



SARATOGA
ASSOCIATES

PRELIMINARY STORMWATER MANAGEMENT REPORT

Carriage Hill Estates
Draft Environmental Impact Statement

Project No. 2004-035.20M

Town of Brunswick
Rensselaer County
New York

September 30, 2005

Prepared for:
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Troy, NY 12180

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CARRIAGE HILL ESTATES

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1.0 INTRODUCTION

The proposed project (hereinafter referred to as the "Project") consists of the construction of both single-family homes and senior apartments in the Town of Brunswick, Rensselaer County, New York, and near the Town's western boundary with the City of Troy. The site is located east of and adjacent to the County Club of Troy, and is bounded by Pinewoods Avenue and to the south, and NYS Route 2 to the North. Existing residential development bounds the site to the east. A Niagara Mohawk utility line divides the project site on a north to south access. Refer to *Figure 1 – Project Location* for additional geographic reference of the project site.

As depicted on *Figure 2 - Project Concept*, the Project consists of the following components:

- > A total of 106 single-family homes are proposed:
 - o 87 homes are proposed to be located on ¼-acre lots and are referred to as Carriage Homes marketed to starting families and "empty nester"
 - o 19 homes are proposed on lots ranging in size from 3 – to 4-acres, and are referred to as Estate Homes.
- > The proposed senior apartment component will include a total of 204 units.

It is anticipated that full build-out of the project will occur by 2010.

2.0 STORMWATER MANAGEMENT

Currently, the site is essentially undeveloped forest and abandoned agricultural fields in various stages of regrowth. There is approximately 1 acre of impervious surface on the site that includes an existing driveway and some abandoned structures. While the site has widely varying topography, the stormwater ultimately drains into the Poesten Kill. Specifically, the site drains to the north into the Poesten Kill, and to the south into the unnamed Class C tributary of the Poesten Kill and ultimately into the Poesten Kill.

Table 2-1 below, provides a summary of the land coverage, Pre- and Post-Development on the project site

Characteristics	Existing Conditions (in acres)	Full Build-Out (in acres)
Meadow or Brushland (Non-Agricultural)	49.15	30.75
Forested	147.50	92.32
Agricultural (active)	0	0
Tributaries	6,196 lin. ft.	6,196 lin. ft.
Wetland	16.35	15.93
Unvegetated (Rock, earth or fill)	0	0
Roads, buildings, and other paved surfaces	1	23
Lawn, Landscaping	0	52
TOTAL	214±	214±

As the project site obviously exceeds one acre in size, the stormwater management facilities for the proposed development must be designed in accordance with the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity, Permit No. GP-02-01. The General Permit requires that a Stormwater Pollution Prevention Plan (SWPPP) be developed for the project in accordance with the technical standards published by the NYSDEC. The SWPPP will address the design, implementation and maintenance of both the erosion and sediment control measures to be used during construction and the post-construction stormwater management facilities. The SWPPP must be completed prior to the start of construction in accordance with the notification requirements detailed in the General Permit.

Preliminary stormwater runoff calculations have been developed for the proposed development and are attached. The purpose of these calculations is to understand the magnitude of the required quality

and quantity treatment facilities and ensure that appropriate locations on the site are designated for these stormwater management facilities.

The general topography of the project site results in the division of the overall site into nine (9) drainage areas to be used in the existing conditions runoff calculations as shown on *Figure 3 - Existing Conditions Drainage Areas*. The developed condition as shown on *Figure 2 - Project Concept* results in the division of the overall site into eight (8) drainage areas to be used in the developed conditions runoff calculations as shown on *Figure 4 - Developed Conditions Drainage Areas*. The southern portion of the project site drains primarily in a southerly direction towards the small stream that runs through the site from east to west through the site and discharges to a pond located in the Country Club of Troy property. Overflow from this pond enters the Poesten Kill. The northern portion of the project site drains in a northerly direction to the Poesten Kill. The Poesten Kill is defined by the NYSDEC as a Class C trout stream, but is not on the list of protected waters with a defined Total Maximum Daily Load (TMDL) of a particular pollutant.

The runoff calculations are performed for each of the areas for both the existing and developed conditions utilizing Soil Conservation Service TR-55 methodology and the Eagle Point 2003 Watershed Modeling computer program. The 10 and 100 year, 24 hour storm events are analyzed, as on-site detention must be provided to limit the developed conditions peak runoff rates from these storms to the existing conditions rates. In addition, Water Quality and Channel Protection Volumes are calculated for each of the areas and these volumes must also be treated and detained on-site, in accordance with the NYSDEC Requirements (80% removal of Total Suspended Solids, 40% removal of Total Phosphorus).

All of the calculated peak runoff rates, required storage volumes and calculation methodology for each of the areas are attached in the Appendices under Stormwater Calculations. Note that the Developed Conditions Peak Runoff Rate is prior to the provision of storm detention facilities designed to attenuate the peak runoff to be equal or less than predevelopment rates.

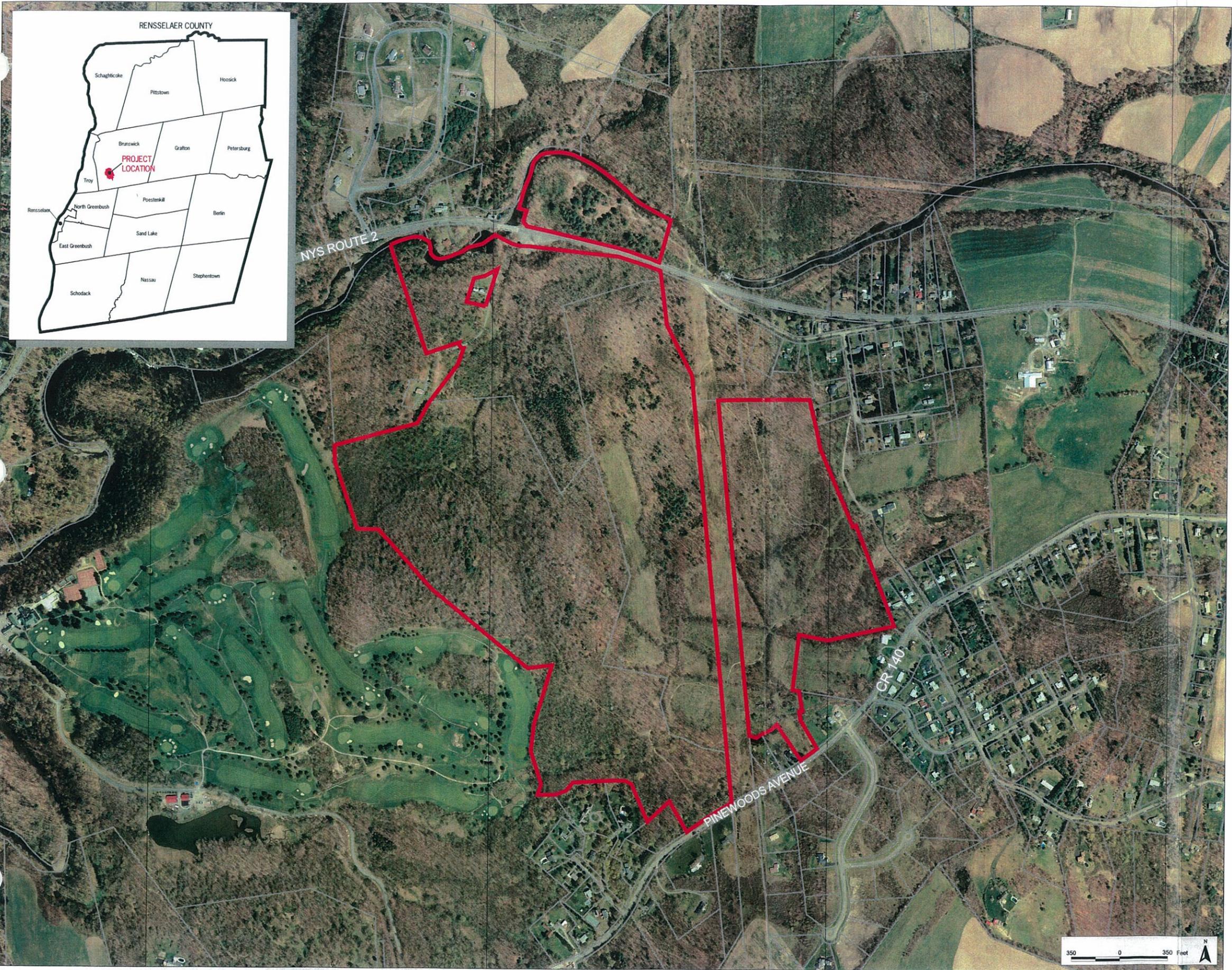
These volumes dictate the use of surface treatment/detention basins from both construction feasibility and financial standpoints. Proposed locations for the basins are shown on the attached drainage map. Whenever recommendations are made for the provision of specific detention/recharge basins, the size given should be considered only preliminary or approximate. Selection of materials and sizing of these facilities will be performed as final subdivision plans are prepared. It is anticipated that the proposed detention/recharge basins would be constructed by the project sponsor and then owned and maintained by the Town of Brunswick. Runoff will be conveyed to these basins both as overland flow, in open channels and through newly constructed storm sewer systems. Once treated and detained as required, the runoff will be discharged to the two streams on the project site.

The Town of Brunswick is designated by the NYSDEC as a Municipal Separate Storm Sewer System (MS4). This designation requires the Town to comply with the NYSDEC SPDES General Permit for Stormwater Discharges from MS4s, Permit No. GP-02-02. This General Permit requires that the

municipality develop a Stormwater Management Program (SWMP) according to the designated minimum control measures. The Town Engineer has indicated that the Town of Brunswick's SWMP does not set any compliance requirements for construction projects to be more stringent than those specified by the NYSDEC

Appendices

Figures



PROJECT LOCATION

Figure 1
 Carriage Hill Estates
 Draft Environmental Impact Statement
 September 2005

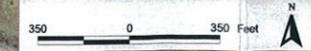
- KEY**
- PROPERTY BOUNDARY, PROPOSED PROJECT LOCATION
 - TAX PARCEL BOUNDARY

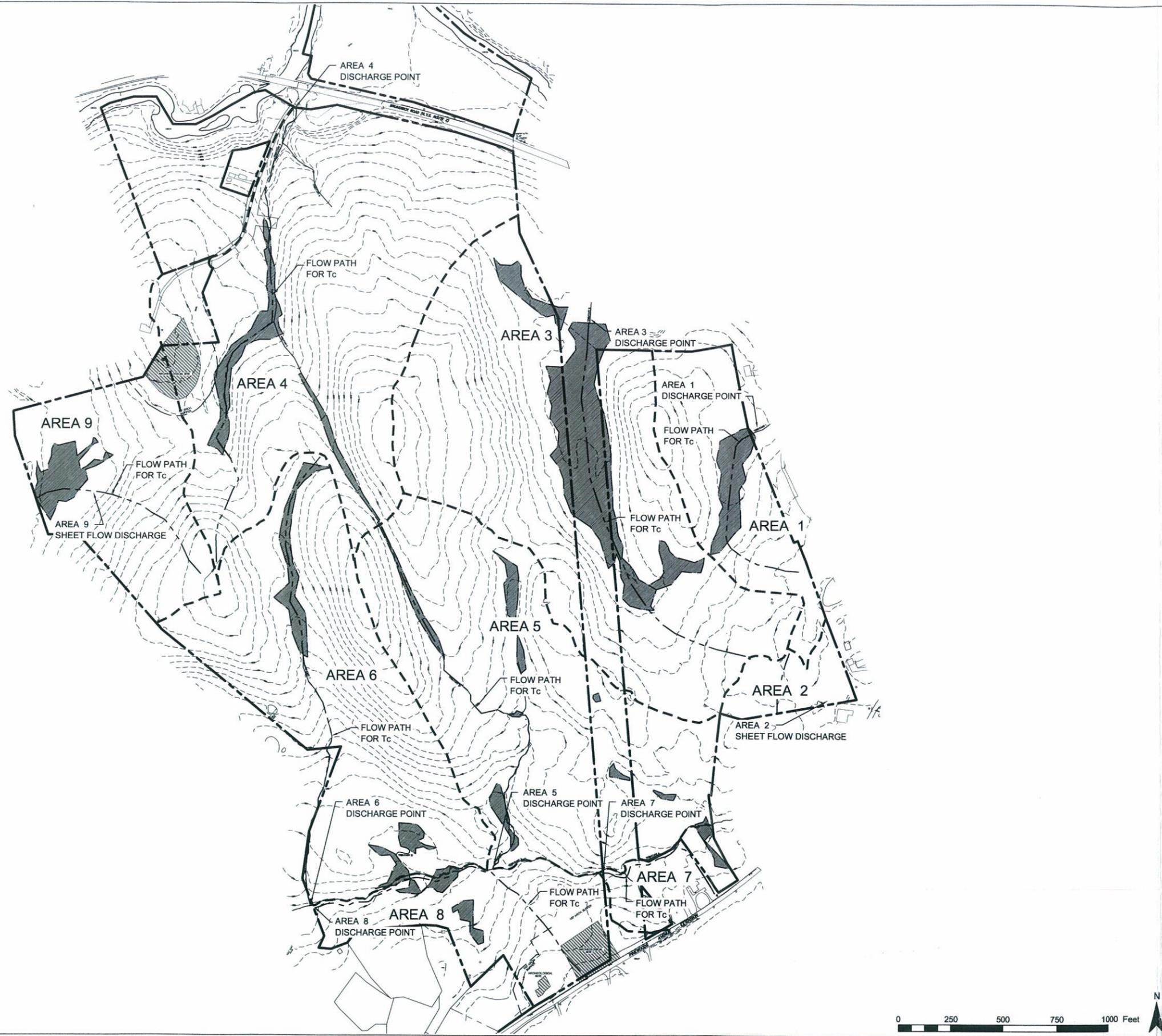
PROJECT # 2004-035.20M
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EXISTING CONDITIONS DRAINAGE AREAS

