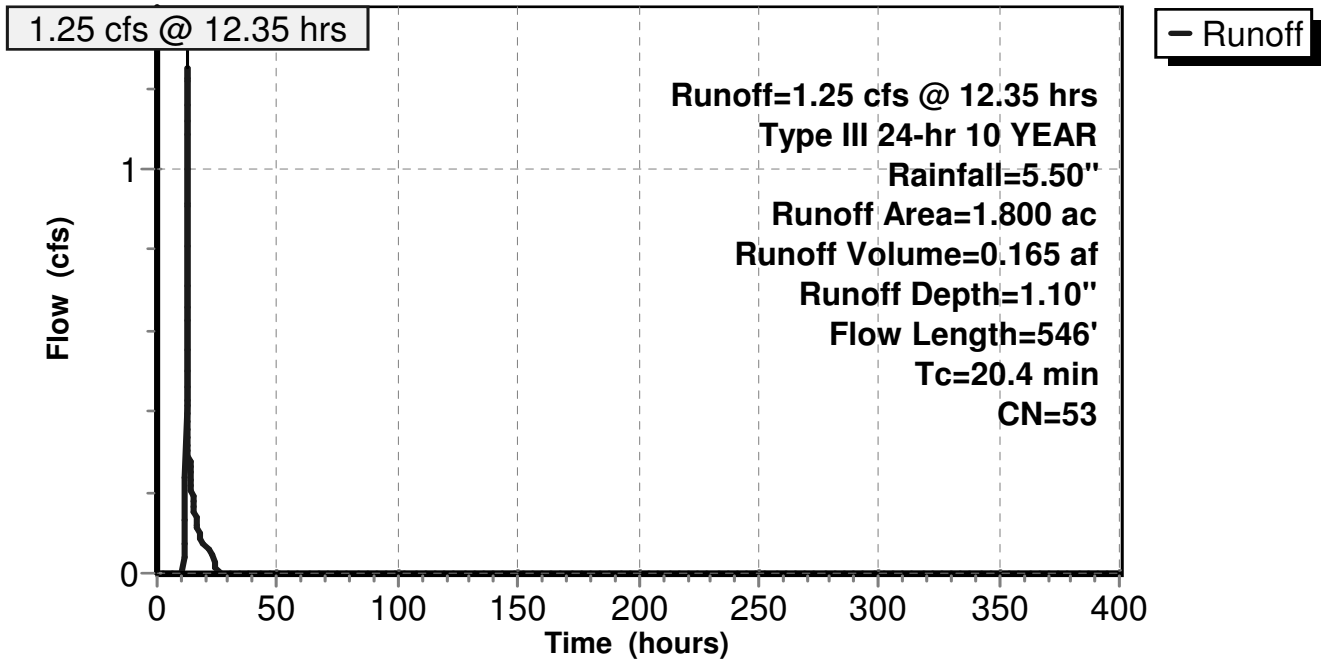
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=5.50"

Area (ac)	CN	Description
0.600	98	Paved parking & roofs
1.200	30	Woods, Good, HSG A
1.800	53	Weighted Average
1.200		Pervious Area
0.600		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
16.0	90	0.0300	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.7	126	0.0600	1.22		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.5	320	0.0200	2.18	2.61	Channel Flow, Area= 1.2 sf Perim= 5.5' r= 0.22' n= 0.035
20.4	546	Total			

Subcatchment 3.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Subcatchment 3.1S:

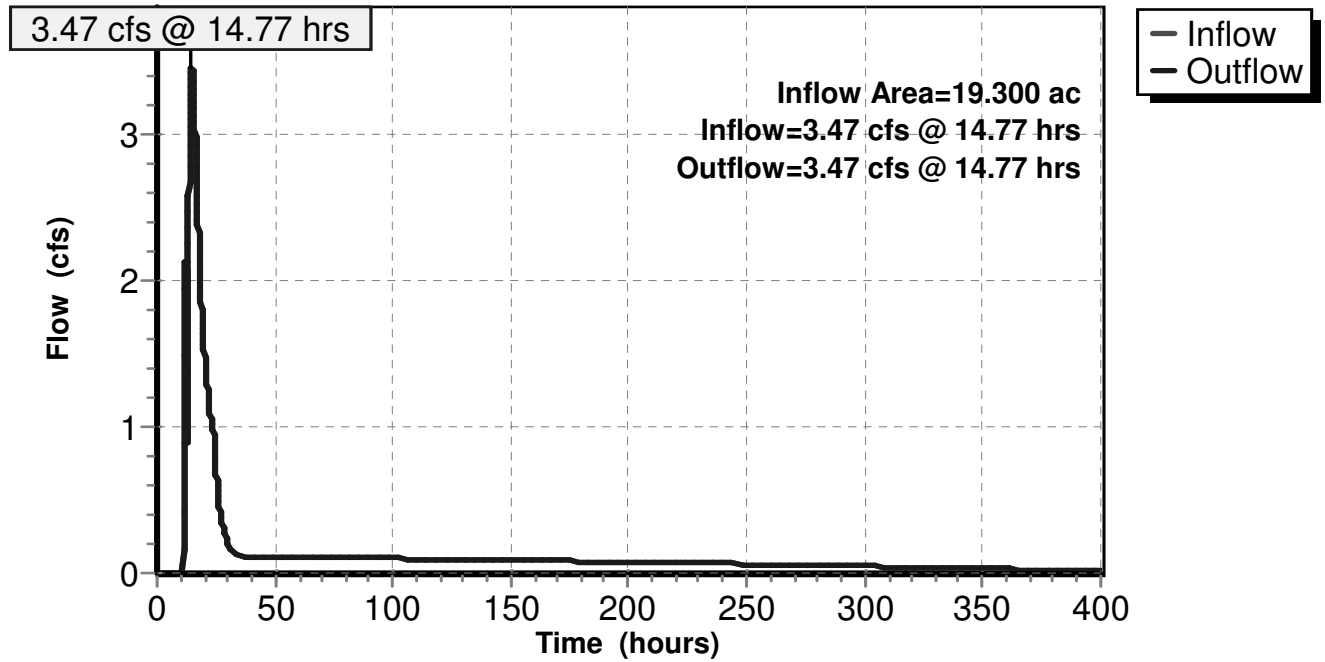
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	5.50	1.10	0.00	330.00	5.50	1.10	0.00
2.50	0.14	0.00	0.00	167.50	5.50	1.10	0.00	332.50	5.50	1.10	0.00
5.00	0.31	0.00	0.00	170.00	5.50	1.10	0.00	335.00	5.50	1.10	0.00
7.50	0.56	0.00	0.00	172.50	5.50	1.10	0.00	337.50	5.50	1.10	0.00
10.00	1.04	0.00	0.00	175.00	5.50	1.10	0.00	340.00	5.50	1.10	0.00
12.50	3.86	0.40	1.08	177.50	5.50	1.10	0.00	342.50	5.50	1.10	0.00
15.00	4.70	0.73	0.18	180.00	5.50	1.10	0.00	345.00	5.50	1.10	0.00
17.50	5.06	0.89	0.09	182.50	5.50	1.10	0.00	347.50	5.50	1.10	0.00
20.00	5.26	0.99	0.06	185.00	5.50	1.10	0.00	350.00	5.50	1.10	0.00
22.50	5.42	1.06	0.05	187.50	5.50	1.10	0.00	352.50	5.50	1.10	0.00
25.00	5.50	1.10	0.00	190.00	5.50	1.10	0.00	355.00	5.50	1.10	0.00
27.50	5.50	1.10	0.00	192.50	5.50	1.10	0.00	357.50	5.50	1.10	0.00
30.00	5.50	1.10	0.00	195.00	5.50	1.10	0.00	360.00	5.50	1.10	0.00
32.50	5.50	1.10	0.00	197.50	5.50	1.10	0.00	362.50	5.50	1.10	0.00
35.00	5.50	1.10	0.00	200.00	5.50	1.10	0.00	365.00	5.50	1.10	0.00
37.50	5.50	1.10	0.00	202.50	5.50	1.10	0.00	367.50	5.50	1.10	0.00
40.00	5.50	1.10	0.00	205.00	5.50	1.10	0.00	370.00	5.50	1.10	0.00
42.50	5.50	1.10	0.00	207.50	5.50	1.10	0.00	372.50	5.50	1.10	0.00
45.00	5.50	1.10	0.00	210.00	5.50	1.10	0.00	375.00	5.50	1.10	0.00
47.50	5.50	1.10	0.00	212.50	5.50	1.10	0.00	377.50	5.50	1.10	0.00
50.00	5.50	1.10	0.00	215.00	5.50	1.10	0.00	380.00	5.50	1.10	0.00
52.50	5.50	1.10	0.00	217.50	5.50	1.10	0.00	382.50	5.50	1.10	0.00
55.00	5.50	1.10	0.00	220.00	5.50	1.10	0.00	385.00	5.50	1.10	0.00
57.50	5.50	1.10	0.00	222.50	5.50	1.10	0.00	387.50	5.50	1.10	0.00
60.00	5.50	1.10	0.00	225.00	5.50	1.10	0.00	390.00	5.50	1.10	0.00
62.50	5.50	1.10	0.00	227.50	5.50	1.10	0.00	392.50	5.50	1.10	0.00
65.00	5.50	1.10	0.00	230.00	5.50	1.10	0.00	395.00	5.50	1.10	0.00
67.50	5.50	1.10	0.00	232.50	5.50	1.10	0.00	397.50	5.50	1.10	0.00
70.00	5.50	1.10	0.00	235.00	5.50	1.10	0.00	400.00	5.50	1.10	0.00
72.50	5.50	1.10	0.00	237.50	5.50	1.10	0.00				
75.00	5.50	1.10	0.00	240.00	5.50	1.10	0.00				
77.50	5.50	1.10	0.00	242.50	5.50	1.10	0.00				
80.00	5.50	1.10	0.00	245.00	5.50	1.10	0.00				
82.50	5.50	1.10	0.00	247.50	5.50	1.10	0.00				
85.00	5.50	1.10	0.00	250.00	5.50	1.10	0.00				
87.50	5.50	1.10	0.00	252.50	5.50	1.10	0.00				
90.00	5.50	1.10	0.00	255.00	5.50	1.10	0.00				
92.50	5.50	1.10	0.00	257.50	5.50	1.10	0.00				
95.00	5.50	1.10	0.00	260.00	5.50	1.10	0.00				
97.50	5.50	1.10	0.00	262.50	5.50	1.10	0.00				
100.00	5.50	1.10	0.00	265.00	5.50	1.10	0.00				
102.50	5.50	1.10	0.00	267.50	5.50	1.10	0.00				
105.00	5.50	1.10	0.00	270.00	5.50	1.10	0.00				
107.50	5.50	1.10	0.00	272.50	5.50	1.10	0.00				
110.00	5.50	1.10	0.00	275.00	5.50	1.10	0.00				
112.50	5.50	1.10	0.00	277.50	5.50	1.10	0.00				
115.00	5.50	1.10	0.00	280.00	5.50	1.10	0.00				
117.50	5.50	1.10	0.00	282.50	5.50	1.10	0.00				
120.00	5.50	1.10	0.00	285.00	5.50	1.10	0.00				
122.50	5.50	1.10	0.00	287.50	5.50	1.10	0.00				
125.00	5.50	1.10	0.00	290.00	5.50	1.10	0.00				
127.50	5.50	1.10	0.00	292.50	5.50	1.10	0.00				
130.00	5.50	1.10	0.00	295.00	5.50	1.10	0.00				
132.50	5.50	1.10	0.00	297.50	5.50	1.10	0.00				
135.00	5.50	1.10	0.00	300.00	5.50	1.10	0.00				
137.50	5.50	1.10	0.00	302.50	5.50	1.10	0.00				
140.00	5.50	1.10	0.00	305.00	5.50	1.10	0.00				
142.50	5.50	1.10	0.00	307.50	5.50	1.10	0.00				
145.00	5.50	1.10	0.00	310.00	5.50	1.10	0.00				
147.50	5.50	1.10	0.00	312.50	5.50	1.10	0.00				
150.00	5.50	1.10	0.00	315.00	5.50	1.10	0.00				
152.50	5.50	1.10	0.00	317.50	5.50	1.10	0.00				
155.00	5.50	1.10	0.00	320.00	5.50	1.10	0.00				
157.50	5.50	1.10	0.00	322.50	5.50	1.10	0.00				
160.00	5.50	1.10	0.00	325.00	5.50	1.10	0.00				
162.50	5.50	1.10	0.00	327.50	5.50	1.10	0.00				

Summary for Reach DESIGN LINE 1:

Inflow Area = 19.300 ac, 52.07% Impervious, Inflow Depth > 2.72" for 10 YEAR event
Inflow = 3.47 cfs @ 14.77 hrs, Volume= 4.373 af
Outflow = 3.47 cfs @ 14.77 hrs, Volume= 4.373 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

**Reach DESIGN LINE 1:
Hydrograph**



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Reach DESIGN LINE 1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.09		0.09	330.00	0.04		0.04
2.50	0.00		0.00	167.50	0.08		0.08	332.50	0.04		0.04
5.00	0.00		0.00	170.00	0.08		0.08	335.00	0.04		0.04
7.50	0.00		0.00	172.50	0.08		0.08	337.50	0.04		0.04
10.00	0.00		0.00	175.00	0.08		0.08	340.00	0.04		0.04
12.50	1.71		1.71	177.50	0.08		0.08	342.50	0.03		0.03
15.00	3.45		3.45	180.00	0.08		0.08	345.00	0.03		0.03
17.50	2.34		2.34	182.50	0.08		0.08	347.50	0.03		0.03
20.00	1.50		1.50	185.00	0.08		0.08	350.00	0.03		0.03
22.50	1.12		1.12	187.50	0.08		0.08	352.50	0.03		0.03
25.00	0.70		0.70	190.00	0.08		0.08	355.00	0.03		0.03
27.50	0.35		0.35	192.50	0.08		0.08	357.50	0.03		0.03
30.00	0.21		0.21	195.00	0.08		0.08	360.00	0.03		0.03
32.50	0.14		0.14	197.50	0.08		0.08	362.50	0.03		0.03
35.00	0.12		0.12	200.00	0.08		0.08	365.00	0.03		0.03
37.50	0.12		0.12	202.50	0.08		0.08	367.50	0.03		0.03
40.00	0.11		0.11	205.00	0.07		0.07	370.00	0.03		0.03
42.50	0.11		0.11	207.50	0.07		0.07	372.50	0.03		0.03
45.00	0.11		0.11	210.00	0.07		0.07	375.00	0.02		0.02
47.50	0.11		0.11	212.50	0.07		0.07	377.50	0.02		0.02
50.00	0.11		0.11	215.00	0.07		0.07	380.00	0.02		0.02
52.50	0.11		0.11	217.50	0.07		0.07	382.50	0.02		0.02
55.00	0.11		0.11	220.00	0.07		0.07	385.00	0.02		0.02
57.50	0.11		0.11	222.50	0.07		0.07	387.50	0.02		0.02
60.00	0.11		0.11	225.00	0.07		0.07	390.00	0.02		0.02
62.50	0.11		0.11	227.50	0.07		0.07	392.50	0.02		0.02
65.00	0.11		0.11	230.00	0.07		0.07	395.00	0.02		0.02
67.50	0.11		0.11	232.50	0.07		0.07	397.50	0.02		0.02
70.00	0.11		0.11	235.00	0.07		0.07	400.00	0.02		0.02
72.50	0.11		0.11	237.50	0.07		0.07				
75.00	0.11		0.11	240.00	0.07		0.07				
77.50	0.11		0.11	242.50	0.06		0.06				
80.00	0.11		0.11	245.00	0.06		0.06				
82.50	0.11		0.11	247.50	0.06		0.06				
85.00	0.10		0.10	250.00	0.06		0.06				
87.50	0.10		0.10	252.50	0.06		0.06				
90.00	0.10		0.10	255.00	0.06		0.06				
92.50	0.10		0.10	257.50	0.06		0.06				
95.00	0.10		0.10	260.00	0.06		0.06				
97.50	0.10		0.10	262.50	0.06		0.06				
100.00	0.10		0.10	265.00	0.06		0.06				
102.50	0.10		0.10	267.50	0.06		0.06				
105.00	0.10		0.10	270.00	0.06		0.06				
107.50	0.10		0.10	272.50	0.06		0.06				
110.00	0.10		0.10	275.00	0.05		0.05				
112.50	0.10		0.10	277.50	0.05		0.05				
115.00	0.10		0.10	280.00	0.05		0.05				
117.50	0.10		0.10	282.50	0.05		0.05				
120.00	0.10		0.10	285.00	0.05		0.05				
122.50	0.10		0.10	287.50	0.05		0.05				
125.00	0.10		0.10	290.00	0.05		0.05				
127.50	0.09		0.09	292.50	0.05		0.05				
130.00	0.09		0.09	295.00	0.05		0.05				
132.50	0.09		0.09	297.50	0.05		0.05				
135.00	0.09		0.09	300.00	0.05		0.05				
137.50	0.09		0.09	302.50	0.05		0.05				
140.00	0.09		0.09	305.00	0.05		0.05				
142.50	0.09		0.09	307.50	0.05		0.05				
145.00	0.09		0.09	310.00	0.04		0.04				
147.50	0.09		0.09	312.50	0.04		0.04				
150.00	0.09		0.09	315.00	0.04		0.04				
152.50	0.09		0.09	317.50	0.04		0.04				
155.00	0.09		0.09	320.00	0.04		0.04				
157.50	0.09		0.09	322.50	0.04		0.04				
160.00	0.09		0.09	325.00	0.04		0.04				
162.50	0.09		0.09	327.50	0.04		0.04				

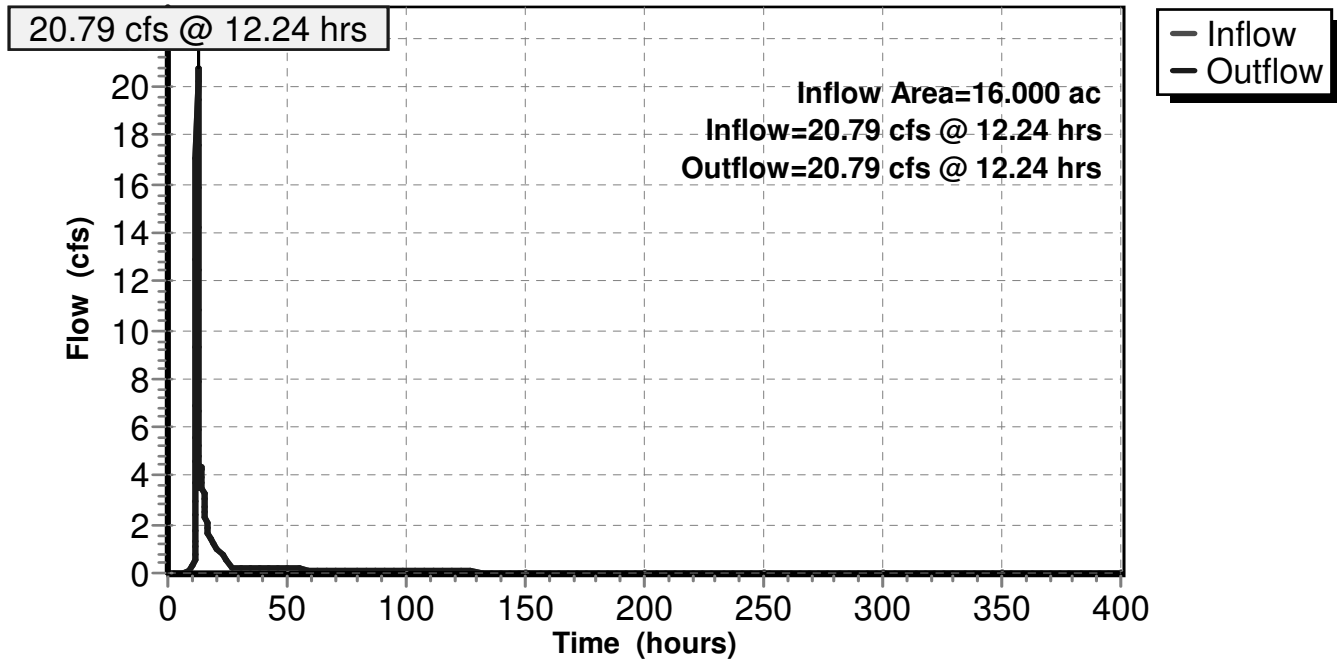
Summary for Reach DESIGN POINT 2:

Inflow Area = 16.000 ac, 31.28% Impervious, Inflow Depth = 3.03" for 10 YEAR event
Inflow = 20.79 cfs @ 12.24 hrs, Volume= 4.045 af
Outflow = 20.79 cfs @ 12.24 hrs, Volume= 4.045 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

Reach DESIGN POINT 2:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Reach DESIGN POINT 2:

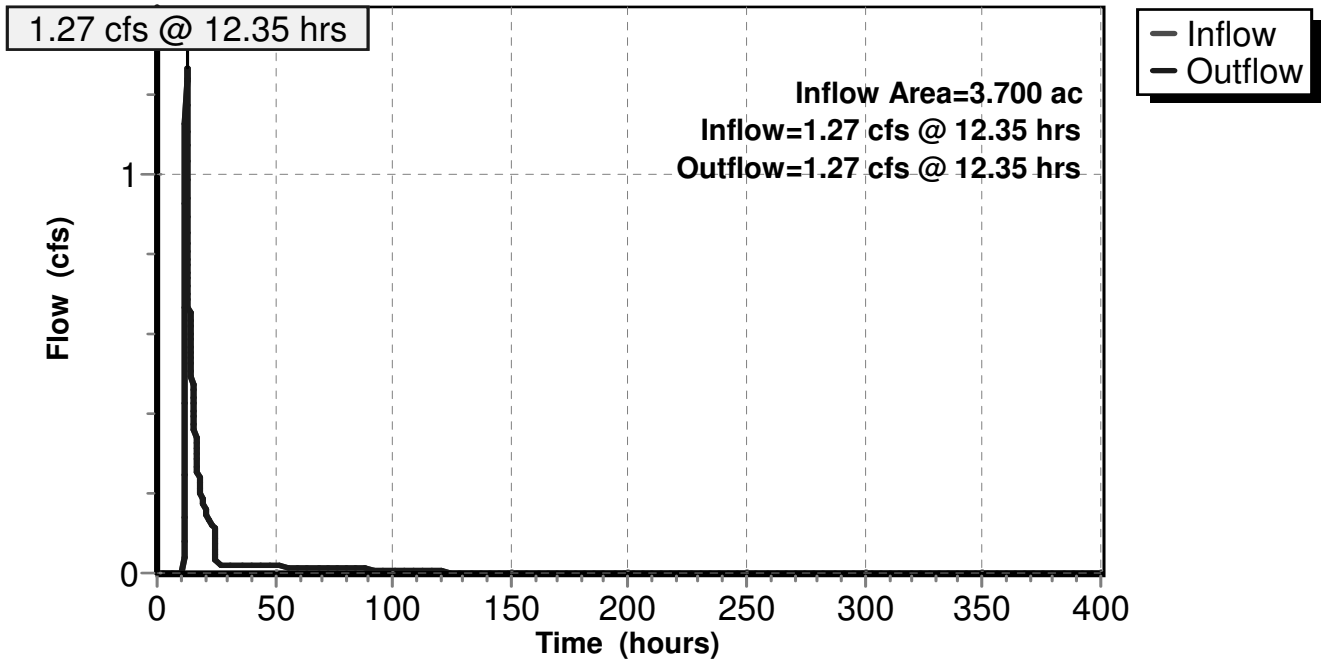
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.04		0.04	330.00	0.00		0.00
2.50	0.00		0.00	167.50	0.04		0.04	332.50	0.00		0.00
5.00	0.00		0.00	170.00	0.04		0.04	335.00	0.00		0.00
7.50	0.01		0.01	172.50	0.04		0.04	337.50	0.00		0.00
10.00	0.15		0.15	175.00	0.03		0.03	340.00	0.00		0.00
12.50	12.49		12.49	177.50	0.03		0.03	342.50	0.00		0.00
15.00	3.03		3.03	180.00	0.03		0.03	345.00	0.00		0.00
17.50	1.53		1.53	182.50	0.03		0.03	347.50	0.00		0.00
20.00	1.02		1.02	185.00	0.03		0.03	350.00	0.00		0.00
22.50	0.80		0.80	187.50	0.00		0.00	352.50	0.00		0.00
25.00	0.27		0.27	190.00	0.00		0.00	355.00	0.00		0.00
27.50	0.26		0.26	192.50	0.00		0.00	357.50	0.00		0.00
30.00	0.25		0.25	195.00	0.00		0.00	360.00	0.00		0.00
32.50	0.24		0.24	197.50	0.00		0.00	362.50	0.00		0.00
35.00	0.24		0.24	200.00	0.00		0.00	365.00	0.00		0.00
37.50	0.23		0.23	202.50	0.00		0.00	367.50	0.00		0.00
40.00	0.22		0.22	205.00	0.00		0.00	370.00	0.00		0.00
42.50	0.21		0.21	207.50	0.00		0.00	372.50	0.00		0.00
45.00	0.21		0.21	210.00	0.00		0.00	375.00	0.00		0.00
47.50	0.20		0.20	212.50	0.00		0.00	377.50	0.00		0.00
50.00	0.19		0.19	215.00	0.00		0.00	380.00	0.00		0.00
52.50	0.18		0.18	217.50	0.00		0.00	382.50	0.00		0.00
55.00	0.17		0.17	220.00	0.00		0.00	385.00	0.00		0.00
57.50	0.17		0.17	222.50	0.00		0.00	387.50	0.00		0.00
60.00	0.16		0.16	225.00	0.00		0.00	390.00	0.00		0.00
62.50	0.15		0.15	227.50	0.00		0.00	392.50	0.00		0.00
65.00	0.14		0.14	230.00	0.00		0.00	395.00	0.00		0.00
67.50	0.13		0.13	232.50	0.00		0.00	397.50	0.00		0.00
70.00	0.13		0.13	235.00	0.00		0.00	400.00	0.00		0.00
72.50	0.12		0.12	237.50	0.00		0.00				
75.00	0.11		0.11	240.00	0.00		0.00				
77.50	0.10		0.10	242.50	0.00		0.00				
80.00	0.09		0.09	245.00	0.00		0.00				
82.50	0.08		0.08	247.50	0.00		0.00				
85.00	0.08		0.08	250.00	0.00		0.00				
87.50	0.07		0.07	252.50	0.00		0.00				
90.00	0.07		0.07	255.00	0.00		0.00				
92.50	0.07		0.07	257.50	0.00		0.00				
95.00	0.07		0.07	260.00	0.00		0.00				
97.50	0.07		0.07	262.50	0.00		0.00				
100.00	0.07		0.07	265.00	0.00		0.00				
102.50	0.07		0.07	267.50	0.00		0.00				
105.00	0.07		0.07	270.00	0.00		0.00				
107.50	0.07		0.07	272.50	0.00		0.00				
110.00	0.06		0.06	275.00	0.00		0.00				
112.50	0.06		0.06	277.50	0.00		0.00				
115.00	0.06		0.06	280.00	0.00		0.00				
117.50	0.06		0.06	282.50	0.00		0.00				
120.00	0.06		0.06	285.00	0.00		0.00				
122.50	0.06		0.06	287.50	0.00		0.00				
125.00	0.06		0.06	290.00	0.00		0.00				
127.50	0.06		0.06	292.50	0.00		0.00				
130.00	0.05		0.05	295.00	0.00		0.00				
132.50	0.05		0.05	297.50	0.00		0.00				
135.00	0.05		0.05	300.00	0.00		0.00				
137.50	0.05		0.05	302.50	0.00		0.00				
140.00	0.05		0.05	305.00	0.00		0.00				
142.50	0.05		0.05	307.50	0.00		0.00				
145.00	0.05		0.05	310.00	0.00		0.00				
147.50	0.05		0.05	312.50	0.00		0.00				
150.00	0.05		0.05	315.00	0.00		0.00				
152.50	0.04		0.04	317.50	0.00		0.00				
155.00	0.04		0.04	320.00	0.00		0.00				
157.50	0.04		0.04	322.50	0.00		0.00				
160.00	0.04		0.04	325.00	0.00		0.00				
162.50	0.04		0.04	327.50	0.00		0.00				

Summary for Reach Design Point 3:

Inflow Area = 3.700 ac, 40.54% Impervious, Inflow Depth = 1.48" for 10 YEAR event
Inflow = 1.27 cfs @ 12.35 hrs, Volume= 0.455 af
Outflow = 1.27 cfs @ 12.35 hrs, Volume= 0.455 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

**Reach Design Point 3:
Hydrograph**



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Reach Design Point 3:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.00		0.00	330.00	0.00		0.00
2.50	0.00		0.00	167.50	0.00		0.00	332.50	0.00		0.00
5.00	0.00		0.00	170.00	0.00		0.00	335.00	0.00		0.00
7.50	0.00		0.00	172.50	0.00		0.00	337.50	0.00		0.00
10.00	0.00		0.00	175.00	0.00		0.00	340.00	0.00		0.00
12.50	1.11		1.11	177.50	0.00		0.00	342.50	0.00		0.00
15.00	0.48		0.48	180.00	0.00		0.00	345.00	0.00		0.00
17.50	0.25		0.25	182.50	0.00		0.00	347.50	0.00		0.00
20.00	0.17		0.17	185.00	0.00		0.00	350.00	0.00		0.00
22.50	0.13		0.13	187.50	0.00		0.00	352.50	0.00		0.00
25.00	0.04		0.04	190.00	0.00		0.00	355.00	0.00		0.00
27.50	0.02		0.02	192.50	0.00		0.00	357.50	0.00		0.00
30.00	0.02		0.02	195.00	0.00		0.00	360.00	0.00		0.00
32.50	0.02		0.02	197.50	0.00		0.00	362.50	0.00		0.00
35.00	0.02		0.02	200.00	0.00		0.00	365.00	0.00		0.00
37.50	0.02		0.02	202.50	0.00		0.00	367.50	0.00		0.00
40.00	0.02		0.02	205.00	0.00		0.00	370.00	0.00		0.00
42.50	0.02		0.02	207.50	0.00		0.00	372.50	0.00		0.00
45.00	0.02		0.02	210.00	0.00		0.00	375.00	0.00		0.00
47.50	0.02		0.02	212.50	0.00		0.00	377.50	0.00		0.00
50.00	0.02		0.02	215.00	0.00		0.00	380.00	0.00		0.00
52.50	0.02		0.02	217.50	0.00		0.00	382.50	0.00		0.00
55.00	0.02		0.02	220.00	0.00		0.00	385.00	0.00		0.00
57.50	0.02		0.02	222.50	0.00		0.00	387.50	0.00		0.00
60.00	0.02		0.02	225.00	0.00		0.00	390.00	0.00		0.00
62.50	0.02		0.02	227.50	0.00		0.00	392.50	0.00		0.00
65.00	0.01		0.01	230.00	0.00		0.00	395.00	0.00		0.00
67.50	0.01		0.01	232.50	0.00		0.00	397.50	0.00		0.00
70.00	0.01		0.01	235.00	0.00		0.00	400.00	0.00		0.00
72.50	0.01		0.01	237.50	0.00		0.00				
75.00	0.01		0.01	240.00	0.00		0.00				
77.50	0.01		0.01	242.50	0.00		0.00				
80.00	0.01		0.01	245.00	0.00		0.00				
82.50	0.01		0.01	247.50	0.00		0.00				
85.00	0.01		0.01	250.00	0.00		0.00				
87.50	0.01		0.01	252.50	0.00		0.00				
90.00	0.01		0.01	255.00	0.00		0.00				
92.50	0.01		0.01	257.50	0.00		0.00				
95.00	0.01		0.01	260.00	0.00		0.00				
97.50	0.01		0.01	262.50	0.00		0.00				
100.00	0.01		0.01	265.00	0.00		0.00				
102.50	0.01		0.01	267.50	0.00		0.00				
105.00	0.01		0.01	270.00	0.00		0.00				
107.50	0.01		0.01	272.50	0.00		0.00				
110.00	0.01		0.01	275.00	0.00		0.00				
112.50	0.01		0.01	277.50	0.00		0.00				
115.00	0.00		0.00	280.00	0.00		0.00				
117.50	0.00		0.00	282.50	0.00		0.00				
120.00	0.00		0.00	285.00	0.00		0.00				
122.50	0.00		0.00	287.50	0.00		0.00				
125.00	0.00		0.00	290.00	0.00		0.00				
127.50	0.00		0.00	292.50	0.00		0.00				
130.00	0.00		0.00	295.00	0.00		0.00				
132.50	0.00		0.00	297.50	0.00		0.00				
135.00	0.00		0.00	300.00	0.00		0.00				
137.50	0.00		0.00	302.50	0.00		0.00				
140.00	0.00		0.00	305.00	0.00		0.00				
142.50	0.00		0.00	307.50	0.00		0.00				
145.00	0.00		0.00	310.00	0.00		0.00				
147.50	0.00		0.00	312.50	0.00		0.00				
150.00	0.00		0.00	315.00	0.00		0.00				
152.50	0.00		0.00	317.50	0.00		0.00				
155.00	0.00		0.00	320.00	0.00		0.00				
157.50	0.00		0.00	322.50	0.00		0.00				
160.00	0.00		0.00	325.00	0.00		0.00				
162.50	0.00		0.00	327.50	0.00		0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Pond 1.0P:

Inflow Area = 12.500 ac, 72.08% Impervious, Inflow Depth = 3.73" for 10 YEAR event
 Inflow = 56.30 cfs @ 12.06 hrs, Volume= 3.886 af
 Outflow = 30.78 cfs @ 12.18 hrs, Volume= 3.850 af, Atten= 45%, Lag= 7.1 min
 Primary = 30.78 cfs @ 12.18 hrs, Volume= 3.850 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 473.00' Surf.Area= 21,200 sf Storage= 38,250 cf
 Peak Elev= 475.00' @ 12.18 hrs Surf.Area= 33,014 sf Storage= 92,428 cf (54,178 cf above start)
 Flood Elev= 476.00' Surf.Area= 39,000 sf Storage= 128,350 cf (90,100 cf above start)

Plug-Flow detention time= 1,650.0 min calculated for 2.971 af (76% of inflow)
 Center-of-Mass det. time= 1,193.5 min (1,998.7 - 805.1)

Volume	Invert	Avail.Storage	Storage Description
#1	468.00'	170,400 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
468.00	1,700	0	0
470.00	4,200	5,900	5,900
472.00	11,700	15,900	21,800
473.00	21,200	16,450	38,250
474.00	27,000	24,100	62,350
476.00	39,000	66,000	128,350
477.00	45,100	42,050	170,400

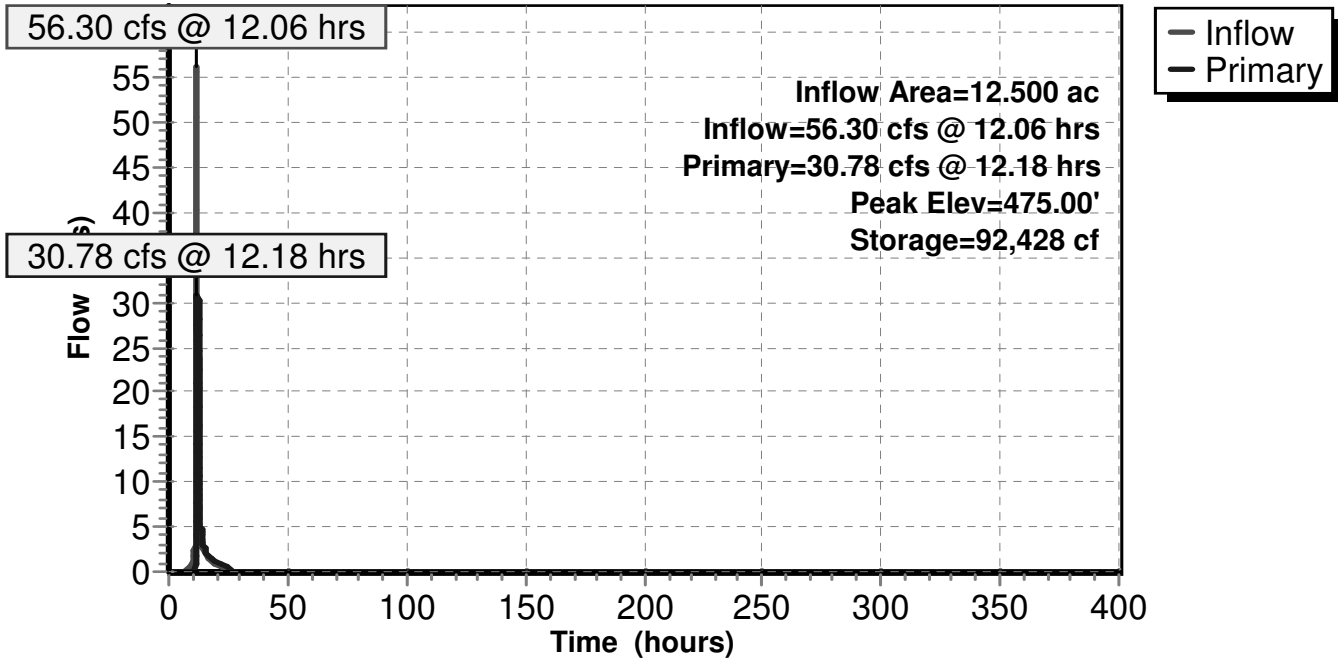
Device	Routing	Invert	Outlet Devices
#1	Primary	467.00'	36.0" x 142.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 462.50' S= 0.0317 '/' Cc= 0.900 n= 0.012
#2	Device 1	473.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	473.90'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=30.63 cfs @ 12.18 hrs HW=475.00' TW=453.56' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 30.63 cfs of 86.77 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 6.74 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 30.59 cfs @ 3.48 fps)

Pond 1.0P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Pond 1.0P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	38,250	473.00	0.00	330.00	0.00	41,545	473.15	0.01
5.00	0.00	38,250	473.00	0.00	335.00	0.00	41,390	473.15	0.01
10.00	1.47	45,513	473.33	0.01	340.00	0.00	41,241	473.14	0.01
15.00	2.40	66,292	474.14	2.75	345.00	0.00	41,096	473.13	0.01
20.00	0.84	62,764	474.02	0.90	350.00	0.00	40,957	473.13	0.01
25.00	0.00	60,777	473.94	0.21	355.00	0.00	40,822	473.12	0.01
30.00	0.00	59,642	473.90	0.02	360.00	0.00	40,693	473.11	0.01
35.00	0.00	59,207	473.88	0.02	365.00	0.00	40,569	473.11	0.01
40.00	0.00	58,776	473.87	0.02	370.00	0.00	40,450	473.10	0.01
45.00	0.00	58,349	473.85	0.02	375.00	0.00	40,336	473.10	0.01
50.00	0.00	57,926	473.83	0.02	380.00	0.00	40,227	473.09	0.01
55.00	0.00	57,508	473.82	0.02	385.00	0.00	40,124	473.09	0.01
60.00	0.00	57,094	473.80	0.02	390.00	0.00	40,025	473.08	0.01
65.00	0.00	56,684	473.79	0.02	395.00	0.00	39,931	473.08	0.01
70.00	0.00	56,278	473.77	0.02	400.00	0.00	39,843	473.07	0.00
75.00	0.00	55,877	473.75	0.02					
80.00	0.00	55,481	473.74	0.02					
85.00	0.00	55,088	473.72	0.02					
90.00	0.00	54,700	473.71	0.02					
95.00	0.00	54,317	473.69	0.02					
100.00	0.00	53,938	473.68	0.02					
105.00	0.00	53,563	473.66	0.02					
110.00	0.00	53,193	473.65	0.02					
115.00	0.00	52,827	473.63	0.02					
120.00	0.00	52,466	473.62	0.02					
125.00	0.00	52,109	473.60	0.02					
130.00	0.00	51,757	473.59	0.02					
135.00	0.00	51,410	473.58	0.02					
140.00	0.00	51,066	473.56	0.02					
145.00	0.00	50,728	473.55	0.02					
150.00	0.00	50,394	473.53	0.02					
155.00	0.00	50,065	473.52	0.02					
160.00	0.00	49,740	473.51	0.02					
165.00	0.00	49,420	473.49	0.02					
170.00	0.00	49,104	473.48	0.02					
175.00	0.00	48,794	473.47	0.02					
180.00	0.00	48,488	473.45	0.02					
185.00	0.00	48,186	473.44	0.02					
190.00	0.00	47,889	473.43	0.02					
195.00	0.00	47,597	473.42	0.02					
200.00	0.00	47,310	473.40	0.02					
205.00	0.00	47,028	473.39	0.02					
210.00	0.00	46,750	473.38	0.02					
215.00	0.00	46,477	473.37	0.02					
220.00	0.00	46,209	473.36	0.01					
225.00	0.00	45,945	473.35	0.01					
230.00	0.00	45,687	473.34	0.01					
235.00	0.00	45,433	473.32	0.01					
240.00	0.00	45,184	473.31	0.01					
245.00	0.00	44,940	473.30	0.01					
250.00	0.00	44,701	473.29	0.01					
255.00	0.00	44,466	473.28	0.01					
260.00	0.00	44,237	473.27	0.01					
265.00	0.00	44,012	473.26	0.01					
270.00	0.00	43,793	473.25	0.01					
275.00	0.00	43,578	473.24	0.01					
280.00	0.00	43,368	473.23	0.01					
285.00	0.00	43,163	473.22	0.01					
290.00	0.00	42,964	473.22	0.01					
295.00	0.00	42,769	473.21	0.01					
300.00	0.00	42,579	473.20	0.01					
305.00	0.00	42,394	473.19	0.01					
310.00	0.00	42,214	473.18	0.01					
315.00	0.00	42,039	473.17	0.01					
320.00	0.00	41,869	473.17	0.01					
325.00	0.00	41,705	473.16	0.01					

Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Pond 1.1P:

Inflow Area = 15.300 ac, 63.73% Impervious, Inflow Depth > 3.25" for 10 YEAR event
 Inflow = 34.00 cfs @ 12.17 hrs, Volume= 4.139 af
 Outflow = 3.14 cfs @ 14.88 hrs, Volume= 4.091 af, Atten= 91%, Lag= 162.3 min
 Primary = 3.14 cfs @ 14.88 hrs, Volume= 4.091 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 452.00' Surf.Area= 14,600 sf Storage= 47,550 cf
 Peak Elev= 456.84' @ 14.88 hrs Surf.Area= 25,978 sf Storage= 144,798 cf (97,248 cf above start)
 Flood Elev= 460.00' Surf.Area= 34,600 sf Storage= 240,350 cf (192,800 cf above start)

Plug-Flow detention time= 6,919.2 min calculated for 2.999 af (72% of inflow)
 Center-of-Mass det. time= 3,979.3 min (5,900.3 - 1,921.0)

Volume	Invert	Avail.Storage	Storage Description
#1	444.00'	276,450 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
444.00	1,000	0	0
446.00	3,600	4,600	4,600
448.00	5,200	8,800	13,400
450.00	7,100	12,300	25,700
451.00	11,000	9,050	34,750
452.00	14,600	12,800	47,550
454.00	19,000	33,600	81,150
456.00	23,800	42,800	123,950
458.00	29,000	52,800	176,750
460.00	34,600	63,600	240,350
461.00	37,600	36,100	276,450

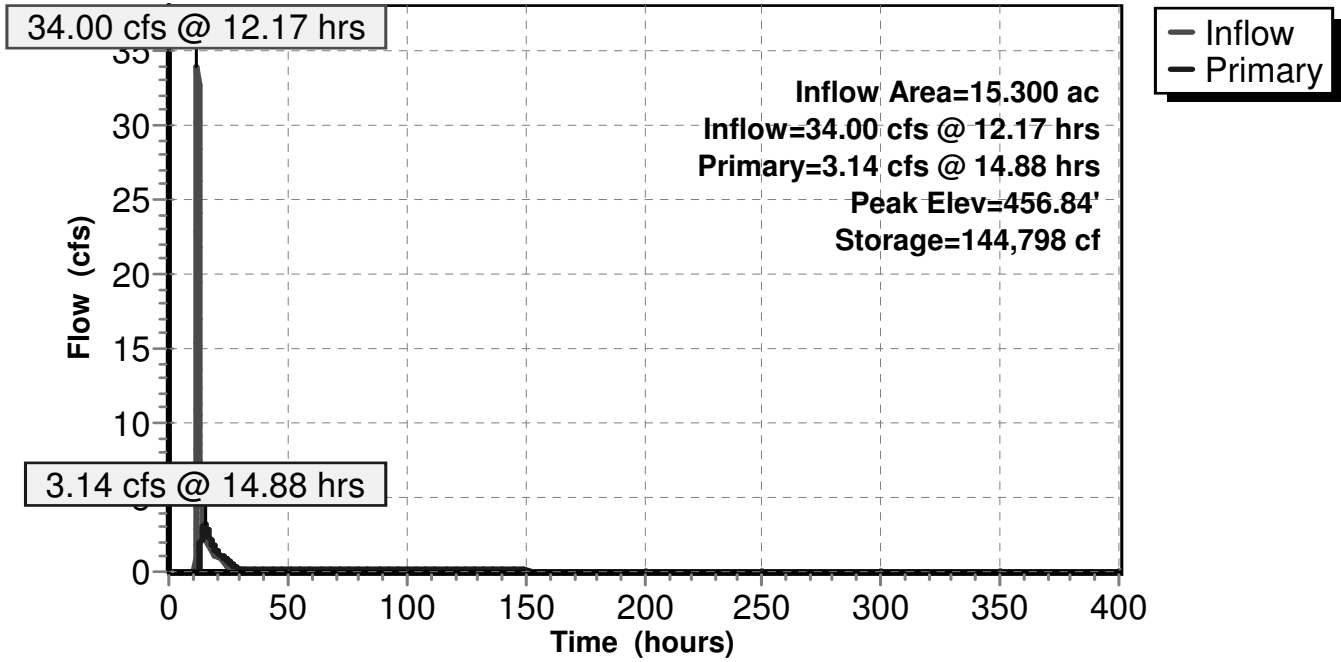
Device	Routing	Invert	Outlet Devices
#1	Primary	452.00'	36.0" x 76.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 451.20' S= 0.0105 '/' Cc= 0.900 n= 0.012
#2	Device 1	452.00'	1.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	455.90'	1.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=3.14 cfs @ 14.88 hrs HW=456.84' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 3.14 cfs of 62.18 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.13 cfs @ 10.52 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 3.01 cfs @ 3.21 fps)

Pond 1.1P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Pond 1.1P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	47,550	452.00	0.00	330.00	0.01	54,836	452.48	0.04
5.00	0.00	47,550	452.00	0.00	335.00	0.01	54,316	452.45	0.04
10.00	0.01	47,617	452.00	0.00	340.00	0.01	53,819	452.42	0.04
15.00	3.03	144,775	456.84	3.13	345.00	0.01	53,345	452.39	0.03
20.00	1.01	135,022	456.45	1.38	350.00	0.01	52,894	452.36	0.03
25.00	0.21	129,848	456.24	0.70	355.00	0.01	52,465	452.33	0.03
30.00	0.02	123,985	456.00	0.21	360.00	0.01	52,060	452.30	0.03
35.00	0.02	121,724	455.91	0.12	365.00	0.01	51,678	452.28	0.03
40.00	0.02	120,079	455.84	0.11	370.00	0.01	51,318	452.25	0.03
45.00	0.02	118,449	455.77	0.11	375.00	0.01	50,981	452.23	0.02
50.00	0.02	116,835	455.70	0.11	380.00	0.01	50,667	452.21	0.02
55.00	0.02	115,235	455.63	0.11	385.00	0.01	50,376	452.19	0.02
60.00	0.02	113,651	455.56	0.11	390.00	0.01	50,107	452.17	0.02
65.00	0.02	112,082	455.49	0.11	395.00	0.01	49,862	452.16	0.02
70.00	0.02	110,529	455.42	0.11	400.00	0.00	49,638	452.14	0.02
75.00	0.02	108,992	455.35	0.11					
80.00	0.02	107,470	455.28	0.11					
85.00	0.02	105,964	455.21	0.10					
90.00	0.02	104,475	455.14	0.10					
95.00	0.02	103,001	455.08	0.10					
100.00	0.02	101,544	455.01	0.10					
105.00	0.02	100,104	454.94	0.10					
110.00	0.02	98,680	454.87	0.10					
115.00	0.02	97,272	454.81	0.10					
120.00	0.02	95,882	454.74	0.10					
125.00	0.02	94,509	454.67	0.10					
130.00	0.02	93,153	454.61	0.09					
135.00	0.02	91,815	454.54	0.09					
140.00	0.02	90,494	454.48	0.09					
145.00	0.02	89,191	454.41	0.09					
150.00	0.02	87,906	454.35	0.09					
155.00	0.02	86,638	454.28	0.09					
160.00	0.02	85,389	454.22	0.09					
165.00	0.02	84,159	454.16	0.09					
170.00	0.02	82,947	454.09	0.08					
175.00	0.02	81,753	454.03	0.08					
180.00	0.02	80,579	453.97	0.08					
185.00	0.02	79,423	453.91	0.08					
190.00	0.02	78,287	453.85	0.08					
195.00	0.02	77,169	453.79	0.08					
200.00	0.02	76,072	453.73	0.08					
205.00	0.02	74,994	453.67	0.07					
210.00	0.02	73,935	453.61	0.07					
215.00	0.02	72,897	453.55	0.07					
220.00	0.01	71,879	453.50	0.07					
225.00	0.01	70,881	453.44	0.07					
230.00	0.01	69,903	453.39	0.07					
235.00	0.01	68,946	453.33	0.07					
240.00	0.01	68,009	453.28	0.07					
245.00	0.01	67,093	453.23	0.06					
250.00	0.01	66,198	453.17	0.06					
255.00	0.01	65,325	453.12	0.06					
260.00	0.01	64,472	453.07	0.06					
265.00	0.01	63,641	453.02	0.06					
270.00	0.01	62,831	452.98	0.06					
275.00	0.01	62,043	452.93	0.05					
280.00	0.01	61,277	452.88	0.05					
285.00	0.01	60,533	452.84	0.05					
290.00	0.01	59,810	452.79	0.05					
295.00	0.01	59,110	452.75	0.05					
300.00	0.01	58,432	452.71	0.05					
305.00	0.01	57,776	452.67	0.05					
310.00	0.01	57,143	452.63	0.04					
315.00	0.01	56,532	452.59	0.04					
320.00	0.01	55,944	452.55	0.04					
325.00	0.01	55,379	452.52	0.04					

Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Pond 2.0P:

Inflow Area = 5.100 ac, 68.33% Impervious, Inflow Depth = 4.15" for 10 YEAR event
 Inflow = 22.45 cfs @ 12.11 hrs, Volume= 1.762 af
 Outflow = 4.86 cfs @ 12.55 hrs, Volume= 1.760 af, Atten= 78%, Lag= 26.3 min
 Primary = 4.86 cfs @ 12.55 hrs, Volume= 1.760 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 478.00' Surf.Area= 14,500 sf Storage= 29,775 cf
 Peak Elev= 480.44' @ 12.55 hrs Surf.Area= 19,916 sf Storage= 71,746 cf (41,971 cf above start)
 Flood Elev= 481.25' Surf.Area= 21,775 sf Storage= 88,597 cf (58,822 cf above start)

Plug-Flow detention time= 2,046.8 min calculated for 1.076 af (61% of inflow)
 Center-of-Mass det. time= 1,197.5 min (1,993.6 - 796.1)

Volume	Invert	Avail.Storage	Storage Description
#1	472.00'	105,575 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

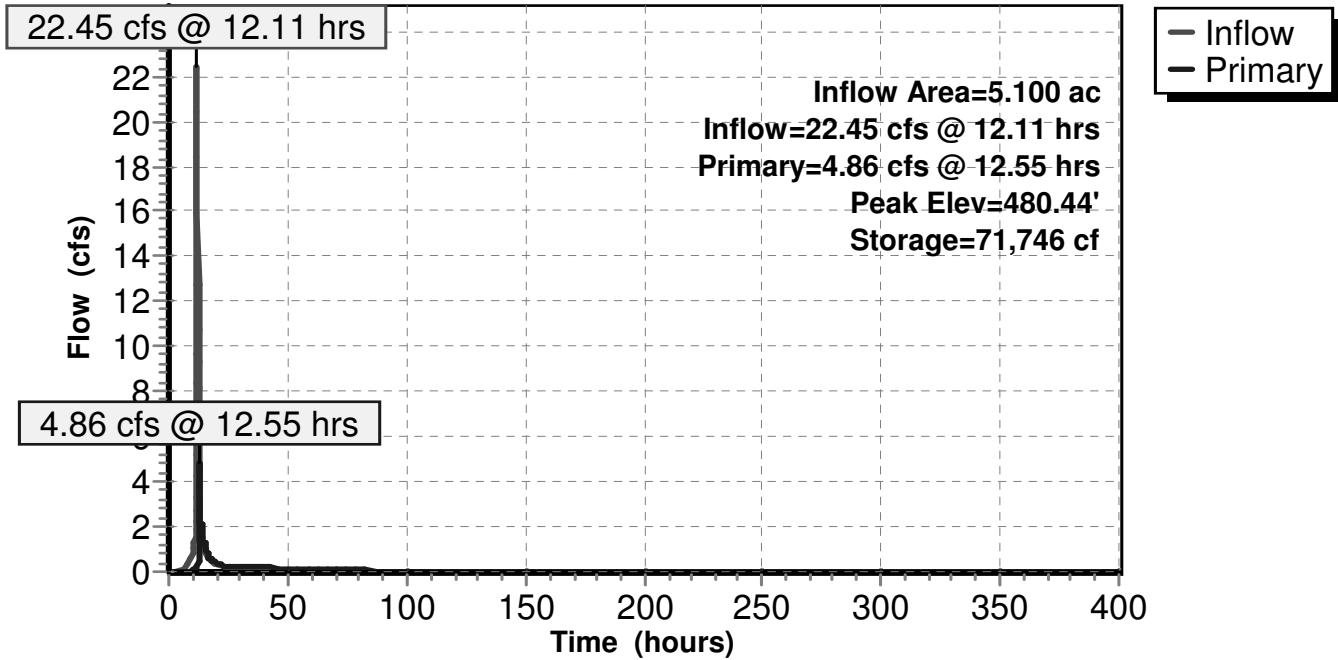
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
472.00	2,000	0	0
474.00	3,100	5,100	5,100
476.00	4,400	7,500	12,600
476.50	5,200	2,400	15,000
478.00	14,500	14,775	29,775
480.00	18,900	33,400	63,175
482.00	23,500	42,400	105,575

Device	Routing	Invert	Outlet Devices
#1	Primary	473.40'	36.0" x 117.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 472.10' S= 0.0111 '/' Cc= 0.900 n= 0.012
#2	Device 1	478.00'	2.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	480.10'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.85 cfs @ 12.55 hrs HW=480.44' TW=473.86' (Dynamic Tailwater)
 ↑ **1=Culvert** (Passes 4.85 cfs of 80.12 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.25 cfs @ 7.36 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 4.60 cfs @ 1.69 fps)

Pond 2.0P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Pond 2.0P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	29,775	478.00	0.00	330.00	0.00	29,892	478.01	0.00
5.00	0.02	29,787	478.00	0.00	335.00	0.00	29,889	478.01	0.00
10.00	0.78	34,225	478.30	0.07	340.00	0.00	29,887	478.01	0.00
15.00	1.04	67,423	480.22	1.19	345.00	0.00	29,885	478.01	0.00
20.00	0.36	65,779	480.14	0.39	350.00	0.00	29,883	478.01	0.00
25.00	0.00	64,576	480.07	0.23	355.00	0.00	29,881	478.01	0.00
30.00	0.00	60,545	479.86	0.22	360.00	0.00	29,879	478.01	0.00
35.00	0.00	56,749	479.65	0.20	365.00	0.00	29,877	478.01	0.00
40.00	0.00	53,193	479.45	0.19	370.00	0.00	29,875	478.01	0.00
45.00	0.00	49,884	479.27	0.18	375.00	0.00	29,874	478.01	0.00
50.00	0.00	46,828	479.09	0.16	380.00	0.00	29,872	478.01	0.00
55.00	0.00	44,030	478.92	0.15	385.00	0.00	29,870	478.01	0.00
60.00	0.00	41,496	478.76	0.13	390.00	0.00	29,869	478.01	0.00
65.00	0.00	39,232	478.62	0.12	395.00	0.00	29,867	478.01	0.00
70.00	0.00	37,242	478.50	0.10	400.00	0.00	29,866	478.01	0.00
75.00	0.00	35,533	478.39	0.09					
80.00	0.00	34,108	478.29	0.07					
85.00	0.00	32,971	478.22	0.06					
90.00	0.00	32,126	478.16	0.04					
95.00	0.00	31,567	478.12	0.02					
100.00	0.00	31,200	478.10	0.02					
105.00	0.00	30,948	478.08	0.01					
110.00	0.00	30,767	478.07	0.01					
115.00	0.00	30,632	478.06	0.01					
120.00	0.00	30,528	478.05	0.01					
125.00	0.00	30,446	478.05	0.00					
130.00	0.00	30,379	478.04	0.00					
135.00	0.00	30,324	478.04	0.00					
140.00	0.00	30,278	478.03	0.00					
145.00	0.00	30,239	478.03	0.00					
150.00	0.00	30,205	478.03	0.00					
155.00	0.00	30,176	478.03	0.00					
160.00	0.00	30,150	478.03	0.00					
165.00	0.00	30,128	478.02	0.00					
170.00	0.00	30,108	478.02	0.00					
175.00	0.00	30,090	478.02	0.00					
180.00	0.00	30,074	478.02	0.00					
185.00	0.00	30,059	478.02	0.00					
190.00	0.00	30,046	478.02	0.00					
195.00	0.00	30,034	478.02	0.00					
200.00	0.00	30,023	478.02	0.00					
205.00	0.00	30,013	478.02	0.00					
210.00	0.00	30,003	478.02	0.00					
215.00	0.00	29,995	478.02	0.00					
220.00	0.00	29,987	478.01	0.00					
225.00	0.00	29,979	478.01	0.00					
230.00	0.00	29,972	478.01	0.00					
235.00	0.00	29,966	478.01	0.00					
240.00	0.00	29,959	478.01	0.00					
245.00	0.00	29,954	478.01	0.00					
250.00	0.00	29,948	478.01	0.00					
255.00	0.00	29,943	478.01	0.00					
260.00	0.00	29,938	478.01	0.00					
265.00	0.00	29,934	478.01	0.00					
270.00	0.00	29,930	478.01	0.00					
275.00	0.00	29,926	478.01	0.00					
280.00	0.00	29,922	478.01	0.00					
285.00	0.00	29,918	478.01	0.00					
290.00	0.00	29,915	478.01	0.00					
295.00	0.00	29,911	478.01	0.00					
300.00	0.00	29,908	478.01	0.00					
305.00	0.00	29,905	478.01	0.00					
310.00	0.00	29,902	478.01	0.00					
315.00	0.00	29,899	478.01	0.00					
320.00	0.00	29,897	478.01	0.00					
325.00	0.00	29,894	478.01	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Pond 2.1P:

