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November 29, 2023, Revised 3/27/24

Project: Cammarata – 232 Silver Spring Road – Wilton, Connecticut

Project Description:

The site currently has an existing single-family residence, and driveway on 2.00 acres. It is proposed to install a pool and patio at the rear of the house which will increase the impervious area by 2,903 square feet.

The peak rates of runoff were generated using HydroCAD for the Water Quality Storm, 2-year, 10-year, and 25-year rainfall events using NOAA 14 data. The proposed increase of impervious area will increase the peak rate of runoff on the site, thus stormwater detention is required. An underground detention system, consisting of Cultec 150HD units will be installed to detain the runoff from the driveway/parking area to reduce peak rates of runoff below the current conditions. Hydrographs are provided below which demonstrate this.

Table 1 – Summary of Peak Rate Changes

Storm Event	Current	Future	Detention	Link
WQ Storm	0.0 cfs	0.0 cfs	0.0/0.0 cfs	0.0 cfs
2-year Storm	2.3 cfs	2.5 cfs	0.3/0.1 cfs	2.3 cfs
10-year Storm	5.0 cfs	5.2 cfs	0.4/0.1 cfs	4.9 cfs
25-year Storm	7.4 cfs	7.7 cfs	0.5/0.2 cfs	7.3 cfs

MS4 Information:

Existing Pervious Surface Area = 79,567 square feet

Existing Impervious surface area directly connected to watercourse = 0 square feet

Existing Impervious surface area not connected to watercourse = 7,727 square feet

Proposed Pervious Surface Area = 76,664 square feet

Proposed Impervious surface area disconnected from watercourse = 0 square feet

Proposed Impervious surface area connected to watercourse = 0.0 square feet

Proposed Impervious surface area not connected to watercourse or municipal or state drainage system = 11,180 square feet

Water Quality Storm – pre-development:

Summary for Subcatchment 21S: Current Conditions

Runoff = 0.0 cfs @ 13.82 hrs, Volume= 0.005 af, Depth> 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr WQ Storm Rainfall=1.00"

Area (sf)	CN	Adj	Description		
67,043	73		Woods, Fair, HSG C		
12,524	79		50-75% Grass cover, Fair, HSG C		
7,727	98		Unconnected pavement, HSG C		
87,294	76	75	Weighted Average, UI Adjusted		
79,567			91.15% Pervious Area		
7,727			8.85% Impervious Area		
7,727			100.00% Unconnected		
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.50"
1.5	130	0.0800	1.41		Shallow Concentrated Flow, scf Woodland Kv= 5.0 fps
9.5	230	Total			

Water Quality Storm – post-development

Summary for Subcatchment 26S: Future Conditions

Runoff = 0.0 cfs @ 12.55 hrs, Volume= 0.006 af, Depth> 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr WQ Storm Rainfall=1.00"

Area (sf)	CN	Adj	Description		
61,590	73		Woods, Fair, HSG C		
14,524	79		50-75% Grass cover, Fair, HSG C		
11,180	98		Unconnected pavement, HSG C		
87,294	77	76	Weighted Average, UI Adjusted		
76,114			87.19% Pervious Area		
11,180			12.81% Impervious Area		
11,180			100.00% Unconnected		
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.50"
1.5	130	0.0800	1.41		Shallow Concentrated Flow, scf Woodland Kv= 5.0 fps
9.5	230	Total			

2-year – pre-development

Summary for Subcatchment 21S: Current Conditions

Runoff = 2.3 cfs @ 12.15 hrs, Volume= 0.197 af, Depth> 1.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.33"

Area (sf)	CN	Adj	Description		
67,043	73		Woods, Fair, HSG C		
12,524	79		50-75% Grass cover, Fair, HSG C		
7,727	98		Unconnected pavement, HSG C		
87,294	76	75	Weighted Average, UI Adjusted		
79,567			91.15% Pervious Area		
7,727			8.85% Impervious Area		
7,727			100.00% Unconnected		
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.50"
1.5	130	0.0800	1.41		Shallow Concentrated Flow, scf Woodland Kv= 5.0 fps
9.5	230	Total			

2-year – post-development

Summary for Subcatchment 26S: Future Conditions

Runoff = 2.5 cfs @ 12.15 hrs, Volume= 0.207 af, Depth> 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.33"

Area (sf)	CN	Adj	Description		
61,590	73		Woods, Fair, HSG C		
14,524	79		50-75% Grass cover, Fair, HSG C		
11,180	98		Unconnected pavement, HSG C		
87,294	77	76	Weighted Average, UI Adjusted		
76,114			87.19% Pervious Area		
11,180			12.81% Impervious Area		
11,180			100.00% Unconnected		
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.50"
1.5	130	0.0800	1.41		Shallow Concentrated Flow, scf Woodland Kv= 5.0 fps
9.5	230	Total			