Figure 3
Carriage Hill Estates
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DEVELOPED CONDITIONS DRAINAGE AREAS

Figure 4
Carriage Hill Estates
Draft Environmental Impact Statement
September, 2005



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S:\2004\04035\1-D-CAD-GIS\1.4 Design Development\04035DEISmaps.dwg

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Stormwater Quantities

Table 1-2 Area 1

Storm Event	Existing Conditions Peak Runoff Rate (cfs)	Developed Conditions Peak Runoff Rate (cfs)	Water Quality Volume – WQv (c.f.)	Channel Protection Volume – CPv (c.f.)	Total Required Volume for Treatment and Storage (c.f.)
10 Year, 24 Hour	22.40	30.38	Area 1A – 5,800	4,191	31,213
100 Year, 24 Hour	39.27	49.26			

Table 1-3 Area 2

Storm Event	Existing Conditions Peak Runoff Rate (cfs)	Developed Conditions Peak Runoff Rate (cfs)	Water Quality Volume – WQv (c.f.)	Channel Protection Volume – CPv (c.f.)	Total Required Volume for Treatment and Storage (c.f.)
10 Year, 24 Hour	8.83	26.99	Area 2A- 6,300	5,450	40,696
100 Year, 24 Hour	15.35	42.31			

Table 1-4 Area 3

Storm Event	Existing Conditions Peak Runoff Rate (cfs)	Developed Conditions Peak Runoff Rate (cfs)	Water Quality Volume – WQv (c.f.)	Channel Protection Volume – CPv (c.f.)	Total Required Volume for Treatment and Storage (c.f.)
10 Year, 24 Hour	45.81	65.48	Area 3A – 11,400	10,330	78,491
100 Year, 24 Hour	81.12	106.82			

Table 1-5 Area 4					
Storm Event	Existing Conditions Peak Runoff Rate (cfs)	Developed Conditions Peak Runoff Rate (cfs)	Water Quality Volume – WQv (c.f.)	Channel Protection Volume – CPv (c.f.)	Total Required Volume for Treatment and Storage (c.f.)
10 Year, 24 Hour	55.35	94.62	Area 4A – 8,300	3,215	37,822
100 Year, 24 Hour	97.95	154.04	Area 4B- 19,500 Area 4C – 2,900	12,100 1,921	95,951 18,376

Table 1-6 Area 5					
Storm Event	Existing Conditions Peak Runoff Rate (cfs)	Developed Conditions Peak Runoff Rate (cfs)	Water Quality Volume – WQv (c.f.)	Channel Protection Volume – CPv (c.f.)	Total Required Volume for Treatment and Storage (c.f.)
10 Year, 24 Hour	62.78	129.96	Area 5A-2,200	4,365	20,078
100 Year, 24 Hour	110.39	203.28	Area 5B-20,500	24,753	178,883

Table 1-7 Area 6					
Storm Event	Existing Conditions Peak Runoff Rate (cfs)	Developed Conditions Peak Runoff Rate (cfs)	Water Quality Volume – WQv (c.f.)	Channel Protection Volume – CPv (c.f.)	Total Required Volume for Treatment and Storage (c.f.)
10 Year, 24 Hour	44.96	37.91	N/A	N/A	N/A
100 Year, 24 Hour	79.43	66.81			

Table 1-8 Area 7					
Storm Event	Existing Conditions Peak Runoff Rate (cfs)	Developed Conditions Peak Runoff Rate (cfs)	Water Quality Volume – WQv (c.f.)	Channel Protection Volume – CPv (c.f.)	Total Required Volume for Treatment and Storage (c.f.)
10 Year, 24 Hour	9.97	8.64	N/A	N/A	N/A
100 Year, 24 Hour	17.35	15.04			

Table 1-9 Area 8					
Storm Event	Existing Conditions Peak Runoff Rate (cfs)	Developed Conditions Peak Runoff Rate (cfs)	Water Quality Volume – WQv (c.f.)	Channel Protection Volume – CPv (c.f.)	Total Required Volume for Treatment and Storage (c.f.)
10 Year, 24 Hour	37.60	37.60	N/A	N/A	N/A
100 Year, 24 Hour	65.84	65.84			

Table 1-10 Area 9					
Storm Event	Existing Conditions Peak Runoff Rate (cfs)	Developed Conditions Peak Runoff Rate (cfs)	Water Quality Volume – WQv (c.f.)	Channel Protection Volume – CPv (c.f.)	Total Required Volume for Treatment and Storage (c.f.)
10 Year, 24 Hour	34.69	34.69	N/A	N/A	N/A
100 Year, 24 Hour	60.56	60.56			

Stormwater Calculations

24 Hour Rainfall Amounts

Table 8-5 24 Hour Rainfall Amounts (inches) for New York State Counties for Use with SCS TR-55 (Continued)

County	Design Flood Frequency or Return Period (Years)						
	1	2	5	10	25	50	100
Kings	2.7	3.5	4.5	5.0	6.0	7.0	7.5
Lewis	2.3	2.5	3.1	3.6	4.2	4.5	4.8
Livingston	2.2	2.5	3.2	3.7	4.2	4.7	4.9
Madison	2.3	2.6	3.3	3.8	4.6	4.9	5.1
Monroe	2.2	2.5	3.1	3.6	4.1	4.6	4.8
Montgomery	2.4	2.7	3.4	3.9	4.7	5.0	5.6
Nassau	2.7	3.5	4.5	5.0	6.0	7.0	7.5
New York	2.7	3.5	4.5	5.0	6.0	6.5	7.5
Niagara	2.1	2.5	3.0	3.5	4.0	4.5	4.7
Oneida	2.3	2.5	3.2	3.8	4.5	4.8	5.0
Onondaga	2.2	2.6	3.2	3.8	4.5	4.8	5.0
Ontario	2.2	2.5	3.2	3.7	4.3	4.7	4.9
Orange	2.9	3.5	4.5	5.5	6.5	7.0	7.5
Orleans	2.1	2.5	3.0	3.5	4.0	4.5	4.8
Oswego	2.2	2.5	3.1	3.6	4.3	4.6	4.8
Otsego	2.4	2.8	3.4	4.0	4.8	5.0	5.6
Putnam	2.7	3.5	4.5	5.0	6.0	7.0	7.5
Queens	2.7	3.5	4.5	5.0	6.0	7.0	7.5
Rensselaer	2.4	2.7	3.5	4.3	4.9	5.5	5.9
Richmond	2.7	3.5	4.5	5.0	6.0	7.0	7.5
Rockland	2.7	3.5	4.5	5.0	6.0	7.0	7.5
Saratoga	2.3	2.6	3.4	3.9	4.7	5.0	5.5
Schenectady	2.4	2.8	3.5	4.0	4.8	5.2	5.7

Analysis of Existing Conditions

Area 1 - Existing - 12.5A CN=73 $L = \frac{\sqrt{S}(100)}{n}$

Total Distance (T_c) - 950 ft $S = .07$

$$L = \frac{\sqrt{.07}(100)}{0.40} = 66'$$

Sheet Flow = 66' $S = 7\%$ $n = 0.4$

Shallow Flow = 884' $S = 6\%$ $K = 0.5$

Area 2 - Existing - 3.7A CN=73

Total Distance (T_c) - 300 ft

$$L = \frac{\sqrt{.07}(100)}{0.4} = 66'$$

Sheet Flow = 66' $S = 7\%$ $n = 0.4$

Shallow Flow = 234' $S = 7\%$ $K = 0.5$

Area 3 - Existing - 49.3A

Total Distance (T_c) = 2,050 ft

$$L = \frac{\sqrt{.04}(100)}{.4} = 50'$$

Sheet Flow = 50' $S = 4\%$ $n = 0.4$

Shallow Flow = 2000' $S = 2\%$ $K = 0.5$

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Carriage Hill Estates - Stormwater

PROJECT NAME: Existing Conditions

PROJECT NO: 04035.20 DATE: 9/27/05

BY: RCM

CHK:

SHEET NO: 2/3

APPROVED BY:

Area 4 - Existing - 49.9A CN=73

Total Distance = 2,300 ft

$$L = \frac{\sqrt{0.05}}{.4} (100) = 56 \text{ ft}$$

Sheet Flow = 56 ft $s = 5\%$ $n = 0.4$

Shallow Flow = 1694 ft $s = 3\%$ $k = 0.5$

Channel Flow = 550 ft

Hydraulic Radius = .25 (10' width x .25' deep)

Manning's $n = .05$

Channel Slope = 11%

Area 5 - Existing - 39.0 A CN=73

Total Distance = 2,100 ft

$$L = \frac{\sqrt{.03}}{.4} (100) = 43 \text{ ft}$$

Sheet Flow = 43 ft $s = 4\%$ $n = 0.4$

Shallow Flow = 657 ft $s = 4\%$ $k = 0.5$

Channel Flow = 1,400 ft

Hydraulic Radius = .25

Manning's $n = .05$

Channel Slope = 8%

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Carriage Hill Estates - Stormwater

PROJECT NAME: Existing Conditions

PROJECT NO: 04035,20 DATE: 9/27/05

BY: RCM

CHK:

SHEET NO: 1/3

APPROVED BY:

Area 6 - Existing - 32.9A CN = 73

Total Distance (T_c) = 2200 ft

$$L = \frac{\sqrt{.03}(100)}{.4} = 43 \text{ ft}$$

Sheet Flow = 43 ft $S = 3\%$ $n = 0.4$

Shallow Flow = 957 ft $S = 3\%$ $k = 0.5$

Channel Flow = 1,200 ft

Hydraulic Radius = .25

Manning's $n = .05$

Channel Slope = 12%

Area 7 - Existing - 4.5A

Total Distance = 700 ft

$$L = \frac{\sqrt{.01}(100)}{.4} = 79 \text{ ft}$$

Sheet Flow = 79 ft $S = 10\%$ $n = 0.4$

Shallow Flow = 221 ft $S = 10\%$ $k = 0.5$

Channel Flow = 400 ft

Hydraulic Radius = .25

Manning's $n = .05$

Channel Slope = 4%

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Carriage Hill Estates - Stormwater

PROJECT NAME: Existing Conditions

PROJECT NO: 04036120

DATE: 9/27/05

BY: Rem

CHK:

SHEET NO: 3/3

APPROVED BY:

Area 8 - Existing - 20.3A CN = 73

Total Distance = 1500 ft

$$L = \frac{\sqrt{.11} (100)}{0.4} = 83 \text{ ft}$$

Sheet Flow = 83 ft $s = 11\%$ $n = 0.4$

Shallow Flow = 617 ft $s = 11\%$ $k = 0.5$

Channel Flow = 800 ft

Hydraulic Radius = 0.25

Manning's $n = 0.05$

Channel Slope = 6%

Area 9 - Existing - 16.6A CN = 73

Total Distance = 1000 ft

$$L = \frac{\sqrt{.04} (100)}{0.4} = 50 \text{ ft}$$

Sheet Flow = 50 ft $s = 10\%$ $n = 0.4$

Shallow Flow = 950 ft $s = 10\%$ $k = 0.5$

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Carriage Hill Estates - Stormwater

PROJECT NAME: Existing Conditions

PROJECT NO: 04035, 20

DATE: 9/27/05

BY: RCM

CHK:

SHEET NO:

APPROVED BY:

Storm Print

User Name: richard miller
Project: Brunswick
Scenario: Area 1 - 2.4 inches - 1 Year/24 Hours

Date: 09-27-05
Time: 16:20:56
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 5.59 (cfs)
Time to Peak (Tp) = 728.00 (min)
Time of Base (Tb) = 1511.08 (min)
Volume = 0.53 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 38.34 (cfs)
Time to Peak (Tp) = 14.79 (min)
Time of Base (Tb) = 73.96 (min)
Volume = 1.04 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 13.31 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	12.50	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 22.19 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.40 (in)
Return Period = 1 (yr)
Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 1 - 2.7 inches - 2 Year/24 Hours

Date: 09-27-05
 Time: 16:24:14
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 7.84 (cfs)
 Time to Peak (Tp) = 727.00 (min)
 Time of Base (Tb) = 1511.08 (min)
 Volume = 0.70 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 38.34 (cfs)
 Time to Peak (Tp) = 14.79 (min)
 Time of Base (Tb) = 73.96 (min)
 Volume = 1.04 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 13.31 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	12.50	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 22.19 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 1 - 4.3 inches - 10 Year/24 Hours

Date: 09-27-05
 Time: 16:25:48
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 22.40 (cfs)
 Time to Peak (Tp) = 727.00 (min)
 Time of Base (Tb) = 1511.08 (min)
 Volume = 1.81 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 38.34 (cfs)
 Time to Peak (Tp) = 14.79 (min)
 Time of Base (Tb) = 73.96 (min)
 Volume = 1.04 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 13.31 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	12.50	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 22.19 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 1 - 5.9 inches - 100 Year/24 Hours

Date: 09-27-05
 Time: 16:27:08
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 39.27 (cfs)
 Time to Peak (Tp) = 726.00 (min)
 Time of Base (Tb) = 1511.08 (min)
 Volume = 3.12 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 38.34 (cfs)
 Time to Peak (Tp) = 14.79 (min)
 Time of Base (Tb) = 73.96 (min)
 Volume = 1.04 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 13.31 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	12.50	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 22.19 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 2 - 2.4 inches - 1 Year/24 Hours