Inflow Area = 5.900 ac, 60.51% Impervious, Inflow Depth = 3.66" for 10 YEAR event
 Inflow = 4.97 cfs @ 12.54 hrs, Volume= 1.801 af
 Outflow = 1.92 cfs @ 13.78 hrs, Volume= 1.801 af, Atten= 61%, Lag= 74.0 min
 Primary = 1.92 cfs @ 13.78 hrs, Volume= 1.801 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 471.00' Surf.Area= 30 sf Storage= 8 cf
 Peak Elev= 475.76' @ 13.78 hrs Surf.Area= 7,307 sf Storage= 15,609 cf (15,600 cf above start)
 Flood Elev= 477.00' Surf.Area= 9,380 sf Storage= 25,945 cf (25,937 cf above start)

Plug-Flow detention time= 1,328.9 min calculated for 1.800 af (100% of inflow)
 Center-of-Mass det. time= 1,326.3 min (3,295.8 - 1,969.5)

Volume	Invert	Avail.Storage	Storage Description
#1	470.30'	20 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 51 cf Overall x 40.0% Voids
#2	472.00'	36,100 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		36,120 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
470.30	30	0	0
472.00	30	51	51

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
472.00	1,300	0	0
474.00	4,200	5,500	5,500
476.00	7,700	11,900	17,400
478.00	11,000	18,700	36,100

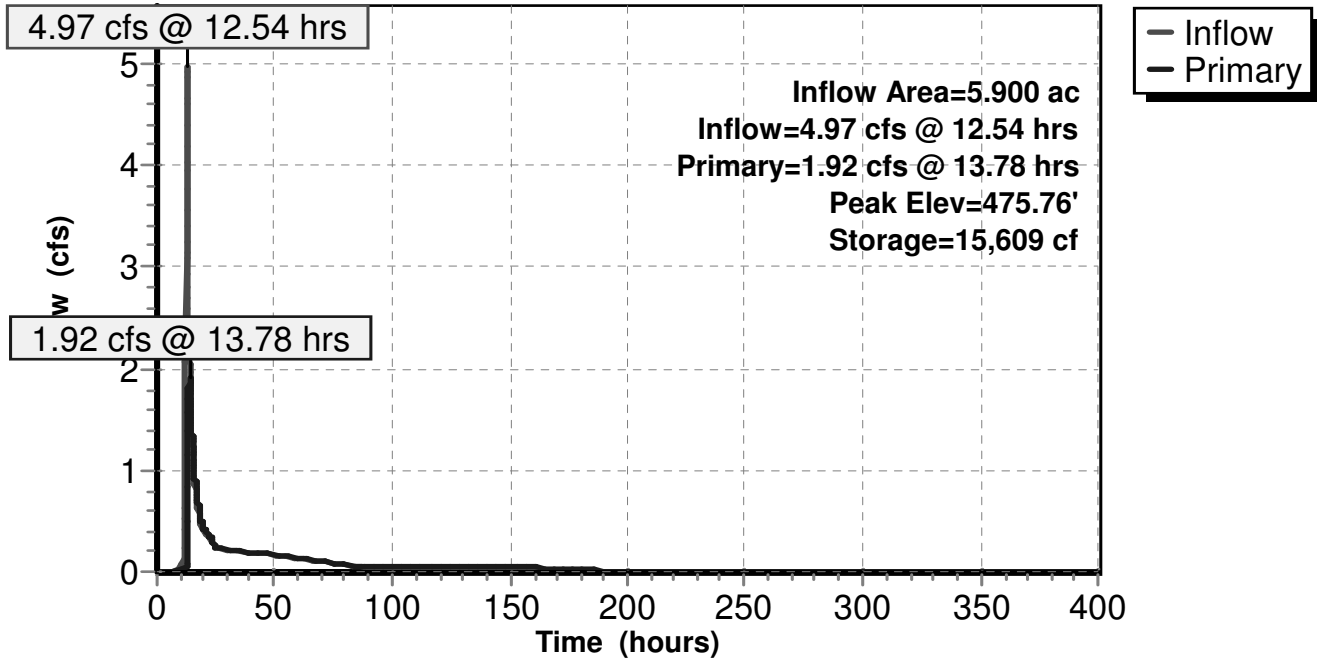
Device	Routing	Invert	Outlet Devices
#1	Primary	471.00'	24.0" x 147.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 469.50' S= 0.0102 '/' Cc= 0.900 n= 0.012
#2	Device 1	471.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	475.50'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.91 cfs @ 13.78 hrs HW=475.76' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 1.91 cfs of 29.32 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.06 cfs @ 10.46 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 1.86 cfs @ 1.44 fps)

Pond 2.1P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Pond 2.1P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	8	471.00	0.00	330.00	0.00	9	471.01	0.00
5.00	0.00	8	471.00	0.00	335.00	0.00	9	471.01	0.00
10.00	0.07	138	472.09	0.03	340.00	0.00	9	471.01	0.00
15.00	1.24	15,195	475.70	1.32	345.00	0.00	9	471.01	0.00
20.00	0.41	14,402	475.59	0.43	350.00	0.00	9	471.01	0.00
25.00	0.23	14,169	475.56	0.24	355.00	0.00	9	471.01	0.00
30.00	0.22	14,142	475.55	0.22	360.00	0.00	9	471.01	0.00
35.00	0.20	14,122	475.55	0.21	365.00	0.00	9	471.01	0.00
40.00	0.19	14,102	475.55	0.19	370.00	0.00	9	471.01	0.00
45.00	0.18	14,080	475.54	0.18	375.00	0.00	9	471.01	0.00
50.00	0.16	14,057	475.54	0.16	380.00	0.00	9	471.01	0.00
55.00	0.15	14,033	475.54	0.15	385.00	0.00	9	471.01	0.00
60.00	0.13	14,007	475.53	0.13	390.00	0.00	8	471.01	0.00
65.00	0.12	13,978	475.53	0.12	395.00	0.00	9	471.01	0.00
70.00	0.10	13,947	475.52	0.10	400.00	0.00	8	471.01	0.00
75.00	0.09	13,912	475.52	0.09					
80.00	0.07	13,871	475.51	0.07					
85.00	0.06	13,816	475.50	0.06					
90.00	0.04	13,655	475.48	0.06					
95.00	0.02	13,221	475.42	0.05					
100.00	0.02	12,604	475.32	0.05					
105.00	0.01	11,884	475.21	0.05					
110.00	0.01	11,107	475.08	0.05					
115.00	0.01	10,300	474.95	0.05					
120.00	0.01	9,478	474.81	0.05					
125.00	0.00	8,652	474.66	0.05					
130.00	0.00	7,830	474.50	0.05					
135.00	0.00	7,017	474.33	0.05					
140.00	0.00	6,216	474.16	0.05					
145.00	0.00	5,433	473.98	0.05					
150.00	0.00	4,669	473.79	0.04					
155.00	0.00	3,929	473.59	0.04					
160.00	0.00	3,215	473.39	0.04					
165.00	0.00	2,531	473.17	0.04					
170.00	0.00	1,880	472.94	0.04					
175.00	0.00	1,268	472.69	0.03					
180.00	0.00	702	472.42	0.03					
185.00	0.00	192	472.12	0.03					
190.00	0.00	9	471.02	0.00					
195.00	0.00	9	471.02	0.00					
200.00	0.00	9	471.02	0.00					
205.00	0.00	9	471.02	0.00					
210.00	0.00	9	471.02	0.00					
215.00	0.00	9	471.02	0.00					
220.00	0.00	9	471.02	0.00					
225.00	0.00	9	471.02	0.00					
230.00	0.00	9	471.02	0.00					
235.00	0.00	9	471.02	0.00					
240.00	0.00	9	471.02	0.00					
245.00	0.00	9	471.02	0.00					
250.00	0.00	9	471.02	0.00					
255.00	0.00	9	471.01	0.00					
260.00	0.00	9	471.01	0.00					
265.00	0.00	9	471.01	0.00					
270.00	0.00	9	471.01	0.00					
275.00	0.00	9	471.01	0.00					
280.00	0.00	9	471.01	0.00					
285.00	0.00	9	471.01	0.00					
290.00	0.00	9	471.01	0.00					
295.00	0.00	9	471.01	0.00					
300.00	0.00	9	471.01	0.00					
305.00	0.00	9	471.01	0.00					
310.00	0.00	9	471.01	0.00					
315.00	0.00	9	471.01	0.00					
320.00	0.00	9	471.01	0.00					
325.00	0.00	9	471.01	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Pond 2.2P:

Inflow Area = 2.100 ac, 40.48% Impervious, Inflow Depth = 3.63" for 10 YEAR event
 Inflow = 7.19 cfs @ 12.17 hrs, Volume= 0.635 af
 Outflow = 5.00 cfs @ 12.32 hrs, Volume= 0.635 af, Atten= 30%, Lag= 9.0 min
 Primary = 5.00 cfs @ 12.32 hrs, Volume= 0.635 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 471.00' Surf.Area= 4,300 sf Storage= 6,560 cf
 Peak Elev= 472.86' @ 12.32 hrs Surf.Area= 6,730 sf Storage= 16,615 cf (10,055 cf above start)
 Flood Elev= 473.25' Surf.Area= 7,338 sf Storage= 19,371 cf (12,811 cf above start)

Plug-Flow detention time= 1,411.4 min calculated for 0.484 af (76% of inflow)
 Center-of-Mass det. time= 996.7 min (1,812.1 - 815.5)

Volume	Invert	Avail.Storage	Storage Description
#1	465.00'	25,310 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

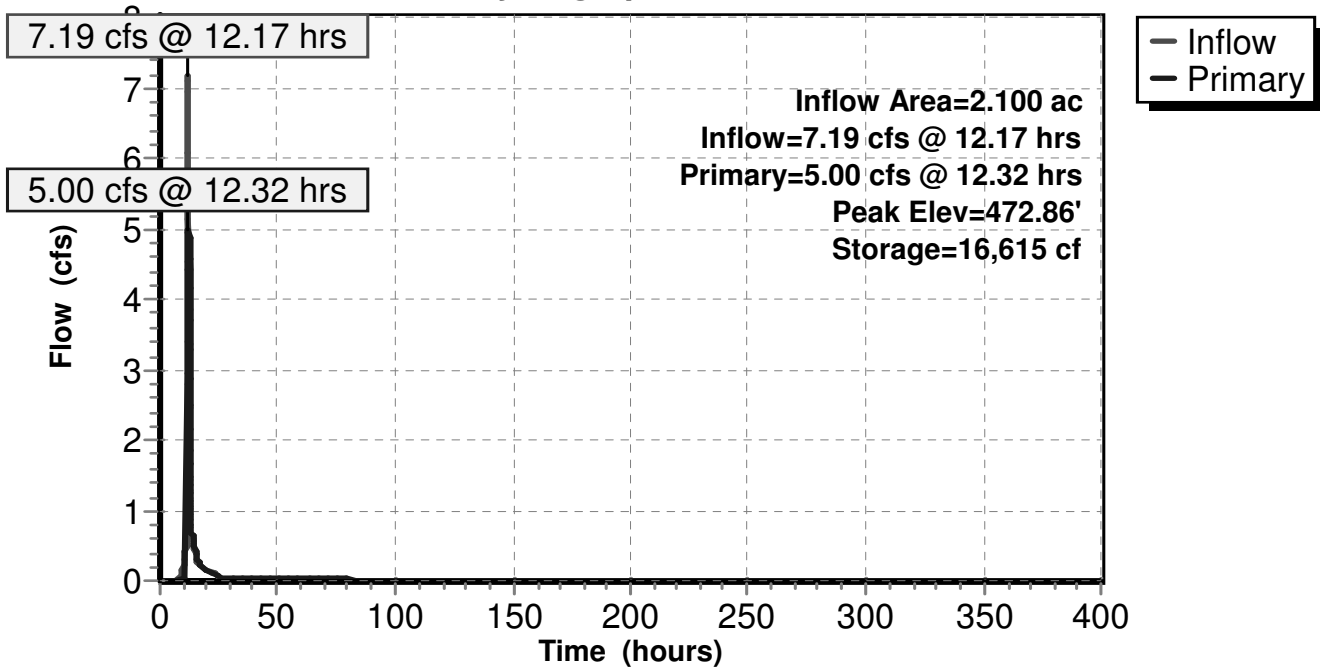
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
465.00	70	0	0
466.00	200	135	135
468.00	600	800	935
469.50	1,300	1,425	2,360
471.00	4,300	4,200	6,560
472.00	5,400	4,850	11,410
474.00	8,500	13,900	25,310

Device	Routing	Invert	Outlet Devices
#1	Primary	469.00'	24.0" x 95.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 467.00' S= 0.0211 ' /' Cc= 0.900 n= 0.012
#2	Device 1	471.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	472.50'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.93 cfs @ 12.32 hrs HW=472.85' TW=0.00' (Dynamic Tailwater)
 ↑ **1=Culvert** (Passes 4.93 cfs of 25.56 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 6.48 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 4.89 cfs @ 1.72 fps)

Pond 2.2P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Pond 2.2P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	6,560	471.00	0.00	330.00	0.00	6,580	471.00	0.00
5.00	0.00	6,560	471.00	0.00	335.00	0.00	6,579	471.00	0.00
10.00	0.21	7,495	471.21	0.01	340.00	0.00	6,579	471.00	0.00
15.00	0.41	14,732	472.57	0.44	345.00	0.00	6,578	471.00	0.00
20.00	0.14	14,487	472.53	0.15	350.00	0.00	6,578	471.00	0.00
25.00	0.00	14,289	472.50	0.03	355.00	0.00	6,578	471.00	0.00
30.00	0.00	13,728	472.41	0.03	360.00	0.00	6,577	471.00	0.00
35.00	0.00	13,185	472.31	0.03	365.00	0.00	6,577	471.00	0.00
40.00	0.00	12,662	472.22	0.03	370.00	0.00	6,576	471.00	0.00
45.00	0.00	12,157	472.14	0.03	375.00	0.00	6,576	471.00	0.00
50.00	0.00	11,673	472.05	0.03	380.00	0.00	6,576	471.00	0.00
55.00	0.00	11,209	471.96	0.03	385.00	0.00	6,575	471.00	0.00
60.00	0.00	10,766	471.88	0.02	390.00	0.00	6,575	471.00	0.00
65.00	0.00	10,344	471.80	0.02	395.00	0.00	6,575	471.00	0.00
70.00	0.00	9,943	471.72	0.02	400.00	0.00	6,575	471.00	0.00
75.00	0.00	9,565	471.65	0.02					
80.00	0.00	9,209	471.57	0.02					
85.00	0.00	8,875	471.51	0.02					
90.00	0.00	8,565	471.44	0.02					
95.00	0.00	8,278	471.38	0.02					
100.00	0.00	8,014	471.32	0.01					
105.00	0.00	7,775	471.27	0.01					
110.00	0.00	7,560	471.23	0.01					
115.00	0.00	7,369	471.18	0.01					
120.00	0.00	7,203	471.15	0.01					
125.00	0.00	7,063	471.12	0.01					
130.00	0.00	6,947	471.09	0.01					
135.00	0.00	6,857	471.07	0.00					
140.00	0.00	6,793	471.05	0.00					
145.00	0.00	6,748	471.04	0.00					
150.00	0.00	6,717	471.04	0.00					
155.00	0.00	6,694	471.03	0.00					
160.00	0.00	6,676	471.03	0.00					
165.00	0.00	6,663	471.02	0.00					
170.00	0.00	6,652	471.02	0.00					
175.00	0.00	6,643	471.02	0.00					
180.00	0.00	6,635	471.02	0.00					
185.00	0.00	6,629	471.02	0.00					
190.00	0.00	6,624	471.01	0.00					
195.00	0.00	6,619	471.01	0.00					
200.00	0.00	6,615	471.01	0.00					
205.00	0.00	6,612	471.01	0.00					
210.00	0.00	6,609	471.01	0.00					
215.00	0.00	6,606	471.01	0.00					
220.00	0.00	6,604	471.01	0.00					
225.00	0.00	6,601	471.01	0.00					
230.00	0.00	6,599	471.01	0.00					
235.00	0.00	6,597	471.01	0.00					
240.00	0.00	6,596	471.01	0.00					
245.00	0.00	6,594	471.01	0.00					
250.00	0.00	6,593	471.01	0.00					
255.00	0.00	6,592	471.01	0.00					
260.00	0.00	6,590	471.01	0.00					
265.00	0.00	6,589	471.01	0.00					
270.00	0.00	6,588	471.01	0.00					
275.00	0.00	6,587	471.01	0.00					
280.00	0.00	6,586	471.01	0.00					
285.00	0.00	6,586	471.01	0.00					
290.00	0.00	6,585	471.01	0.00					
295.00	0.00	6,584	471.01	0.00					
300.00	0.00	6,583	471.01	0.00					
305.00	0.00	6,583	471.01	0.00					
310.00	0.00	6,582	471.01	0.00					
315.00	0.00	6,581	471.00	0.00					
320.00	0.00	6,581	471.00	0.00					
325.00	0.00	6,580	471.00	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Summary for Pond 3.0P:

Inflow Area = 1.900 ac, 47.37% Impervious, Inflow Depth = 1.83" for 10 YEAR event
 Inflow = 3.06 cfs @ 12.20 hrs, Volume= 0.290 af
 Outflow = 0.41 cfs @ 13.36 hrs, Volume= 0.290 af, Atten= 86%, Lag= 69.8 min
 Primary = 0.41 cfs @ 13.36 hrs, Volume= 0.290 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 461.25' Surf.Area= 5,900 sf Storage= 8,213 cf
 Peak Elev= 462.17' @ 13.36 hrs Surf.Area= 7,295 sf Storage= 14,257 cf (6,044 cf above start)
 Flood Elev= 463.00' Surf.Area= 8,750 sf Storage= 20,925 cf (12,713 cf above start)

Plug-Flow detention time= 3,673.0 min calculated for 0.101 af (35% of inflow)
 Center-of-Mass det. time= 1,351.6 min (2,218.6 - 866.9)

Volume	Invert	Avail.Storage	Storage Description
#1	457.25'	30,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
457.25	400	0	0
458.00	700	413	413
459.75	1,700	2,100	2,513
461.25	5,900	5,700	8,213
462.00	7,000	4,838	13,050
464.00	10,500	17,500	30,550

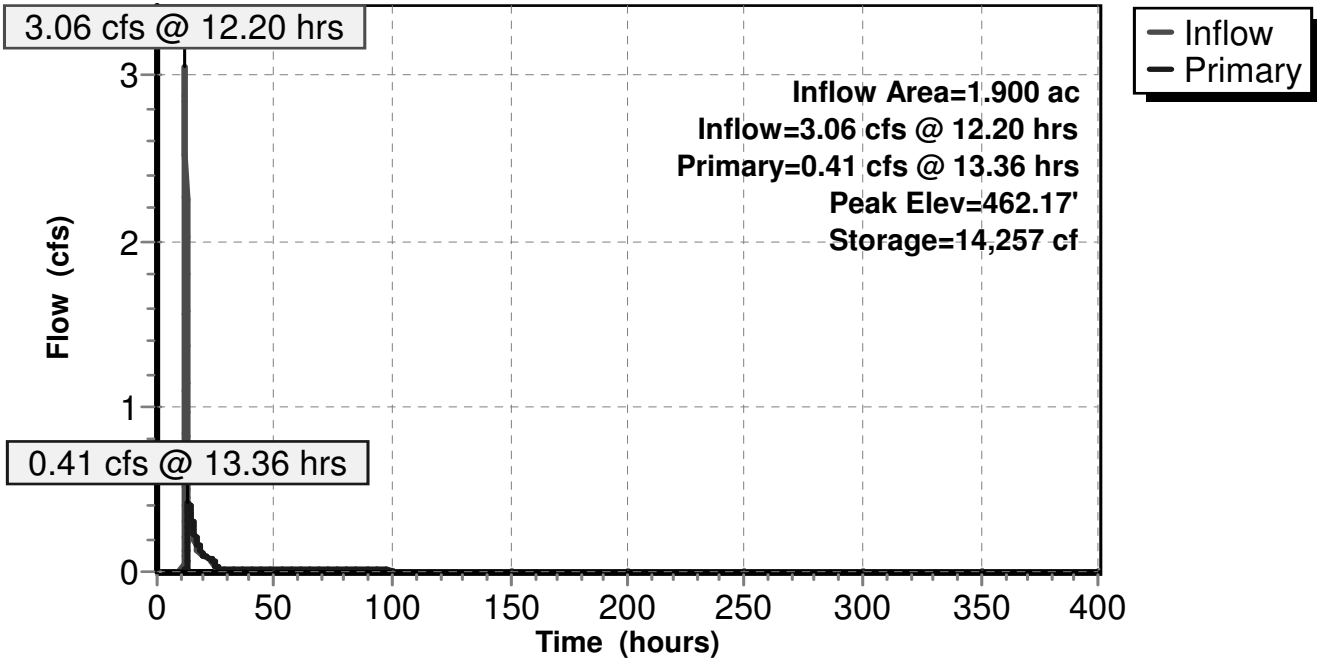
Device	Routing	Invert	Outlet Devices
#1	Primary	461.25'	15.0" x 28.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 460.90' S= 0.0125 '/' Cc= 0.900 n= 0.012
#2	Device 1	461.25'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	462.00'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.41 cfs @ 13.36 hrs HW=462.17' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 0.41 cfs of 2.99 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 4.51 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 0.39 cfs @ 1.15 fps)

Pond 3.0P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 10 YEAR Rainfall=5.50"

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Hydrograph for Pond 3.OP:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	8,213	461.25	0.00	330.00	0.00	8,246	461.26	0.00
5.00	0.00	8,213	461.25	0.00	335.00	0.00	8,246	461.26	0.00
10.00	0.00	8,213	461.25	0.00	340.00	0.00	8,245	461.26	0.00
15.00	0.25	14,006	462.13	0.30	345.00	0.00	8,244	461.26	0.00
20.00	0.09	13,464	462.06	0.10	350.00	0.00	8,243	461.26	0.00
25.00	0.00	13,189	462.02	0.04	355.00	0.00	8,243	461.26	0.00
30.00	0.00	12,767	461.96	0.02	360.00	0.00	8,242	461.26	0.00
35.00	0.00	12,389	461.90	0.02	365.00	0.00	8,242	461.25	0.00
40.00	0.00	12,027	461.85	0.02	370.00	0.00	8,241	461.25	0.00
45.00	0.00	11,682	461.80	0.02	375.00	0.00	8,240	461.25	0.00
50.00	0.00	11,353	461.75	0.02	380.00	0.00	8,240	461.25	0.00
55.00	0.00	11,041	461.70	0.02	385.00	0.00	8,239	461.25	0.00
60.00	0.00	10,746	461.66	0.02	390.00	0.00	8,239	461.25	0.00
65.00	0.00	10,468	461.62	0.01	395.00	0.00	8,238	461.25	0.00
70.00	0.00	10,208	461.58	0.01	400.00	0.00	8,238	461.25	0.00
75.00	0.00	9,965	461.54	0.01					
80.00	0.00	9,740	461.50	0.01					
85.00	0.00	9,532	461.47	0.01					
90.00	0.00	9,343	461.44	0.01					
95.00	0.00	9,172	461.41	0.01					
100.00	0.00	9,019	461.38	0.01					
105.00	0.00	8,884	461.36	0.01					
110.00	0.00	8,768	461.34	0.01					
115.00	0.00	8,669	461.33	0.00					
120.00	0.00	8,591	461.31	0.00					
125.00	0.00	8,530	461.30	0.00					
130.00	0.00	8,484	461.30	0.00					
135.00	0.00	8,449	461.29	0.00					
140.00	0.00	8,420	461.29	0.00					
145.00	0.00	8,398	461.28	0.00					
150.00	0.00	8,379	461.28	0.00					
155.00	0.00	8,364	461.28	0.00					
160.00	0.00	8,351	461.27	0.00					
165.00	0.00	8,340	461.27	0.00					
170.00	0.00	8,331	461.27	0.00					
175.00	0.00	8,323	461.27	0.00					
180.00	0.00	8,316	461.27	0.00					
185.00	0.00	8,309	461.27	0.00					
190.00	0.00	8,304	461.27	0.00					
195.00	0.00	8,299	461.26	0.00					
200.00	0.00	8,294	461.26	0.00					
205.00	0.00	8,290	461.26	0.00					
210.00	0.00	8,286	461.26	0.00					
215.00	0.00	8,283	461.26	0.00					
220.00	0.00	8,280	461.26	0.00					
225.00	0.00	8,277	461.26	0.00					
230.00	0.00	8,275	461.26	0.00					
235.00	0.00	8,272	461.26	0.00					
240.00	0.00	8,270	461.26	0.00					
245.00	0.00	8,268	461.26	0.00					
250.00	0.00	8,266	461.26	0.00					
255.00	0.00	8,264	461.26	0.00					
260.00	0.00	8,262	461.26	0.00					
265.00	0.00	8,261	461.26	0.00					
270.00	0.00	8,259	461.26	0.00					
275.00	0.00	8,258	461.26	0.00					
280.00	0.00	8,257	461.26	0.00					
285.00	0.00	8,255	461.26	0.00					
290.00	0.00	8,254	461.26	0.00					
295.00	0.00	8,253	461.26	0.00					
300.00	0.00	8,252	461.26	0.00					
305.00	0.00	8,251	461.26	0.00					
310.00	0.00	8,250	461.26	0.00					
315.00	0.00	8,249	461.26	0.00					
320.00	0.00	8,248	461.26	0.00					
325.00	0.00	8,247	461.26	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Subcatchment 1.0S:

Runoff = 63.07 cfs @ 12.06 hrs, Volume= 4.371 af, Depth= 4.20"

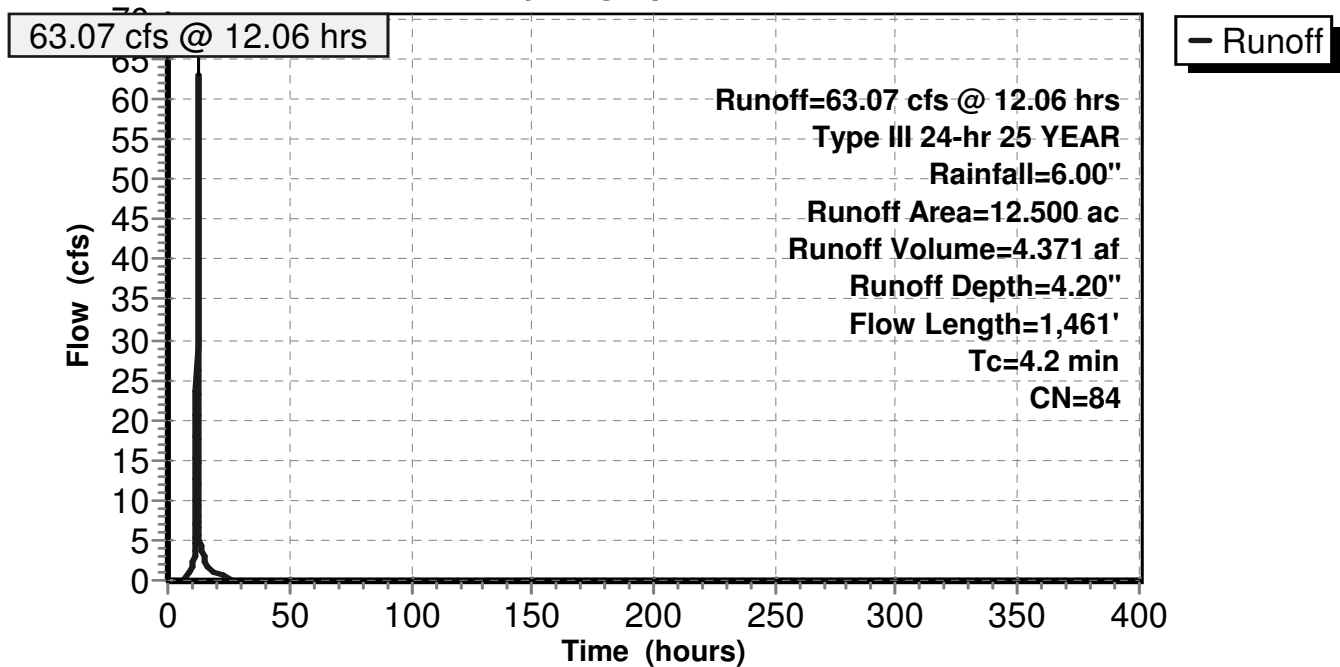
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=6.00"

Area (ac)	CN	Description
1.200	39	>75% Grass cover, Good, HSG A
7.200	89	Urban commercial, 85% imp, HSG A
3.400	94	Urban commercial, 85% imp, HSG C
* 0.700	70	Pervious Pavment
12.500	84	Weighted Average
3.490		Pervious Area
9.010		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	96	0.0100	1.08		Sheet Flow , Smooth surfaces n= 0.011 P2= 3.50"
0.6	214	0.0121	6.27	7.70	Circular Channel (pipe) , Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
1.1	601	0.0130	8.89	27.94	Circular Channel (pipe) , Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
1.0	550	0.0080	9.14	64.63	Circular Channel (pipe) , Diam= 36.0" Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012
4.2	1,461	Total			

Subcatchment 1.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Subcatchment 1.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	6.00	4.20	0.00	330.00	6.00	4.20	0.00
2.50	0.15	0.00	0.00	167.50	6.00	4.20	0.00	332.50	6.00	4.20	0.00
5.00	0.34	0.00	0.00	170.00	6.00	4.20	0.00	335.00	6.00	4.20	0.00
7.50	0.61	0.02	0.34	172.50	6.00	4.20	0.00	337.50	6.00	4.20	0.00
10.00	1.13	0.21	1.75	175.00	6.00	4.20	0.00	340.00	6.00	4.20	0.00
12.50	4.21	2.56	11.82	177.50	6.00	4.20	0.00	342.50	6.00	4.20	0.00
15.00	5.13	3.39	2.65	180.00	6.00	4.20	0.00	345.00	6.00	4.20	0.00
17.50	5.52	3.75	1.32	182.50	6.00	4.20	0.00	347.50	6.00	4.20	0.00
20.00	5.74	3.96	0.92	185.00	6.00	4.20	0.00	350.00	6.00	4.20	0.00
22.50	5.92	4.12	0.73	187.50	6.00	4.20	0.00	352.50	6.00	4.20	0.00
25.00	6.00	4.20	0.00	190.00	6.00	4.20	0.00	355.00	6.00	4.20	0.00
27.50	6.00	4.20	0.00	192.50	6.00	4.20	0.00	357.50	6.00	4.20	0.00
30.00	6.00	4.20	0.00	195.00	6.00	4.20	0.00	360.00	6.00	4.20	0.00
32.50	6.00	4.20	0.00	197.50	6.00	4.20	0.00	362.50	6.00	4.20	0.00
35.00	6.00	4.20	0.00	200.00	6.00	4.20	0.00	365.00	6.00	4.20	0.00
37.50	6.00	4.20	0.00	202.50	6.00	4.20	0.00	367.50	6.00	4.20	0.00
40.00	6.00	4.20	0.00	205.00	6.00	4.20	0.00	370.00	6.00	4.20	0.00
42.50	6.00	4.20	0.00	207.50	6.00	4.20	0.00	372.50	6.00	4.20	0.00
45.00	6.00	4.20	0.00	210.00	6.00	4.20	0.00	375.00	6.00	4.20	0.00
47.50	6.00	4.20	0.00	212.50	6.00	4.20	0.00	377.50	6.00	4.20	0.00
50.00	6.00	4.20	0.00	215.00	6.00	4.20	0.00	380.00	6.00	4.20	0.00
52.50	6.00	4.20	0.00	217.50	6.00	4.20	0.00	382.50	6.00	4.20	0.00
55.00	6.00	4.20	0.00	220.00	6.00	4.20	0.00	385.00	6.00	4.20	0.00
57.50	6.00	4.20	0.00	222.50	6.00	4.20	0.00	387.50	6.00	4.20	0.00
60.00	6.00	4.20	0.00	225.00	6.00	4.20	0.00	390.00	6.00	4.20	0.00
62.50	6.00	4.20	0.00	227.50	6.00	4.20	0.00	392.50	6.00	4.20	0.00
65.00	6.00	4.20	0.00	230.00	6.00	4.20	0.00	395.00	6.00	4.20	0.00
67.50	6.00	4.20	0.00	232.50	6.00	4.20	0.00	397.50	6.00	4.20	0.00
70.00	6.00	4.20	0.00	235.00	6.00	4.20	0.00	400.00	6.00	4.20	0.00
72.50	6.00	4.20	0.00	237.50	6.00	4.20	0.00				
75.00	6.00	4.20	0.00	240.00	6.00	4.20	0.00				
77.50	6.00	4.20	0.00	242.50	6.00	4.20	0.00				
80.00	6.00	4.20	0.00	245.00	6.00	4.20	0.00				
82.50	6.00	4.20	0.00	247.50	6.00	4.20	0.00				
85.00	6.00	4.20	0.00	250.00	6.00	4.20	0.00				
87.50	6.00	4.20	0.00	252.50	6.00	4.20	0.00				
90.00	6.00	4.20	0.00	255.00	6.00	4.20	0.00				
92.50	6.00	4.20	0.00	257.50	6.00	4.20	0.00				
95.00	6.00	4.20	0.00	260.00	6.00	4.20	0.00				
97.50	6.00	4.20	0.00	262.50	6.00	4.20	0.00				
100.00	6.00	4.20	0.00	265.00	6.00	4.20	0.00				
102.50	6.00	4.20	0.00	267.50	6.00	4.20	0.00				
105.00	6.00	4.20	0.00	270.00	6.00	4.20	0.00				
107.50	6.00	4.20	0.00	272.50	6.00	4.20	0.00				
110.00	6.00	4.20	0.00	275.00	6.00	4.20	0.00				
112.50	6.00	4.20	0.00	277.50	6.00	4.20	0.00				
115.00	6.00	4.20	0.00	280.00	6.00	4.20	0.00				
117.50	6.00	4.20	0.00	282.50	6.00	4.20	0.00				
120.00	6.00	4.20	0.00	285.00	6.00	4.20	0.00				
122.50	6.00	4.20	0.00	287.50	6.00	4.20	0.00				
125.00	6.00	4.20	0.00	290.00	6.00	4.20	0.00				
127.50	6.00	4.20	0.00	292.50	6.00	4.20	0.00				
130.00	6.00	4.20	0.00	295.00	6.00	4.20	0.00				
132.50	6.00	4.20	0.00	297.50	6.00	4.20	0.00				
135.00	6.00	4.20	0.00	300.00	6.00	4.20	0.00				
137.50	6.00	4.20	0.00	302.50	6.00	4.20	0.00				
140.00	6.00	4.20	0.00	305.00	6.00	4.20	0.00				
142.50	6.00	4.20	0.00	307.50	6.00	4.20	0.00				
145.00	6.00	4.20	0.00	310.00	6.00	4.20	0.00				
147.50	6.00	4.20	0.00	312.50	6.00	4.20	0.00				
150.00	6.00	4.20	0.00	315.00	6.00	4.20	0.00				
152.50	6.00	4.20	0.00	317.50	6.00	4.20	0.00				
155.00	6.00	4.20	0.00	320.00	6.00	4.20	0.00				
157.50	6.00	4.20	0.00	322.50	6.00	4.20	0.00				
160.00	6.00	4.20	0.00	325.00	6.00	4.20	0.00				
162.50	6.00	4.20	0.00	327.50	6.00	4.20	0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Subcatchment 1.1S:

Runoff = 3.95 cfs @ 12.14 hrs, Volume= 0.354 af, Depth= 1.52"

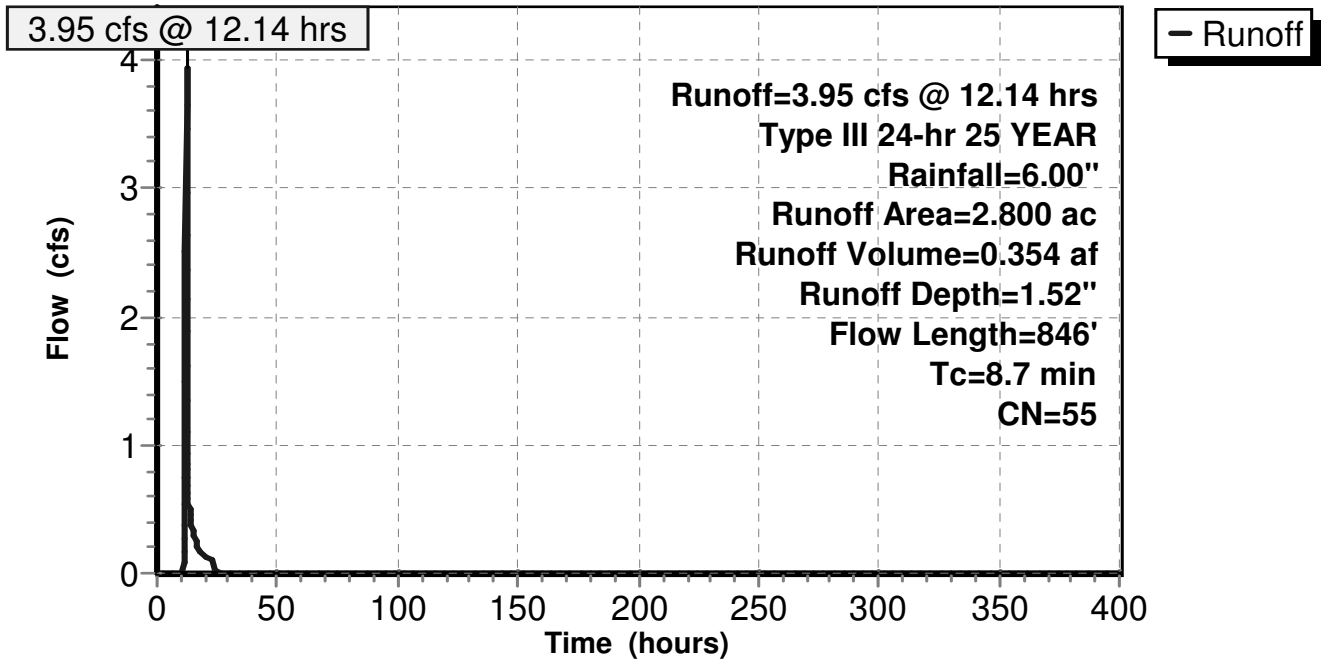
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=6.00"

Area (ac)	CN	Description
2.000	39	>75% Grass cover, Good, HSG A
0.400	89	Urban commercial, 85% imp, HSG A
0.400	98	Paved parking & roofs
2.800	55	Weighted Average
2.060		Pervious Area
0.740		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0100	1.09		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
7.0	652	0.0170	1.55	0.43	Trap/Vee/Rect Channel Flow, Bot.W=1.00' D=0.20' Z= 2.0 ' Top.W=1.80' n= 0.035 Earth, dense weeds
0.2	94	0.0290	9.71	11.92	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
8.7	846	Total			

Subcatchment 1.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Subcatchment 1.1S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	6.00	1.52	0.00	330.00	6.00	1.52	0.00
2.50	0.15	0.00	0.00	167.50	6.00	1.52	0.00	332.50	6.00	1.52	0.00
5.00	0.34	0.00	0.00	170.00	6.00	1.52	0.00	335.00	6.00	1.52	0.00
7.50	0.61	0.00	0.00	172.50	6.00	1.52	0.00	337.50	6.00	1.52	0.00
10.00	1.13	0.00	0.00	175.00	6.00	1.52	0.00	340.00	6.00	1.52	0.00
12.50	4.21	0.62	1.62	177.50	6.00	1.52	0.00	342.50	6.00	1.52	0.00
15.00	5.13	1.04	0.33	180.00	6.00	1.52	0.00	345.00	6.00	1.52	0.00
17.50	5.52	1.25	0.17	182.50	6.00	1.52	0.00	347.50	6.00	1.52	0.00
20.00	5.74	1.37	0.12	185.00	6.00	1.52	0.00	350.00	6.00	1.52	0.00
22.50	5.92	1.47	0.10	187.50	6.00	1.52	0.00	352.50	6.00	1.52	0.00
25.00	6.00	1.52	0.00	190.00	6.00	1.52	0.00	355.00	6.00	1.52	0.00
27.50	6.00	1.52	0.00	192.50	6.00	1.52	0.00	357.50	6.00	1.52	0.00
30.00	6.00	1.52	0.00	195.00	6.00	1.52	0.00	360.00	6.00	1.52	0.00
32.50	6.00	1.52	0.00	197.50	6.00	1.52	0.00	362.50	6.00	1.52	0.00
35.00	6.00	1.52	0.00	200.00	6.00	1.52	0.00	365.00	6.00	1.52	0.00
37.50	6.00	1.52	0.00	202.50	6.00	1.52	0.00	367.50	6.00	1.52	0.00
40.00	6.00	1.52	0.00	205.00	6.00	1.52	0.00	370.00	6.00	1.52	0.00
42.50	6.00	1.52	0.00	207.50	6.00	1.52	0.00	372.50	6.00	1.52	0.00
45.00	6.00	1.52	0.00	210.00	6.00	1.52	0.00	375.00	6.00	1.52	0.00
47.50	6.00	1.52	0.00	212.50	6.00	1.52	0.00	377.50	6.00	1.52	0.00
50.00	6.00	1.52	0.00	215.00	6.00	1.52	0.00	380.00	6.00	1.52	0.00
52.50	6.00	1.52	0.00	217.50	6.00	1.52	0.00	382.50	6.00	1.52	0.00
55.00	6.00	1.52	0.00	220.00	6.00	1.52	0.00	385.00	6.00	1.52	0.00
57.50	6.00	1.52	0.00	222.50	6.00	1.52	0.00	387.50	6.00	1.52	0.00
60.00	6.00	1.52	0.00	225.00	6.00	1.52	0.00	390.00	6.00	1.52	0.00
62.50	6.00	1.52	0.00	227.50	6.00	1.52	0.00	392.50	6.00	1.52	0.00
65.00	6.00	1.52	0.00	230.00	6.00	1.52	0.00	395.00	6.00	1.52	0.00
67.50	6.00	1.52	0.00	232.50	6.00	1.52	0.00	397.50	6.00	1.52	0.00
70.00	6.00	1.52	0.00	235.00	6.00	1.52	0.00	400.00	6.00	1.52	0.00
72.50	6.00	1.52	0.00	237.50	6.00	1.52	0.00				
75.00	6.00	1.52	0.00	240.00	6.00	1.52	0.00				
77.50	6.00	1.52	0.00	242.50	6.00	1.52	0.00				
80.00	6.00	1.52	0.00	245.00	6.00	1.52	0.00				
82.50	6.00	1.52	0.00	247.50	6.00	1.52	0.00				
85.00	6.00	1.52	0.00	250.00	6.00	1.52	0.00				
87.50	6.00	1.52	0.00	252.50	6.00	1.52	0.00				
90.00	6.00	1.52	0.00	255.00	6.00	1.52	0.00				
92.50	6.00	1.52	0.00	257.50	6.00	1.52	0.00				
95.00	6.00	1.52	0.00	260.00	6.00	1.52	0.00				
97.50	6.00	1.52	0.00	262.50	6.00	1.52	0.00				
100.00	6.00	1.52	0.00	265.00	6.00	1.52	0.00				
102.50	6.00	1.52	0.00	267.50	6.00	1.52	0.00				
105.00	6.00	1.52	0.00	270.00	6.00	1.52	0.00				
107.50	6.00	1.52	0.00	272.50	6.00	1.52	0.00				
110.00	6.00	1.52	0.00	275.00	6.00	1.52	0.00				
112.50	6.00	1.52	0.00	277.50	6.00	1.52	0.00				
115.00	6.00	1.52	0.00	280.00	6.00	1.52	0.00				
117.50	6.00	1.52	0.00	282.50	6.00	1.52	0.00				
120.00	6.00	1.52	0.00	285.00	6.00	1.52	0.00				
122.50	6.00	1.52	0.00	287.50	6.00	1.52	0.00				
125.00	6.00	1.52	0.00	290.00	6.00	1.52	0.00				
127.50	6.00	1.52	0.00	292.50	6.00	1.52	0.00				
130.00	6.00	1.52	0.00	295.00	6.00	1.52	0.00				
132.50	6.00	1.52	0.00	297.50	6.00	1.52	0.00				
135.00	6.00	1.52	0.00	300.00	6.00	1.52	0.00				
137.50	6.00	1.52	0.00	302.50	6.00	1.52	0.00				
140.00	6.00	1.52	0.00	305.00	6.00	1.52	0.00				
142.50	6.00	1.52	0.00	307.50	6.00	1.52	0.00				
145.00	6.00	1.52	0.00	310.00	6.00	1.52	0.00				
147.50	6.00	1.52	0.00	312.50	6.00	1.52	0.00				
150.00	6.00	1.52	0.00	315.00	6.00	1.52	0.00				
152.50	6.00	1.52	0.00	317.50	6.00	1.52	0.00				
155.00	6.00	1.52	0.00	320.00	6.00	1.52	0.00				
157.50	6.00	1.52	0.00	322.50	6.00	1.52	0.00				
160.00	6.00	1.52	0.00	325.00	6.00	1.52	0.00				
162.50	6.00	1.52	0.00	327.50	6.00	1.52	0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Subcatchment 1.2S:

Runoff = 2.88 cfs @ 12.26 hrs, Volume= 0.357 af, Depth= 1.07"

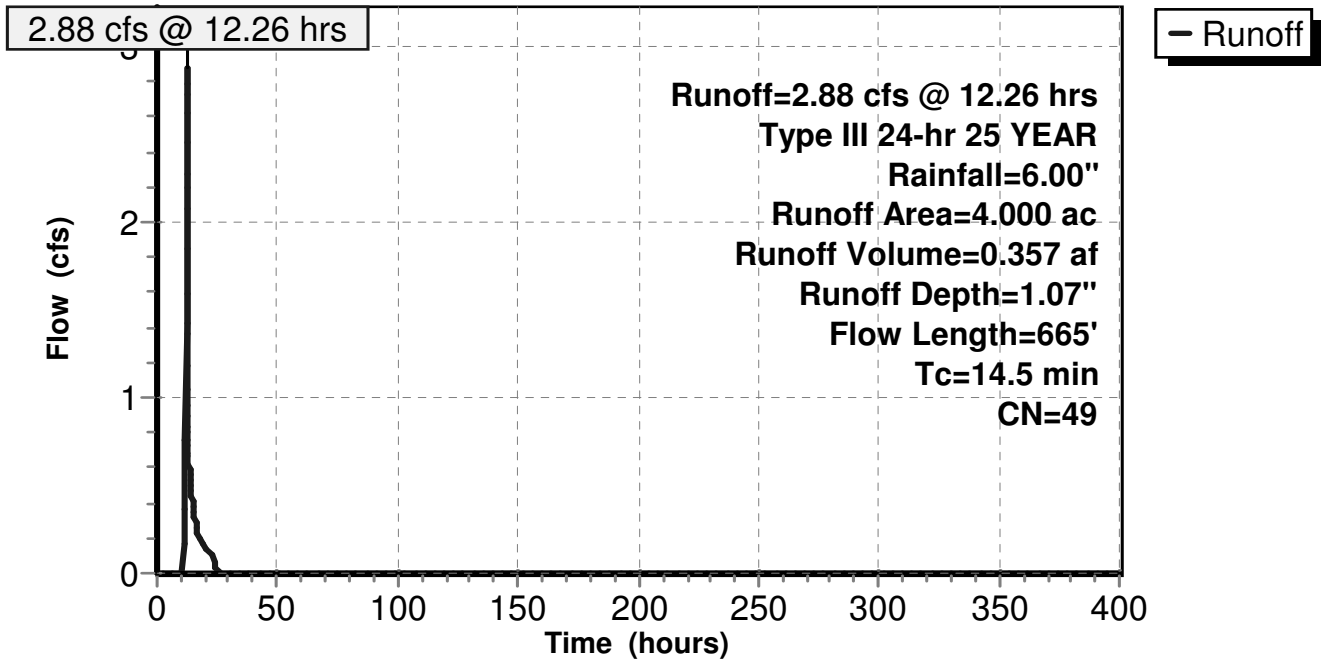
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=6.00"

Area (ac)	CN	Description
1.000	39	>75% Grass cover, Good, HSG A
0.300	98	Paved parking & roofs
1.500	30	Woods, Good, HSG A
1.200	70	Woods, Good, HSG C
4.000	49	Weighted Average
3.700		Pervious Area
0.300		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.1500	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	315	0.0790	3.60	1.73	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=0.20' Z= 2.0 ' Top.W=2.80' n= 0.035
3.8	250	0.0480	1.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.5	665	Total			

Subcatchment 1.2S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Subcatchment 1.2S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	6.00	1.07	0.00	330.00	6.00	1.07	0.00
2.50	0.15	0.00	0.00	167.50	6.00	1.07	0.00	332.50	6.00	1.07	0.00
5.00	0.34	0.00	0.00	170.00	6.00	1.07	0.00	335.00	6.00	1.07	0.00
7.50	0.61	0.00	0.00	172.50	6.00	1.07	0.00	337.50	6.00	1.07	0.00
10.00	1.13	0.00	0.00	175.00	6.00	1.07	0.00	340.00	6.00	1.07	0.00
12.50	4.21	0.36	2.07	177.50	6.00	1.07	0.00	342.50	6.00	1.07	0.00
15.00	5.13	0.69	0.38	180.00	6.00	1.07	0.00	345.00	6.00	1.07	0.00
17.50	5.52	0.85	0.21	182.50	6.00	1.07	0.00	347.50	6.00	1.07	0.00
20.00	5.74	0.95	0.15	185.00	6.00	1.07	0.00	350.00	6.00	1.07	0.00
22.50	5.92	1.03	0.12	187.50	6.00	1.07	0.00	352.50	6.00	1.07	0.00
25.00	6.00	1.07	0.00	190.00	6.00	1.07	0.00	355.00	6.00	1.07	0.00
27.50	6.00	1.07	0.00	192.50	6.00	1.07	0.00	357.50	6.00	1.07	0.00
30.00	6.00	1.07	0.00	195.00	6.00	1.07	0.00	360.00	6.00	1.07	0.00
32.50	6.00	1.07	0.00	197.50	6.00	1.07	0.00	362.50	6.00	1.07	0.00
35.00	6.00	1.07	0.00	200.00	6.00	1.07	0.00	365.00	6.00	1.07	0.00
37.50	6.00	1.07	0.00	202.50	6.00	1.07	0.00	367.50	6.00	1.07	0.00
40.00	6.00	1.07	0.00	205.00	6.00	1.07	0.00	370.00	6.00	1.07	0.00
42.50	6.00	1.07	0.00	207.50	6.00	1.07	0.00	372.50	6.00	1.07	0.00
45.00	6.00	1.07	0.00	210.00	6.00	1.07	0.00	375.00	6.00	1.07	0.00
47.50	6.00	1.07	0.00	212.50	6.00	1.07	0.00	377.50	6.00	1.07	0.00
50.00	6.00	1.07	0.00	215.00	6.00	1.07	0.00	380.00	6.00	1.07	0.00
52.50	6.00	1.07	0.00	217.50	6.00	1.07	0.00	382.50	6.00	1.07	0.00
55.00	6.00	1.07	0.00	220.00	6.00	1.07	0.00	385.00	6.00	1.07	0.00
57.50	6.00	1.07	0.00	222.50	6.00	1.07	0.00	387.50	6.00	1.07	0.00
60.00	6.00	1.07	0.00	225.00	6.00	1.07	0.00	390.00	6.00	1.07	0.00
62.50	6.00	1.07	0.00	227.50	6.00	1.07	0.00	392.50	6.00	1.07	0.00
65.00	6.00	1.07	0.00	230.00	6.00	1.07	0.00	395.00	6.00	1.07	0.00
67.50	6.00	1.07	0.00	232.50	6.00	1.07	0.00	397.50	6.00	1.07	0.00
70.00	6.00	1.07	0.00	235.00	6.00	1.07	0.00	400.00	6.00	1.07	0.00
72.50	6.00	1.07	0.00	237.50	6.00	1.07	0.00				
75.00	6.00	1.07	0.00	240.00	6.00	1.07	0.00				
77.50	6.00	1.07	0.00	242.50	6.00	1.07	0.00				
80.00	6.00	1.07	0.00	245.00	6.00	1.07	0.00				
82.50	6.00	1.07	0.00	247.50	6.00	1.07	0.00				
85.00	6.00	1.07	0.00	250.00	6.00	1.07	0.00				
87.50	6.00	1.07	0.00	252.50	6.00	1.07	0.00				
90.00	6.00	1.07	0.00	255.00	6.00	1.07	0.00				
92.50	6.00	1.07	0.00	257.50	6.00	1.07	0.00				
95.00	6.00	1.07	0.00	260.00	6.00	1.07	0.00				
97.50	6.00	1.07	0.00	262.50	6.00	1.07	0.00				
100.00	6.00	1.07	0.00	265.00	6.00	1.07	0.00				
102.50	6.00	1.07	0.00	267.50	6.00	1.07	0.00				
105.00	6.00	1.07	0.00	270.00	6.00	1.07	0.00				
107.50	6.00	1.07	0.00	272.50	6.00	1.07	0.00				
110.00	6.00	1.07	0.00	275.00	6.00	1.07	0.00				
112.50	6.00	1.07	0.00	277.50	6.00	1.07	0.00				
115.00	6.00	1.07	0.00	280.00	6.00	1.07	0.00				
117.50	6.00	1.07	0.00	282.50	6.00	1.07	0.00				
120.00	6.00	1.07	0.00	285.00	6.00	1.07	0.00				
122.50	6.00	1.07	0.00	287.50	6.00	1.07	0.00				
125.00	6.00	1.07	0.00	290.00	6.00	1.07	0.00				
127.50	6.00	1.07	0.00	292.50	6.00	1.07	0.00				
130.00	6.00	1.07	0.00	295.00	6.00	1.07	0.00				
132.50	6.00	1.07	0.00	297.50	6.00	1.07	0.00				
135.00	6.00	1.07	0.00	300.00	6.00	1.07	0.00				
137.50	6.00	1.07	0.00	302.50	6.00	1.07	0.00				
140.00	6.00	1.07	0.00	305.00	6.00	1.07	0.00				
142.50	6.00	1.07	0.00	307.50	6.00	1.07	0.00				
145.00	6.00	1.07	0.00	310.00	6.00	1.07	0.00				
147.50	6.00	1.07	0.00	312.50	6.00	1.07	0.00				
150.00	6.00	1.07	0.00	315.00	6.00	1.07	0.00				
152.50	6.00	1.07	0.00	317.50	6.00	1.07	0.00				
155.00	6.00	1.07	0.00	320.00	6.00	1.07	0.00				
157.50	6.00	1.07	0.00	322.50	6.00	1.07	0.00				
160.00	6.00	1.07	0.00	325.00	6.00	1.07	0.00				
162.50	6.00	1.07	0.00	327.50	6.00	1.07	0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Subcatchment 2.0S:

Runoff = 24.92 cfs @ 12.11 hrs, Volume= 1.966 af, Depth= 4.63"

