

ECHD Overall-Proposed Drainage Analysis

Prepared by {enter your company name here}

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Type II 24-hr 1-YR Rainfall=2.10"

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1/8/2010

Subcatchment 3S: Remainder of Project Limits

Runoff = 29.66 cfs @ 12.18 hrs, Volume= 2.568 af, Depth= 1.49"

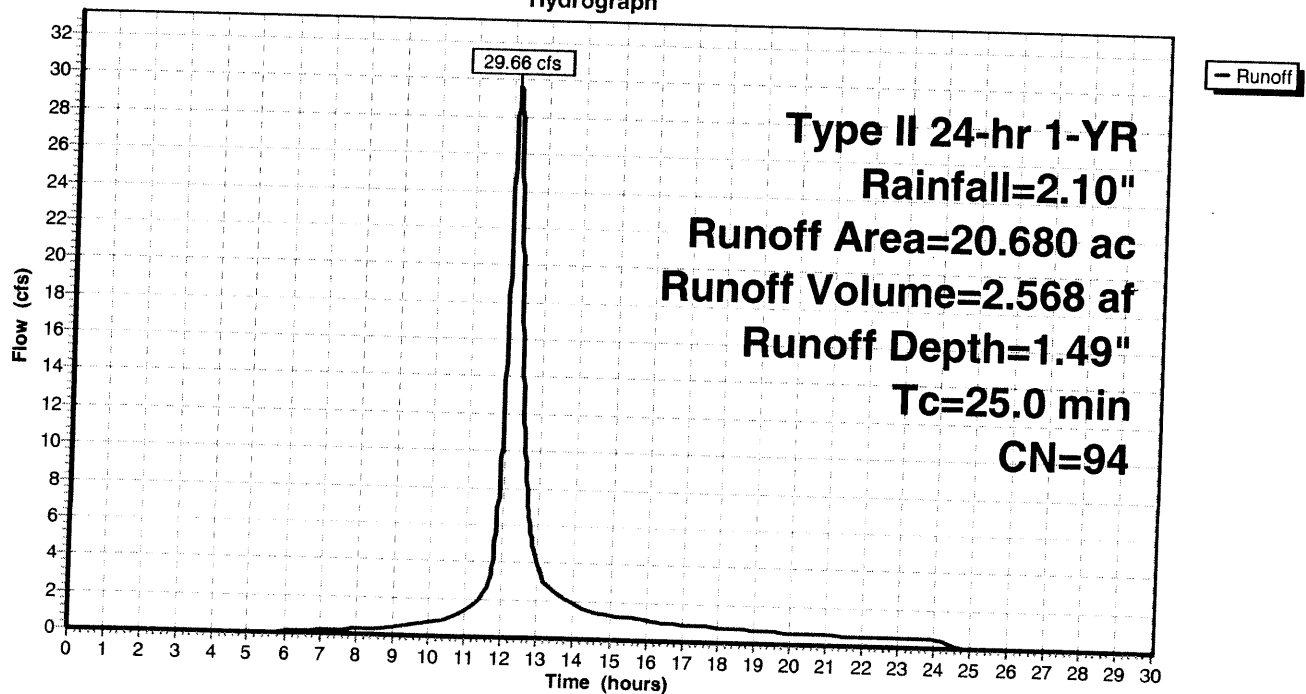
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-YR Rainfall=2.10"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
20.310	94	Urban commercial, 85% imp, HSG C
20.680	94	Weighted Average
3.417		Pervious Area
17.263		Impervious Area

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

Subcatchment 3S: Remainder of Project Limits

Hydrograph



ECHD Overall-Proposed Drainage Analysis

Type II 24-hr 1-YR Rainfall=2.10"

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Subcatchment 4S: Donovan North

Runoff = 3.49 cfs @ 12.18 hrs, Volume= 0.302 af, Depth= 1.49"

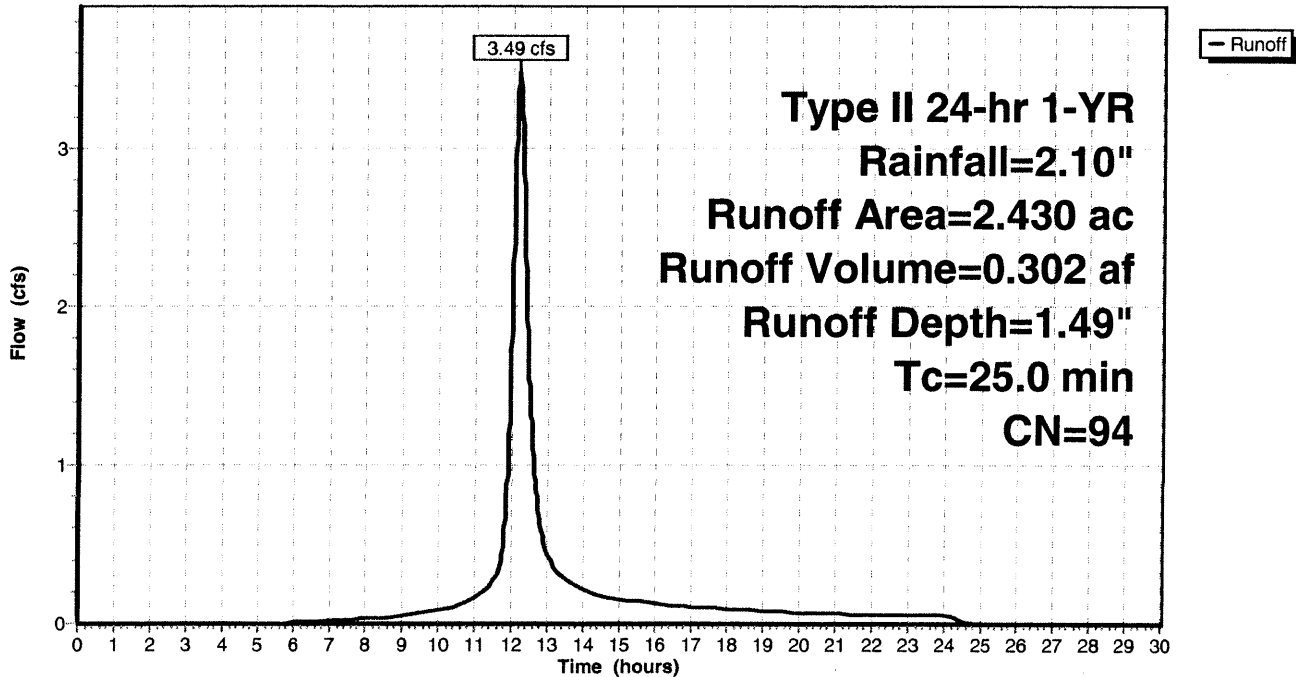
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-YR Rainfall=2.10"

Area (ac)	CN	Description
0.450	74	>75% Grass cover, Good, HSG C
1.980	98	Paved parking & roofs
2.430	94	Weighted Average
0.450		Pervious Area
1.980		Impervious Area

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

Subcatchment 4S: Donovan North

Hydrograph



ECHD Overall-Proposed Drainage Analysis

Type II 24-hr 1-YR Rainfall=2.10"

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Subcatchment 5S: Donovan South

Runoff = 0.63 cfs @ 12.18 hrs, Volume= 0.055 af, Depth= 1.49"

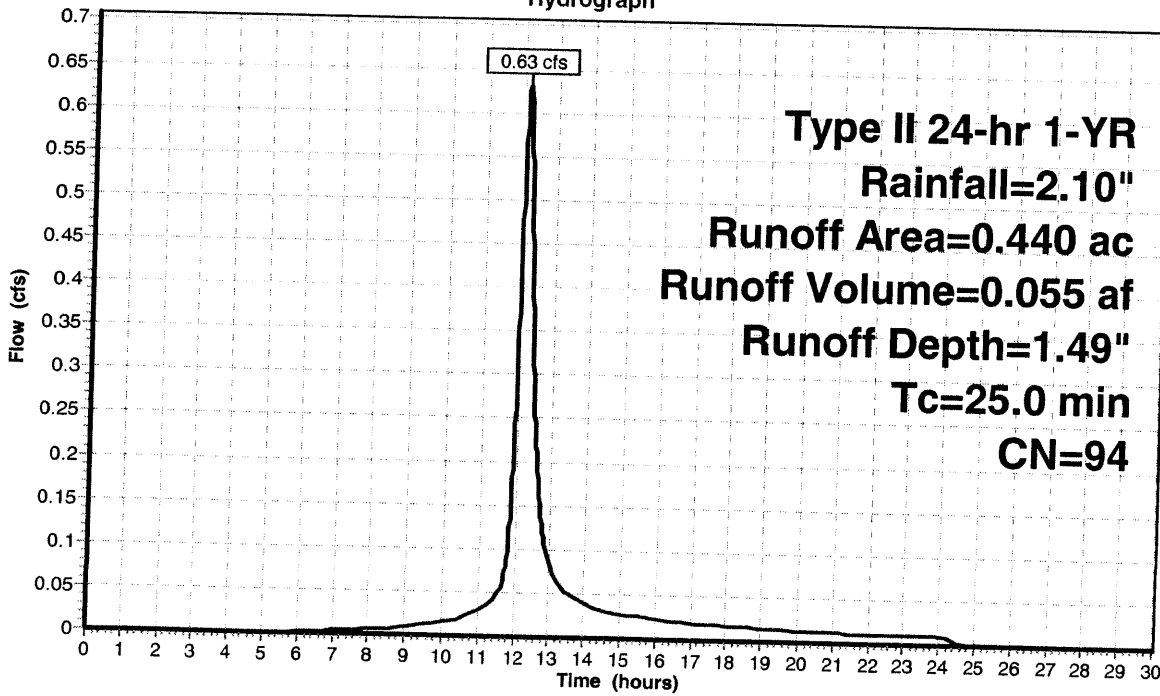
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-YR Rainfall=2.10"