Date: 09-27-05
 Time: 16:34:06
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 2.29 (cfs)
 Time to Peak (Tp) = 722.00 (min)
 Time of Base (Tb) = 1481.76 (min)
 Volume = 0.16 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 19.21 (cfs)
 Time to Peak (Tp) = 8.74 (min)
 Time of Base (Tb) = 43.69 (min)
 Volume = 0.31 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 7.86 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	3.70	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 13.11 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
Project: Brunswick
Scenario: Area 2 - 2.7 inches - 2 Year/24 Hours

Date: 09-27-05
Time: 16:35:32
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 3.19 (cfs)
Time to Peak (Tp) = 722.00 (min)
Time of Base (Tb) = 1481.76 (min)
Volume = 0.21 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 19.21 (cfs)
Time to Peak (Tp) = 8.74 (min)
Time of Base (Tb) = 43.69 (min)
Volume = 0.31 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 7.86 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	3.70	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 13.11 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.70 (in)
Return Period = 2 (yr)
Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 2 4.3 inches - 10 Year/24 Hours

Date: 09-27-05
 Time: 16:36:42
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 8.83 (cfs)
 Time to Peak (Tp) = 722.00 (min)
 Time of Base (Tb) = 1481.76 (min)
 Volume = 0.53 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 19.21 (cfs)
 Time to Peak (Tp) = 8.74 (min)
 Time of Base (Tb) = 43.69 (min)
 Volume = 0.31 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 7.86 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	3.70	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 13.11 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 2 - 5.9 inches - 100 Year/24 Hours

Date: 09-27-05
 Time: 16:37:51
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 15.35 (cfs)
 Time to Peak (Tp) = 721.00 (min)
 Time of Base (Tb) = 1481.76 (min)
 Volume = 0.92 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 19.21 (cfs)
 Time to Peak (Tp) = 8.74 (min)
 Time of Base (Tb) = 43.69 (min)
 Volume = 0.31 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 7.86 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	3.70	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 13.11 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 3 - 2.4 inches - 1 Year/24 Hours

Date: 09-27-05
 Time: 16:50:13
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 11.13 (cfs)
 Time to Peak (Tp) = 751.00 (min)
 Time of Base (Tb) = 1624.19 (min)
 Volume = 2.07 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 58.54 (cfs)
 Time to Peak (Tp) = 38.21 (min)
 Time of Base (Tb) = 191.05 (min)
 Volume = 4.12 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 34.39 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	49.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 57.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 3 - 2.7 inches - 2 Year/24 Hours

Date: 09-27-05
 Time: 16:51:27
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 15.70 (cfs)
 Time to Peak (Tp) = 751.00 (min)
 Time of Base (Tb) = 1624.19 (min)
 Volume = 2.74 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 58.54 (cfs)
 Time to Peak (Tp) = 38.21 (min)
 Time of Base (Tb) = 191.05 (min)
 Volume = 4.12 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 34.39 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	49.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 57.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 3 - 4.3 inches - 10 Year/24 Hours

Date: 09-27-05
 Time: 16:52:44
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 45.81 (cfs)
 Time to Peak (Tp) = 751.00 (min)
 Time of Base (Tb) = 1624.19 (min)
 Volume = 7.08 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 58.54 (cfs)
 Time to Peak (Tp) = 38.21 (min)
 Time of Base (Tb) = 191.05 (min)
 Volume = 4.12 (ac-ft)
 Shape Factor = 484.00
 Time Step = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 34.39 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	49.30	73

[TIME CONCENTRATION -- User Defined]
 Time of Concentration (Tc) = 57.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
Project: Brunswick
Scenario: Area 3 - 5.9 inches - 100 Year/24 Hours

Date: 09-27-05
Time: 16:54:36
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 81.12 (cfs)
Time to Peak (Tp) = 748.00 (min)
Time of Base (Tb) = 1624.19 (min)
Volume = 12.20 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 58.54 (cfs)
Time to Peak (Tp) = 38.21 (min)
Time of Base (Tb) = 191.05 (min)
Volume = 4.12 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 34.39 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	49.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 57.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 5.90 (in)
Return Period = 100 (yr)
Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 4 - 2.4 inches - 1 Year/24 Hours
 Page: 1

Date: 09-28-05
 Time: 10:58:06

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 13.41 (cfs)
 Time to Peak (Tp) = 744.00 (min)
 Time of Base (Tb) = 1584.92 (min)
 Volume = 2.11 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 75.26 (cfs)
 Time to Peak (Tp) = 30.09 (min)
 Time of Base (Tb) = 150.43 (min)
 Volume = 4.17 (ac-ft)
 Shape Factor = 484.00
 Time Step = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 27.08 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	49.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 45.13 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 4 - 2.7 inches - 2 Year/24 Hours
 Page: 1

Date: 09-28-05
 Time: 11:00:31

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 18.89 (cfs)
 Time to Peak (Tp) = 742.00 (min)
 Time of Base (Tb) = 1584.92 (min)
 Volume = 2.79 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 75.26 (cfs)
 Time to Peak (Tp) = 30.09 (min)
 Time of Base (Tb) = 150.43 (min)
 Volume = 4.17 (ac-ft)
 Shape Factor = 484.00
 Time Step = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 27.08 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	49.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 45.13 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
Project: Brunswick
Scenario: Area 4 - 4.3 inches - 10 Year/24 Hours
Page: 1

Date: 09-28-05
Time: 11:03:00

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 55.35 (cfs)
Time to Peak (Tp) = 741.00 (min)
Time of Base (Tb) = 1584.92 (min)
Volume = 7.19 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 75.26 (cfs)
Time to Peak (Tp) = 30.09 (min)
Time of Base (Tb) = 150.43 (min)
Volume = 4.17 (ac-ft)
Shape Factor = 484.00
Time Step = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 27.08 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	49.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 45.13 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 4.30 (in)
Return Period = 10 (yr)
Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
Project: Brunswick
Scenario: Area 4 - 5.9 inches - 100 Year/24 Hours
Page: 1

Date: 09-28-05
Time: 11:05:12

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 97.95 (cfs)
Time to Peak (Tp) = 741.00 (min)
Time of Base (Tb) = 1584.92 (min)
Volume = 12.39 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 75.26 (cfs)
Time to Peak (Tp) = 30.09 (min)
Time of Base (Tb) = 150.43 (min)
Volume = 4.17 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 27.08 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	49.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 45.13 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 5.90 (in)
Return Period = 100 (yr)
Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
Project: Brunswick
Scenario: Area 5 - 2.4 inches - 1 Year/24 Hours

Date: 09-28-05
Time: 11:10:25
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 15.53 (cfs)
Time to Peak (Tp) = 730.00 (min)
Time of Base (Tb) = 1523.48 (min)
Volume = 1.66 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 101.28 (cfs)
Time to Peak (Tp) = 17.47 (min)
Time of Base (Tb) = 87.36 (min)
Volume = 3.26 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 15.73 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	39.00	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 26.21 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.40 (in)
Return Period = 1 (yr)
Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 5 - 2.7 inches - 2 Year/24 Hours

Date: 09-28-05
 Time: 11:11:51
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 21.86 (cfs)
 Time to Peak (Tp) = 730.00 (min)
 Time of Base (Tb) = 1523.48 (min)
 Volume = 2.19 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 101.28 (cfs)
 Time to Peak (Tp) = 17.47 (min)
 Time of Base (Tb) = 87.36 (min)
 Volume = 3.26 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 15.73 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	39.00	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 26.21 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 5 - 4.3 inches - 10 Year/24 Hours

Date: 09-28-05
 Time: 11:12:57
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 62.78 (cfs)
 Time to Peak (Tp) = 729.00 (min)
 Time of Base (Tb) = 1523.48 (min)
 Volume = 5.65 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 101.28 (cfs)
 Time to Peak (Tp) = 17.47 (min)
 Time of Base (Tb) = 87.36 (min)
 Volume = 3.26 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 15.73 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	39.00	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 26.21 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 5 - 5.9 inches - 100 Year/24 Hours
 Page: 1

Date: 09-28-05
 Time: 11:14:15

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 110.39 (cfs)
 Time to Peak (Tp) = 729.00 (min)
 Time of Base (Tb) = 1523.48 (min)
 Volume = 9.73 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 101.28 (cfs)
 Time to Peak (Tp) = 17.47 (min)
 Time of Base (Tb) = 87.36 (min)
 Volume = 3.26 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 15.73 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	39.00	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 26.21 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
Project: Brunswick
Scenario: Area 6 - 2.4 inches - 1 Year/24 Hours

Date: 09-28-05
Time: 14:44:41
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 11.03 (cfs)
Time to Peak (Tp) = 736.00 (min)
Time of Base (Tb) = 1547.02 (min)
Volume = 1.39 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 67.01 (cfs)
Time to Peak (Tp) = 22.28 (min)
Time of Base (Tb) = 111.40 (min)
Volume = 2.75 (ac-ft)
Shape Factor = 484.00
Time Step = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 20.05 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	32.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 33.42 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.40 (in)
Return Period = 1 (yr)
Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 6 - 2.7 inches - 2 Year/24 Hours

Date: 09-28-05
 Time: 14:45:55
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 15.53 (cfs)
 Time to Peak (Tp) = 735.00 (min)
 Time of Base (Tb) = 1547.02 (min)
 Volume = 1.84 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 67.01 (cfs)
 Time to Peak (Tp) = 22.28 (min)
 Time of Base (Tb) = 111.40 (min)
 Volume = 2.75 (ac-ft)
 Shape Factor = 484.00
 Time Step = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 20.05 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	32.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 33.42 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 6 - 4.3 inches - 10 Year/24 Hours

Date: 09-28-05
 Time: 14:47:14
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 44.96 (cfs)
 Time to Peak (Tp) = 733.00 (min)
 Time of Base (Tb) = 1547.02 (min)
 Volume = 4.75 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 67.01 (cfs)
 Time to Peak (Tp) = 22.28 (min)
 Time of Base (Tb) = 111.40 (min)
 Volume = 2.75 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 20.05 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	32.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 33.42 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 6 - 5.9 inches - 100year/24 Hours

Date: 09-28-05
 Time: 14:40:35
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 79.43 (cfs)
 Time to Peak (Tp) = 733.00 (min)
 Time of Base (Tb) = 1547.02 (min)
 Volume = 8.19 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 67.01 (cfs)
 Time to Peak (Tp) = 22.28 (min)
 Time of Base (Tb) = 111.40 (min)
 Volume = 2.75 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 20.05 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	32.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 33.42 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
Project: Brunswick
Scenario: Area 7 - 2.4 inches - 1 Year/24 Hours

Date: 09-28-05
Time: 13:32:23
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 2.56 (cfs)
Time to Peak (Tp) = 724.00 (min)
Time of Base (Tb) = 1489.40 (min)
Volume = 0.19 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 19.99 (cfs)
Time to Peak (Tp) = 10.21 (min)
Time of Base (Tb) = 51.06 (min)
Volume = 0.38 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 9.19 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	4.50	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 15.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.40 (in)
Return Period = 1 (yr)
Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
Project: Brunswick
Scenario: Area 7 - 2.7 inches - 2 Year/24 Hours

Date: 09-28-05
Time: 13:34:02
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 3.55 (cfs)
Time to Peak (Tp) = 724.00 (min)
Time of Base (Tb) = 1489.40 (min)
Volume = 0.25 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 19.99 (cfs)
Time to Peak (Tp) = 10.21 (min)
Time of Base (Tb) = 51.06 (min)
Volume = 0.38 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 9.19 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	4.50	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 15.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.70 (in)
Return Period = 2 (yr)
Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 7 - 4.3 inches - 10 Year/24 Hours

Date: 09-28-05
 Time: 13:35:12
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 9.97 (cfs)
 Time to Peak (Tp) = 723.00 (min)
 Time of Base (Tb) = 1489.40 (min)
 Volume = 0.65 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 19.99 (cfs)
 Time to Peak (Tp) = 10.21 (min)
 Time of Base (Tb) = 51.06 (min)
 Volume = 0.38 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 9.19 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	4.50	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 15.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 7 - 5.9 inches - 100 Year/24 Hours

Date: 09-28-05
 Time: 13:36:35
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 17.35 (cfs)
 Time to Peak (Tp) = 722.00 (min)
 Time of Base (Tb) = 1489.40 (min)
 Volume = 1.12 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 19.99 (cfs)
 Time to Peak (Tp) = 10.21 (min)
 Time of Base (Tb) = 51.06 (min)
 Volume = 0.38 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 9.19 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	4.50	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 15.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
Project: Brunswick
Scenario: Area 8 - 2.4 inches - 1 Year/24 Hours

Date: 09-28-05
Time: 13:52:02
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 9.43 (cfs)
Time to Peak (Tp) = 727.00 (min)
Time of Base (Tb) = 1507.53 (min)
Volume = 0.86 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 65.83 (cfs)
Time to Peak (Tp) = 13.99 (min)
Time of Base (Tb) = 69.96 (min)
Volume = 1.69 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 12.59 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	20.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 20.99 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.40 (in)
Return Period = 1 (yr)
Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
Project: Brunswick
Scenario: Area 8 - 2.7 inches - 2 Year/24 Hours

Date: 09-28-05
Time: 13:53:03
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 13.21 (cfs)
Time to Peak (Tp) = 727.00 (min)
Time of Base (Tb) = 1507.53 (min)
Volume = 1.14 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 65.83 (cfs)
Time to Peak (Tp) = 13.99 (min)
Time of Base (Tb) = 69.96 (min)
Volume = 1.69 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 12.59 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	20.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 20.99 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.70 (in)
Return Period = 2 (yr)
Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 8 - 4.3 inches - 10 Year/24 Hours