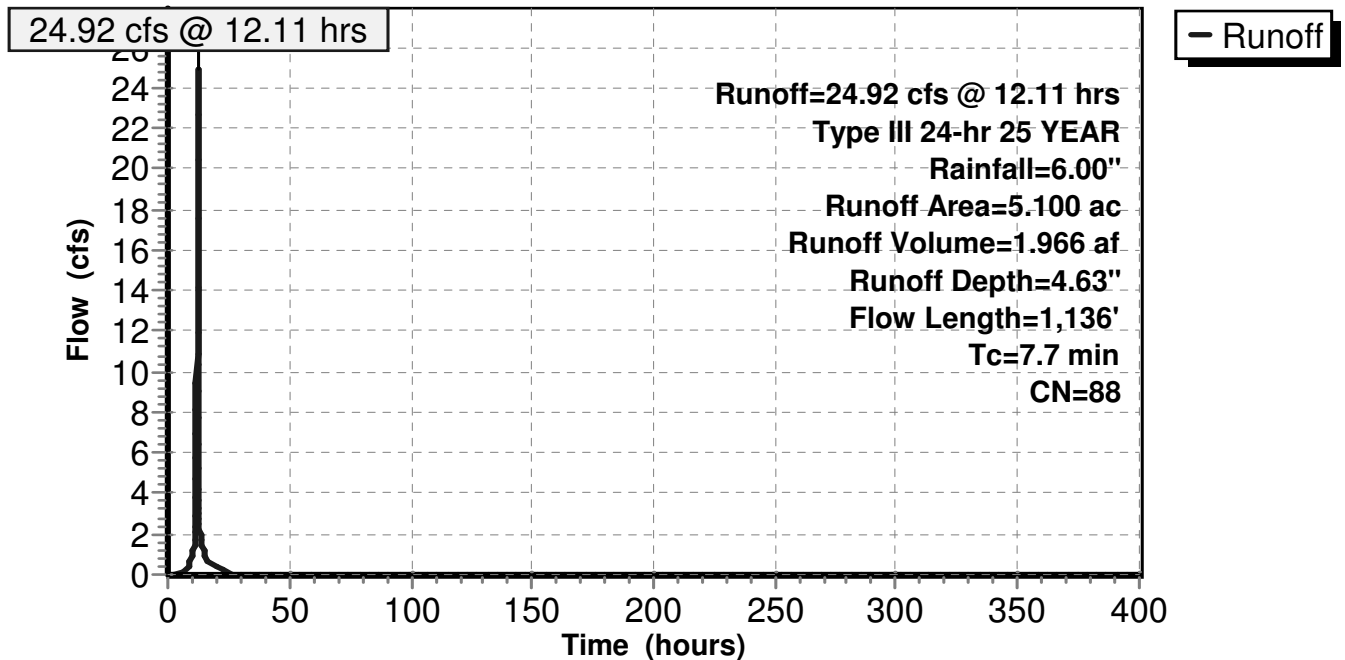
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=6.00"

Area (ac)	CN	Description
0.200	39	>75% Grass cover, Good, HSG A
0.300	74	>75% Grass cover, Good, HSG C
0.300	70	Woods, Good, HSG C
3.700	94	Urban commercial, 85% imp, HSG C
0.400	89	Urban commercial, 85% imp, HSG A
* 0.200	70	Pervious Pavment
5.100	88	Weighted Average
1.615		Pervious Area
3.485		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.0400	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
1.1	85	0.0350	1.31		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.0	797	0.0140	6.75	8.28	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	172	0.0120	7.05	12.47	Circular Channel (pipe), Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.1	32	0.0094	7.56	23.76	Circular Channel (pipe), Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
7.7	1,136	Total			

Subcatchment 2.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Subcatchment 2.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	6.00	4.63	0.00	330.00	6.00	4.63	0.00
2.50	0.15	0.00	0.00	167.50	6.00	4.63	0.00	332.50	6.00	4.63	0.00
5.00	0.34	0.00	0.04	170.00	6.00	4.63	0.00	335.00	6.00	4.63	0.00
7.50	0.61	0.07	0.24	172.50	6.00	4.63	0.00	337.50	6.00	4.63	0.00
10.00	1.13	0.33	0.90	175.00	6.00	4.63	0.00	340.00	6.00	4.63	0.00
12.50	4.21	2.93	6.42	177.50	6.00	4.63	0.00	342.50	6.00	4.63	0.00
15.00	5.13	3.79	1.14	180.00	6.00	4.63	0.00	345.00	6.00	4.63	0.00
17.50	5.52	4.16	0.56	182.50	6.00	4.63	0.00	347.50	6.00	4.63	0.00
20.00	5.74	4.38	0.39	185.00	6.00	4.63	0.00	350.00	6.00	4.63	0.00
22.50	5.92	4.54	0.31	187.50	6.00	4.63	0.00	352.50	6.00	4.63	0.00
25.00	6.00	4.63	0.00	190.00	6.00	4.63	0.00	355.00	6.00	4.63	0.00
27.50	6.00	4.63	0.00	192.50	6.00	4.63	0.00	357.50	6.00	4.63	0.00
30.00	6.00	4.63	0.00	195.00	6.00	4.63	0.00	360.00	6.00	4.63	0.00
32.50	6.00	4.63	0.00	197.50	6.00	4.63	0.00	362.50	6.00	4.63	0.00
35.00	6.00	4.63	0.00	200.00	6.00	4.63	0.00	365.00	6.00	4.63	0.00
37.50	6.00	4.63	0.00	202.50	6.00	4.63	0.00	367.50	6.00	4.63	0.00
40.00	6.00	4.63	0.00	205.00	6.00	4.63	0.00	370.00	6.00	4.63	0.00
42.50	6.00	4.63	0.00	207.50	6.00	4.63	0.00	372.50	6.00	4.63	0.00
45.00	6.00	4.63	0.00	210.00	6.00	4.63	0.00	375.00	6.00	4.63	0.00
47.50	6.00	4.63	0.00	212.50	6.00	4.63	0.00	377.50	6.00	4.63	0.00
50.00	6.00	4.63	0.00	215.00	6.00	4.63	0.00	380.00	6.00	4.63	0.00
52.50	6.00	4.63	0.00	217.50	6.00	4.63	0.00	382.50	6.00	4.63	0.00
55.00	6.00	4.63	0.00	220.00	6.00	4.63	0.00	385.00	6.00	4.63	0.00
57.50	6.00	4.63	0.00	222.50	6.00	4.63	0.00	387.50	6.00	4.63	0.00
60.00	6.00	4.63	0.00	225.00	6.00	4.63	0.00	390.00	6.00	4.63	0.00
62.50	6.00	4.63	0.00	227.50	6.00	4.63	0.00	392.50	6.00	4.63	0.00
65.00	6.00	4.63	0.00	230.00	6.00	4.63	0.00	395.00	6.00	4.63	0.00
67.50	6.00	4.63	0.00	232.50	6.00	4.63	0.00	397.50	6.00	4.63	0.00
70.00	6.00	4.63	0.00	235.00	6.00	4.63	0.00	400.00	6.00	4.63	0.00
72.50	6.00	4.63	0.00	237.50	6.00	4.63	0.00				
75.00	6.00	4.63	0.00	240.00	6.00	4.63	0.00				
77.50	6.00	4.63	0.00	242.50	6.00	4.63	0.00				
80.00	6.00	4.63	0.00	245.00	6.00	4.63	0.00				
82.50	6.00	4.63	0.00	247.50	6.00	4.63	0.00				
85.00	6.00	4.63	0.00	250.00	6.00	4.63	0.00				
87.50	6.00	4.63	0.00	252.50	6.00	4.63	0.00				
90.00	6.00	4.63	0.00	255.00	6.00	4.63	0.00				
92.50	6.00	4.63	0.00	257.50	6.00	4.63	0.00				
95.00	6.00	4.63	0.00	260.00	6.00	4.63	0.00				
97.50	6.00	4.63	0.00	262.50	6.00	4.63	0.00				
100.00	6.00	4.63	0.00	265.00	6.00	4.63	0.00				
102.50	6.00	4.63	0.00	267.50	6.00	4.63	0.00				
105.00	6.00	4.63	0.00	270.00	6.00	4.63	0.00				
107.50	6.00	4.63	0.00	272.50	6.00	4.63	0.00				
110.00	6.00	4.63	0.00	275.00	6.00	4.63	0.00				
112.50	6.00	4.63	0.00	277.50	6.00	4.63	0.00				
115.00	6.00	4.63	0.00	280.00	6.00	4.63	0.00				
117.50	6.00	4.63	0.00	282.50	6.00	4.63	0.00				
120.00	6.00	4.63	0.00	285.00	6.00	4.63	0.00				
122.50	6.00	4.63	0.00	287.50	6.00	4.63	0.00				
125.00	6.00	4.63	0.00	290.00	6.00	4.63	0.00				
127.50	6.00	4.63	0.00	292.50	6.00	4.63	0.00				
130.00	6.00	4.63	0.00	295.00	6.00	4.63	0.00				
132.50	6.00	4.63	0.00	297.50	6.00	4.63	0.00				
135.00	6.00	4.63	0.00	300.00	6.00	4.63	0.00				
137.50	6.00	4.63	0.00	302.50	6.00	4.63	0.00				
140.00	6.00	4.63	0.00	305.00	6.00	4.63	0.00				
142.50	6.00	4.63	0.00	307.50	6.00	4.63	0.00				
145.00	6.00	4.63	0.00	310.00	6.00	4.63	0.00				
147.50	6.00	4.63	0.00	312.50	6.00	4.63	0.00				
150.00	6.00	4.63	0.00	315.00	6.00	4.63	0.00				
152.50	6.00	4.63	0.00	317.50	6.00	4.63	0.00				
155.00	6.00	4.63	0.00	320.00	6.00	4.63	0.00				
157.50	6.00	4.63	0.00	322.50	6.00	4.63	0.00				
160.00	6.00	4.63	0.00	325.00	6.00	4.63	0.00				
162.50	6.00	4.63	0.00	327.50	6.00	4.63	0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Subcatchment 2.1S:

Runoff = 0.49 cfs @ 12.09 hrs, Volume= 0.053 af, Depth= 0.80"

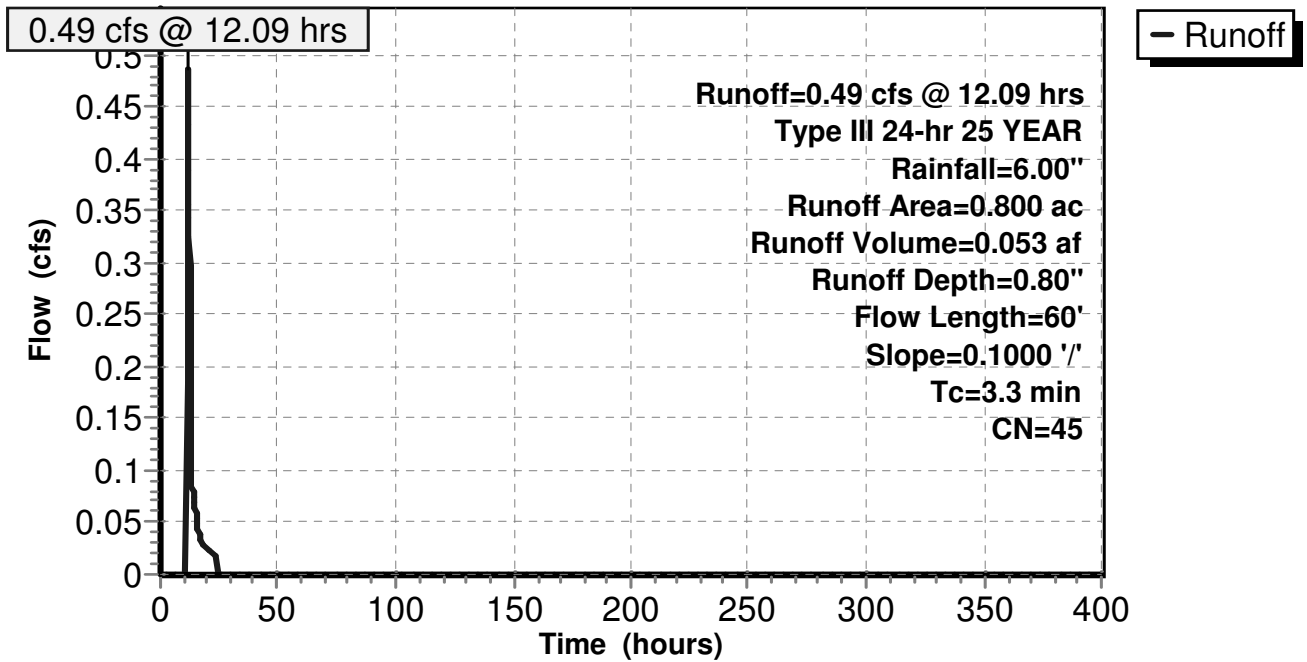
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=6.00"

Area (ac)	CN	Description
0.700	39	>75% Grass cover, Good, HSG A
0.100	89	Urban commercial, 85% imp, HSG A
0.800	45	Weighted Average
0.715		Pervious Area
0.085		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	60	0.1000	0.31		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"

Subcatchment 2.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Subcatchment 2.1S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	6.00	0.80	0.00	330.00	6.00	0.80	0.00
2.50	0.15	0.00	0.00	167.50	6.00	0.80	0.00	332.50	6.00	0.80	0.00
5.00	0.34	0.00	0.00	170.00	6.00	0.80	0.00	335.00	6.00	0.80	0.00
7.50	0.61	0.00	0.00	172.50	6.00	0.80	0.00	337.50	6.00	0.80	0.00
10.00	1.13	0.00	0.00	175.00	6.00	0.80	0.00	340.00	6.00	0.80	0.00
12.50	4.21	0.22	0.18	177.50	6.00	0.80	0.00	342.50	6.00	0.80	0.00
15.00	5.13	0.48	0.06	180.00	6.00	0.80	0.00	345.00	6.00	0.80	0.00
17.50	5.52	0.62	0.03	182.50	6.00	0.80	0.00	347.50	6.00	0.80	0.00
20.00	5.74	0.70	0.02	185.00	6.00	0.80	0.00	350.00	6.00	0.80	0.00
22.50	5.92	0.77	0.02	187.50	6.00	0.80	0.00	352.50	6.00	0.80	0.00
25.00	6.00	0.80	0.00	190.00	6.00	0.80	0.00	355.00	6.00	0.80	0.00
27.50	6.00	0.80	0.00	192.50	6.00	0.80	0.00	357.50	6.00	0.80	0.00
30.00	6.00	0.80	0.00	195.00	6.00	0.80	0.00	360.00	6.00	0.80	0.00
32.50	6.00	0.80	0.00	197.50	6.00	0.80	0.00	362.50	6.00	0.80	0.00
35.00	6.00	0.80	0.00	200.00	6.00	0.80	0.00	365.00	6.00	0.80	0.00
37.50	6.00	0.80	0.00	202.50	6.00	0.80	0.00	367.50	6.00	0.80	0.00
40.00	6.00	0.80	0.00	205.00	6.00	0.80	0.00	370.00	6.00	0.80	0.00
42.50	6.00	0.80	0.00	207.50	6.00	0.80	0.00	372.50	6.00	0.80	0.00
45.00	6.00	0.80	0.00	210.00	6.00	0.80	0.00	375.00	6.00	0.80	0.00
47.50	6.00	0.80	0.00	212.50	6.00	0.80	0.00	377.50	6.00	0.80	0.00
50.00	6.00	0.80	0.00	215.00	6.00	0.80	0.00	380.00	6.00	0.80	0.00
52.50	6.00	0.80	0.00	217.50	6.00	0.80	0.00	382.50	6.00	0.80	0.00
55.00	6.00	0.80	0.00	220.00	6.00	0.80	0.00	385.00	6.00	0.80	0.00
57.50	6.00	0.80	0.00	222.50	6.00	0.80	0.00	387.50	6.00	0.80	0.00
60.00	6.00	0.80	0.00	225.00	6.00	0.80	0.00	390.00	6.00	0.80	0.00
62.50	6.00	0.80	0.00	227.50	6.00	0.80	0.00	392.50	6.00	0.80	0.00
65.00	6.00	0.80	0.00	230.00	6.00	0.80	0.00	395.00	6.00	0.80	0.00
67.50	6.00	0.80	0.00	232.50	6.00	0.80	0.00	397.50	6.00	0.80	0.00
70.00	6.00	0.80	0.00	235.00	6.00	0.80	0.00	400.00	6.00	0.80	0.00
72.50	6.00	0.80	0.00	237.50	6.00	0.80	0.00				
75.00	6.00	0.80	0.00	240.00	6.00	0.80	0.00				
77.50	6.00	0.80	0.00	242.50	6.00	0.80	0.00				
80.00	6.00	0.80	0.00	245.00	6.00	0.80	0.00				
82.50	6.00	0.80	0.00	247.50	6.00	0.80	0.00				
85.00	6.00	0.80	0.00	250.00	6.00	0.80	0.00				
87.50	6.00	0.80	0.00	252.50	6.00	0.80	0.00				
90.00	6.00	0.80	0.00	255.00	6.00	0.80	0.00				
92.50	6.00	0.80	0.00	257.50	6.00	0.80	0.00				
95.00	6.00	0.80	0.00	260.00	6.00	0.80	0.00				
97.50	6.00	0.80	0.00	262.50	6.00	0.80	0.00				
100.00	6.00	0.80	0.00	265.00	6.00	0.80	0.00				
102.50	6.00	0.80	0.00	267.50	6.00	0.80	0.00				
105.00	6.00	0.80	0.00	270.00	6.00	0.80	0.00				
107.50	6.00	0.80	0.00	272.50	6.00	0.80	0.00				
110.00	6.00	0.80	0.00	275.00	6.00	0.80	0.00				
112.50	6.00	0.80	0.00	277.50	6.00	0.80	0.00				
115.00	6.00	0.80	0.00	280.00	6.00	0.80	0.00				
117.50	6.00	0.80	0.00	282.50	6.00	0.80	0.00				
120.00	6.00	0.80	0.00	285.00	6.00	0.80	0.00				
122.50	6.00	0.80	0.00	287.50	6.00	0.80	0.00				
125.00	6.00	0.80	0.00	290.00	6.00	0.80	0.00				
127.50	6.00	0.80	0.00	292.50	6.00	0.80	0.00				
130.00	6.00	0.80	0.00	295.00	6.00	0.80	0.00				
132.50	6.00	0.80	0.00	297.50	6.00	0.80	0.00				
135.00	6.00	0.80	0.00	300.00	6.00	0.80	0.00				
137.50	6.00	0.80	0.00	302.50	6.00	0.80	0.00				
140.00	6.00	0.80	0.00	305.00	6.00	0.80	0.00				
142.50	6.00	0.80	0.00	307.50	6.00	0.80	0.00				
145.00	6.00	0.80	0.00	310.00	6.00	0.80	0.00				
147.50	6.00	0.80	0.00	312.50	6.00	0.80	0.00				
150.00	6.00	0.80	0.00	315.00	6.00	0.80	0.00				
152.50	6.00	0.80	0.00	317.50	6.00	0.80	0.00				
155.00	6.00	0.80	0.00	320.00	6.00	0.80	0.00				
157.50	6.00	0.80	0.00	322.50	6.00	0.80	0.00				
160.00	6.00	0.80	0.00	325.00	6.00	0.80	0.00				
162.50	6.00	0.80	0.00	327.50	6.00	0.80	0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Subcatchment 2.2S:

Runoff = 8.08 cfs @ 12.17 hrs, Volume= 0.716 af, Depth= 4.09"

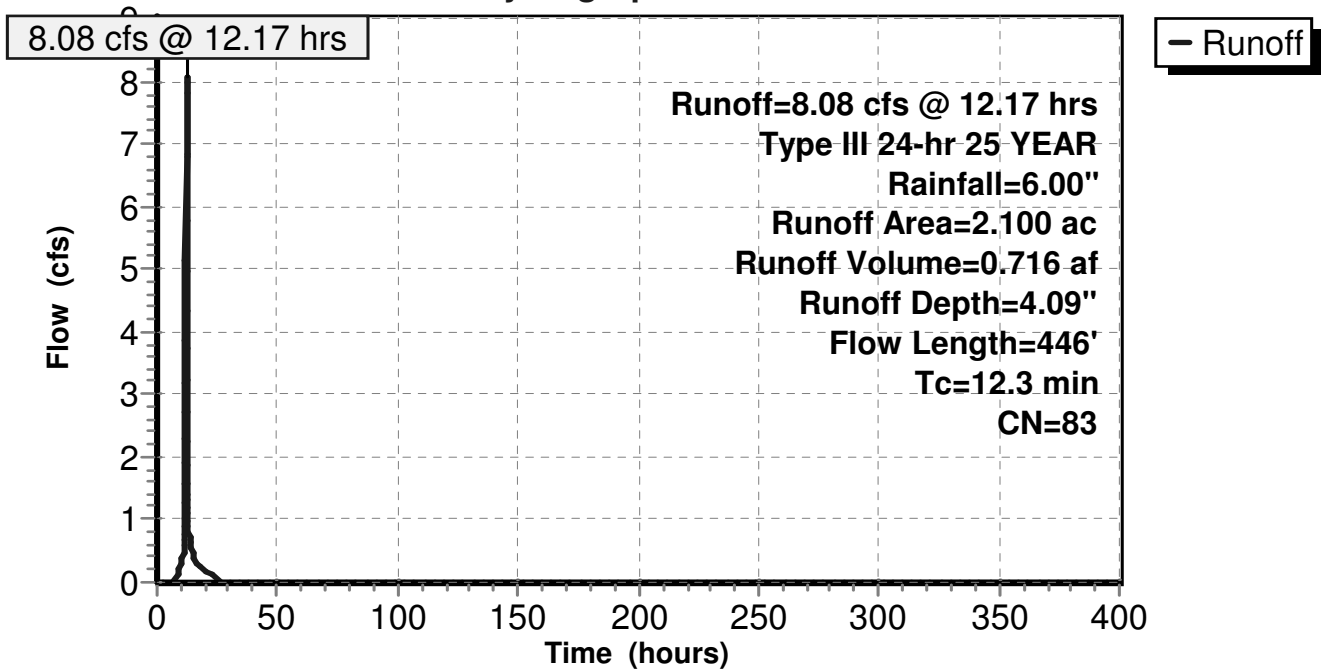
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=6.00"

Area (ac)	CN	Description
1.000	94	Urban commercial, 85% imp, HSG C
0.700	74	>75% Grass cover, Good, HSG C
0.300	71	Meadow, non-grazed, HSG C
* 0.100	70	Pervious Pavement
2.100	83	Weighted Average
1.250		Pervious Area
0.850		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	157	0.1400	2.62		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	140	0.0930	6.19		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	49	0.0290	9.71	11.92	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
12.3	446	Total			

Subcatchment 2.2S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Subcatchment 2.2S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	6.00	4.09	0.00	330.00	6.00	4.09	0.00
2.50	0.15	0.00	0.00	167.50	6.00	4.09	0.00	332.50	6.00	4.09	0.00
5.00	0.34	0.00	0.00	170.00	6.00	4.09	0.00	335.00	6.00	4.09	0.00
7.50	0.61	0.02	0.04	172.50	6.00	4.09	0.00	337.50	6.00	4.09	0.00
10.00	1.13	0.19	0.26	175.00	6.00	4.09	0.00	340.00	6.00	4.09	0.00
12.50	4.21	2.47	3.22	177.50	6.00	4.09	0.00	342.50	6.00	4.09	0.00
15.00	5.13	3.29	0.46	180.00	6.00	4.09	0.00	345.00	6.00	4.09	0.00
17.50	5.52	3.64	0.23	182.50	6.00	4.09	0.00	347.50	6.00	4.09	0.00
20.00	5.74	3.85	0.16	185.00	6.00	4.09	0.00	350.00	6.00	4.09	0.00
22.50	5.92	4.01	0.12	187.50	6.00	4.09	0.00	352.50	6.00	4.09	0.00
25.00	6.00	4.09	0.00	190.00	6.00	4.09	0.00	355.00	6.00	4.09	0.00
27.50	6.00	4.09	0.00	192.50	6.00	4.09	0.00	357.50	6.00	4.09	0.00
30.00	6.00	4.09	0.00	195.00	6.00	4.09	0.00	360.00	6.00	4.09	0.00
32.50	6.00	4.09	0.00	197.50	6.00	4.09	0.00	362.50	6.00	4.09	0.00
35.00	6.00	4.09	0.00	200.00	6.00	4.09	0.00	365.00	6.00	4.09	0.00
37.50	6.00	4.09	0.00	202.50	6.00	4.09	0.00	367.50	6.00	4.09	0.00
40.00	6.00	4.09	0.00	205.00	6.00	4.09	0.00	370.00	6.00	4.09	0.00
42.50	6.00	4.09	0.00	207.50	6.00	4.09	0.00	372.50	6.00	4.09	0.00
45.00	6.00	4.09	0.00	210.00	6.00	4.09	0.00	375.00	6.00	4.09	0.00
47.50	6.00	4.09	0.00	212.50	6.00	4.09	0.00	377.50	6.00	4.09	0.00
50.00	6.00	4.09	0.00	215.00	6.00	4.09	0.00	380.00	6.00	4.09	0.00
52.50	6.00	4.09	0.00	217.50	6.00	4.09	0.00	382.50	6.00	4.09	0.00
55.00	6.00	4.09	0.00	220.00	6.00	4.09	0.00	385.00	6.00	4.09	0.00
57.50	6.00	4.09	0.00	222.50	6.00	4.09	0.00	387.50	6.00	4.09	0.00
60.00	6.00	4.09	0.00	225.00	6.00	4.09	0.00	390.00	6.00	4.09	0.00
62.50	6.00	4.09	0.00	227.50	6.00	4.09	0.00	392.50	6.00	4.09	0.00
65.00	6.00	4.09	0.00	230.00	6.00	4.09	0.00	395.00	6.00	4.09	0.00
67.50	6.00	4.09	0.00	232.50	6.00	4.09	0.00	397.50	6.00	4.09	0.00
70.00	6.00	4.09	0.00	235.00	6.00	4.09	0.00	400.00	6.00	4.09	0.00
72.50	6.00	4.09	0.00	237.50	6.00	4.09	0.00				
75.00	6.00	4.09	0.00	240.00	6.00	4.09	0.00				
77.50	6.00	4.09	0.00	242.50	6.00	4.09	0.00				
80.00	6.00	4.09	0.00	245.00	6.00	4.09	0.00				
82.50	6.00	4.09	0.00	247.50	6.00	4.09	0.00				
85.00	6.00	4.09	0.00	250.00	6.00	4.09	0.00				
87.50	6.00	4.09	0.00	252.50	6.00	4.09	0.00				
90.00	6.00	4.09	0.00	255.00	6.00	4.09	0.00				
92.50	6.00	4.09	0.00	257.50	6.00	4.09	0.00				
95.00	6.00	4.09	0.00	260.00	6.00	4.09	0.00				
97.50	6.00	4.09	0.00	262.50	6.00	4.09	0.00				
100.00	6.00	4.09	0.00	265.00	6.00	4.09	0.00				
102.50	6.00	4.09	0.00	267.50	6.00	4.09	0.00				
105.00	6.00	4.09	0.00	270.00	6.00	4.09	0.00				
107.50	6.00	4.09	0.00	272.50	6.00	4.09	0.00				
110.00	6.00	4.09	0.00	275.00	6.00	4.09	0.00				
112.50	6.00	4.09	0.00	277.50	6.00	4.09	0.00				
115.00	6.00	4.09	0.00	280.00	6.00	4.09	0.00				
117.50	6.00	4.09	0.00	282.50	6.00	4.09	0.00				
120.00	6.00	4.09	0.00	285.00	6.00	4.09	0.00				
122.50	6.00	4.09	0.00	287.50	6.00	4.09	0.00				
125.00	6.00	4.09	0.00	290.00	6.00	4.09	0.00				
127.50	6.00	4.09	0.00	292.50	6.00	4.09	0.00				
130.00	6.00	4.09	0.00	295.00	6.00	4.09	0.00				
132.50	6.00	4.09	0.00	297.50	6.00	4.09	0.00				
135.00	6.00	4.09	0.00	300.00	6.00	4.09	0.00				
137.50	6.00	4.09	0.00	302.50	6.00	4.09	0.00				
140.00	6.00	4.09	0.00	305.00	6.00	4.09	0.00				
142.50	6.00	4.09	0.00	307.50	6.00	4.09	0.00				
145.00	6.00	4.09	0.00	310.00	6.00	4.09	0.00				
147.50	6.00	4.09	0.00	312.50	6.00	4.09	0.00				
150.00	6.00	4.09	0.00	315.00	6.00	4.09	0.00				
152.50	6.00	4.09	0.00	317.50	6.00	4.09	0.00				
155.00	6.00	4.09	0.00	320.00	6.00	4.09	0.00				
157.50	6.00	4.09	0.00	322.50	6.00	4.09	0.00				
160.00	6.00	4.09	0.00	325.00	6.00	4.09	0.00				
162.50	6.00	4.09	0.00	327.50	6.00	4.09	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Subcatchment 2.3S:

Runoff = 20.21 cfs @ 12.20 hrs, Volume= 1.870 af, Depth= 2.81"

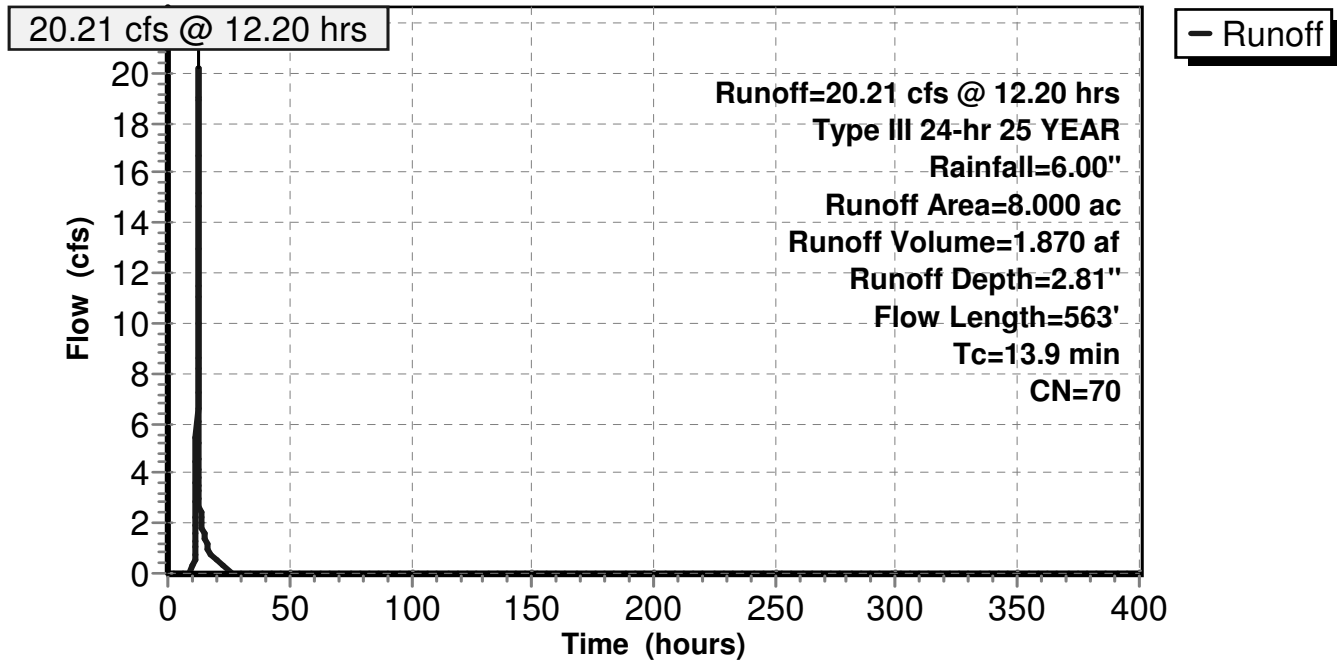
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=6.00"

Area (ac)	CN	Description
5.500	70	Woods, Good, HSG C
0.200	39	>75% Grass cover, Good, HSG A
0.500	98	Paved parking & roofs
0.500	71	Meadow, non-grazed, HSG C
0.900	74	>75% Grass cover, Good, HSG C
0.300	30	Woods, Good, HSG A
0.050	94	Urban commercial, 85% imp, HSG C
0.050	89	Urban commercial, 85% imp, HSG A
8.000	70	Weighted Average
7.415		Pervious Area
0.585		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
4.5	463	0.1200	1.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.9	563	Total			

Subcatchment 2.3S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Subcatchment 2.3S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	6.00	2.81	0.00	330.00	6.00	2.81	0.00
2.50	0.15	0.00	0.00	167.50	6.00	2.81	0.00	332.50	6.00	2.81	0.00
5.00	0.34	0.00	0.00	170.00	6.00	2.81	0.00	335.00	6.00	2.81	0.00
7.50	0.61	0.00	0.00	172.50	6.00	2.81	0.00	337.50	6.00	2.81	0.00
10.00	1.13	0.02	0.21	175.00	6.00	2.81	0.00	340.00	6.00	2.81	0.00
12.50	4.21	1.47	10.04	177.50	6.00	2.81	0.00	342.50	6.00	2.81	0.00
15.00	5.13	2.13	1.44	180.00	6.00	2.81	0.00	345.00	6.00	2.81	0.00
17.50	5.52	2.43	0.73	182.50	6.00	2.81	0.00	347.50	6.00	2.81	0.00
20.00	5.74	2.60	0.50	185.00	6.00	2.81	0.00	350.00	6.00	2.81	0.00
22.50	5.92	2.74	0.40	187.50	6.00	2.81	0.00	352.50	6.00	2.81	0.00
25.00	6.00	2.81	0.00	190.00	6.00	2.81	0.00	355.00	6.00	2.81	0.00
27.50	6.00	2.81	0.00	192.50	6.00	2.81	0.00	357.50	6.00	2.81	0.00
30.00	6.00	2.81	0.00	195.00	6.00	2.81	0.00	360.00	6.00	2.81	0.00
32.50	6.00	2.81	0.00	197.50	6.00	2.81	0.00	362.50	6.00	2.81	0.00
35.00	6.00	2.81	0.00	200.00	6.00	2.81	0.00	365.00	6.00	2.81	0.00
37.50	6.00	2.81	0.00	202.50	6.00	2.81	0.00	367.50	6.00	2.81	0.00
40.00	6.00	2.81	0.00	205.00	6.00	2.81	0.00	370.00	6.00	2.81	0.00
42.50	6.00	2.81	0.00	207.50	6.00	2.81	0.00	372.50	6.00	2.81	0.00
45.00	6.00	2.81	0.00	210.00	6.00	2.81	0.00	375.00	6.00	2.81	0.00
47.50	6.00	2.81	0.00	212.50	6.00	2.81	0.00	377.50	6.00	2.81	0.00
50.00	6.00	2.81	0.00	215.00	6.00	2.81	0.00	380.00	6.00	2.81	0.00
52.50	6.00	2.81	0.00	217.50	6.00	2.81	0.00	382.50	6.00	2.81	0.00
55.00	6.00	2.81	0.00	220.00	6.00	2.81	0.00	385.00	6.00	2.81	0.00
57.50	6.00	2.81	0.00	222.50	6.00	2.81	0.00	387.50	6.00	2.81	0.00
60.00	6.00	2.81	0.00	225.00	6.00	2.81	0.00	390.00	6.00	2.81	0.00
62.50	6.00	2.81	0.00	227.50	6.00	2.81	0.00	392.50	6.00	2.81	0.00
65.00	6.00	2.81	0.00	230.00	6.00	2.81	0.00	395.00	6.00	2.81	0.00
67.50	6.00	2.81	0.00	232.50	6.00	2.81	0.00	397.50	6.00	2.81	0.00
70.00	6.00	2.81	0.00	235.00	6.00	2.81	0.00	400.00	6.00	2.81	0.00
72.50	6.00	2.81	0.00	237.50	6.00	2.81	0.00				
75.00	6.00	2.81	0.00	240.00	6.00	2.81	0.00				
77.50	6.00	2.81	0.00	242.50	6.00	2.81	0.00				
80.00	6.00	2.81	0.00	245.00	6.00	2.81	0.00				
82.50	6.00	2.81	0.00	247.50	6.00	2.81	0.00				
85.00	6.00	2.81	0.00	250.00	6.00	2.81	0.00				
87.50	6.00	2.81	0.00	252.50	6.00	2.81	0.00				
90.00	6.00	2.81	0.00	255.00	6.00	2.81	0.00				
92.50	6.00	2.81	0.00	257.50	6.00	2.81	0.00				
95.00	6.00	2.81	0.00	260.00	6.00	2.81	0.00				
97.50	6.00	2.81	0.00	262.50	6.00	2.81	0.00				
100.00	6.00	2.81	0.00	265.00	6.00	2.81	0.00				
102.50	6.00	2.81	0.00	267.50	6.00	2.81	0.00				
105.00	6.00	2.81	0.00	270.00	6.00	2.81	0.00				
107.50	6.00	2.81	0.00	272.50	6.00	2.81	0.00				
110.00	6.00	2.81	0.00	275.00	6.00	2.81	0.00				
112.50	6.00	2.81	0.00	277.50	6.00	2.81	0.00				
115.00	6.00	2.81	0.00	280.00	6.00	2.81	0.00				
117.50	6.00	2.81	0.00	282.50	6.00	2.81	0.00				
120.00	6.00	2.81	0.00	285.00	6.00	2.81	0.00				
122.50	6.00	2.81	0.00	287.50	6.00	2.81	0.00				
125.00	6.00	2.81	0.00	290.00	6.00	2.81	0.00				
127.50	6.00	2.81	0.00	292.50	6.00	2.81	0.00				
130.00	6.00	2.81	0.00	295.00	6.00	2.81	0.00				
132.50	6.00	2.81	0.00	297.50	6.00	2.81	0.00				
135.00	6.00	2.81	0.00	300.00	6.00	2.81	0.00				
137.50	6.00	2.81	0.00	302.50	6.00	2.81	0.00				
140.00	6.00	2.81	0.00	305.00	6.00	2.81	0.00				
142.50	6.00	2.81	0.00	307.50	6.00	2.81	0.00				
145.00	6.00	2.81	0.00	310.00	6.00	2.81	0.00				
147.50	6.00	2.81	0.00	312.50	6.00	2.81	0.00				
150.00	6.00	2.81	0.00	315.00	6.00	2.81	0.00				
152.50	6.00	2.81	0.00	317.50	6.00	2.81	0.00				
155.00	6.00	2.81	0.00	320.00	6.00	2.81	0.00				
157.50	6.00	2.81	0.00	322.50	6.00	2.81	0.00				
160.00	6.00	2.81	0.00	325.00	6.00	2.81	0.00				
162.50	6.00	2.81	0.00	327.50	6.00	2.81	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Subcatchment 3.0S:

Runoff = 3.68 cfs @ 12.20 hrs, Volume= 0.345 af, Depth= 2.18"

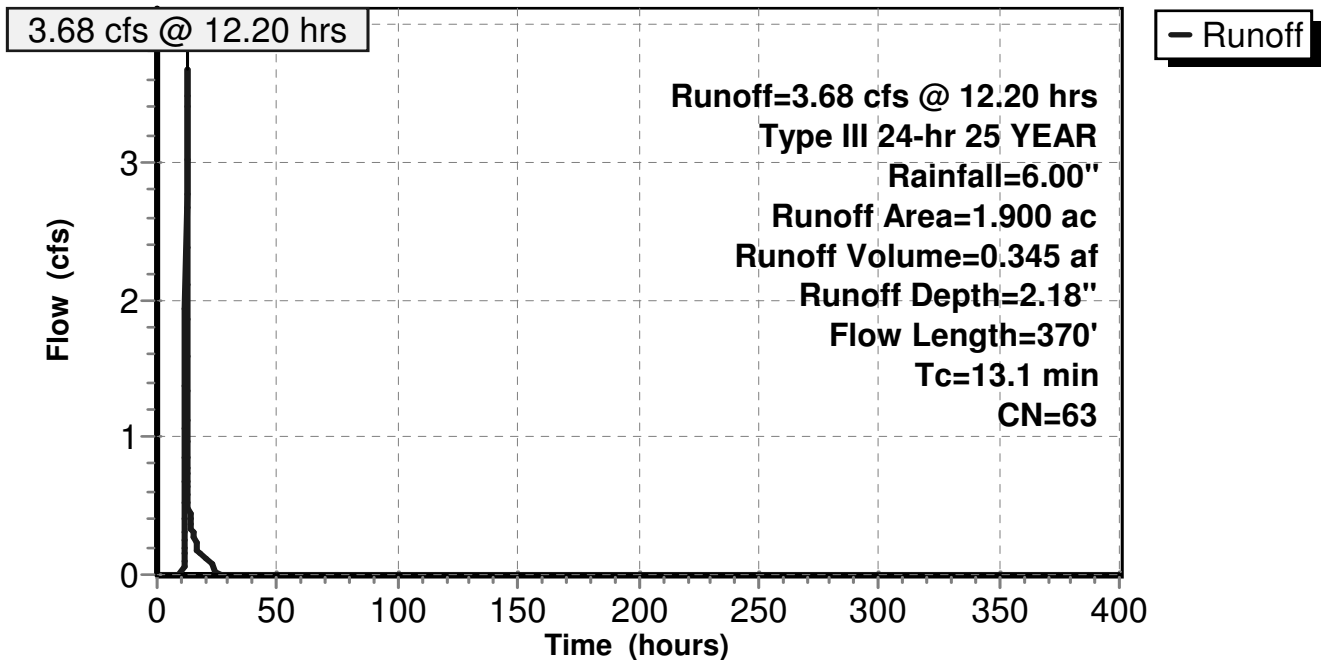
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YEAR Rainfall=6.00"

Area (ac)	CN	Description
0.900	98	Paved parking & roofs
0.800	30	Woods, Good, HSG A
0.200	39	>75% Grass cover, Good, HSG A
1.900	63	Weighted Average
1.000		Pervious Area
0.900		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
6.5	90	0.0400	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
6.4	270	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.1	370	Total			

Subcatchment 3.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Subcatchment 3.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	6.00	2.18	0.00	330.00	6.00	2.18	0.00
2.50	0.15	0.00	0.00	167.50	6.00	2.18	0.00	332.50	6.00	2.18	0.00
5.00	0.34	0.00	0.00	170.00	6.00	2.18	0.00	335.00	6.00	2.18	0.00
7.50	0.61	0.00	0.00	172.50	6.00	2.18	0.00	337.50	6.00	2.18	0.00
10.00	1.13	0.00	0.00	175.00	6.00	2.18	0.00	340.00	6.00	2.18	0.00
12.50	4.21	1.04	1.86	177.50	6.00	2.18	0.00	342.50	6.00	2.18	0.00
15.00	5.13	1.59	0.29	180.00	6.00	2.18	0.00	345.00	6.00	2.18	0.00
17.50	5.52	1.85	0.15	182.50	6.00	2.18	0.00	347.50	6.00	2.18	0.00
20.00	5.74	2.00	0.10	185.00	6.00	2.18	0.00	350.00	6.00	2.18	0.00
22.50	5.92	2.12	0.08	187.50	6.00	2.18	0.00	352.50	6.00	2.18	0.00
25.00	6.00	2.18	0.00	190.00	6.00	2.18	0.00	355.00	6.00	2.18	0.00
27.50	6.00	2.18	0.00	192.50	6.00	2.18	0.00	357.50	6.00	2.18	0.00
30.00	6.00	2.18	0.00	195.00	6.00	2.18	0.00	360.00	6.00	2.18	0.00
32.50	6.00	2.18	0.00	197.50	6.00	2.18	0.00	362.50	6.00	2.18	0.00
35.00	6.00	2.18	0.00	200.00	6.00	2.18	0.00	365.00	6.00	2.18	0.00
37.50	6.00	2.18	0.00	202.50	6.00	2.18	0.00	367.50	6.00	2.18	0.00
40.00	6.00	2.18	0.00	205.00	6.00	2.18	0.00	370.00	6.00	2.18	0.00
42.50	6.00	2.18	0.00	207.50	6.00	2.18	0.00	372.50	6.00	2.18	0.00
45.00	6.00	2.18	0.00	210.00	6.00	2.18	0.00	375.00	6.00	2.18	0.00
47.50	6.00	2.18	0.00	212.50	6.00	2.18	0.00	377.50	6.00	2.18	0.00
50.00	6.00	2.18	0.00	215.00	6.00	2.18	0.00	380.00	6.00	2.18	0.00
52.50	6.00	2.18	0.00	217.50	6.00	2.18	0.00	382.50	6.00	2.18	0.00
55.00	6.00	2.18	0.00	220.00	6.00	2.18	0.00	385.00	6.00	2.18	0.00
57.50	6.00	2.18	0.00	222.50	6.00	2.18	0.00	387.50	6.00	2.18	0.00
60.00	6.00	2.18	0.00	225.00	6.00	2.18	0.00	390.00	6.00	2.18	0.00
62.50	6.00	2.18	0.00	227.50	6.00	2.18	0.00	392.50	6.00	2.18	0.00
65.00	6.00	2.18	0.00	230.00	6.00	2.18	0.00	395.00	6.00	2.18	0.00
67.50	6.00	2.18	0.00	232.50	6.00	2.18	0.00	397.50	6.00	2.18	0.00
70.00	6.00	2.18	0.00	235.00	6.00	2.18	0.00	400.00	6.00	2.18	0.00
72.50	6.00	2.18	0.00	237.50	6.00	2.18	0.00				
75.00	6.00	2.18	0.00	240.00	6.00	2.18	0.00				
77.50	6.00	2.18	0.00	242.50	6.00	2.18	0.00				
80.00	6.00	2.18	0.00	245.00	6.00	2.18	0.00				
82.50	6.00	2.18	0.00	247.50	6.00	2.18	0.00				
85.00	6.00	2.18	0.00	250.00	6.00	2.18	0.00				
87.50	6.00	2.18	0.00	252.50	6.00	2.18	0.00				
90.00	6.00	2.18	0.00	255.00	6.00	2.18	0.00				
92.50	6.00	2.18	0.00	257.50	6.00	2.18	0.00				
95.00	6.00	2.18	0.00	260.00	6.00	2.18	0.00				
97.50	6.00	2.18	0.00	262.50	6.00	2.18	0.00				
100.00	6.00	2.18	0.00	265.00	6.00	2.18	0.00				
102.50	6.00	2.18	0.00	267.50	6.00	2.18	0.00				
105.00	6.00	2.18	0.00	270.00	6.00	2.18	0.00				
107.50	6.00	2.18	0.00	272.50	6.00	2.18	0.00				
110.00	6.00	2.18	0.00	275.00	6.00	2.18	0.00				
112.50	6.00	2.18	0.00	277.50	6.00	2.18	0.00				
115.00	6.00	2.18	0.00	280.00	6.00	2.18	0.00				
117.50	6.00	2.18	0.00	282.50	6.00	2.18	0.00				
120.00	6.00	2.18	0.00	285.00	6.00	2.18	0.00				
122.50	6.00	2.18	0.00	287.50	6.00	2.18	0.00				
125.00	6.00	2.18	0.00	290.00	6.00	2.18	0.00				
127.50	6.00	2.18	0.00	292.50	6.00	2.18	0.00				
130.00	6.00	2.18	0.00	295.00	6.00	2.18	0.00				
132.50	6.00	2.18	0.00	297.50	6.00	2.18	0.00				
135.00	6.00	2.18	0.00	300.00	6.00	2.18	0.00				
137.50	6.00	2.18	0.00	302.50	6.00	2.18	0.00				
140.00	6.00	2.18	0.00	305.00	6.00	2.18	0.00				
142.50	6.00	2.18	0.00	307.50	6.00	2.18	0.00				
145.00	6.00	2.18	0.00	310.00	6.00	2.18	0.00				
147.50	6.00	2.18	0.00	312.50	6.00	2.18	0.00				
150.00	6.00	2.18	0.00	315.00	6.00	2.18	0.00				
152.50	6.00	2.18	0.00	317.50	6.00	2.18	0.00				
155.00	6.00	2.18	0.00	320.00	6.00	2.18	0.00				
157.50	6.00	2.18	0.00	322.50	6.00	2.18	0.00				
160.00	6.00	2.18	0.00	325.00	6.00	2.18	0.00				
162.50	6.00	2.18	0.00	327.50	6.00	2.18	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Subcatchment 3.1S:

Runoff = 1.63 cfs @ 12.33 hrs, Volume= 0.205 af, Depth= 1.36"

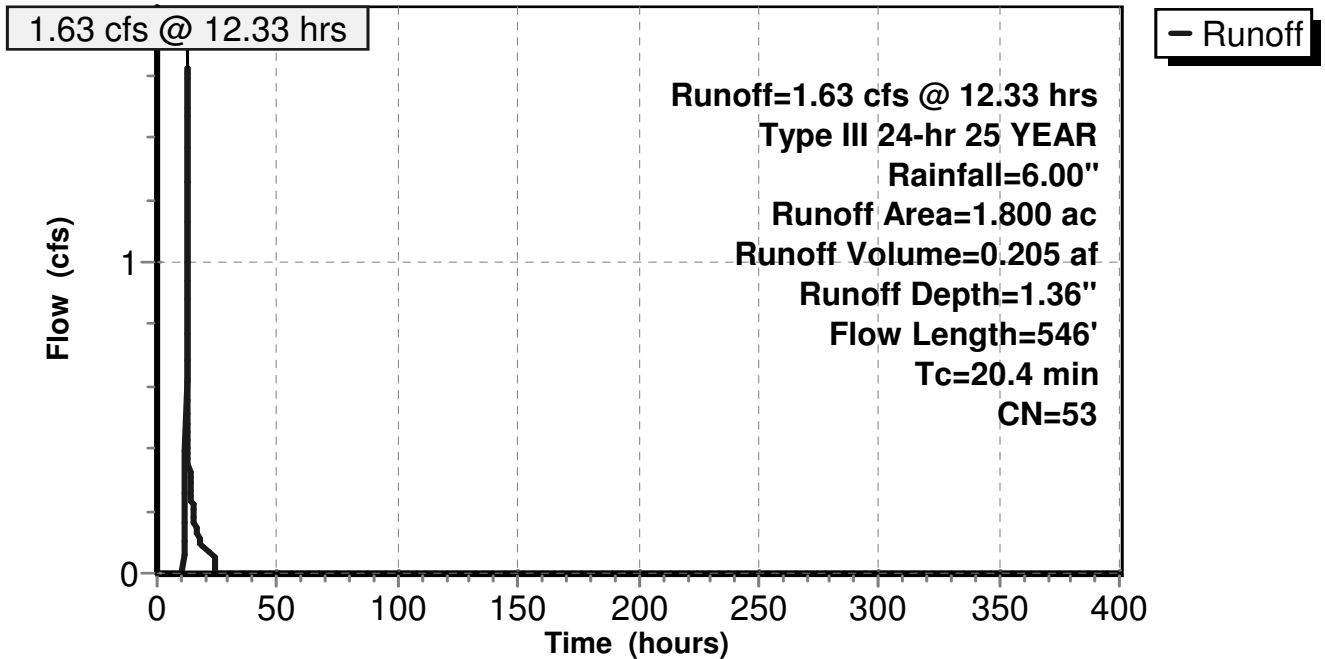
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YEAR Rainfall=6.00"

Area (ac)	CN	Description
0.600	98	Paved parking & roofs
1.200	30	Woods, Good, HSG A
1.800	53	Weighted Average
1.200		Pervious Area
0.600		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
16.0	90	0.0300	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.7	126	0.0600	1.22		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.5	320	0.0200	2.18	2.61	Channel Flow, Area= 1.2 sf Perim= 5.5' r= 0.22' n= 0.035
20.4	546	Total			

Subcatchment 3.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Subcatchment 3.1S:

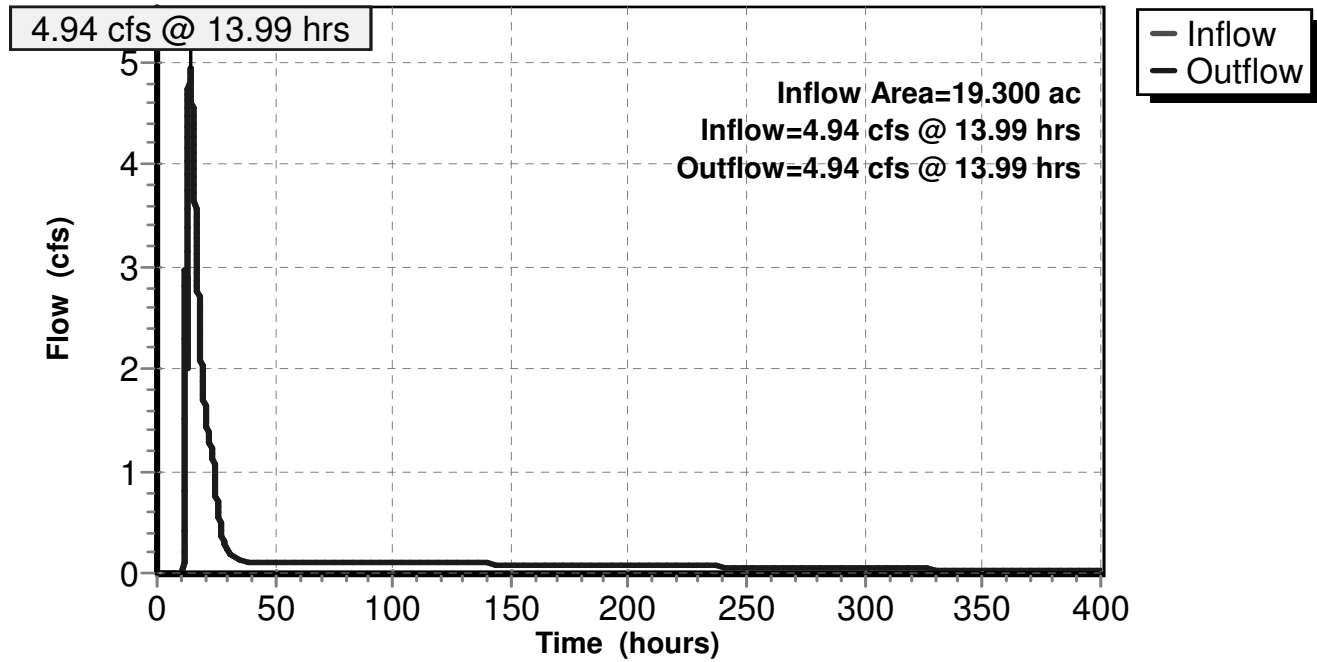
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	6.00	1.36	0.00	330.00	6.00	1.36	0.00
2.50	0.15	0.00	0.00	167.50	6.00	1.36	0.00	332.50	6.00	1.36	0.00
5.00	0.34	0.00	0.00	170.00	6.00	1.36	0.00	335.00	6.00	1.36	0.00
7.50	0.61	0.00	0.00	172.50	6.00	1.36	0.00	337.50	6.00	1.36	0.00
10.00	1.13	0.00	0.00	175.00	6.00	1.36	0.00	340.00	6.00	1.36	0.00
12.50	4.21	0.53	1.37	177.50	6.00	1.36	0.00	342.50	6.00	1.36	0.00
15.00	5.13	0.92	0.21	180.00	6.00	1.36	0.00	345.00	6.00	1.36	0.00
17.50	5.52	1.11	0.11	182.50	6.00	1.36	0.00	347.50	6.00	1.36	0.00
20.00	5.74	1.23	0.08	185.00	6.00	1.36	0.00	350.00	6.00	1.36	0.00
22.50	5.92	1.32	0.06	187.50	6.00	1.36	0.00	352.50	6.00	1.36	0.00
25.00	6.00	1.36	0.00	190.00	6.00	1.36	0.00	355.00	6.00	1.36	0.00
27.50	6.00	1.36	0.00	192.50	6.00	1.36	0.00	357.50	6.00	1.36	0.00
30.00	6.00	1.36	0.00	195.00	6.00	1.36	0.00	360.00	6.00	1.36	0.00
32.50	6.00	1.36	0.00	197.50	6.00	1.36	0.00	362.50	6.00	1.36	0.00
35.00	6.00	1.36	0.00	200.00	6.00	1.36	0.00	365.00	6.00	1.36	0.00
37.50	6.00	1.36	0.00	202.50	6.00	1.36	0.00	367.50	6.00	1.36	0.00
40.00	6.00	1.36	0.00	205.00	6.00	1.36	0.00	370.00	6.00	1.36	0.00
42.50	6.00	1.36	0.00	207.50	6.00	1.36	0.00	372.50	6.00	1.36	0.00
45.00	6.00	1.36	0.00	210.00	6.00	1.36	0.00	375.00	6.00	1.36	0.00
47.50	6.00	1.36	0.00	212.50	6.00	1.36	0.00	377.50	6.00	1.36	0.00
50.00	6.00	1.36	0.00	215.00	6.00	1.36	0.00	380.00	6.00	1.36	0.00
52.50	6.00	1.36	0.00	217.50	6.00	1.36	0.00	382.50	6.00	1.36	0.00
55.00	6.00	1.36	0.00	220.00	6.00	1.36	0.00	385.00	6.00	1.36	0.00
57.50	6.00	1.36	0.00	222.50	6.00	1.36	0.00	387.50	6.00	1.36	0.00
60.00	6.00	1.36	0.00	225.00	6.00	1.36	0.00	390.00	6.00	1.36	0.00
62.50	6.00	1.36	0.00	227.50	6.00	1.36	0.00	392.50	6.00	1.36	0.00
65.00	6.00	1.36	0.00	230.00	6.00	1.36	0.00	395.00	6.00	1.36	0.00
67.50	6.00	1.36	0.00	232.50	6.00	1.36	0.00	397.50	6.00	1.36	0.00
70.00	6.00	1.36	0.00	235.00	6.00	1.36	0.00	400.00	6.00	1.36	0.00
72.50	6.00	1.36	0.00	237.50	6.00	1.36	0.00				
75.00	6.00	1.36	0.00	240.00	6.00	1.36	0.00				
77.50	6.00	1.36	0.00	242.50	6.00	1.36	0.00				
80.00	6.00	1.36	0.00	245.00	6.00	1.36	0.00				
82.50	6.00	1.36	0.00	247.50	6.00	1.36	0.00				
85.00	6.00	1.36	0.00	250.00	6.00	1.36	0.00				
87.50	6.00	1.36	0.00	252.50	6.00	1.36	0.00				
90.00	6.00	1.36	0.00	255.00	6.00	1.36	0.00				
92.50	6.00	1.36	0.00	257.50	6.00	1.36	0.00				
95.00	6.00	1.36	0.00	260.00	6.00	1.36	0.00				
97.50	6.00	1.36	0.00	262.50	6.00	1.36	0.00				
100.00	6.00	1.36	0.00	265.00	6.00	1.36	0.00				
102.50	6.00	1.36	0.00	267.50	6.00	1.36	0.00				
105.00	6.00	1.36	0.00	270.00	6.00	1.36	0.00				
107.50	6.00	1.36	0.00	272.50	6.00	1.36	0.00				
110.00	6.00	1.36	0.00	275.00	6.00	1.36	0.00				
112.50	6.00	1.36	0.00	277.50	6.00	1.36	0.00				
115.00	6.00	1.36	0.00	280.00	6.00	1.36	0.00				
117.50	6.00	1.36	0.00	282.50	6.00	1.36	0.00				
120.00	6.00	1.36	0.00	285.00	6.00	1.36	0.00				
122.50	6.00	1.36	0.00	287.50	6.00	1.36	0.00				
125.00	6.00	1.36	0.00	290.00	6.00	1.36	0.00				
127.50	6.00	1.36	0.00	292.50	6.00	1.36	0.00				
130.00	6.00	1.36	0.00	295.00	6.00	1.36	0.00				
132.50	6.00	1.36	0.00	297.50	6.00	1.36	0.00				
135.00	6.00	1.36	0.00	300.00	6.00	1.36	0.00				
137.50	6.00	1.36	0.00	302.50	6.00	1.36	0.00				
140.00	6.00	1.36	0.00	305.00	6.00	1.36	0.00				
142.50	6.00	1.36	0.00	307.50	6.00	1.36	0.00				
145.00	6.00	1.36	0.00	310.00	6.00	1.36	0.00				
147.50	6.00	1.36	0.00	312.50	6.00	1.36	0.00				
150.00	6.00	1.36	0.00	315.00	6.00	1.36	0.00				
152.50	6.00	1.36	0.00	317.50	6.00	1.36	0.00				
155.00	6.00	1.36	0.00	320.00	6.00	1.36	0.00				
157.50	6.00	1.36	0.00	322.50	6.00	1.36	0.00				
160.00	6.00	1.36	0.00	325.00	6.00	1.36	0.00				
162.50	6.00	1.36	0.00	327.50	6.00	1.36	0.00				