Area (ac)	CN	Description
0.440	94	Urban commercial, 85% imp, HSG C
0.066		Pervious Area
0.374		Impervious Area

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

Subcatchment 5S: Donovan South

Hydrograph



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Type II 24-hr 1-YR Rainfall=2.10"

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Subcatchment 6S: Webster Block

Runoff = 3.23 cfs @ 12.17 hrs, Volume= 0.286 af, Depth= 1.67"

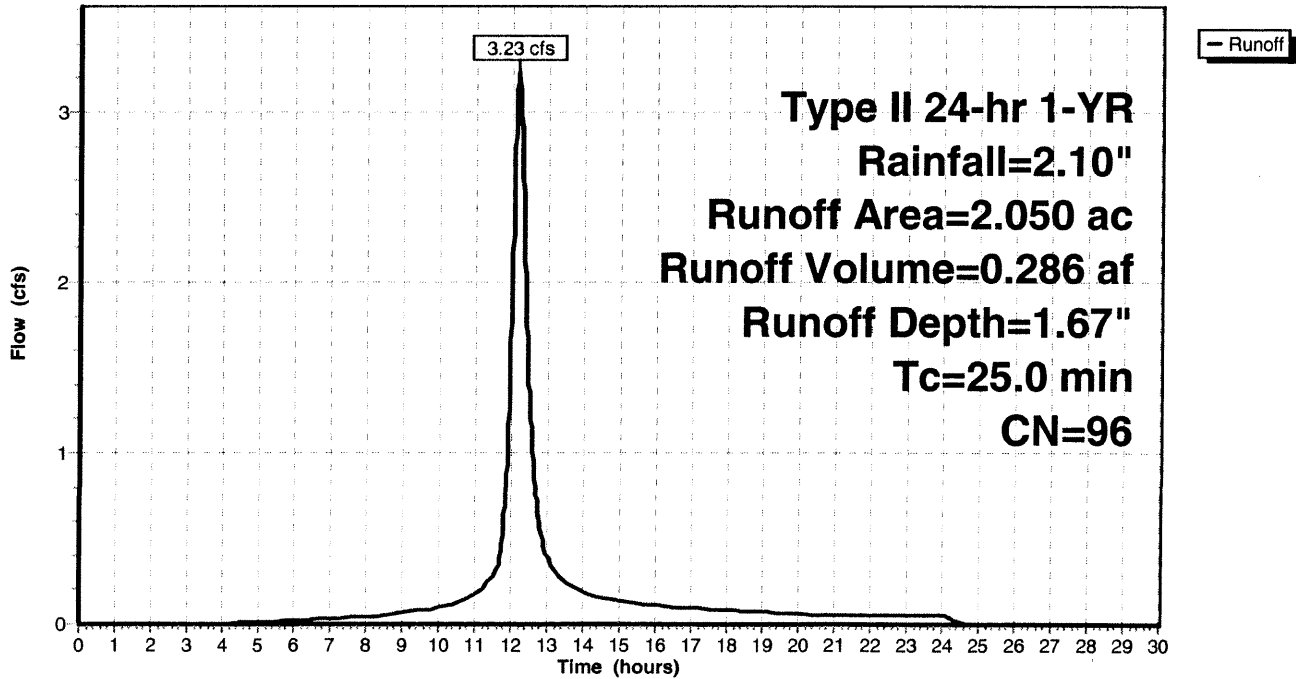
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-YR Rainfall=2.10"

Area (ac)	CN	Description
0.140	74	>75% Grass cover, Good, HSG C
1.910	98	Paved parking & roofs
2.050	96	Weighted Average
0.140		Pervious Area
1.910		Impervious Area

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

Subcatchment 6S: Webster Block

Hydrograph



ECHID Overall-Proposed Drainage Analysis

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Type II 24-hr 1-YR Rainfall=2.10"

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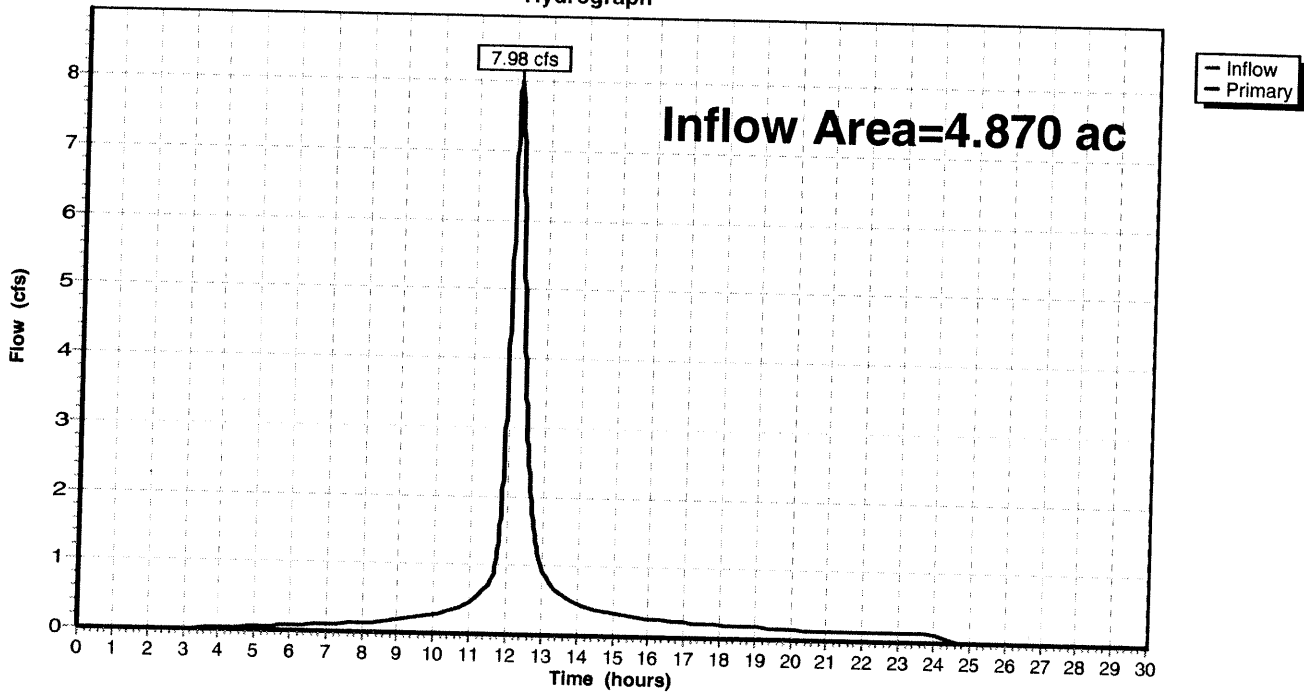
Pond 1P: Hamburg Drain

Inflow Area = 4.870 ac, Inflow Depth = 1.77" for 1-YR event
Inflow = 7.98 cfs @ 12.17 hrs, Volume= 0.718 af
Primary = 7.98 cfs @ 12.17 hrs, Volume= 0.718 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 1P: Hamburg Drain

Hydrograph



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Type II 24-hr 1-YR Rainfall=2.10"