Date: 09-28-05
 Time: 13:54:04
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 37.60 (cfs)
 Time to Peak (Tp) = 726.00 (min)
 Time of Base (Tb) = 1507.53 (min)
 Volume = 2.94 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 65.83 (cfs)
 Time to Peak (Tp) = 13.99 (min)
 Time of Base (Tb) = 69.96 (min)
 Volume = 1.69 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 12.59 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	20.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 20.99 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 8 - 5.9 inches - 100 Year/24 Hours

Date: 09-28-05
 Time: 13:55:07
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 65.84 (cfs)
 Time to Peak (Tp) = 726.00 (min)
 Time of Base (Tb) = 1507.53 (min)
 Volume = 5.07 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 65.83 (cfs)
 Time to Peak (Tp) = 13.99 (min)
 Time of Base (Tb) = 69.96 (min)
 Volume = 1.69 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 12.59 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	20.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 20.99 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
Project: Brunswick
Scenario: Area 9 - 2.4 inches - 1 Year/24 Hours

Date: 09-28-05
Time: 14:00:31
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 8.84 (cfs)
Time to Peak (Tp) = 725.00 (min)
Time of Base (Tb) = 1496.03 (min)
Volume = 0.71 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 66.20 (cfs)
Time to Peak (Tp) = 11.38 (min)
Time of Base (Tb) = 56.89 (min)
Volume = 1.39 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 10.24 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	16.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 17.07 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.40 (in)
Return Period = 1 (yr)
Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
Project: Brunswick
Scenario: Area 9 - 2.7 inches - 2 Year/24 Hours

Date: 09-28-05
Time: 14:01:39
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 12.30 (cfs)
Time to Peak (Tp) = 725.00 (min)
Time of Base (Tb) = 1496.03 (min)
Volume = 0.93 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 66.20 (cfs)
Time to Peak (Tp) = 11.38 (min)
Time of Base (Tb) = 56.89 (min)
Volume = 1.39 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 10.24 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	16.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 17.07 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.70 (in)
Return Period = 2 (yr)
Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 9 - 4.3 inches - 10 Year/24 Hours

Date: 09-28-05
 Time: 14:03:09
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 34.69 (cfs)
 Time to Peak (Tp) = 724.00 (min)
 Time of Base (Tb) = 1496.03 (min)
 Volume = 2.41 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 66.20 (cfs)
 Time to Peak (Tp) = 11.38 (min)
 Time of Base (Tb) = 56.89 (min)
 Volume = 1.39 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 10.24 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	16.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 17.07 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

Storm Print

User Name: richard miller
 Project: Brunswick
 Scenario: Area 9 - 5.9 inches - 100 Year/24 Hours

Date: 09-28-05
 Time: 14:04:23
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 60.56 (cfs)
 Time to Peak (Tp) = 723.00 (min)
 Time of Base (Tb) = 1496.03 (min)
 Volume = 4.15 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 66.20 (cfs)
 Time to Peak (Tp) = 11.38 (min)
 Time of Base (Tb) = 56.89 (min)
 Volume = 1.39 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 10.24 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	16.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 17.07 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

Analysis of Developed Conditions

Area 1 - existing - 11.6A CN = 73

Sheet Flow = 66' S = 7% n = 0.4

Shallow Flow = 884' S = 6% k = 0.5

Area 1A - existing - 4.0A CN = 73

Sheet Flow = 66' S = 7% n = 0.4

Shallow Flow = 334' S = 6% K = 0.5

Area 1A - developed - 4.0A CN = 83 Tc = 5 min

Area 2 - existing - 8.1A CN = 73

Sheet Flow = 43 ft S = 4% n = 0.4

Shallow Flow = 907 ft S = 4% K = 0.5

Area 2A - existing - 5.0A CN = 73

Sheet Flow = 43 ft S = 4% n = 0.4

Shallow Flow = 557 ft S = 4% K = 0.5

Area 2A - developed - 5.0A CN = 83 Tc = 5 min

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443 BROADWAY, SARATOGA SPRINGS, NY 12866, (518) 587-2550

Carriage Hill Estates - Stormwater

PROJECT NAME: Developed Conditions

PROJECT NO: 4035.20

DATE: 10/1/05

BY: RCM

CHK:

SHEET NO: 1/5

APPROVED BY:

Area 3 - Existing - 42.4A CN=73

Sheet Flow - 50' S=4% n=0.14

Shallow Flow = 2000' S=2% k=0.5

Area 3A - Existing - 8.4A CN=7.3

Sheet Flow - 50' S=4% n=0.14

Shallow Flow - 750' S=2% k=0.5

Area 3A - Developed - 8.4A CN=83 Tc=5min

Area 4 - Existing - 53.2A CN=73

Sheet Flow - 56' S=5% n=0.14

Shallow Flow - 1694' S=3% k=0.5

Channel Flow HR - .25 550ft
n - .05
S - 11%

Area 4A - Existing - 8.2A CN=73 L=300'

Sheet Flow - 56' S=5% n=0.14

Shallow Flow - 244' S=5% k=0.5

Area 4A - Developed - 8.2A CN=74 L=300'

Sheet Flow - 100' S=30% n=0.14

Shallow Flow - 200' S=30% k=0.5

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Carriage Hill Estates - Stormwater

PROJECT NAME: Developed Conditions

PROJECT NO: 4035.20

DATE: 10/1/05

BY: REM

CHK:

SHEET NO: 2/5

APPROVED BY:

Area 4B - Existing - 11.1A CN=73 L=600'

Sheet Flow - 56' S=5% n=0.4

Shallow Flow - 544' S=5% K=0.5

Area 4B - Developed - 11.1A CN=83 Tc=5min

Area 4C - Existing - 4.2A CN=73 L=400'

Sheet Flow - 56' S=5% n=0.4

Shallow Flow - 344' S=5% K=0.5

Area 4C - Developed - 4.2A CN=76

Roads - 800' x 24 = 19,200 - .44A

73 - 3.9A

98 - .5A

$$> 73 \times .89 + 98 \times .11 = 76$$

Sheet Flow - 56' S=5% n=0.4

Shallow Flow - 194' S=5% K=0.5

Channel Flow - HR= .25 L=200'

n = .085
S = 7%

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Carriage Hill Estates - Stormwater

PROJECT NAME: Developed Conditions

PROJECT NO: 4035,20

DATE: 10/11/05

BY: RCM

CHK:

SHEET NO: 3/5

APPROVED BY:

Area 6 - Existing - 24.9 A - CN=73

Sheet Flow - 43' S=3% n=0.4

Shallow Flow - 957 S=3% k=0.5

Channel Flow HR=.25 L=1,200'
n=.05
S=8%

Area 5 - Existing - 44.6 A - CN=73

Total Distance = 2,700'

Sheet Flow = 43 ft S=4% n=0.4

Shallow Flow = 1257 ft S=4% k=0.5

Channel Flow HR=.25 L=1400'
n=.05
S=8%

Area 5A - Existing - 1.3 A - CN=73 L=600'

Sheet Flow = 43' S=4% n=0.4

Shallow Flow = 557' S=4% k=0.5

Area 5A - Developed - 1.3 A - CN=98 Tc=5min

SARATOGA ASSOCIATES Landscape Architects, Architects, Engineers, and Planners, P.C.	Carriage Hill Estates - Stormwater	
	PROJECT NAME:	Developed Conditions
443 BROADWAY, SARATOGA SPRINGS, NY 12866, (518) 587-2550	PROJECT No: 4035,20	DATE: 10/1/05
	BY: RCM	CHK:
	SHEET No: 4/5	APPROVED BY:

Area 5B - Existing - 21.6A CN=73 L=800

Sheet Flow - 43' S=4% n=0.4

Shallow Flow - 757' S=4% k=0.5

Area 5B - Developed - 21.6A CN=83 Tc=5min

Area 7 - Existing - 39A CN=73

Sheet Flow - 79' S=10% n=0.4

Shallow Flow - 221' S=10% k=0.5

Channel Flow - 400' HR=,25
n=,05
S=4%

Area 8 - Existing - 20.3A CN=73

Sheet Flow - 83' S=11% n=0.4

Shallow Flow - 617' S=11% k=0.5

Channel Flow - 800' HR=,25
n=,05
S=6%

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Carriage Hill Estates - Stormwater

PROJECT NAME: Developed Condition

PROJECT NO: 4032,20

DATE: 10/1/05

BY: RCM

CHK:

SHEET NO: 5/5

APPROVED BY:

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 1 - 2.4 inches - 1 Year/24 Hours

Date: 10-01-05
 Time: 12:16:37
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 5.19 (cfs)
 Time to Peak (Tp) = 728.00 (min)
 Time of Base (Tb) = 1511.08 (min)
 Volume = 0.49 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 35.58 (cfs)
 Time to Peak (Tp) = 14.79 (min)
 Time of Base (Tb) = 73.96 (min)
 Volume = 0.97 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 13.31 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	11.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 22.19 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 1 - 2.7 inches - 2 Year/24 Hours

Date: 10-01-05
 Time: 12:17:58
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 7.27 (cfs)
 Time to Peak (Tp) = 727.00 (min)
 Time of Base (Tb) = 1511.08 (min)
 Volume = 0.65 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 35.58 (cfs)
 Time to Peak (Tp) = 14.79 (min)
 Time of Base (Tb) = 73.96 (min)
 Volume = 0.97 (ac-ft)
 Shape Factor = 484.00
 Time Step = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 13.31 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	11.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 22.19 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 1 - 4.3 inches - 10 Year/24 Hours

Date: 10-01-05
 Time: 12:19:09
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 20.79 (cfs)
 Time to Peak (Tp) = 727.00 (min)
 Time of Base (Tb) = 1511.08 (min)
 Volume = 1.68 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 35.58 (cfs)
 Time to Peak (Tp) = 14.79 (min)
 Time of Base (Tb) = 73.96 (min)
 Volume = 0.97 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 13.31 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	11.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 22.19 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 1 - 5.9 inches - 100 Year/24 Hours

Date: 10-01-05
 Time: 12:20:22
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 36.44 (cfs)
 Time to Peak (Tp) = 726.00 (min)
 Time of Base (Tb) = 1511.08 (min)
 Volume = 2.89 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 35.58 (cfs)
 Time to Peak (Tp) = 14.79 (min)
 Time of Base (Tb) = 73.96 (min)
 Volume = 0.97 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 13.31 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	11.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 22.19 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 1A - 2.4 inches - 1 Year/24 Hours

Date: 10-01-05
 Time: 12:25:27
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 2.33 (cfs)
 Time to Peak (Tp) = 723.00 (min)
 Time of Base (Tb) = 1488.28 (min)
 Volume = 0.17 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 18.52 (cfs)
 Time to Peak (Tp) = 9.80 (min)
 Time of Base (Tb) = 49.01 (min)
 Volume = 0.33 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 8.82 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	4.00	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 14.70 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 1A - 2.7 inches - 2 Year/24 Hours

Date: 10-01-05
 Time: 12:26:37
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 3.24 (cfs)
 Time to Peak (Tp) = 723.00 (min)
 Time of Base (Tb) = 1488.28 (min)
 Volume = 0.22 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 18.52 (cfs)
 Time to Peak (Tp) = 9.80 (min)
 Time of Base (Tb) = 49.01 (min)
 Volume = 0.33 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 8.82 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	4.00	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 14.70 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 1A - 4.3 inches - 10 Year/24 Hours

Date: 10-01-05
 Time: 12:27:44
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 9.02 (cfs)
 Time to Peak (Tp) = 722.00 (min)
 Time of Base (Tb) = 1488.28 (min)
 Volume = 0.58 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 18.52 (cfs)
 Time to Peak (Tp) = 9.80 (min)
 Time of Base (Tb) = 49.01 (min)
 Volume = 0.33 (ac-ft)
 Shape Factor = 484.00
 Time Step = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 8.82 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	4.00	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 14.70 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 1A - 5.9 inches - 100 Year/24 Hours

Date: 10-01-05
 Time: 12:28:49
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 15.73 (cfs)
 Time to Peak (Tp) = 722.00 (min)
 Time of Base (Tb) = 1488.28 (min)
 Volume = 1.00 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 18.52 (cfs)
 Time to Peak (Tp) = 9.80 (min)
 Time of Base (Tb) = 49.01 (min)
 Volume = 0.33 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 8.82 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	4.00	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 14.70 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 1A - 2.4 inches - 1 Year/24 Hours

Date: 10-01-05
 Time: 12:32:15
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 7.30 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 0.26 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 54.45 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.33 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	4.00	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 1A - 2.7 inches - 2 Year/24 Hours

Date: 10-01-05
 Time: 12:33:33
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 9.00 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 0.32 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 54.45 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.33 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	4.00	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 1A - 4.3 inches - 10 Year/24 Hours

Date: 10-01-05
 Time: 12:34:41
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 18.61 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 0.70 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 54.45 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.33 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	4.00	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 1A - 5.9 inches - 100 Year/24 Hours

Date: 10-01-05
 Time: 12:35:43
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 28.55 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 1.12 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 54.45 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.33 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	4.00	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 2 - 2.4 inches - 1 Year/24 Hours

Date: 10-01-05
 Time: 12:40:48
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 3.42 (cfs)
 Time to Peak (Tp) = 729.00 (min)
 Time of Base (Tb) = 1518.56 (min)
 Volume = 0.34 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 22.84 (cfs)
 Time to Peak (Tp) = 16.09 (min)
 Time of Base (Tb) = 80.45 (min)
 Volume = 0.68 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 14.48 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	8.10	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 24.14 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 2 - 2.7 inches - 2 Year/24 Hours