10-year – pre-development

Summary for Subcatchment 21S: Current Conditions

Runoff = 5.0 cfs @ 12.14 hrs, Volume= 0.408 af, Depth> 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Adj	Description		
67,043	73		Woods, Fair, HSG C		
12,524	79		50-75% Grass cover, Fair, HSG C		
7,727	98		Unconnected pavement, HSG C		
87,294	76	75	Weighted Average, UI Adjusted		
79,567			91.15% Pervious Area		
7,727			8.85% Impervious Area		
7,727			100.00% Unconnected		
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.50"
1.5	130	0.0800	1.41		Shallow Concentrated Flow, scf Woodland Kv= 5.0 fps
9.5	230	Total			

10-year – post-development

Summary for Subcatchment 26S: Future Conditions

Runoff = 5.2 cfs @ 12.14 hrs, Volume= 0.423 af, Depth> 2.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Adj	Description		
61,590	73		Woods, Fair, HSG C		
14,524	79		50-75% Grass cover, Fair, HSG C		
11,180	98		Unconnected pavement, HSG C		
87,294	77	76	Weighted Average, UI Adjusted		
76,114			87.19% Pervious Area		
11,180			12.81% Impervious Area		
11,180			100.00% Unconnected		
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.50"
1.5	130	0.0800	1.41		Shallow Concentrated Flow, scf Woodland Kv= 5.0 fps
9.5	230	Total			

25-year – pre-development

Summary for Subcatchment 21S: Current Conditions

Runoff = 7.4 cfs @ 12.14 hrs, Volume= 0.604 af, Depth> 3.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.40"

Area (sf)	CN	Adj	Description		
67,043	73		Woods, Fair, HSG C		
12,524	79		50-75% Grass cover, Fair, HSG C		
7,727	98		Unconnected pavement, HSG C		
87,294	76	75	Weighted Average, UI Adjusted		
79,567			91.15% Pervious Area		
7,727			8.85% Impervious Area		
7,727			100.00% Unconnected		
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.50"
1.5	130	0.0800	1.41		Shallow Concentrated Flow, scf Woodland Kv= 5.0 fps
9.5	230	Total			

25-year – post-development

Summary for Subcatchment 26S: Future Conditions

Runoff = 7.7 cfs @ 12.14 hrs, Volume= 0.622 af, Depth> 3.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.40"

Area (sf)	CN	Adj	Description		
61,590	73		Woods, Fair, HSG C		
14,524	79		50-75% Grass cover, Fair, HSG C		
11,180	98		Unconnected pavement, HSG C		
87,294	77	76	Weighted Average, UI Adjusted		
76,114			87.19% Pervious Area		
11,180			12.81% Impervious Area		
11,180			100.00% Unconnected		
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.50"
1.5	130	0.0800	1.41		Shallow Concentrated Flow, scf Woodland Kv= 5.0 fps
9.5	230	Total			

Roof Drains to Detention System: WQ Storm

Summary for Pond 20P: Cultec System #1

Inflow Area = 0.086 ac, 100.00% Impervious, Inflow Depth > 0.79" for WQ Storm event
 Inflow = 0.1 cfs @ 12.09 hrs, Volume= 0.006 af
 Outflow = 0.0 cfs @ 11.85 hrs, Volume= 0.006 af, Atten= 79%, Lag= 0.0 min
 Discarded = 0.0 cfs @ 11.85 hrs, Volume= 0.006 af
 Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 24L : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 101.43' @ 12.51 hrs Surf.Area= 919 sf Storage= 66 cf

Plug-Flow detention time= 27.6 min calculated for 0.006 af (100% of inflow)
 Center-of-Mass det. time= 26.4 min (813.8 - 787.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	101.25'	669 cf	21.00'W x 43.75'L x 2.54'H Field A 2,335 cf Overall - 664 cf Embedded = 1,672 cf x 40.0% Voids
#2A	101.75'	664 cf	Cultec R-150XLHD x24 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 6 rows
		1,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	101.25'	0.750 in/hr Exfiltration over Surface area
#2	Primary	101.75'	2.0" Horiz. Orifice/Grate X 2 rows C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.0 cfs @ 11.85 hrs HW=101.28' (Free Discharge)
 ↳ **1=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=101.25' (Free Discharge)
 ↳ **2=Orifice/Grate** (Controls 0.0 cfs)

2-year storm

Summary for Pond 20P: Cultec System #1

Inflow Area = 0.086 ac, 100.00% Impervious, Inflow Depth > 3.10" for 2-YR event
 Inflow = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af
 Outflow = 0.1 cfs @ 12.36 hrs, Volume= 0.022 af, Atten= 66%, Lag= 16.5 min
 Discarded = 0.0 cfs @ 10.65 hrs, Volume= 0.017 af
 Primary = 0.1 cfs @ 12.36 hrs, Volume= 0.005 af
 Routed to Link 24L : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 101.89' @ 12.36 hrs Surf.Area= 919 sf Storage= 284 cf

Plug-Flow detention time= 73.6 min calculated for 0.022 af (100% of inflow)
 Center-of-Mass det. time= 72.4 min (827.6 - 755.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	101.25'	669 cf	21.00'W x 43.75'L x 2.54'H Field A 2,335 cf Overall - 664 cf Embedded = 1,672 cf x 40.0% Voids
#2A	101.75'	664 cf	Cultec R-150XLHD x24 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 6 rows
		1,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	101.25'	0.750 in/hr Exfiltration over Surface area
#2	Primary	101.75'	2.0" Horiz. Orifice/Grate X 2 rows C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.0 cfs @ 10.65 hrs HW=101.28' (Free Discharge)
 ↳ **1=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.1 cfs @ 12.36 hrs HW=101.89' (Free Discharge)
 ↳ **2=Orifice/Grate** (Orifice Controls 0.1 cfs @ 1.78 fps)

10-year storm

Summary for Pond 20P: Cultec System #1

Inflow Area = 0.086 ac, 100.00% Impervious, Inflow Depth > 4.76" for 10-YR event
 Inflow = 0.4 cfs @ 12.09 hrs, Volume = 0.034 af
 Outflow = 0.1 cfs @ 12.36 hrs, Volume = 0.034 af, Atten = 66%, Lag = 16.4 min
 Discarded = 0.0 cfs @ 9.35 hrs, Volume = 0.021 af
 Primary = 0.1 cfs @ 12.36 hrs, Volume = 0.013 af
 Routed to Link 24L : (new Link)

Routing by Stor-Ind method, Time Span = 0.00-24.00 hrs, dt = 0.05 hrs
 Peak Elev = 102.11' @ 12.36 hrs Surf.Area = 919 sf Storage = 443 cf

Plug-Flow detention time = 69.9 min calculated for 0.034 af (100% of inflow)
 Center-of-Mass det. time = 68.8 min (816.4 - 747.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	101.25'	669 cf	21.00'W x 43.75'L x 2.54'H Field A 2,335 cf Overall - 664 cf Embedded = 1,672 cf x 40.0% Voids
#2A	101.75'	664 cf	Cultec R-150XLHD x 24 Inside #1 Effective Size = 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size = 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment = +0.75' x 2.65 sf x 6 rows
		1,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	101.25'	0.750 in/hr Exfiltration over Surface area
#2	Primary	101.75'	2.0" Horiz. Orifice/Grate X 2 rows C = 0.600 Limited to weir flow at low heads

Discarded OutFlow Max = 0.0 cfs @ 9.35 hrs HW = 101.28' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max = 0.1 cfs @ 12.36 hrs HW = 102.11' (Free Discharge)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.1 cfs @ 2.88 fps)

25-year storm

Summary for Pond 20P: Cultec System #1

Inflow Area = 0.086 ac, 100.00% Impervious, Inflow Depth > 6.16" for 25-YR event
 Inflow = 0.5 cfs @ 12.09 hrs, Volume = 0.044 af
 Outflow = 0.2 cfs @ 12.38 hrs, Volume = 0.044 af, Atten = 67%, Lag = 17.4 min
 Discarded = 0.0 cfs @ 8.60 hrs, Volume = 0.024 af
 Primary = 0.2 cfs @ 12.38 hrs, Volume = 0.021 af
 Routed to Link 24L : (new Link)

Routing by Stor-Ind method, Time Span = 0.00-24.00 hrs, dt = 0.05 hrs
 Peak Elev = 102.31' @ 12.38 hrs Surf.Area = 919 sf Storage = 583 cf

Plug-Flow detention time = 70.2 min calculated for 0.044 af (100% of inflow)
 Center-of-Mass det. time = 69.1 min (812.8 - 743.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	101.25'	669 cf	21.00'W x 43.75'L x 2.54'H Field A 2,335 cf Overall - 664 cf Embedded = 1,672 cf x 40.0% Voids
#2A	101.75'	664 cf	Cultec R-150XLHD x 24 Inside #1 Effective Size = 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size = 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment = +0.75' x 2.65 sf x 6 rows
		1,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	101.25'	0.750 in/hr Exfiltration over Surface area
#2	Primary	101.75'	2.0" Horiz. Orifice/Grate X 2 rows C = 0.600 Limited to weir flow at low heads

Discarded OutFlow Max = 0.0 cfs @ 8.60 hrs HW = 101.28' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max = 0.2 cfs @ 12.38 hrs HW = 102.31' (Free Discharge)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.2 cfs @ 3.59 fps)

Future By-pass: WQ Storm

Summary for Subcatchment 29S: Future By-pass

Runoff = 0.0 cfs @ 13.82 hrs, Volume= 0.005 af, Depth> 0.03"
Routed to Link 24L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr WQ Storm Rainfall=1.00"

Area (sf)	CN	Adj	Description
61,590	73		Woods, Fair, HSG C
14,524	79		50-75% Grass cover, Fair, HSG C
7,413	98		Unconnected pavement, HSG C
83,527	76	75	Weighted Average, UI Adjusted
76,114			91.13% Pervious Area
7,413			8.87% Impervious Area
7,413			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.50"
1.5	130	0.0800	1.41		Shallow Concentrated Flow, scf Woodland Kv= 5.0 fps
9.5	230	Total			

2-year storm

Summary for Subcatchment 29S: Future By-pass

Runoff = 2.2 cfs @ 12.15 hrs, Volume= 0.189 af, Depth> 1.18"
Routed to Link 24L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.33"

Area (sf)	CN	Adj	Description
61,590	73		Woods, Fair, HSG C
14,524	79		50-75% Grass cover, Fair, HSG C
7,413	98		Unconnected pavement, HSG C
83,527	76	75	Weighted Average, UI Adjusted
76,114			91.13% Pervious Area
7,413			8.87% Impervious Area
7,413			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.50"
1.5	130	0.0800	1.41		Shallow Concentrated Flow, scf Woodland Kv= 5.0 fps
9.5	230	Total			

10-year storm

Summary for Subcatchment 29S: Future By-pass

Runoff = 4.8 cfs @ 12.14 hrs, Volume= 0.391 af, Depth> 2.45"
Routed to Link 24L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Adj	Description
61,590	73		Woods, Fair, HSG C
14,524	79		50-75% Grass cover, Fair, HSG C
7,413	98		Unconnected pavement, HSG C
83,527	76	75	Weighted Average, UI Adjusted
76,114			91.13% Pervious Area
7,413			8.87% Impervious Area
7,413			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.50"
1.5	130	0.0800	1.41		Shallow Concentrated Flow, scf Woodland Kv= 5.0 fps
9.5	230	Total			

25-year storm

Summary for Subcatchment 29S: Future By-pass

Runoff = 7.1 cfs @ 12.14 hrs, Volume= 0.578 af, Depth> 3.62"
Routed to Link 24L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.40"

Area (sf)	CN	Adj	Description
61,590	73		Woods, Fair, HSG C
14,524	79		50-75% Grass cover, Fair, HSG C
7,413	98		Unconnected pavement, HSG C
83,527	76	75	Weighted Average, UI Adjusted
76,114			91.13% Pervious Area
7,413			8.87% Impervious Area
7,413			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.50"
1.5	130	0.0800	1.41		Shallow Concentrated Flow, scf Woodland Kv= 5.0 fps
9.5	230	Total			

Link

WQ Storm

Summary for Link 24L: (new Link)

Inflow Area = 2.004 ac, 12.81% Impervious, Inflow Depth > 0.03" for WQ Storm event
Inflow = 0.0 cfs @ 13.82 hrs, Volume= 0.005 af
Primary = 0.0 cfs @ 13.82 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

2-year storm

Summary for Link 24L: (new Link)

Inflow Area = 2.004 ac, 12.81% Impervious, Inflow Depth > 1.16" for 2-YR event
Inflow = 2.3 cfs @ 12.15 hrs, Volume= 0.194 af
Primary = 2.3 cfs @ 12.15 hrs, Volume= 0.194 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

10-year storm

Summary for Link 24L: (new Link)

Inflow Area = 2.004 ac, 12.81% Impervious, Inflow Depth > 2.42" for 10-YR event
Inflow = 4.9 cfs @ 12.14 hrs, Volume= 0.404 af
Primary = 4.9 cfs @ 12.14 hrs, Volume= 0.404 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

25-year storm

Summary for Link 24L: (new Link)

Inflow Area = 2.004 ac, 12.81% Impervious, Inflow Depth > 3.59" for 25-YR event
Inflow = 7.3 cfs @ 12.14 hrs, Volume= 0.599 af
Primary = 7.3 cfs @ 12.14 hrs, Volume= 0.599 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Watershed Map:

The watershed area is simply the boundaries of the existing lot.

Conclusion:

With the proposed detention system, zero increase in the peak rate of runoff for rainfall events up to and including the 25-year storm are met.

Please contact me if you have any questions concerning this information.

Very Truly Yours,
Trinkaus Engineering, LLC



Steven D. Trinkaus, PE