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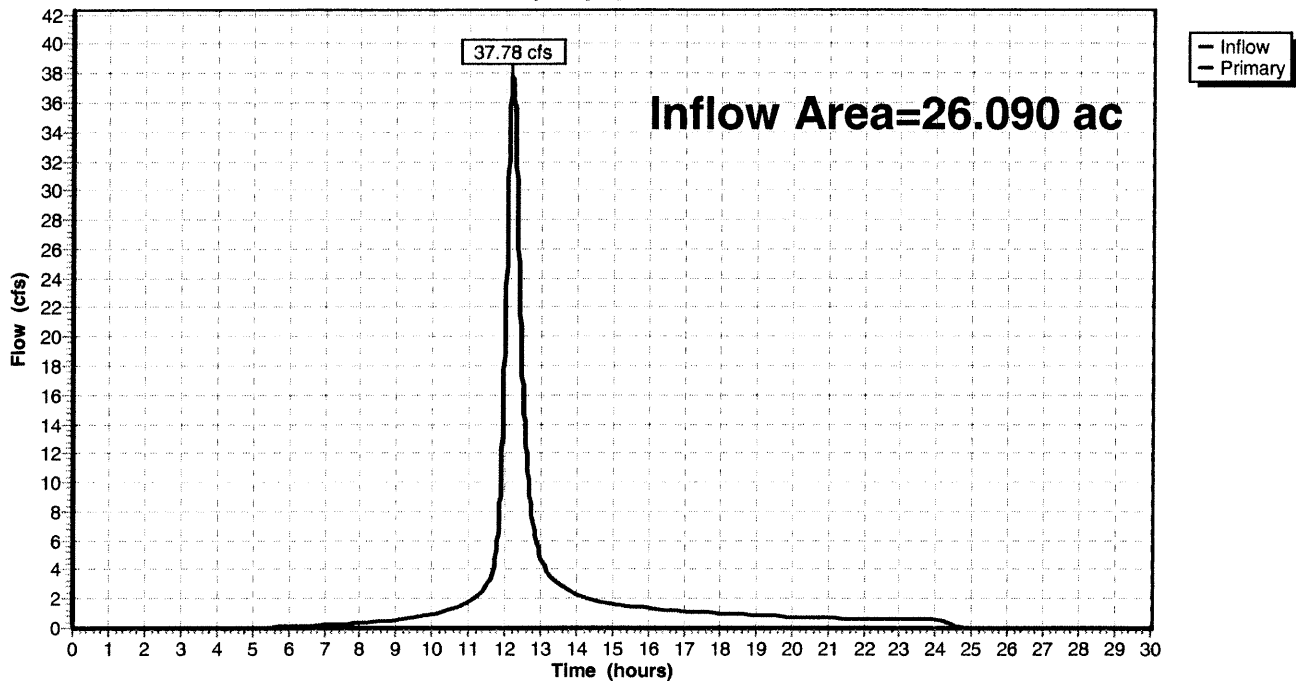
Pond 2P: Combined Sewer

Inflow Area = 26.090 ac, Inflow Depth = 1.51" for 1-YR event
Inflow = 37.78 cfs @ 12.17 hrs, Volume= 3.278 af
Primary = 37.78 cfs @ 12.17 hrs, Volume= 3.278 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 2P: Combined Sewer

Hydrograph



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Type II 24-hr 10-YR Rainfall=3.60"

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Subcatchment 1S: Memorial Auditorium Site Footprint

Runoff = 14.23 cfs @ 12.17 hrs, Volume= 1.320 af, Depth= 3.25"

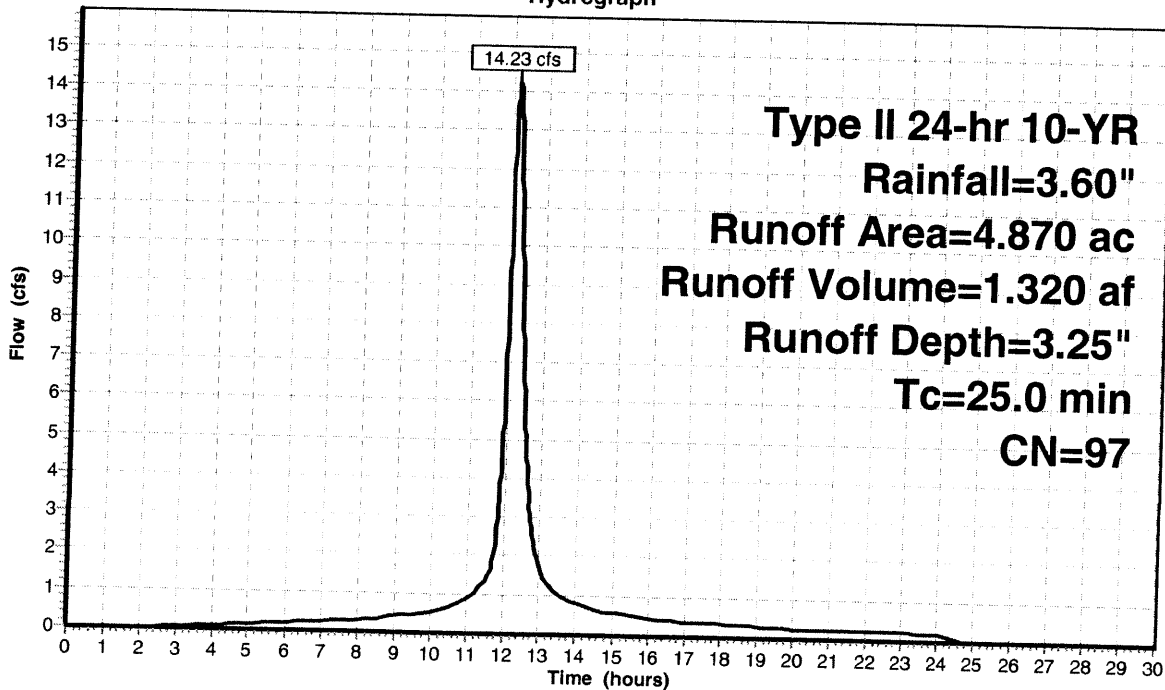
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.60"

Area (ac)	CN	Description
0.160	74	>75% Grass cover, Good, HSG C
4.710	98	Paved parking & roofs
4.870	97	Weighted Average
0.160		Pervious Area
4.710		Impervious Area

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

Subcatchment 1S: Memorial Auditorium Site Footprint

Hydrograph



ECHD Overall-Proposed Drainage Analysis

Type II 24-hr 10-YR Rainfall=3.60"

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Subcatchment 2S: The Beaches

Runoff = 1.41 cfs @ 12.17 hrs, Volume= 0.128 af, Depth= 3.14"

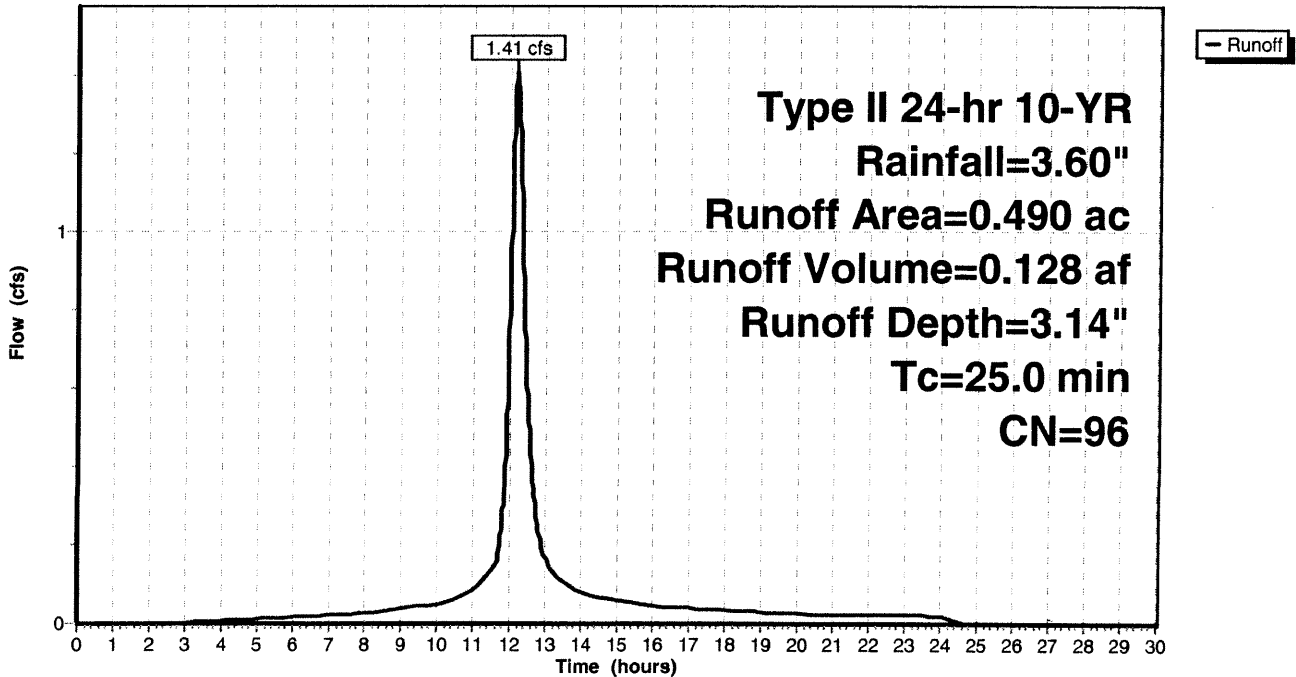
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.60"