Date: 10-01-05
Time: 12:41:53
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 4.80 (cfs)
Time to Peak (Tp) = 729.00 (min)
Time of Base (Tb) = 1518.56 (min)
Volume = 0.45 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 22.84 (cfs)
Time to Peak (Tp) = 16.09 (min)
Time of Base (Tb) = 80.45 (min)
Volume = 0.68 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 14.48 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	8.10	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 24.14 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.70 (in)
Return Period = 2 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 2 - 4.3 inches - 10 Year/24 Hours

Date: 10-01-05
 Time: 12:42:54
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 13.76 (cfs)
 Time to Peak (Tp) = 728.00 (min)
 Time of Base (Tb) = 1518.56 (min)
 Volume = 1.17 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 22.84 (cfs)
 Time to Peak (Tp) = 16.09 (min)
 Time of Base (Tb) = 80.45 (min)
 Volume = 0.68 (ac-ft)
 Shape Factor = 484.00
 Time Step = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 14.48 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	8.10	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (TC) = 24.14 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 2 - 5.9 inches - 100 Year/24 Hours

Date: 10-01-05
 Time: 12:43:58
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 24.20 (cfs)
 Time to Peak (Tp) = 727.00 (min)
 Time of Base (Tb) = 1518.56 (min)
 Volume = 2.02 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 22.84 (cfs)
 Time to Peak (Tp) = 16.09 (min)
 Time of Base (Tb) = 80.45 (min)
 Volume = 0.68 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 14.48 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	8.10	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 24.14 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 2A - 2.4 inches - 1 Year/24 Hours

Date: 10-01-05
Time: 12:48:07
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 2.54 (cfs)
Time to Peak (Tp) = 726.00 (min)
Time of Base (Tb) = 1499.64 (min)
Volume = 0.21 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 18.59 (cfs)
Time to Peak (Tp) = 12.20 (min)
Time of Base (Tb) = 61.01 (min)
Volume = 0.42 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 10.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	5.00	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 18.30 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.40 (in)
Return Period = 1 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 2A - 2.7 inches - 2 Year/24 Hours

Date: 10-01-05
 Time: 12:49:06
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 3.55 (cfs)
 Time to Peak (Tp) = 725.00 (min)
 Time of Base (Tb) = 1499.64 (min)
 Volume = 0.28 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 18.59 (cfs)
 Time to Peak (Tp) = 12.20 (min)
 Time of Base (Tb) = 61.01 (min)
 Volume = 0.42 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 10.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	5.00	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 18.30 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 2A - 4.3 inches - 10 Year/24 Hours

Date: 10-01-05
 Time: 12:50:01
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 10.03 (cfs)
 Time to Peak (Tp) = 724.00 (min)
 Time of Base (Tb) = 1499.64 (min)
 Volume = 0.72 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 18.59 (cfs)
 Time to Peak (Tp) = 12.20 (min)
 Time of Base (Tb) = 61.01 (min)
 Volume = 0.42 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 10.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	5.00	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 18.30 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 2A - 5.9 inches - 100 Year/24 Hour

Date: 10-01-05
Time: 12:51:00
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 17.57 (cfs)
Time to Peak (Tp) = 724.00 (min)
Time of Base (Tb) = 1499.64 (min)
Volume = 1.25 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 18.59 (cfs)
Time to Peak (Tp) = 12.20 (min)
Time of Base (Tb) = 61.01 (min)
Volume = 0.42 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 10.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	5.00	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 18.30 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 5.90 (in)
Return Period = 100 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 2A - 2.4 inches - 1 Year/24 Hours

Date: 10-01-05
 Time: 13:10:37
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 9.12 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 0.32 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 68.06 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.42 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	5.00	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 2A - 2.7 inches - 2 Year/24 Hours

Date: 10-01-05
Time: 13:11:46
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
Name: Developed
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 11.25 (cfs)
Time to Peak (Tp) = 717.00 (min)
Time of Base (Tb) = 1456.39 (min)
Volume = 0.40 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
Type = SCS Curvilinear
Peak Flow (Qp) = 68.06 (cfs)
Time to Peak (Tp) = 3.33 (min)
Time of Base (Tb) = 16.67 (min)
Volume = 0.42 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	5.00	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.70 (in)
Return Period = 2 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 2A - 4.3 inches - 10 Year/24 Hours

Date: 10-01-05
 Time: 13:12:50
 Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 23.26 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 0.88 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 68.06 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.42 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	5.00	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 2A - 5.9 inches - 100 Year/24 hours

Date: 10-01-05
Time: 13:13:52
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
Name: Developed
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 35.68 (cfs)
Time to Peak (Tp) = 717.00 (min)
Time of Base (Tb) = 1456.39 (min)
Volume = 1.40 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
Type = SCS Curvilinear
Peak Flow (Qp) = 68.06 (cfs)
Time to Peak (Tp) = 3.33 (min)
Time of Base (Tb) = 16.67 (min)
Volume = 0.42 (ac-ft)
Shape Factor = 484.00
Time Step = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	5.00	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 5.90 (in)
Return Period = 100 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 3 - 2.4 inches - 1 Year/24 Hours

Date: 10-01-05
Time: 13:18:59
Page: 1

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 9.57 (cfs)
Time to Peak (Tp) = 751.00 (min)
Time of Base (Tb) = 1624.19 (min)
Volume = 1.78 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 50.35 (cfs)
Time to Peak (Tp) = 38.21 (min)
Time of Base (Tb) = 191.05 (min)
Volume = 3.54 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 34.39 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
Overall Approximation	42.40	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 57.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.40 (in)
Return Period = 1 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 3 2.7 inches - 2 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:20:02

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 13.51 (cfs)
 Time to Peak (Tp) = 751.00 (min)
 Time of Base (Tb) = 1624.19 (min)
 Volume = 2.36 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 50.35 (cfs)
 Time to Peak (Tp) = 38.21 (min)
 Time of Base (Tb) = 191.05 (min)
 Volume = 3.54 (ac-ft)
 Shape Factor = 484.00
 Time Step = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 34.39 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	42.40	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 57.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 3 - 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:20:57

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 39.40 (cfs)
 Time to Peak (Tp) = 751.00 (min)
 Time of Base (Tb) = 1624.19 (min)
 Volume = 6.09 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 50.35 (cfs)
 Time to Peak (Tp) = 38.21 (min)
 Time of Base (Tb) = 191.05 (min)
 Volume = 3.54 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 34.39 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	42.40	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 57.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 3 - 5.9 inches - 100 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 13:21:49

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 69.76 (cfs)
Time to Peak (Tp) = 748.00 (min)
Time of Base (Tb) = 1624.19 (min)
Volume = 10.50 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 50.35 (cfs)
Time to Peak (Tp) = 38.21 (min)
Time of Base (Tb) = 191.05 (min)
Volume = 3.54 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 34.39 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	42.40	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 57.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 5.90 (in)
Return Period = 100 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 3A - 2.4 inches - 1 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:27:14

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 3.21 (cfs)
 Time to Peak (Tp) = 732.00 (min)
 Time of Base (Tb) = 1530.19 (min)
 Volume = 0.35 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 20.53 (cfs)
 Time to Peak (Tp) = 18.57 (min)
 Time of Base (Tb) = 92.84 (min)
 Volume = 0.70 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 16.71 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.40	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 27.85 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 3A - 2.7 inches - 2 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:28:07

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 4.51 (cfs)
 Time to Peak (Tp) = 731.00 (min)
 Time of Base (Tb) = 1530.19 (min)
 Volume = 0.47 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 20.53 (cfs)
 Time to Peak (Tp) = 18.57 (min)
 Time of Base (Tb) = 92.84 (min)
 Volume = 0.70 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 16.71 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.40	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 27.85 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 3A - 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:28:55

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 13.00 (cfs)
 Time to Peak (Tp) = 730.00 (min)
 Time of Base (Tb) = 1530.19 (min)
 Volume = 1.21 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 20.53 (cfs)
 Time to Peak (Tp) = 18.57 (min)
 Time of Base (Tb) = 92.84 (min)
 Volume = 0.70 (ac-ft)
 Shape Factor = 484.00
 Time Step = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 16.71 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.40	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 27.85 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 3A - 5.9 inches - 100 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:29:44

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 22.88 (cfs)
 Time to Peak (Tp) = 730.00 (min)
 Time of Base (Tb) = 1530.19 (min)
 Volume = 2.09 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 20.53 (cfs)
 Time to Peak (Tp) = 18.57 (min)
 Time of Base (Tb) = 92.84 (min)
 Volume = 0.70 (ac-ft)
 Shape Factor = 484.00
 Time Step = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 16.71 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.40	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 27.85 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 3A - 2.4 inches - 1 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 13:32:31

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
Name: Developed
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 15.33 (cfs)
Time to Peak (Tp) = 717.00 (min)
Time of Base (Tb) = 1456.39 (min)
Volume = 0.54 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
Type = SCS Curvilinear
Peak Flow (Qp) = 114.35 (cfs)
Time to Peak (Tp) = 3.33 (min)
Time of Base (Tb) = 16.67 (min)
Volume = 0.70 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.40	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.40 (in)
Return Period = 1 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 3A - 2.7 inches - 2 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 13:33:25

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
Name: Developed
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 18.89 (cfs)
Time to Peak (Tp) = 717.00 (min)
Time of Base (Tb) = 1456.39 (min)
Volume = 0.67 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
Type = SCS Curvilinear
Peak Flow (Qp) = 114.35 (cfs)
Time to Peak (Tp) = 3.33 (min)
Time of Base (Tb) = 16.67 (min)
Volume = 0.70 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.40	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.70 (in)
Return Period = 2 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 3A - 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:34:13

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 39.08 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 1.47 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 114.35 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.70 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.40	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 3A - 5.9 inches - 100 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:35:12

=====

FLOOD HYDROGRAPH REPORT

=====

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 59.94 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 2.35 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 114.35 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.70 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.40	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 4 - 2.4 inches - 1 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 13:41:56

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 14.30 (cfs)
Time to Peak (Tp) = 744.00 (min)
Time of Base (Tb) = 1584.92 (min)
Volume = 2.25 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 80.24 (cfs)
Time to Peak (Tp) = 30.09 (min)
Time of Base (Tb) = 150.43 (min)
Volume = 4.44 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 27.08 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	53.20	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 45.13 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.40 (in)
Return Period = 1 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 4 - 2.7 inches - 2 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 13:42:45

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 20.14 (cfs)
Time to Peak (Tp) = 742.00 (min)
Time of Base (Tb) = 1584.92 (min)
Volume = 2.97 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 80.24 (cfs)
Time to Peak (Tp) = 30.09 (min)
Time of Base (Tb) = 150.43 (min)
Volume = 4.44 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 27.08 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	53.20	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 45.13 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.70 (in)
Return Period = 2 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4 - 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:43:34

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 59.01 (cfs)
 Time to Peak (Tp) = 741.00 (min)
 Time of Base (Tb) = 1584.92 (min)
 Volume = 7.66 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 80.24 (cfs)
 Time to Peak (Tp) = 30.09 (min)
 Time of Base (Tb) = 150.43 (min)
 Volume = 4.44 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 27.08 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	53.20	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 45.13 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4 - 5.9 inches - 100 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:44:38

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 104.43 (cfs)
 Time to Peak (Tp) = 741.00 (min)
 Time of Base (Tb) = 1584.92 (min)
 Volume = 13.21 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 80.24 (cfs)
 Time to Peak (Tp) = 30.09 (min)
 Time of Base (Tb) = 150.43 (min)
 Volume = 4.44 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 27.08 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	53.20	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 45.13 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 4A - 2.4 inches - 1 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 13:50:55

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 4.94 (cfs)
Time to Peak (Tp) = 723.00 (min)
Time of Base (Tb) = 1484.23 (min)
Volume = 0.35 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 40.36 (cfs)
Time to Peak (Tp) = 9.22 (min)
Time of Base (Tb) = 46.09 (min)
Volume = 0.68 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 8.30 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.20	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 13.83 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.40 (in)
Return Period = 1 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4A - 2.7 inches - 2 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:51:43

=====

FLOOD HYDROGRAPH REPORT

=====

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 6.84 (cfs)
 Time to Peak (Tp) = 723.00 (min)
 Time of Base (Tb) = 1484.23 (min)
 Volume = 0.46 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 40.36 (cfs)
 Time to Peak (Tp) = 9.22 (min)
 Time of Base (Tb) = 46.09 (min)
 Volume = 0.68 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 8.30 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.20	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 13.83 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4A - 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:52:30

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 19.10 (cfs)
 Time to Peak (Tp) = 722.00 (min)
 Time of Base (Tb) = 1484.23 (min)
 Volume = 1.19 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 40.36 (cfs)
 Time to Peak (Tp) = 9.22 (min)
 Time of Base (Tb) = 46.09 (min)
 Volume = 0.68 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 8.30 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.20	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 13.83 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 4A - 5.9 inches - 100 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 13:53:25

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 33.18 (cfs)
Time to Peak (Tp) = 722.00 (min)
Time of Base (Tb) = 1484.23 (min)
Volume = 2.05 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 40.36 (cfs)
Time to Peak (Tp) = 9.22 (min)
Time of Base (Tb) = 46.09 (min)
Volume = 0.68 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 8.30 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.20	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 13.83 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 5.90 (in)
Return Period = 100 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4A - 2.4 inches - 1 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:57:19