Summary for Reach DESIGN LINE 1:

Inflow Area = 19.300 ac, 52.07% Impervious, Inflow Depth > 3.11" for 25 YEAR event
Inflow = 4.94 cfs @ 13.99 hrs, Volume= 4.998 af
Outflow = 4.94 cfs @ 13.99 hrs, Volume= 4.998 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

**Reach DESIGN LINE 1:
Hydrograph**



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Reach DESIGN LINE 1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.09		0.09	330.00	0.04		0.04
2.50	0.00		0.00	167.50	0.08		0.08	332.50	0.04		0.04
5.00	0.00		0.00	170.00	0.08		0.08	335.00	0.04		0.04
7.50	0.00		0.00	172.50	0.08		0.08	337.50	0.04		0.04
10.00	0.00		0.00	175.00	0.08		0.08	340.00	0.04		0.04
12.50	2.18		2.18	177.50	0.08		0.08	342.50	0.03		0.03
15.00	4.52		4.52	180.00	0.08		0.08	345.00	0.03		0.03
17.50	2.74		2.74	182.50	0.08		0.08	347.50	0.03		0.03
20.00	1.67		1.67	185.00	0.08		0.08	350.00	0.03		0.03
22.50	1.24		1.24	187.50	0.08		0.08	352.50	0.03		0.03
25.00	0.76		0.76	190.00	0.08		0.08	355.00	0.03		0.03
27.50	0.37		0.37	192.50	0.08		0.08	357.50	0.03		0.03
30.00	0.22		0.22	195.00	0.08		0.08	360.00	0.03		0.03
32.50	0.15		0.15	197.50	0.08		0.08	362.50	0.03		0.03
35.00	0.12		0.12	200.00	0.08		0.08	365.00	0.03		0.03
37.50	0.12		0.12	202.50	0.08		0.08	367.50	0.03		0.03
40.00	0.11		0.11	205.00	0.07		0.07	370.00	0.03		0.03
42.50	0.11		0.11	207.50	0.07		0.07	372.50	0.03		0.03
45.00	0.11		0.11	210.00	0.07		0.07	375.00	0.02		0.02
47.50	0.11		0.11	212.50	0.07		0.07	377.50	0.02		0.02
50.00	0.11		0.11	215.00	0.07		0.07	380.00	0.02		0.02
52.50	0.11		0.11	217.50	0.07		0.07	382.50	0.02		0.02
55.00	0.11		0.11	220.00	0.07		0.07	385.00	0.02		0.02
57.50	0.11		0.11	222.50	0.07		0.07	387.50	0.02		0.02
60.00	0.11		0.11	225.00	0.07		0.07	390.00	0.02		0.02
62.50	0.11		0.11	227.50	0.07		0.07	392.50	0.02		0.02
65.00	0.11		0.11	230.00	0.07		0.07	395.00	0.02		0.02
67.50	0.11		0.11	232.50	0.07		0.07	397.50	0.02		0.02
70.00	0.11		0.11	235.00	0.07		0.07	400.00	0.02		0.02
72.50	0.11		0.11	237.50	0.07		0.07				
75.00	0.11		0.11	240.00	0.07		0.07				
77.50	0.11		0.11	242.50	0.06		0.06				
80.00	0.11		0.11	245.00	0.06		0.06				
82.50	0.11		0.11	247.50	0.06		0.06				
85.00	0.10		0.10	250.00	0.06		0.06				
87.50	0.10		0.10	252.50	0.06		0.06				
90.00	0.10		0.10	255.00	0.06		0.06				
92.50	0.10		0.10	257.50	0.06		0.06				
95.00	0.10		0.10	260.00	0.06		0.06				
97.50	0.10		0.10	262.50	0.06		0.06				
100.00	0.10		0.10	265.00	0.06		0.06				
102.50	0.10		0.10	267.50	0.06		0.06				
105.00	0.10		0.10	270.00	0.06		0.06				
107.50	0.10		0.10	272.50	0.06		0.06				
110.00	0.10		0.10	275.00	0.06		0.06				
112.50	0.10		0.10	277.50	0.05		0.05				
115.00	0.10		0.10	280.00	0.05		0.05				
117.50	0.10		0.10	282.50	0.05		0.05				
120.00	0.10		0.10	285.00	0.05		0.05				
122.50	0.10		0.10	287.50	0.05		0.05				
125.00	0.10		0.10	290.00	0.05		0.05				
127.50	0.09		0.09	292.50	0.05		0.05				
130.00	0.09		0.09	295.00	0.05		0.05				
132.50	0.09		0.09	297.50	0.05		0.05				
135.00	0.09		0.09	300.00	0.05		0.05				
137.50	0.09		0.09	302.50	0.05		0.05				
140.00	0.09		0.09	305.00	0.05		0.05				
142.50	0.09		0.09	307.50	0.05		0.05				
145.00	0.09		0.09	310.00	0.04		0.04				
147.50	0.09		0.09	312.50	0.04		0.04				
150.00	0.09		0.09	315.00	0.04		0.04				
152.50	0.09		0.09	317.50	0.04		0.04				
155.00	0.09		0.09	320.00	0.04		0.04				
157.50	0.09		0.09	322.50	0.04		0.04				
160.00	0.09		0.09	325.00	0.04		0.04				
162.50	0.09		0.09	327.50	0.04		0.04				

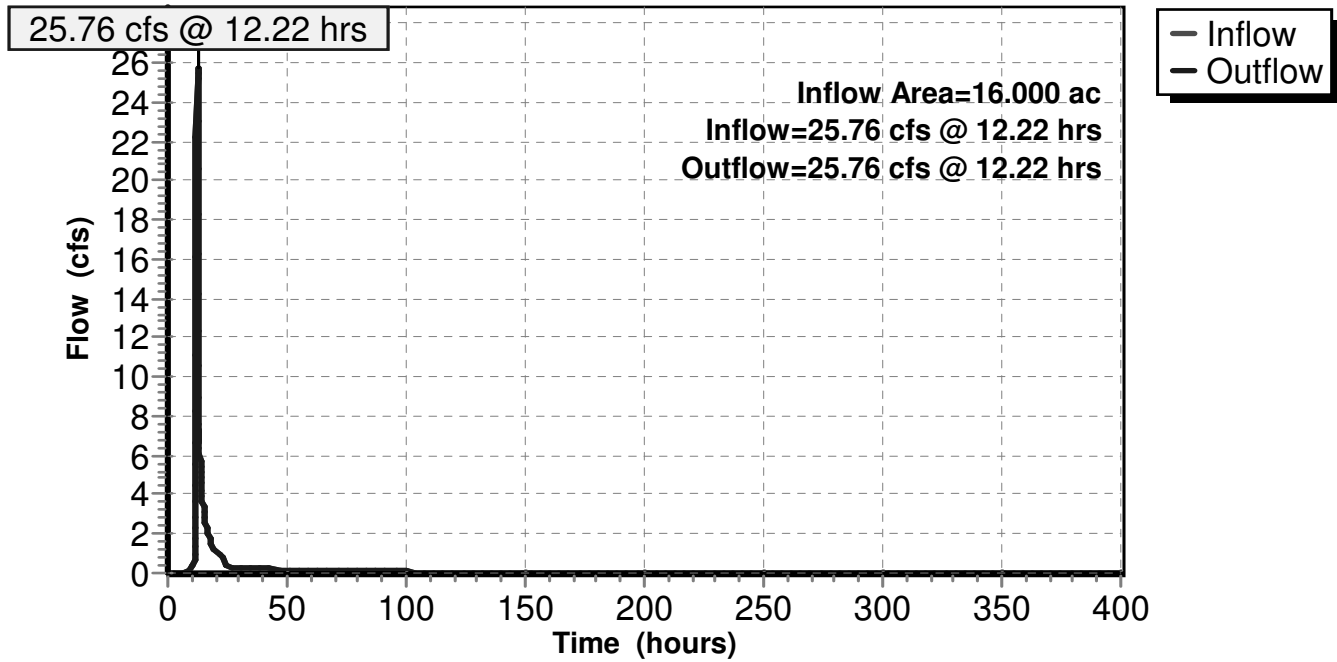
Summary for Reach DESIGN POINT 2:

Inflow Area = 16.000 ac, 31.28% Impervious, Inflow Depth = 3.45" for 25 YEAR event
Inflow = 25.76 cfs @ 12.22 hrs, Volume= 4.603 af
Outflow = 25.76 cfs @ 12.22 hrs, Volume= 4.603 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

Reach DESIGN POINT 2:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Reach DESIGN POINT 2:

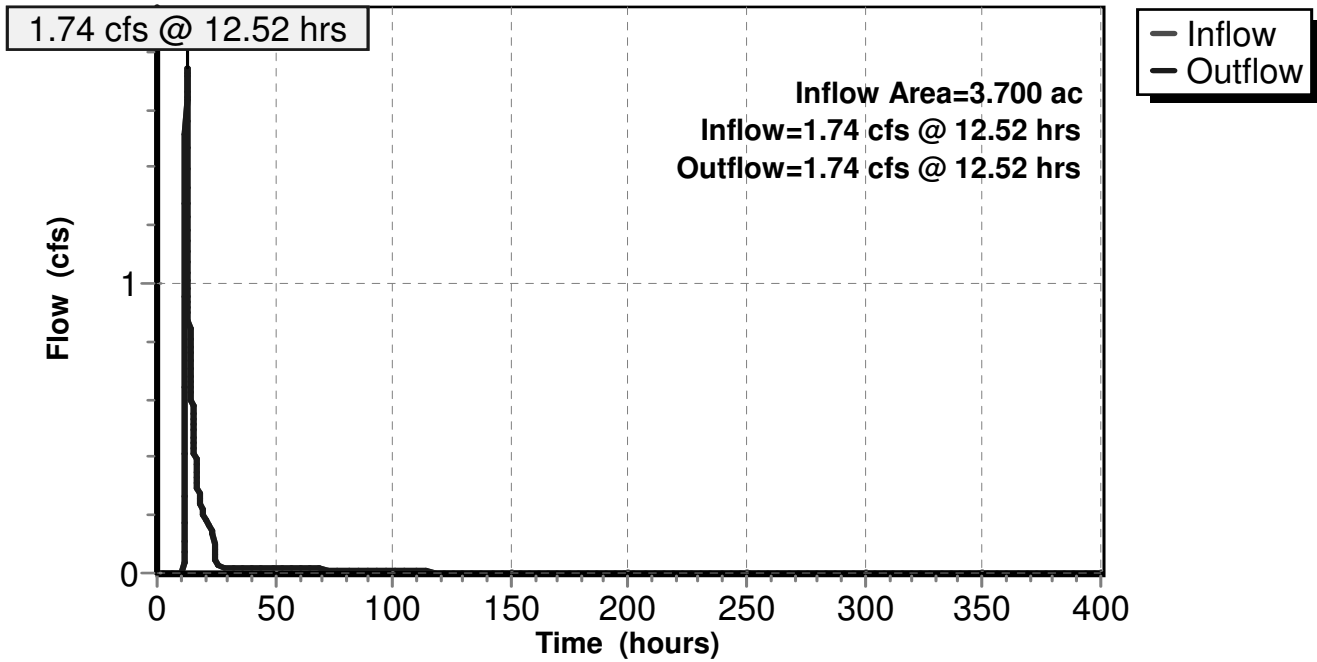
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.04		0.04	330.00	0.00		0.00
2.50	0.00		0.00	167.50	0.04		0.04	332.50	0.00		0.00
5.00	0.00		0.00	170.00	0.04		0.04	335.00	0.00		0.00
7.50	0.01		0.01	172.50	0.04		0.04	337.50	0.00		0.00
10.00	0.25		0.25	175.00	0.03		0.03	340.00	0.00		0.00
12.50	14.26		14.26	177.50	0.03		0.03	342.50	0.00		0.00
15.00	3.37		3.37	180.00	0.03		0.03	345.00	0.00		0.00
17.50	1.70		1.70	182.50	0.03		0.03	347.50	0.00		0.00
20.00	1.13		1.13	185.00	0.03		0.03	350.00	0.00		0.00
22.50	0.89		0.89	187.50	0.00		0.00	352.50	0.00		0.00
25.00	0.27		0.27	190.00	0.00		0.00	355.00	0.00		0.00
27.50	0.26		0.26	192.50	0.00		0.00	357.50	0.00		0.00
30.00	0.25		0.25	195.00	0.00		0.00	360.00	0.00		0.00
32.50	0.24		0.24	197.50	0.00		0.00	362.50	0.00		0.00
35.00	0.24		0.24	200.00	0.00		0.00	365.00	0.00		0.00
37.50	0.23		0.23	202.50	0.00		0.00	367.50	0.00		0.00
40.00	0.22		0.22	205.00	0.00		0.00	370.00	0.00		0.00
42.50	0.21		0.21	207.50	0.00		0.00	372.50	0.00		0.00
45.00	0.21		0.21	210.00	0.00		0.00	375.00	0.00		0.00
47.50	0.20		0.20	212.50	0.00		0.00	377.50	0.00		0.00
50.00	0.19		0.19	215.00	0.00		0.00	380.00	0.00		0.00
52.50	0.18		0.18	217.50	0.00		0.00	382.50	0.00		0.00
55.00	0.18		0.18	220.00	0.00		0.00	385.00	0.00		0.00
57.50	0.17		0.17	222.50	0.00		0.00	387.50	0.00		0.00
60.00	0.16		0.16	225.00	0.00		0.00	390.00	0.00		0.00
62.50	0.15		0.15	227.50	0.00		0.00	392.50	0.00		0.00
65.00	0.14		0.14	230.00	0.00		0.00	395.00	0.00		0.00
67.50	0.13		0.13	232.50	0.00		0.00	397.50	0.00		0.00
70.00	0.13		0.13	235.00	0.00		0.00	400.00	0.00		0.00
72.50	0.12		0.12	237.50	0.00		0.00				
75.00	0.11		0.11	240.00	0.00		0.00				
77.50	0.10		0.10	242.50	0.00		0.00				
80.00	0.09		0.09	245.00	0.00		0.00				
82.50	0.08		0.08	247.50	0.00		0.00				
85.00	0.08		0.08	250.00	0.00		0.00				
87.50	0.07		0.07	252.50	0.00		0.00				
90.00	0.07		0.07	255.00	0.00		0.00				
92.50	0.07		0.07	257.50	0.00		0.00				
95.00	0.07		0.07	260.00	0.00		0.00				
97.50	0.07		0.07	262.50	0.00		0.00				
100.00	0.07		0.07	265.00	0.00		0.00				
102.50	0.07		0.07	267.50	0.00		0.00				
105.00	0.07		0.07	270.00	0.00		0.00				
107.50	0.07		0.07	272.50	0.00		0.00				
110.00	0.06		0.06	275.00	0.00		0.00				
112.50	0.06		0.06	277.50	0.00		0.00				
115.00	0.06		0.06	280.00	0.00		0.00				
117.50	0.06		0.06	282.50	0.00		0.00				
120.00	0.06		0.06	285.00	0.00		0.00				
122.50	0.06		0.06	287.50	0.00		0.00				
125.00	0.06		0.06	290.00	0.00		0.00				
127.50	0.06		0.06	292.50	0.00		0.00				
130.00	0.05		0.05	295.00	0.00		0.00				
132.50	0.05		0.05	297.50	0.00		0.00				
135.00	0.05		0.05	300.00	0.00		0.00				
137.50	0.05		0.05	302.50	0.00		0.00				
140.00	0.05		0.05	305.00	0.00		0.00				
142.50	0.05		0.05	307.50	0.00		0.00				
145.00	0.05		0.05	310.00	0.00		0.00				
147.50	0.05		0.05	312.50	0.00		0.00				
150.00	0.05		0.05	315.00	0.00		0.00				
152.50	0.04		0.04	317.50	0.00		0.00				
155.00	0.04		0.04	320.00	0.00		0.00				
157.50	0.04		0.04	322.50	0.00		0.00				
160.00	0.04		0.04	325.00	0.00		0.00				
162.50	0.04		0.04	327.50	0.00		0.00				

Summary for Reach Design Point 3:

Inflow Area = 3.700 ac, 40.54% Impervious, Inflow Depth = 1.78" for 25 YEAR event
Inflow = 1.74 cfs @ 12.52 hrs, Volume= 0.549 af
Outflow = 1.74 cfs @ 12.52 hrs, Volume= 0.549 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

**Reach Design Point 3:
Hydrograph**



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Reach Design Point 3:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.00		0.00	330.00	0.00		0.00
2.50	0.00		0.00	167.50	0.00		0.00	332.50	0.00		0.00
5.00	0.00		0.00	170.00	0.00		0.00	335.00	0.00		0.00
7.50	0.00		0.00	172.50	0.00		0.00	337.50	0.00		0.00
10.00	0.00		0.00	175.00	0.00		0.00	340.00	0.00		0.00
12.50	1.74		1.74	177.50	0.00		0.00	342.50	0.00		0.00
15.00	0.56		0.56	180.00	0.00		0.00	345.00	0.00		0.00
17.50	0.29		0.29	182.50	0.00		0.00	347.50	0.00		0.00
20.00	0.19		0.19	185.00	0.00		0.00	350.00	0.00		0.00
22.50	0.15		0.15	187.50	0.00		0.00	352.50	0.00		0.00
25.00	0.04		0.04	190.00	0.00		0.00	355.00	0.00		0.00
27.50	0.02		0.02	192.50	0.00		0.00	357.50	0.00		0.00
30.00	0.02		0.02	195.00	0.00		0.00	360.00	0.00		0.00
32.50	0.02		0.02	197.50	0.00		0.00	362.50	0.00		0.00
35.00	0.02		0.02	200.00	0.00		0.00	365.00	0.00		0.00
37.50	0.02		0.02	202.50	0.00		0.00	367.50	0.00		0.00
40.00	0.02		0.02	205.00	0.00		0.00	370.00	0.00		0.00
42.50	0.02		0.02	207.50	0.00		0.00	372.50	0.00		0.00
45.00	0.02		0.02	210.00	0.00		0.00	375.00	0.00		0.00
47.50	0.02		0.02	212.50	0.00		0.00	377.50	0.00		0.00
50.00	0.02		0.02	215.00	0.00		0.00	380.00	0.00		0.00
52.50	0.02		0.02	217.50	0.00		0.00	382.50	0.00		0.00
55.00	0.02		0.02	220.00	0.00		0.00	385.00	0.00		0.00
57.50	0.02		0.02	222.50	0.00		0.00	387.50	0.00		0.00
60.00	0.02		0.02	225.00	0.00		0.00	390.00	0.00		0.00
62.50	0.02		0.02	227.50	0.00		0.00	392.50	0.00		0.00
65.00	0.01		0.01	230.00	0.00		0.00	395.00	0.00		0.00
67.50	0.01		0.01	232.50	0.00		0.00	397.50	0.00		0.00
70.00	0.01		0.01	235.00	0.00		0.00	400.00	0.00		0.00
72.50	0.01		0.01	237.50	0.00		0.00				
75.00	0.01		0.01	240.00	0.00		0.00				
77.50	0.01		0.01	242.50	0.00		0.00				
80.00	0.01		0.01	245.00	0.00		0.00				
82.50	0.01		0.01	247.50	0.00		0.00				
85.00	0.01		0.01	250.00	0.00		0.00				
87.50	0.01		0.01	252.50	0.00		0.00				
90.00	0.01		0.01	255.00	0.00		0.00				
92.50	0.01		0.01	257.50	0.00		0.00				
95.00	0.01		0.01	260.00	0.00		0.00				
97.50	0.01		0.01	262.50	0.00		0.00				
100.00	0.01		0.01	265.00	0.00		0.00				
102.50	0.01		0.01	267.50	0.00		0.00				
105.00	0.01		0.01	270.00	0.00		0.00				
107.50	0.01		0.01	272.50	0.00		0.00				
110.00	0.01		0.01	275.00	0.00		0.00				
112.50	0.01		0.01	277.50	0.00		0.00				
115.00	0.00		0.00	280.00	0.00		0.00				
117.50	0.00		0.00	282.50	0.00		0.00				
120.00	0.00		0.00	285.00	0.00		0.00				
122.50	0.00		0.00	287.50	0.00		0.00				
125.00	0.00		0.00	290.00	0.00		0.00				
127.50	0.00		0.00	292.50	0.00		0.00				
130.00	0.00		0.00	295.00	0.00		0.00				
132.50	0.00		0.00	297.50	0.00		0.00				
135.00	0.00		0.00	300.00	0.00		0.00				
137.50	0.00		0.00	302.50	0.00		0.00				
140.00	0.00		0.00	305.00	0.00		0.00				
142.50	0.00		0.00	307.50	0.00		0.00				
145.00	0.00		0.00	310.00	0.00		0.00				
147.50	0.00		0.00	312.50	0.00		0.00				
150.00	0.00		0.00	315.00	0.00		0.00				
152.50	0.00		0.00	317.50	0.00		0.00				
155.00	0.00		0.00	320.00	0.00		0.00				
157.50	0.00		0.00	322.50	0.00		0.00				
160.00	0.00		0.00	325.00	0.00		0.00				
162.50	0.00		0.00	327.50	0.00		0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Pond 1.0P:

Inflow Area = 12.500 ac, 72.08% Impervious, Inflow Depth = 4.20" for 25 YEAR event
 Inflow = 63.07 cfs @ 12.06 hrs, Volume= 4.371 af
 Outflow = 35.85 cfs @ 12.17 hrs, Volume= 4.335 af, Atten= 43%, Lag= 6.6 min
 Primary = 35.85 cfs @ 12.17 hrs, Volume= 4.335 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 473.00' Surf.Area= 21,200 sf Storage= 38,250 cf
 Peak Elev= 475.12' @ 12.17 hrs Surf.Area= 33,723 sf Storage= 96,373 cf (58,123 cf above start)
 Flood Elev= 476.00' Surf.Area= 39,000 sf Storage= 128,350 cf (90,100 cf above start)

Plug-Flow detention time= 1,433.6 min calculated for 3.457 af (79% of inflow)
 Center-of-Mass det. time= 1,064.8 min (1,866.7 - 801.8)

Volume	Invert	Avail.Storage	Storage Description
#1	468.00'	170,400 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
468.00	1,700	0	0
470.00	4,200	5,900	5,900
472.00	11,700	15,900	21,800
473.00	21,200	16,450	38,250
474.00	27,000	24,100	62,350
476.00	39,000	66,000	128,350
477.00	45,100	42,050	170,400

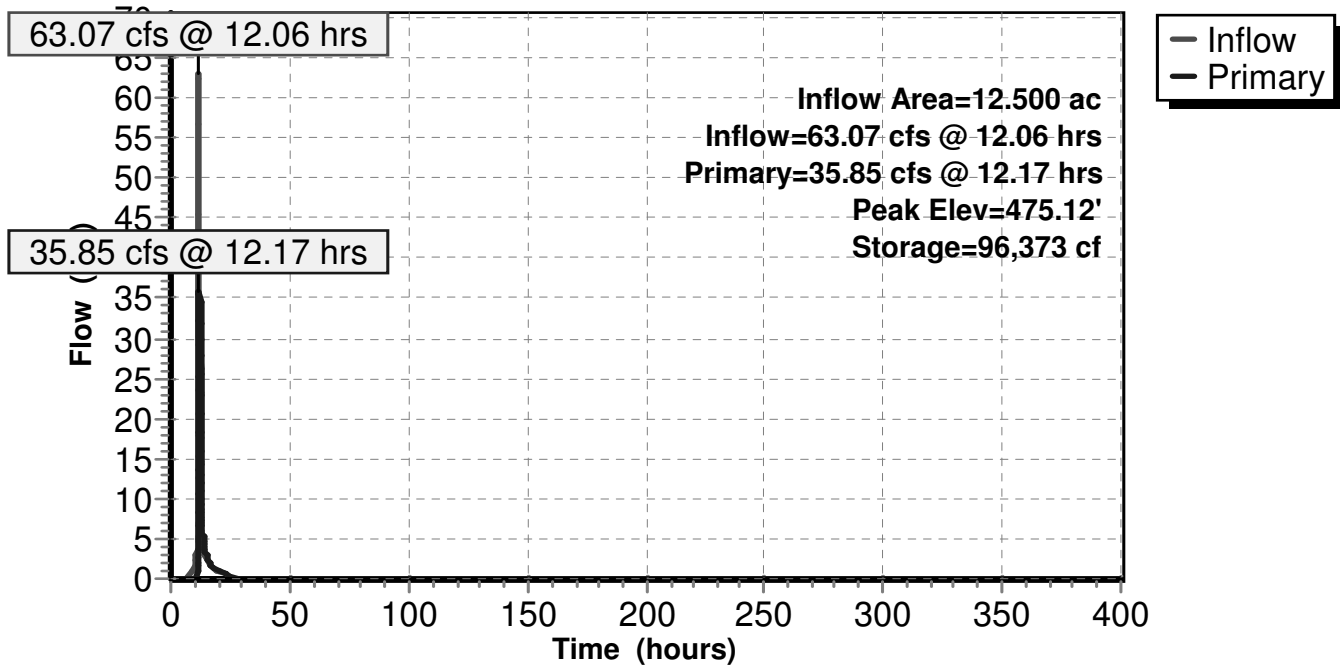
Device	Routing	Invert	Outlet Devices
#1	Primary	467.00'	36.0" x 142.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 462.50' S= 0.0317 '/' Cc= 0.900 n= 0.012
#2	Device 1	473.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	473.90'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=35.42 cfs @ 12.17 hrs HW=475.11' TW=453.96' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 35.42 cfs of 87.51 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 6.93 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 35.38 cfs @ 3.65 fps)

Pond 1.0P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Pond 1.0P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	38,250	473.00	0.00	330.00	0.00	41,547	473.15	0.01
5.00	0.00	38,250	473.00	0.00	335.00	0.00	41,392	473.15	0.01
10.00	1.75	47,433	473.41	0.02	340.00	0.00	41,243	473.14	0.01
15.00	2.65	66,724	474.16	3.02	345.00	0.00	41,098	473.13	0.01
20.00	0.92	62,974	474.02	0.99	350.00	0.00	40,959	473.13	0.01
25.00	0.00	60,832	473.94	0.23	355.00	0.00	40,824	473.12	0.01
30.00	0.00	59,649	473.90	0.02	360.00	0.00	40,695	473.11	0.01
35.00	0.00	59,213	473.88	0.02	365.00	0.00	40,571	473.11	0.01
40.00	0.00	58,782	473.87	0.02	370.00	0.00	40,452	473.10	0.01
45.00	0.00	58,355	473.85	0.02	375.00	0.00	40,338	473.10	0.01
50.00	0.00	57,932	473.83	0.02	380.00	0.00	40,229	473.09	0.01
55.00	0.00	57,514	473.82	0.02	385.00	0.00	40,125	473.09	0.01
60.00	0.00	57,099	473.80	0.02	390.00	0.00	40,027	473.08	0.01
65.00	0.00	56,690	473.79	0.02	395.00	0.00	39,933	473.08	0.01
70.00	0.00	56,284	473.77	0.02	400.00	0.00	39,844	473.07	0.00
75.00	0.00	55,883	473.75	0.02					
80.00	0.00	55,486	473.74	0.02					
85.00	0.00	55,094	473.72	0.02					
90.00	0.00	54,706	473.71	0.02					
95.00	0.00	54,322	473.69	0.02					
100.00	0.00	53,943	473.68	0.02					
105.00	0.00	53,568	473.66	0.02					
110.00	0.00	53,198	473.65	0.02					
115.00	0.00	52,832	473.63	0.02					
120.00	0.00	52,471	473.62	0.02					
125.00	0.00	52,114	473.60	0.02					
130.00	0.00	51,762	473.59	0.02					
135.00	0.00	51,414	473.58	0.02					
140.00	0.00	51,071	473.56	0.02					
145.00	0.00	50,733	473.55	0.02					
150.00	0.00	50,399	473.53	0.02					
155.00	0.00	50,069	473.52	0.02					
160.00	0.00	49,745	473.51	0.02					
165.00	0.00	49,424	473.49	0.02					
170.00	0.00	49,109	473.48	0.02					
175.00	0.00	48,798	473.47	0.02					
180.00	0.00	48,492	473.45	0.02					
185.00	0.00	48,190	473.44	0.02					
190.00	0.00	47,894	473.43	0.02					
195.00	0.00	47,601	473.42	0.02					
200.00	0.00	47,314	473.41	0.02					
205.00	0.00	47,032	473.39	0.02					
210.00	0.00	46,754	473.38	0.02					
215.00	0.00	46,481	473.37	0.02					
220.00	0.00	46,212	473.36	0.01					
225.00	0.00	45,949	473.35	0.01					
230.00	0.00	45,690	473.34	0.01					
235.00	0.00	45,436	473.32	0.01					
240.00	0.00	45,187	473.31	0.01					
245.00	0.00	44,943	473.30	0.01					
250.00	0.00	44,704	473.29	0.01					
255.00	0.00	44,469	473.28	0.01					
260.00	0.00	44,240	473.27	0.01					
265.00	0.00	44,015	473.26	0.01					
270.00	0.00	43,796	473.25	0.01					
275.00	0.00	43,581	473.24	0.01					
280.00	0.00	43,371	473.23	0.01					
285.00	0.00	43,166	473.22	0.01					
290.00	0.00	42,966	473.22	0.01					
295.00	0.00	42,771	473.21	0.01					
300.00	0.00	42,581	473.20	0.01					
305.00	0.00	42,397	473.19	0.01					
310.00	0.00	42,217	473.18	0.01					
315.00	0.00	42,042	473.17	0.01					
320.00	0.00	41,872	473.17	0.01					
325.00	0.00	41,707	473.16	0.01					

Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Pond 1.1P:

Inflow Area = 15.300 ac, 63.73% Impervious, Inflow Depth > 3.68" for 25 YEAR event
 Inflow = 39.69 cfs @ 12.17 hrs, Volume= 4.689 af
 Outflow = 4.46 cfs @ 14.10 hrs, Volume= 4.641 af, Atten= 89%, Lag= 115.8 min
 Primary = 4.46 cfs @ 14.10 hrs, Volume= 4.641 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 452.00' Surf.Area= 14,600 sf Storage= 47,550 cf
 Peak Elev= 457.09' @ 14.10 hrs Surf.Area= 26,644 sf Storage= 151,540 cf (103,990 cf above start)
 Flood Elev= 460.00' Surf.Area= 34,600 sf Storage= 240,350 cf (192,800 cf above start)

Plug-Flow detention time= 5,893.9 min calculated for 3.549 af (76% of inflow)
 Center-of-Mass det. time= 3,524.0 min (5,316.1 - 1,792.1)

Volume	Invert	Avail.Storage	Storage Description
#1	444.00'	276,450 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
444.00	1,000	0	0
446.00	3,600	4,600	4,600
448.00	5,200	8,800	13,400
450.00	7,100	12,300	25,700
451.00	11,000	9,050	34,750
452.00	14,600	12,800	47,550
454.00	19,000	33,600	81,150
456.00	23,800	42,800	123,950
458.00	29,000	52,800	176,750
460.00	34,600	63,600	240,350
461.00	37,600	36,100	276,450

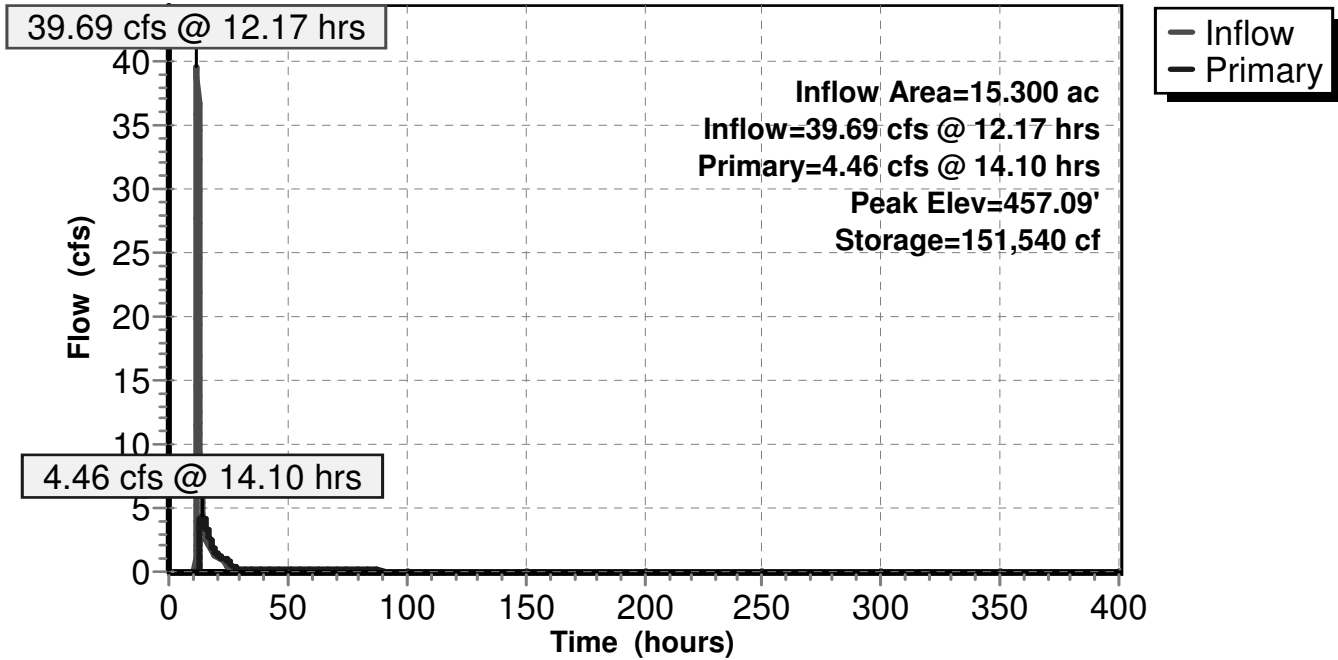
Device	Routing	Invert	Outlet Devices
#1	Primary	452.00'	36.0" x 76.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 451.20' S= 0.0105 '/' Cc= 0.900 n= 0.012
#2	Device 1	452.00'	1.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	455.90'	1.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.46 cfs @ 14.10 hrs HW=457.09' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 4.46 cfs of 64.52 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.13 cfs @ 10.80 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 4.33 cfs @ 3.63 fps)

Pond 1.1P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Pond 1.1P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	47,550	452.00	0.00	330.00	0.01	54,854	452.48	0.04
5.00	0.00	47,550	452.00	0.00	335.00	0.01	54,334	452.45	0.04
10.00	0.02	47,636	452.01	0.00	340.00	0.01	53,836	452.42	0.04
15.00	3.36	149,928	457.03	4.14	345.00	0.01	53,361	452.39	0.03
20.00	1.12	135,973	456.49	1.52	350.00	0.01	52,909	452.36	0.03
25.00	0.23	130,381	456.27	0.76	355.00	0.01	52,479	452.33	0.03
30.00	0.02	124,125	456.01	0.22	360.00	0.01	52,073	452.30	0.03
35.00	0.02	121,794	455.91	0.12	365.00	0.01	51,690	452.28	0.03
40.00	0.02	120,147	455.84	0.11	370.00	0.01	51,330	452.25	0.03
45.00	0.02	118,516	455.77	0.11	375.00	0.01	50,992	452.23	0.02
50.00	0.02	116,901	455.70	0.11	380.00	0.01	50,677	452.21	0.02
55.00	0.02	115,301	455.63	0.11	385.00	0.01	50,385	452.19	0.02
60.00	0.02	113,716	455.56	0.11	390.00	0.01	50,116	452.17	0.02
65.00	0.02	112,147	455.49	0.11	395.00	0.01	49,869	452.16	0.02
70.00	0.02	110,593	455.42	0.11	400.00	0.00	49,644	452.14	0.02
75.00	0.02	109,055	455.35	0.11					
80.00	0.02	107,532	455.28	0.11					
85.00	0.02	106,026	455.22	0.10					
90.00	0.02	104,535	455.15	0.10					
95.00	0.02	103,061	455.08	0.10					
100.00	0.02	101,603	455.01	0.10					
105.00	0.02	100,162	454.94	0.10					
110.00	0.02	98,737	454.88	0.10					
115.00	0.02	97,329	454.81	0.10					
120.00	0.02	95,938	454.74	0.10					
125.00	0.02	94,564	454.68	0.10					
130.00	0.02	93,207	454.61	0.09					
135.00	0.02	91,868	454.55	0.09					
140.00	0.02	90,547	454.48	0.09					
145.00	0.02	89,243	454.42	0.09					
150.00	0.02	87,956	454.35	0.09					
155.00	0.02	86,688	454.29	0.09					
160.00	0.02	85,439	454.22	0.09					
165.00	0.02	84,207	454.16	0.09					
170.00	0.02	82,994	454.10	0.08					
175.00	0.02	81,800	454.03	0.08					
180.00	0.02	80,624	453.97	0.08					
185.00	0.02	79,468	453.91	0.08					
190.00	0.02	78,330	453.85	0.08					
195.00	0.02	77,212	453.79	0.08					
200.00	0.02	76,114	453.73	0.08					
205.00	0.02	75,035	453.67	0.07					
210.00	0.02	73,976	453.61	0.07					
215.00	0.02	72,937	453.56	0.07					
220.00	0.01	71,917	453.50	0.07					
225.00	0.01	70,918	453.44	0.07					
230.00	0.01	69,940	453.39	0.07					
235.00	0.01	68,982	453.33	0.07					
240.00	0.01	68,044	453.28	0.07					
245.00	0.01	67,127	453.23	0.06					
250.00	0.01	66,232	453.18	0.06					
255.00	0.01	65,357	453.12	0.06					
260.00	0.01	64,504	453.07	0.06					
265.00	0.01	63,672	453.03	0.06					
270.00	0.01	62,861	452.98	0.06					
275.00	0.01	62,072	452.93	0.06					
280.00	0.01	61,305	452.88	0.05					
285.00	0.01	60,560	452.84	0.05					
290.00	0.01	59,836	452.79	0.05					
295.00	0.01	59,135	452.75	0.05					
300.00	0.01	58,456	452.71	0.05					
305.00	0.01	57,799	452.67	0.05					
310.00	0.01	57,165	452.63	0.04					
315.00	0.01	56,554	452.59	0.04					
320.00	0.01	55,964	452.55	0.04					
325.00	0.01	55,398	452.52	0.04					

Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Pond 2.0P:

Inflow Area = 5.100 ac, 68.33% Impervious, Inflow Depth = 4.63" for 25 YEAR event
 Inflow = 24.92 cfs @ 12.11 hrs, Volume= 1.966 af
 Outflow = 7.37 cfs @ 12.47 hrs, Volume= 1.964 af, Atten= 70%, Lag= 21.4 min
 Primary = 7.37 cfs @ 12.47 hrs, Volume= 1.964 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 478.00' Surf.Area= 14,500 sf Storage= 29,775 cf
 Peak Elev= 480.55' @ 12.47 hrs Surf.Area= 20,162 sf Storage= 73,892 cf (44,117 cf above start)
 Flood Elev= 481.25' Surf.Area= 21,775 sf Storage= 88,597 cf (58,822 cf above start)

Plug-Flow detention time= 1,766.0 min calculated for 1.280 af (65% of inflow)
 Center-of-Mass det. time= 1,081.7 min (1,874.7 - 793.1)

Volume	Invert	Avail.Storage	Storage Description
#1	472.00'	105,575 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

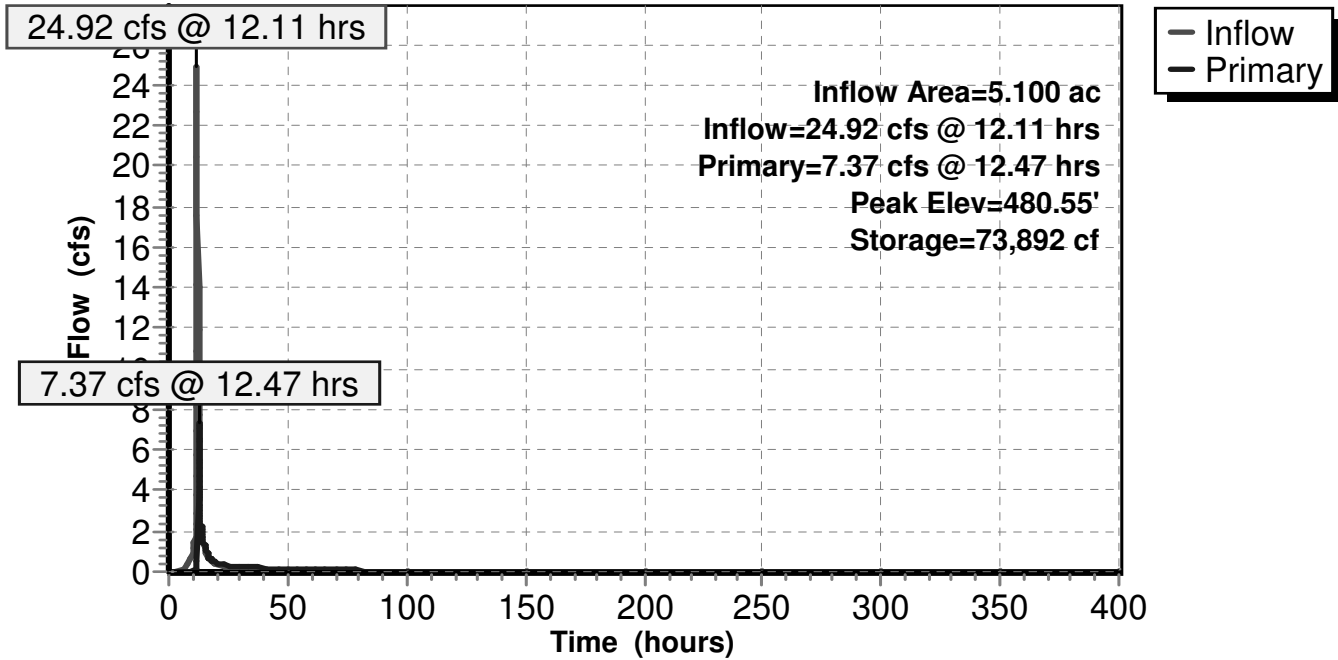
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
472.00	2,000	0	0
474.00	3,100	5,100	5,100
476.00	4,400	7,500	12,600
476.50	5,200	2,400	15,000
478.00	14,500	14,775	29,775
480.00	18,900	33,400	63,175
482.00	23,500	42,400	105,575

Device	Routing	Invert	Outlet Devices
#1	Primary	473.40'	36.0" x 117.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 472.10' S= 0.0111 '/' Cc= 0.900 n= 0.012
#2	Device 1	478.00'	2.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	480.10'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=7.34 cfs @ 12.47 hrs HW=480.55' TW=474.33' (Dynamic Tailwater)
 ↑ **1=Culvert** (Passes 7.34 cfs of 80.88 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.26 cfs @ 7.53 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 7.08 cfs @ 1.98 fps)

Pond 2.0P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Pond 2.0P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	29,775	478.00	0.00	330.00	0.00	29,892	478.01	0.00
5.00	0.04	29,818	478.00	0.00	335.00	0.00	29,889	478.01	0.00
10.00	0.90	35,137	478.36	0.08	340.00	0.00	29,887	478.01	0.00
15.00	1.14	67,605	480.23	1.30	345.00	0.00	29,885	478.01	0.00
20.00	0.39	65,881	480.14	0.43	350.00	0.00	29,883	478.01	0.00
25.00	0.00	64,659	480.08	0.23	355.00	0.00	29,881	478.01	0.00
30.00	0.00	60,623	479.86	0.22	360.00	0.00	29,879	478.01	0.00
35.00	0.00	56,822	479.66	0.20	365.00	0.00	29,877	478.01	0.00
40.00	0.00	53,262	479.46	0.19	370.00	0.00	29,875	478.01	0.00
45.00	0.00	49,948	479.27	0.18	375.00	0.00	29,874	478.01	0.00
50.00	0.00	46,886	479.09	0.16	380.00	0.00	29,872	478.01	0.00
55.00	0.00	44,083	478.92	0.15	385.00	0.00	29,870	478.01	0.00
60.00	0.00	41,544	478.77	0.13	390.00	0.00	29,869	478.01	0.00
65.00	0.00	39,274	478.63	0.12	395.00	0.00	29,867	478.01	0.00
70.00	0.00	37,279	478.50	0.10	400.00	0.00	29,866	478.01	0.00
75.00	0.00	35,564	478.39	0.09					
80.00	0.00	34,134	478.29	0.07					
85.00	0.00	32,991	478.22	0.06					
90.00	0.00	32,139	478.16	0.04					
95.00	0.00	31,576	478.12	0.03					
100.00	0.00	31,206	478.10	0.02					
105.00	0.00	30,952	478.08	0.01					
110.00	0.00	30,770	478.07	0.01					
115.00	0.00	30,635	478.06	0.01					
120.00	0.00	30,530	478.05	0.01					
125.00	0.00	30,447	478.05	0.00					
130.00	0.00	30,380	478.04	0.00					
135.00	0.00	30,325	478.04	0.00					
140.00	0.00	30,279	478.03	0.00					
145.00	0.00	30,239	478.03	0.00					
150.00	0.00	30,206	478.03	0.00					
155.00	0.00	30,176	478.03	0.00					
160.00	0.00	30,151	478.03	0.00					
165.00	0.00	30,128	478.02	0.00					
170.00	0.00	30,108	478.02	0.00					
175.00	0.00	30,090	478.02	0.00					
180.00	0.00	30,074	478.02	0.00					
185.00	0.00	30,059	478.02	0.00					
190.00	0.00	30,046	478.02	0.00					
195.00	0.00	30,034	478.02	0.00					
200.00	0.00	30,023	478.02	0.00					
205.00	0.00	30,013	478.02	0.00					
210.00	0.00	30,003	478.02	0.00					
215.00	0.00	29,995	478.02	0.00					
220.00	0.00	29,987	478.01	0.00					
225.00	0.00	29,979	478.01	0.00					
230.00	0.00	29,972	478.01	0.00					
235.00	0.00	29,966	478.01	0.00					
240.00	0.00	29,960	478.01	0.00					
245.00	0.00	29,954	478.01	0.00					
250.00	0.00	29,948	478.01	0.00					
255.00	0.00	29,943	478.01	0.00					
260.00	0.00	29,939	478.01	0.00					
265.00	0.00	29,934	478.01	0.00					
270.00	0.00	29,930	478.01	0.00					
275.00	0.00	29,926	478.01	0.00					
280.00	0.00	29,922	478.01	0.00					
285.00	0.00	29,918	478.01	0.00					
290.00	0.00	29,915	478.01	0.00					
295.00	0.00	29,911	478.01	0.00					
300.00	0.00	29,908	478.01	0.00					
305.00	0.00	29,905	478.01	0.00					
310.00	0.00	29,902	478.01	0.00					
315.00	0.00	29,899	478.01	0.00					
320.00	0.00	29,897	478.01	0.00					
325.00	0.00	29,894	478.01	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Pond 2.1P:

Inflow Area = 5.900 ac, 60.51% Impervious, Inflow Depth = 4.10" for 25 YEAR event
 Inflow = 7.59 cfs @ 12.46 hrs, Volume= 2.017 af
 Outflow = 3.26 cfs @ 13.14 hrs, Volume= 2.017 af, Atten= 57%, Lag= 40.9 min
 Primary = 3.26 cfs @ 13.14 hrs, Volume= 2.017 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 471.00' Surf.Area= 30 sf Storage= 8 cf
 Peak Elev= 475.87' @ 13.14 hrs Surf.Area= 7,494 sf Storage= 16,398 cf (16,390 cf above start)
 Flood Elev= 477.00' Surf.Area= 9,380 sf Storage= 25,945 cf (25,937 cf above start)

Plug-Flow detention time= 1,190.8 min calculated for 2.017 af (100% of inflow)
 Center-of-Mass det. time= 1,188.5 min (3,037.8 - 1,849.3)

Volume	Invert	Avail.Storage	Storage Description
#1	470.30'	20 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 51 cf Overall x 40.0% Voids
#2	472.00'	36,100 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		36,120 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
470.30	30	0	0
472.00	30	51	51

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
472.00	1,300	0	0
474.00	4,200	5,500	5,500
476.00	7,700	11,900	17,400
478.00	11,000	18,700	36,100

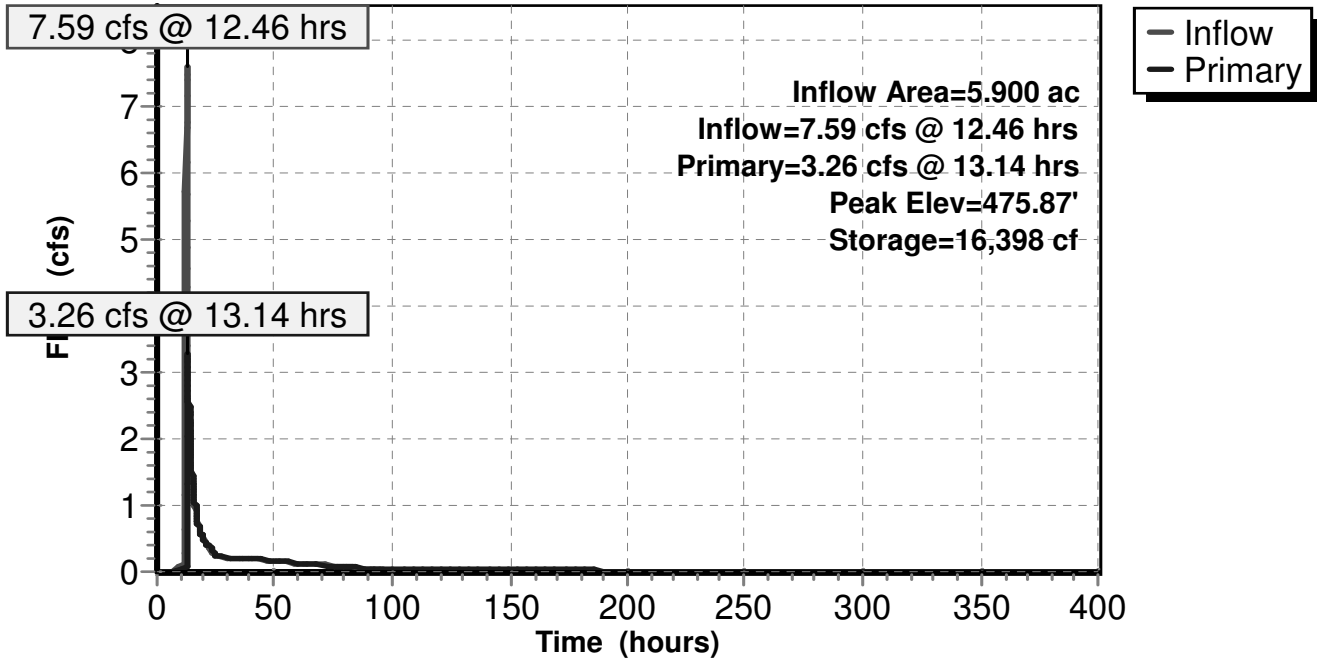
Device	Routing	Invert	Outlet Devices
#1	Primary	471.00'	24.0" x 147.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 469.50' S= 0.0102 '/' Cc= 0.900 n= 0.012
#2	Device 1	471.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	475.50'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=3.25 cfs @ 13.14 hrs HW=475.86' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 3.25 cfs of 29.74 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.06 cfs @ 10.57 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 3.20 cfs @ 1.75 fps)

Pond 2.1P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Pond 2.1P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	8	471.00	0.00	330.00	0.00	9	471.01	0.00
5.00	0.00	8	471.00	0.00	335.00	0.00	9	471.01	0.00
10.00	0.08	200	472.13	0.03	340.00	0.00	9	471.01	0.00
15.00	1.36	15,289	475.71	1.45	345.00	0.00	9	471.01	0.00
20.00	0.45	14,446	475.60	0.47	350.00	0.00	9	471.01	0.00
25.00	0.23	14,174	475.56	0.24	355.00	0.00	9	471.01	0.00
30.00	0.22	14,142	475.55	0.22	360.00	0.00	9	471.01	0.00
35.00	0.20	14,123	475.55	0.21	365.00	0.00	9	471.01	0.00
40.00	0.19	14,102	475.55	0.19	370.00	0.00	9	471.01	0.00
45.00	0.18	14,081	475.54	0.18	375.00	0.00	9	471.01	0.00
50.00	0.16	14,058	475.54	0.16	380.00	0.00	9	471.01	0.00
55.00	0.15	14,033	475.54	0.15	385.00	0.00	9	471.01	0.00
60.00	0.13	14,007	475.53	0.14	390.00	0.00	8	471.01	0.00
65.00	0.12	13,979	475.53	0.12	395.00	0.00	9	471.01	0.00
70.00	0.10	13,948	475.52	0.10	400.00	0.00	8	471.01	0.00
75.00	0.09	13,913	475.52	0.09					
80.00	0.07	13,872	475.51	0.07					
85.00	0.06	13,817	475.50	0.06					
90.00	0.04	13,661	475.48	0.06					
95.00	0.03	13,232	475.42	0.05					
100.00	0.02	12,618	475.32	0.05					
105.00	0.01	11,900	475.21	0.05					
110.00	0.01	11,123	475.09	0.05					
115.00	0.01	10,316	474.95	0.05					
120.00	0.01	9,494	474.81	0.05					
125.00	0.00	8,669	474.66	0.05					
130.00	0.00	7,846	474.50	0.05					
135.00	0.00	7,033	474.34	0.05					
140.00	0.00	6,232	474.16	0.05					
145.00	0.00	5,448	473.98	0.05					
150.00	0.00	4,685	473.79	0.04					
155.00	0.00	3,944	473.60	0.04					
160.00	0.00	3,229	473.39	0.04					
165.00	0.00	2,544	473.17	0.04					
170.00	0.00	1,893	472.94	0.04					
175.00	0.00	1,280	472.70	0.03					
180.00	0.00	713	472.43	0.03					
185.00	0.00	201	472.13	0.03					
190.00	0.00	9	471.02	0.00					
195.00	0.00	9	471.02	0.00					
200.00	0.00	9	471.02	0.00					
205.00	0.00	9	471.02	0.00					
210.00	0.00	9	471.02	0.00					
215.00	0.00	9	471.02	0.00					
220.00	0.00	9	471.02	0.00					
225.00	0.00	9	471.02	0.00					
230.00	0.00	9	471.02	0.00					
235.00	0.00	9	471.02	0.00					
240.00	0.00	9	471.02	0.00					
245.00	0.00	9	471.02	0.00					
250.00	0.00	9	471.02	0.00					
255.00	0.00	9	471.01	0.00					
260.00	0.00	9	471.01	0.00					
265.00	0.00	9	471.01	0.00					
270.00	0.00	9	471.01	0.00					
275.00	0.00	9	471.01	0.00					
280.00	0.00	9	471.01	0.00					
285.00	0.00	9	471.01	0.00					
290.00	0.00	9	471.01	0.00					
295.00	0.00	9	471.01	0.00					
300.00	0.00	9	471.01	0.00					
305.00	0.00	9	471.01	0.00					
310.00	0.00	9	471.01	0.00					
315.00	0.00	9	471.01	0.00					
320.00	0.00	9	471.01	0.00					
325.00	0.00	9	471.01	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Pond 2.2P:

Inflow Area = 2.100 ac, 40.48% Impervious, Inflow Depth = 4.09" for 25 YEAR event
 Inflow = 8.08 cfs @ 12.17 hrs, Volume= 0.716 af
 Outflow = 6.27 cfs @ 12.28 hrs, Volume= 0.716 af, Atten= 22%, Lag= 6.7 min
 Primary = 6.27 cfs @ 12.28 hrs, Volume= 0.716 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 471.00' Surf.Area= 4,300 sf Storage= 6,560 cf
 Peak Elev= 472.91' @ 12.28 hrs Surf.Area= 6,816 sf Storage= 16,991 cf (10,431 cf above start)
 Flood Elev= 473.25' Surf.Area= 7,338 sf Storage= 19,371 cf (12,811 cf above start)

Plug-Flow detention time= 1,221.9 min calculated for 0.565 af (79% of inflow)
 Center-of-Mass det. time= 888.5 min (1,700.6 - 812.1)

Volume	Invert	Avail.Storage	Storage Description
#1	465.00'	25,310 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

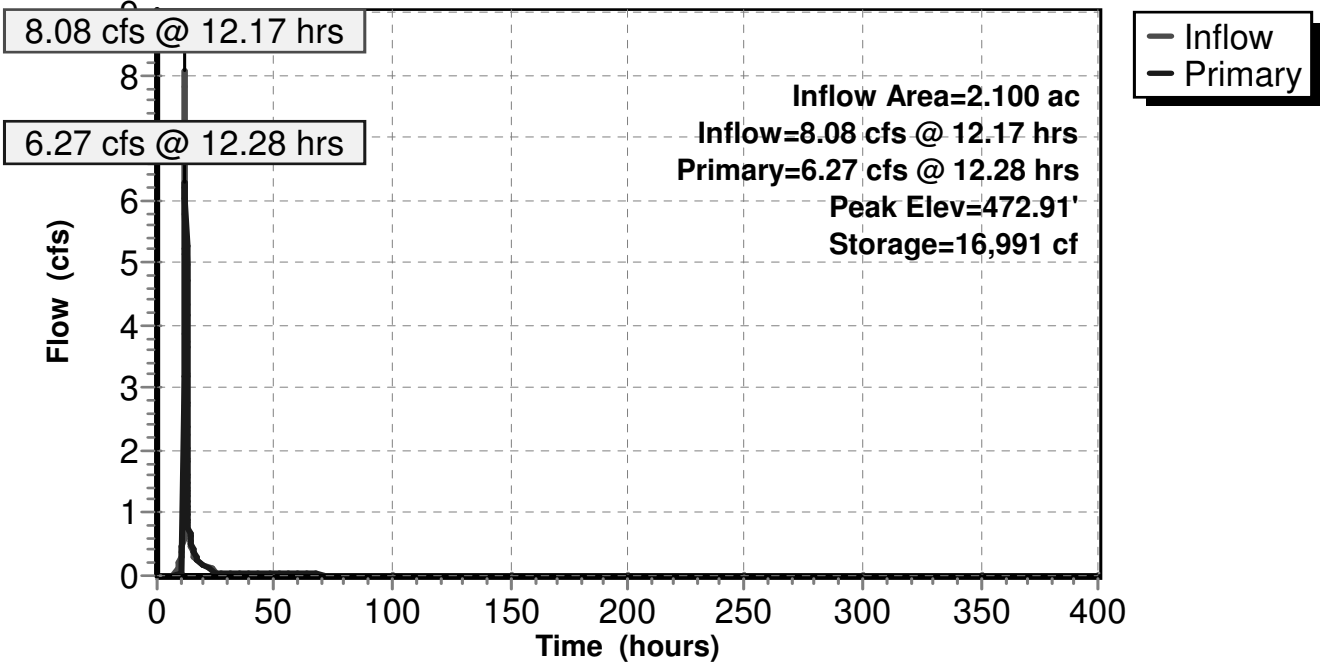
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
465.00	70	0	0
466.00	200	135	135
468.00	600	800	935
469.50	1,300	1,425	2,360
471.00	4,300	4,200	6,560
472.00	5,400	4,850	11,410
474.00	8,500	13,900	25,310

Device	Routing	Invert	Outlet Devices
#1	Primary	469.00'	24.0" x 95.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 467.00' S= 0.0211 '/' Cc= 0.900 n= 0.012
#2	Device 1	471.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	472.50'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=6.22 cfs @ 12.28 hrs HW=472.91' TW=0.00' (Dynamic Tailwater)
 ↑ **1=Culvert** (Passes 6.22 cfs of 25.81 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 6.58 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 6.18 cfs @ 1.88 fps)

Pond 2.2P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Pond 2.2P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	6,560	471.00	0.00	330.00	0.00	6,580	471.00	0.00
5.00	0.00	6,560	471.00	0.00	335.00	0.00	6,579	471.00	0.00
10.00	0.26	7,763	471.27	0.01	340.00	0.00	6,579	471.00	0.00
15.00	0.46	14,764	472.57	0.48	345.00	0.00	6,578	471.00	0.00
20.00	0.16	14,503	472.53	0.16	350.00	0.00	6,578	471.00	0.00
25.00	0.00	14,293	472.50	0.03	355.00	0.00	6,578	471.00	0.00
30.00	0.00	13,732	472.41	0.03	360.00	0.00	6,577	471.00	0.00
35.00	0.00	13,189	472.32	0.03	365.00	0.00	6,577	471.00	0.00
40.00	0.00	12,665	472.23	0.03	370.00	0.00	6,576	471.00	0.00
45.00	0.00	12,161	472.14	0.03	375.00	0.00	6,576	471.00	0.00
50.00	0.00	11,676	472.05	0.03	380.00	0.00	6,576	471.00	0.00
55.00	0.00	11,212	471.96	0.03	385.00	0.00	6,575	471.00	0.00
60.00	0.00	10,769	471.88	0.02	390.00	0.00	6,575	471.00	0.00
65.00	0.00	10,347	471.80	0.02	395.00	0.00	6,575	471.00	0.00
70.00	0.00	9,946	471.72	0.02	400.00	0.00	6,575	471.00	0.00
75.00	0.00	9,568	471.65	0.02					
80.00	0.00	9,211	471.57	0.02					
85.00	0.00	8,878	471.51	0.02					
90.00	0.00	8,567	471.44	0.02					
95.00	0.00	8,280	471.38	0.02					
100.00	0.00	8,016	471.33	0.01					
105.00	0.00	7,776	471.27	0.01					
110.00	0.00	7,561	471.23	0.01					
115.00	0.00	7,370	471.18	0.01					
120.00	0.00	7,204	471.15	0.01					
125.00	0.00	7,063	471.12	0.01					
130.00	0.00	6,948	471.09	0.01					
135.00	0.00	6,857	471.07	0.00					
140.00	0.00	6,793	471.05	0.00					
145.00	0.00	6,749	471.04	0.00					
150.00	0.00	6,717	471.04	0.00					
155.00	0.00	6,694	471.03	0.00					
160.00	0.00	6,676	471.03	0.00					
165.00	0.00	6,663	471.02	0.00					
170.00	0.00	6,652	471.02	0.00					
175.00	0.00	6,643	471.02	0.00					
180.00	0.00	6,635	471.02	0.00					
185.00	0.00	6,629	471.02	0.00					
190.00	0.00	6,624	471.01	0.00					
195.00	0.00	6,619	471.01	0.00					
200.00	0.00	6,615	471.01	0.00					
205.00	0.00	6,612	471.01	0.00					
210.00	0.00	6,609	471.01	0.00					
215.00	0.00	6,606	471.01	0.00					
220.00	0.00	6,604	471.01	0.00					
225.00	0.00	6,601	471.01	0.00					
230.00	0.00	6,599	471.01	0.00					
235.00	0.00	6,598	471.01	0.00					
240.00	0.00	6,596	471.01	0.00					
245.00	0.00	6,594	471.01	0.00					
250.00	0.00	6,593	471.01	0.00					
255.00	0.00	6,592	471.01	0.00					
260.00	0.00	6,590	471.01	0.00					
265.00	0.00	6,589	471.01	0.00					
270.00	0.00	6,588	471.01	0.00					
275.00	0.00	6,587	471.01	0.00					
280.00	0.00	6,586	471.01	0.00					
285.00	0.00	6,586	471.01	0.00					
290.00	0.00	6,585	471.01	0.00					
295.00	0.00	6,584	471.01	0.00					
300.00	0.00	6,583	471.01	0.00					
305.00	0.00	6,583	471.01	0.00					
310.00	0.00	6,582	471.01	0.00					
315.00	0.00	6,581	471.00	0.00					
320.00	0.00	6,581	471.00	0.00					
325.00	0.00	6,580	471.00	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Summary for Pond 3.0P:

Inflow Area = 1.900 ac, 47.37% Impervious, Inflow Depth = 2.18" for 25 YEAR event
 Inflow = 3.68 cfs @ 12.20 hrs, Volume= 0.345 af
 Outflow = 0.71 cfs @ 12.87 hrs, Volume= 0.344 af, Atten= 81%, Lag= 40.4 min
 Primary = 0.71 cfs @ 12.87 hrs, Volume= 0.344 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 461.25' Surf.Area= 5,900 sf Storage= 8,213 cf
 Peak Elev= 462.25' @ 12.87 hrs Surf.Area= 7,430 sf Storage= 14,821 cf (6,609 cf above start)
 Flood Elev= 463.00' Surf.Area= 8,750 sf Storage= 20,925 cf (12,713 cf above start)

Plug-Flow detention time= 2,633.7 min calculated for 0.155 af (45% of inflow)
 Center-of-Mass det. time= 1,149.7 min (2,011.4 - 861.7)

Volume	Invert	Avail.Storage	Storage Description
#1	457.25'	30,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
457.25	400	0	0
458.00	700	413	413
459.75	1,700	2,100	2,513
461.25	5,900	5,700	8,213
462.00	7,000	4,838	13,050
464.00	10,500	17,500	30,550

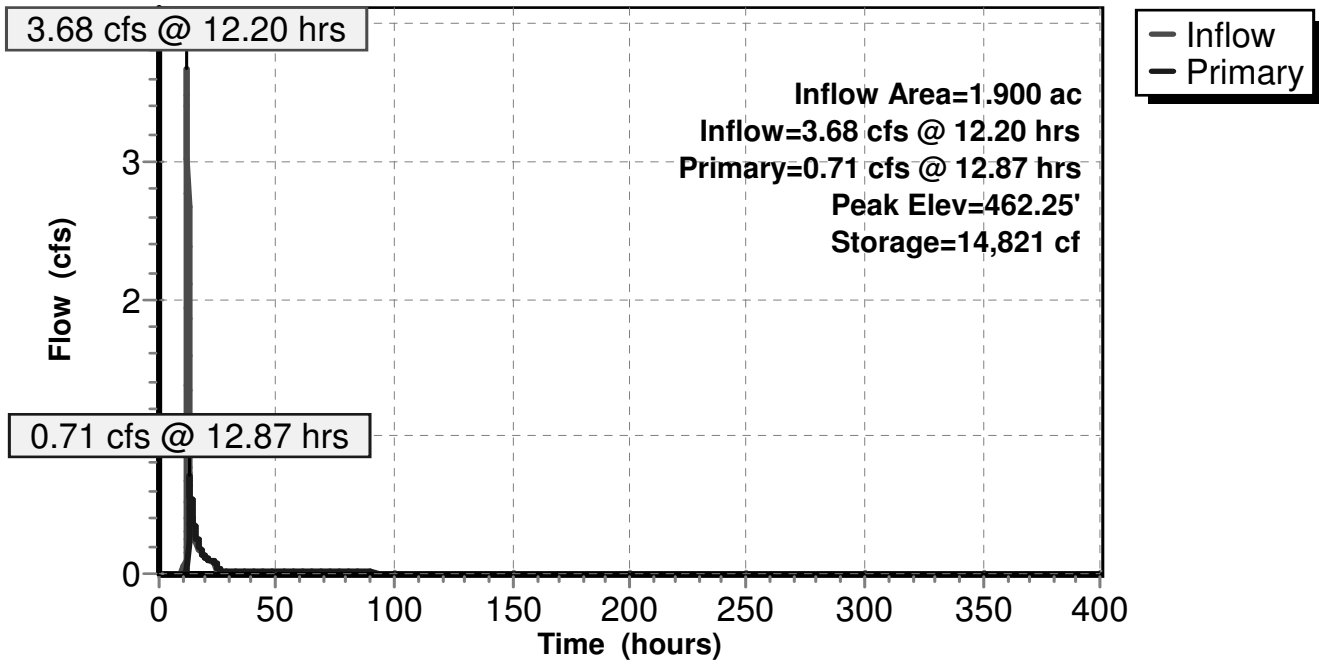
Device	Routing	Invert	Outlet Devices
#1	Primary	461.25'	15.0" x 28.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 460.90' S= 0.0125 ' / ' Cc= 0.900 n= 0.012
#2	Device 1	461.25'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	462.00'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.71 cfs @ 12.87 hrs HW=462.25' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 0.71 cfs of 3.37 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 4.70 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 0.69 cfs @ 1.40 fps)

Pond 3.0P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 25 YEAR Rainfall=6.00"

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Hydrograph for Pond 3.OP:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	8,213	461.25	0.00	330.00	0.00	8,246	461.26	0.00
5.00	0.00	8,213	461.25	0.00	335.00	0.00	8,246	461.26	0.00
10.00	0.00	8,213	461.25	0.00	340.00	0.00	8,245	461.26	0.00
15.00	0.29	14,120	462.15	0.35	345.00	0.00	8,244	461.26	0.00
20.00	0.10	13,511	462.07	0.12	350.00	0.00	8,243	461.26	0.00
25.00	0.00	13,209	462.02	0.04	355.00	0.00	8,243	461.26	0.00
30.00	0.00	12,778	461.96	0.02	360.00	0.00	8,242	461.26	0.00
35.00	0.00	12,399	461.91	0.02	365.00	0.00	8,242	461.25	0.00
40.00	0.00	12,037	461.85	0.02	370.00	0.00	8,241	461.25	0.00
45.00	0.00	11,691	461.80	0.02	375.00	0.00	8,240	461.25	0.00
50.00	0.00	11,362	461.75	0.02	380.00	0.00	8,240	461.25	0.00
55.00	0.00	11,049	461.71	0.02	385.00	0.00	8,239	461.25	0.00
60.00	0.00	10,754	461.66	0.02	390.00	0.00	8,239	461.25	0.00
65.00	0.00	10,476	461.62	0.01	395.00	0.00	8,238	461.25	0.00
70.00	0.00	10,215	461.58	0.01	400.00	0.00	8,238	461.25	0.00
75.00	0.00	9,972	461.54	0.01					
80.00	0.00	9,746	461.50	0.01					
85.00	0.00	9,538	461.47	0.01					
90.00	0.00	9,348	461.44	0.01					
95.00	0.00	9,176	461.41	0.01					
100.00	0.00	9,023	461.39	0.01					
105.00	0.00	8,887	461.36	0.01					
110.00	0.00	8,771	461.34	0.01					
115.00	0.00	8,672	461.33	0.00					
120.00	0.00	8,592	461.31	0.00					
125.00	0.00	8,532	461.30	0.00					
130.00	0.00	8,485	461.30	0.00					
135.00	0.00	8,449	461.29	0.00					
140.00	0.00	8,421	461.29	0.00					
145.00	0.00	8,398	461.28	0.00					
150.00	0.00	8,380	461.28	0.00					
155.00	0.00	8,365	461.28	0.00					
160.00	0.00	8,352	461.27	0.00					
165.00	0.00	8,341	461.27	0.00					
170.00	0.00	8,331	461.27	0.00					
175.00	0.00	8,323	461.27	0.00					
180.00	0.00	8,316	461.27	0.00					
185.00	0.00	8,309	461.27	0.00					
190.00	0.00	8,304	461.27	0.00					
195.00	0.00	8,299	461.26	0.00					
200.00	0.00	8,294	461.26	0.00					
205.00	0.00	8,290	461.26	0.00					
210.00	0.00	8,287	461.26	0.00					
215.00	0.00	8,283	461.26	0.00					
220.00	0.00	8,280	461.26	0.00					
225.00	0.00	8,277	461.26	0.00					
230.00	0.00	8,275	461.26	0.00					
235.00	0.00	8,272	461.26	0.00					
240.00	0.00	8,270	461.26	0.00					
245.00	0.00	8,268	461.26	0.00					
250.00	0.00	8,266	461.26	0.00					
255.00	0.00	8,264	461.26	0.00					
260.00	0.00	8,262	461.26	0.00					
265.00	0.00	8,261	461.26	0.00					
270.00	0.00	8,259	461.26	0.00					
275.00	0.00	8,258	461.26	0.00					
280.00	0.00	8,257	461.26	0.00					
285.00	0.00	8,255	461.26	0.00					
290.00	0.00	8,254	461.26	0.00					
295.00	0.00	8,253	461.26	0.00					
300.00	0.00	8,252	461.26	0.00					
305.00	0.00	8,251	461.26	0.00					
310.00	0.00	8,250	461.26	0.00					
315.00	0.00	8,249	461.26	0.00					
320.00	0.00	8,248	461.26	0.00					
325.00	0.00	8,247	461.26	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Summary for Subcatchment 1.0S:

Runoff = 117.00 cfs @ 12.06 hrs, Volume= 8.364 af, Depth= 8.03"

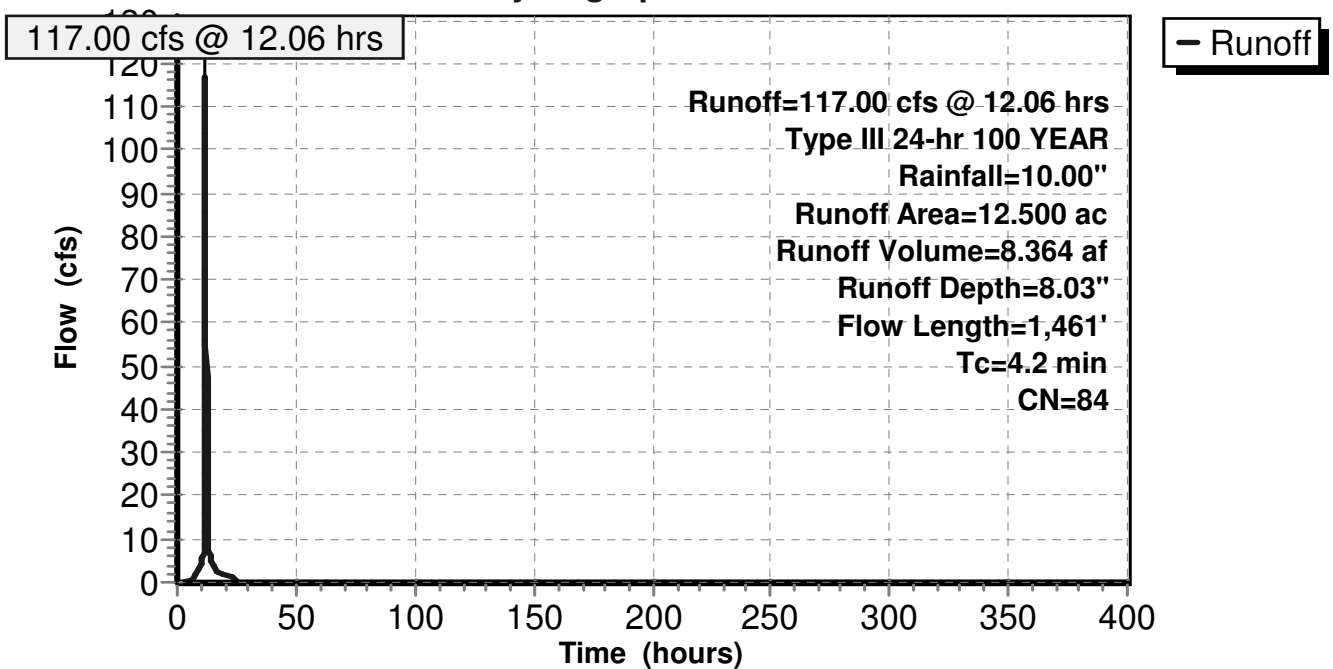
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YEAR Rainfall=10.00"

Area (ac)	CN	Description
1.200	39	>75% Grass cover, Good, HSG A
7.200	89	Urban commercial, 85% imp, HSG A
3.400	94	Urban commercial, 85% imp, HSG C
* 0.700	70	Pervious Pavment
12.500	84	Weighted Average
3.490		Pervious Area
9.010		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	96	0.0100	1.08		Sheet Flow , Smooth surfaces n= 0.011 P2= 3.50"
0.6	214	0.0121	6.27	7.70	Circular Channel (pipe) , Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
1.1	601	0.0130	8.89	27.94	Circular Channel (pipe) , Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
1.0	550	0.0080	9.14	64.63	Circular Channel (pipe) , Diam= 36.0" Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012
4.2	1,461	Total			

Subcatchment 1.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Subcatchment 1.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	10.00	8.03	0.00	330.00	10.00	8.03	0.00
2.50	0.25	0.00	0.00	167.50	10.00	8.03	0.00	332.50	10.00	8.03	0.00
5.00	0.57	0.02	0.30	170.00	10.00	8.03	0.00	335.00	10.00	8.03	0.00
7.50	1.02	0.16	1.26	172.50	10.00	8.03	0.00	337.50	10.00	8.03	0.00
10.00	1.89	0.67	4.15	175.00	10.00	8.03	0.00	340.00	10.00	8.03	0.00
12.50	7.02	5.16	21.07	177.50	10.00	8.03	0.00	342.50	10.00	8.03	0.00
15.00	8.54	6.62	4.65	180.00	10.00	8.03	0.00	345.00	10.00	8.03	0.00
17.50	9.19	7.25	2.30	182.50	10.00	8.03	0.00	347.50	10.00	8.03	0.00
20.00	9.57	7.61	1.60	185.00	10.00	8.03	0.00	350.00	10.00	8.03	0.00
22.50	9.86	7.89	1.26	187.50	10.00	8.03	0.00	352.50	10.00	8.03	0.00
25.00	10.00	8.03	0.00	190.00	10.00	8.03	0.00	355.00	10.00	8.03	0.00
27.50	10.00	8.03	0.00	192.50	10.00	8.03	0.00	357.50	10.00	8.03	0.00
30.00	10.00	8.03	0.00	195.00	10.00	8.03	0.00	360.00	10.00	8.03	0.00
32.50	10.00	8.03	0.00	197.50	10.00	8.03	0.00	362.50	10.00	8.03	0.00
35.00	10.00	8.03	0.00	200.00	10.00	8.03	0.00	365.00	10.00	8.03	0.00
37.50	10.00	8.03	0.00	202.50	10.00	8.03	0.00	367.50	10.00	8.03	0.00
40.00	10.00	8.03	0.00	205.00	10.00	8.03	0.00	370.00	10.00	8.03	0.00
42.50	10.00	8.03	0.00	207.50	10.00	8.03	0.00	372.50	10.00	8.03	0.00
45.00	10.00	8.03	0.00	210.00	10.00	8.03	0.00	375.00	10.00	8.03	0.00
47.50	10.00	8.03	0.00	212.50	10.00	8.03	0.00	377.50	10.00	8.03	0.00
50.00	10.00	8.03	0.00	215.00	10.00	8.03	0.00	380.00	10.00	8.03	0.00
52.50	10.00	8.03	0.00	217.50	10.00	8.03	0.00	382.50	10.00	8.03	0.00
55.00	10.00	8.03	0.00	220.00	10.00	8.03	0.00	385.00	10.00	8.03	0.00
57.50	10.00	8.03	0.00	222.50	10.00	8.03	0.00	387.50	10.00	8.03	0.00
60.00	10.00	8.03	0.00	225.00	10.00	8.03	0.00	390.00	10.00	8.03	0.00
62.50	10.00	8.03	0.00	227.50	10.00	8.03	0.00	392.50	10.00	8.03	0.00
65.00	10.00	8.03	0.00	230.00	10.00	8.03	0.00	395.00	10.00	8.03	0.00
67.50	10.00	8.03	0.00	232.50	10.00	8.03	0.00	397.50	10.00	8.03	0.00
70.00	10.00	8.03	0.00	235.00	10.00	8.03	0.00	400.00	10.00	8.03	0.00
72.50	10.00	8.03	0.00	237.50	10.00	8.03	0.00				
75.00	10.00	8.03	0.00	240.00	10.00	8.03	0.00				
77.50	10.00	8.03	0.00	242.50	10.00	8.03	0.00				
80.00	10.00	8.03	0.00	245.00	10.00	8.03	0.00				
82.50	10.00	8.03	0.00	247.50	10.00	8.03	0.00				
85.00	10.00	8.03	0.00	250.00	10.00	8.03	0.00				
87.50	10.00	8.03	0.00	252.50	10.00	8.03	0.00				
90.00	10.00	8.03	0.00	255.00	10.00	8.03	0.00				
92.50	10.00	8.03	0.00	257.50	10.00	8.03	0.00				
95.00	10.00	8.03	0.00	260.00	10.00	8.03	0.00				
97.50	10.00	8.03	0.00	262.50	10.00	8.03	0.00				
100.00	10.00	8.03	0.00	265.00	10.00	8.03	0.00				
102.50	10.00	8.03	0.00	267.50	10.00	8.03	0.00				
105.00	10.00	8.03	0.00	270.00	10.00	8.03	0.00				
107.50	10.00	8.03	0.00	272.50	10.00	8.03	0.00				
110.00	10.00	8.03	0.00	275.00	10.00	8.03	0.00				
112.50	10.00	8.03	0.00	277.50	10.00	8.03	0.00				
115.00	10.00	8.03	0.00	280.00	10.00	8.03	0.00				
117.50	10.00	8.03	0.00	282.50	10.00	8.03	0.00				
120.00	10.00	8.03	0.00	285.00	10.00	8.03	0.00				
122.50	10.00	8.03	0.00	287.50	10.00	8.03	0.00				
125.00	10.00	8.03	0.00	290.00	10.00	8.03	0.00				
127.50	10.00	8.03	0.00	292.50	10.00	8.03	0.00				
130.00	10.00	8.03	0.00	295.00	10.00	8.03	0.00				
132.50	10.00	8.03	0.00	297.50	10.00	8.03	0.00				
135.00	10.00	8.03	0.00	300.00	10.00	8.03	0.00				
137.50	10.00	8.03	0.00	302.50	10.00	8.03	0.00				
140.00	10.00	8.03	0.00	305.00	10.00	8.03	0.00				
142.50	10.00	8.03	0.00	307.50	10.00	8.03	0.00				
145.00	10.00	8.03	0.00	310.00	10.00	8.03	0.00				
147.50	10.00	8.03	0.00	312.50	10.00	8.03	0.00				
150.00	10.00	8.03	0.00	315.00	10.00	8.03	0.00				
152.50	10.00	8.03	0.00	317.50	10.00	8.03	0.00				
155.00	10.00	8.03	0.00	320.00	10.00	8.03	0.00				
157.50	10.00	8.03	0.00	322.50	10.00	8.03	0.00				
160.00	10.00	8.03	0.00	325.00	10.00	8.03	0.00				
162.50	10.00	8.03	0.00	327.50	10.00	8.03	0.00				

Summary for Subcatchment 1.1S:

Runoff = 12.19 cfs @ 12.13 hrs, Volume= 0.986 af, Depth= 4.23"

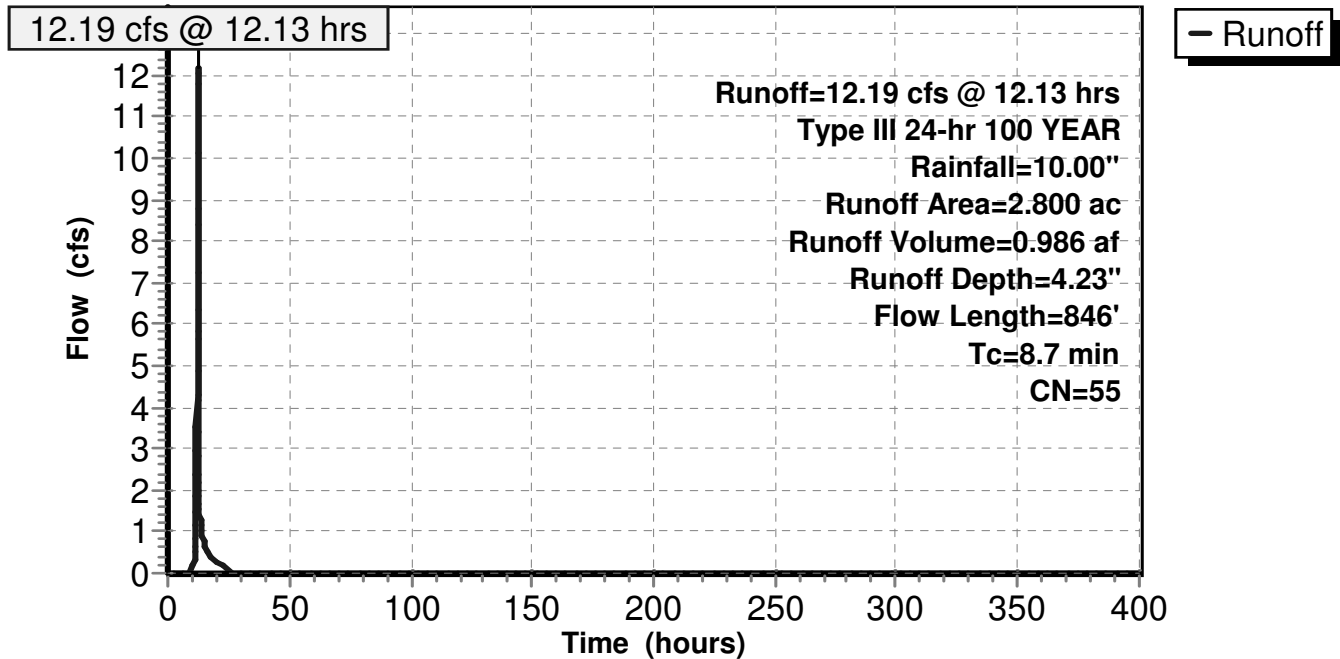
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YEAR Rainfall=10.00"

Area (ac)	CN	Description
2.000	39	>75% Grass cover, Good, HSG A
0.400	89	Urban commercial, 85% imp, HSG A
0.400	98	Paved parking & roofs
2.800	55	Weighted Average
2.060		Pervious Area
0.740		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0100	1.09		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
7.0	652	0.0170	1.55	0.43	Trap/Vee/Rect Channel Flow, Bot.W=1.00' D=0.20' Z= 2.0 ' /' Top.W=1.80' n= 0.035 Earth, dense weeds
0.2	94	0.0290	9.71	11.92	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
8.7	846	Total			

Subcatchment 1.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Subcatchment 1.1S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	10.00	4.23	0.00	330.00	10.00	4.23	0.00
2.50	0.25	0.00	0.00	167.50	10.00	4.23	0.00	332.50	10.00	4.23	0.00
5.00	0.57	0.00	0.00	170.00	10.00	4.23	0.00	335.00	10.00	4.23	0.00
7.50	1.02	0.00	0.00	172.50	10.00	4.23	0.00	337.50	10.00	4.23	0.00
10.00	1.89	0.01	0.06	175.00	10.00	4.23	0.00	340.00	10.00	4.23	0.00
12.50	7.02	2.14	4.16	177.50	10.00	4.23	0.00	342.50	10.00	4.23	0.00
15.00	8.54	3.16	0.78	180.00	10.00	4.23	0.00	345.00	10.00	4.23	0.00
17.50	9.19	3.63	0.39	182.50	10.00	4.23	0.00	347.50	10.00	4.23	0.00
20.00	9.57	3.91	0.28	185.00	10.00	4.23	0.00	350.00	10.00	4.23	0.00
22.50	9.86	4.12	0.22	187.50	10.00	4.23	0.00	352.50	10.00	4.23	0.00
25.00	10.00	4.23	0.00	190.00	10.00	4.23	0.00	355.00	10.00	4.23	0.00
27.50	10.00	4.23	0.00	192.50	10.00	4.23	0.00	357.50	10.00	4.23	0.00
30.00	10.00	4.23	0.00	195.00	10.00	4.23	0.00	360.00	10.00	4.23	0.00
32.50	10.00	4.23	0.00	197.50	10.00	4.23	0.00	362.50	10.00	4.23	0.00
35.00	10.00	4.23	0.00	200.00	10.00	4.23	0.00	365.00	10.00	4.23	0.00
37.50	10.00	4.23	0.00	202.50	10.00	4.23	0.00	367.50	10.00	4.23	0.00
40.00	10.00	4.23	0.00	205.00	10.00	4.23	0.00	370.00	10.00	4.23	0.00
42.50	10.00	4.23	0.00	207.50	10.00	4.23	0.00	372.50	10.00	4.23	0.00
45.00	10.00	4.23	0.00	210.00	10.00	4.23	0.00	375.00	10.00	4.23	0.00
47.50	10.00	4.23	0.00	212.50	10.00	4.23	0.00	377.50	10.00	4.23	0.00
50.00	10.00	4.23	0.00	215.00	10.00	4.23	0.00	380.00	10.00	4.23	0.00
52.50	10.00	4.23	0.00	217.50	10.00	4.23	0.00	382.50	10.00	4.23	0.00
55.00	10.00	4.23	0.00	220.00	10.00	4.23	0.00	385.00	10.00	4.23	0.00
57.50	10.00	4.23	0.00	222.50	10.00	4.23	0.00	387.50	10.00	4.23	0.00
60.00	10.00	4.23	0.00	225.00	10.00	4.23	0.00	390.00	10.00	4.23	0.00
62.50	10.00	4.23	0.00	227.50	10.00	4.23	0.00	392.50	10.00	4.23	0.00
65.00	10.00	4.23	0.00	230.00	10.00	4.23	0.00	395.00	10.00	4.23	0.00
67.50	10.00	4.23	0.00	232.50	10.00	4.23	0.00	397.50	10.00	4.23	0.00
70.00	10.00	4.23	0.00	235.00	10.00	4.23	0.00	400.00	10.00	4.23	0.00
72.50	10.00	4.23	0.00	237.50	10.00	4.23	0.00				
75.00	10.00	4.23	0.00	240.00	10.00	4.23	0.00				
77.50	10.00	4.23	0.00	242.50	10.00	4.23	0.00				
80.00	10.00	4.23	0.00	245.00	10.00	4.23	0.00				
82.50	10.00	4.23	0.00	247.50	10.00	4.23	0.00				
85.00	10.00	4.23	0.00	250.00	10.00	4.23	0.00				
87.50	10.00	4.23	0.00	252.50	10.00	4.23	0.00				
90.00	10.00	4.23	0.00	255.00	10.00	4.23	0.00				
92.50	10.00	4.23	0.00	257.50	10.00	4.23	0.00				
95.00	10.00	4.23	0.00	260.00	10.00	4.23	0.00				
97.50	10.00	4.23	0.00	262.50	10.00	4.23	0.00				
100.00	10.00	4.23	0.00	265.00	10.00	4.23	0.00				
102.50	10.00	4.23	0.00	267.50	10.00	4.23	0.00				
105.00	10.00	4.23	0.00	270.00	10.00	4.23	0.00				
107.50	10.00	4.23	0.00	272.50	10.00	4.23	0.00				
110.00	10.00	4.23	0.00	275.00	10.00	4.23	0.00				
112.50	10.00	4.23	0.00	277.50	10.00	4.23	0.00				
115.00	10.00	4.23	0.00	280.00	10.00	4.23	0.00				
117.50	10.00	4.23	0.00	282.50	10.00	4.23	0.00				
120.00	10.00	4.23	0.00	285.00	10.00	4.23	0.00				
122.50	10.00	4.23	0.00	287.50	10.00	4.23	0.00				
125.00	10.00	4.23	0.00	290.00	10.00	4.23	0.00				
127.50	10.00	4.23	0.00	292.50	10.00	4.23	0.00				
130.00	10.00	4.23	0.00	295.00	10.00	4.23	0.00				
132.50	10.00	4.23	0.00	297.50	10.00	4.23	0.00				
135.00	10.00	4.23	0.00	300.00	10.00	4.23	0.00				
137.50	10.00	4.23	0.00	302.50	10.00	4.23	0.00				
140.00	10.00	4.23	0.00	305.00	10.00	4.23	0.00				
142.50	10.00	4.23	0.00	307.50	10.00	4.23	0.00				
145.00	10.00	4.23	0.00	310.00	10.00	4.23	0.00				
147.50	10.00	4.23	0.00	312.50	10.00	4.23	0.00				
150.00	10.00	4.23	0.00	315.00	10.00	4.23	0.00				
152.50	10.00	4.23	0.00	317.50	10.00	4.23	0.00				
155.00	10.00	4.23	0.00	320.00	10.00	4.23	0.00				
157.50	10.00	4.23	0.00	322.50	10.00	4.23	0.00				
160.00	10.00	4.23	0.00	325.00	10.00	4.23	0.00				
162.50	10.00	4.23	0.00	327.50	10.00	4.23	0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Summary for Subcatchment 1.2S:

Runoff = 11.65 cfs @ 12.22 hrs, Volume= 1.140 af, Depth= 3.42"

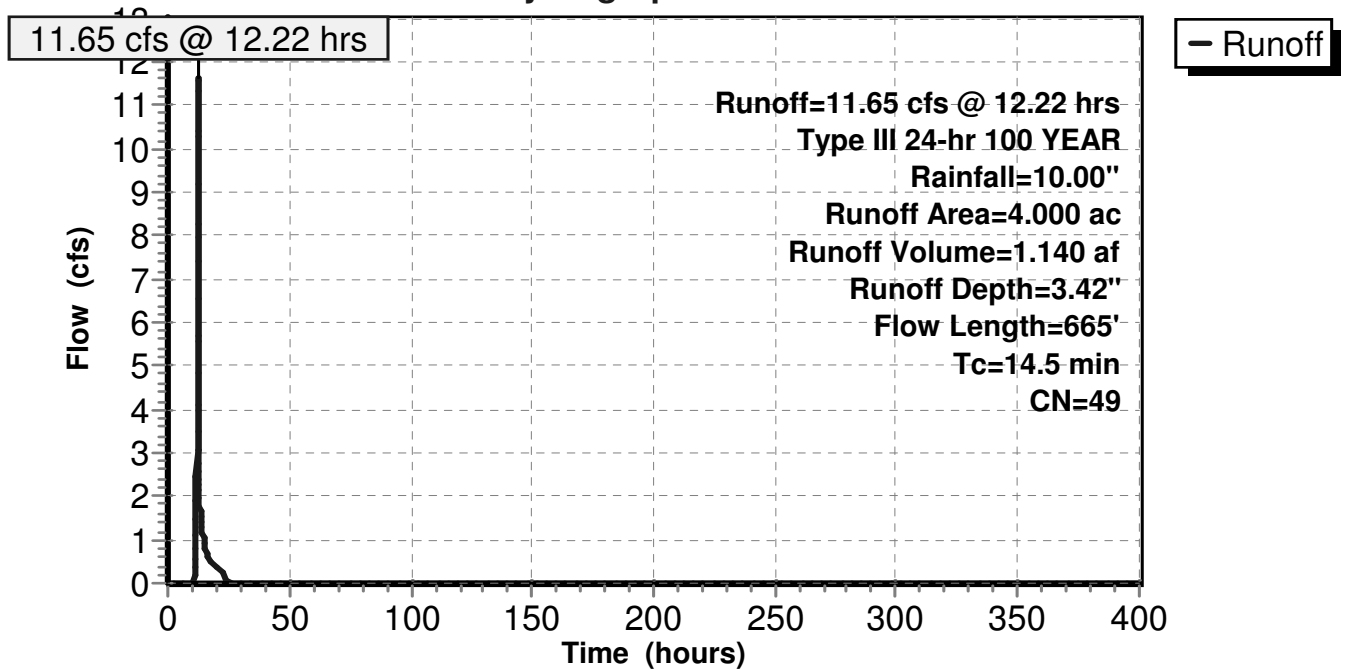
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YEAR Rainfall=10.00"

Area (ac)	CN	Description
1.000	39	>75% Grass cover, Good, HSG A
0.300	98	Paved parking & roofs
1.500	30	Woods, Good, HSG A
1.200	70	Woods, Good, HSG C
4.000	49	Weighted Average
3.700		Pervious Area
0.300		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.1500	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	315	0.0790	3.60	1.73	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=0.20' Z= 2.0 ' Top.W=2.80' n= 0.035
3.8	250	0.0480	1.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.5	665	Total			

Subcatchment 1.2S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Subcatchment 1.2S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	10.00	3.42	0.00	330.00	10.00	3.42	0.00
2.50	0.25	0.00	0.00	167.50	10.00	3.42	0.00	332.50	10.00	3.42	0.00
5.00	0.57	0.00	0.00	170.00	10.00	3.42	0.00	335.00	10.00	3.42	0.00
7.50	1.02	0.00	0.00	172.50	10.00	3.42	0.00	337.50	10.00	3.42	0.00
10.00	1.89	0.00	0.00	175.00	10.00	3.42	0.00	340.00	10.00	3.42	0.00
12.50	7.02	1.59	6.55	177.50	10.00	3.42	0.00	342.50	10.00	3.42	0.00
15.00	8.54	2.47	0.99	180.00	10.00	3.42	0.00	345.00	10.00	3.42	0.00
17.50	9.19	2.89	0.51	182.50	10.00	3.42	0.00	347.50	10.00	3.42	0.00
20.00	9.57	3.13	0.36	185.00	10.00	3.42	0.00	350.00	10.00	3.42	0.00
22.50	9.86	3.33	0.28	187.50	10.00	3.42	0.00	352.50	10.00	3.42	0.00
25.00	10.00	3.42	0.00	190.00	10.00	3.42	0.00	355.00	10.00	3.42	0.00
27.50	10.00	3.42	0.00	192.50	10.00	3.42	0.00	357.50	10.00	3.42	0.00
30.00	10.00	3.42	0.00	195.00	10.00	3.42	0.00	360.00	10.00	3.42	0.00
32.50	10.00	3.42	0.00	197.50	10.00	3.42	0.00	362.50	10.00	3.42	0.00
35.00	10.00	3.42	0.00	200.00	10.00	3.42	0.00	365.00	10.00	3.42	0.00
37.50	10.00	3.42	0.00	202.50	10.00	3.42	0.00	367.50	10.00	3.42	0.00
40.00	10.00	3.42	0.00	205.00	10.00	3.42	0.00	370.00	10.00	3.42	0.00
42.50	10.00	3.42	0.00	207.50	10.00	3.42	0.00	372.50	10.00	3.42	0.00
45.00	10.00	3.42	0.00	210.00	10.00	3.42	0.00	375.00	10.00	3.42	0.00
47.50	10.00	3.42	0.00	212.50	10.00	3.42	0.00	377.50	10.00	3.42	0.00
50.00	10.00	3.42	0.00	215.00	10.00	3.42	0.00	380.00	10.00	3.42	0.00
52.50	10.00	3.42	0.00	217.50	10.00	3.42	0.00	382.50	10.00	3.42	0.00
55.00	10.00	3.42	0.00	220.00	10.00	3.42	0.00	385.00	10.00	3.42	0.00
57.50	10.00	3.42	0.00	222.50	10.00	3.42	0.00	387.50	10.00	3.42	0.00
60.00	10.00	3.42	0.00	225.00	10.00	3.42	0.00	390.00	10.00	3.42	0.00
62.50	10.00	3.42	0.00	227.50	10.00	3.42	0.00	392.50	10.00	3.42	0.00
65.00	10.00	3.42	0.00	230.00	10.00	3.42	0.00	395.00	10.00	3.42	0.00
67.50	10.00	3.42	0.00	232.50	10.00	3.42	0.00	397.50	10.00	3.42	0.00
70.00	10.00	3.42	0.00	235.00	10.00	3.42	0.00	400.00	10.00	3.42	0.00
72.50	10.00	3.42	0.00	237.50	10.00	3.42	0.00				
75.00	10.00	3.42	0.00	240.00	10.00	3.42	0.00				
77.50	10.00	3.42	0.00	242.50	10.00	3.42	0.00				
80.00	10.00	3.42	0.00	245.00	10.00	3.42	0.00				
82.50	10.00	3.42	0.00	247.50	10.00	3.42	0.00				
85.00	10.00	3.42	0.00	250.00	10.00	3.42	0.00				
87.50	10.00	3.42	0.00	252.50	10.00	3.42	0.00				
90.00	10.00	3.42	0.00	255.00	10.00	3.42	0.00				
92.50	10.00	3.42	0.00	257.50	10.00	3.42	0.00				
95.00	10.00	3.42	0.00	260.00	10.00	3.42	0.00				
97.50	10.00	3.42	0.00	262.50	10.00	3.42	0.00				
100.00	10.00	3.42	0.00	265.00	10.00	3.42	0.00				
102.50	10.00	3.42	0.00	267.50	10.00	3.42	0.00				
105.00	10.00	3.42	0.00	270.00	10.00	3.42	0.00				
107.50	10.00	3.42	0.00	272.50	10.00	3.42	0.00				
110.00	10.00	3.42	0.00	275.00	10.00	3.42	0.00				
112.50	10.00	3.42	0.00	277.50	10.00	3.42	0.00				
115.00	10.00	3.42	0.00	280.00	10.00	3.42	0.00				
117.50	10.00	3.42	0.00	282.50	10.00	3.42	0.00				
120.00	10.00	3.42	0.00	285.00	10.00	3.42	0.00				
122.50	10.00	3.42	0.00	287.50	10.00	3.42	0.00				
125.00	10.00	3.42	0.00	290.00	10.00	3.42	0.00				
127.50	10.00	3.42	0.00	292.50	10.00	3.42	0.00				
130.00	10.00	3.42	0.00	295.00	10.00	3.42	0.00				
132.50	10.00	3.42	0.00	297.50	10.00	3.42	0.00				
135.00	10.00	3.42	0.00	300.00	10.00	3.42	0.00				
137.50	10.00	3.42	0.00	302.50	10.00	3.42	0.00				
140.00	10.00	3.42	0.00	305.00	10.00	3.42	0.00				
142.50	10.00	3.42	0.00	307.50	10.00	3.42	0.00				
145.00	10.00	3.42	0.00	310.00	10.00	3.42	0.00				
147.50	10.00	3.42	0.00	312.50	10.00	3.42	0.00				
150.00	10.00	3.42	0.00	315.00	10.00	3.42	0.00				
152.50	10.00	3.42	0.00	317.50	10.00	3.42	0.00				
155.00	10.00	3.42	0.00	320.00	10.00	3.42	0.00				
157.50	10.00	3.42	0.00	322.50	10.00	3.42	0.00				
160.00	10.00	3.42	0.00	325.00	10.00	3.42	0.00				
162.50	10.00	3.42	0.00	327.50	10.00	3.42	0.00				

Summary for Subcatchment 2.0S:

Runoff = 44.44 cfs @ 12.11 hrs, Volume= 3.626 af, Depth= 8.53"

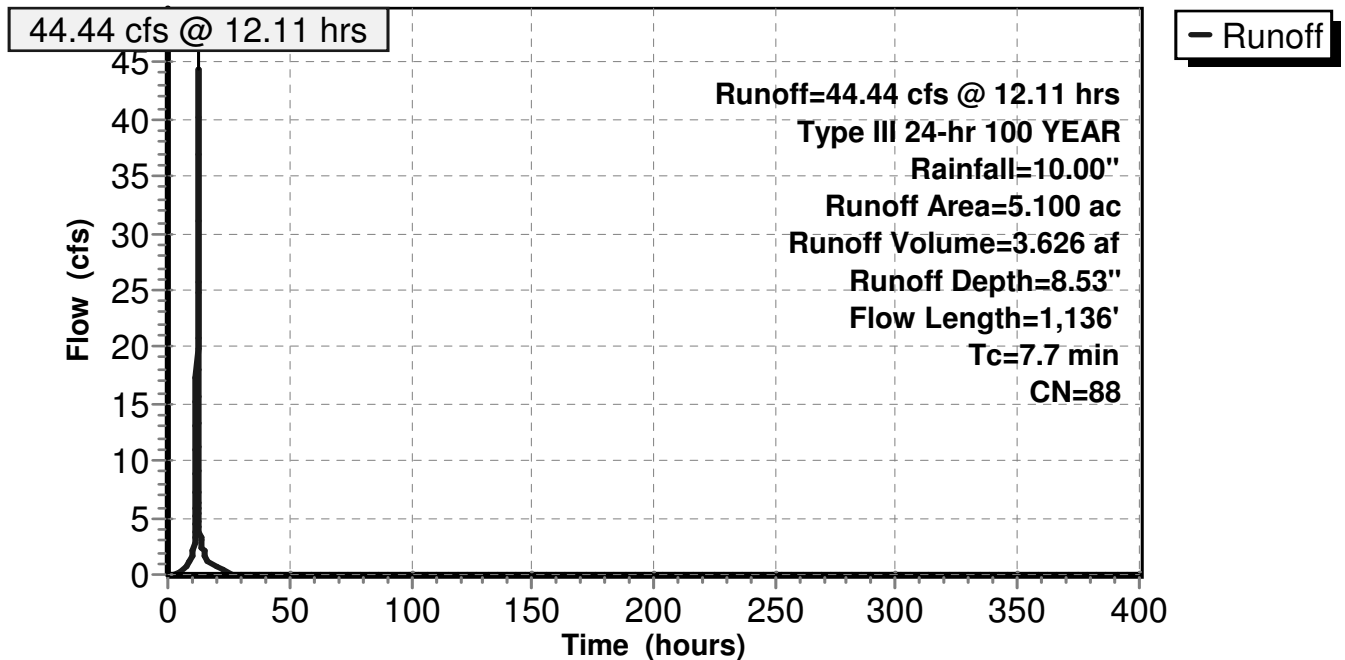
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YEAR Rainfall=10.00"

Area (ac)	CN	Description
0.200	39	>75% Grass cover, Good, HSG A
0.300	74	>75% Grass cover, Good, HSG C
0.300	70	Woods, Good, HSG C
3.700	94	Urban commercial, 85% imp, HSG C
0.400	89	Urban commercial, 85% imp, HSG A
* 0.200	70	Pervious Pavment
5.100	88	Weighted Average
1.615		Pervious Area
3.485		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.0400	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
1.1	85	0.0350	1.31		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.0	797	0.0140	6.75	8.28	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	172	0.0120	7.05	12.47	Circular Channel (pipe), Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.1	32	0.0094	7.56	23.76	Circular Channel (pipe), Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
7.7	1,136	Total			

Subcatchment 2.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

Prepared by Insite Engineering, Surveying, and Landscape Architecture, P.C.

Printed 5/5/2009

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Hydrograph for Subcatchment 2.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	10.00	8.53	0.00	330.00	10.00	8.53	0.00
2.50	0.25	0.00	0.00	167.50	10.00	8.53	0.00	332.50	10.00	8.53	0.00
5.00	0.57	0.05	0.23	170.00	10.00	8.53	0.00	335.00	10.00	8.53	0.00
7.50	1.02	0.26	0.67	172.50	10.00	8.53	0.00	337.50	10.00	8.53	0.00
10.00	1.89	0.88	1.92	175.00	10.00	8.53	0.00	340.00	10.00	8.53	0.00
12.50	7.02	5.61	11.16	177.50	10.00	8.53	0.00	342.50	10.00	8.53	0.00
15.00	8.54	7.10	1.96	180.00	10.00	8.53	0.00	345.00	10.00	8.53	0.00
17.50	9.19	7.74	0.96	182.50	10.00	8.53	0.00	347.50	10.00	8.53	0.00
20.00	9.57	8.11	0.67	185.00	10.00	8.53	0.00	350.00	10.00	8.53	0.00
22.50	9.86	8.39	0.52	187.50	10.00	8.53	0.00	352.50	10.00	8.53	0.00
25.00	10.00	8.53	0.00	190.00	10.00	8.53	0.00	355.00	10.00	8.53	0.00
27.50	10.00	8.53	0.00	192.50	10.00	8.53	0.00	357.50	10.00	8.53	0.00
30.00	10.00	8.53	0.00	195.00	10.00	8.53	0.00	360.00	10.00	8.53	0.00
32.50	10.00	8.53	0.00	197.50	10.00	8.53	0.00	362.50	10.00	8.53	0.00
35.00	10.00	8.53	0.00	200.00	10.00	8.53	0.00	365.00	10.00	8.53	0.00
37.50	10.00	8.53	0.00	202.50	10.00	8.53	0.00	367.50	10.00	8.53	0.00
40.00	10.00	8.53	0.00	205.00	10.00	8.53	0.00	370.00	10.00	8.53	0.00
42.50	10.00	8.53	0.00	207.50	10.00	8.53	0.00	372.50	10.00	8.53	0.00
45.00	10.00	8.53	0.00	210.00	10.00	8.53	0.00	375.00	10.00	8.53	0.00
47.50	10.00	8.53	0.00	212.50	10.00	8.53	0.00	377.50	10.00	8.53	0.00
50.00	10.00	8.53	0.00	215.00	10.00	8.53	0.00	380.00	10.00	8.53	0.00
52.50	10.00	8.53	0.00	217.50	10.00	8.53	0.00	382.50	10.00	8.53	0.00
55.00	10.00	8.53	0.00	220.00	10.00	8.53	0.00	385.00	10.00	8.53	0.00
57.50	10.00	8.53	0.00	222.50	10.00	8.53	0.00	387.50	10.00	8.53	0.00
60.00	10.00	8.53	0.00	225.00	10.00	8.53	0.00	390.00	10.00	8.53	0.00
62.50	10.00	8.53	0.00	227.50	10.00	8.53	0.00	392.50	10.00	8.53	0.00
65.00	10.00	8.53	0.00	230.00	10.00	8.53	0.00	395.00	10.00	8.53	0.00
67.50	10.00	8.53	0.00	232.50	10.00	8.53	0.00	397.50	10.00	8.53	0.00
70.00	10.00	8.53	0.00	235.00	10.00	8.53	0.00	400.00	10.00	8.53	0.00
72.50	10.00	8.53	0.00	237.50	10.00	8.53	0.00				
75.00	10.00	8.53	0.00	240.00	10.00	8.53	0.00				
77.50	10.00	8.53	0.00	242.50	10.00	8.53	0.00				
80.00	10.00	8.53	0.00	245.00	10.00	8.53	0.00				
82.50	10.00	8.53	0.00	247.50	10.00	8.53	0.00				
85.00	10.00	8.53	0.00	250.00	10.00	8.53	0.00				
87.50	10.00	8.53	0.00	252.50	10.00	8.53	0.00				
90.00	10.00	8.53	0.00	255.00	10.00	8.53	0.00				
92.50	10.00	8.53	0.00	257.50	10.00	8.53	0.00				
95.00	10.00	8.53	0.00	260.00	10.00	8.53	0.00				
97.50	10.00	8.53	0.00	262.50	10.00	8.53	0.00				
100.00	10.00	8.53	0.00	265.00	10.00	8.53	0.00				
102.50	10.00	8.53	0.00	267.50	10.00	8.53	0.00				
105.00	10.00	8.53	0.00	270.00	10.00	8.53	0.00				
107.50	10.00	8.53	0.00	272.50	10.00	8.53	0.00				
110.00	10.00	8.53	0.00	275.00	10.00	8.53	0.00				
112.50	10.00	8.53	0.00	277.50	10.00	8.53	0.00				
115.00	10.00	8.53	0.00	280.00	10.00	8.53	0.00				
117.50	10.00	8.53	0.00	282.50	10.00	8.53	0.00				
120.00	10.00	8.53	0.00	285.00	10.00	8.53	0.00				
122.50	10.00	8.53	0.00	287.50	10.00	8.53	0.00				
125.00	10.00	8.53	0.00	290.00	10.00	8.53	0.00				
127.50	10.00	8.53	0.00	292.50	10.00	8.53	0.00				
130.00	10.00	8.53	0.00	295.00	10.00	8.53	0.00				
132.50	10.00	8.53	0.00	297.50	10.00	8.53	0.00				
135.00	10.00	8.53	0.00	300.00	10.00	8.53	0.00				
137.50	10.00	8.53	0.00	302.50	10.00	8.53	0.00				
140.00	10.00	8.53	0.00	305.00	10.00	8.53	0.00				
142.50	10.00	8.53	0.00	307.50	10.00	8.53	0.00				
145.00	10.00	8.53	0.00	310.00	10.00	8.53	0.00				
147.50	10.00	8.53	0.00	312.50	10.00	8.53	0.00				
150.00	10.00	8.53	0.00	315.00	10.00	8.53	0.00				
152.50	10.00	8.53	0.00	317.50	10.00	8.53	0.00				
155.00	10.00	8.53	0.00	320.00	10.00	8.53	0.00				
157.50	10.00	8.53	0.00	322.50	10.00	8.53	0.00				
160.00	10.00	8.53	0.00	325.00	10.00	8.53	0.00				
162.50	10.00	8.53	0.00	327.50	10.00	8.53	0.00				

Summary for Subcatchment 2.1S:

Runoff = 2.70 cfs @ 12.06 hrs, Volume= 0.192 af, Depth= 2.89"

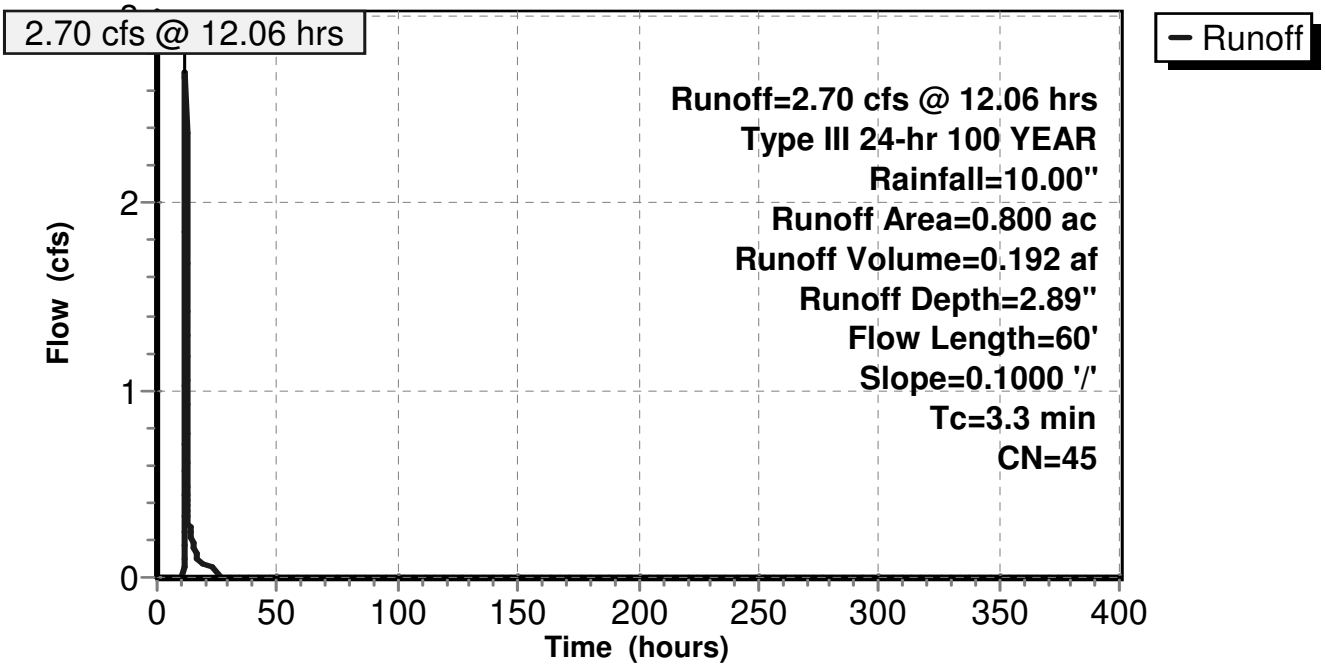
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YEAR Rainfall=10.00"

Area (ac)	CN	Description
0.700	39	>75% Grass cover, Good, HSG A
0.100	89	Urban commercial, 85% imp, HSG A
0.800	45	Weighted Average
0.715		Pervious Area
0.085		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	60	0.1000	0.31		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"

Subcatchment 2.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

Prepared by Insite Engineering, Surveying, and Landscape Architecture, P.C.
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Hydrograph for Subcatchment 2.1S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	10.00	2.89	0.00	330.00	10.00	2.89	0.00
2.50	0.25	0.00	0.00	167.50	10.00	2.89	0.00	332.50	10.00	2.89	0.00
5.00	0.57	0.00	0.00	170.00	10.00	2.89	0.00	335.00	10.00	2.89	0.00
7.50	1.02	0.00	0.00	172.50	10.00	2.89	0.00	337.50	10.00	2.89	0.00
10.00	1.89	0.00	0.00	175.00	10.00	2.89	0.00	340.00	10.00	2.89	0.00
12.50	7.02	1.25	0.62	177.50	10.00	2.89	0.00	342.50	10.00	2.89	0.00
15.00	8.54	2.03	0.17	180.00	10.00	2.89	0.00	345.00	10.00	2.89	0.00
17.50	9.19	2.40	0.09	182.50	10.00	2.89	0.00	347.50	10.00	2.89	0.00
20.00	9.57	2.62	0.06	185.00	10.00	2.89	0.00	350.00	10.00	2.89	0.00
22.50	9.86	2.80	0.05	187.50	10.00	2.89	0.00	352.50	10.00	2.89	0.00
25.00	10.00	2.89	0.00	190.00	10.00	2.89	0.00	355.00	10.00	2.89	0.00
27.50	10.00	2.89	0.00	192.50	10.00	2.89	0.00	357.50	10.00	2.89	0.00
30.00	10.00	2.89	0.00	195.00	10.00	2.89	0.00	360.00	10.00	2.89	0.00
32.50	10.00	2.89	0.00	197.50	10.00	2.89	0.00	362.50	10.00	2.89	0.00
35.00	10.00	2.89	0.00	200.00	10.00	2.89	0.00	365.00	10.00	2.89	0.00
37.50	10.00	2.89	0.00	202.50	10.00	2.89	0.00	367.50	10.00	2.89	0.00
40.00	10.00	2.89	0.00	205.00	10.00	2.89	0.00	370.00	10.00	2.89	0.00
42.50	10.00	2.89	0.00	207.50	10.00	2.89	0.00	372.50	10.00	2.89	0.00
45.00	10.00	2.89	0.00	210.00	10.00	2.89	0.00	375.00	10.00	2.89	0.00
47.50	10.00	2.89	0.00	212.50	10.00	2.89	0.00	377.50	10.00	2.89	0.00
50.00	10.00	2.89	0.00	215.00	10.00	2.89	0.00	380.00	10.00	2.89	0.00
52.50	10.00	2.89	0.00	217.50	10.00	2.89	0.00	382.50	10.00	2.89	0.00
55.00	10.00	2.89	0.00	220.00	10.00	2.89	0.00	385.00	10.00	2.89	0.00
57.50	10.00	2.89	0.00	222.50	10.00	2.89	0.00	387.50	10.00	2.89	0.00
60.00	10.00	2.89	0.00	225.00	10.00	2.89	0.00	390.00	10.00	2.89	0.00
62.50	10.00	2.89	0.00	227.50	10.00	2.89	0.00	392.50	10.00	2.89	0.00
65.00	10.00	2.89	0.00	230.00	10.00	2.89	0.00	395.00	10.00	2.89	0.00
67.50	10.00	2.89	0.00	232.50	10.00	2.89	0.00	397.50	10.00	2.89	0.00
70.00	10.00	2.89	0.00	235.00	10.00	2.89	0.00	400.00	10.00	2.89	0.00
72.50	10.00	2.89	0.00	237.50	10.00	2.89	0.00				
75.00	10.00	2.89	0.00	240.00	10.00	2.89	0.00				
77.50	10.00	2.89	0.00	242.50	10.00	2.89	0.00				
80.00	10.00	2.89	0.00	245.00	10.00	2.89	0.00				
82.50	10.00	2.89	0.00	247.50	10.00	2.89	0.00				
85.00	10.00	2.89	0.00	250.00	10.00	2.89	0.00				
87.50	10.00	2.89	0.00	252.50	10.00	2.89	0.00				
90.00	10.00	2.89	0.00	255.00	10.00	2.89	0.00				
92.50	10.00	2.89	0.00	257.50	10.00	2.89	0.00				
95.00	10.00	2.89	0.00	260.00	10.00	2.89	0.00				
97.50	10.00	2.89	0.00	262.50	10.00	2.89	0.00				
100.00	10.00	2.89	0.00	265.00	10.00	2.89	0.00				
102.50	10.00	2.89	0.00	267.50	10.00	2.89	0.00				
105.00	10.00	2.89	0.00	270.00	10.00	2.89	0.00				
107.50	10.00	2.89	0.00	272.50	10.00	2.89	0.00				
110.00	10.00	2.89	0.00	275.00	10.00	2.89	0.00				
112.50	10.00	2.89	0.00	277.50	10.00	2.89	0.00				
115.00	10.00	2.89	0.00	280.00	10.00	2.89	0.00				
117.50	10.00	2.89	0.00	282.50	10.00	2.89	0.00				
120.00	10.00	2.89	0.00	285.00	10.00	2.89	0.00				
122.50	10.00	2.89	0.00	287.50	10.00	2.89	0.00				
125.00	10.00	2.89	0.00	290.00	10.00	2.89	0.00				
127.50	10.00	2.89	0.00	292.50	10.00	2.89	0.00				
130.00	10.00	2.89	0.00	295.00	10.00	2.89	0.00				
132.50	10.00	2.89	0.00	297.50	10.00	2.89	0.00				
135.00	10.00	2.89	0.00	300.00	10.00	2.89	0.00				
137.50	10.00	2.89	0.00	302.50	10.00	2.89	0.00				
140.00	10.00	2.89	0.00	305.00	10.00	2.89	0.00				
142.50	10.00	2.89	0.00	307.50	10.00	2.89	0.00				
145.00	10.00	2.89	0.00	310.00	10.00	2.89	0.00				
147.50	10.00	2.89	0.00	312.50	10.00	2.89	0.00				
150.00	10.00	2.89	0.00	315.00	10.00	2.89	0.00				
152.50	10.00	2.89	0.00	317.50	10.00	2.89	0.00				
155.00	10.00	2.89	0.00	320.00	10.00	2.89	0.00				
157.50	10.00	2.89	0.00	322.50	10.00	2.89	0.00				
160.00	10.00	2.89	0.00	325.00	10.00	2.89	0.00				
162.50	10.00	2.89	0.00	327.50	10.00	2.89	0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Summary for Subcatchment 2.2S:

Runoff = 15.18 cfs @ 12.17 hrs, Volume= 1.383 af, Depth= 7.90"

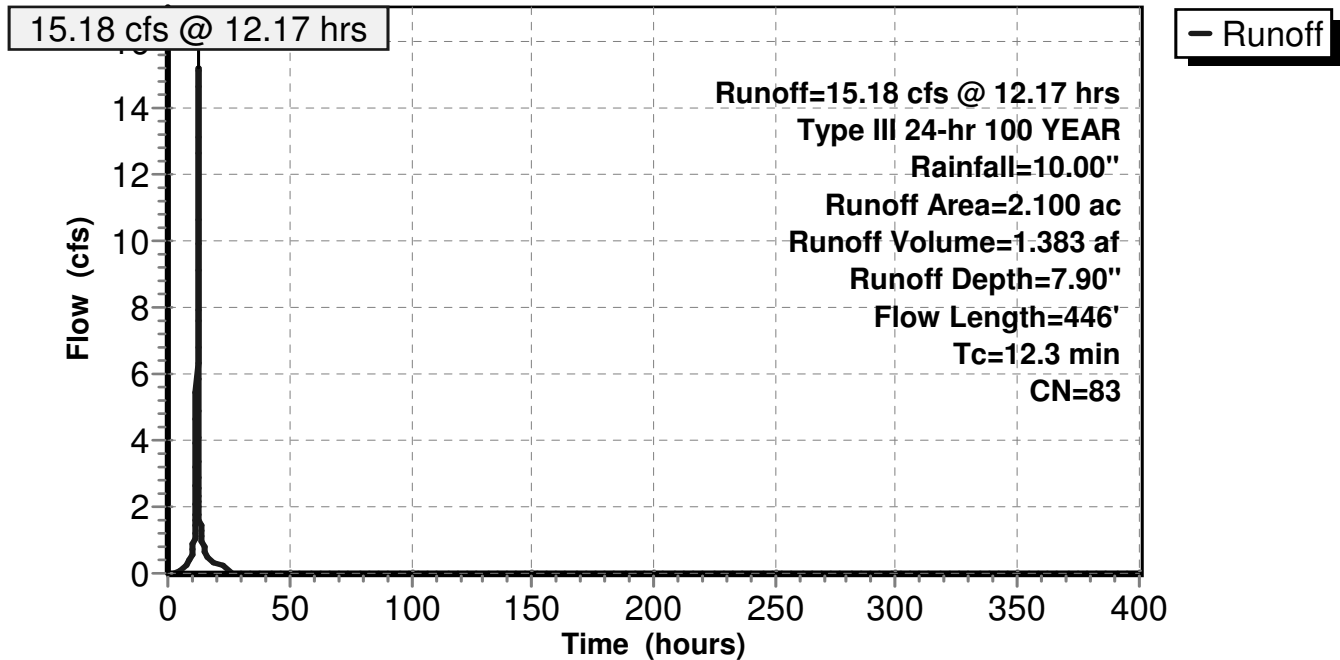
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YEAR Rainfall=10.00"

Area (ac)	CN	Description
1.000	94	Urban commercial, 85% imp, HSG C
0.700	74	>75% Grass cover, Good, HSG C
0.300	71	Meadow, non-grazed, HSG C
* 0.100	70	Pervious Pavement
2.100	83	Weighted Average
1.250		Pervious Area
0.850		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	157	0.1400	2.62		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	140	0.0930	6.19		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	49	0.0290	9.71	11.92	Circular Channel (pipe), Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
12.3	446	Total			

Subcatchment 2.2S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Subcatchment 2.2S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	10.00	7.90	0.00	330.00	10.00	7.90	0.00
2.50	0.25	0.00	0.00	167.50	10.00	7.90	0.00	332.50	10.00	7.90	0.00
5.00	0.57	0.01	0.04	170.00	10.00	7.90	0.00	335.00	10.00	7.90	0.00
7.50	1.02	0.14	0.18	172.50	10.00	7.90	0.00	337.50	10.00	7.90	0.00
10.00	1.89	0.62	0.64	175.00	10.00	7.90	0.00	340.00	10.00	7.90	0.00
12.50	7.02	5.05	5.83	177.50	10.00	7.90	0.00	342.50	10.00	7.90	0.00
15.00	8.54	6.50	0.81	180.00	10.00	7.90	0.00	345.00	10.00	7.90	0.00
17.50	9.19	7.12	0.40	182.50	10.00	7.90	0.00	347.50	10.00	7.90	0.00
20.00	9.57	7.49	0.27	185.00	10.00	7.90	0.00	350.00	10.00	7.90	0.00
22.50	9.86	7.77	0.21	187.50	10.00	7.90	0.00	352.50	10.00	7.90	0.00
25.00	10.00	7.90	0.00	190.00	10.00	7.90	0.00	355.00	10.00	7.90	0.00
27.50	10.00	7.90	0.00	192.50	10.00	7.90	0.00	357.50	10.00	7.90	0.00
30.00	10.00	7.90	0.00	195.00	10.00	7.90	0.00	360.00	10.00	7.90	0.00
32.50	10.00	7.90	0.00	197.50	10.00	7.90	0.00	362.50	10.00	7.90	0.00
35.00	10.00	7.90	0.00	200.00	10.00	7.90	0.00	365.00	10.00	7.90	0.00
37.50	10.00	7.90	0.00	202.50	10.00	7.90	0.00	367.50	10.00	7.90	0.00
40.00	10.00	7.90	0.00	205.00	10.00	7.90	0.00	370.00	10.00	7.90	0.00
42.50	10.00	7.90	0.00	207.50	10.00	7.90	0.00	372.50	10.00	7.90	0.00
45.00	10.00	7.90	0.00	210.00	10.00	7.90	0.00	375.00	10.00	7.90	0.00
47.50	10.00	7.90	0.00	212.50	10.00	7.90	0.00	377.50	10.00	7.90	0.00
50.00	10.00	7.90	0.00	215.00	10.00	7.90	0.00	380.00	10.00	7.90	0.00
52.50	10.00	7.90	0.00	217.50	10.00	7.90	0.00	382.50	10.00	7.90	0.00
55.00	10.00	7.90	0.00	220.00	10.00	7.90	0.00	385.00	10.00	7.90	0.00
57.50	10.00	7.90	0.00	222.50	10.00	7.90	0.00	387.50	10.00	7.90	0.00
60.00	10.00	7.90	0.00	225.00	10.00	7.90	0.00	390.00	10.00	7.90	0.00
62.50	10.00	7.90	0.00	227.50	10.00	7.90	0.00	392.50	10.00	7.90	0.00
65.00	10.00	7.90	0.00	230.00	10.00	7.90	0.00	395.00	10.00	7.90	0.00
67.50	10.00	7.90	0.00	232.50	10.00	7.90	0.00	397.50	10.00	7.90	0.00
70.00	10.00	7.90	0.00	235.00	10.00	7.90	0.00	400.00	10.00	7.90	0.00
72.50	10.00	7.90	0.00	237.50	10.00	7.90	0.00				
75.00	10.00	7.90	0.00	240.00	10.00	7.90	0.00				
77.50	10.00	7.90	0.00	242.50	10.00	7.90	0.00				
80.00	10.00	7.90	0.00	245.00	10.00	7.90	0.00				
82.50	10.00	7.90	0.00	247.50	10.00	7.90	0.00				
85.00	10.00	7.90	0.00	250.00	10.00	7.90	0.00				
87.50	10.00	7.90	0.00	252.50	10.00	7.90	0.00				
90.00	10.00	7.90	0.00	255.00	10.00	7.90	0.00				
92.50	10.00	7.90	0.00	257.50	10.00	7.90	0.00				
95.00	10.00	7.90	0.00	260.00	10.00	7.90	0.00				
97.50	10.00	7.90	0.00	262.50	10.00	7.90	0.00				
100.00	10.00	7.90	0.00	265.00	10.00	7.90	0.00				
102.50	10.00	7.90	0.00	267.50	10.00	7.90	0.00				
105.00	10.00	7.90	0.00	270.00	10.00	7.90	0.00				
107.50	10.00	7.90	0.00	272.50	10.00	7.90	0.00				
110.00	10.00	7.90	0.00	275.00	10.00	7.90	0.00				
112.50	10.00	7.90	0.00	277.50	10.00	7.90	0.00				
115.00	10.00	7.90	0.00	280.00	10.00	7.90	0.00				
117.50	10.00	7.90	0.00	282.50	10.00	7.90	0.00				
120.00	10.00	7.90	0.00	285.00	10.00	7.90	0.00				
122.50	10.00	7.90	0.00	287.50	10.00	7.90	0.00				
125.00	10.00	7.90	0.00	290.00	10.00	7.90	0.00				
127.50	10.00	7.90	0.00	292.50	10.00	7.90	0.00				
130.00	10.00	7.90	0.00	295.00	10.00	7.90	0.00				
132.50	10.00	7.90	0.00	297.50	10.00	7.90	0.00				
135.00	10.00	7.90	0.00	300.00	10.00	7.90	0.00				
137.50	10.00	7.90	0.00	302.50	10.00	7.90	0.00				
140.00	10.00	7.90	0.00	305.00	10.00	7.90	0.00				
142.50	10.00	7.90	0.00	307.50	10.00	7.90	0.00				
145.00	10.00	7.90	0.00	310.00	10.00	7.90	0.00				
147.50	10.00	7.90	0.00	312.50	10.00	7.90	0.00				
150.00	10.00	7.90	0.00	315.00	10.00	7.90	0.00				
152.50	10.00	7.90	0.00	317.50	10.00	7.90	0.00				
155.00	10.00	7.90	0.00	320.00	10.00	7.90	0.00				
157.50	10.00	7.90	0.00	322.50	10.00	7.90	0.00				
160.00	10.00	7.90	0.00	325.00	10.00	7.90	0.00				
162.50	10.00	7.90	0.00	327.50	10.00	7.90	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 100 YEAR Rainfall=10.00"

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Summary for Subcatchment 2.3S:

Runoff = 45.07 cfs @ 12.19 hrs, Volume= 4.150 af, Depth= 6.22"

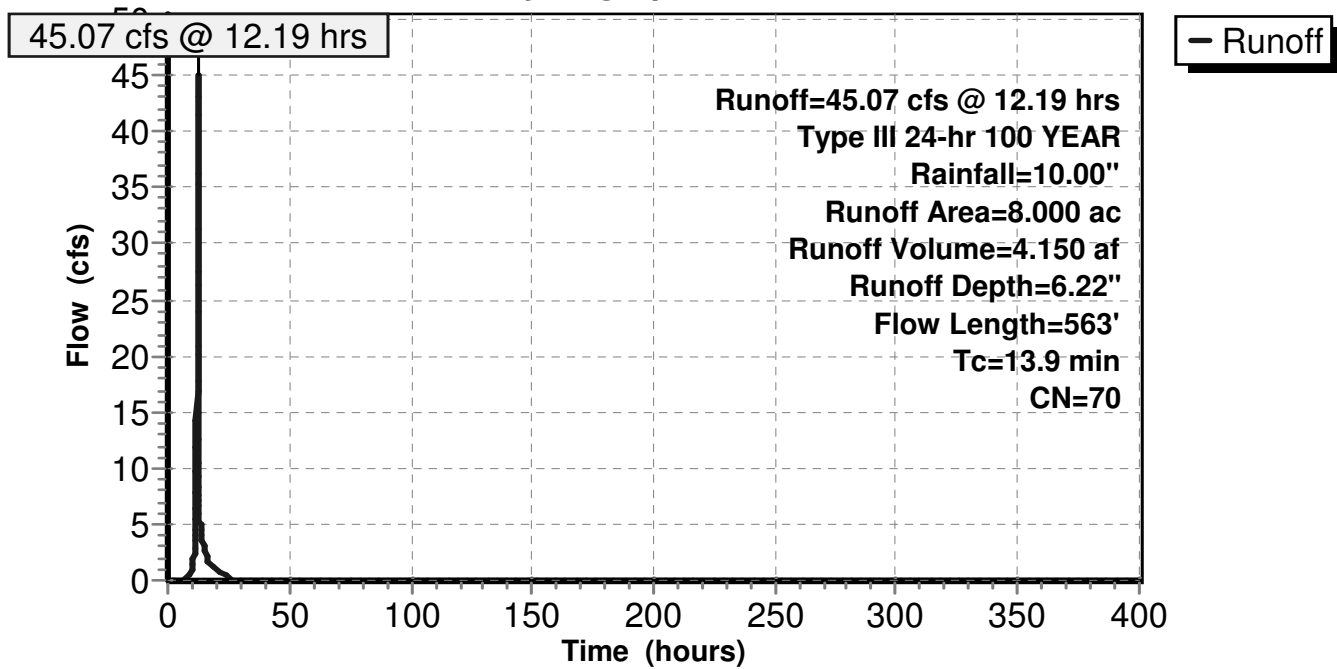
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 YEAR Rainfall=10.00"

Area (ac)	CN	Description
5.500	70	Woods, Good, HSG C
0.200	39	>75% Grass cover, Good, HSG A
0.500	98	Paved parking & roofs
0.500	71	Meadow, non-grazed, HSG C
0.900	74	>75% Grass cover, Good, HSG C
0.300	30	Woods, Good, HSG A
0.050	94	Urban commercial, 85% imp, HSG C
0.050	89	Urban commercial, 85% imp, HSG A
8.000	70	Weighted Average
7.415		Pervious Area
0.585		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
4.5	463	0.1200	1.73		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.9	563	Total			

Subcatchment 2.3S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Subcatchment 2.3S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	10.00	6.22	0.00	330.00	10.00	6.22	0.00
2.50	0.25	0.00	0.00	167.50	10.00	6.22	0.00	332.50	10.00	6.22	0.00
5.00	0.57	0.00	0.00	170.00	10.00	6.22	0.00	335.00	10.00	6.22	0.00
7.50	1.02	0.01	0.09	172.50	10.00	6.22	0.00	337.50	10.00	6.22	0.00
10.00	1.89	0.20	1.22	175.00	10.00	6.22	0.00	340.00	10.00	6.22	0.00
12.50	7.02	3.64	20.85	177.50	10.00	6.22	0.00	342.50	10.00	6.22	0.00
15.00	8.54	4.93	2.80	180.00	10.00	6.22	0.00	345.00	10.00	6.22	0.00
17.50	9.19	5.51	1.40	182.50	10.00	6.22	0.00	347.50	10.00	6.22	0.00
20.00	9.57	5.84	0.96	185.00	10.00	6.22	0.00	350.00	10.00	6.22	0.00
22.50	9.86	6.10	0.75	187.50	10.00	6.22	0.00	352.50	10.00	6.22	0.00
25.00	10.00	6.22	0.00	190.00	10.00	6.22	0.00	355.00	10.00	6.22	0.00
27.50	10.00	6.22	0.00	192.50	10.00	6.22	0.00	357.50	10.00	6.22	0.00
30.00	10.00	6.22	0.00	195.00	10.00	6.22	0.00	360.00	10.00	6.22	0.00
32.50	10.00	6.22	0.00	197.50	10.00	6.22	0.00	362.50	10.00	6.22	0.00
35.00	10.00	6.22	0.00	200.00	10.00	6.22	0.00	365.00	10.00	6.22	0.00
37.50	10.00	6.22	0.00	202.50	10.00	6.22	0.00	367.50	10.00	6.22	0.00
40.00	10.00	6.22	0.00	205.00	10.00	6.22	0.00	370.00	10.00	6.22	0.00
42.50	10.00	6.22	0.00	207.50	10.00	6.22	0.00	372.50	10.00	6.22	0.00
45.00	10.00	6.22	0.00	210.00	10.00	6.22	0.00	375.00	10.00	6.22	0.00
47.50	10.00	6.22	0.00	212.50	10.00	6.22	0.00	377.50	10.00	6.22	0.00
50.00	10.00	6.22	0.00	215.00	10.00	6.22	0.00	380.00	10.00	6.22	0.00
52.50	10.00	6.22	0.00	217.50	10.00	6.22	0.00	382.50	10.00	6.22	0.00
55.00	10.00	6.22	0.00	220.00	10.00	6.22	0.00	385.00	10.00	6.22	0.00
57.50	10.00	6.22	0.00	222.50	10.00	6.22	0.00	387.50	10.00	6.22	0.00
60.00	10.00	6.22	0.00	225.00	10.00	6.22	0.00	390.00	10.00	6.22	0.00
62.50	10.00	6.22	0.00	227.50	10.00	6.22	0.00	392.50	10.00	6.22	0.00
65.00	10.00	6.22	0.00	230.00	10.00	6.22	0.00	395.00	10.00	6.22	0.00
67.50	10.00	6.22	0.00	232.50	10.00	6.22	0.00	397.50	10.00	6.22	0.00
70.00	10.00	6.22	0.00	235.00	10.00	6.22	0.00	400.00	10.00	6.22	0.00
72.50	10.00	6.22	0.00	237.50	10.00	6.22	0.00				
75.00	10.00	6.22	0.00	240.00	10.00	6.22	0.00				
77.50	10.00	6.22	0.00	242.50	10.00	6.22	0.00				
80.00	10.00	6.22	0.00	245.00	10.00	6.22	0.00				
82.50	10.00	6.22	0.00	247.50	10.00	6.22	0.00				
85.00	10.00	6.22	0.00	250.00	10.00	6.22	0.00				
87.50	10.00	6.22	0.00	252.50	10.00	6.22	0.00				
90.00	10.00	6.22	0.00	255.00	10.00	6.22	0.00				
92.50	10.00	6.22	0.00	257.50	10.00	6.22	0.00				
95.00	10.00	6.22	0.00	260.00	10.00	6.22	0.00				
97.50	10.00	6.22	0.00	262.50	10.00	6.22	0.00				
100.00	10.00	6.22	0.00	265.00	10.00	6.22	0.00				
102.50	10.00	6.22	0.00	267.50	10.00	6.22	0.00				
105.00	10.00	6.22	0.00	270.00	10.00	6.22	0.00				
107.50	10.00	6.22	0.00	272.50	10.00	6.22	0.00				
110.00	10.00	6.22	0.00	275.00	10.00	6.22	0.00				
112.50	10.00	6.22	0.00	277.50	10.00	6.22	0.00				
115.00	10.00	6.22	0.00	280.00	10.00	6.22	0.00				
117.50	10.00	6.22	0.00	282.50	10.00	6.22	0.00				
120.00	10.00	6.22	0.00	285.00	10.00	6.22	0.00				
122.50	10.00	6.22	0.00	287.50	10.00	6.22	0.00				
125.00	10.00	6.22	0.00	290.00	10.00	6.22	0.00				
127.50	10.00	6.22	0.00	292.50	10.00	6.22	0.00				
130.00	10.00	6.22	0.00	295.00	10.00	6.22	0.00				
132.50	10.00	6.22	0.00	297.50	10.00	6.22	0.00				
135.00	10.00	6.22	0.00	300.00	10.00	6.22	0.00				
137.50	10.00	6.22	0.00	302.50	10.00	6.22	0.00				
140.00	10.00	6.22	0.00	305.00	10.00	6.22	0.00				
142.50	10.00	6.22	0.00	307.50	10.00	6.22	0.00				
145.00	10.00	6.22	0.00	310.00	10.00	6.22	0.00				
147.50	10.00	6.22	0.00	312.50	10.00	6.22	0.00				
150.00	10.00	6.22	0.00	315.00	10.00	6.22	0.00				
152.50	10.00	6.22	0.00	317.50	10.00	6.22	0.00				
155.00	10.00	6.22	0.00	320.00	10.00	6.22	0.00				
157.50	10.00	6.22	0.00	322.50	10.00	6.22	0.00				
160.00	10.00	6.22	0.00	325.00	10.00	6.22	0.00				
162.50	10.00	6.22	0.00	327.50	10.00	6.22	0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Summary for Subcatchment 3.0S:

Runoff = 9.30 cfs @ 12.19 hrs, Volume= 0.839 af, Depth= 5.30"

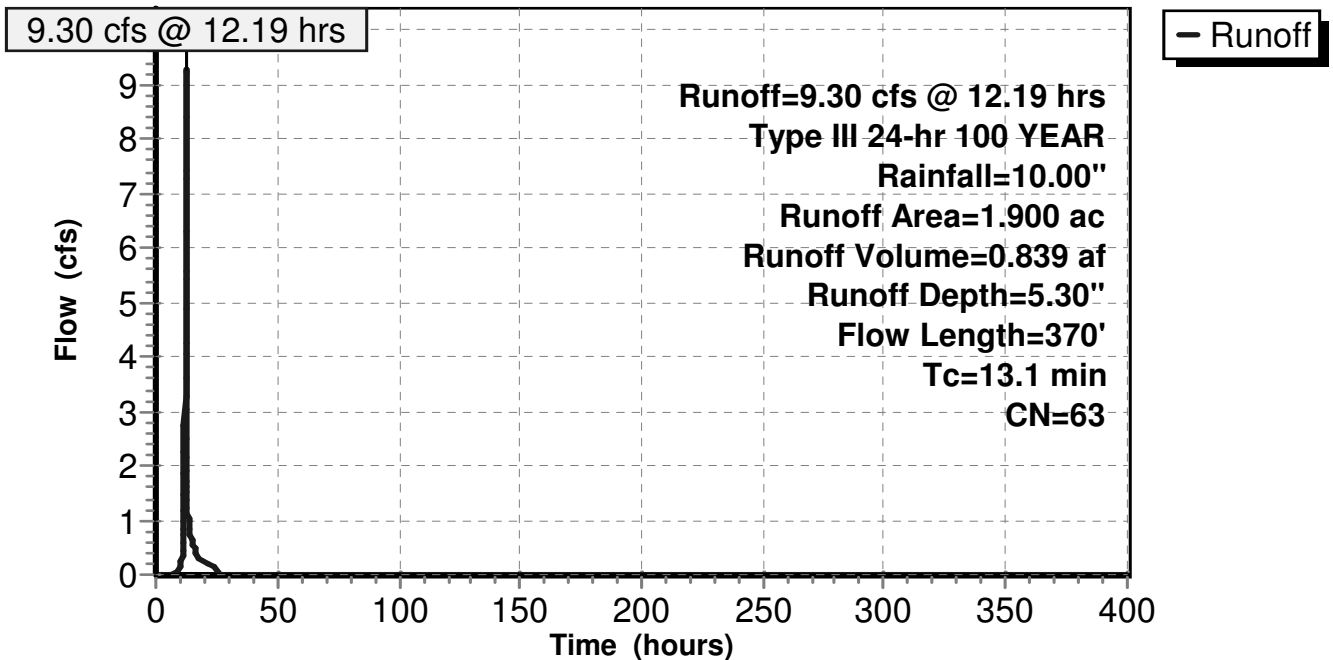
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YEAR Rainfall=10.00"

Area (ac)	CN	Description
0.900	98	Paved parking & roofs
0.800	30	Woods, Good, HSG A
0.200	39	>75% Grass cover, Good, HSG A
1.900	63	Weighted Average
1.000		Pervious Area
0.900		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
6.5	90	0.0400	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.50"
6.4	270	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.1	370	Total			

Subcatchment 3.0S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Subcatchment 3.0S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	10.00	5.30	0.00	330.00	10.00	5.30	0.00
2.50	0.25	0.00	0.00	167.50	10.00	5.30	0.00	332.50	10.00	5.30	0.00
5.00	0.57	0.00	0.00	170.00	10.00	5.30	0.00	335.00	10.00	5.30	0.00
7.50	1.02	0.00	0.00	172.50	10.00	5.30	0.00	337.50	10.00	5.30	0.00
10.00	1.89	0.08	0.16	175.00	10.00	5.30	0.00	340.00	10.00	5.30	0.00
12.50	7.02	2.92	4.23	177.50	10.00	5.30	0.00	342.50	10.00	5.30	0.00
15.00	8.54	4.10	0.61	180.00	10.00	5.30	0.00	345.00	10.00	5.30	0.00
17.50	9.19	4.63	0.31	182.50	10.00	5.30	0.00	347.50	10.00	5.30	0.00
20.00	9.57	4.94	0.21	185.00	10.00	5.30	0.00	350.00	10.00	5.30	0.00
22.50	9.86	5.18	0.17	187.50	10.00	5.30	0.00	352.50	10.00	5.30	0.00
25.00	10.00	5.30	0.00	190.00	10.00	5.30	0.00	355.00	10.00	5.30	0.00
27.50	10.00	5.30	0.00	192.50	10.00	5.30	0.00	357.50	10.00	5.30	0.00
30.00	10.00	5.30	0.00	195.00	10.00	5.30	0.00	360.00	10.00	5.30	0.00
32.50	10.00	5.30	0.00	197.50	10.00	5.30	0.00	362.50	10.00	5.30	0.00
35.00	10.00	5.30	0.00	200.00	10.00	5.30	0.00	365.00	10.00	5.30	0.00
37.50	10.00	5.30	0.00	202.50	10.00	5.30	0.00	367.50	10.00	5.30	0.00
40.00	10.00	5.30	0.00	205.00	10.00	5.30	0.00	370.00	10.00	5.30	0.00
42.50	10.00	5.30	0.00	207.50	10.00	5.30	0.00	372.50	10.00	5.30	0.00
45.00	10.00	5.30	0.00	210.00	10.00	5.30	0.00	375.00	10.00	5.30	0.00
47.50	10.00	5.30	0.00	212.50	10.00	5.30	0.00	377.50	10.00	5.30	0.00
50.00	10.00	5.30	0.00	215.00	10.00	5.30	0.00	380.00	10.00	5.30	0.00
52.50	10.00	5.30	0.00	217.50	10.00	5.30	0.00	382.50	10.00	5.30	0.00
55.00	10.00	5.30	0.00	220.00	10.00	5.30	0.00	385.00	10.00	5.30	0.00
57.50	10.00	5.30	0.00	222.50	10.00	5.30	0.00	387.50	10.00	5.30	0.00
60.00	10.00	5.30	0.00	225.00	10.00	5.30	0.00	390.00	10.00	5.30	0.00
62.50	10.00	5.30	0.00	227.50	10.00	5.30	0.00	392.50	10.00	5.30	0.00
65.00	10.00	5.30	0.00	230.00	10.00	5.30	0.00	395.00	10.00	5.30	0.00
67.50	10.00	5.30	0.00	232.50	10.00	5.30	0.00	397.50	10.00	5.30	0.00
70.00	10.00	5.30	0.00	235.00	10.00	5.30	0.00	400.00	10.00	5.30	0.00
72.50	10.00	5.30	0.00	237.50	10.00	5.30	0.00				
75.00	10.00	5.30	0.00	240.00	10.00	5.30	0.00				
77.50	10.00	5.30	0.00	242.50	10.00	5.30	0.00				
80.00	10.00	5.30	0.00	245.00	10.00	5.30	0.00				
82.50	10.00	5.30	0.00	247.50	10.00	5.30	0.00				
85.00	10.00	5.30	0.00	250.00	10.00	5.30	0.00				
87.50	10.00	5.30	0.00	252.50	10.00	5.30	0.00				
90.00	10.00	5.30	0.00	255.00	10.00	5.30	0.00				
92.50	10.00	5.30	0.00	257.50	10.00	5.30	0.00				
95.00	10.00	5.30	0.00	260.00	10.00	5.30	0.00				
97.50	10.00	5.30	0.00	262.50	10.00	5.30	0.00				
100.00	10.00	5.30	0.00	265.00	10.00	5.30	0.00				
102.50	10.00	5.30	0.00	267.50	10.00	5.30	0.00				
105.00	10.00	5.30	0.00	270.00	10.00	5.30	0.00				
107.50	10.00	5.30	0.00	272.50	10.00	5.30	0.00				
110.00	10.00	5.30	0.00	275.00	10.00	5.30	0.00				
112.50	10.00	5.30	0.00	277.50	10.00	5.30	0.00				
115.00	10.00	5.30	0.00	280.00	10.00	5.30	0.00				
117.50	10.00	5.30	0.00	282.50	10.00	5.30	0.00				
120.00	10.00	5.30	0.00	285.00	10.00	5.30	0.00				
122.50	10.00	5.30	0.00	287.50	10.00	5.30	0.00				
125.00	10.00	5.30	0.00	290.00	10.00	5.30	0.00				
127.50	10.00	5.30	0.00	292.50	10.00	5.30	0.00				
130.00	10.00	5.30	0.00	295.00	10.00	5.30	0.00				
132.50	10.00	5.30	0.00	297.50	10.00	5.30	0.00				
135.00	10.00	5.30	0.00	300.00	10.00	5.30	0.00				
137.50	10.00	5.30	0.00	302.50	10.00	5.30	0.00				
140.00	10.00	5.30	0.00	305.00	10.00	5.30	0.00				
142.50	10.00	5.30	0.00	307.50	10.00	5.30	0.00				
145.00	10.00	5.30	0.00	310.00	10.00	5.30	0.00				
147.50	10.00	5.30	0.00	312.50	10.00	5.30	0.00				
150.00	10.00	5.30	0.00	315.00	10.00	5.30	0.00				
152.50	10.00	5.30	0.00	317.50	10.00	5.30	0.00				
155.00	10.00	5.30	0.00	320.00	10.00	5.30	0.00				
157.50	10.00	5.30	0.00	322.50	10.00	5.30	0.00				
160.00	10.00	5.30	0.00	325.00	10.00	5.30	0.00				
162.50	10.00	5.30	0.00	327.50	10.00	5.30	0.00				

Stateline Retail Center Post-development 040809

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Type III 24-hr 100 YEAR Rainfall=10.00"

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Summary for Subcatchment 3.1S:

Runoff = 5.42 cfs @ 12.30 hrs, Volume= 0.594 af, Depth= 3.96"

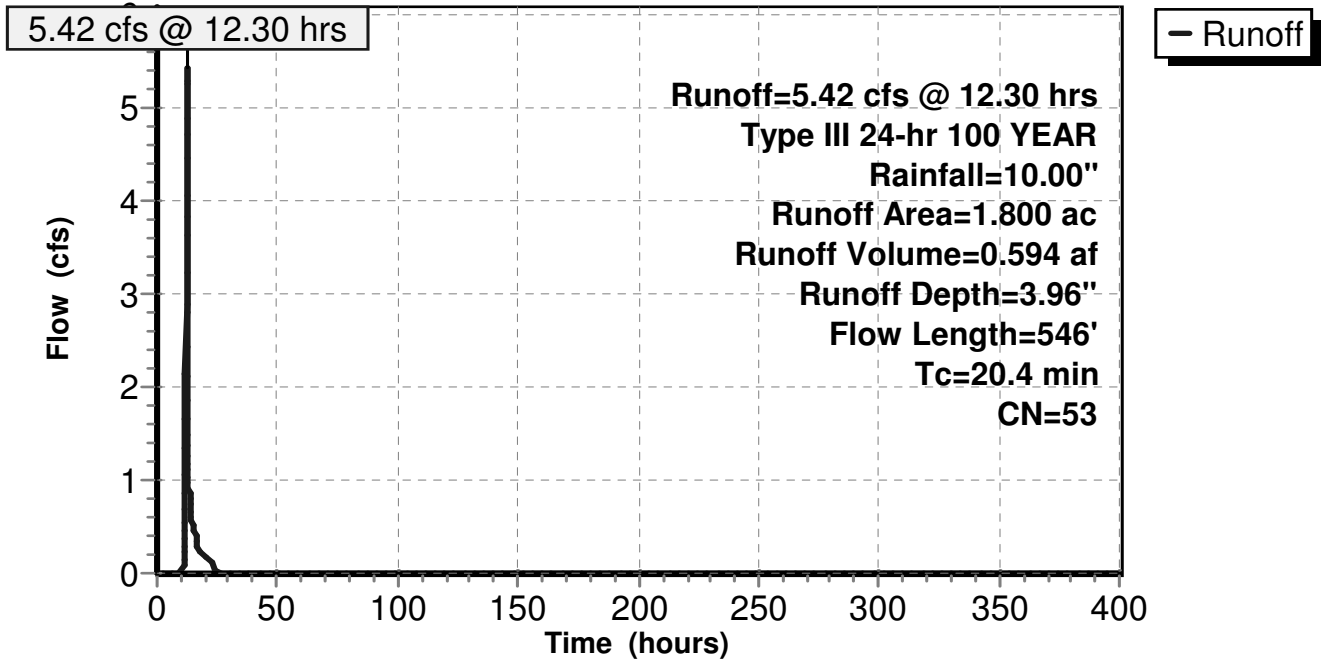
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 YEAR Rainfall=10.00"

Area (ac)	CN	Description
0.600	98	Paved parking & roofs
1.200	30	Woods, Good, HSG A
1.800	53	Weighted Average
1.200		Pervious Area
0.600		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0100	0.69		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"
16.0	90	0.0300	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.7	126	0.0600	1.22		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.5	320	0.0200	2.18	2.61	Channel Flow, Area= 1.2 sf Perim= 5.5' r= 0.22' n= 0.035
20.4	546	Total			

Subcatchment 3.1S:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Subcatchment 3.1S:

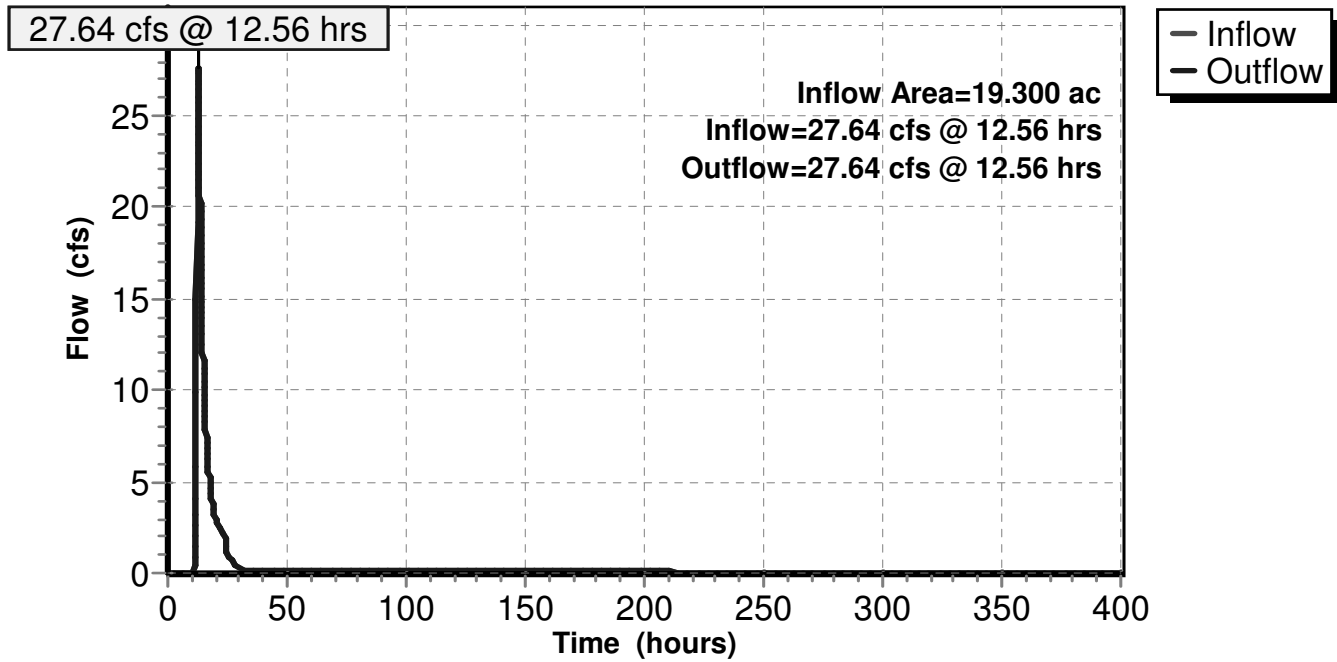
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	165.00	10.00	3.96	0.00	330.00	10.00	3.96	0.00
2.50	0.25	0.00	0.00	167.50	10.00	3.96	0.00	332.50	10.00	3.96	0.00
5.00	0.57	0.00	0.00	170.00	10.00	3.96	0.00	335.00	10.00	3.96	0.00
7.50	1.02	0.00	0.00	172.50	10.00	3.96	0.00	337.50	10.00	3.96	0.00
10.00	1.89	0.00	0.00	175.00	10.00	3.96	0.00	340.00	10.00	3.96	0.00
12.50	7.02	1.95	4.04	177.50	10.00	3.96	0.00	342.50	10.00	3.96	0.00
15.00	8.54	2.93	0.50	180.00	10.00	3.96	0.00	345.00	10.00	3.96	0.00
17.50	9.19	3.38	0.26	182.50	10.00	3.96	0.00	347.50	10.00	3.96	0.00
20.00	9.57	3.65	0.17	185.00	10.00	3.96	0.00	350.00	10.00	3.96	0.00
22.50	9.86	3.86	0.14	187.50	10.00	3.96	0.00	352.50	10.00	3.96	0.00
25.00	10.00	3.96	0.00	190.00	10.00	3.96	0.00	355.00	10.00	3.96	0.00
27.50	10.00	3.96	0.00	192.50	10.00	3.96	0.00	357.50	10.00	3.96	0.00
30.00	10.00	3.96	0.00	195.00	10.00	3.96	0.00	360.00	10.00	3.96	0.00
32.50	10.00	3.96	0.00	197.50	10.00	3.96	0.00	362.50	10.00	3.96	0.00
35.00	10.00	3.96	0.00	200.00	10.00	3.96	0.00	365.00	10.00	3.96	0.00
37.50	10.00	3.96	0.00	202.50	10.00	3.96	0.00	367.50	10.00	3.96	0.00
40.00	10.00	3.96	0.00	205.00	10.00	3.96	0.00	370.00	10.00	3.96	0.00
42.50	10.00	3.96	0.00	207.50	10.00	3.96	0.00	372.50	10.00	3.96	0.00
45.00	10.00	3.96	0.00	210.00	10.00	3.96	0.00	375.00	10.00	3.96	0.00
47.50	10.00	3.96	0.00	212.50	10.00	3.96	0.00	377.50	10.00	3.96	0.00
50.00	10.00	3.96	0.00	215.00	10.00	3.96	0.00	380.00	10.00	3.96	0.00
52.50	10.00	3.96	0.00	217.50	10.00	3.96	0.00	382.50	10.00	3.96	0.00
55.00	10.00	3.96	0.00	220.00	10.00	3.96	0.00	385.00	10.00	3.96	0.00
57.50	10.00	3.96	0.00	222.50	10.00	3.96	0.00	387.50	10.00	3.96	0.00
60.00	10.00	3.96	0.00	225.00	10.00	3.96	0.00	390.00	10.00	3.96	0.00
62.50	10.00	3.96	0.00	227.50	10.00	3.96	0.00	392.50	10.00	3.96	0.00
65.00	10.00	3.96	0.00	230.00	10.00	3.96	0.00	395.00	10.00	3.96	0.00
67.50	10.00	3.96	0.00	232.50	10.00	3.96	0.00	397.50	10.00	3.96	0.00
70.00	10.00	3.96	0.00	235.00	10.00	3.96	0.00	400.00	10.00	3.96	0.00
72.50	10.00	3.96	0.00	237.50	10.00	3.96	0.00				
75.00	10.00	3.96	0.00	240.00	10.00	3.96	0.00				
77.50	10.00	3.96	0.00	242.50	10.00	3.96	0.00				
80.00	10.00	3.96	0.00	245.00	10.00	3.96	0.00				
82.50	10.00	3.96	0.00	247.50	10.00	3.96	0.00				
85.00	10.00	3.96	0.00	250.00	10.00	3.96	0.00				
87.50	10.00	3.96	0.00	252.50	10.00	3.96	0.00				
90.00	10.00	3.96	0.00	255.00	10.00	3.96	0.00				
92.50	10.00	3.96	0.00	257.50	10.00	3.96	0.00				
95.00	10.00	3.96	0.00	260.00	10.00	3.96	0.00				
97.50	10.00	3.96	0.00	262.50	10.00	3.96	0.00				
100.00	10.00	3.96	0.00	265.00	10.00	3.96	0.00				
102.50	10.00	3.96	0.00	267.50	10.00	3.96	0.00				
105.00	10.00	3.96	0.00	270.00	10.00	3.96	0.00				
107.50	10.00	3.96	0.00	272.50	10.00	3.96	0.00				
110.00	10.00	3.96	0.00	275.00	10.00	3.96	0.00				
112.50	10.00	3.96	0.00	277.50	10.00	3.96	0.00				
115.00	10.00	3.96	0.00	280.00	10.00	3.96	0.00				
117.50	10.00	3.96	0.00	282.50	10.00	3.96	0.00				
120.00	10.00	3.96	0.00	285.00	10.00	3.96	0.00				
122.50	10.00	3.96	0.00	287.50	10.00	3.96	0.00				
125.00	10.00	3.96	0.00	290.00	10.00	3.96	0.00				
127.50	10.00	3.96	0.00	292.50	10.00	3.96	0.00				
130.00	10.00	3.96	0.00	295.00	10.00	3.96	0.00				
132.50	10.00	3.96	0.00	297.50	10.00	3.96	0.00				
135.00	10.00	3.96	0.00	300.00	10.00	3.96	0.00				
137.50	10.00	3.96	0.00	302.50	10.00	3.96	0.00				
140.00	10.00	3.96	0.00	305.00	10.00	3.96	0.00				
142.50	10.00	3.96	0.00	307.50	10.00	3.96	0.00				
145.00	10.00	3.96	0.00	310.00	10.00	3.96	0.00				
147.50	10.00	3.96	0.00	312.50	10.00	3.96	0.00				
150.00	10.00	3.96	0.00	315.00	10.00	3.96	0.00				
152.50	10.00	3.96	0.00	317.50	10.00	3.96	0.00				
155.00	10.00	3.96	0.00	320.00	10.00	3.96	0.00				
157.50	10.00	3.96	0.00	322.50	10.00	3.96	0.00				
160.00	10.00	3.96	0.00	325.00	10.00	3.96	0.00				
162.50	10.00	3.96	0.00	327.50	10.00	3.96	0.00				

Summary for Reach DESIGN LINE 1:

Inflow Area = 19.300 ac, 52.07% Impervious, Inflow Depth > 6.47" for 100 YEAR event
Inflow = 27.64 cfs @ 12.56 hrs, Volume= 10.405 af
Outflow = 27.64 cfs @ 12.56 hrs, Volume= 10.405 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

**Reach DESIGN LINE 1:
Hydrograph**



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Reach DESIGN LINE 1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.09		0.09	330.00	0.04		0.04
2.50	0.00		0.00	167.50	0.09		0.09	332.50	0.04		0.04
5.00	0.00		0.00	170.00	0.08		0.08	335.00	0.04		0.04
7.50	0.00		0.00	172.50	0.08		0.08	337.50	0.04		0.04
10.00	0.02		0.02	175.00	0.08		0.08	340.00	0.04		0.04
12.50	27.41		27.41	177.50	0.08		0.08	342.50	0.03		0.03
15.00	10.96		10.96	180.00	0.08		0.08	345.00	0.03		0.03
17.50	5.10		5.10	182.50	0.08		0.08	347.50	0.03		0.03
20.00	3.01		3.01	185.00	0.08		0.08	350.00	0.03		0.03
22.50	2.16		2.16	187.50	0.08		0.08	352.50	0.03		0.03
25.00	1.20		1.20	190.00	0.08		0.08	355.00	0.03		0.03
27.50	0.50		0.50	192.50	0.08		0.08	357.50	0.03		0.03
30.00	0.26		0.26	195.00	0.08		0.08	360.00	0.03		0.03
32.50	0.17		0.17	197.50	0.08		0.08	362.50	0.03		0.03
35.00	0.13		0.13	200.00	0.08		0.08	365.00	0.03		0.03
37.50	0.12		0.12	202.50	0.08		0.08	367.50	0.03		0.03
40.00	0.12		0.12	205.00	0.08		0.08	370.00	0.03		0.03
42.50	0.11		0.11	207.50	0.07		0.07	372.50	0.03		0.03
45.00	0.11		0.11	210.00	0.07		0.07	375.00	0.02		0.02
47.50	0.11		0.11	212.50	0.07		0.07	377.50	0.02		0.02
50.00	0.11		0.11	215.00	0.07		0.07	380.00	0.02		0.02
52.50	0.11		0.11	217.50	0.07		0.07	382.50	0.02		0.02
55.00	0.11		0.11	220.00	0.07		0.07	385.00	0.02		0.02
57.50	0.11		0.11	222.50	0.07		0.07	387.50	0.02		0.02
60.00	0.11		0.11	225.00	0.07		0.07	390.00	0.02		0.02
62.50	0.11		0.11	227.50	0.07		0.07	392.50	0.02		0.02
65.00	0.11		0.11	230.00	0.07		0.07	395.00	0.02		0.02
67.50	0.11		0.11	232.50	0.07		0.07	397.50	0.02		0.02
70.00	0.11		0.11	235.00	0.07		0.07	400.00	0.02		0.02
72.50	0.11		0.11	237.50	0.07		0.07				
75.00	0.11		0.11	240.00	0.07		0.07				
77.50	0.11		0.11	242.50	0.06		0.06				
80.00	0.11		0.11	245.00	0.06		0.06				
82.50	0.11		0.11	247.50	0.06		0.06				
85.00	0.11		0.11	250.00	0.06		0.06				
87.50	0.10		0.10	252.50	0.06		0.06				
90.00	0.10		0.10	255.00	0.06		0.06				
92.50	0.10		0.10	257.50	0.06		0.06				
95.00	0.10		0.10	260.00	0.06		0.06				
97.50	0.10		0.10	262.50	0.06		0.06				
100.00	0.10		0.10	265.00	0.06		0.06				
102.50	0.10		0.10	267.50	0.06		0.06				
105.00	0.10		0.10	270.00	0.06		0.06				
107.50	0.10		0.10	272.50	0.06		0.06				
110.00	0.10		0.10	275.00	0.06		0.06				
112.50	0.10		0.10	277.50	0.05		0.05				
115.00	0.10		0.10	280.00	0.05		0.05				
117.50	0.10		0.10	282.50	0.05		0.05				
120.00	0.10		0.10	285.00	0.05		0.05				
122.50	0.10		0.10	287.50	0.05		0.05				
125.00	0.10		0.10	290.00	0.05		0.05				
127.50	0.10		0.10	292.50	0.05		0.05				
130.00	0.09		0.09	295.00	0.05		0.05				
132.50	0.09		0.09	297.50	0.05		0.05				
135.00	0.09		0.09	300.00	0.05		0.05				
137.50	0.09		0.09	302.50	0.05		0.05				
140.00	0.09		0.09	305.00	0.05		0.05				
142.50	0.09		0.09	307.50	0.05		0.05				
145.00	0.09		0.09	310.00	0.04		0.04				
147.50	0.09		0.09	312.50	0.04		0.04				
150.00	0.09		0.09	315.00	0.04		0.04				
152.50	0.09		0.09	317.50	0.04		0.04				
155.00	0.09		0.09	320.00	0.04		0.04				
157.50	0.09		0.09	322.50	0.04		0.04				
160.00	0.09		0.09	325.00	0.04		0.04				
162.50	0.09		0.09	327.50	0.04		0.04				

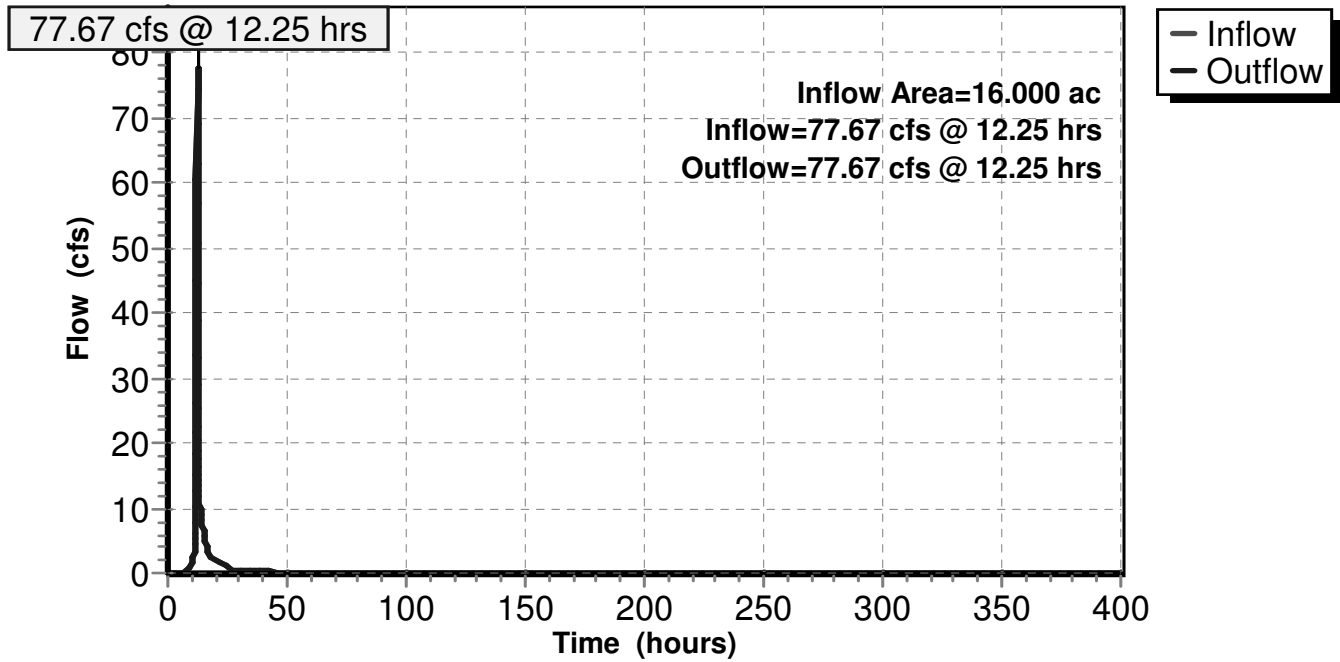
Summary for Reach DESIGN POINT 2:

Inflow Area = 16.000 ac, 31.28% Impervious, Inflow Depth = 7.01" for 100 YEAR event
Inflow = 77.67 cfs @ 12.25 hrs, Volume= 9.349 af
Outflow = 77.67 cfs @ 12.25 hrs, Volume= 9.349 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

Reach DESIGN POINT 2:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Reach DESIGN POINT 2:

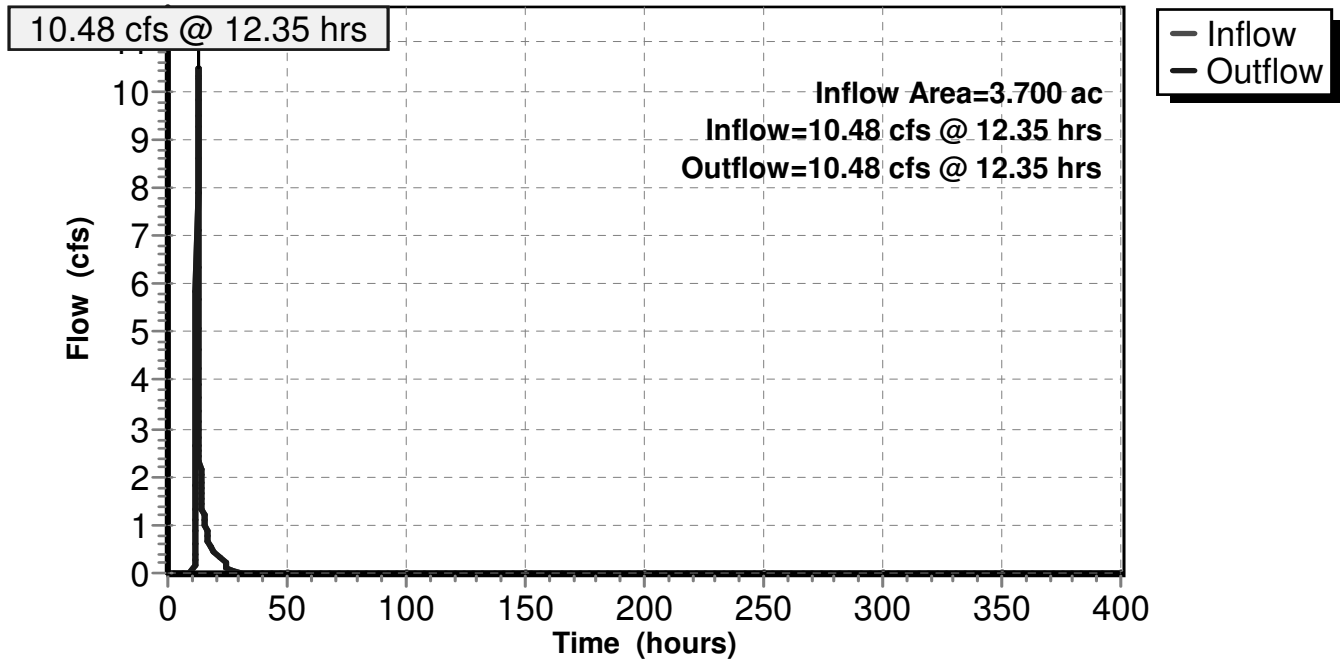
Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.04		0.04	330.00	0.00		0.00
2.50	0.00		0.00	167.50	0.04		0.04	332.50	0.00		0.00
5.00	0.01		0.01	170.00	0.04		0.04	335.00	0.00		0.00
7.50	0.13		0.13	172.50	0.04		0.04	337.50	0.00		0.00
10.00	1.28		1.28	175.00	0.03		0.03	340.00	0.00		0.00
12.50	50.73		50.73	177.50	0.03		0.03	342.50	0.00		0.00
15.00	6.10		6.10	180.00	0.03		0.03	345.00	0.00		0.00
17.50	3.05		3.05	182.50	0.03		0.03	347.50	0.00		0.00
20.00	2.03		2.03	185.00	0.03		0.03	350.00	0.00		0.00
22.50	1.60		1.60	187.50	0.01		0.01	352.50	0.00		0.00
25.00	0.32		0.32	190.00	0.00		0.00	355.00	0.00		0.00
27.50	0.26		0.26	192.50	0.00		0.00	357.50	0.00		0.00
30.00	0.25		0.25	195.00	0.00		0.00	360.00	0.00		0.00
32.50	0.24		0.24	197.50	0.00		0.00	362.50	0.00		0.00
35.00	0.24		0.24	200.00	0.00		0.00	365.00	0.00		0.00
37.50	0.23		0.23	202.50	0.00		0.00	367.50	0.00		0.00
40.00	0.22		0.22	205.00	0.00		0.00	370.00	0.00		0.00
42.50	0.21		0.21	207.50	0.00		0.00	372.50	0.00		0.00
45.00	0.21		0.21	210.00	0.00		0.00	375.00	0.00		0.00
47.50	0.20		0.20	212.50	0.00		0.00	377.50	0.00		0.00
50.00	0.19		0.19	215.00	0.00		0.00	380.00	0.00		0.00
52.50	0.18		0.18	217.50	0.00		0.00	382.50	0.00		0.00
55.00	0.18		0.18	220.00	0.00		0.00	385.00	0.00		0.00
57.50	0.17		0.17	222.50	0.00		0.00	387.50	0.00		0.00
60.00	0.16		0.16	225.00	0.00		0.00	390.00	0.00		0.00
62.50	0.15		0.15	227.50	0.00		0.00	392.50	0.00		0.00
65.00	0.14		0.14	230.00	0.00		0.00	395.00	0.00		0.00
67.50	0.14		0.14	232.50	0.00		0.00	397.50	0.00		0.00
70.00	0.13		0.13	235.00	0.00		0.00	400.00	0.00		0.00
72.50	0.12		0.12	237.50	0.00		0.00				
75.00	0.11		0.11	240.00	0.00		0.00				
77.50	0.10		0.10	242.50	0.00		0.00				
80.00	0.09		0.09	245.00	0.00		0.00				
82.50	0.09		0.09	247.50	0.00		0.00				
85.00	0.08		0.08	250.00	0.00		0.00				
87.50	0.07		0.07	252.50	0.00		0.00				
90.00	0.07		0.07	255.00	0.00		0.00				
92.50	0.07		0.07	257.50	0.00		0.00				
95.00	0.07		0.07	260.00	0.00		0.00				
97.50	0.07		0.07	262.50	0.00		0.00				
100.00	0.07		0.07	265.00	0.00		0.00				
102.50	0.07		0.07	267.50	0.00		0.00				
105.00	0.07		0.07	270.00	0.00		0.00				
107.50	0.07		0.07	272.50	0.00		0.00				
110.00	0.06		0.06	275.00	0.00		0.00				
112.50	0.06		0.06	277.50	0.00		0.00				
115.00	0.06		0.06	280.00	0.00		0.00				
117.50	0.06		0.06	282.50	0.00		0.00				
120.00	0.06		0.06	285.00	0.00		0.00				
122.50	0.06		0.06	287.50	0.00		0.00				
125.00	0.06		0.06	290.00	0.00		0.00				
127.50	0.06		0.06	292.50	0.00		0.00				
130.00	0.05		0.05	295.00	0.00		0.00				
132.50	0.05		0.05	297.50	0.00		0.00				
135.00	0.05		0.05	300.00	0.00		0.00				
137.50	0.05		0.05	302.50	0.00		0.00				
140.00	0.05		0.05	305.00	0.00		0.00				
142.50	0.05		0.05	307.50	0.00		0.00				
145.00	0.05		0.05	310.00	0.00		0.00				
147.50	0.05		0.05	312.50	0.00		0.00				
150.00	0.05		0.05	315.00	0.00		0.00				
152.50	0.04		0.04	317.50	0.00		0.00				
155.00	0.04		0.04	320.00	0.00		0.00				
157.50	0.04		0.04	322.50	0.00		0.00				
160.00	0.04		0.04	325.00	0.00		0.00				
162.50	0.04		0.04	327.50	0.00		0.00				

Summary for Reach Design Point 3:

Inflow Area = 3.700 ac, 40.54% Impervious, Inflow Depth = 4.65" for 100 YEAR event
Inflow = 10.48 cfs @ 12.35 hrs, Volume= 1.432 af
Outflow = 10.48 cfs @ 12.35 hrs, Volume= 1.432 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs

**Reach Design Point 3:
Hydrograph**



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Reach Design Point 3:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	165.00	0.00		0.00	330.00	0.00		0.00
2.50	0.00		0.00	167.50	0.00		0.00	332.50	0.00		0.00
5.00	0.00		0.00	170.00	0.00		0.00	335.00	0.00		0.00
7.50	0.00		0.00	172.50	0.00		0.00	337.50	0.00		0.00
10.00	0.01		0.01	175.00	0.00		0.00	340.00	0.00		0.00
12.50	9.24		9.24	177.50	0.00		0.00	342.50	0.00		0.00
15.00	1.21		1.21	180.00	0.00		0.00	345.00	0.00		0.00
17.50	0.61		0.61	182.50	0.00		0.00	347.50	0.00		0.00
20.00	0.40		0.40	185.00	0.00		0.00	350.00	0.00		0.00
22.50	0.32		0.32	187.50	0.00		0.00	352.50	0.00		0.00
25.00	0.07		0.07	190.00	0.00		0.00	355.00	0.00		0.00
27.50	0.02		0.02	192.50	0.00		0.00	357.50	0.00		0.00
30.00	0.02		0.02	195.00	0.00		0.00	360.00	0.00		0.00
32.50	0.02		0.02	197.50	0.00		0.00	362.50	0.00		0.00
35.00	0.02		0.02	200.00	0.00		0.00	365.00	0.00		0.00
37.50	0.02		0.02	202.50	0.00		0.00	367.50	0.00		0.00
40.00	0.02		0.02	205.00	0.00		0.00	370.00	0.00		0.00
42.50	0.02		0.02	207.50	0.00		0.00	372.50	0.00		0.00
45.00	0.02		0.02	210.00	0.00		0.00	375.00	0.00		0.00
47.50	0.02		0.02	212.50	0.00		0.00	377.50	0.00		0.00
50.00	0.02		0.02	215.00	0.00		0.00	380.00	0.00		0.00
52.50	0.02		0.02	217.50	0.00		0.00	382.50	0.00		0.00
55.00	0.02		0.02	220.00	0.00		0.00	385.00	0.00		0.00
57.50	0.02		0.02	222.50	0.00		0.00	387.50	0.00		0.00
60.00	0.02		0.02	225.00	0.00		0.00	390.00	0.00		0.00
62.50	0.02		0.02	227.50	0.00		0.00	392.50	0.00		0.00
65.00	0.02		0.02	230.00	0.00		0.00	395.00	0.00		0.00
67.50	0.01		0.01	232.50	0.00		0.00	397.50	0.00		0.00
70.00	0.01		0.01	235.00	0.00		0.00	400.00	0.00		0.00
72.50	0.01		0.01	237.50	0.00		0.00				
75.00	0.01		0.01	240.00	0.00		0.00				
77.50	0.01		0.01	242.50	0.00		0.00				
80.00	0.01		0.01	245.00	0.00		0.00				
82.50	0.01		0.01	247.50	0.00		0.00				
85.00	0.01		0.01	250.00	0.00		0.00				
87.50	0.01		0.01	252.50	0.00		0.00				
90.00	0.01		0.01	255.00	0.00		0.00				
92.50	0.01		0.01	257.50	0.00		0.00				
95.00	0.01		0.01	260.00	0.00		0.00				
97.50	0.01		0.01	262.50	0.00		0.00				
100.00	0.01		0.01	265.00	0.00		0.00				
102.50	0.01		0.01	267.50	0.00		0.00				
105.00	0.01		0.01	270.00	0.00		0.00				
107.50	0.01		0.01	272.50	0.00		0.00				
110.00	0.01		0.01	275.00	0.00		0.00				
112.50	0.01		0.01	277.50	0.00		0.00				
115.00	0.01		0.01	280.00	0.00		0.00				
117.50	0.00		0.00	282.50	0.00		0.00				
120.00	0.00		0.00	285.00	0.00		0.00				
122.50	0.00		0.00	287.50	0.00		0.00				
125.00	0.00		0.00	290.00	0.00		0.00				
127.50	0.00		0.00	292.50	0.00		0.00				
130.00	0.00		0.00	295.00	0.00		0.00				
132.50	0.00		0.00	297.50	0.00		0.00				
135.00	0.00		0.00	300.00	0.00		0.00				
137.50	0.00		0.00	302.50	0.00		0.00				
140.00	0.00		0.00	305.00	0.00		0.00				
142.50	0.00		0.00	307.50	0.00		0.00				
145.00	0.00		0.00	310.00	0.00		0.00				
147.50	0.00		0.00	312.50	0.00		0.00				
150.00	0.00		0.00	315.00	0.00		0.00				
152.50	0.00		0.00	317.50	0.00		0.00				
155.00	0.00		0.00	320.00	0.00		0.00				
157.50	0.00		0.00	322.50	0.00		0.00				
160.00	0.00		0.00	325.00	0.00		0.00				
162.50	0.00		0.00	327.50	0.00		0.00				

Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Summary for Pond 1.0P:

Inflow Area = 12.500 ac, 72.08% Impervious, Inflow Depth = 8.03" for 100 YEAR event
 Inflow = 117.00 cfs @ 12.06 hrs, Volume= 8,364 af
 Outflow = 71.41 cfs @ 12.16 hrs, Volume= 8,327 af, Atten= 39%, Lag= 6.0 min
 Primary = 71.41 cfs @ 12.16 hrs, Volume= 8,327 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 473.00' Surf.Area= 21,200 sf Storage= 38,250 cf
 Peak Elev= 475.83' @ 12.16 hrs Surf.Area= 37,997 sf Storage= 121,916 cf (83,666 cf above start)
 Flood Elev= 476.00' Surf.Area= 39,000 sf Storage= 128,350 cf (90,100 cf above start)

Plug-Flow detention time= 706.2 min calculated for 7.449 af (89% of inflow)
 Center-of-Mass det. time= 572.2 min (1,356.2 - 783.9)

Volume	Invert	Avail.Storage	Storage Description
#1	468.00'	170,400 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
468.00	1,700	0	0
470.00	4,200	5,900	5,900
472.00	11,700	15,900	21,800
473.00	21,200	16,450	38,250
474.00	27,000	24,100	62,350
476.00	39,000	66,000	128,350
477.00	45,100	42,050	170,400

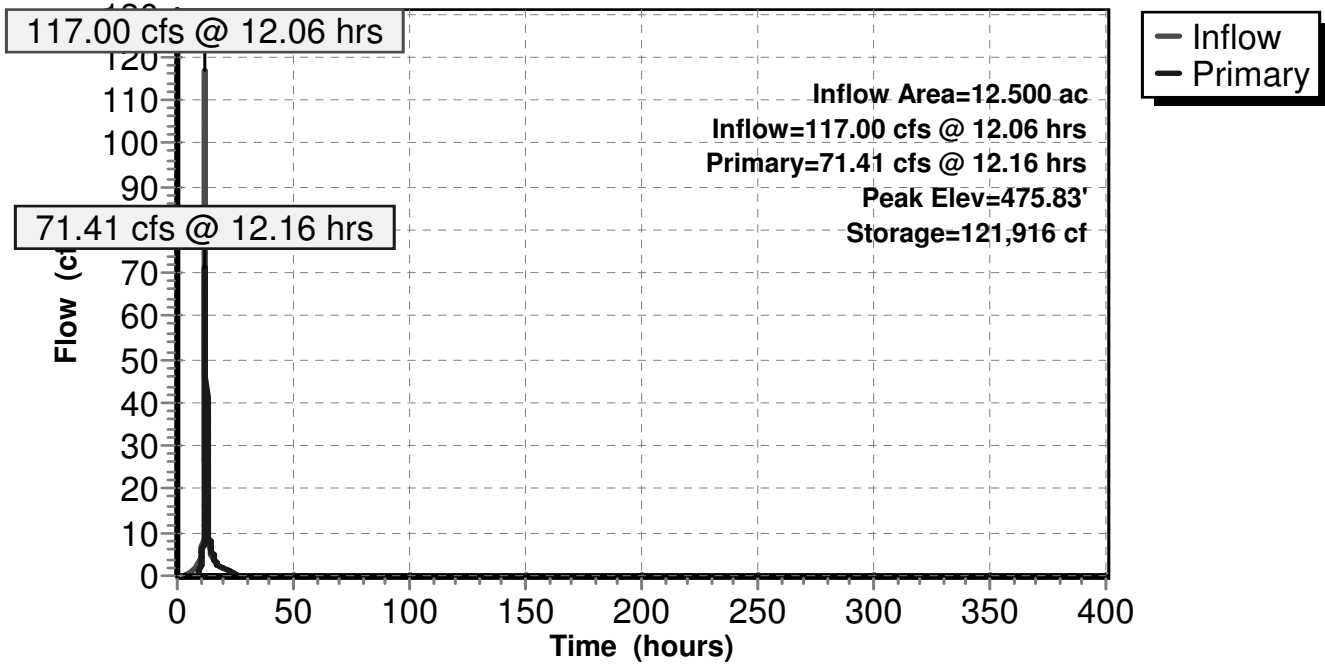
Device	Routing	Invert	Outlet Devices
#1	Primary	467.00'	36.0" x 142.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 462.50' S= 0.0317 '/' Cc= 0.900 n= 0.012
#2	Device 1	473.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	473.90'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=70.80 cfs @ 12.16 hrs HW=475.82' TW=457.23' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 70.80 cfs of 92.09 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 8.03 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 70.76 cfs @ 4.60 fps)

Pond 1.0P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Pond 1.0P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	38,250	473.00	0.00	330.00	0.00	41,558	473.15	0.01
5.00	0.30	38,934	473.03	0.00	335.00	0.00	41,403	473.15	0.01
10.00	4.15	65,311	474.11	2.16	340.00	0.00	41,253	473.14	0.01
15.00	4.65	69,737	474.27	5.16	345.00	0.00	41,108	473.13	0.01
20.00	1.60	64,462	474.08	1.70	350.00	0.00	40,969	473.13	0.01
25.00	0.00	61,187	473.96	0.33	355.00	0.00	40,834	473.12	0.01
30.00	0.00	59,680	473.90	0.02	360.00	0.00	40,704	473.11	0.01
35.00	0.00	59,244	473.88	0.02	365.00	0.00	40,580	473.11	0.01
40.00	0.00	58,813	473.87	0.02	370.00	0.00	40,460	473.10	0.01
45.00	0.00	58,385	473.85	0.02	375.00	0.00	40,346	473.10	0.01
50.00	0.00	57,962	473.83	0.02	380.00	0.00	40,237	473.09	0.01
55.00	0.00	57,544	473.82	0.02	385.00	0.00	40,133	473.09	0.01
60.00	0.00	57,129	473.80	0.02	390.00	0.00	40,034	473.08	0.01
65.00	0.00	56,719	473.79	0.02	395.00	0.00	39,939	473.08	0.01
70.00	0.00	56,313	473.77	0.02	400.00	0.00	39,850	473.07	0.00
75.00	0.00	55,912	473.76	0.02					
80.00	0.00	55,515	473.74	0.02					
85.00	0.00	55,122	473.72	0.02					
90.00	0.00	54,734	473.71	0.02					
95.00	0.00	54,350	473.69	0.02					
100.00	0.00	53,970	473.68	0.02					
105.00	0.00	53,595	473.66	0.02					
110.00	0.00	53,225	473.65	0.02					
115.00	0.00	52,859	473.63	0.02					
120.00	0.00	52,497	473.62	0.02					
125.00	0.00	52,140	473.61	0.02					
130.00	0.00	51,787	473.59	0.02					
135.00	0.00	51,439	473.58	0.02					
140.00	0.00	51,096	473.56	0.02					
145.00	0.00	50,757	473.55	0.02					
150.00	0.00	50,423	473.54	0.02					
155.00	0.00	50,093	473.52	0.02					
160.00	0.00	49,768	473.51	0.02					
165.00	0.00	49,447	473.49	0.02					
170.00	0.00	49,131	473.48	0.02					
175.00	0.00	48,820	473.47	0.02					
180.00	0.00	48,514	473.46	0.02					
185.00	0.00	48,212	473.44	0.02					
190.00	0.00	47,915	473.43	0.02					
195.00	0.00	47,622	473.42	0.02					
200.00	0.00	47,335	473.41	0.02					
205.00	0.00	47,052	473.39	0.02					
210.00	0.00	46,773	473.38	0.02					
215.00	0.00	46,500	473.37	0.02					
220.00	0.00	46,231	473.36	0.01					
225.00	0.00	45,968	473.35	0.01					
230.00	0.00	45,709	473.34	0.01					
235.00	0.00	45,454	473.33	0.01					
240.00	0.00	45,205	473.31	0.01					
245.00	0.00	44,961	473.30	0.01					
250.00	0.00	44,721	473.29	0.01					
255.00	0.00	44,486	473.28	0.01					
260.00	0.00	44,256	473.27	0.01					
265.00	0.00	44,031	473.26	0.01					
270.00	0.00	43,811	473.25	0.01					
275.00	0.00	43,596	473.24	0.01					
280.00	0.00	43,386	473.23	0.01					
285.00	0.00	43,181	473.23	0.01					
290.00	0.00	42,981	473.22	0.01					
295.00	0.00	42,785	473.21	0.01					
300.00	0.00	42,595	473.20	0.01					
305.00	0.00	42,410	473.19	0.01					
310.00	0.00	42,229	473.18	0.01					
315.00	0.00	42,054	473.18	0.01					
320.00	0.00	41,884	473.17	0.01					
325.00	0.00	41,719	473.16	0.01					

Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Summary for Pond 1.1P:

Inflow Area = 15.300 ac, 63.73% Impervious, Inflow Depth = 7.30" for 100 YEAR event
 Inflow = 83.30 cfs @ 12.15 hrs, Volume= 9,313 af
 Outflow = 23.65 cfs @ 12.77 hrs, Volume= 9,265 af, Atten= 72%, Lag= 37.2 min
 Primary = 23.65 cfs @ 12.77 hrs, Volume= 9,265 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 452.00' Surf.Area= 14,600 sf Storage= 47,550 cf
 Peak Elev= 459.58' @ 12.77 hrs Surf.Area= 33,437 sf Storage= 226,225 cf (178,675 cf above start)
 Flood Elev= 460.00' Surf.Area= 34,600 sf Storage= 240,350 cf (192,800 cf above start)

Plug-Flow detention time= 2,644.5 min calculated for 8.172 af (88% of inflow)
 Center-of-Mass det. time= 1,818.1 min (3,120.4 - 1,302.3)

Volume	Invert	Avail.Storage	Storage Description
#1	444.00'	276,450 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
444.00	1,000	0	0
446.00	3,600	4,600	4,600
448.00	5,200	8,800	13,400
450.00	7,100	12,300	25,700
451.00	11,000	9,050	34,750
452.00	14,600	12,800	47,550
454.00	19,000	33,600	81,150
456.00	23,800	42,800	123,950
458.00	29,000	52,800	176,750
460.00	34,600	63,600	240,350
461.00	37,600	36,100	276,450

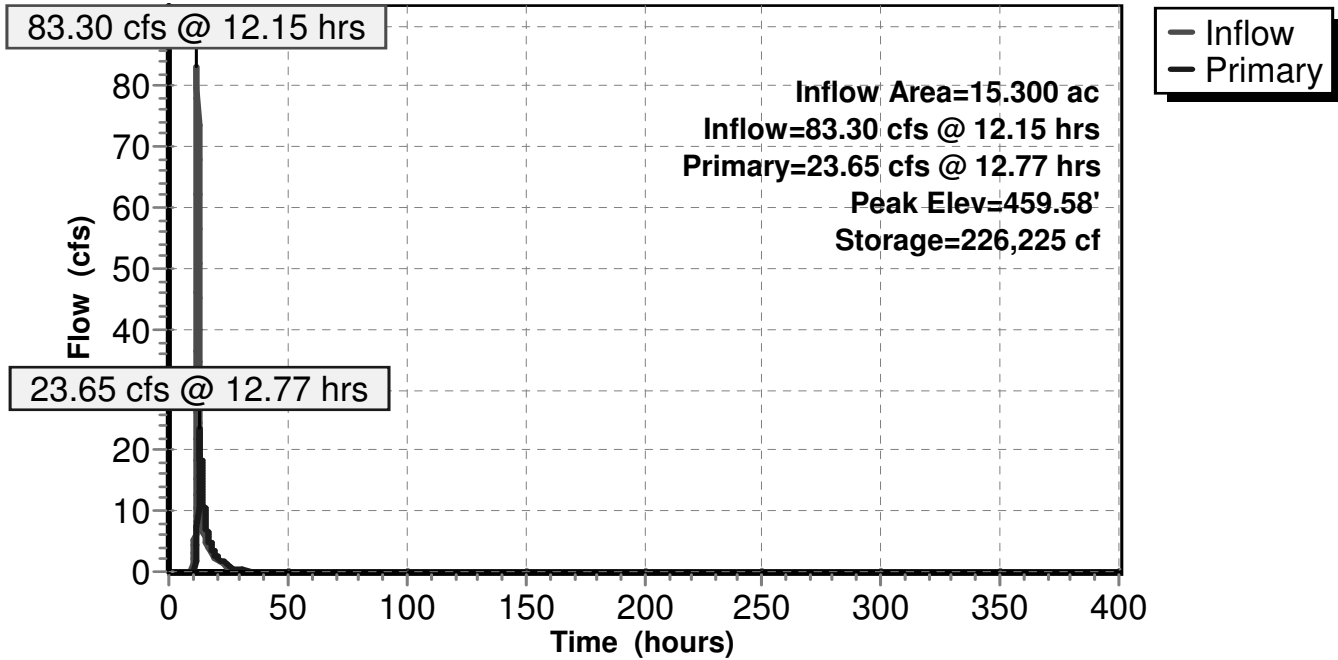
Device	Routing	Invert	Outlet Devices
#1	Primary	452.00'	36.0" x 76.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 451.20' S= 0.0105 '/' Cc= 0.900 n= 0.012
#2	Device 1	452.00'	1.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	455.90'	1.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=23.63 cfs @ 12.77 hrs HW=459.58' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 23.63 cfs of 83.94 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.16 cfs @ 13.20 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 23.47 cfs @ 6.37 fps)

Pond 1.1P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Pond 1.1P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	47,550	452.00	0.00	330.00	0.01	54,945	452.49	0.04
5.00	0.00	47,551	452.00	0.00	335.00	0.01	54,420	452.45	0.04
10.00	2.22	49,812	452.15	0.02	340.00	0.01	53,918	452.42	0.04
15.00	5.94	175,625	457.96	9.97	345.00	0.01	53,439	452.39	0.03
20.00	1.98	142,169	456.74	2.65	350.00	0.01	52,982	452.36	0.03
25.00	0.33	133,777	456.40	1.20	355.00	0.01	52,549	452.33	0.03
30.00	0.02	124,902	456.04	0.26	360.00	0.01	52,138	452.31	0.03
35.00	0.02	122,148	455.92	0.13	365.00	0.01	51,751	452.28	0.03
40.00	0.02	120,476	455.85	0.12	370.00	0.01	51,386	452.26	0.03
45.00	0.02	118,842	455.78	0.11	375.00	0.01	51,045	452.24	0.02
50.00	0.02	117,223	455.71	0.11	380.00	0.01	50,726	452.21	0.02
55.00	0.02	115,619	455.64	0.11	385.00	0.01	50,430	452.19	0.02
60.00	0.02	114,031	455.57	0.11	390.00	0.01	50,156	452.18	0.02
65.00	0.02	112,458	455.50	0.11	395.00	0.01	49,906	452.16	0.02
70.00	0.02	110,900	455.44	0.11	400.00	0.00	49,677	452.14	0.02
75.00	0.02	109,358	455.37	0.11					
80.00	0.02	107,832	455.30	0.11					
85.00	0.02	106,322	455.23	0.11					
90.00	0.02	104,828	455.16	0.10					
95.00	0.02	103,350	455.09	0.10					
100.00	0.02	101,888	455.03	0.10					
105.00	0.02	100,443	454.96	0.10					
110.00	0.02	99,014	454.89	0.10					
115.00	0.02	97,602	454.82	0.10					
120.00	0.02	96,208	454.76	0.10					
125.00	0.02	94,830	454.69	0.10					
130.00	0.02	93,469	454.62	0.09					
135.00	0.02	92,126	454.56	0.09					
140.00	0.02	90,800	454.49	0.09					
145.00	0.02	89,493	454.43	0.09					
150.00	0.02	88,202	454.36	0.09					
155.00	0.02	86,930	454.30	0.09					
160.00	0.02	85,676	454.23	0.09					
165.00	0.02	84,441	454.17	0.09					
170.00	0.02	83,224	454.11	0.08					
175.00	0.02	82,025	454.05	0.08					
180.00	0.02	80,846	453.98	0.08					
185.00	0.02	79,685	453.92	0.08					
190.00	0.02	78,544	453.86	0.08					
195.00	0.02	77,421	453.80	0.08					
200.00	0.02	76,319	453.74	0.08					
205.00	0.02	75,235	453.68	0.08					
210.00	0.02	74,172	453.62	0.07					
215.00	0.02	73,128	453.57	0.07					
220.00	0.01	72,105	453.51	0.07					
225.00	0.01	71,102	453.45	0.07					
230.00	0.01	70,119	453.40	0.07					
235.00	0.01	69,156	453.34	0.07					
240.00	0.01	68,214	453.29	0.07					
245.00	0.01	67,293	453.24	0.06					
250.00	0.01	66,393	453.18	0.06					
255.00	0.01	65,514	453.13	0.06					
260.00	0.01	64,656	453.08	0.06					
265.00	0.01	63,820	453.03	0.06					
270.00	0.01	63,005	452.99	0.06					
275.00	0.01	62,212	452.94	0.06					
280.00	0.01	61,440	452.89	0.05					
285.00	0.01	60,690	452.85	0.05					
290.00	0.01	59,963	452.80	0.05					
295.00	0.01	59,257	452.76	0.05					
300.00	0.01	58,574	452.72	0.05					
305.00	0.01	57,912	452.68	0.05					
310.00	0.01	57,274	452.64	0.04					
315.00	0.01	56,658	452.60	0.04					
320.00	0.01	56,064	452.56	0.04					
325.00	0.01	55,493	452.52	0.04					

Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Summary for Pond 2.0P:

Inflow Area = 5.100 ac, 68.33% Impervious, Inflow Depth = 8.53" for 100 YEAR event
 Inflow = 44.44 cfs @ 12.11 hrs, Volume= 3.626 af
 Outflow = 30.63 cfs @ 12.21 hrs, Volume= 3.624 af, Atten= 31%, Lag= 6.3 min
 Primary = 30.63 cfs @ 12.21 hrs, Volume= 3.624 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 478.00' Surf.Area= 14,500 sf Storage= 29,775 cf
 Peak Elev= 481.19' @ 12.21 hrs Surf.Area= 21,644 sf Storage= 87,357 cf (57,582 cf above start)
 Flood Elev= 481.25' Surf.Area= 21,775 sf Storage= 88,597 cf (58,822 cf above start)

Plug-Flow detention time= 848.6 min calculated for 2.940 af (81% of inflow)
 Center-of-Mass det. time= 617.4 min (1,394.4 - 776.9)

Volume	Invert	Avail.Storage	Storage Description
#1	472.00'	105,575 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
472.00	2,000	0	0
474.00	3,100	5,100	5,100
476.00	4,400	7,500	12,600
476.50	5,200	2,400	15,000
478.00	14,500	14,775	29,775
480.00	18,900	33,400	63,175
482.00	23,500	42,400	105,575

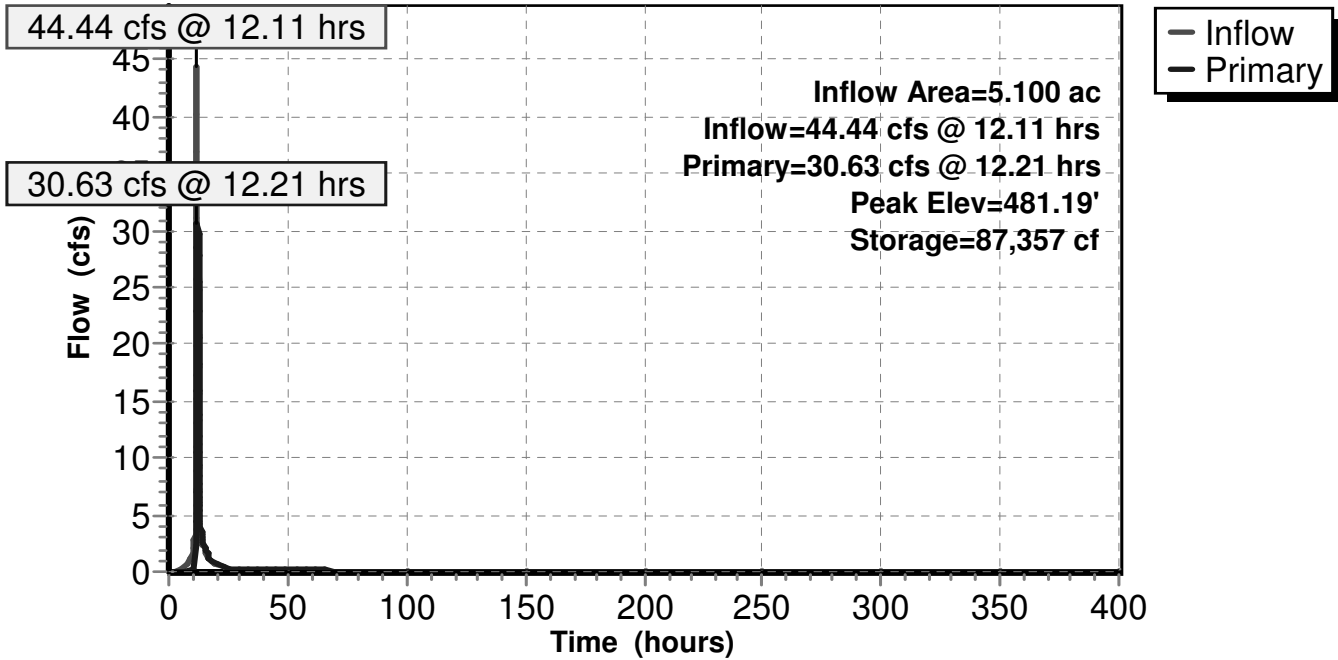
Device	Routing	Invert	Outlet Devices
#1	Primary	473.40'	36.0" x 117.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 472.10' S= 0.0111 '/' Cc= 0.900 n= 0.012
#2	Device 1	478.00'	2.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	480.10'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=30.38 cfs @ 12.21 hrs HW=481.19' TW=476.52' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 30.38 cfs of 73.51 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.29 cfs @ 8.45 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 30.09 cfs @ 3.46 fps)

Pond 2.0P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Pond 2.0P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	29,775	478.00	0.00	330.00	0.00	29,892	478.01	0.00
5.00	0.23	30,635	478.06	0.01	335.00	0.00	29,890	478.01	0.00
10.00	1.92	43,901	478.91	0.15	340.00	0.00	29,887	478.01	0.00
15.00	1.96	68,853	480.30	2.17	345.00	0.00	29,885	478.01	0.00
20.00	0.67	66,549	480.18	0.71	350.00	0.00	29,883	478.01	0.00
25.00	0.00	65,025	480.10	0.23	355.00	0.00	29,881	478.01	0.00
30.00	0.00	60,969	479.88	0.22	360.00	0.00	29,879	478.01	0.00
35.00	0.00	57,148	479.67	0.21	365.00	0.00	29,877	478.01	0.00
40.00	0.00	53,566	479.48	0.19	370.00	0.00	29,876	478.01	0.00
45.00	0.00	50,230	479.29	0.18	375.00	0.00	29,874	478.01	0.00
50.00	0.00	47,146	479.11	0.16	380.00	0.00	29,872	478.01	0.00
55.00	0.00	44,320	478.94	0.15	385.00	0.00	29,870	478.01	0.00
60.00	0.00	41,757	478.78	0.13	390.00	0.00	29,869	478.01	0.00
65.00	0.00	39,463	478.64	0.12	395.00	0.00	29,867	478.01	0.00
70.00	0.00	37,444	478.51	0.10	400.00	0.00	29,866	478.01	0.00
75.00	0.00	35,704	478.40	0.09					
80.00	0.00	34,248	478.30	0.07					
85.00	0.00	33,080	478.22	0.06					
90.00	0.00	32,202	478.17	0.04					
95.00	0.00	31,616	478.13	0.03					
100.00	0.00	31,233	478.10	0.02					
105.00	0.00	30,971	478.08	0.01					
110.00	0.00	30,784	478.07	0.01					
115.00	0.00	30,645	478.06	0.01					
120.00	0.00	30,538	478.05	0.01					
125.00	0.00	30,454	478.05	0.00					
130.00	0.00	30,386	478.04	0.00					
135.00	0.00	30,329	478.04	0.00					
140.00	0.00	30,283	478.03	0.00					
145.00	0.00	30,243	478.03	0.00					
150.00	0.00	30,209	478.03	0.00					
155.00	0.00	30,179	478.03	0.00					
160.00	0.00	30,153	478.03	0.00					
165.00	0.00	30,130	478.02	0.00					
170.00	0.00	30,110	478.02	0.00					
175.00	0.00	30,092	478.02	0.00					
180.00	0.00	30,075	478.02	0.00					
185.00	0.00	30,061	478.02	0.00					
190.00	0.00	30,047	478.02	0.00					
195.00	0.00	30,035	478.02	0.00					
200.00	0.00	30,024	478.02	0.00					
205.00	0.00	30,014	478.02	0.00					
210.00	0.00	30,004	478.02	0.00					
215.00	0.00	29,995	478.02	0.00					
220.00	0.00	29,987	478.01	0.00					
225.00	0.00	29,980	478.01	0.00					
230.00	0.00	29,973	478.01	0.00					
235.00	0.00	29,966	478.01	0.00					
240.00	0.00	29,960	478.01	0.00					
245.00	0.00	29,954	478.01	0.00					
250.00	0.00	29,949	478.01	0.00					
255.00	0.00	29,944	478.01	0.00					
260.00	0.00	29,939	478.01	0.00					
265.00	0.00	29,934	478.01	0.00					
270.00	0.00	29,930	478.01	0.00					
275.00	0.00	29,926	478.01	0.00					
280.00	0.00	29,922	478.01	0.00					
285.00	0.00	29,918	478.01	0.00					
290.00	0.00	29,915	478.01	0.00					
295.00	0.00	29,912	478.01	0.00					
300.00	0.00	29,908	478.01	0.00					
305.00	0.00	29,905	478.01	0.00					
310.00	0.00	29,902	478.01	0.00					
315.00	0.00	29,900	478.01	0.00					
320.00	0.00	29,897	478.01	0.00					
325.00	0.00	29,894	478.01	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Summary for Pond 2.1P:

Inflow Area = 5.900 ac, 60.51% Impervious, Inflow Depth = 7.76" for 100 YEAR event
 Inflow = 32.01 cfs @ 12.21 hrs, Volume= 3.816 af
 Outflow = 26.62 cfs @ 12.35 hrs, Volume= 3.816 af, Atten= 17%, Lag= 8.7 min
 Primary = 26.62 cfs @ 12.35 hrs, Volume= 3.816 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 471.00' Surf.Area= 30 sf Storage= 8 cf
 Peak Elev= 476.87' @ 12.35 hrs Surf.Area= 9,162 sf Storage= 24,725 cf (24,717 cf above start)
 Flood Elev= 477.00' Surf.Area= 9,380 sf Storage= 25,945 cf (25,937 cf above start)

Plug-Flow detention time= 639.1 min calculated for 3.816 af (100% of inflow)
 Center-of-Mass det. time= 637.9 min (2,005.7 - 1,367.8)

Volume	Invert	Avail.Storage	Storage Description
#1	470.30'	20 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 51 cf Overall x 40.0% Voids
#2	472.00'	36,100 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		36,120 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
470.30	30	0	0
472.00	30	51	51

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
472.00	1,300	0	0
474.00	4,200	5,500	5,500
476.00	7,700	11,900	17,400
478.00	11,000	18,700	36,100

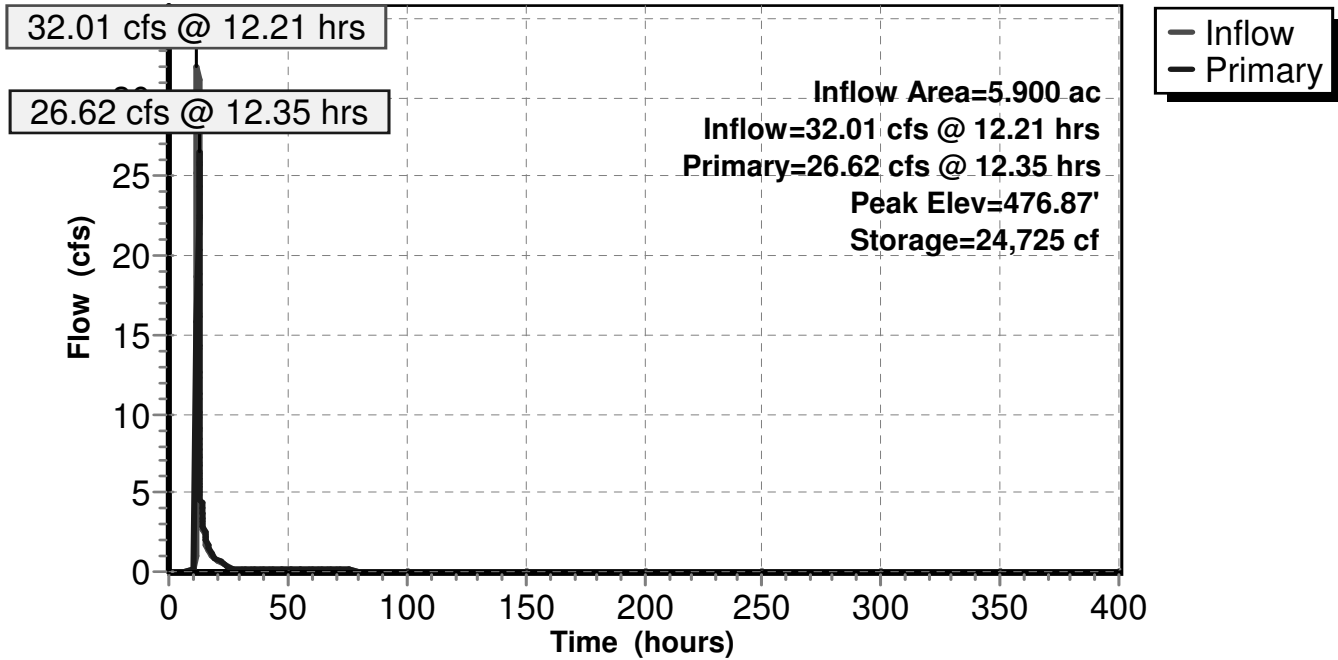
Device	Routing	Invert	Outlet Devices
#1	Primary	471.00'	24.0" x 147.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 469.50' S= 0.0102 '/' Cc= 0.900 n= 0.012
#2	Device 1	471.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	475.50'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=26.58 cfs @ 12.35 hrs HW=476.87' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 26.58 cfs of 33.37 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.06 cfs @ 11.62 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 26.52 cfs @ 3.88 fps)

Pond 2.1P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Pond 2.1P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	8	471.00	0.00	330.00	0.00	9	471.01	0.00
5.00	0.01	10	471.09	0.01	335.00	0.00	9	471.01	0.00
10.00	0.15	838	472.49	0.03	340.00	0.00	9	471.01	0.00
15.00	2.34	15,944	475.80	2.45	345.00	0.00	9	471.01	0.00
20.00	0.77	14,768	475.64	0.80	350.00	0.00	9	471.01	0.00
25.00	0.23	14,231	475.56	0.28	355.00	0.00	9	471.01	0.00
30.00	0.22	14,144	475.55	0.22	360.00	0.00	9	471.01	0.00
35.00	0.21	14,124	475.55	0.21	365.00	0.00	9	471.01	0.00
40.00	0.19	14,104	475.55	0.19	370.00	0.00	9	471.01	0.00
45.00	0.18	14,083	475.54	0.18	375.00	0.00	9	471.01	0.00
50.00	0.16	14,060	475.54	0.17	380.00	0.00	9	471.01	0.00
55.00	0.15	14,036	475.54	0.15	385.00	0.00	9	471.01	0.00
60.00	0.13	14,010	475.53	0.14	390.00	0.00	8	471.01	0.00
65.00	0.12	13,981	475.53	0.12	395.00	0.00	9	471.01	0.00
70.00	0.10	13,951	475.52	0.11	400.00	0.00	9	471.01	0.00
75.00	0.09	13,916	475.52	0.09					
80.00	0.07	13,875	475.51	0.08					
85.00	0.06	13,823	475.50	0.06					
90.00	0.04	13,686	475.48	0.06					
95.00	0.03	13,278	475.42	0.05					
100.00	0.02	12,677	475.33	0.05					
105.00	0.01	11,966	475.22	0.05					
110.00	0.01	11,193	475.10	0.05					
115.00	0.01	10,388	474.96	0.05					
120.00	0.01	9,567	474.82	0.05					
125.00	0.00	8,741	474.67	0.05					
130.00	0.00	7,919	474.52	0.05					
135.00	0.00	7,104	474.35	0.05					
140.00	0.00	6,302	474.18	0.05					
145.00	0.00	5,517	474.00	0.05					
150.00	0.00	4,751	473.81	0.04					
155.00	0.00	4,008	473.61	0.04					
160.00	0.00	3,291	473.41	0.04					
165.00	0.00	2,603	473.19	0.04					
170.00	0.00	1,949	472.96	0.04					
175.00	0.00	1,332	472.72	0.03					
180.00	0.00	761	472.45	0.03					
185.00	0.00	244	472.16	0.03					
190.00	0.00	9	471.02	0.00					
195.00	0.00	9	471.02	0.00					
200.00	0.00	9	471.02	0.00					
205.00	0.00	9	471.02	0.00					
210.00	0.00	9	471.02	0.00					
215.00	0.00	9	471.02	0.00					
220.00	0.00	9	471.02	0.00					
225.00	0.00	9	471.02	0.00					
230.00	0.00	9	471.02	0.00					
235.00	0.00	9	471.02	0.00					
240.00	0.00	9	471.02	0.00					
245.00	0.00	9	471.02	0.00					
250.00	0.00	9	471.02	0.00					
255.00	0.00	9	471.01	0.00					
260.00	0.00	9	471.01	0.00					
265.00	0.00	9	471.01	0.00					
270.00	0.00	9	471.01	0.00					
275.00	0.00	9	471.01	0.00					
280.00	0.00	9	471.01	0.00					
285.00	0.00	9	471.01	0.00					
290.00	0.00	9	471.01	0.00					
295.00	0.00	9	471.01	0.00					
300.00	0.00	9	471.01	0.00					
305.00	0.00	9	471.01	0.00					
310.00	0.00	9	471.01	0.00					
315.00	0.00	9	471.01	0.00					
320.00	0.00	9	471.01	0.00					
325.00	0.00	9	471.01	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Summary for Pond 2.2P:

Inflow Area = 2.100 ac, 40.48% Impervious, Inflow Depth = 7.90" for 100 YEAR event
 Inflow = 15.18 cfs @ 12.17 hrs, Volume= 1.383 af
 Outflow = 13.92 cfs @ 12.22 hrs, Volume= 1.383 af, Atten= 8%, Lag= 3.4 min
 Primary = 13.92 cfs @ 12.22 hrs, Volume= 1.383 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 471.00' Surf.Area= 4,300 sf Storage= 6,560 cf
 Peak Elev= 473.17' @ 12.22 hrs Surf.Area= 7,215 sf Storage= 18,796 cf (12,236 cf above start)
 Flood Elev= 473.25' Surf.Area= 7,338 sf Storage= 19,371 cf (12,811 cf above start)

Plug-Flow detention time= 599.3 min calculated for 1.232 af (89% of inflow)
 Center-of-Mass det. time= 477.6 min (1,271.4 - 793.8)

Volume	Invert	Avail.Storage	Storage Description
#1	465.00'	25,310 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

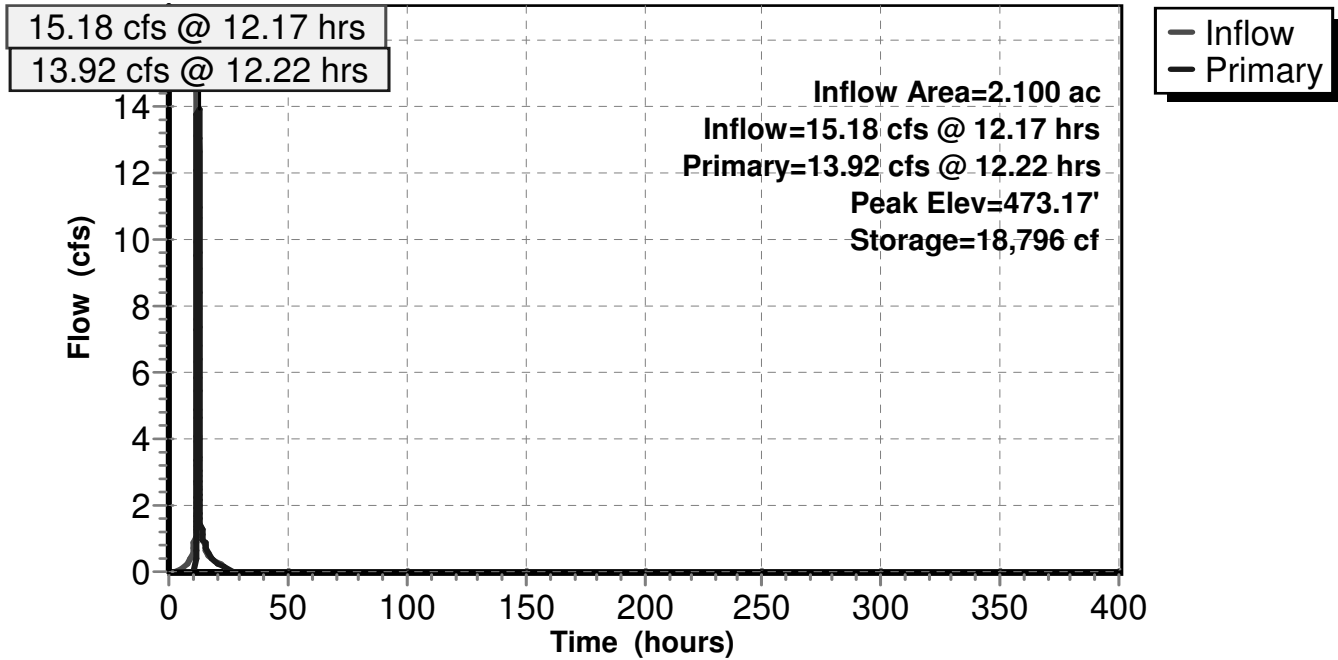
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
465.00	70	0	0
466.00	200	135	135
468.00	600	800	935
469.50	1,300	1,425	2,360
471.00	4,300	4,200	6,560
472.00	5,400	4,850	11,410
474.00	8,500	13,900	25,310

Device	Routing	Invert	Outlet Devices
#1	Primary	469.00'	24.0" x 95.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 467.00' S= 0.0211 ' /' Cc= 0.900 n= 0.012
#2	Device 1	471.00'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	472.50'	8.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=13.70 cfs @ 12.22 hrs HW=473.16' TW=0.00' (Dynamic Tailwater)
 1=Culvert (Passes 13.70 cfs of 26.91 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.04 cfs @ 7.02 fps)
 3=Broad-Crested Rectangular Weir (Weir Controls 13.66 cfs @ 2.57 fps)

Pond 2.2P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Pond 2.2P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	6,560	471.00	0.00	330.00	0.00	6,580	471.00	0.00
5.00	0.04	6,620	471.01	0.00	335.00	0.00	6,579	471.00	0.00
10.00	0.64	10,651	471.86	0.02	340.00	0.00	6,579	471.00	0.00
15.00	0.81	14,988	472.61	0.84	345.00	0.00	6,578	471.00	0.00
20.00	0.27	14,611	472.55	0.28	350.00	0.00	6,578	471.00	0.00
25.00	0.00	14,313	472.50	0.03	355.00	0.00	6,578	471.00	0.00
30.00	0.00	13,751	472.41	0.03	360.00	0.00	6,577	471.00	0.00
35.00	0.00	13,207	472.32	0.03	365.00	0.00	6,577	471.00	0.00
40.00	0.00	12,683	472.23	0.03	370.00	0.00	6,576	471.00	0.00
45.00	0.00	12,178	472.14	0.03	375.00	0.00	6,576	471.00	0.00
50.00	0.00	11,692	472.05	0.03	380.00	0.00	6,576	471.00	0.00
55.00	0.00	11,228	471.97	0.03	385.00	0.00	6,575	471.00	0.00
60.00	0.00	10,784	471.88	0.02	390.00	0.00	6,575	471.00	0.00
65.00	0.00	10,361	471.80	0.02	395.00	0.00	6,575	471.00	0.00
70.00	0.00	9,959	471.72	0.02	400.00	0.00	6,575	471.00	0.00
75.00	0.00	9,580	471.65	0.02					
80.00	0.00	9,223	471.58	0.02					
85.00	0.00	8,889	471.51	0.02					
90.00	0.00	8,577	471.44	0.02					
95.00	0.00	8,289	471.38	0.02					
100.00	0.00	8,025	471.33	0.01					
105.00	0.00	7,784	471.28	0.01					
110.00	0.00	7,568	471.23	0.01					
115.00	0.00	7,376	471.19	0.01					
120.00	0.00	7,210	471.15	0.01					
125.00	0.00	7,068	471.12	0.01					
130.00	0.00	6,951	471.09	0.01					
135.00	0.00	6,860	471.07	0.00					
140.00	0.00	6,795	471.05	0.00					
145.00	0.00	6,750	471.04	0.00					
150.00	0.00	6,718	471.04	0.00					
155.00	0.00	6,695	471.03	0.00					
160.00	0.00	6,677	471.03	0.00					
165.00	0.00	6,663	471.02	0.00					
170.00	0.00	6,652	471.02	0.00					
175.00	0.00	6,643	471.02	0.00					
180.00	0.00	6,636	471.02	0.00					
185.00	0.00	6,629	471.02	0.00					
190.00	0.00	6,624	471.01	0.00					
195.00	0.00	6,620	471.01	0.00					
200.00	0.00	6,616	471.01	0.00					
205.00	0.00	6,612	471.01	0.00					
210.00	0.00	6,609	471.01	0.00					
215.00	0.00	6,606	471.01	0.00					
220.00	0.00	6,604	471.01	0.00					
225.00	0.00	6,601	471.01	0.00					
230.00	0.00	6,599	471.01	0.00					
235.00	0.00	6,598	471.01	0.00					
240.00	0.00	6,596	471.01	0.00					
245.00	0.00	6,594	471.01	0.00					
250.00	0.00	6,593	471.01	0.00					
255.00	0.00	6,592	471.01	0.00					
260.00	0.00	6,590	471.01	0.00					
265.00	0.00	6,589	471.01	0.00					
270.00	0.00	6,588	471.01	0.00					
275.00	0.00	6,587	471.01	0.00					
280.00	0.00	6,586	471.01	0.00					
285.00	0.00	6,586	471.01	0.00					
290.00	0.00	6,585	471.01	0.00					
295.00	0.00	6,584	471.01	0.00					
300.00	0.00	6,583	471.01	0.00					
305.00	0.00	6,583	471.01	0.00					
310.00	0.00	6,582	471.01	0.00					
315.00	0.00	6,581	471.00	0.00					
320.00	0.00	6,581	471.00	0.00					
325.00	0.00	6,580	471.00	0.00					

Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Summary for Pond 3.0P:

Inflow Area = 1.900 ac, 47.37% Impervious, Inflow Depth = 5.30" for 100 YEAR event
 Inflow = 9.30 cfs @ 12.19 hrs, Volume= 0.839 af
 Outflow = 5.37 cfs @ 12.42 hrs, Volume= 0.838 af, Atten= 42%, Lag= 13.8 min
 Primary = 5.37 cfs @ 12.42 hrs, Volume= 0.838 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.05 hrs
 Starting Elev= 461.25' Surf.Area= 5,900 sf Storage= 8,213 cf
 Peak Elev= 462.87' @ 12.42 hrs Surf.Area= 8,517 sf Storage= 19,775 cf (11,563 cf above start)
 Flood Elev= 463.00' Surf.Area= 8,750 sf Storage= 20,925 cf (12,713 cf above start)

Plug-Flow detention time= 755.3 min calculated for 0.650 af (77% of inflow)
 Center-of-Mass det. time= 499.5 min (1,335.0 - 835.5)

Volume	Invert	Avail.Storage	Storage Description
#1	457.25'	30,550 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
457.25	400	0	0
458.00	700	413	413
459.75	1,700	2,100	2,513
461.25	5,900	5,700	8,213
462.00	7,000	4,838	13,050
464.00	10,500	17,500	30,550

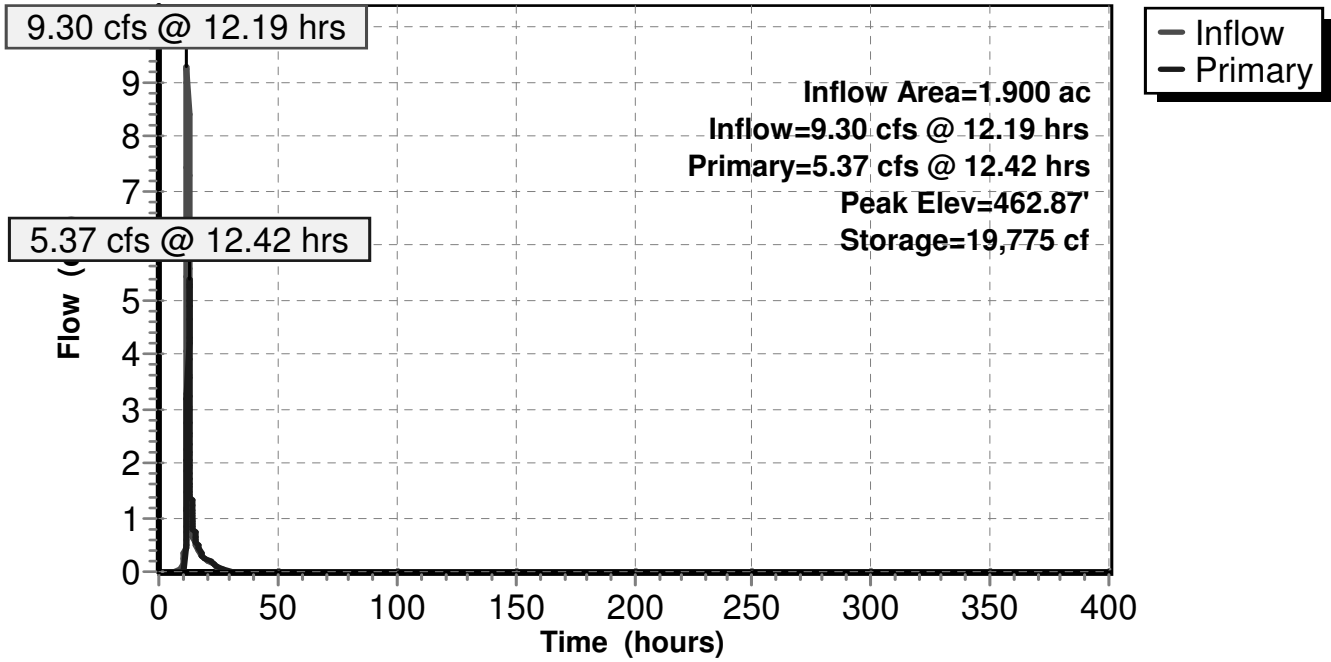
Device	Routing	Invert	Outlet Devices
#1	Primary	461.25'	15.0" x 28.0' long Culvert CPP, square edge headwall, Ke= 0.500 Outlet Invert= 460.90' S= 0.0125 '/' Cc= 0.900 n= 0.012
#2	Device 1	461.25'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	462.00'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=5.35 cfs @ 12.42 hrs HW=462.87' TW=0.00' (Dynamic Tailwater)

- ↑ **1=Culvert** (Passes 5.35 cfs of 5.88 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 6.04 fps)
- ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 5.32 cfs @ 3.08 fps)

Pond 3.0P:

Hydrograph



Stateline Retail Center Post-development 040809

Type III 24-hr 100 YEAR Rainfall=10.00"

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Hydrograph for Pond 3.OP:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	8,213	461.25	0.00	330.00	0.00	8,246	461.26	0.00
5.00	0.00	8,213	461.25	0.00	335.00	0.00	8,246	461.26	0.00
10.00	0.16	8,616	461.32	0.00	340.00	0.00	8,245	461.26	0.00
15.00	0.61	14,809	462.24	0.71	345.00	0.00	8,244	461.26	0.00
20.00	0.21	13,835	462.11	0.23	350.00	0.00	8,244	461.26	0.00
25.00	0.00	13,330	462.04	0.07	355.00	0.00	8,243	461.26	0.00
30.00	0.00	12,827	461.97	0.02	360.00	0.00	8,242	461.26	0.00
35.00	0.00	12,447	461.91	0.02	365.00	0.00	8,242	461.25	0.00
40.00	0.00	12,082	461.86	0.02	370.00	0.00	8,241	461.25	0.00
45.00	0.00	11,734	461.81	0.02	375.00	0.00	8,241	461.25	0.00
50.00	0.00	11,403	461.76	0.02	380.00	0.00	8,240	461.25	0.00
55.00	0.00	11,088	461.71	0.02	385.00	0.00	8,240	461.25	0.00
60.00	0.00	10,791	461.67	0.02	390.00	0.00	8,239	461.25	0.00
65.00	0.00	10,510	461.62	0.02	395.00	0.00	8,239	461.25	0.00
70.00	0.00	10,247	461.58	0.01	400.00	0.00	8,238	461.25	0.00
75.00	0.00	10,002	461.54	0.01					
80.00	0.00	9,774	461.51	0.01					
85.00	0.00	9,563	461.47	0.01					
90.00	0.00	9,371	461.44	0.01					
95.00	0.00	9,197	461.41	0.01					
100.00	0.00	9,041	461.39	0.01					
105.00	0.00	8,904	461.37	0.01					
110.00	0.00	8,784	461.35	0.01					
115.00	0.00	8,684	461.33	0.01					
120.00	0.00	8,601	461.32	0.00					
125.00	0.00	8,539	461.30	0.00					
130.00	0.00	8,491	461.30	0.00					
135.00	0.00	8,454	461.29	0.00					
140.00	0.00	8,424	461.29	0.00					
145.00	0.00	8,401	461.28	0.00					
150.00	0.00	8,382	461.28	0.00					
155.00	0.00	8,366	461.28	0.00					
160.00	0.00	8,353	461.27	0.00					
165.00	0.00	8,342	461.27	0.00					
170.00	0.00	8,332	461.27	0.00					
175.00	0.00	8,324	461.27	0.00					
180.00	0.00	8,317	461.27	0.00					
185.00	0.00	8,310	461.27	0.00					
190.00	0.00	8,305	461.27	0.00					
195.00	0.00	8,299	461.26	0.00					
200.00	0.00	8,295	461.26	0.00					
205.00	0.00	8,291	461.26	0.00					
210.00	0.00	8,287	461.26	0.00					
215.00	0.00	8,284	461.26	0.00					
220.00	0.00	8,280	461.26	0.00					
225.00	0.00	8,278	461.26	0.00					
230.00	0.00	8,275	461.26	0.00					
235.00	0.00	8,273	461.26	0.00					
240.00	0.00	8,270	461.26	0.00					
245.00	0.00	8,268	461.26	0.00					
250.00	0.00	8,266	461.26	0.00					
255.00	0.00	8,264	461.26	0.00					
260.00	0.00	8,263	461.26	0.00					
265.00	0.00	8,261	461.26	0.00					
270.00	0.00	8,260	461.26	0.00					
275.00	0.00	8,258	461.26	0.00					
280.00	0.00	8,257	461.26	0.00					
285.00	0.00	8,255	461.26	0.00					
290.00	0.00	8,254	461.26	0.00					
295.00	0.00	8,253	461.26	0.00					
300.00	0.00	8,252	461.26	0.00					
305.00	0.00	8,251	461.26	0.00					
310.00	0.00	8,250	461.26	0.00					
315.00	0.00	8,249	461.26	0.00					
320.00	0.00	8,248	461.26	0.00					
325.00	0.00	8,247	461.26	0.00					

APPENDIX C
Annual Pollutant Loading Rate Calculations

DESIGN LINE 1									
PRE-DEVELOPMENT STATELINE RETAIL CENTER									
ANNUAL POLLUTANT LOADS									
SUB PRE 1									
NO TREATMENT									
Land use/Ground Cover	Area (Acres)	BOD	TP	TN	TSS	BOD	TP	TN	TSS
Forest	9.20	7.0	0.10	1.8	76.5	64.4	0.92	16.6	703.8
Pasture	9.00	32.0	0.11	3.7	305.3	288.0	0.99	33.3	2747.7
Road	0.80	113.0	0.98	2.1	446.8	90.4	0.78	1.7	357.4
TOTALS						442.8	2.69	51.5	3808.9
DESIGN LINE 1									
POST-DEVELOPMENT STATELINE RETAIL CENTER									
ANNUAL POLLUTANT LOADS									
SUB 1.0S									
		Rates (lb/ac/yr)				Annual Loads (lb/yr)			
Land use/Ground Cover	Area (Acres)	BOD	TP	TN	TSS	BOD	TP	TN	TSS
Grass	1.20	6.0	0.12	3.7	308.0	7.2	0.14	4.4	369.6
Commercial	11.30	163.0	0.71	4.6	716.5	1841.9	8.02	52.0	8096.5
TOTALS PRIOR TO TREATMENT						1849.1	8.17	56.4	8466.1
DESIGN 2 EXTENDED DETENTION POND 1.0P POLLUTANT REMOVAL EFFICIENCIES						40%	40%	20%	80%
						to	to	to	to
SUBTOTAL						60%	60%	40%	100%
						1109.5	4.90	45.1	1693.2
						to	to	to	to
						739.6	3.27	33.9	0.0
DESIGN 2 EXTENDED DETENTION POND 1.1P POLLUTANT REMOVAL EFFICIENCIES						40%	40%	20%	80%
						to	to	to	to
SUBTOTAL						60%	60%	40%	100%
						665.7	2.94	36.1	338.6
						to	to	to	to
						295.9	1.31	20.3	0.0
DESIGN 14 LOW GRADIENT GRASS SWALE WITH STONE CHECKDAMS						20%	20%	20%	20%
						to	to	to	to
TOTALS AFTER TREATMENT						40%	40%	40%	40%
						532.5	2.35	28.9	270.9
						to	to	to	to
						177.5	0.78	12.2	0.0

SUB 1.1S

Land use/Ground Cover	Area (Acres)	Rates (lb/ac/yr)				Annual Loads (lb/yr)			
		BOD	TP	TN	TSS	BOD	TP	TN	TSS
Grass	2.00	6.0	0.12	3.7	308.0	12.0	0.24	7.4	616.0
Road	0.40	113.0	0.98	2.1	446.8	45.2	0.39	0.8	178.7
Commercial	0.40	163.0	0.71	4.6	716.5	65.2	0.28	1.8	286.6
TOTALS PRIOR TO TREATMENT						122.4	0.92	10.1	1081.3
DESIGN 2 EXTENDED DETENTION POND 1.1P POLLUTANT REMOVAL EFFICIENCIES						40%	40%	20%	80%
						to	to	to	to
SUBTOTAL						60%	60%	40%	100%
						73.4	0.55	8.1	216.3
DESIGN 14 LOW GRADIENT GRASS SWALE WITH STONE CHECKDAMS						to	to	to	to
						49.0	0.37	6.0	0.0
TOTALS AFTER TREATMENT						20%	20%	20%	20%
						58.8	0.44	6.5	173.0
						to	to	to	to
						29.4	0.22	3.6	0.0

SUB 1.2S

NO TREATMENT

Land use/Ground Cover	Area (Acres)	Rates (lb/ac/yr)				Annual Loads (lb/yr)			
		BOD	TP	TN	TSS	BOD	TP	TN	TSS
Forest	2.70	7.0	0.10	1.8	76.5	18.9	0.27	4.9	206.6
Grass	1.00	6.0	0.12	3.7	308.0	6.0	0.12	3.7	308.0
Road	0.30	113.0	0.98	2.1	446.8	33.9	0.29	0.6	134.0
TOTALS						58.8	0.68	9.2	648.6

POST-DEVELOPMENT TOTAL FOR SUB 1.0S to 1.3S

						BOD	TP	TN	TSS
TOTALS AFTER TREATMENT						650.1	3.48	44.5	1092.5
						to	to	to	to
						265.7	1.69	25.0	648.6

**DESIGN POINT 2
PRE-DEVELOPMENT STATELINE RETAIL CENTER
ANNUAL POLLUTANT LOADS**

**PRE 2
NO TREATMENT**

Land use/Ground Cover	Area (Acres)	BOD	TP	TN	TSS	BOD	TP	TN	TSS
Forest	13.00	7.0	0.10	1.8	76.5	91.0	1.30	23.4	994.5
Pasture	2.80	32.0	0.11	3.7	305.3	89.6	0.31	10.4	854.8
Road	0.50	113.0	0.98	2.1	446.8	56.5	0.49	1.1	223.4
TOTALS						237.1	2.10	34.8	2072.7

**DESIGN POINT 2
POST-DEVELOPMENT STATELINE RETAIL CENTER
ANNUAL POLLUTANT LOADS**

SUB 2.0S

Land use/Ground Cover	Area (Acres)	Rates (lb/ac/yr)				Annual Loads (lb/yr)			
		BOD	TP	TN	TSS	BOD	TP	TN	TSS
Forest	0.30	7.0	0.10	1.8	76.5	2.1	0.03	0.5	23.0
Grass	0.50	6.0	0.12	3.7	308.0	3.0	0.06	1.9	154.0
Commercial	4.30	163.0	0.71	4.6	716.5	700.9	3.05	19.8	3081.0
TOTALS PRIOR TO TREATMENT						706.0	3.14	22.2	3257.9

DESIGN 2 EXTENDED DETENTION POND 2.0P POLLUTANT REMOVAL EFFICIENCIES

40%	40%	20%	80%
to	to	to	to
60%	60%	40%	100%
423.6	1.9	17.7	651.6
SUBTOTAL			
to	to	to	to
282.4	1.3	13.3	0.0

DESIGN 2 EXTENDED DETENTION POND 2.1P POLLUTANT REMOVAL EFFICIENCIES

40%	40%	20%	80%
to	to	to	to
60%	60%	40%	100%
254.2	1.13	14.2	130.3
SUBTOTAL			
to	to	to	to
113.0	0.50	8.0	0.0

DESIGN 14 LOW GRADIENT GRASS SWALE WITH STONE CHECKDAMS

20%	20%	20%	20%
to	to	to	to
40%	40%	40%	40%
203.3	0.91	11.4	104.3
TOTALS AFTER TREATMENT			
to	to	to	to
67.8	0.30	4.8	0.0

SUB 2.1S

Land use/Ground Cover	Area (Acres)	Rates (lb/ac/yr)				Annual Loads (lb/yr)			
		BOD	TP	TN	TSS	BOD	TP	TN	TSS
Grass	0.70	6.0	0.12	3.7	308.0	4.2	0.08	2.6	215.6
Commercial	0.10	163.0	0.71	4.6	716.5	16.3	0.07	0.5	71.7
TOTALS PRIOR TO TREATMENT						20.5	0.16	3.1	287.3
DESIGN 2 EXTENDED DETENTION POND 1.1P POLLUTANT REMOVAL EFFICIENCIES						40%	40%	20%	80%
						to	to	to	to
SUBTOTAL						60%	60%	40%	100%
						12.3	0.09	2.4	57.5
DESIGN 14 LOW GRADIENT GRASS SWALE WITH STONE CHECKDAMS						to	to	to	to
						8.2	0.06	1.8	0.0
TOTALS AFTER TREATMENT						20%	20%	20%	20%
						to	to	to	to
						40%	40%	40%	40%
						9.8	0.07	2.0	46.0
						to	to	to	to
						4.9	0.04	1.1	0.0

SUB 2.2S

Land use/Ground Cover	Area (Acres)	Rates (lb/ac/yr)				Annual Loads (lb/yr)			
		BOD	TP	TN	TSS	BOD	TP	TN	TSS
Grass	0.70	6.0	0.12	3.7	308.0	4.2	0.08	2.6	215.6
Commercial	1.10	163.0	0.71	4.6	716.5	179.3	0.78	5.1	788.2
Pasture	0.30	32.0	0.11	3.7	305.3	9.6	0.03	1.1	91.6
TOTALS PRIOR TO TREATMENT						193.1	0.90	8.8	1095.3
DESIGN 2 EXTENDED DETENTION POND 2.3P POLLUTANT REMOVAL EFFICIENCIES						40%	40%	40%	40%
						to	to	to	to
SUBTOTAL						60%	60%	60%	60%
						115.9	0.54	5.3	657.2
DESIGN 14 LOW GRADIENT GRASS SWALE WITH STONE CHECKDAMS						to	to	to	to
						77.2	0.36	3.5	438.1
TOTALS AFTER TREATMENT						20%	20%	20%	20%
						to	to	to	to
						40%	40%	40%	40%
						92.7	0.43	4.2	525.8
						to	to	to	to
						46.3	0.22	2.1	262.9

SUB 2.3S

NO TREATMENT

Land use/Ground Cover	Area (Acres)	Rates (lb/ac/yr)				Annual Loads (lb/yr)			
		BOD	TP	TN	TSS	BOD	TP	TN	TSS
Forest	5.80	7.0	0.10	1.8	76.5	40.6	0.58	10.4	443.7
Grass	1.10	6.0	0.12	3.7	308.0	6.6	0.13	4.1	338.8
Pasture	0.50	32.0	0.11	3.7	305.3	16.0	0.06	1.9	152.7
Road	0.50	113.0	0.98	2.1	446.8	56.5	0.49	1.1	223.4
Commercial	0.10	163.0	0.71	4.6	716.5	16.3	0.07	0.5	71.7
TOTALS						136.0	1.33	17.9	1230.2

POST-DEVELOPMENT TOTAL FOR SUB 2.0S to 2.2S

TOTALS AFTER TREATMENT						BOD	TP	TN	TSS
						441.9	2.74	35.4	1906.2
						to	to	to	to
						255.0	1.88	25.9	1493.1

DESIGN POINT 3									
PRE-DEVELOPMENT STATELINE RETAIL CENTER									
ANNUAL POLLUTANT LOADS									
SUB PRE 3									
NO TREATMENT									
Land use/Ground Cover	Area (Acres)	BOD	TP	TN	TSS	BOD	TP	TN	TSS
Forest	2.10	7.0	0.10	1.8	76.5	14.7	0.21	3.8	160.7
Grass	0.20	6.0	0.12	3.7	308.0	1.2	0.02	0.7	61.6
Road	1.40	113.0	0.98	2.1	446.8	158.2	1.37	2.9	625.5
TOTALS						174.1	1.61	7.5	847.8

DESIGN POINT 3									
POST-DEVELOPMENT STATELINE RETAIL CENTER									
ANNUAL POLLUTANT LOADS									
SUB 3.0S									
Land use/Ground Cover	Area (Acres)	Rates (lb/ac/yr)				Annual Loads (lb/yr)			
		BOD	TP	TN	TSS	BOD	TP	TN	TSS
Road	1.40	113.0	0.98	2.1	446.8	158.2	1.37	2.9	625.5
Grass	0.20	6.0	0.12	3.7	308.0	1.2	0.02	0.7	61.6
Forest	0.80	7.0	0.10	1.8	76.5	5.6	0.08	1.4	61.2
TOTALS PRIOR TO TREATMENT						165.0	1.48	5.1	748.3
DESIGN 2 EXTENDED DETENTION POND 3.0P POLLUTANT REMOVAL EFFICIENCIES						40%	40%	20%	80%
						to	to	to	to
TOTALS AFTER TREATMENT						99.0	0.89	4.1	149.7
						to	to	to	to
						66.0	0.59	3.1	0.0
						to	to	to	to

SUB 3.1S									
NO TREATMENT									
Land use/Ground Cover	Area (Acres)	Rates (lb/ac/yr)				Annual Loads (lb/yr)			
		BOD	TP	TN	TSS	BOD	TP	TN	TSS
Forest	1.20	7.0	0.10	1.8	76.5	8.4	0.12	2.2	91.8
Road	0.60	113.0	0.98	2.1	446.8	67.8	0.59	1.3	268.1
TOTALS						8.4	0.12	2.2	91.8
POST-DEVELOPMENT TOTAL FOR SUB 3.0S to 3.1S									
TOTALS AFTER TREATMENT						107.4	1.01	6.3	241.5
						to	to	to	to
						74.4	0.71	5.2	91.8
						to	to	to	to

APPENDIX D
Operation, Maintenance, and Management
Inspection Checklists

Pervious Pavement Operation, Maintenance and Management Inspection Checklist

Project: _____

Location: _____

Site Status: _____

Date: _____

Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Pavement Surface (Monthly, After Major Storms)		
1. Ensure that paving area is clean of debris		
2. Ensure that paving dewaterers between storms		
3. Ensure that the area is clean of sediment		
4. Vacuum sweep to keep surface clear (3 to 4 times a year)		
5. Inspect the surface for deterioration or spalling (annual)		
2. Adjacent Areas (As Needed)		
1. Mow upland and adjacent areas, and seed bare areas		

Rain Garden Operation, Maintenance and Management Inspection Checklist

Project: _____

Location: _____

Site Status: _____

Date: _____

Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Plant Maintenance (Monthly, After Major Storms)		
1. Ensure vegetation is healthy		
2. Remove and replace diseased / dead vegetation		
3. Ensure adequate layer of mulch present		
4. Remove invasive species and/ or weeds		
5. Ensure raingarden dewater between storms		

**Stormwater Pond/Wetland Operation, Maintenance and
Management Inspection Checklist**

Project: _____

Location: _____

Site Status: _____

Date: _____

Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Embankment and emergency spillway (Annual, After Major Storms)		
1. Vegetation and ground cover adequate		
2. Embankment Erosion		
3. Animal Burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of dam		
a. Upstream face		
b. Downstream face		
c. At or beyond toe		
downstream		
upstream		
d. Emergency spillway		
6. Pond, toe & chimney drains clear and functioning		
7. Seeps/leaks on downstream face		
8. Slope protection or riprap failure		
9. Vertical/horizontal alignment of top of dam "As-Built"		
10. Emergency spillway clear of obstructions and debris		
11. Other (specify)		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
2. Riser and principal spillway (Annual)		
Type: Reinforced concrete _____ Corrugated pipe _____ Masonry _____		
1. Low flow orifice obstructed		
2. Low flow trash rack.		
a. Debris removal necessary		
b. Corrosion control		
3. Weir trash rack maintenance		
a. Debris removal necessary		
b. Corrosion control		
4. Excessive sediment accumulation insider riser		
5. Concrete/masonry condition riser and barrels		
a. cracks or displacement		
b. Minor spalling (<1")		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
6. Metal pipe condition		
7. Control valve		
a. Operational/exercised		
b. Chained and locked		
8. Pond drain valve		
a. Operational/exercised		
b. Chained and locked		
9. Outfall channels functioning		
10. Other (specify)		
3. Permanent Pool (Wet Ponds) (monthly)		
1. Undesirable vegetative growth		
2. Floating or floatable debris removal required		
3. Visible pollution		
4. Shoreline problem		
5. Other (specify)		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
4. Sediment Forebays		
1. Sedimentation noted		
2. Sediment cleanout when depth < 50% design depth		
5. Dry Pond Areas		
1. Vegetation adequate		
2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and/or trash accumulation		
7. Other (specify)		
6. Condition of Outfalls (Annual, After Major Storms)		
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4. Endwalls/Headwalls		
5. Other (specify)		
7. Other (Monthly)		
1. Encroachment on pond, wetland or easement area		
2. Complaints from residents		
3. Aesthetics		
a. Grass growing required		
b. Graffiti removal needed		
c. Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		
8. Wetland Vegetation (Annual)		
1. Vegetation healthy and growing Wetland maintaining 50% surface area coverage of wetland plants after the second growing season. (If unsatisfactory, reinforcement plantings needed)		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
2. Dominant wetland plants Survival of desired wetland plant species Distribution according to landscaping plan?		
3. Evidence of invasive species		
4. Maintenance of adequate water depths for desired wetland plant species		
5. Harvesting of emergent plantings needed		
6. Have sediment accumulations reduced pool volume significantly or are plants "choked" with sediment		
7. Eutrophication level of the wetland		
8. Other (specify)		

Comments:

Actions to be Taken:

**Grass Lined Swales Operation, Maintenance, and
Management Inspection Checklist**

Project: _____

Location: _____

Site Status: _____

Date: _____

Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Debris Cleanout (Monthly)		
Contributing areas clean of debris		
2. Check Dams or Energy Dissipaters (Annual, After Major Storms)		
No evidence of flow going around structures		
No evidence of erosion at downstream toe		
Soil permeability		
Groundwater/bedrock		
3. Vegetation (Monthly)		
Mowing done when needed		
Minimum mowing depth not exceeded		
No evidence of erosion		
Fertilized per specification		
4. Sediment deposition (Annual)		
Clean of sediment		

Comments:

Actions to be Taken:

Irrigation System Operation, Maintenance and Management Inspection Checklist

Project: _____

Location: _____

Site Status: _____

Date: _____

Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Irrigation System Components (Semi-Annually, After Major Storms)		
1. Ensure roof catchment does not contain particulate matter		
2. Ensure no leaks or obstruction present in roof drain system		
3. Clean accumulated sediment in preceding sediment tank		

Deep Sump Catch Basin Operation, Maintenance and Management Inspection Checklist

Project: _____

Location: _____

Site Status: _____

Date: _____

Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Catch Basin (Semi-Annually, After Major Storms)		
1. Inspect for damage to cast iron grate and frame		
2. Inspect for damage around pipe inlets / outlets		
3. Clean accumulated sediment in sump		

APPENDIX E

Sediment Trap With Optional Dewatering Device Sizing Calculations

3,600 CF minimum of storage required for each acre of contributing area

Sediment Basin #	Contributing Area	Minimum Volume Required	Volume Provided*	
1.0P	12.5 AC	45,000 CF	61,034 CF	From Elev. 468.00 To Elev. 473.90
1.1P	15.3 AC	55,080 CF	71,374 CF	From Elev. 452.00 To Elev. 455.90
2.0P	5.1 AC	18,360 CF	35,313 CF	From Elev. 478.00 To Elev. 480.10
2.1P ¹	5.9 AC	21,240 CF	25,937 CF	From Elev. 472.00 To Elev. 477.00
2.2P	2.1 AC	7,560 CF	7,753 CF	From Elev. 471.00 To Elev. 472.50

¹ Weirs to be blocked during construction.

*NOTE: Volume provided is calculated from elevation indicated above, to the proposed weir height, except where indicated. These elevations may be modified during construction based on actual groundwater elevations encountered. If modifications are necessary, the volume of the proposed sediment basin shall not be less than the minimum required.

APPENDIX F
Stormwater Conveyance System Sizing Calculations



DRAINAGE SYSTEM CALCULATIONS
Design Storm: 10-Year

PROJECT: Stateline Retail Center
JOB NUMBER: 03157.100
BY: EJK DATE: 2-03-2009
CHK: RDW DATE: 2-03-2009

STRUCTURE		IMPERVIOUS AREA			PERVIOUS AREA			CA			TIME OF CONC. (min.)			Q (cfs)			PIPE DESIGN			
FROM	TO	A (ac.)	C	CA	A (ac.)	C	CA	CA	CA	INLET	PIPE	TOTAL	I	DESIGN	CAP.	V (ft/s)	n	s (%)	L (ft)	DIA (in)
CB 10A	CB 10	0.07	0.9	0.06	0.39	0.3	0.12	0.18	0.12	6	-	6	6.3	1.1	11.6	6.0	0.012	2.73	22	15
CB 12	CB 11	0.07	0.9	0.06	-	-	-	0.06	-	6	-	6	6.3	0.4	16.8	5.8	0.012	5.78	45	15
CB 11	CB 10	0.04	0.9	0.04	-	-	-	0.10	-	6	-	6	6.3	0.6	18.5	7.1	0.012	6.95	95	15
CB 10	CB 9	0.03	0.9	0.03	0.01	0.3	0.00	0.31	0.00	6	-	6	6.3	1.9	21.3	10.8	0.012	9.23	39	15
CB 9		0.09	0.9	0.08	0.04	0.3	0.01	0.40	0.01	6	-	6	6.3	2.5	8.1	5.8	0.012	1.33	15	15
CB 15A	CB 15	0.10	0.9	0.09	0.25	0.3	0.08	0.17	0.08	6	-	6	6.3	1.0	8.4	4.7	0.012	1.43	21	15
CB 17	CB 16	0.05	0.9	0.05	-	-	-	0.05	-	6	-	6	6.3	0.3	15.4	5.2	0.012	4.83	60	15
CB 16	CB 15	0.02	0.9	0.02	0.01	0.3	0.00	0.07	0.00	6	-	6	6.3	0.4	18.5	6.2	0.012	6.98	43	15
CB 15	CB 14	0.01	0.9	0.01	0.01	0.3	0.00	0.24	0.00	6	-	6	6.3	1.5	15.2	8.0	0.012	4.69	224	15
CB 14		0.46	0.9	0.41	0.05	0.3	0.02	0.67	0.02	6	-	6	6.3	4.2	14.6	10.4	0.012	4.38	16	15
CB 7	CB 6	0.01	0.9	0.01	0.01	0.3	0.00	0.01	0.01	6	-	6	6.3	0.1	7.0	3.0	0.012	1.00	20	15
CB 6	ES 5	0.46	0.9	0.41	0.05	0.3	0.02	0.44	0.44	6	-	6	6.3	2.8	14.2	9.0	0.012	4.14	29	15
CB 3	CB 2	0.01	0.9	0.01	0.01	0.3	0.00	0.01	0.01	6	-	6	6.3	0.1	7.0	3.0	0.012	1.00	20	15
CB 2	ES 1	0.46	0.9	0.41	0.05	0.3	0.02	0.44	0.44	6	-	6	6.3	2.8	7.6	5.7	0.012	1.17	128	15
DI 33E	DI 33D	-	-	-	0.39	0.3	0.12	0.12	0.12	6	-	6	6.3	0.7	7.8	4.0	0.012	1.25	8	15
DI 33D	DI 33C	-	-	-	0.05	0.3	0.02	0.16	0.16	6	-	6	6.3	1.0	7.0	4.1	0.012	1.00	10	15
DI 33C	CB 33B	-	-	-	0.05	0.3	0.02	0.17	0.17	6	-	6	6.3	1.1	7.3	4.3	0.012	1.10	91	15
CB 33B	CB 33A	0.42	0.9	0.38	0.16	0.3	0.05	0.60	0.60	6	-	6	6.3	3.8	7.2	5.9	0.012	1.05	171	15
CB 33A	CB 33	0.31	0.9	0.28	0.07	0.3	0.02	0.90	0.90	6	-	6	6.3	5.7	7.3	6.6	0.012	1.08	249	15
CB 31D	CB 31C	0.15	0.9	0.14	-	-	-	0.14	-	6	-	6	6.3	0.9	7.2	4.0	0.012	1.05	114	15
CB 31C	CB 31B	0.07	0.9	0.06	0.01	0.3	0.00	0.20	0.20	6	-	6	6.3	1.3	7.3	4.5	0.012	1.08	37	15
CB 31B	CB 31A	0.19	0.9	0.17	0.02	0.3	0.01	0.38	0.38	6	-	6	6.3	2.4	19.5	10.8	0.012	7.78	36	15
CB 31A	CB 31	0.03	0.9	0.03	0.06	0.3	0.02	0.42	0.42	6	-	6	6.3	2.7	14.0	8.8	0.012	4.00	20	15
CB 32A	CB 32	0.54	0.9	0.49	-	-	-	0.49	-	6	-	6	6.3	3.1	12.1	8.3	0.012	3.00	20	15



DRAINAGE SYSTEM CALCULATIONS
Design Storm: 10-Year

PROJECT: Stateline Retail Center
JOB NUMBER: 03157.100
BY: EJK DATE: 2-03-2009
CHK: RDW DATE: 2-03-2009

STRUCTURE	IMPERVIOUS AREA			PERVIOUS AREA			CA	TIME OF CONC. (min.)			I	Q (cfs)			PIPE DESIGN			
	FROM	TO	A (ac.)	C	CA	A (ac.)		C	CA	INLET		PIPE	TOTAL	DESIGN CAP.	V(ft/s)	n	s (%)	L (ft)
DI 33G		DI 33F	-	-	0.04	0.3	0.01	0.01	6	-	6	6.3	0.1	7.8	0.012	1.25	8	15
DI 33F		DI 33D	-	-	0.05	0.3	0.02	0.03	6	-	6	6.3	0.2	7.0	0.012	1.01	268	15
CB 37		CB 36	0.33	0.9	0.30	-	-	0.30	6	-	6	8.9	2.6	7.0	0.012	1.00	30	15
CB 36		CB 35	0.16	0.9	0.14	0.05	0.02	0.46	6	-	6	6.3	2.9	7.1	0.012	1.03	107	15
CB 35		CB 34	0.11	0.9	0.10	-	-	0.56	6	-	6	6.3	3.5	7.4	0.012	1.11	54	15
CB 34		CB 33	0.20	0.9	0.18	-	-	0.74	6	-	6	6.3	4.6	7.3	0.012	1.09	46	15
CB 33		CB 32	0.20	0.9	0.18	-	-	1.82	6	-	6	6.3	11.4	12.2	0.012	1.15	61	18
CB 32		CB 31	0.20	0.9	0.18	-	-	2.48	6	-	6	6.3	15.6	33.2	0.012	8.52	108	18
CB 31		ES 30	0.03	0.9	0.03	-	-	2.93	6	-	6	6.3	18.5	38.7	0.012	2.50	32	24
*CB 43		CB 42	0.04	0.9	0.04	0.02	0.3	0.01	6	-	6	6.3	2.2	72.2	0.012	1.00	20	36
CB 42		ES 31	0.03	0.9	0.03	0.05	0.3	0.02	6	-	6	6.3	2.8	76.1	0.012	1.11	45	36
**CB 92A		CB 92	0.28	0.9	0.25	0.22	0.3	0.07	6	-	6	8.9	1.3	7.0	0.012	1.00	140	15
**CB 91A		CB 91	0.20	0.9	0.18	0.18	0.3	0.05	6	-	6	8.9	1.3	13.4	0.012	3.64	88	15
DI 94		DI 93	-	-	0.04	0.3	0.01	0.01	6	-	6	6.3	0.1	7.8	0.012	1.25	8	15
DI 93		CB 92	-	-	0.05	0.3	0.02	0.03	6	-	6	6.3	0.2	18.1	0.012	6.67	30	15
**CB 92		CB 91	0.23	0.9	0.21	0.03	0.3	0.01	6	-	6	8.9	5.0	7.1	0.012	1.03	174	15
**CB 91		CB 90	0.33	0.9	0.30	-	-	1.09	6	-	6	8.9	9.7	15.0	0.012	1.73	110	18
**CB 90		DMH 89	-	-	-	-	-	1.09	6	-	6	8.9	9.7	11.6	0.012	1.03	155	18
DMH 89		DI 88	1.83	0.9	1.65	-	-	2.75	6	-	6	6.3	17.3	28.3	0.012	1.33	173	24
DI 88		CB 62	0.27	0.9	0.24	0.03	0.3	0.01	6	-	6	6.3	8.5	25.2	0.012	1.06	66	24
CB 70A		CB 70	0.32	0.9	0.29	-	-	0.29	6	-	6	6.3	1.8	9.9	0.012	2.00	75	15
CB 65A		CB 65	0.18	0.9	0.16	0.39	0.3	0.12	6	-	6	6.3	1.8	17.3	0.012	6.14	70	15
CB 64B		CB 64A	0.31	0.9	0.28	0.02	0.3	0.01	6	-	6	6.3	1.8	7.4	0.012	1.11	54	15
CB 64A		CB 64	0.11	0.9	0.10	0.03	0.3	0.01	6	-	6	6.3	2.5	10.0	0.012	2.04	215	15
CB 56A		CB 56	0.08	0.9	0.07	-	-	0.07	6	-	6	6.3	0.5	7.2	0.012	1.07	65	15

*Design flow taken from 10 year 24-hour design storm in the Post Development HydroCad as shown in Appendix B of the SWPPP.

**100 year design storm use for sizing.



DRAINAGE SYSTEM CALCULATIONS
Design Storm: 10-Year

PROJECT: Stateline Retail Center
JOB NUMBER: 03157.100
BY: EJK DATE: 2-03-2009
CHK: RDW DATE: 2-03-2009

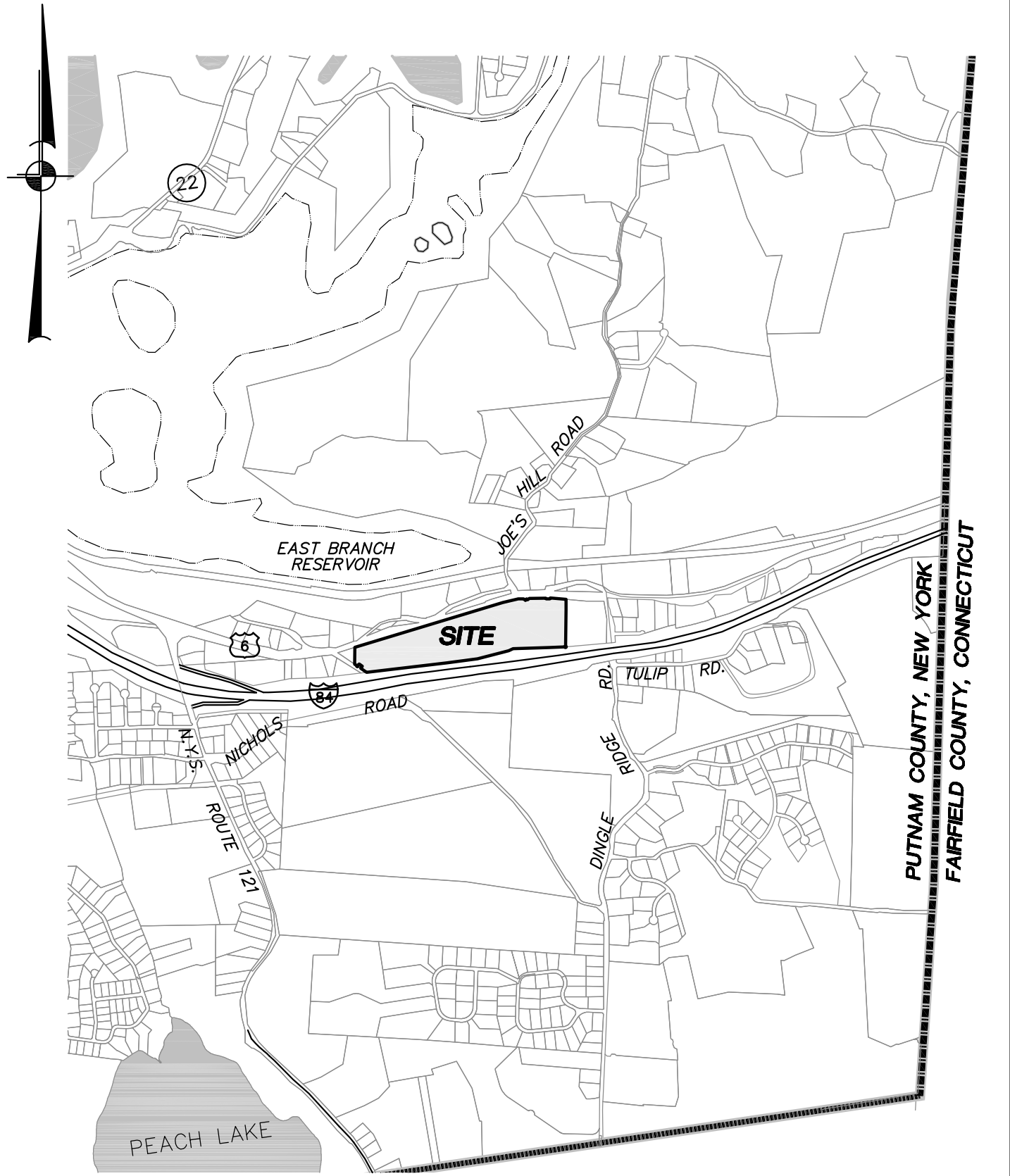
STRUCTURE	IMPERVIOUS AREA			PERVIOUS AREA			CA	TIME OF CONC. (min.)		I	Q (cfs)			PIPE DESIGN					
	FROM	TO	A (ac.)	C	CA	A (ac.)		C	CA		INLET	PIPE	TOTAL	DESIGN CAP.	V(ft/s)	n	s (%)	L (ft)	DIA (in)
CB 58	CB 57	0.16	0.9	0.14	-	-	0.14	-	6	-	6	6.3	0.9	7.8	4.3	0.012	1.25	24	15
CB 57	CB 56	0.20	0.9	0.18	-	-	0.32	-	6	-	6	6.3	2.0	9.2	6.0	0.012	1.72	58	15
CB 56	CB 63	-	-	-	0.01	0.3	0.40	0.00	6	-	6	6.3	2.5	7.4	5.4	0.012	1.11	54	15
**DMH 74	CB 73	0.19	0.9	0.17	-	-	0.17	-	6	-	6	8.9	1.5	7.1	4.6	0.012	1.03	184	15
**CB 73	CB 72	0.09	0.9	0.08	0.01	0.3	0.00	0.26	6	-	6	8.9	2.3	7.1	5.2	0.012	1.03	214	15
CB 72	CB 71	1.96	0.9	1.76	0.02	0.3	0.01	2.03	6	-	6	6.3	12.8	24.5	7.9	0.012	1.00	70	24
CB 71	CB 70	0.21	0.9	0.19	0.01	0.3	0.00	2.22	6	-	6	6.3	14.0	25.1	8.2	0.012	1.05	57	24
CB 70	CB 69	0.06	0.9	0.05	0.05	0.3	0.02	2.57	6	-	6	6.3	16.2	27.0	9.0	0.012	1.21	33	24
CB 69	CB 68	0.03	0.9	0.03	-	-	2.60	-	6	-	6	6.3	16.4	24.9	8.5	0.012	1.03	29	24
CB 68	CB 67	0.02	0.9	0.02	-	-	2.62	-	6	-	6	6.3	16.5	24.8	8.4	0.012	1.02	167	24
CB 67	CB 66	0.23	0.9	0.21	0.03	0.3	2.84	0.01	6	-	6	6.3	17.9	24.8	8.6	0.012	1.02	128	24
CB 66	CB 65	0.28	0.9	0.25	-	-	3.09	-	6	-	6	6.3	19.4	25.6	9.0	0.012	1.09	64	24
CB 65	CB 64	0.34	0.9	0.31	-	-	3.67	-	6	-	6	6.3	23.1	24.8	9.0	0.012	1.02	49	24
CB 64	CB 63	1.17	0.9	1.05	0.05	0.3	5.13	0.02	6	-	6	6.3	32.3	72.2	10.0	0.012	1.00	250	36
CB 63	CB 62	0.74	0.9	0.67	0.06	0.3	6.22	0.02	6	-	6	6.3	39.2	72.6	10.5	0.012	1.01	278	36
CB 62	DI 61	0.68	0.9	0.61	0.03	0.3	8.18	0.01	6	-	6	6.3	51.5	78.5	11.9	0.012	1.18	17	36
DI 61	ES 60	-	-	-	0.05	0.3	8.23	0.02	6	-	6	6.3	51.9	72.2	11.1	0.012	1.00	20	36
CB 107	ES 106	0.83	0.9	0.75	0.39	0.3	0.86	0.12	6	-	6	6.3	5.4	7.0	6.3	0.012	1.01	173	15
CB 103B	CB 103A	0.30	0.9	0.27	-	-	0.27	-	6	-	6	6.3	1.7	10.4	6.3	0.012	2.19	32	15
CB 103A	DI 103	0.11	0.9	0.10	-	-	0.37	-	6	-	6	6.3	2.3	18.8	10.5	0.012	7.24	29	15
DI 104	DI 103	-	-	-	0.01	0.3	0.00	0.00	6	-	6	6.3	0.0	7.4	8.7	0.012	1.11	18	15
DI 103	DMH 102	-	-	-	0.18	0.3	0.43	0.05	6	-	6	6.3	2.7	16.0	9.7	0.012	5.25	61	15
*DMH 102	ES 101	0.05	0.9	0.05	0.03	0.3	0.48	0.01	6	-	6	6.3	34.8	165.0	18.6	0.012	5.22	92	36

*Design flow taken from 10 year 24-hour design storm in the Post Development HydroCad as shown in Appendix B of the SWPPP.

**100 year design storm use for sizing.

FIGURES

Z:\E\03157100\Stormwater\Figures\Figure 1.dwg, 5/7/2009 2:02:53 PM, erick, 1:1



PROJECT:
STATELINE RETAIL CENTER
 U.S. ROUTE 6, TOWN OF SOUTHEAST, PUTNAM COUNTY, NEW YORK

DRAWING:
LOCATION MAP



INSITE
 ENGINEERING, SURVEYING &
 LANDSCAPE ARCHITECTURE, P.C.

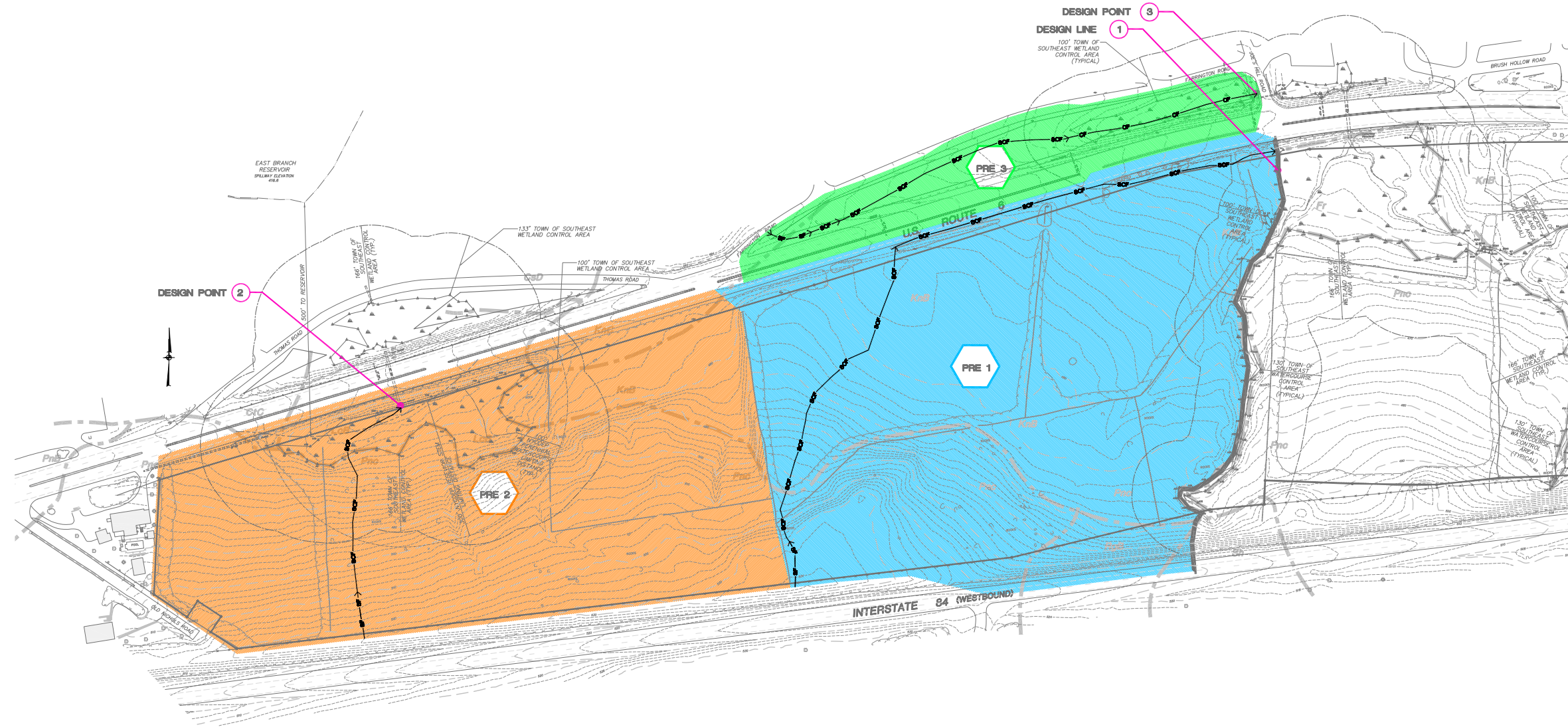
3 Garrett Place • Carmel, New York 10512
 Phone (845) 225-9690 • Fax (845) 225-9717
 www.insite-eng.com

DATE: 05-08-2009

SCALE: 1" = 2000'

PROJECT NO.: 03157.100

FIGURE: 1



LEGEND

- Subcatchment
- Design Point / Line
- Channel Flow
- Sheet Flow
- Shallow Concentrated Flow

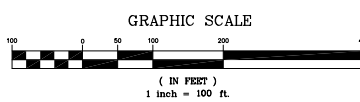
SOILS LEGEND

SOILS	DESCRIPTION	HYDROLOGICAL GROUP
	Soils Boundary	-
CeD	Chaffield-Chariton complex, hilly, very rocky	B
Fr	Fredon silt loam	C
KnB	Knickerbocker fine sandy loam, 2% to 8% slopes	A
KnC	Knickerbocker fine sandy loam, 2% to 8% slopes	A
LcB	Leicester loam, 3% to 8% slopes, stony	C
PnB	Paxton fine sandy loam, 2% to 8% slopes	C
PnC	Paxton fine sandy loam, 8% to 15% slopes	C
RdB	Ridgebury loam, 2% to 8% slopes, very stony	C
Sh	Sun loam	D

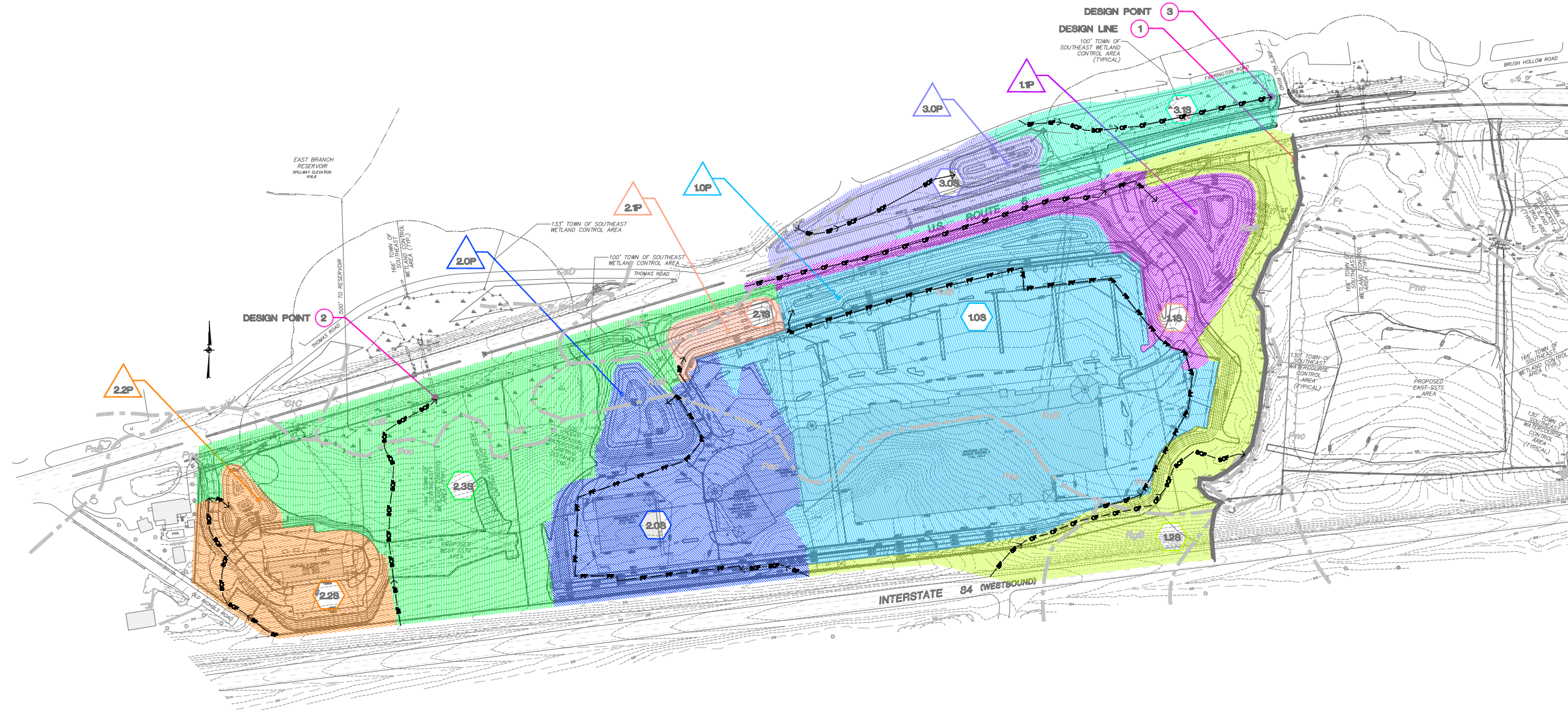
4	5-08-09	REVISIONS FOR NYCDEP SUBMISSION / FEIS COMMENTS	RDW
3	2-03-09	REVISIONS FOR NYCDEP SUBMISSION	EJK
2	10-30-08	REVISIONS FOR FEIS SUBMISSION	RDW
1	10-16-07	REVISIONS FOR DEIS SUBMISSION	RDW
NO.	DATE	REVISION	BY

INSITE
 ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
 3 Garrett Place
 Carmel, NY 12512
 (845) 225-9690
 (845) 225-9717 fax
 www.insite-ny.com

PROJECT:	STATELINE RETAIL CENTER U.S. ROUTE 6, TOWN OF SOUTHEAST, PUTNAM COUNTY, NEW YORK		
DRAWING:	PRE-DEVELOPMENT DRAINAGE MAP		
PROJECT NO.	03157.100	PROJECT MANAGER	J.J.C.
DATE	3-30-06	DRAWN BY	M.D.M.
SCALE	1" = 100'	CHECKED BY	
FIGURE NO.	2		



ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.



LEGEND

	Subcatchment
	Stormwater Management Basin
	Design Point or Line
	Channel Flow
	Sheet Flow
	Shallow Concentrated Flow
	Pipe Flow

SOILS LEGEND

SOILS	DESCRIPTION	HYDROLOGICAL GROUP
-----	Soils Boundary	-
CeD	Chaffield-Charlton complex, hilly, very rocky	B
Fr	Fredon silt loam	C
KnB	Knickerbocker fine sandy loam, 2% to 8% slopes	A
KnC	Knickerbocker fine sandy loam, 2% to 8% slopes	A
LoB	Lelcester loam, 3% to 8% slopes, stony	C
PnB	Paxton fine sandy loam, 2% to 8% slopes	C
PnC	Paxton fine sandy loam, 8% to 15% slopes	C
RdB	Ridgebury loam, 2% to 8% slopes, very stony	C
Sh	Sun loam	D

NO.	DATE	REVISION	BY
4	5-08-09	REVISIONS FOR NYCDEP SUBMISSION / FEIS COMMENTS	RDW
3	2-03-09	REVISIONS FOR NYCDEP SUBMISSION	EJK
2	10-30-08	REVISIONS FOR FEIS SUBMISSIONS	RDW
1	10-16-07	REVISIONS FOR DEIS SUBMISSIONS	RDW

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PROJECT:
STATELINE RETAIL CENTER
U.S. ROUTE 6, TOWN OF SOUTHEAST, PUTNAM COUNTY, NEW YORK

DRAWING:
POST-DEVELOPMENT DRAINAGE MAP

PROJECT NO.	03157.100	PROJECT MANAGER	J.J.C.	FIGURE NO.	3
DATE	3-30-06	DRAWN BY	M.D.M.		
SCALE	1" = 100'	CHECKED BY			

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