Area (ac)	CN	Description
0.050	74	>75% Grass cover, Good, HSG C
0.440	98	Paved parking & roofs
0.490	96	Weighted Average
0.050		Pervious Area
0.440		Impervious Area

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

Subcatchment 2S: The Beaches

Hydrograph



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Type II 24-hr 10-YR Rainfall=3.60"

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Subcatchment 3S: Remainder of Project Limits

Runoff = 56.81 cfs @ 12.17 hrs, Volume= 5.055 af, Depth= 2.93"

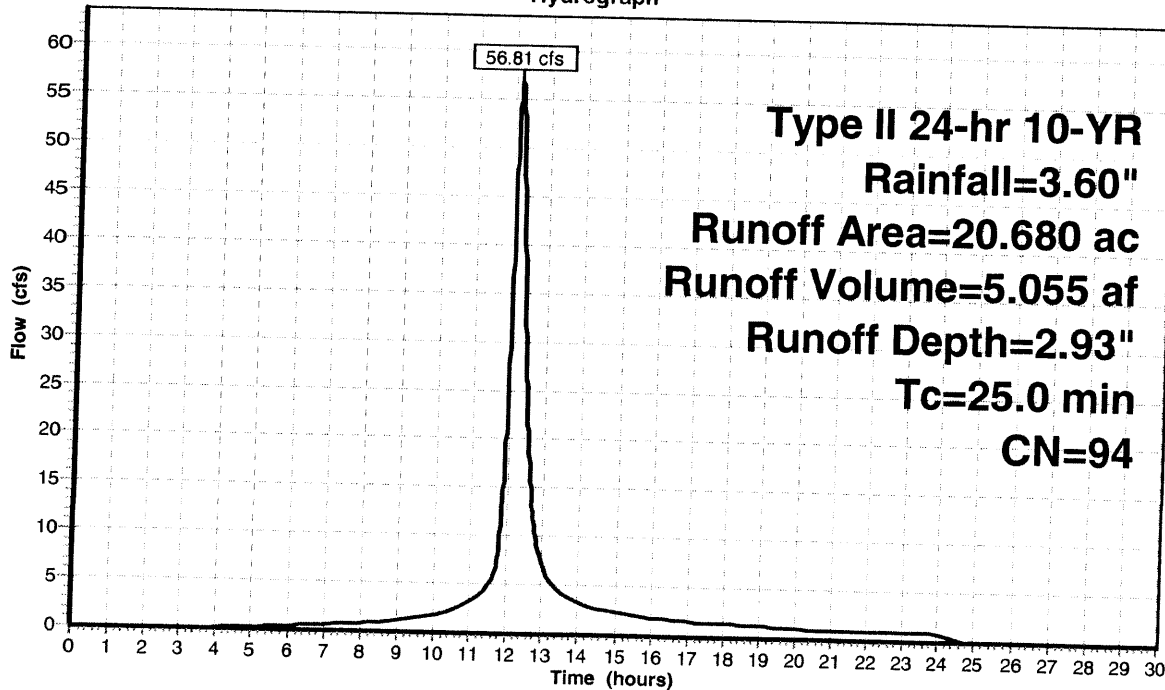
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.60"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
20.310	94	Urban commercial, 85% imp, HSG C
20.680	94	Weighted Average
3.417		Pervious Area
17.263		Impervious Area

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

Subcatchment 3S: Remainder of Project Limits

Hydrograph



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Type II 24-hr 10-YR Rainfall=3.60"

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Subcatchment 4S: Donovan North

Runoff = 6.68 cfs @ 12.17 hrs, Volume= 0.594 af, Depth= 2.93"

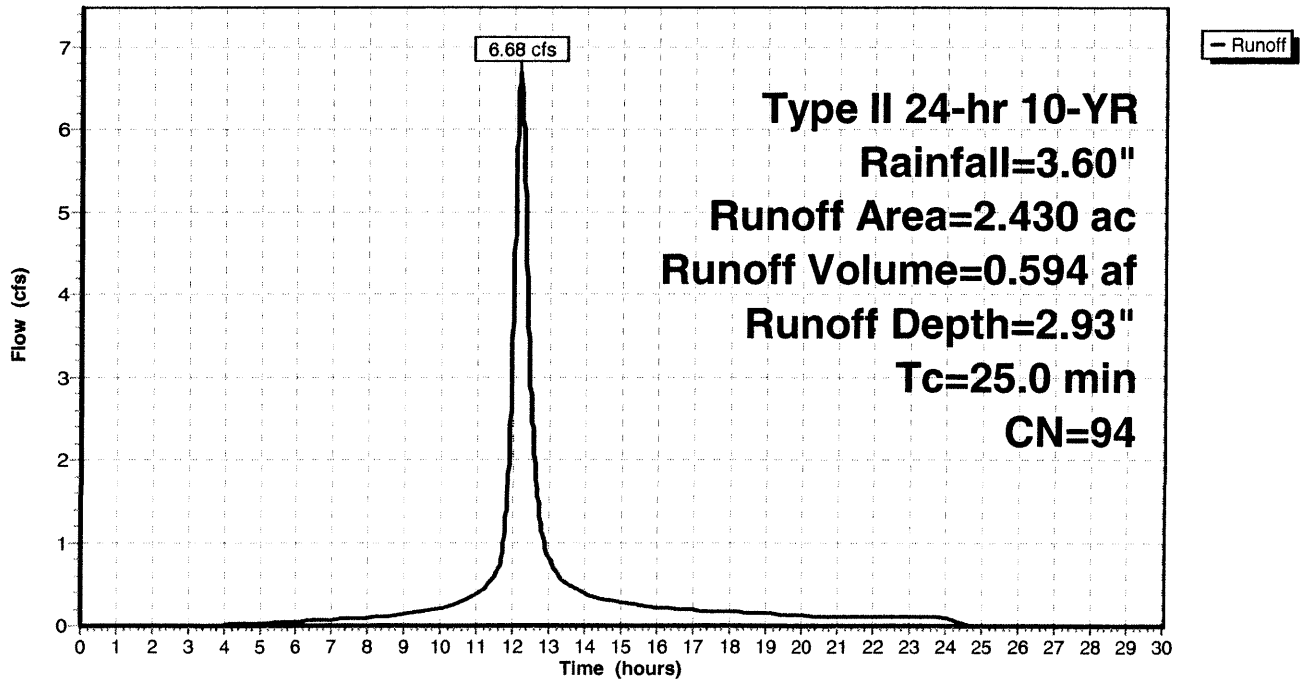
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.60"

Area (ac)	CN	Description
0.450	74	>75% Grass cover, Good, HSG C
1.980	98	Paved parking & roofs
2.430	94	Weighted Average
0.450		Pervious Area
1.980		Impervious Area

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

Subcatchment 4S: Donovan North

Hydrograph



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Type II 24-hr 10-YR Rainfall=3.60"

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Subcatchment 5S: Donovan South

Runoff = 1.21 cfs @ 12.17 hrs, Volume= 0.108 af, Depth= 2.93"

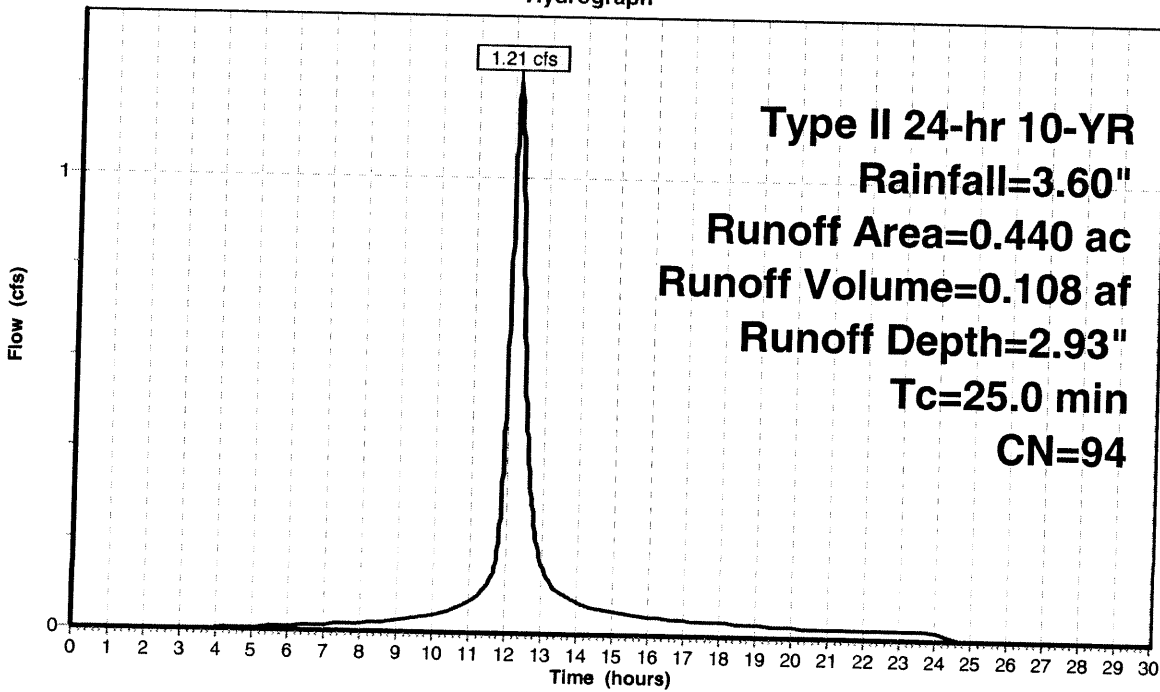
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.60"