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 6.65 (cfs)
 Time to Peak (Tp) = 720.00 (min)
 Time of Base (Tb) = 1469.47 (min)
 Volume = 0.37 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 61.13 (cfs)
 Time to Peak (Tp) = 6.09 (min)
 Time of Base (Tb) = 30.44 (min)
 Volume = 0.68 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 5.48 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.20	74

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 9.13 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4A - 2.7 inches - 2 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:58:33

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 9.00 (cfs)
 Time to Peak (Tp) = 720.00 (min)
 Time of Base (Tb) = 1469.47 (min)
 Volume = 0.49 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 61.13 (cfs)
 Time to Peak (Tp) = 6.09 (min)
 Time of Base (Tb) = 30.44 (min)
 Volume = 0.68 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 5.48 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.20	74

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 9.13 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4A - 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 13:59:14

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 23.65 (cfs)
 Time to Peak (Tp) = 719.00 (min)
 Time of Base (Tb) = 1469.47 (min)
 Volume = 1.24 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 61.13 (cfs)
 Time to Peak (Tp) = 6.09 (min)
 Time of Base (Tb) = 30.44 (min)
 Volume = 0.68 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 5.48 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.20	74

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 9.13 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4A - 5.9 inches - 100 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:00:05

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 40.37 (cfs)
 Time to Peak (Tp) = 719.00 (min)
 Time of Base (Tb) = 1469.47 (min)
 Volume = 2.12 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 61.13 (cfs)
 Time to Peak (Tp) = 6.09 (min)
 Time of Base (Tb) = 30.44 (min)
 Volume = 0.68 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 5.48 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	8.20	74

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 9.13 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4B - 2.4 inches - 1 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:04:42

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 5.64 (cfs)
 Time to Peak (Tp) = 726.00 (min)
 Time of Base (Tb) = 1499.40 (min)
 Volume = 0.47 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 41.28 (cfs)
 Time to Peak (Tp) = 12.20 (min)
 Time of Base (Tb) = 61.00 (min)
 Volume = 0.93 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 10.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	11.10	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 18.30 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4B - 2.7 inches - 2 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:05:36

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 7.88 (cfs)
 Time to Peak (Tp) = 725.00 (min)
 Time of Base (Tb) = 1499.40 (min)
 Volume = 0.62 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS curvilinear
 Peak Flow (Qp) = 41.28 (cfs)
 Time to Peak (Tp) = 12.20 (min)
 Time of Base (Tb) = 61.00 (min)
 Volume = 0.93 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 10.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	11.10	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 18.30 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 4B - 4.3 inches - 10 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 14:06:39

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 22.28 (cfs)
Time to Peak (Tp) = 724.00 (min)
Time of Base (Tb) = 1499.40 (min)
Volume = 1.61 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 41.28 (cfs)
Time to Peak (Tp) = 12.20 (min)
Time of Base (Tb) = 61.00 (min)
Volume = 0.93 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 10.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	11.10	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 18.30 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 4.30 (in)
Return Period = 10 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4B - 5.9 inches - 100 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:07:56

=====

FLOOD HYDROGRAPH REPORT

=====

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 39.01 (cfs)
 Time to Peak (Tp) = 724.00 (min)
 Time of Base (Tb) = 1499.40 (min)
 Volume = 2.77 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 41.28 (cfs)
 Time to Peak (Tp) = 12.20 (min)
 Time of Base (Tb) = 61.00 (min)
 Volume = 0.93 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 10.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	11.10	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 18.30 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4B - 2.4 inches - 1 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:10:17

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 20.26 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 0.71 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS curvilinear
 Peak Flow (Qp) = 151.10 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.93 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	11.10	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4B - 2.7 inches - 2 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:11:10

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 24.97 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 0.89 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 151.10 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.93 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	11.10	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4B - 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:12:08

=====

FLOOD HYDROGRAPH REPORT

=====

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 51.64 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 1.95 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 151.10 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.93 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	11.10	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4B - 5.9 inches - 100 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:13:03

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 79.21 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 3.10 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 151.10 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.93 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	11.10	83

[TIME CONCENTRATION -- User Defined]
 Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4C - 2.4 inches - 1 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:19:01

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 2.39 (cfs)
 Time to Peak (Tp) = 724.00 (min)
 Time of Base (Tb) = 1489.40 (min)
 Volume = 0.18 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 18.66 (cfs)
 Time to Peak (Tp) = 10.21 (min)
 Time of Base (Tb) = 51.06 (min)
 Volume = 0.35 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 9.19 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	4.20	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 15.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4C - 2.7 inches - 2 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:19:56

=====

FLOOD HYDROGRAPH REPORT

=====

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 3.32 (cfs)
 Time to Peak (Tp) = 724.00 (min)
 Time of Base (Tb) = 1489.40 (min)
 Volume = 0.23 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 18.66 (cfs)
 Time to Peak (Tp) = 10.21 (min)
 Time of Base (Tb) = 51.06 (min)
 Volume = 0.35 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 9.19 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	4.20	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 15.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4C - 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:24:56

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 9.30 (cfs)
 Time to Peak (Tp) = 723.00 (min)
 Time of Base (Tb) = 1489.40 (min)
 Volume = 0.61 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 18.66 (cfs)
 Time to Peak (Tp) = 10.21 (min)
 Time of Base (Tb) = 51.06 (min)
 Volume = 0.35 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 9.19 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	4.20	73

[TIME CONCENTRATION -- User Defined]
 Time of Concentration (Tc) = 15.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 4C - 5.9 inches - 100 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 14:25:54

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 16.19 (cfs)
Time to Peak (Tp) = 722.00 (min)
Time of Base (Tb) = 1489.40 (min)
Volume = 1.05 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 18.66 (cfs)
Time to Peak (Tp) = 10.21 (min)
Time of Base (Tb) = 51.06 (min)
Volume = 0.35 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 9.19 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	4.20	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 15.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 5.90 (in)
Return Period = 100 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4C - 2.4 inches - 1 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:27:51

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 3.29 (cfs)
 Time to Peak (Tp) = 723.00 (min)
 Time of Base (Tb) = 1486.59 (min)
 Volume = 0.22 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 20.21 (cfs)
 Time to Peak (Tp) = 9.43 (min)
 Time of Base (Tb) = 47.16 (min)
 Volume = 0.35 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 8.49 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	4.20	76

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 14.15 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 4C - 2.7 inches - 2 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 14:28:43

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
Name: Developed
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 4.36 (cfs)
Time to Peak (Tp) = 723.00 (min)
Time of Base (Tb) = 1486.59 (min)
Volume = 0.28 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
Type = SCS Curvilinear
Peak Flow (Qp) = 20.21 (cfs)
Time to Peak (Tp) = 9.43 (min)
Time of Base (Tb) = 47.16 (min)
Volume = 0.35 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 8.49 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	4.20	76

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 14.15 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.70 (in)
Return Period = 2 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 4C - 4.3 inches - 10 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 14:29:27

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
Name: Developed
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 11.00 (cfs)
Time to Peak (Tp) = 722.00 (min)
Time of Base (Tb) = 1486.59 (min)
Volume = 0.68 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
Type = SCS Curvilinear
Peak Flow (Qp) = 20.21 (cfs)
Time to Peak (Tp) = 9.43 (min)
Time of Base (Tb) = 47.16 (min)
Volume = 0.35 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 8.49 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	4.20	76

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 14.15 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 4.30 (in)
Return Period = 10 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 4C - 5.9 inches - 100 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:30:15

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 18.41 (cfs)
 Time to Peak (Tp) = 722.00 (min)
 Time of Base (Tb) = 1486.59 (min)
 Volume = 1.15 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 20.21 (cfs)
 Time to Peak (Tp) = 9.43 (min)
 Time of Base (Tb) = 47.16 (min)
 Volume = 0.35 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 8.49 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	4.20	76

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 14.15 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Develo

ped
 Scenario: AREA ~~85~~ 2.4 inches - 1 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:41:49

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 15.48 (cfs)
 Time to Peak (Tp) = 734.00 (min)
 Time of Base (Tb) = 1543.16 (min)
 Volume = 1.89 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 95.51 (cfs)
 Time to Peak (Tp) = 21.19 (min)
 Time of Base (Tb) = 105.94 (min)
 Volume = 3.72 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 19.07 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	44.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 31.78 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA ~~86~~ 2.7 inches - 2 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:42:41

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 21.82 (cfs)
 Time to Peak (Tp) = 734.00 (min)
 Time of Base (Tb) = 1543.16 (min)
 Volume = 2.50 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 95.51 (cfs)
 Time to Peak (Tp) = 21.19 (min)
 Time of Base (Tb) = 105.94 (min)
 Volume = 3.72 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 19.07 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	44.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (TC) = 31.78 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 85 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:43:22

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 63.19 (cfs)
 Time to Peak (Tp) = 733.00 (min)
 Time of Base (Tb) = 1543.16 (min)
 Volume = 6.45 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 95.51 (cfs)
 Time to Peak (Tp) = 21.19 (min)
 Time of Base (Tb) = 105.94 (min)
 Volume = 3.72 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 19.07 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	44.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 31.78 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA ~~BS~~ 5.9 inches - 100 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:44:17

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 111.42 (cfs)
 Time to Peak (Tp) = 732.00 (min)
 Time of Base (Tb) = 1543.16 (min)
 Volume = 11.11 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 95.51 (cfs)
 Time to Peak (Tp) = 21.19 (min)
 Time of Base (Tb) = 105.94 (min)
 Volume = 3.72 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 19.07 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	44.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 31.78 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA ~~6A~~ - 2.4 inches - 1 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:48:39

SA

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 0.66 (cfs)
 Time to Peak (Tp) = 726.00 (min)
 Time of Base (Tb) = 1499.64 (min)
 Volume = 0.05 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 4.83 (cfs)
 Time to Peak (Tp) = 12.20 (min)
 Time of Base (Tb) = 61.01 (min)
 Volume = 0.11 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 10.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	1.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 18.30 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA SA - 2.7 inches - 2 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 14:49:31

SA

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 0.92 (cfs)
Time to Peak (Tp) = 725.00 (min)
Time of Base (Tb) = 1499.64 (min)
Volume = 0.07 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 4.83 (cfs)
Time to Peak (Tp) = 12.20 (min)
Time of Base (Tb) = 61.01 (min)
Volume = 0.11 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 10.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	1.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 18.30 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.70 (in)
Return Period = 2 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA SA - 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:50:22

SA

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 2.61 (cfs)
 Time to Peak (Tp) = 724.00 (min)
 Time of Base (Tb) = 1499.64 (min)
 Volume = 0.19 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 4.83 (cfs)
 Time to Peak (Tp) = 12.20 (min)
 Time of Base (Tb) = 61.01 (min)
 Volume = 0.11 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 10.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	1.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 18.30 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA ~~SA~~ - 5.9 inches - 100 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:51:16

SA

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 4.57 (cfs)
 Time to Peak (Tp) = 724.00 (min)
 Time of Base (Tb) = 1499.64 (min)
 Volume = 0.32 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 4.83 (cfs)
 Time to Peak (Tp) = 12.20 (min)
 Time of Base (Tb) = 61.01 (min)
 Volume = 0.11 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 10.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	1.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 18.30 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA ~~6A~~ - 2.4 inches - 1 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:58:12

SA

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 4.51 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 0.20 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 17.70 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.11 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	1.30	98

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA ~~SA~~ - 2.7 inches - 2 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:59:09

SA

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 5.09 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 0.23 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 17.70 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.11 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	1.30	98

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA ~~SA~~ - 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 15:00:42

SA

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 8.18 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 0.38 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS curvilinear
 Peak Flow (Qp) = 17.70 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 0.11 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	1.30	98

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA SA - 5.9 inches -100 Year/24 Hours
Page: 1
SA

Date: 10-01-05
Time: 15:01:33

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
Name: Developed
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 11.26 (cfs)
Time to Peak (Tp) = 717.00 (min)
Time of Base (Tb) = 1456.39 (min)
Volume = 0.53 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
Type = SCS Curvilinear
Peak Flow (Qp) = 17.70 (cfs)
Time to Peak (Tp) = 3.33 (min)
Time of Base (Tb) = 16.67 (min)
Volume = 0.11 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	1.30	98

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 5.90 (in)
Return Period = 100 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA ~~68~~ - 2.4 inches - 1 Year/24 Hours
 Page: 1
 CB

Date: 10-01-05
 Time: 15:06:04

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 9.83 (cfs)
 Time to Peak (Tp) = 727.00 (min)
 Time of Base (Tb) = 1510.90 (min)
 Volume = 0.92 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 67.95 (cfs)
 Time to Peak (Tp) = 14.42 (min)
 Time of Base (Tb) = 72.12 (min)
 Volume = 1.80 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 12.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	21.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 21.64 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA ~~68~~ - 2.7 inches -2 Year/24 Hours
Page: 1
SB

Date: 10-01-05
Time: 15:06:56

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 13.81 (cfs)
Time to Peak (Tp) = 727.00 (min)
Time of Base (Tb) = 1510.90 (min)
Volume = 1.21 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 67.95 (cfs)
Time to Peak (Tp) = 14.42 (min)
Time of Base (Tb) = 72.12 (min)
Volume = 1.80 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 12.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	21.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 21.64 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.70 (in)
Return Period = 2 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA ~~68~~ - 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 15:07:40

SB

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 39.30 (cfs)
 Time to Peak (Tp) = 726.00 (min)
 Time of Base (Tb) = 1510.90 (min)
 Volume = 3.13 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 67.95 (cfs)
 Time to Peak (Tp) = 14.42 (min)
 Time of Base (Tb) = 72.12 (min)
 Volume = 1.80 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 12.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	21.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (TC) = 21.64 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA ~~58~~ - 5.9 inches - 100 Year/ 24 Hours
 Page: 1