Area (ac)	CN	Description
0.440	94	Urban commercial, 85% imp, HSG C
0.066		Pervious Area
0.374		Impervious Area

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

Subcatchment 5S: Donovan South

Hydrograph



ECHD Overall-Proposed Drainage Analysis

Type II 24-hr 10-YR Rainfall=3.60"

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Subcatchment 6S: Webster Block

Runoff = 5.89 cfs @ 12.17 hrs, Volume= 0.537 af, Depth= 3.14"

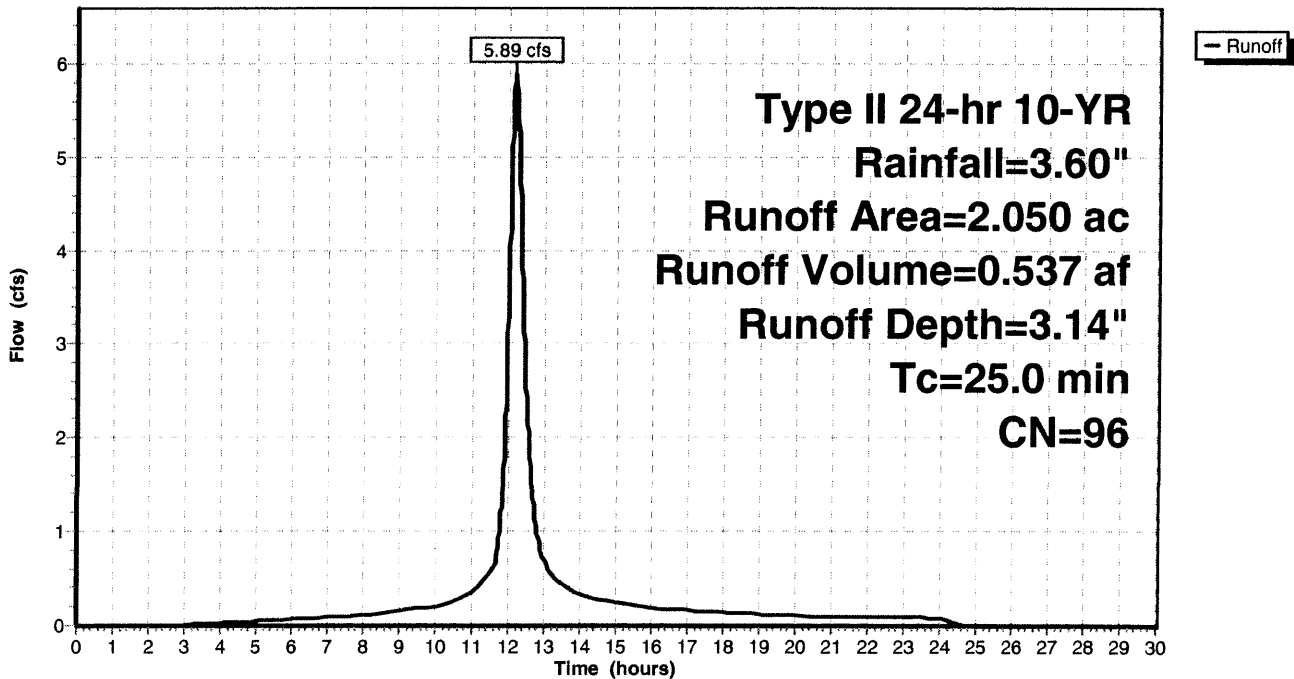
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.60"

Area (ac)	CN	Description
0.140	74	>75% Grass cover, Good, HSG C
1.910	98	Paved parking & roofs
2.050	96	Weighted Average
0.140		Pervious Area
1.910		Impervious Area

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

Subcatchment 6S: Webster Block

Hydrograph



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Type II 24-hr 10-YR Rainfall=3.60"

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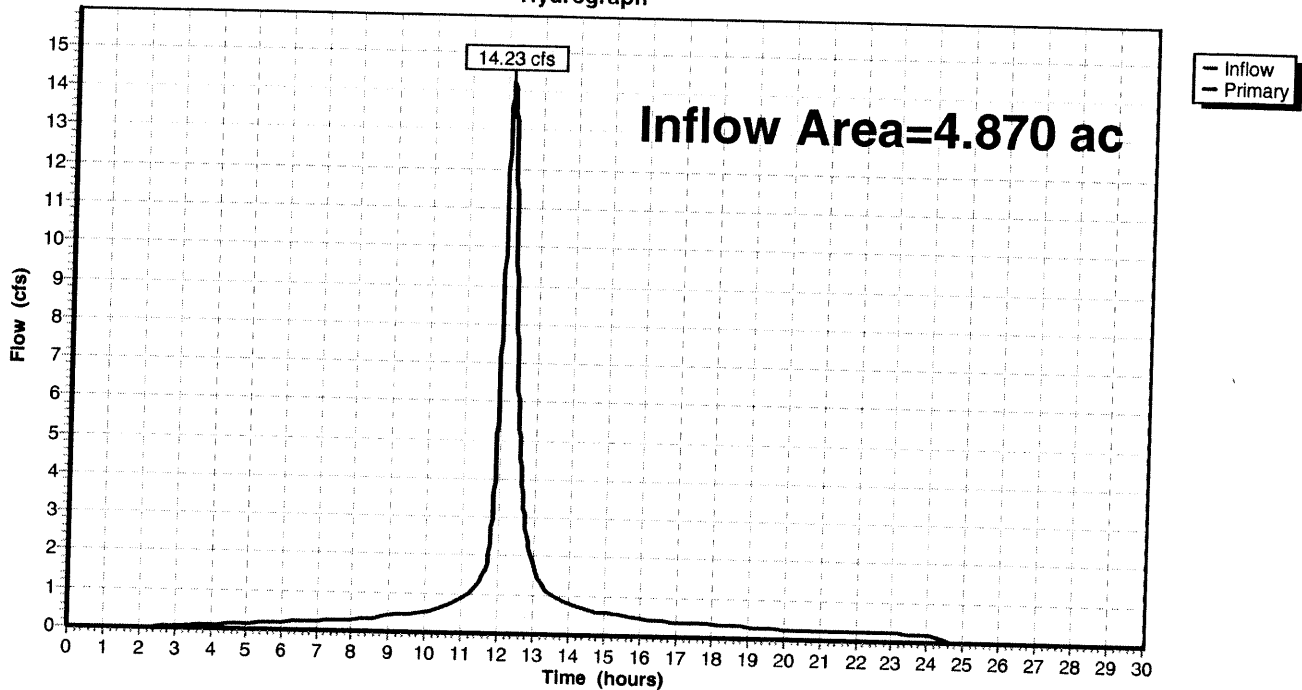
Pond 1P: Hamburg Drain

Inflow Area = 4.870 ac, Inflow Depth = 3.25" for 10-YR event
Inflow = 14.23 cfs @ 12.17 hrs, Volume= 1.320 af
Primary = 14.23 cfs @ 12.17 hrs, Volume= 1.320 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 1P: Hamburg Drain

Hydrograph



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Type II 24-hr 10-YR Rainfall=3.60"

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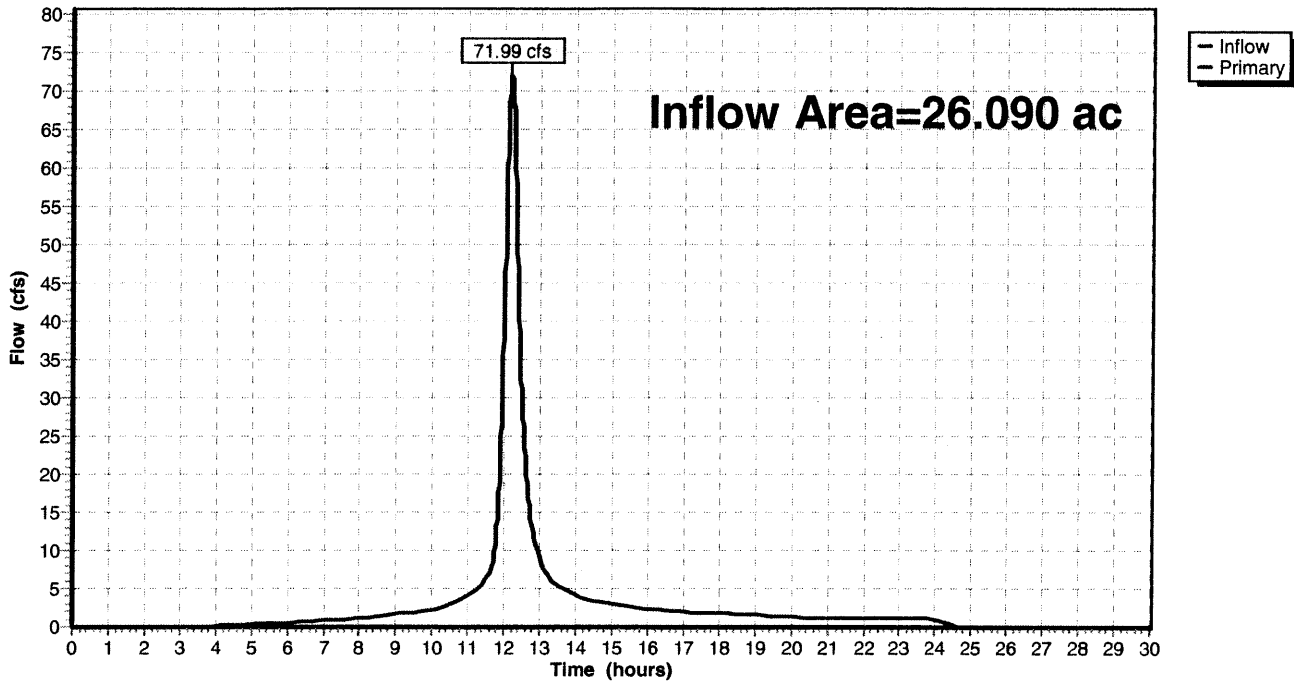
Pond 2P: Combined Sewer

Inflow Area = 26.090 ac, Inflow Depth = 2.95" for 10-YR event
Inflow = 71.99 cfs @ 12.17 hrs, Volume= 6.422 af
Primary = 71.99 cfs @ 12.17 hrs, Volume= 6.422 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 2P: Combined Sewer

Hydrograph



ECHD Overall-Proposed Drainage Analysis

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Type II 24-hr 100-YR Rainfall=4.90"

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Subcatchment 1S: Memorial Auditorium Site Footprint

Runoff = 19.58 cfs @ 12.17 hrs, Volume= 1.846 af, Depth= 4.55"

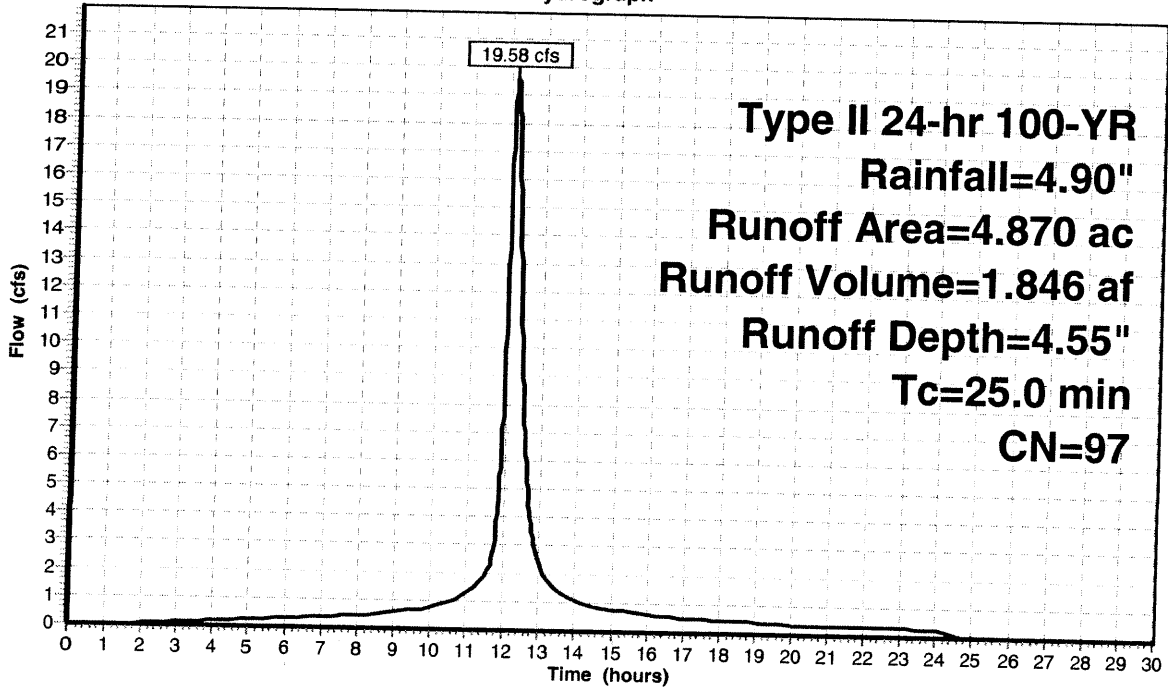
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=4.90"

Area (ac)	CN	Description
0.160	74	>75% Grass cover, Good, HSG C
4.710	98	Paved parking & roofs
4.870	97	Weighted Average
0.160		Pervious Area
4.710		Impervious Area

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

Subcatchment 1S: Memorial Auditorium Site Footprint

Hydrograph



Runoff

ECHD Overall-Proposed Drainage Analysis

Type II 24-hr 100-YR Rainfall=4.90"

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Subcatchment 2S: The Beaches

Runoff = 1.95 cfs @ 12.17 hrs, Volume= 0.181 af, Depth= 4.43"

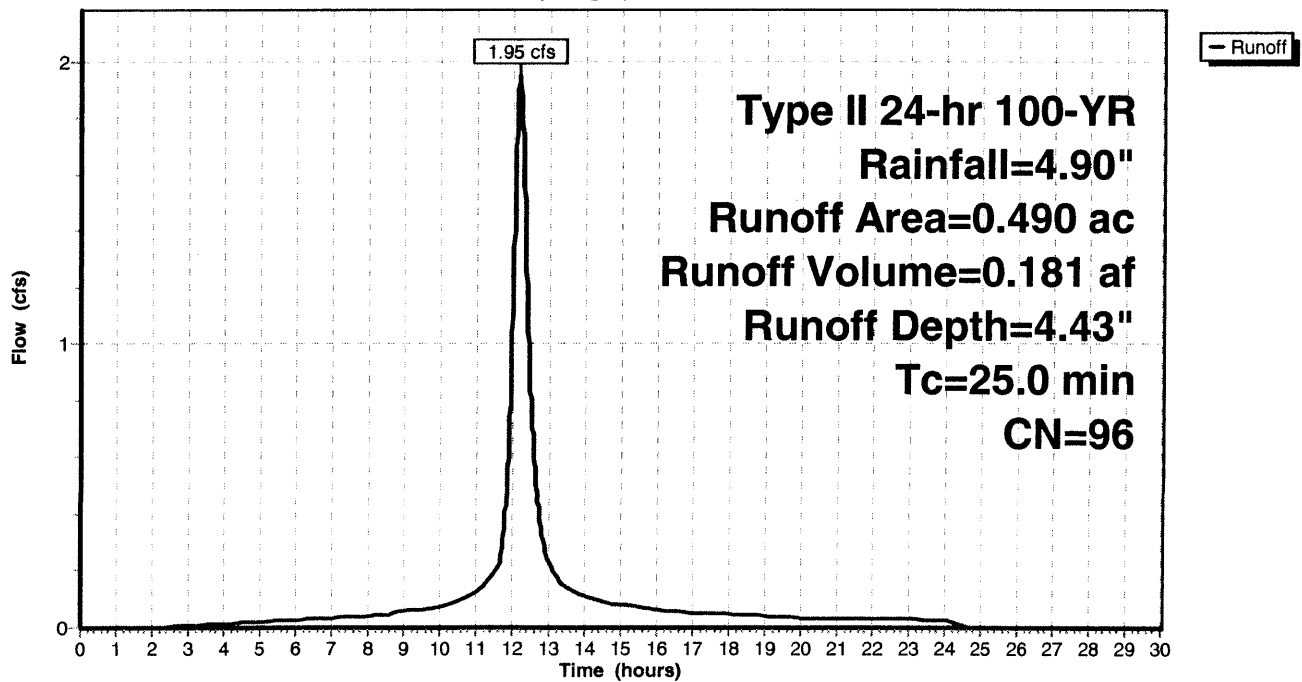
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=4.90"

Area (ac)	CN	Description
0.050	74	>75% Grass cover, Good, HSG C
0.440	98	Paved parking & roofs
0.490	96	Weighted Average
0.050		Pervious Area
0.440		Impervious Area