Date: 10-01-05
 Time: 15:08:37

SB

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 68.97 (cfs)
 Time to Peak (Tp) = 726.00 (min)
 Time of Base (Tb) = 1510.90 (min)
 Volume = 5.39 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 67.95 (cfs)
 Time to Peak (Tp) = 14.42 (min)
 Time of Base (Tb) = 72.12 (min)
 Volume = 1.80 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 12.98 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	21.60	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 21.64 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 68 - 2.4 inches - 1 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 15:10:20

SB

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 39.42 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 1.39 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 294.03 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 1.81 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	21.60	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA ~~6B~~ - 2.7 inches - 2 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 15:11:21

58

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 48.59 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 1.74 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 294.03 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 1.81 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	21.60	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Develo]ped
 Scenario: AREA ~~of~~ 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 15:12:11

SB

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Develo]ped
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 100.50 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 3.79 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 294.03 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 1.81 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	21.60	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA ~~58~~ - 5.9 inches - 100 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 15:13:07

5B

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 2
 Name: Developed
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 154.14 (cfs)
 Time to Peak (Tp) = 717.00 (min)
 Time of Base (Tb) = 1456.39 (min)
 Volume = 6.04 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 2
 Type = SCS Curvilinear
 Peak Flow (Qp) = 294.03 (cfs)
 Time to Peak (Tp) = 3.33 (min)
 Time of Base (Tb) = 16.67 (min)
 Volume = 1.81 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 3.00 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	21.60	83

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 5.00 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 5/6 2.4 inches - 1 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:34:55

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 9.32 (cfs)
 Time to Peak (Tp) = 732.00 (min)
 Time of Base (Tb) = 1533.56 (min)
 Volume = 1.06 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 59.39 (cfs)
 Time to Peak (Tp) = 19.02 (min)
 Time of Base (Tb) = 95.12 (min)
 Volume = 2.08 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 17.12 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	24.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 28.54 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.40 (in)
 Return Period = 1 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 86 2.7 inches - 2 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:35:52

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 13.13 (cfs)
 Time to Peak (Tp) = 731.00 (min)
 Time of Base (Tb) = 1533.56 (min)
 Volume = 1.40 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 59.39 (cfs)
 Time to Peak (Tp) = 19.02 (min)
 Time of Base (Tb) = 95.12 (min)
 Volume = 2.08 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 17.12 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	24.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 28.54 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA ~~76~~ 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 14:38:17

=====

FLOOD HYDROGRAPH REPORT

=====

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 37.91 (cfs)
 Time to Peak (Tp) = 731.00 (min)
 Time of Base (Tb) = 1533.56 (min)
 Volume = 3.60 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 59.39 (cfs)
 Time to Peak (Tp) = 19.02 (min)
 Time of Base (Tb) = 95.12 (min)
 Volume = 2.08 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 17.12 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	24.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 28.54 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 36 5.9 inches - 100 Year/ 24 Hours
Page: 1

Date: 10-01-05
Time: 14:36:41

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 66.81 (cfs)
Time to Peak (Tp) = 730.00 (min)
Time of Base (Tb) = 1533.56 (min)
Volume = 6.21 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 59.39 (cfs)
Time to Peak (Tp) = 19.02 (min)
Time of Base (Tb) = 95.12 (min)
Volume = 2.08 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 17.12 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	24.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 28.54 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 5.90 (in)
Return Period = 100 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 7 - 2.4 inches - 1 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 15:17:25

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 2.22 (cfs)
Time to Peak (Tp) = 724.00 (min)
Time of Base (Tb) = 1489.40 (min)
Volume = 0.16 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 17.33 (cfs)
Time to Peak (Tp) = 10.21 (min)
Time of Base (Tb) = 51.06 (min)
Volume = 0.33 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 9.19 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	3.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 15.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.40 (in)
Return Period = 1 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 7 - 2.4 inches - 2 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 15:18:13

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 3.08 (cfs)
 Time to Peak (Tp) = 724.00 (min)
 Time of Base (Tb) = 1489.40 (min)
 Volume = 0.22 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 17.33 (cfs)
 Time to Peak (Tp) = 10.21 (min)
 Time of Base (Tb) = 51.06 (min)
 Volume = 0.33 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 9.19 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	3.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 15.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 7 - 4.3 inches - 10 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 15:19:07

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 8.64 (cfs)
 Time to Peak (Tp) = 723.00 (min)
 Time of Base (Tb) = 1489.40 (min)
 Volume = 0.56 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 17.33 (cfs)
 Time to Peak (Tp) = 10.21 (min)
 Time of Base (Tb) = 51.06 (min)
 Volume = 0.33 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 9.19 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	3.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 15.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 4.30 (in)
 Return Period = 10 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 7 - 5.9 inches - 100 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 15:19:57

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 15.04 (cfs)
 Time to Peak (Tp) = 722.00 (min)
 Time of Base (Tb) = 1489.40 (min)
 Volume = 0.97 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS curvilinear
 Peak Flow (Qp) = 17.33 (cfs)
 Time to Peak (Tp) = 10.21 (min)
 Time of Base (Tb) = 51.06 (min)
 Volume = 0.33 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 9.19 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	3.90	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 15.32 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 8 - 2.4 inches - 1 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 15:23:12

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 10.59 (cfs)
Time to Peak (Tp) = 725.00 (min)
Time of Base (Tb) = 1496.71 (min)
Volume = 0.86 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS Curvilinear
Peak Flow (Qp) = 78.58 (cfs)
Time to Peak (Tp) = 11.72 (min)
Time of Base (Tb) = 58.61 (min)
Volume = 1.69 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 10.55 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	20.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 17.58 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 2.40 (in)
Return Period = 1 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 8 - 2.7 inches - 2 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 15:23:58

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 14.76 (cfs)
 Time to Peak (Tp) = 725.00 (min)
 Time of Base (Tb) = 1496.71 (min)
 Volume = 1.14 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 78.58 (cfs)
 Time to Peak (Tp) = 11.72 (min)
 Time of Base (Tb) = 58.61 (min)
 Volume = 1.69 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 10.55 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	20.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 17.58 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 2.70 (in)
 Return Period = 2 (yr)
 Storm Duration = 24.00 (hr)

User Name: richard miller
Project: CHE Developed
Scenario: AREA 8 - 4.3 inches - 10 Year/24 Hours
Page: 1

Date: 10-01-05
Time: 15:24:47

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
Name: Existing
Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 41.73 (cfs)
Time to Peak (Tp) = 724.00 (min)
Time of Base (Tb) = 1496.71 (min)
Volume = 2.94 (ac-ft)
Time Step = 1.00 (min)
Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
Type = SCS curvilinear
Peak Flow (Qp) = 78.58 (cfs)
Time to Peak (Tp) = 11.72 (min)
Time of Base (Tb) = 58.61 (min)
Volume = 1.69 (ac-ft)
Shape Factor = 484.00
Time Step: = 1.00 (min)
Excess Rain = 1.00 (in)
Lag Time = 10.55 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	20.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 17.58 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
Total Precipitation = 4.30 (in)
Return Period = 10 (yr)
Storm Duration = 24.00 (hr)

User Name: richard miller
 Project: CHE Developed
 Scenario: AREA 8 - 5.9 inches - 100 Year/24 Hours
 Page: 1

Date: 10-01-05
 Time: 15:25:36

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 1
 Name: Existing
 Type: Computed Flood

[HYDROGRAPH INFORMATION]

Peak Flow (Qp) = 72.85 (cfs)
 Time to Peak (Tp) = 724.00 (min)
 Time of Base (Tb) = 1496.71 (min)
 Volume = 5.07 (ac-ft)
 Time Step = 1.00 (min)
 Flow Multiplier = 1.00

[UNIT HYDROGRAPH INFORMATION]

Number = 1
 Type = SCS Curvilinear
 Peak Flow (Qp) = 78.58 (cfs)
 Time to Peak (Tp) = 11.72 (min)
 Time of Base (Tb) = 58.61 (min)
 Volume = 1.69 (ac-ft)
 Shape Factor = 484.00
 Time Step: = 1.00 (min)
 Excess Rain = 1.00 (in)
 Lag Time = 10.55 (min)

[BASIN INFORMATION]

[WEIGHTED WATERSHED AREA]

Description	Area	CN
<None>		
Overall Approximation	20.30	73

[TIME CONCENTRATION -- User Defined]

Time of Concentration (Tc) = 17.58 (min)

[RAINFALL DESCRIPTION]

Distribution Type = SCS II
 Total Precipitation = 5.90 (in)
 Return Period = 100 (yr)
 Storm Duration = 24.00 (hr)

Summary of Results

Area 1

existing - 11.6A

1 yr - 5.19 cfs

2 yr - 7.27

10 yr - 20.79

100 yr - 36.44

Area 1A

existing - 4.0A

1 yr - 2.33

2 yr - 3.24

10 yr - 9.02

100 yr - 15.73

developed - 4.0A

7.30

9.00

18.61

28.55

Area 1 - developed - 11.6A

1 yr - 10.16

2 yr - 13.03

10 yr - 30.38

100 yr - 49.26

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Carridge Hill Estates - Stormwater

PROJECT NAME: Summary - Developed

PROJECT No: 4035-201 DATE: 10/2/05

BY: RCM

CHK:

SHEET No: 1/ APPROVED BY:

Area 2

Existing - 8,1A

1 yr - 3,42

2 yr - 4,80

10 yr - 13,76

100 yr - 24,20

Area 2A - 5,0A
existing

1 yr - 2,54

2 yr - 3,55

10 yr - 10,03

100 yr - 17,57

developed

9,12

11,25

23,26

35,68

Area 2 - developed

1 yr - 10,0

2 yr - 12,5

10 yr - 26,99

100 yr - 42,31

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Carrage Hill Estates - Stormwater

PROJECT NAME: Summary - Developed

PROJECT No: 4035,20

DATE:

BY: RCM

CHK:

SHEET No: 2/

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Area 3 - 42.4A
Existing

1yr - 9.57

2yr - 13.51

10yr - 39.40

100yr - 69.76

Area 3A - 8.4A

existing

developed

1yr - 3.21

15.33

2yr - 4.51

18.89

10yr - 13.00

39.08

100yr - 22.88

89.94

Area 3 - developed

1yr - 21.69

2yr - 27.89

10yr - 65.48

100yr - 106.82

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Carriage Hill Estates - Stormwater

PROJECT NAME: Summary Developed

PROJECT No: 4035.20

DATE:

BY: REM

CHK:

SHEET No: 3/

APPROVED BY:

Area 4 - 53.2A

	Existing	8.2 4A	11.1 4B	4.2 4C
1 yr -	14.30	4.94	5.64	2.39
2 yr -	20.14	6.84	7.88	3.32
10 yr -	59.01	19.10	22.28	9.30
100 yr -	104.43	33.18	39.01	16.19

Developed	8.2 4A	11.1 4B	4.2 4C
1 yr -	6.65	20.26	3.29
2 yr -	9.00	24.97	4.36
10 yr -	23.65	51.64	11.00
100 yr -	40.37	79.21	18.41

Area 4 - Developed

1 yr -	31.53
2 yr -	40.43
10 yr -	94.62
100 yr -	154.04

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Carrriage Hill Estates - Stormwater

PROJECT NAME: Summary Developed

PROJECT NO: 4035, 20

DATE: 10/2/05

BY: RCM

CHK:

SHEET NO: 4/

APPROVED BY:

Area 5 - 44.6A

	Existing	5A	5B
1yr -	15.48	0.66	9.83
2yr -	21.82	0.92	13.81
10yr -	63.19	2.61	39.30
100yr -	111.42	4.57	68.97

	1.3 5A	21.6 5B
Developed		
1yr -	4.51	39.42
2yr -	5.09	48.59
10yr -	8.18	100.50
100yr -	11.26	154.14

Area 5 - Developed

1yr -	48.92
2yr -	33.59
10yr -	129.96
100yr -	203.28

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Carriage Hill Estates - Stormwater

PROJECT NAME: Summary Developed

PROJECT No: 4038.20

DATE: 10/2/05

BY: REM

CHK:

SHEET No:

APPROVED BY:

Area 6 - 24.9A

Developed

1 yr - 9.32

2 yr - 13.13

10 yr - 37.91

100 yr - 66.81

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Carriage Hill Estates - Stormwater

PROJECT NAME: Summary Developed

PROJECT NO: 4088120

DATE: 10/2/05

BY: RCM

CHK:

SHEET NO:

APPROVED BY:

Area 7 - Developed

1 yr - 2.22

2 yr - 3.08

10 yr - 8.64

100 yr - 15.04

Area 8 - Developed

1 yr - 10.59 cfs

2 yr - 14.76

10 yr - 41.73

100 yr - 72.85

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PROJECT NAME:

PROJECT NO:

BY:

SHEET NO:

DATE:

CHK:

APPROVED BY:

WQv Calculations

WQ_v Calculations

$$WQ_v = (C P \times R_v \times A) / 12 \quad P = 0.95$$

$$R_v = 0.05 + 0.009(I)$$

A = acres

↑ % Impervious
cover

$$\text{Area 1A} - (0.95 \times 0.419 \times 4) / 12$$

$$WQ_v = 0.133 \text{ acre ft} - 5780 \text{ cf}$$

$$\text{Area 2A} - (0.95 \times 0.365 \times 5) / 12$$

$$WQ_v = 0.145 \text{ acre ft} = 6294 \text{ cf}$$

$$\text{Area 3A} - (0.95 \times 0.392 \times 8.14) / 12$$

$$WQ_v = 0.261 \text{ acre ft} - 11,355 \text{ cf}$$

$$\text{Area 4A} - (0.95 \times 0.293 \times 8.2) / 12$$

$$WQ_v = 0.190 \text{ acre ft} - 8,288 \text{ cf}$$

$$\text{Area 4B} - (0.95 \times 0.509 \times 11.1) / 12$$

$$WQ_v = 0.447 \text{ acre ft} - 19,484 \text{ cf}$$

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Carriage Hill Estates - Stormwater