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

Subcatchment 2S: The Beaches

Hydrograph



ECHD Overall-Proposed Drainage Analysis

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Type II 24-hr 100-YR Rainfall=4.90"

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Subcatchment 3S: Remainder of Project Limits

Runoff = 80.04 cfs @ 12.17 hrs, Volume= 7.254 af, Depth= 4.21"

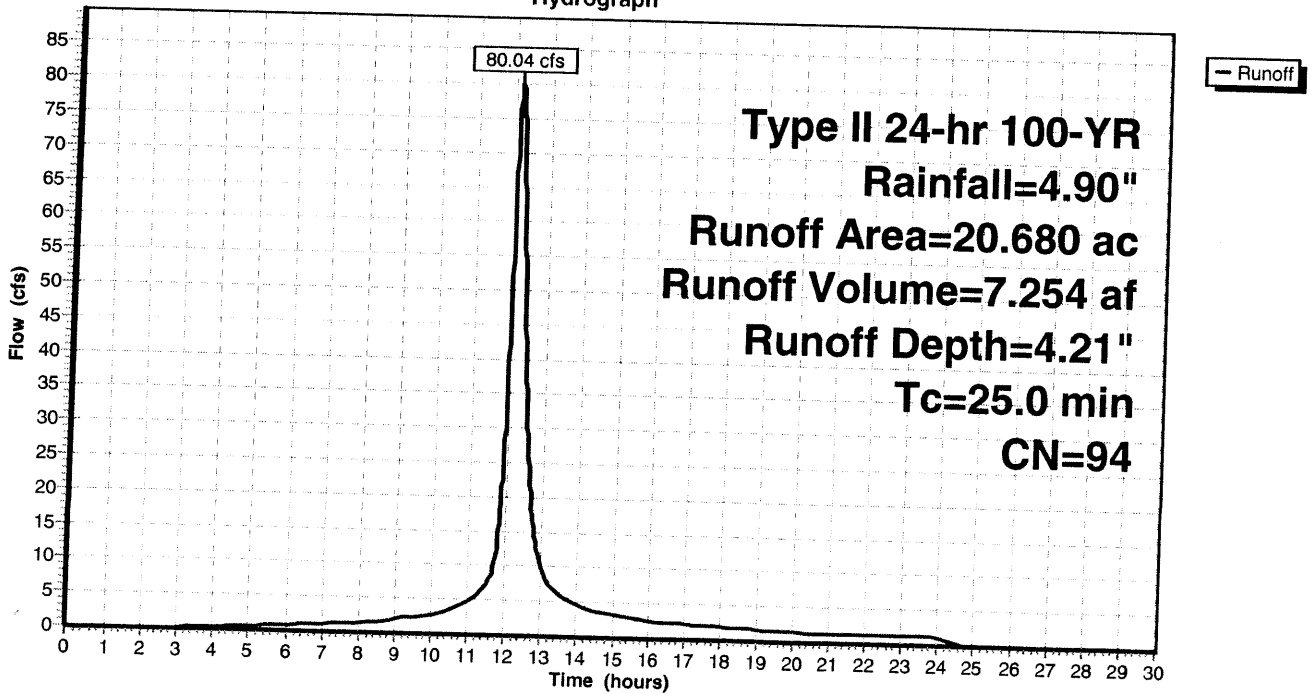
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=4.90"

Area (ac)	CN	Description
0.370	74	>75% Grass cover, Good, HSG C
20.310	94	Urban commercial, 85% imp, HSG C
20.680	94	Weighted Average
3.417		Pervious Area
17.263		Impervious Area

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

Subcatchment 3S: Remainder of Project Limits

Hydrograph



ECHD Overall-Proposed Drainage Analysis

Type II 24-hr 100-YR Rainfall=4.90"

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Subcatchment 4S: Donovan North

Runoff = 9.41 cfs @ 12.17 hrs, Volume= 0.852 af, Depth= 4.21"

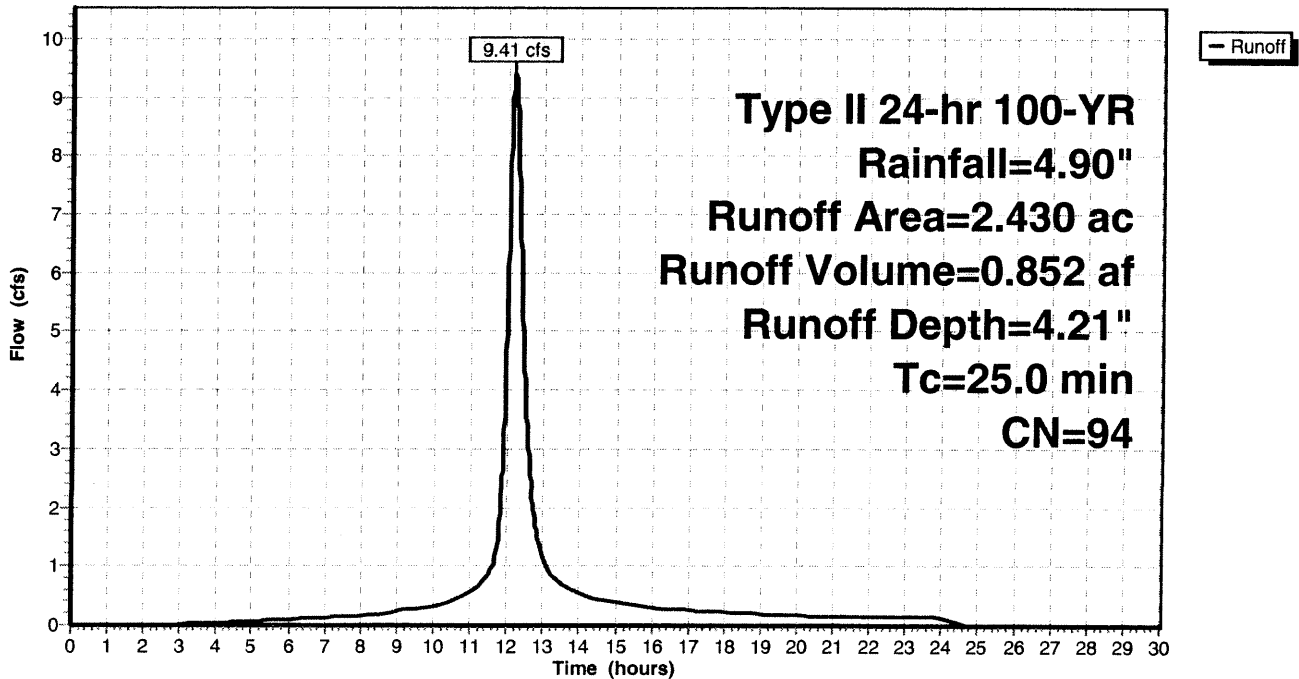
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=4.90"

Area (ac)	CN	Description
0.450	74	>75% Grass cover, Good, HSG C
1.980	98	Paved parking & roofs
2.430	94	Weighted Average
0.450		Pervious Area
1.980		Impervious Area

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

Subcatchment 4S: Donovan North

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ECHD Overall-Proposed Drainage Analysis

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Type II 24-hr 100-YR Rainfall=4.90"

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Subcatchment 5S: Donovan South

Runoff = 1.70 cfs @ 12.17 hrs, Volume= 0.154 af, Depth= 4.21"

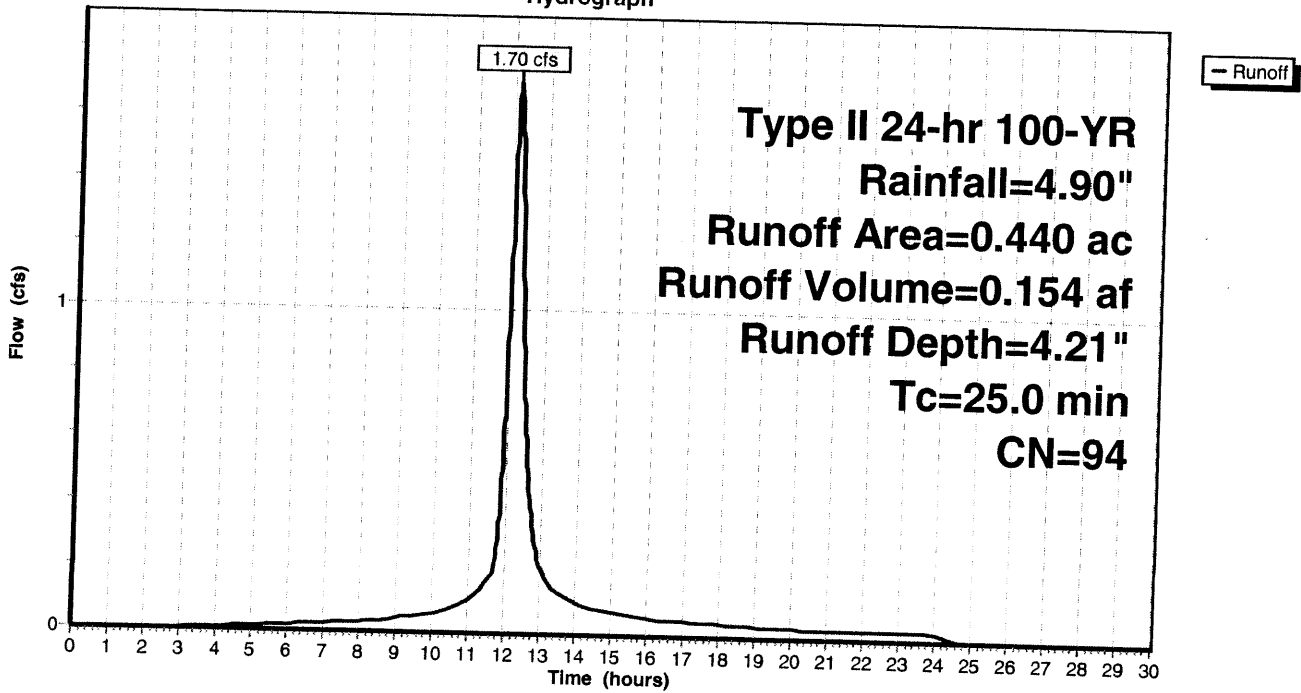
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=4.90"

Area (ac)	CN	Description
0.440	94	Urban commercial, 85% imp, HSG C
0.066		Pervious Area
0.374		Impervious Area

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

Subcatchment 5S: Donovan South

Hydrograph



ECHD Overall-Proposed Drainage Analysis

Type II 24-hr 100-YR Rainfall=4.90"

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Subcatchment 6S: Webster Block

Runoff = 8.16 cfs @ 12.17 hrs, Volume= 0.757 af, Depth= 4.43"

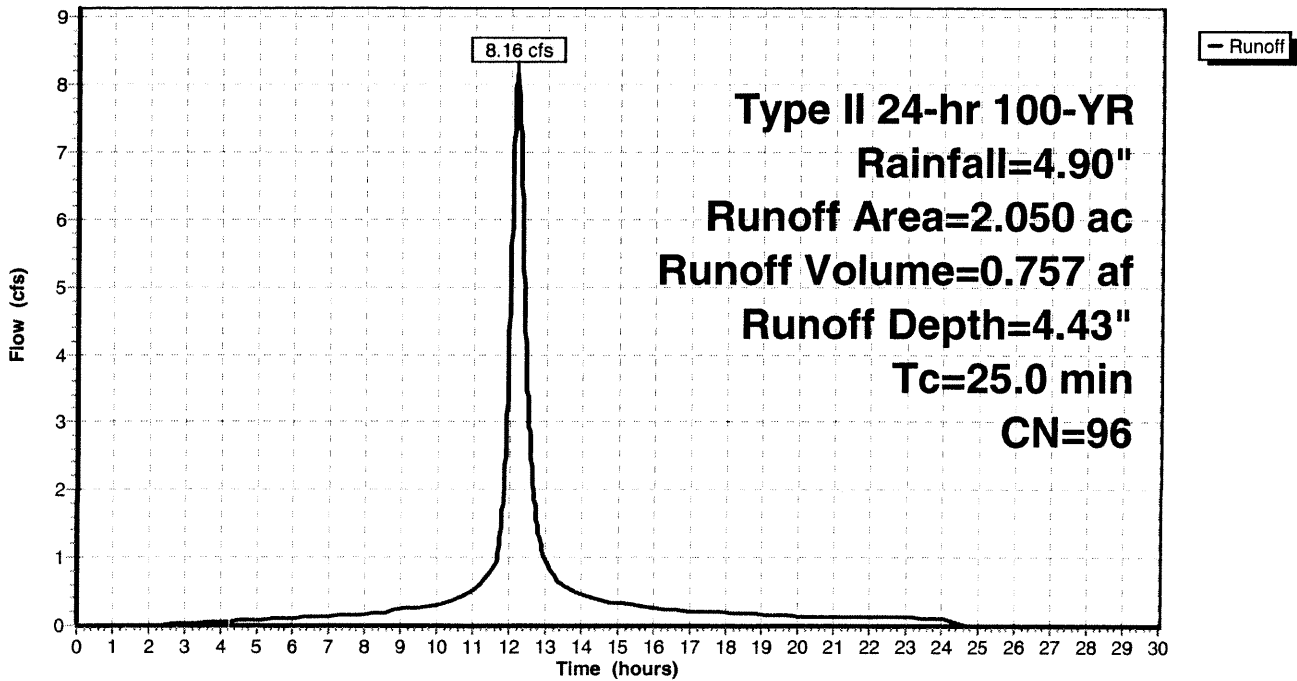
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=4.90"

Area (ac)	CN	Description
0.140	74	>75% Grass cover, Good, HSG C
1.910	98	Paved parking & roofs
2.050	96	Weighted Average
0.140		Pervious Area
1.910		Impervious Area

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

Subcatchment 6S: Webster Block

Hydrograph



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Type II 24-hr 100-YR Rainfall=4.90"

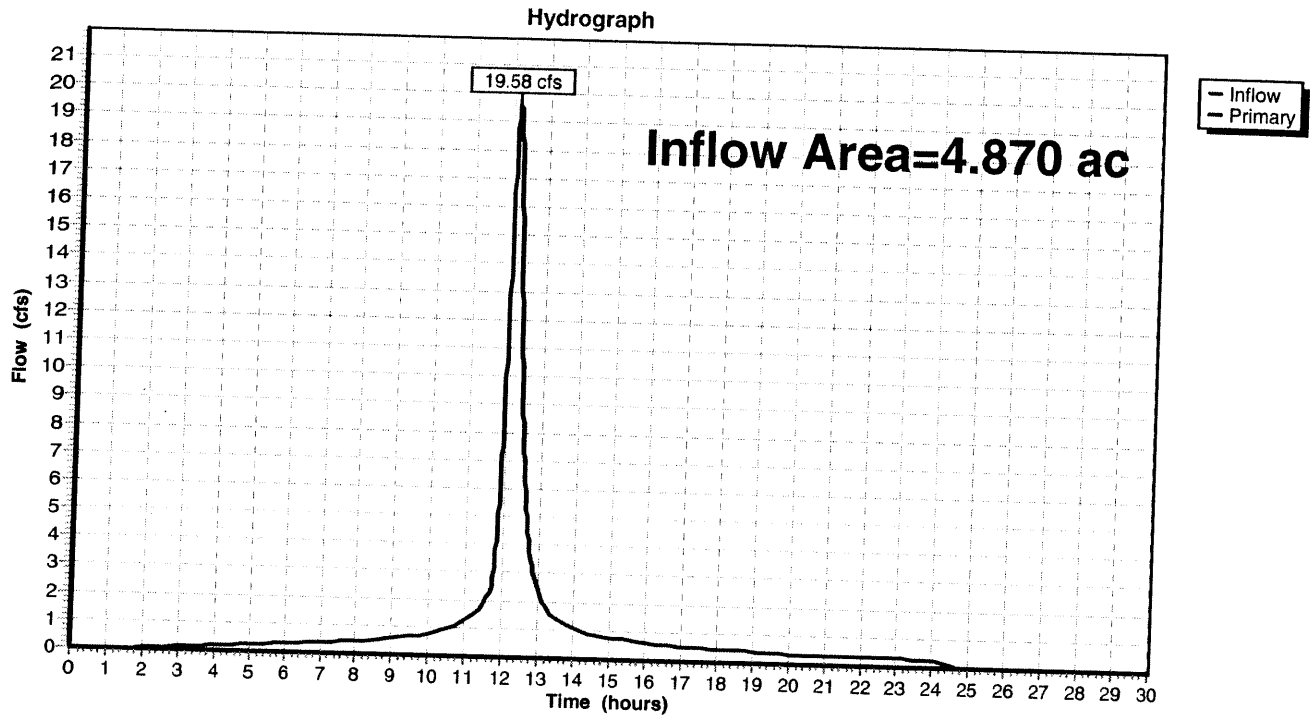
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1/8/2010

Pond 1P: Hamburg Drain

Inflow Area = 4.870 ac, Inflow Depth = 4.55" for 100-YR event
Inflow = 19.58 cfs @ 12.17 hrs, Volume= 1.846 af
Primary = 19.58 cfs @ 12.17 hrs, Volume= 1.846 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 1P: Hamburg Drain



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Type II 24-hr 100-YR Rainfall=4.90"

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Pond 2P: Combined Sewer

Inflow Area = 26.090 ac, Inflow Depth = 4.23" for 100-YR event
Inflow = 101.26 cfs @ 12.17 hrs, Volume= 9.199 af
Primary = 101.26 cfs @ 12.17 hrs, Volume= 9.199 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 2P: Combined Sewer

Hydrograph