PROJECT NAME: WQ_v - Calculations

PROJECT NO: 4035.20

DATE: 10/2/05

BY: Rem

CHK:

SHEET NO:

1/2

APPROVED BY:

$$\underline{\text{Area 4C}} - (1.95 \times 0.2 \times 4.2) / 12$$

$$\text{WQv} = .0665 \text{ acreft} - 2897 \text{ cf}$$

$$\underline{\text{Area 5A}} - (1.95 \times 0.991 \times 1.3) / 12$$

$$\text{WQv} = .051 \text{ acreft} - 2201 \text{ cf}$$

$$\underline{\text{Area 5B}} - (1.95 \times 0.275 \times 21.6) / 12$$

$$\text{WQv} = .470 \text{ acreft} - 20,484 \text{ cf}$$

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Carriage Hill Estates - Stormwater

PROJECT NAME: WQv Calculations

PROJECT NO: 4035.20

DATE: 10/2/05

BY: *RCh*

CHK:

SHEET NO: 2/2

APPROVED BY:

Storage Volume Calculations

Storage Volume Calculations

$$V_s = \frac{(V_s/V_r)(Q_d)(A)}{12}$$

Q_d = post developed runoff for the design storm

A = drainage Area

q_o = peak outflow

q_i = peak inflow

Area 1 A

1 yr - $q_o = 2.33$ $q_i = 7.30$

$$\frac{2.33}{7.30} = 0.32$$

$$V_s/V_r = 0.37$$

$$V_s = \frac{0.37(0.78)(4)}{12} = 0.0962 \text{ ac-ft} = 4191 \text{ cf.}$$

$$Q = V_o / A / 43560 / 12 = 11326 / 4 / 43560 / 12 = 2832 / 3630 = 0.78''$$

10 yr - $q_o = 9.02$ $q_i = 18.61$

$$\frac{9.02}{18.61} = 0.49$$

$$V_s/V_r = 0.28$$

$$Q = \left[\frac{30492}{4} \right] / \left(\frac{43560}{12} \right) = 2.1''$$

7623 3630

$$V_s = \frac{(0.28)(2.1)(4)}{12} = 0.196 \rightarrow 8537 \text{ cf.}$$

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Carriage Hill Estates - Stormwater

PROJECT NAME: Storage Volumes

PROJECT NO: 4035120

DATE: 10/2/05

BY: REM

CHK:

SHEET NO: 1/9

APPROVED BY:

$$100 \text{ yr} - q_0 = 15.73 \quad q_1 = 28.55 \quad \frac{15.73}{28.55} = .55$$

$$V_s/V_r = .26$$

$$Q = (48787/4) / 3630 = 3.36''$$

$$V_s = \frac{(.26)(3.36)(4)}{12} = .2912 \rightarrow 12685 \text{ cf.}$$

$$CP_v = 4191 \text{ cf}$$

$$Q_p = 8537 \text{ cf}$$

$$Q_t = 12685 \text{ cf}$$

Area 2A

$$1 \text{ yr} - q_0 = 2.54 \quad q_1 = 9.12 \quad \frac{2.54}{9.12} = .28$$

$$V_s/V_r = .39$$

$$Q = (13939/5) / 3630 = .77''$$

$$V_s = \frac{(.39)(.77)(5)}{12} = .125 \rightarrow 5450 \text{ cf.}$$

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Carriage Hill Estates - Stormwater

PROJECT NAME: Storage Volumes

PROJECT NO: 4035,20

DATE: 10/2/05

BY: REN

CHK:

SHEET NO: 2/9

APPROVED BY:

$$10 \text{ yr} = q_0 = 10.03 \quad q_1 = 23.26 \quad \frac{10.03}{23.26} = 0.43$$

$$V_s/Y_r = 0.31$$

$$Q = (38332/5) / 3630 = 2.11''$$

$$V_s = \frac{(0.31)(2.11)(5)}{12} = 0.273 - 11871 \text{ cf.}$$

$$100 \text{ yr} = q_0 = 17.57 \quad q_1 = 35.68 \quad \frac{17.57}{35.68} = 0.49$$

$$V_s/Y_r = 0.28$$

$$Q = (60984/5) / 3630 = 3.36''$$

$$V_s = \frac{(0.28)(3.36)(5)}{12} = 0.392 - 17,075 \text{ cf}$$

$$C P_y = 5450 \text{ cf}$$

$$Q_p = 11871 \text{ cf}$$

$$Q_t = 17075 \text{ cf}$$

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Carnage Hill Estates - Stormwater

PROJECT NAME: Storage Volume

PROJECT No: 4035,20

DATE: 10/2/05

BY: REM

CHK:

SHEET No: 3/9

APPROVED BY:

Area 3A

$$1 \text{ yr} - q_0 = 3.21 \quad q_1 = 15.33 \quad \frac{3.21}{15.33} = .21$$

$$V_s/V_r = .44$$

$$Q = (23522/8.4) / 3630 = .77''$$

$$V_s = \frac{(644)(.77)(8.4)}{12} = .237 - 10330 \text{ cf}$$

$$10 \text{ yr} - q_0 = 13.00 \quad q_1 = 39.08 \quad \frac{13.00}{39.08} = .33$$

$$V_s/V_r = .36$$

$$Q = (64033/8.4) / 3630 = 2.1''$$

$$V_s = \frac{(.36)(2.1)(8.4)}{12} = .529 - 23052 \text{ cf}$$

$$100 \text{ yr} - q_0 = 22.88 \quad q_1 = 59.94 \quad \frac{22.88}{59.94} = .38$$

$$V_s/V_r = .33$$

$$Q = (102366/8.4) / 3630 = 3.35''$$

$$V_s = \frac{(.33)(3.35)(8.4)}{12} = .774 - 33709 \text{ cf}$$

$$C_P = 10330 \text{ cf}$$

$$Q_P = 23052 \text{ cf}$$

$$Q_f = 33709 \text{ cf}$$

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Carriage Hill Estates

PROJECT NAME: Storage Volume

PROJECT NO: 4035.20

DATE: 10/2/05

BY: Rem

CHK:

SHEET NO: 4/9

APPROVED BY:

Area 4A

$$1yr - q_0 = 4.94 \quad q_1 = 6.65 \quad \frac{4.94}{6.65} = 0.74$$

$$V_s/V_r = 0.2$$

$$Q = (16117/8.2)/3630 = 0.54$$

$$V_s = \frac{(0.2)(0.54)(8.2)}{12} = 0.074 - 3215cf$$

$$10yr - q_0 = 19.10 \quad q_1 = 23.65 \quad \frac{19.10}{23.65} = 0.81$$

$$V_s/V_r = 0.18$$

$$Q = (54014/8.2)/3630 = 1.81''$$

$$V_s = \frac{(0.18)(1.81)(8.2)}{12} = 0.223 - 9698cf$$

$$100yr - q_0 = 33.18 \quad q_1 = 40.37 \quad \frac{33.18}{40.37} = 0.82$$

$$V_s/V_r = 0.18$$

$$Q = (92347/8.2)/3630 = 3.10''$$

$$V_s = \frac{(0.18)(3.10)(8.2)}{12} = 0.381 - 16609cf$$

$$C_{Pv} = 3215cf$$

$$Q_p = 9698cf$$

$$Q_f = 16609cf$$

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Carrige Hill Estates - Stormwater

PROJECT NAME: Storage Volumes

PROJECT NO: 4038.200

DATE: 10/2/05

BY: RCM

CHK:

SHEET NO: 5/9

APPROVED BY:

Area 4 B

1 yr - $q_0 = 5.64$ $q_1 = 20.26$ $\frac{5.64}{20.26} = .28$
 $V_s/V_r = .39$

$$Q = (30928/11.1) / 3630 = .77$$

$$V_s = \frac{(.39)(.77)(11.1)}{12} = .278 - 12100 \text{ cf}$$

10 yr - $q_0 = 22.28$ $q_1 = 51.64$ $\frac{22.28}{51.64} = .43$

$$V_s/V_r = .31$$

$$Q = (84942/11.1) / 3630 = 2.11$$

$$V_s = \frac{(.31)(2.11)(11.1)}{12} = .605 - 26356 \text{ cf}$$

100 yr - $q_0 = 39.01$ $q_1 = 79.21$ $\frac{39.01}{79.21} = .49$

$$V_s/V_r = .28$$

$$Q = (135036/11.1) / 3630 = 3.35$$

$$V_s = \frac{(.28)(3.35)(11.1)}{12} = .868 - 37795 \text{ cf}$$

$$C_{Pv} = 12100 \text{ cf}$$

$$Q_p = 26556 \text{ cf}$$

$$Q_f = 37795 \text{ cf}$$

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Carriage Hill Estates - Stormwater

PROJECT NAME: Storage Volumes

PROJECT NO: 408520

DATE: 10/2/05

BY: *DEM*

CHK:

SHEET NO: 6/9

APPROVED BY:

Area 4C

1 yr - $q_0 = 2.39$ $q_1 = 3.29$ $\frac{2.39}{3.29} = 0.73$

$V_s/V_r = 0.2$

$Q = (9583/4.2)/3630 = 0.63$

$V_s = \frac{(0.2)(0.63)(4.2)}{12} = 0.0441 - 1921 \text{ cf}$

10 yr - $q_0 = 9.30$ $q_1 = 11.00$ $\frac{9.30}{11.00} = 0.84$

$V_s/V_r = 0.17$

$Q = (29621/4.2)/3630 = 1.94$

$V_s = \frac{(0.17)(1.94)(4.2)}{12} = 0.1154 - 5028 \text{ cf}$

100 yr - $q_0 = 16.19$ $q_1 = 18.41$ $\frac{16.19}{18.41} = 0.87$

$V_s/V_r = 0.17$

$Q = (50094/4.2)/3630 = 3.29$

$V_s = \frac{(0.17)(3.29)(4.2)}{12} = 0.196 - 8527 \text{ cf}$

$C_{Pv} = 1921 \text{ cf}$

$Q_P = 5028 \text{ cf}$

$Q_f = 8527 \text{ cf}$

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Carriaget Hill Estates - Stormwater

PROJECT NAME: Storage Volumes

PROJECT NO: 4035.20

DATE: 10/2/05

BY: REM

CHK:

SHEET NO: 7/

APPROVED BY:

Area 5A

1yr - $q_0 = 0.66$ $q_1 = 4.51$ $\frac{0.66}{4.51} = .15$
 $V_s/V_r = .5$

$$Q = (8712/1.3)/3630 = 1.85''$$

$$V_s = \frac{(0.5)(1.85)(1.3)}{12} = .100 - 4365 \text{ cf}$$

10yr - $q_0 = 2.61$ $q_1 = 8.18$ $\frac{2.61}{8.18} = .32$
 $V_s/V_r = .37$

$$Q = (16553/1.3)/3630 = 3.51''$$

$$V_s = \frac{(0.37)(3.51)(1.3)}{12} = .141 - 6129 \text{ cf}$$

100yr - $q_0 = 4.57$ $q_1 = 11.26$ $\frac{4.57}{11.26} = .41$
 $V_s/V_r = .32$

$$Q = (23087/1.3)/3630 = 4.89''$$

$$V_s = \frac{(0.32)(4.89)(1.3)}{12} = .169 - 7384 \text{ cf}$$

$$C_{P_y} = 4365 \text{ cf}$$

$$Q_P = 6129 \text{ cf}$$

$$Q_F = 7384 \text{ cf}$$

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Carriage Hill Estates - Stormwater

PROJECT NAME: Storage Volume

PROJECT NO: 4035.20

DATE: 10/2/05

BY: *REN*

CHK:

SHEET NO: 8/9

APPROVED BY:

Area 5B

$$1\text{yr} - q_0 = 9.83 \quad q_1 = 39.42 \quad \frac{9.83}{39.42} = 0.25$$

$$V_s/V_r = 0.41$$

$$Q = (60548/21.6)/3630 = 0.77''$$

$$V_s = \frac{(0.41)(0.77)(21.6)}{12} = 0.568 - 24753 \text{ cf}$$

$$10\text{yr} - q_0 = 39.30 \quad q_1 = 100.50 \quad \frac{39.30}{100.50} = 0.39$$

$$V_s/V_r = 0.33$$

$$Q = (165092/21.6)/3630 = 2.11''$$

$$V_s = \frac{(0.33)(2.11)(21.6)}{12} = 1.25 - 54595 \text{ cf}$$

$$100\text{yr} - q_0 = 68.97 \quad q_1 = 154.14 \quad \frac{68.97}{154.14} = 0.45$$

$$V_s/V_r = 0.3$$

$$Q = (263102/21.6)/3630 = 3.36''$$

$$V_s = \frac{(0.3)(3.36)(21.6)}{12} = 1.81 - 79035 \text{ cf}$$

$$CP_y = 24753 \text{ cf}$$

$$QP = 54595 \text{ cf}$$

$$QF = 79035 \text{ cf}$$

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Carriaget Hill Estates - Stormwater

PROJECT NAME: Storage Volume

PROJECT NO: 403520

DATE: 10/2/05

BY: Rem

CHK:

SHEET NO: 9

APPROVED BY: