WinTR55 NOAA A 100 YEAR Rainfall=8.21"

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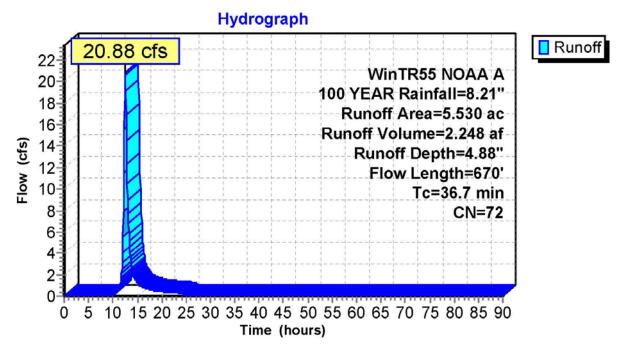
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Summary for Subcatchment PA #1: PA #1

Runoff = 20.88 cfs @ 12.52 hrs, Volume= 2.248 af, Depth= 4.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 100 YEAR Rainfall=8.21"

	Area	(ac) (N De	scription								
	3.	600	72 1/3	acre lots, 3	0% imp, H	SG B						
*	0.	710	90 Pav	red roads w	/open ditch	nes, 50% imp, HSG C						
*	1.	220	60 Bru	sh, Good, I	HSG C							
	5.530 72 Weighted Average											
	4.	095	74.	05% Pervio	us Area							
	1.	435	25.	95% Imper	vious Area							
	Тс	Length	Slope	Velocity	Capacity	Description						
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)							
	33.8	300	0.0200	0.15		Sheet Flow, Segment #1						
						Grass: Dense n= 0.240 P2= 3.30"						
	2.9	370	0.0170	2.10		Shallow Concentrated Flow, Segment #2						
_						Unpaved Kv= 16.1 fps						
	36.7	670	Total									



2) Drainage Area #2

WinTR55 NOAA A 2 YEAR Rainfall=3.34" Printed 4/30/2020

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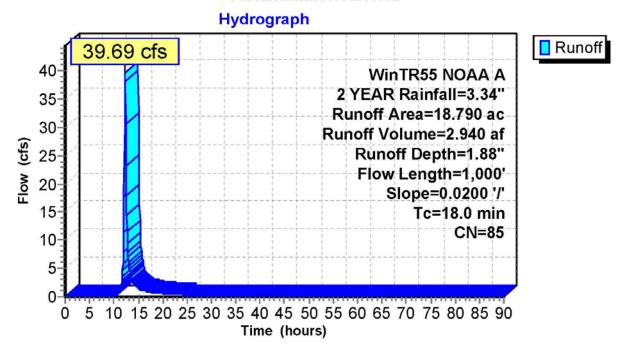
Page 1

Summary for Subcatchment PA #2: PA #2

Runoff = 39.69 cfs @ 12.28 hrs, Volume= 2.940 af, Depth= 1.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 2 YEAR Rainfall=3.34"

	Area	(ac) C	N Desc	cription								
*	5.	5.400 64 >75% Grass cover, Good, HSG C										
	8.	590 9	8 Pave	ed parking	HSG C							
*	0.	640	2 Pave	ed roads w	curbs & se	ewers, HSG C						
*	4.160 86 Urban industrial, 65% imp, HSG C											
	18.790 85 Weighted Average											
	7.	496	39.8	9% Pervio	us Area							
	11.	294	60.1	1% Imperv	ious Area							
	_											
	Tc	Length	Slope	Velocity	Capacity	Description						
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)							
	14.1	100	0.0200	0.12		Sheet Flow, Segment #1						
						Grass: Dense n= 0.240 P2= 3.30"						
	0.6	100	0.0200	2.87		Shallow Concentrated Flow, Segment #2						
						Paved Kv= 20.3 fps						
_	3.3	800		4.00		Direct Entry, Segment #3						
	18.0	1 000	Total									



WinTR55 NOAA A 10 YEAR Rainfall=5.01" Printed 4/30/2020

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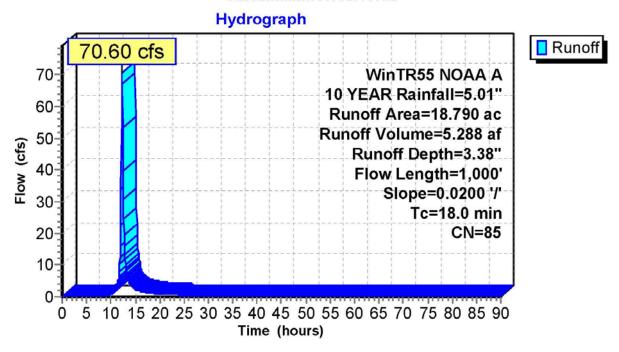
Page 2

Summary for Subcatchment PA #2: PA #2

Runoff = 70.60 cfs @ 12.27 hrs, Volume= 5.288 af, Depth= 3.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 10 YEAR Rainfall=5.01"

	Area	(ac) C	N Desc	cription								
*	5.	5.400 64 >75% Grass cover, Good, HSG C										
	8.	590 9	8 Pave	ed parking	HSG C							
*	0.	640	2 Pave	ed roads w	curbs & se	ewers, HSG C						
*	4.160 86 Urban industrial, 65% imp, HSG C											
	18.790 85 Weighted Average											
	7.	496	39.8	9% Pervio	us Area							
11.294 60.11% Impervious Area												
	Tc	Length	Slope	Velocity	Capacity	Description						
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)							
	14.1	100	0.0200	0.12		Sheet Flow, Segment #1						
						Grass: Dense n= 0.240 P2= 3.30"						
	0.6	100	0.0200	2.87		Shallow Concentrated Flow, Segment #2						
						Paved Kv= 20.3 fps						
_	3.3	800		4.00		Direct Entry, Segment #3						
	18.0	1 000	Total									



WinTR55 NOAA A 100 YEAR Rainfall=8.21"

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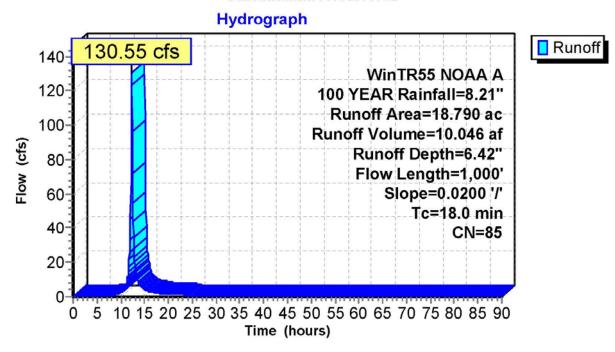
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Summary for Subcatchment PA #2: PA #2

Runoff = 130.55 cfs @ 12.27 hrs, Volume= 10.046 af, Depth= 6.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 100 YEAR Rainfall=8.21"

	Area	(ac) C	N Desc	cription										
*	5.	400 6	34 >759	% Grass co	over, Good	, HSG C								
	8.	8.590 98 Paved parking, HSG C												
*	* 0.640 92 Paved roads w/curbs & sewers, HSG C													
*	4.	160 8	6 Urba	n industria	al, 65% imp	, HSG C								
	18.	790 8	55 Weig	hted Aver	age									
	7.	496	39.8	9% Pervio	us Area									
	11.	294	60.1	1% Imperv	ious Area									
	_													
	Тс	Length	Slope	Velocity	Capacity	Description								
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)									
	14.1	100	0.0200	0.12		Sheet Flow, Segment #1								
						Grass: Dense n= 0.240 P2= 3.30"								
	0.6	100	0.0200	2.87		Shallow Concentrated Flow, Segment #2								
						Paved Kv= 20.3 fps								
_	3.3	800		4.00		Direct Entry, Segment #3								
	18.0	1 000	Total											



3) Routing for Basin #1

WinTR55 NOAA A 2 YEAR Rainfall=3.34"

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Summary for Pond Basin #1: Pond #1

24.320 ac, 52.34% Impervious, Inflow Depth = 1.68" for 2 YEAR event Inflow Area = 41.33 cfs @ 12.28 hrs, Volume= 3.409 af Inflow = Outflow = 3.137 af, Atten= 98%, Lag= 334.7 min

0.88 cfs @ 17.86 hrs, Volume= 0.88 cfs @ 17.86 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= Primary 3.137 af 0.000 af Secondary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 74.27' @ 17.86 hrs Surf.Area= 1.051 ac Storage= 2.729 af

Plug-Flow detention time= 1,914.1 min calculated for 3.135 af (92% of inflow)

Center-of-Mass det. time= 1,877.1 min (2,699.1 - 822.0)

Volume	Invert A	vail.Storag	e Stor	age Description	
#1	68.90'	8.785	af Cus	tom Stage Data	(Prismatic)Listed below (Recalc)
Elevation	on Surf.Area	Inc	.Store	Cum.Store	
(fee			e-feet)	(acre-feet)	
68.9			0.000	0.000	
70.0			0.115	0.115	
71.0			0.350	0.465	
72.0			0.540	1.005 1.650	
73.0 74.0			0.645		
74.0 75.0			0.810 1.160	2.460	
		1.505		3.620	
76.0				5.125	
77.0 78.0			1.720 1.940	6.845 8.785	
70.0	2.030		1.940	0.703	
Device	Routing	Invert	Outlet D	evices	
#1	Device 6	68.90'	3.0" Ver	t. Orifice/Grate	C= 0.600
#2	Device 6	74.00'	9.0" W	24.0" H Vert. O	rifice/Grate C= 0.600
#3	Device 6	76.00'	60.0" W	x 12.0" H Vert. 0	Orifice/Grate C= 0.600
#4	Device 6	76.00'	54.0" W	x 12.0" H Vert. 0	Orifice/Grate C= 0.600
#5	Device 6	76.00'	54.0" W	x 12.0" H Vert. 0	Orifice/Grate C= 0.600
#6	Primary	68.80'	36.0" R	ound Culvert L=	86.0' RCP, square edge headwall, Ke= 0.500
	•		nlet / O	utlet Invert= 68.80	0' / 66.53' S= 0.0264 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#7	Secondary	77.50'	75.0' lor	ng x 10.0' bread	th Broad-Crested Rectangular Weir
					.60 0.80 1.00 1.20 1.40 1.60
					6 2.70 2.69 2.68 2.69 2.67 2.64
	. O 451 M			-	

Primary OutFlow Max=0.88 cfs @ 17.86 hrs HW=74.27' (Free Discharge)

-6=Culvert (Passes 0.88 cfs of 67.83 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.54 cfs @ 11.03 fps) -2=Orifice/Grate (Orifice Controls 0.34 cfs @ 1.67 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

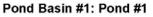
-5=Orifice/Grate (Controls 0.00 cfs)

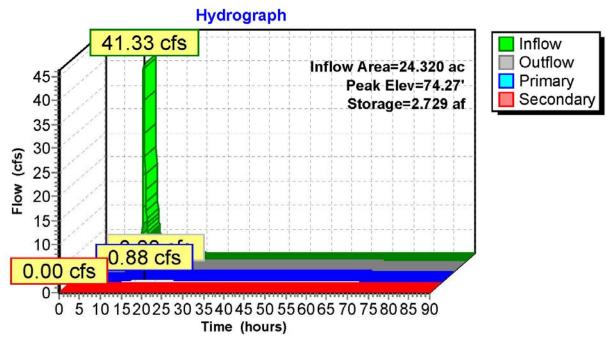
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.90' (Free Discharge) 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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WinTR55 NOAA A 10 YEAR Rainfall=5.01"

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Summary for Pond Basin #1: Pond #1

24.320 ac, 52.34% Impervious, Inflow Depth = 3.11" for 10 YEAR event Inflow Area = 75.94 cfs @ 12.28 hrs, Volume= Inflow 6.305 af = 5.03 cfs @ 13.96 hrs, Volume= 5.03 cfs @ 13.96 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= Outflow = 5.906 af, Atten= 93%, Lag= 100.8 min = 5.906 af Primary 0.000 af Secondary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 75.50' @ 13.96 hrs Surf.Area= 1.505 ac Storage= 4.349 af

Plug-Flow detention time= 1,192.2 min calculated for 5.901 af (94% of inflow)

Center-of-Mass det. time= 1,162.3 min (1,972.5 - 810.1)

Volume	Inve	ert A	vail.Storag	e Stor	age Description	
#1	68.9	90'	8.785	af Cus	tom Stage Data	(Prismatic)Listed below (Recalc)
Elevation		rf.Area		.Store	Cum.Store	
(fee		(acres)		e-feet)	(acre-feet)	
68.9		0.000		0.000	0.000	
70.0		0.210		0.115	0.115	
71.0		0.490		0.350	0.465	
72.0		0.590		0.540	1.005	
73.0		0.700		0.645	1.650	
74.0		0.920		0.810	2.460	
75.0		1.400		1.160	3.620	
76.0		1.610		1.505	5.125	
77.0	the State of the S	1.830		1.720	6.845	
78.0	00	2.050		1.940	8.785	
Device	Routing		Invert	Outlet D	evices	
#1	Device 6		11 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		t. Orifice/Grate	C= 0.600
#2	Device 6					cifice/Grate C= 0.600
#3	Device 6					Orifice/Grate C= 0.600
#4	Device 6					Orifice/Grate C= 0.600
#5	Device 6					Orifice/Grate C= 0.600
#6	Primary	'				: 86.0' RCP, square edge headwall, Ke= 0.500
#6 Primary						b' / 66.53' S= 0.0264'/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#7	Seconda	rv				h Broad-Crested Rectangular Weir
<i>"</i>	Occornac	, ,			•	60 0.80 1.00 1.20 1.40 1.60
						3 2.70 2.69 2.68 2.69 2.67 2.64
					2110 2101	

Primary OutFlow Max=5.03 cfs @ 13.96 hrs HW=75.50' (Free Discharge)

6=Culvert (Passes 5.03 cfs of 77.62 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.60 cfs @ 12.25 fps)
-2=Orifice/Grate (Orifice Controls 4.43 cfs @ 3.93 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

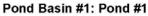
-5=Orifice/Grate (Controls 0.00 cfs)

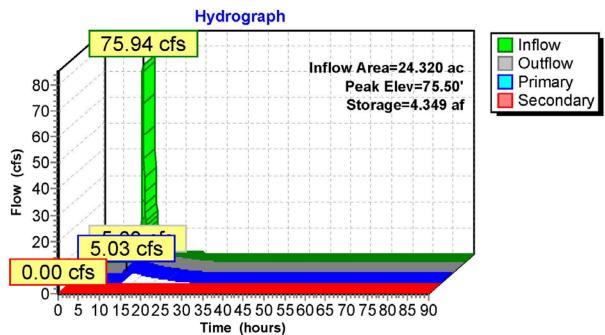
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.90' (Free Discharge) 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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WinTR55 NOAA A 100 YEAR Rainfall=8.21"

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Summary for Pond Basin #1: Pond #1

24.320 ac, 52.34% Impervious, Inflow Depth = 6.07" for 100 YEAR event Inflow Area = Inflow 143.56 cfs @ 12.28 hrs, Volume= 12.295 af = 47.05 cfs @ 12.76 hrs, Volume= 47.05 cfs @ 12.76 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= Outflow = 11.834 af, Atten= 67%, Lag= 29.1 min = 11.834 af Primary 0.000 af Secondary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 76.87' @ 12.76 hrs Surf.Area= 1.802 ac Storage= 6.614 af

Plug-Flow detention time= 669.2 min calculated for 11.824 af (96% of inflow)

Center-of-Mass det. time= 651.1 min (1,448.4 - 797.3)

Volume	Inver	t Av	ail.Storage	e Stor	age Description	
#1	68.90		8.785 a	f Cus	tom Stage Data	(Prismatic)Listed below (Recalc)
Elevation		Area		Store	Cum.Store	
(fee		cres)		-feet)	(acre-feet)	
68.9		0.000		0.000	0.000	
70.0	7070	0.210		0.115	0.115	
71.0		0.490	0.350		0.465	
72.0		0.590		0.540	1.005	
73.0		0.700		0.645	1.650	
74.0		0.920		0.810	2.460	
75.0		1.400	1.160		3.620	
76.0		1.610	1.505		5.125	
77.0	7.7.	1.830		1.720	6.845	
78.0	00 ;	2.050		1.940	8.785	
Device	Routing		Invert C	Outlet D	evices	
#1	Device 6		68.90' 3	0" Ver	t. Orifice/Grate	C= 0.600
#2	Device 6					rifice/Grate C= 0.600
#3	Device 6					Orifice/Grate C= 0.600
#4	Device 6				continued to a section of	Orifice/Grate C= 0.600
#5	Device 6		76.00' 5	4.0" W	x 12.0" H Vert. 0	Orifice/Grate C= 0.600
#6	Primary		68.80' 3	6.0" R	ound Culvert L=	86.0' RCP, square edge headwall, Ke= 0.500
	•		1	nlet / Ou	utlet Invert= 68.80	0' / 66.53' S= 0.0264 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#7	Secondary	,	77.50' 7	5.0' lon	ig x 10.0' bread	th Broad-Crested Rectangular Weir
			H	Head (fe	et) 0.20 0.40 0	60 0.80 1.00 1.20 1.40 1.60
			(Coef. (E	nglish) 2.49 2.56	6 2.70 2.69 2.68 2.69 2.67 2.64
					5	

Primary OutFlow Max=46.83 cfs @ 12.76 hrs HW=76.87 (Free Discharge)

6=Culvert (Passes 46.83 cfs of 87.23 cfs potential flow) -1=Orifice/Grate (Orifice Controls 0.66 cfs @ 13.49 fps) -2=Orifice/Grate (Orifice Controls 9.75 cfs @ 6.50 fps)

-3=Orifice/Grate (Orifice Controls 13.01 cfs @ 2.99 fps)

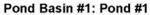
-4=Orifice/Grate (Orifice Controls 11.71 cfs @ 2.99 fps) -5=Orifice/Grate (Orifice Controls 11.71 cfs @ 2.99 fps)

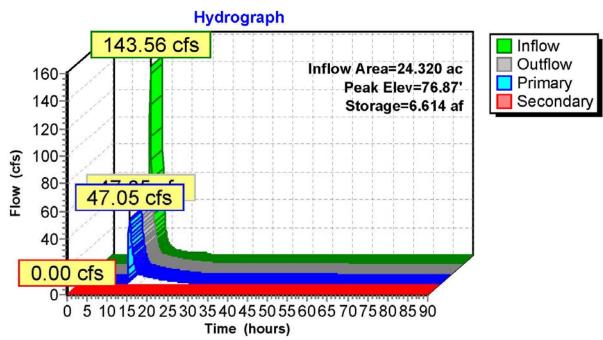
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.90' (Free Discharge) 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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ii. Post Development Peak Flow Conditions (Basin #3)

1) Drainage Area #3

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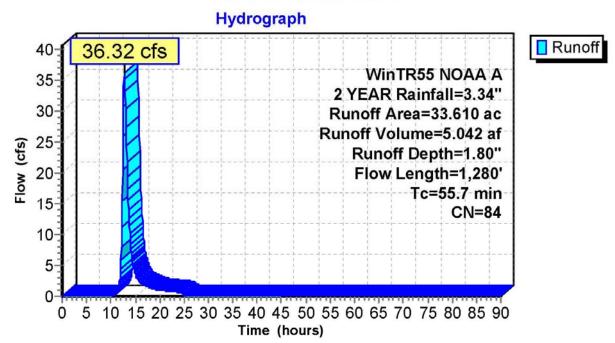
Page 1

Summary for Subcatchment PA #3: PA #3

Runoff = 36.32 cfs @ 12.78 hrs, Volume= 5.042 af, Depth= 1.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 2 YEAR Rainfall=3.34"

	Area ((ac) C	N De	scription											
*	13.3	350	36 Urb	an industria	al, 65% imp	, HSG C									
	10.	170	98 Pa	ved parking, HSG C											
*	0.3	210	34 >75	% Grass c	over, Good,	, HSG C									
	2.0	030	98 Pa	ed roads w	curbs & se	ewers, HSG C									
*	0.6	670	31 >75	% Grass c	over, Good,	, HSG C									
*	4.3	240	31 >75	% Grass c	over, Good,	, HSG C									
*	2.9	940 (31 >75	% Grass c	over, Good,	, HSG C									
	33.6	610	34 We	ighted Avei	age										
	12.732 37.88% Pervious Area														
	20.8	378	62.	12% Imper	ious Area										
	Тс	Length	Slope		Capacity	Description									
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)										
	44.9	240	0.0063	0.09		Sheet Flow, Segment #1									
						Grass: Dense n= 0.240 P2= 3.30"									
	10.8	1,040	0.0100	1.61		Shallow Concentrated Flow, Segment #2									
						Unpaved Kv= 16.1 fps									
	55.7	1,280	Total												



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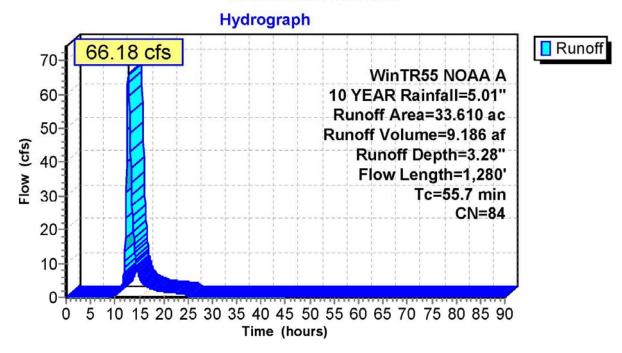
Page 2

Summary for Subcatchment PA #3: PA #3

Runoff = 66.18 cfs @ 12.76 hrs, Volume= 9.186 af, Depth= 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 10 YEAR Rainfall=5.01"

	Area	(ac) C	N Des	cription									
*					al, 65% imp	. HSG C							
	0.00	10.170 98 Paved parking, HSG C											
*	0.	210	64 >75% Grass cover, Good, HSG C										
						ewers, HSG C							
*	0.	670 (31 >75	% Grass c	over, Good	, HSG C							
*	4.	240 (31 >75	% Grass c	over, Good	, HSG C							
*	2.	940 (31 >75	% Grass c	over, Good	, HSG C							
	33.610 84 Weighted Average												
	12.732 37.88% Pervious Area												
	20.	878	62.	12% Imper	vious Area								
	Тс	Length	Slope	Velocity	Capacity	Description							
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)								
	44.9	240	0.0063	0.09		Sheet Flow, Segment #1							
						Grass: Dense n= 0.240 P2= 3.30"							
	10.8	1,040	0.0100	1.61		Shallow Concentrated Flow, Segment #2							
						Unpaved Kv= 16.1 fps							
_	55.7	1.280	Total										



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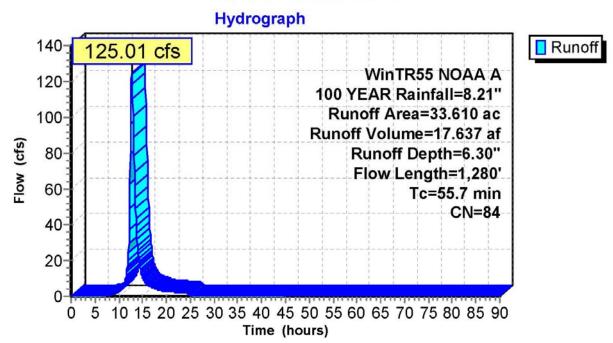
Page 3

Summary for Subcatchment PA #3: PA #3

Runoff = 125.01 cfs @ 12.75 hrs, Volume= 17.637 af, Depth= 6.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 100 YEAR Rainfall=8.21"

	Area ((ac) C	N De	scription									
*	13.3	350	36 Urk	an industria	al, 65% imp	, HSG C							
	10.	170	8 Paved parking, HSG C										
*	0.3	210	34 >75										
						ewers, HSG C							
*	0.6	670			over, Good,								
*	4.3	240 (31 >75	% Grass c	over, Good,	, HSG C							
*	2.9	940 (31 >75	% Grass c	over, Good,	, HSG C							
	33.6	310	34 We	ighted Avei	age								
	12.732 37.88% Pervious Area												
	20.8	378	62.	12% Imper	ious Area								
	Тс	Length	Slope	Velocity	Capacity	Description							
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)								
	44.9	240	0.0063	0.09		Sheet Flow, Segment #1							
						Grass: Dense n= 0.240 P2= 3.30"							
	10.8	1,040	0.0100	1.61		Shallow Concentrated Flow, Segment #2							
						Unpaved Kv= 16.1 fps							
	55.7	1,280	Total										



2) Routing for Basin #3

WinTR55 NOAA A 2 YEAR Rainfall=3.34"

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Summary for Pond Basin #3: Pond #3

Inflow Area = 33.610 ac, 62.12% Impervious, Inflow Depth = 1.80" for 2 YEAR event Inflow 36.32 cfs @ 12.78 hrs, Volume= 5.042 af =

Outflow = 4.318 af, Atten= 91%, Lag= 148.5 min

3.13 cfs @ 15.25 hrs, Volume= 3.13 cfs @ 15.25 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= Primary = 4.318 af Secondary = 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 73.06' @ 15.25 hrs Surf.Area= 2.315 ac Storage= 3.613 af

Plug-Flow detention time= 1,374.0 min calculated for 4.318 af (86% of inflow)

Center-of-Mass det. time= 1,316.6 min (2,169.4 - 852.8)

Volume	Invert	Avail.Storag	e Stor	age Description					
#1	69.50'	13.505		tom Stage Data (F	Prismatic) is	sted below (Recalc)		
,,,	00.00	10.000	• • • • •	tom stage sata (i	nomatio,=.	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1 (00010)		
Elevation	on Surf.Are	a Inc	Store	Cum.Store					
(fee	et) (acres	s) (acre	-feet)	(acre-feet)					
69.5	0.00	0	0.000	0.000					
70.0	00 0.16	0	0.040	0.040					
71.0	10.70 (T. 10.70	7	0.330	0.370					
72.0		T	1.100	1.470					
73.0			2.005	3.475					
74.0			2.355	5.830					
75.0		_	2.450	8.280					
76.0			2.560	10.840					
77.0	00 2.71	0	2.665	13.505					
Device	Routing	Invert	Outlet D	evices					
#1	Device 6	69.50'	3.0" Ver	t. Orifice/Grate C	= 0.600				
#2	Device 6	72.50'	24.0" W	x 18.0" H Vert. Or	ifice/Grate	C = 0.600			
#3	Device 6			x 18.0" H Vert. Or					
#4	Device 6	0.100-1-1		x 18.0" H Vert. Or					
#5	Device 6			x 18.0" H Vert. Or					
#6	Primary			ound Culvert L= 8					
		=====	nlet / Ou	itlet Invert= 69.40'	/ 67.50' S=	0.0221 7	Cc= 0.900	n= 0.011, I	Flow Area= 7.07 sf

120.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=3.13 cfs @ 15.25 hrs HW=73.06' (Free Discharge) -6=Culvert (Passes 3.13 cfs of 50.02 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.44 cfs @ 8.92 fps)

76.00

−2=Orifice/Grate (Orifice Controls 2.69 cfs @ 2.40 fps) −3=Orifice/Grate (Controls 0.00 cfs)

Secondary

4=Orifice/Grate (Controls 0.00 cfs)

-5=Orifice/Grate (Controls 0.00 cfs)

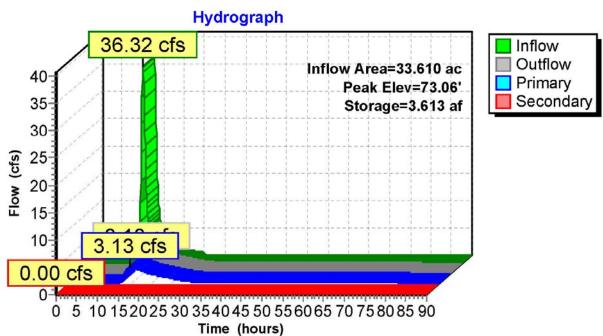
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.50' (Free Discharge)

-7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Pond Basin #3: Pond #3



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Summary for Pond Basin #3: Pond #3

33.610 ac, 62.12% Impervious, Inflow Depth = 3.28" for 10 YEAR event Inflow Area = 66.18 cfs @ 12.76 hrs, Volume= Inflow = 9.186 af 12.22 cfs @ 14.14 hrs, Volume= 12.22 cfs @ 14.14 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= 8.394 af, Atten= 82%, Lag= 82.7 min Outflow = Primary = 8.394 af Secondary = 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 73.99' @ 14.14 hrs Surf.Area= 2.399 ac Storage= 5.815 af

Plug-Flow detention time= 822.4 min calculated for 8.394 af (91% of inflow)

Center-of-Mass det. time= 781.7 min (1,622.2 - 840.4)

Volume	Invert	Avail.Stora	ge Stor	age Description					
#1	69.50'	13.505	af Cus	tom Stage Data	(Prismatic)Listed below (Recalc)				
Elevation	on Surf.Ar	ea In	c.Store	Cum.Store					
(fee	et) (acre	es) (ac	re-feet)	(acre-feet)					
69.5	50 0.0	000	0.000	0.000					
70.0	00 0.1	60	0.040	0.040					
71.0	00 0.5	600	0.330	0.370					
72.0		00	1.100	1.470					
73.0		310	2.005	3.475					
74.0		100	2.355	5.830					
75.0		600	2.450	8.280					
76.0		20	2.560	10.840					
77.0	00 2.7	'10	2.665	13.505					
Device	Routing	Invert	Outlet D	evices					
#1	Device 6	69.50'		t. Orifice/Grate	C= 0.600				
#2	Device 6	72.50			Orifice/Grate C= 0.600				
#3	Device 6	74.00'			Orifice/Grate C= 0.600				
#4	Device 6	74.00							
#5	Device 6	74.00		60.0" W x 18.0" H Vert. Orifice/Grate C= 0.600 60.0" W x 18.0" H Vert. Orifice/Grate C= 0.600					
#6	Primary	69.40'			= 86.0' RCP, square edge headwall, Ke= 0.500				
"0	1 minuty	00.10			0' / 67.50' S= 0.0221 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf				
#7 Secondary		76.00'			dth Broad-Crested Rectangular Weir				
					0.60 0.80 1.00 1.20 1.40 1.60				
					6 2.70 2.69 2.68 2.69 2.67 2.64				

Primary OutFlow Max=12.21 cfs @ 14.14 hrs HW=73.99' (Free Discharge)

6=Culvert (Passes 12.21 cfs of 59.86 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.49 cfs @ 10.06 fps)

-2=Orifice/Grate (Orifice Controls 11.72 cfs @ 3.92 fps) -3=Orifice/Grate (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

-5=Orifice/Grate (Controls 0.00 cfs)

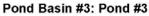
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.50' (Free Discharge)

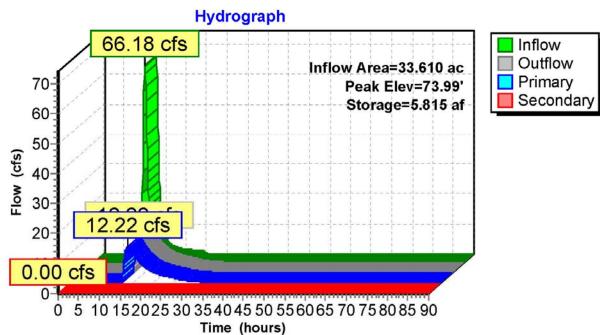
-7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Summary for Pond Basin #3: Pond #3

33.610 ac, 62.12% Impervious, Inflow Depth = 6.30" for 100 YEAR event Inflow Area = Inflow 125.01 cfs @ 12.75 hrs, Volume= 17.637 af 68.86 cfs @ 13.30 hrs, Volume= 68.86 cfs @ 13.30 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= Outflow = 16.802 af, Atten= 45%, Lag= 33.1 min 16.802 af Primary = Secondary = 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 75.02' @ 13.30 hrs Surf.Area= 2.502 ac Storage= 8.319 af

Plug-Flow detention time= 459.4 min calculated for 16.787 af (95% of inflow) Center-of-Mass det. time= 437.0 min (1,264.1 - 827.1)

Volume	Invert A	vail.Storag	e Stora	ge Description					
#1	69.50'	13.505 a	f Cust	om Stage Data (Prismatic)Li	sted below	(Recalc)		
Clayatia	Cumf Area	laa	Ctava	Cuma Stava					
Elevation			Store Cum.Store						
(fee	et) (acres)	(acre	-feet)	(acre-feet)					
69.5	0.000		0.000	0.000					
70.0	0.160		0.040	0.040					
71.0	0.500		0.330	0.370					
72.0	00 1.700		1.100	1.470					
73.0			2.005	3.475					
74.0			2.355	5.830					
75.0			2.450	8.280					
76.0			2.560	10.840					
77.0	00 2.710		2.665	13.505					
Dovice	Pouting	Invort (Outlet De	vices					
Device	Routing								
#1	Device 6			. Orifice/Grate					
#2	Device 6	72.50' 2	24.0" W	18.0" H Vert. O	rifice/Grate	C = 0.600			
#3	Device 6	74.00'	0.0" W	18.0" H Vert. O	rifice/Grate	C = 0.600			
#4	Device 6	74.00'	0.0" W	(18.0" H Vert. O	rifice/Grate	C = 0.600			
#5	Device 6	74.00'	0.0" W	(18.0" H Vert. O	rifice/Grate	C = 0.600			
#6	Primary			und Culvert L=			ge headwall.	Ke = 0.500	
									low Area= 7.07 sf
				100.40	, 0, .00	0.0221	0.000	11. 0.011, 1	101171104 - 7.07 51

120.0' long x 10.0' breadth Broad-Crested Rectangular Weir

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=68.72 cfs @ 13.30 hrs HW=75.01' (Free Discharge)

-6=Culvert (Passes 68.72 cfs of 69.03 cfs potential flow)

76.00

Secondary

-1=Orifice/Grate (Orifice Controls 0.55 cfs @ 11.18 fps)

–2=Orifice/Grate (Orifice Controls 19.03 cfs @ 6.34 fps) –3=Orifice/Grate (Orifice Controls 16.38 cfs @ 3.23 fps)

4=Orifice/Grate (Orifice Controls 16.38 cfs @ 3.23 fps)

-5=Orifice/Grate (Orifice Controls 16.38 cfs @ 3.23 fps)

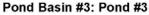
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.50' (Free Discharge)

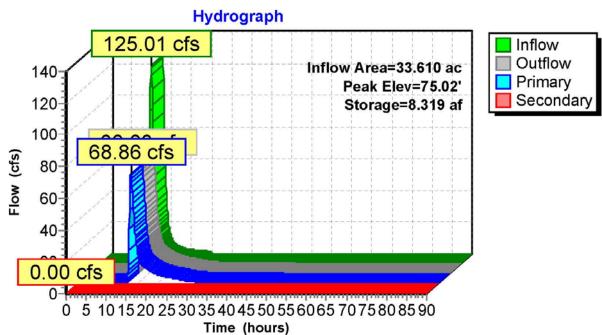
-7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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STIRES ASSOCIATES, P.A.

3. Best Foods Site Plan and Major Subdivision November 1990 i. Post Development Peak Flow Conditions (Basin #1)

1) Drainage Area #1

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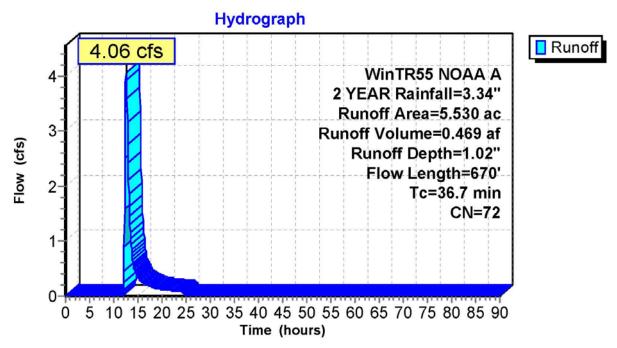
Page 1

Summary for Subcatchment PA #1: PA #1

Runoff = 4.06 cfs @ 12.57 hrs, Volume= 0.469 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 2 YEAR Rainfall=3.34"

	Area	(ac) C	N Des	cription						
	3.	600	72 1/3	/3 acre lots, 30% imp, HSG B						
*	0.	710	90 Pav	ed roads w	/open ditch	nes, 50% imp, HSG C				
*	1.	220	60 Bru	sh, Good, I	HSG C					
	5.530 72 Weighted Average									
	4.	095	74.0	5% Pervio	us Area					
	1.	435	25.9	95% Imper	vious Area					
	Тс	Length	Slope			Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	33.8	300	0.0200	0.15		Sheet Flow, Segment #1				
						Grass: Dense n= 0.240 P2= 3.30"				
	2.9	370	0.0170	2.10		Shallow Concentrated Flow, Segment #2				
_						Unpaved Kv= 16.1 fps				
	36.7	670	Total							



WinTR55 NOAA A 10 YEAR Rainfall=5.01"

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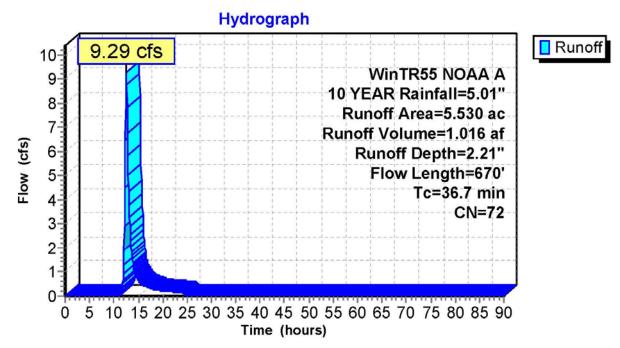
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Summary for Subcatchment PA #1: PA #1

Runoff = 9.29 cfs @ 12.54 hrs, Volume= 1.016 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 10 YEAR Rainfall=5.01"

	Area	(ac) (N De	cription						
	3.	600	72 1/3	1/3 acre lots, 30% imp, HSG B						
*	0.	710	90 Pav	ed roads w	/open ditch	nes, 50% imp, HSG C				
*	1.	220	60 Bru	sh, Good, I	HSG C					
	5.530 72 Weighted Average									
	4.	095	74.	05% Pervio	us Area					
	1.	435	25.	95% Imper	vious Area					
	Тс	Length	Slope	Velocity	Capacity	Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	33.8	300	0.0200	0.15		Sheet Flow, Segment #1				
						Grass: Dense n= 0.240 P2= 3.30"				
	2.9	370	0.0170	2.10		Shallow Concentrated Flow, Segment #2				
_						Unpaved Kv= 16.1 fps				
	36.7	670	Total							



WinTR55 NOAA A 100 YEAR Rainfall=8.21" Printed 4/30/2020

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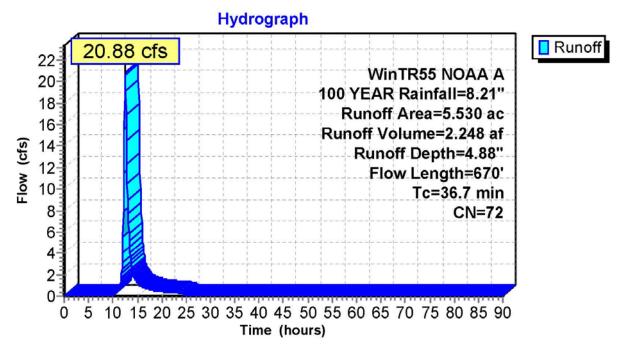
Page 3

Summary for Subcatchment PA #1: PA #1

Runoff = 20.88 cfs @ 12.52 hrs, Volume= 2.248 af, Depth= 4.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 100 YEAR Rainfall=8.21"

	Area	(ac) (N De	cription						
	3.	600	72 1/3	1/3 acre lots, 30% imp, HSG B						
*	0.	710	90 Pav	ed roads w	/open ditch	nes, 50% imp, HSG C				
*	1.	220	60 Bru	sh, Good, I	HSG C					
	5.530 72 Weighted Average									
	4.	095	74.	05% Pervio	us Area					
	1.	435	25.	95% Imper	vious Area					
	Тс	Length	Slope	Velocity	Capacity	Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	33.8	300	0.0200	0.15		Sheet Flow, Segment #1				
						Grass: Dense n= 0.240 P2= 3.30"				
	2.9	370	0.0170	2.10		Shallow Concentrated Flow, Segment #2				
_						Unpaved Kv= 16.1 fps				
	36.7	670	Total							



2) Drainage Area #2

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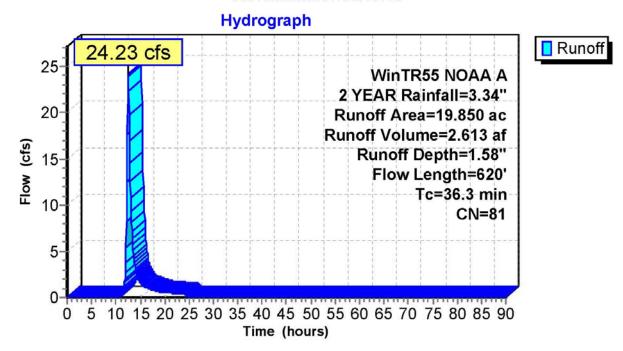
Page 1

Summary for Subcatchment PA #2: PA #2

24.23 cfs @ 12.52 hrs, Volume= 2.613 af, Depth= 1.58" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 2 YEAR Rainfall=3.34"

	Area	(ac)	CN	Desc	ription						
*	13.	380	86	Urba	Jrban industrial, 65% imp, HSG C						
	1.	130	98	Pave	d parking,	HSG C					
*	4.	930	64	>759	6 Grass co	ver, Good,	HSG C				
*	0.	410	61	Brus	h, Good, F	ISG C					
	19.850 81 Weighted Average										
	10.	023		50.49	9% Pervio	us Area					
	9.	827		49.5	1% Imperv	ious Area					
	Тс	Length		lope	Velocity	Capacity	Description				
_	(min)	(feet)		(ft/ft)	(ft/sec)	(cfs)					
	33.8	300	0.0	0200	0.15		Sheet Flow, Segment #1				
							Grass: Dense n= 0.240 P2= 3.30"				
	2.5	320	0.0	0112	2.15		Shallow Concentrated Flow, Segment #2				
_							Paved Kv= 20.3 fps				
	36.3	620	То	tal							



WinTR55 NOAA A 10 YEAR Rainfall=5.01" Printed 4/30/2020

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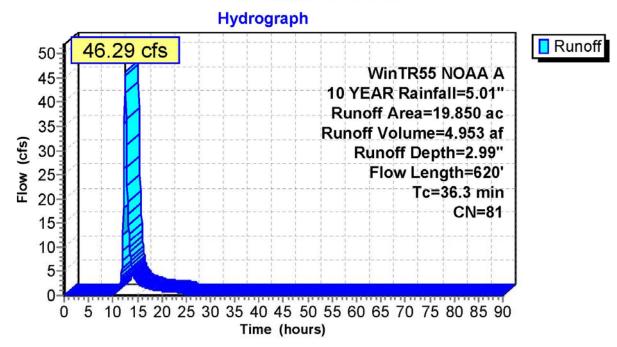
Page 2

Summary for Subcatchment PA #2: PA #2

Runoff = 46.29 cfs @ 12.51 hrs, Volume= 4.953 af, Depth= 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 10 YEAR Rainfall=5.01"

	Area	(ac) (ON DO	escription					
*	13.	380	86 Ui	Jrban industrial, 65% imp, HSG C					
	1.	130	98 Pa	eved parking	, HSG C				
*	4.	930	64 >7	5% Grass c	over, Good,	, HSG C			
*	0.	410	61 Br	ush, Good, I	HSG C				
	19.	850	81 W	eighted Avei	age				
	10.	023	50	.49% Pervio	us Area				
	9.	827	49	0.51% Imper	ious Area				
	Tc (min)	Length (feet)	Slop (ft/f		Capacity (cfs)	Description			
_	33.8	300	0.020	0 0.15		Sheet Flow, Segment #1			
	2.5	320	0.011	2 2.15		Grass: Dense n= 0.240 P2= 3.30" Shallow Concentrated Flow, Segment #2 Paved Kv= 20.3 fps			
	36.3	620	Total						



WinTR55 NOAA A 100 YEAR Rainfall=8.21"

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Runoff

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Summary for Subcatchment PA #2: PA #2

Runoff = 90.68 cfs @ 12.49 hrs, Volume= 9.827 af, Depth= 5.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 100 YEAR Rainfall=8.21"

	Area	(ac) (CN	Desc	ription		
*	13.	380	86	Urba	n industria	I, 65% imp	o, HSG C
	1.	130	98	Pave	d parking,	HSG C	
*	4.	930	64	>75%	6 Grass co	ver, Good,	, HSG C
*	0.	410	61	Brusl	h, Good, F	ISG C	
	19.	850	81	Weig	hted Aver	age	
	10.	023		50.49	9% Pervio	us Area	
	9.	9.827 49.51% Impervious Area					
	Tc	Length	S	Slope	Velocity	Capacity	Description
_	(min)	(feet)		(ft/ft)	(ft/sec)	(cfs)	
	33.8	300	0.	0200	0.15		Sheet Flow, Segment #1
							Grass: Dense n= 0.240 P2= 3.30"
	2.5	320	0.	0112	2.15		Shallow Concentrated Flow, Segment #2
							Paved Kv= 20.3 fps
	36.3	620	To	tal			

Subcatchment PA #2: PA #2

Hydrograph 90.68 cfs 100-WinTR55 NOAA A 90-100 YEAR Rainfall=8.21" 80-Runoff Area=19.850 ac 70-Runoff Volume=9.827 af Flow (cfs) 60-Runoff Depth=5.94" 50-Flow Length=620' Tc=36.3 min 40 CN=81 30-20-10 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 Time (hours)

3) Routing for Basin #1

WinTR55 NOAA A 2 YEAR Rainfall=3.34"

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Summary for Pond Basin #1: Pond #1

25.380 ac, 44.37% Impervious, Inflow Depth = 1.46" for 2 YEAR event Inflow Area = Inflow 28.19 cfs @ 12.53 hrs, Volume= 3.082 af = 0.41 cfs @ 24.22 hrs, Volume= 0.41 cfs @ 24.22 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= 2.114 af, Atten= 99%, Lag= 701.6 min Outflow = Primary 2.114 af 0.000 af Secondary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 74.07' @ 24.22 hrs Surf.Area= 36,834 sf Storage= 117,670 cf

Plug-Flow detention time= 2,167.0 min calculated for 2.112 af (69% of inflow)

Center-of-Mass det. time= 2,084.6 min (2,929.8 - 845.2)

Volume	Invert	: Avail.Sto	rage Sto	rage Description				
#1	68.90	308,0	42 cf Cu:	stom Stage Data (Prismatic)Listed below (Recalc)				
Elevation	on S	urf.Area	Inc.Sto	re Cum.Store				
(fee	et)	(sq-ft)	(cubic-fee	t) (cubic-feet)				
68.9	90	0		0 0				
70.0		16,701	9,18					
71.0	00	21,975	19,33	8 28,524				
72.0		26,427	24,20					
73.0		31,116	28,77	2 81,496				
74.0	00	36,464	33,79	0 115,286				
75.0		42,160	39,31					
76.0		47,915	45,03					
77.0		54,076	50,99					
77.5		57,500	27,89					
78.0	00	60,567	29,51	7 308,042				
	D		0 11 1 1	n.konor				
Device	Routing	Invert	Outlet De					
#1	Device 6	68.90'		t. Orifice/Grate C= 0.600				
#2	Device 6	74.00'		24.0" H Vert. Orifice/Grate C= 0.600				
#3	Device 6	76.00		x 12.0" H Vert. Orifice/Grate C= 0.600				
#4	Device 6	76.00'		x 12.0" H Vert. Orifice/Grate C= 0.600				
#5	Device 6	76.00'		x 12.0" H Vert. Orifice/Grate C= 0.600				
#6	Primary	68.80'	36.0" Round Culvert L= 86.0' RCP, square edge headwall, Ke= 0.500					
				tlet Invert= 68.80' / 66.53' S= 0.0264 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf				
#7	Secondary	77.50		g x 10.0' breadth Broad-Crested Rectangular Weir				
				et) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60				
			Coef. (Er	nglish) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64				

Primary OutFlow Max=0.41 cfs @ 24.22 hrs HW=74.07' (Free Discharge)

6=Culvert (Passes 0.41 cfs of 66.04 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.37 cfs @ 10.83 fps)

-2=Orifice/Grate (Orifice Controls 0.04 cfs @ 0.82 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

-5=Orifice/Grate (Controls 0.00 cfs)

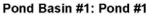
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.90' (Free Discharge)

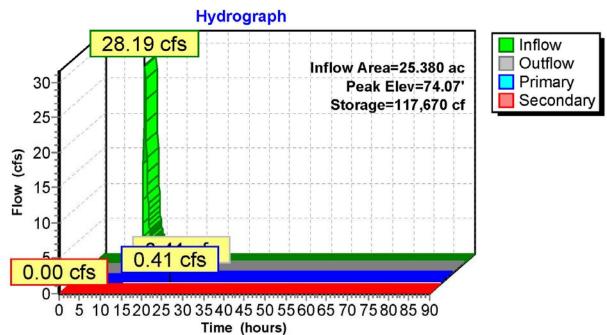
-7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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WinTR55 NOAA A 2 YEAR Rainfall=3.34" Printed 4/30/2020

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WinTR55 NOAA A 10 YEAR Rainfall=5.01"

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Summary for Pond Basin #1: Pond #1

25.380 ac, 44.37% Impervious, Inflow Depth = 2.82" for 10 YEAR event Inflow Area = 55.56 cfs @ 12.51 hrs, Volume= Inflow 5.969 af = 5.08 cfs @ 14.22 hrs, Volume= 5.08 cfs @ 14.22 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= Outflow = 4.850 af, Atten= 91%, Lag= 102.4 min 4.850 af Primary Secondary = 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 75.55' @ 14.22 hrs Surf.Area= 45,343 sf Storage= 178,797 cf

Plug-Flow detention time= 1,143.3 min calculated for 4.850 af (81% of inflow)

Center-of-Mass det. time= 1,078.2 min (1,909.7 - 831.5)

Volume	Invert	t Avail.Sto	rage Storag	e Description
#1	68.90	308,0	42 cf Custor	m Stage Data (Prismatic)Listed below (Recalc)
Elevation	on S	urf.Area	Inc.Store	Cum.Store
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)
68.90 0		0	0	0
70.0	00	16,701	9,186	9,186
71.00		21,975	19,338	28,524
72.00		26,427	24,201	52,725
73.0	00	31,116	28,772	81,496
74.0		36,464	33,790	115,286
75.0		42,160	39,312	154,598
76.0		47,915	45,038	199,636
77.0		54,076	50,996	250,631
77.5		57,500	27,894	278,525
78.0	00	60,567	29,517	308,042
B	D .:		0 11 1 15 1	
Device	Routing	Invert	KIN DOWNSTON IN COM	
#1	Device 6	68.90'		rifice/Grate C= 0.600
#2	Device 6	74.00'		.0" H Vert. Orifice/Grate C= 0.600
#3	Device 6	76.00'		2.0" H Vert. Orifice/Grate C= 0.600
#4	Device 6	76.00'		2.0" H Vert. Orifice/Grate C= 0.600
#5	Device 6	76.00'		2.0" H Vert. Orifice/Grate C= 0.600
#6	Primary	68.80'		d Culvert L= 86.0' RCP, square edge headwall, Ke= 0.500
				Invert= 68.80' / 66.53' S= 0.0264 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#7	Secondary	77.50		x 10.0' breadth Broad-Crested Rectangular Weir
				0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (Englis	sh) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=5.08 cfs @ 14.22 hrs HW=75.55' (Free Discharge)

6=Culvert (Passes 5.08 cfs of 78.01 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.42 cfs @ 12.32 fps)

-2=Orifice/Grate (Orifice Controls 4.66 cfs @ 4.00 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

-5=Orifice/Grate (Controls 0.00 cfs)

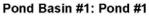
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.90' (Free Discharge)

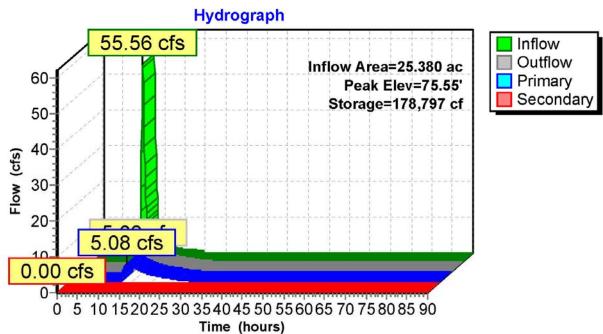
-7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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WinTR55 NOAA A 100 YEAR Rainfall=8.21"

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Summary for Pond Basin #1: Pond #1

25.380 ac, 44.37% Impervious, Inflow Depth = 5.71" for 100 YEAR event Inflow Area = Inflow 111.50 cfs @ 12.50 hrs, Volume= 12.075 af = Outflow = 58.59 cfs @ 12.92 hrs, Volume= 10.915 af, Atten= 47%, Lag= 25.2 min Primary = 10.915 af

58.59 cfs @ 12.92 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= Secondary = 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 77.05' @ 12.92 hrs Surf.Area= 54,416 sf Storage= 253,327 cf

Plug-Flow detention time= 568.7 min calculated for 10.905 af (90% of inflow)

Center-of-Mass det. time= 528.7 min (1,345.9 - 817.2)

Volume	Invert	Avail.Sto	rage Storage	Description
#1	68.90'	308,04	42 cf Custom	n Stage Data (Prismatic)Listed below (Recalc)
-				
Elevation		urf.Area	Inc.Store	Cum.Store
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)
68.9		0	0	0
70.0		16,701	9,186	9,186
71.0		21,975	19,338	28,524
72.0		26,427	24,201	52,725
73.0		31,116	28,772	81,496
74.0		36,464	33,790	115,286
75.0		42,160	39,312	154,598
76.0		47,915	45,038	199,636
77.0	T. T.	54,076	50,996	250,631
77.5		57,500	27,894	278,525
78.0	00	60,567	29,517	308,042
Device	Routing	Invert	Outlet Device	es
#1	Device 6	68.90'	2.5" Vert. Ori	ifice/Grate C= 0.600
#2	Device 6	74.00'	9.0" W x 24.0	O" H Vert. Orifice/Grate C= 0.600
#3	Device 6	76.00	60.0" W x 12	.0" H Vert. Orifice/Grate C= 0.600
#4	Device 6	76.00'	54.0" W x 12.	.0" H Vert. Orifice/Grate C= 0.600
#5	Device 6	76.00'	54.0" W x 12	.0" H Vert. Orifice/Grate C= 0.600
#6	Primary	68.80'	36.0" Round	d Culvert L= 86.0' RCP, square edge headwall, Ke= 0.500
			Inlet / Outlet I	nvert= 68.80' / 66.53' S= 0.0264 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#7	Secondary	77.50	75.0' long x	10.0' breadth Broad-Crested Rectangular Weir

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=58.07 cfs @ 12.92 hrs HW=77.04' (Free Discharge)

6=Culvert (Passes 58.07 cfs of 88.37 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.47 cfs @ 13.65 fps) -2=Orifice/Grate (Orifice Controls 10.21 cfs @ 6.81 fps)

-3=Orifice/Grate (Orifice Controls 16.93 cfs @ 3.39 fps)

-4=Orifice/Grate (Orifice Controls 15.23 cfs @ 3.39 fps)

-5=Orifice/Grate (Orifice Controls 15.23 cfs @ 3.39 fps)

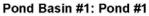
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.90' (Free Discharge)

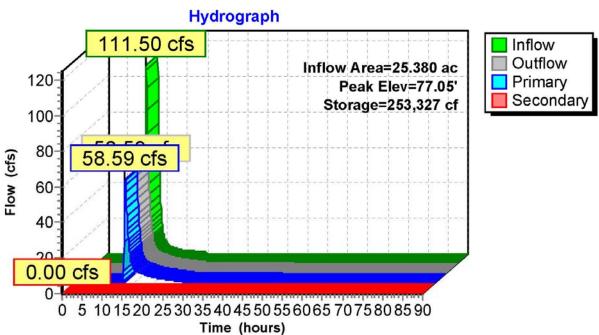
-7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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WinTR55 NOAA A 100 YEAR Rainfall=8.21" Printed 4/30/2020

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ii. Post Development Peak Flow Conditions (Basin #3)

1) Drainage Area #3

WinTR55 NOAA A 2 YEAR Rainfall=3.34" Printed 4/30/2020

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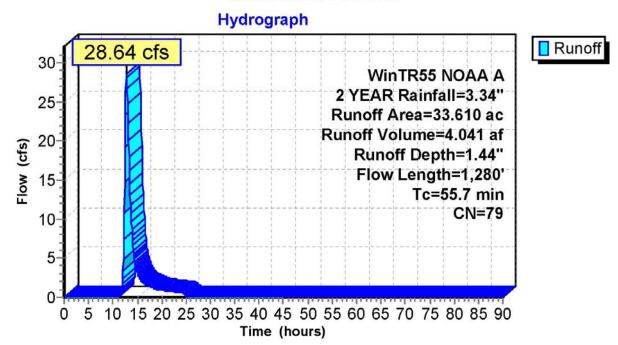
Summary for Subcatchment PA #3: PA #3

Runoff = 28.64 cfs @ 12.80 hrs, Volume= 4.041 af, Depth= 1.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 2 YEAR Rainfall=3.34"

	Area	(ac) C	N	Desc	ription							
*	13.	350	86	Urba	ban industrial, 65% imp, HSG C							
	5.	100	98	Pave	d parking	HSG C						
*	5.	280	64	>75%	6 Grass co	over, Good,	, HSG C					
	2.	030	98	Pave	d roads w	curbs & se	ewers, HSG C					
*	0.	670	61	>75%	6 Grass co	over, Good,	, HSG C					
*	4.	240	61	>75%	75% Grass cover, Good, HSG C							
*	2.	940	61	>75%	6 Grass co	over, Good,	, HSG C					
	33.610 79 Weighted Average											
	17.802 52.97% Pervious Area					us Area						
	15.808 47.03% Impervious Area					ious Area						
	Тс	Length		ope	Velocity	Capacity	Description					
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	44.9	240	0.0	063	0.09		Sheet Flow, Segment #1					
							Grass: Dense n= 0.240 P2= 3.30"					
	10.8	1,040	0.0	100	1.61		Shallow Concentrated Flow, Segment #2					
_							Unpaved Kv= 16.1 fps					
	55.7	1.280	Tot	tal								

Subcatchment PA #3: PA #3



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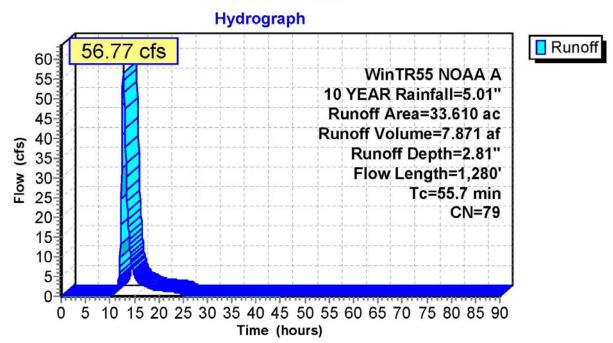
Summary for Subcatchment PA #3: PA #3

Runoff = 56.77 cfs @ 12.77 hrs, Volume= 7.871 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 10 YEAR Rainfall=5.01"

	Area	(ac) C	N De	scription		
*	13.	350 8	36 Url	an industri	al, 65% imp	o, HSG C
	5.	100	98 Pa	ed parking	, HSG C	
*	5.	280	34 >7	5% Grass c	over, Good	, HSG C
	2.	030				ewers, HSG C
*					over, Good	
*	4.	240	31 >7	5% Grass c	over, Good	, HSG C
*	2.	940 (31 >7	5% Grass c	over, Good	, HSG C
	33.	610	79 We	ighted Ave	rage	
	17.	802	52.	97% Pervio	us Area	
	15.808 47.03% Impervious Area					
	Тс	Length	Slope			Description
_	(min)	(feet)	(ft/ft	(ft/sec)	(cfs)	
	44.9	240	0.0063	0.09		Sheet Flow, Segment #1
						Grass: Dense n= 0.240 P2= 3.30"
	10.8	1,040	0.0100	1.61		Shallow Concentrated Flow, Segment #2
_						Unpaved Kv= 16.1 fps
	55.7	1,280	Total			

Subcatchment PA #3: PA #3



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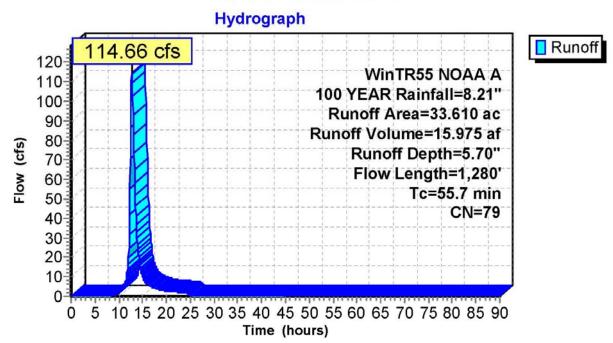
Summary for Subcatchment PA #3: PA #3

Runoff = 114.66 cfs @ 12.75 hrs, Volume= 15.975 af, Depth= 5.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 100 YEAR Rainfall=8.21"

	Area	(ac) C	N De	scription							
*	13.	350	36 Ur	rban industrial, 65% imp, HSG C							
	5.	100	98 Pa	ved parking	, HSG C						
*	5.	280	34 >7	5% Grass c	over, Good	, HSG C					
	2.	030				ewers, HSG C					
*	0.	670	31 >7	5% Grass c	over, Good	, HSG C					
*	4.	240		5% Grass c							
*	2.	940 (31 >7	5% Grass c	over, Good	, HSG C					
	33.	610	79 W	eighted Ave	rage						
	17.802 52.97% Pervious Area										
	15.808 47.03% Impervious Area										
	Тс	Length	Slop	e Velocity	Capacity	Description					
_	(min)	(feet)	(ft/f) (ft/sec)	(cfs)						
	44.9	240	0.006	0.09		Sheet Flow, Segment #1					
						Grass: Dense n= 0.240 P2= 3.30"					
	10.8	1,040	0.010	1.61		Shallow Concentrated Flow, Segment #2					
_						Unpaved Kv= 16.1 fps					
	55.7	1.280	Total								

Subcatchment PA #3: PA #3



2) Routing for Basin #3

18051-original-BF

Type III 24-hr 2 YEAR Rainfall=3.30"

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Summary for Pond Basin #3: Pond #3

33.610 ac, 47.03% Impervious, Inflow Depth = 1.41" for 2 YEAR event Inflow Area =

Inflow = 22.41 cfs @ 12.79 hrs, Volume= 3.956 af

Outflow = 3.249 af, Atten= 94%, Lag= 363.4 min 3.249 af

1.37 cfs @ 18.84 hrs, Volume= 1.37 cfs @ 18.84 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= Primary 0.000 af Secondary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 72.78' @ 18.84 hrs Surf.Area= 2.176 ac Storage= 2.981 af

Invert Avail.Storage Storage Description

Plug-Flow detention time= 1,719.4 min calculated for 3.246 af (82% of inflow)

Center-of-Mass det. time= 1,647.2 min (2,537.7 - 890.4)

#1	69.50'	13.505 a	f Cus	stom Stage Data (Prismatic)Listed below (Recalc)						
Elevation	on Surf.Area	Inc	Store	Cum.Store						
(fee			-feet)	(acre-feet)						
69.5			0.000 0.000							
70.0			0.040 0.040							
71.0			0.330 0.370							
72.0	00 1.700		1.100	1.470						
73.0	00 2.310	3	2.005	3.475						
74.0	00 2.400		2.355	5.830						
75.0	00 2.500		2.450	8.280						
76.0			2.560	10.840						
77.0	00 2.710		2.665	13.505						
Device	Routing	Invert (Outlet De	Devices						
#1	Device 6	69.50' 3	.0" Ver	rt, Orifice/Grate C= 0.600						
#2	Device 6			x 18.0" H Vert. Orifice/Grate C= 0.600						
#3	Device 6	74.00' 6	0.0" W	x 18.0" H Vert. Orifice/Grate C= 0.600						
#4	Device 6	74.00' 6	0.0" W	x 18.0" H Vert. Orifice/Grate C= 0.600						
#5	Device 6			x 18.0" H Vert. Orifice/Grate C= 0.600						
#6	Primary			Round Culvert L= 86.0' RCP, square edge headwall, Ke= 0.500						
				utlet Invert= 69.40' / 67.50' S= 0.0221 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf						
#7	Secondary			ong x 10.0' breadth Broad-Crested Rectangular Weir						
				eet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60						
		(oet. (Ei	English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64						
Primary	Primary OutFlow Max=1.37 cfs @ 18.84 hrs HW=72.78' (Free Discharge)									

-6=Culvert (Passes 1.37 cfs of 46.66 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.42 cfs @ 8.55 fps)

-2=Orifice/Grate (Orifice Controls 0.95 cfs @ 1.70 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

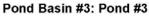
4=Orifice/Grate (Controls 0.00 cfs)

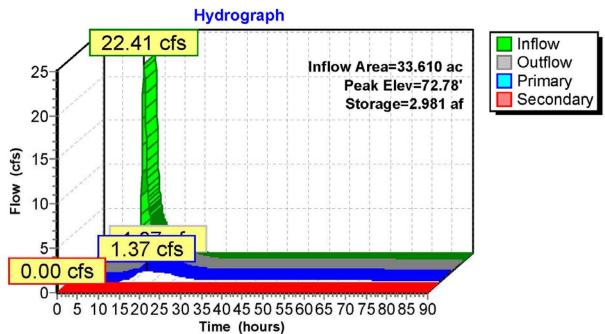
-5=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.50' (Free Discharge) 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Type III 24-hr 2 YEAR Rainfall=3.30"
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Type III 24-hr 10 YEAR Rainfall=5.20"

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Summary for Pond Basin #3: Pond #3

33.610 ac, 47.03% Impervious, Inflow Depth = 2.97" for 10 YEAR event Inflow Area = Inflow 48.10 cfs @ 12.76 hrs, Volume= 8.331 af 7.91 cfs @ 14.79 hrs, Volume= 7.91 cfs @ 14.79 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= Outflow = 7.525 af, Atten= 84%, Lag= 121.8 min 7.525 af Primary =

Secondary = 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 73.60' @ 14.79 hrs Surf.Area= 2.364 ac Storage= 4.884 af

Plug-Flow detention time= 901.3 min calculated for 7.518 af (90% of inflow)

Center-of-Mass det. time= 856.7 min (1,725.5 - 868.8)

Volume	Invert	Avail.Stora	age Stor	orage Description
#1	69.50'	13.505	af Cus	stom Stage Data (Prismatic)Listed below (Recalc)
Elevation	on Surf.Ar	ea In	c.Store	Cum.Store
(fee	(feet) (acres		re-feet)	(acre-feet)
69.5	50 0.0	00	0.000	0.000
70.0	00 0.1	60	0.040	0.040
71.0	00 0.5	00	0.330	0.370
72.0	00 1.7	00	1.100	1.470
73.0	00 2.3	10	2.005	3.475
74.0	00 2.4	00	2.355	5.830
75.0	00 2.5	00	2.450	8.280
76.0	00 2.6	20	2.560	10.840
77.0	00 2.7	10	2.665	13.505
Device	Routing	Invert	Outlet D	Devices
#1	Device 6	69.50'	3.0" Ver	ert. Orifice/Grate C= 0.600
#2	Device 6	72.50'	24.0" W	V x 18.0" H Vert. Orifice/Grate C= 0.600
#3	Device 6	74.00'	60.0" W	V x 18.0" H Vert. Orifice/Grate C= 0.600
#4	Device 6	74.00'	60.0" W	V x 18.0" H Vert. Orifice/Grate C= 0.600
#5	Device 6	74.00'	60.0" W	V x 18.0" H Vert. Orifice/Grate C= 0.600
#6	Primary	69.40'	36.0" R	Round Culvert L= 86.0' RCP, square edge headwall, Ke= 0.500
	-		Inlet / Ou	Outlet Invert= 69.40' / 67.50' S= 0.0221 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf

76.00' 120.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=7.91 cfs @ 14.79 hrs HW=73.60' (Free Discharge)

-6=Culvert (Passes 7.91 cfs of 55.95 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.47 cfs @ 9.60 fps)

−2=Orifice/Grate (Orifice Controls 7.44 cfs @ 3.37 fps) −3=Orifice/Grate (Controls 0.00 cfs)

Secondary

4=Orifice/Grate (Controls 0.00 cfs)

-5=Orifice/Grate (Controls 0.00 cfs)

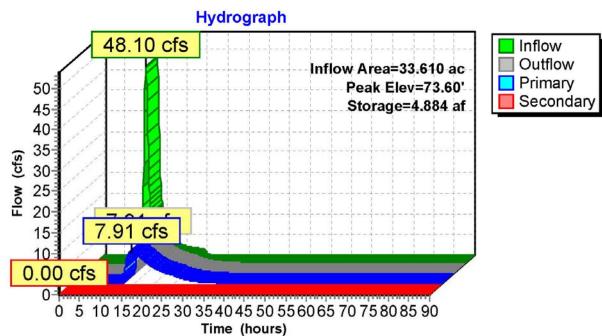
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.50' (Free Discharge)

-7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Type III 24-hr 10 YEAR Rainfall=5.20" Printed 4/30/2020 Page 5

Pond Basin #3: Pond #3



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Type III 24-hr 100 YEAR Rainfall=7.50" Printed 4/30/2020

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Summary for Pond Basin #3: Pond #3

33.610 ac, 47.03% Impervious, Inflow Depth = 5.04" for 100 YEAR event Inflow Area = Inflow = 81.16 cfs @ 12.75 hrs, Volume= 14.128 af 31.24 cfs @ 13.58 hrs, Volume= 31.24 cfs @ 13.58 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= Outflow = 13.282 af, Atten= 62%, Lag= 50.3 min Primary = 13.282 af Secondary = 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 74.46' @ 13.58 hrs Surf.Area= 2.446 ac Storage= 6.948 af

Plug-Flow detention time= 581.6 min calculated for 13.282 af (94% of inflow)

Center-of-Mass det. time= 549.2 min (1,403.0 - 853.8)

Volume	Invert	Avail.Stora	ge Stor	rage Description
#1	69.50'	13.505	af Cus	stom Stage Data (Prismatic)Listed below (Recalc)
- 1*	O	in for	. 01	001
Elevation			c.Store	Cum.Store
(fee	et) (acre	s) (ac	re-feet)	(acre-feet)
69.50 0.000		00	0.000	0.000
70.00 0.160		60	0.040	0.040
71.0	0.50	00	0.330	0.370
72.00 1.700		00	1.100	1.470
73.0	00 2.31	0	2.005	3.475
74.0	00 2.40	00	2.355	5.830
75.0	00 2.50	00	2.450	8.280
76.0	00 2.62	0	2.560	10.840
77.0			2.665	13.505
	2		2.000	10.000
Device	Routing	Invert	Outlet D	Devices
#1	Device 6	69.50'	3.0" Ver	rt. Orifice/Grate C= 0.600
#2	Device 6	72.50'	24.0" W	x 18.0" H Vert. Orifice/Grate C= 0.600
#3	Device 6	74.00'	60.0" W	/ x 18.0" H Vert. Orifice/Grate C= 0.600
#4	Device 6	74.00'	60.0" W	/ x 18.0" H Vert. Orifice/Grate C= 0.600
#5	Device 6	74.00'		/ x 18.0" H Vert. Orifice/Grate C= 0.600
#6	Primary	69.40'		Round Culvert L= 86.0' RCP, square edge headwall, Ke= 0.500
,,,	· ···········	00.10		outlet Inverte 69.40' / 67.50' S= 0.0221 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#7	Secondary	76.00'		ong x 10.0' breadth Broad-Crested Rectangular Weir
#1	Coolidary	70.00		eet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			i lead (le	0.20 0.40 0.00 0.00 1.00 1.20 1.40 1.00

Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=31.20 cfs @ 13.58 hrs HW=74.46' (Free Discharge)

-6=Culvert (Passes 31.20 cfs of 64.22 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.52 cfs @ 10.59 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.50' (Free Discharge)

⁻²⁼Orifice/Grate (Orifice Controls 15.62 cfs @ 5.21 fps) -3=Orifice/Grate (Orifice Controls 5.02 cfs @ 2.18 fps)

⁻⁴⁼Orifice/Grate (Orifice Controls 5.02 cfs @ 2.18 fps)

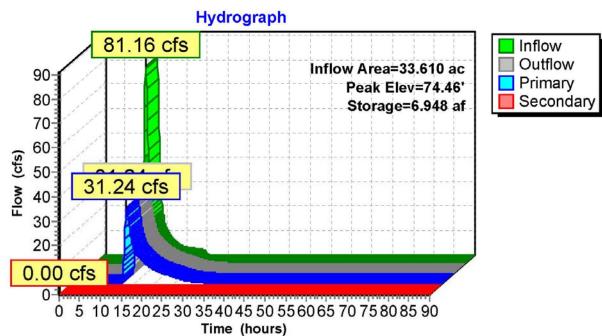
⁻⁵⁼Orifice/Grate (Orifice Controls 5.02 cfs @ 2.18 fps)

⁻⁷⁼Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Type III 24-hr 100 YEAR Rainfall=7.50" Printed 4/30/2020 Page 8

Pond Basin #3: Pond #3



STIRES ASSOCIATES, P.A.

4. 150 Pierce Street, LLC (Thomas Edison School Site Plan) July 2016 i. Post Development Peak Flow Conditions (Basin #1)

1) Drainage Area #1

WinTR55 NOAA A 2 YEAR Rainfall=3.34" Printed 4/30/2020

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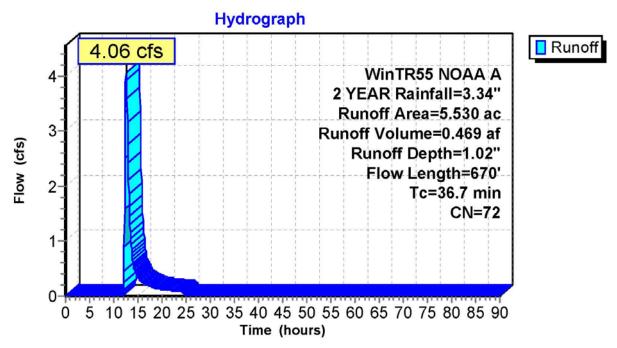
Summary for Subcatchment PA #1: PA #1

Runoff = 4.06 cfs @ 12.57 hrs, Volume= 0.469 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 2 YEAR Rainfall=3.34"

	Area	(ac) C	N Des	cription							
	3.	600	72 1/3	3 acre lots, 30% imp, HSG B							
*	0.	710	90 Pav	ed roads w	/open ditch	nes, 50% imp, HSG C					
*	1.	220	60 Bru	rush, Good, HSG C							
	5.	5.530 72 Weighted Average									
4.095 74.05% Pervious Area											
	1.	435	25.9	95% Imper	vious Area						
	Тс	Length	Slope			Description					
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	33.8	300	0.0200	0.15		Sheet Flow, Segment #1					
						Grass: Dense n= 0.240 P2= 3.30"					
	2.9	370	0.0170	2.10		Shallow Concentrated Flow, Segment #2					
_						Unpaved Kv= 16.1 fps					
	36.7	670	Total								

Subcatchment PA #1: PA #1



WinTR55 NOAA A 10 YEAR Rainfall=5.01" Printed 4/30/2020

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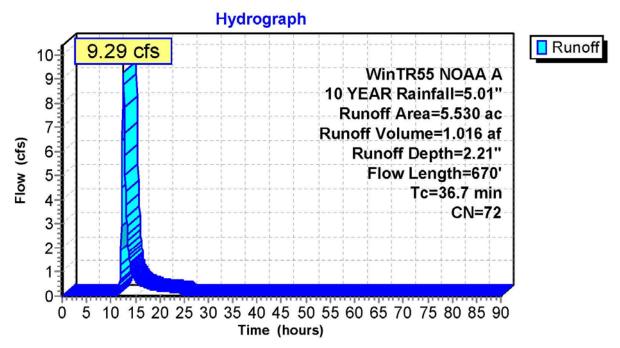
Summary for Subcatchment PA #1: PA #1

Runoff = 9.29 cfs @ 12.54 hrs, Volume= 1.016 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 10 YEAR Rainfall=5.01"

	Area	(ac) C	N Des	cription							
	3.	600	72 1/3	3 acre lots, 30% imp, HSG B							
*	0.	710	90 Pav	ed roads w	/open ditch	nes, 50% imp, HSG C					
*	1.	220	60 Bru	rush, Good, HSG C							
	5.	5.530 72 Weighted Average									
4.095 74.05% Pervious Area											
	1.	435	25.9	95% Imper	vious Area						
	Тс	Length	Slope			Description					
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	33.8	300	0.0200	0.15		Sheet Flow, Segment #1					
						Grass: Dense n= 0.240 P2= 3.30"					
	2.9	370	0.0170	2.10		Shallow Concentrated Flow, Segment #2					
_						Unpaved Kv= 16.1 fps					
	36.7	670	Total								

Subcatchment PA #1: PA #1



WinTR55 NOAA A 100 YEAR Rainfall=8.21" Printed 4/30/2020

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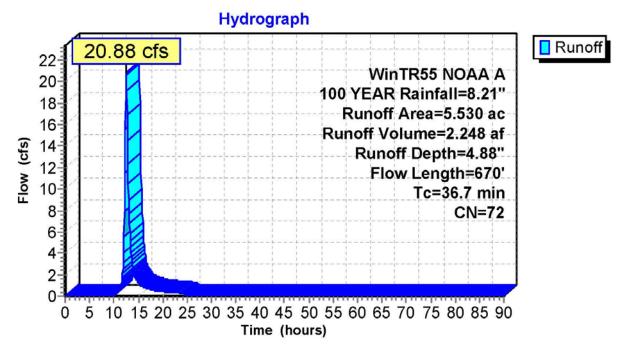
Summary for Subcatchment PA #1: PA #1

Runoff = 20.88 cfs @ 12.52 hrs, Volume= 2.248 af, Depth= 4.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 100 YEAR Rainfall=8.21"

	Area	(ac) (N De	scription							
	3.	600	72 1/3	3 acre lots, 30% imp, HSG B							
*	0.	710	90 Pav	red roads w	/open ditch	nes, 50% imp, HSG C					
*	1.	220	60 Bru	rush, Good, HSG C							
	5.530 72 Weighted Average										
	4.	095	74.	05% Pervio	us Area						
	1.	435	25.	95% Imper	vious Area						
	Тс	Length	Slope	Velocity	Capacity	Description					
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	33.8	300	0.0200	0.15		Sheet Flow, Segment #1					
						Grass: Dense n= 0.240 P2= 3.30"					
	2.9	370	0.0170	2.10		Shallow Concentrated Flow, Segment #2					
_						Unpaved Kv= 16.1 fps					
	36.7	670	Total								

Subcatchment PA #1: PA #1



2) Drainage Area #2

WinTR55 NOAA A 2 YEAR Rainfall=3.34"

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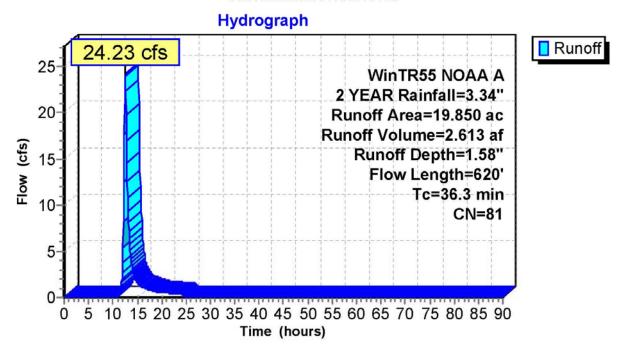
Summary for Subcatchment PA #2: PA #2

24.23 cfs @ 12.52 hrs, Volume= 2.613 af, Depth= 1.58" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 2 YEAR Rainfall=3.34"

	Area	(ac)	CN	Desc	ription		
*	13.	380	86	Urba	n industria	I, 65% imp	, HSG C
	1.	130	98	Pave	d parking,	HSG C	
*	4.	930	64	>75%	6 Grass co	ver, Good,	HSG C
*	0.	410	61	Brus	h, Good, F	ISG C	
	19.	850	81	Weig	hted Aver		
	10.	023		50.49	9% Pervio	us Area	
	9.	827		49.5	1% Imperv	ious Area	
	Тс	Length		lope	Velocity	Capacity	Description
_	(min)	(feet)		(ft/ft)	(ft/sec)	(cfs)	
	33.8	300	0.0	0200	0.15		Sheet Flow, Segment #1
							Grass: Dense n= 0.240 P2= 3.30"
	2.5	320	0.0	0112	2.15		Shallow Concentrated Flow, Segment #2
_							Paved Kv= 20.3 fps
	36.3	620	То	tal			

Subcatchment PA #2: PA #2



WinTR55 NOAA A 10 YEAR Rainfall=5.01" Printed 4/30/2020

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Summary for Subcatchment PA #2: PA #2

Runoff = 46.29 cfs @ 12.51 hrs, Volume= 4.953 af, Depth= 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 10 YEAR Rainfall=5.01"

	Area	(ac) C	N Des	scription								
*	13.	380	36 Urb	Urban industrial, 65% imp, HSG C								
	1.	130	98 Pav	Paved parking, HSG C								
*	4.	930	64 >75% Grass cover, Good, HSG C									
*	0.410 61 Brush, Good, HSG C											
	19.850 81 Weighted Average											
	10.	023	50.	49% Pervio	us Area							
	9.	827	49.	51% Imper	vious Area							
	Tc (min)	Length (feet)	Slope (ft/ft)		Capacity (cfs)	Description						
	33.8	300	0.0200	0.15		Sheet Flow, Segment #1						
	2.5 320 0		0.0112	2.15		Grass: Dense n= 0.240 P2= 3.30" Shallow Concentrated Flow, Segment #2 Paved Kv= 20.3 fps						
	36.3	620	Total									

Subcatchment PA #2: PA #2

Hydrograph Runoff 46.29 cfs 50-WinTR55 NOAA A 45 10 YEAR Rainfall=5.01" 40-Runoff Area=19.850 ac 35-Runoff Volume=4.953 af (cfs) 30-Runoff Depth=2.99" Flow Length=620' 25 Tc=36.3 min 20 CN=81 15 10-5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 Time (hours)

WinTR55 NOAA A 100 YEAR Rainfall=8.21"

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Summary for Subcatchment PA #2: PA #2

Runoff = 90.68 cfs @ 12.49 hrs, Volume= 9.827 af, Depth= 5.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 100 YEAR Rainfall=8.21"

	Area	(ac) C	N Des	cription								
*	13.	380	36 Urb	Urban industrial, 65% imp, HSG C								
	1.	130		ed parking								
*	4.	930 64 >75% Grass cover, Good, HSG C										
*	0.410 61 Brush, Good, HSG C											
	19.850 81 Weighted Average											
	10.	023	50.4	19% Pervio	us Area							
	9.	827	49.5	51% Imper	vious Area							
	То	Longth	Clone	Valority	Canacity	Description						
	Tc (min)	Length	Slope (ft/ft)		Capacity (cfs)	Description						
_		(feet)	\		(CIS)							
	33.8	300	0.0200	0.15		Sheet Flow, Segment #1						
						Grass: Dense n= 0.240 P2= 3.30"						
	2.5	320	0.0112	2.15		Shallow Concentrated Flow, Segment #2						
_						Paved Kv= 20.3 fps						
	36.3	620	Total									

Subcatchment PA #2: PA #2

Hydrograph Runoff 90.68 cfs 100 WinTR55 NOAA A 90-100 YEAR Rainfall=8.21" 80-Runoff Area=19.850 ac 70-Runoff Volume=9.827 af Flow (cfs) 60-Runoff Depth=5.94" 50-Flow Length=620' Tc=36.3 min 40 CN=81 30-20 10 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 Time (hours)

3) Routing for Basin #1

WinTR55 NOAA A 2 YEAR Rainfall=3.34"

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Summary for Pond Basin #1: Pond #1

25.380 ac, 44.37% Impervious, Inflow Depth = 1.46" for 2 YEAR event Inflow Area = 28.19 cfs @ 12.53 hrs, Volume= 0.54 cfs @ 22.19 hrs, Volume= 0.54 cfs @ 22.19 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= Inflow 3.082 af = 2.251 af, Atten= 98%, Lag= 579.7 min Outflow = 2.251 af Primary 0.000 af Secondary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 74.17' @ 22.19 hrs Surf.Area= 43,627 sf Storage= 114,289 cf

Plug-Flow detention time= 2,091.5 min calculated for 2.249 af (73% of inflow)

Center-of-Mass det. time= 2,013.5 min (2,858.7 - 845.2)

Volume	Inver	. Avail.Sto	rage Stora	ge Description						
#1	68.90			om Stage Data (Prismatic)Listed below (Recalc)						
		-								
Elevation	700	urf.Area	Inc.Store							
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)						
68.9		0	0							
70.0		9,148	5,031	5,031						
71.0		21,344	15,246							
72.0		25,700	23,522							
73.0		30,492	28,096							
74.0		40,075	35,284							
75.0		60,984	50,530							
76.0		70,132	65,558							
77.0		79,715	74,924							
78.0	00	89,298	84,507	382,696						
Device	Pouting	Invert	Outlet Devi	inos						
	Routing	12-0-10-10-10-10-10-10-10-10-10-10-10-10-1								
#1	Device 6	68.90'		Orifice/Grate C= 0.600						
#2	Device 6	74.00'		4.0" H Vert. Orifice/Grate C= 0.600						
#3	Device 6	76.00'	60.0" W x 12.0" H Vert. Orifice/Grate C= 0.600							
#4	Device 6	76.00'	54.0" W x 12.0" H Vert. Orifice/Grate C= 0.600							
#5	Device 6	76.00'	54.0" W x 12.0" H Vert. Orifice/Grate C= 0.600							
#6	Primary	68.80'	36.0" Round Culvert L= 86.0' RCP, square edge headwall, Ke= 0.500							
		77.50		et Invert= 68.80' / 66.53' S= 0.0264 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf						
#7	Secondary	77.50'		x 10.0' breadth Broad-Crested Rectangular Weir						
				0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60						
			Coef. (Eng	lish) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64						

Primary OutFlow Max=0.54 cfs @ 22.19 hrs HW=74.17' (Free Discharge)

6=Culvert (Passes 0.54 cfs of 66.95 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.37 cfs @ 10.94 fps) -2=Orifice/Grate (Orifice Controls 0.17 cfs @ 1.32 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

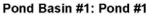
-5=Orifice/Grate (Controls 0.00 cfs)

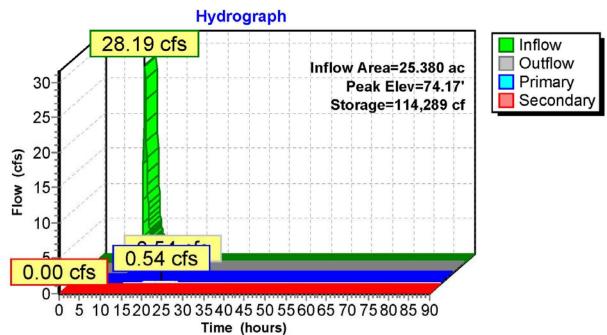
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.90' (Free Discharge) 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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WinTR55 NOAA A 10 YEAR Rainfall=5.01"

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Summary for Pond Basin #1: Pond #1

25.380 ac, 44.37% Impervious, Inflow Depth = 2.82" for 10 YEAR event Inflow Area = 55.56 cfs @ 12.51 hrs, Volume= Inflow = 5.969 af 4.32 cfs @ 14.51 hrs, Volume= 4.32 cfs @ 14.51 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= = Outflow 4.986 af, Atten= 92%, Lag= 119.9 min = 4.986 af Primary Secondary = 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 75.38' @ 14.51 hrs Surf.Area= 64,463 sf Storage= 181,564 cf

Plug-Flow detention time= 1,153.1 min calculated for 4.982 af (83% of inflow)

Center-of-Mass det. time= 1,094.8 min (1,926.3 - 831.5)

Volume	Invert	Avail.Sto	rage St	prage Description						
#1	68.90'			stom Stage Data (Prismatic)Listed below (Recalc)						
Elevation		Surf.Area		ore Cum.Store						
(fee	et)	(sq-ft)		et) (cubic-feet)						
68.9		0		0 0						
70.0		9,148	5,0							
71.0		21,344	15,2							
72.0		25,700	23,5	MM (1997) (1997) (1997) (1997)						
73.0		30,492	28,0							
74.0		40,075	35,2							
75.0		60,984	50,5							
76.0		70,132		58 223,266						
77.0	To a Total	79,715		24 298,190						
78.0	00	89,298	84,5	07 382,696						
Device	Routing	Invert	Outlet D	evices						
#1	Device 6	68.90'		t. Orifice/Grate C= 0.600						
#2	Device 6	74.00'		24.0" H Vert. Orifice/Grate C= 0.600						
#3	Device 6	76.00'		x 12.0" H Vert. Orifice/Grate C= 0.600						
#4	Device 6	76.00'		54.0" W x 12.0" H Vert. Orifice/Grate C= 0.600						
#5	Device 6	76.00'	54.0" W x 12.0" H Vert. Orifice/Grate C= 0.600							
#6	Primary	68.80'	36.0" Round Culvert L= 86.0' RCP, square edge headwall, Ke= 0.500							
				utlet Invert= 68.80' / 66.53' S= 0.0264 '/' Cc= 0.900 n= 0.011. Flow Area= 7.07 sf						
#7	Secondary	77.50'		ng x 10.0' breadth Broad-Crested Rectangular Weir						
	,			set) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60						
			Coef. (E	nglish) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64						

Primary OutFlow Max=4.32 cfs @ 14.51 hrs HW=75.38' (Free Discharge)

6=Culvert (Passes 4.32 cfs of 76.71 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.41 cfs @ 12.16 fps) -2=Orifice/Grate (Orifice Controls 3.90 cfs @ 3.77 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

-5=Orifice/Grate (Controls 0.00 cfs)

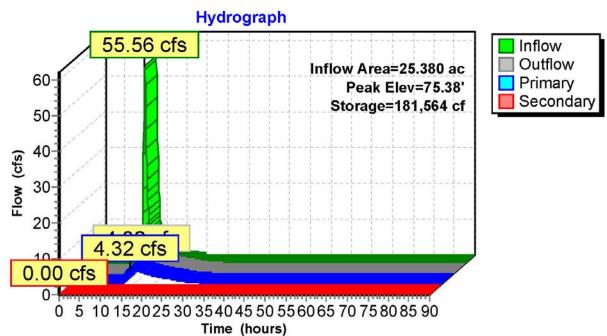
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.90' (Free Discharge) 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Pond Basin #1: Pond #1



WinTR55 NOAA A 100 YEAR Rainfall=8.21"

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Summary for Pond Basin #1: Pond #1

25.380 ac, 44.37% Impervious, Inflow Depth = 5.71" for 100 YEAR event Inflow Area = Inflow 111.50 cfs @ 12.50 hrs, Volume= 12.075 af = 42.73 cfs @ 13.08 hrs, Volume= Outflow = 11.033 af, Atten= 62%, Lag= 34.6 min 42.73 cfs @ 13.08 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= = 11.033 af Primary Secondary = 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 76.81' @ 13.08 hrs Surf.Area= 77,883 sf Storage= 283,124 cf

Plug-Flow detention time= 610.2 min calculated for 11.023 af (91% of inflow)

Center-of-Mass det. time= 573.1 min (1,390.3 - 817.2)

Volume	Inve	rt Avail.Sto	rage Stora	ge Description							
#1	68.9	0' 382,69	96 cf Custo	om Stage Data (Prismatic)Listed below (Recalc)							
Elevation		Surf.Area	Inc.Store	Cum.Store							
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)							
68.9		0	0	0							
70.0		9,148	5,031	5,031							
71.0		21,344	15,246	20,277							
72.0		25,700	23,522	43,799							
73.0		30,492	28,096								
74.0		40,075	35,284	107,179							
75.0		60,984	50,530	157,708							
76.0		70,132	65,558								
77.0		79,715	74,924	298,190							
78.0	00	89,298	84,507	382,696							
Device	Routing	Invert	Outlet Devi	ces							
#1	Device 6	68.90'	2.5" Vert. 0	Orifice/Grate C= 0.600							
#2	Device 6	74.00'	9.0" W x 2	4.0" H Vert. Orifice/Grate C= 0.600							
#3	Device 6	76.00'	60.0" W x	12.0" H Vert. Orifice/Grate C= 0.600							
#4	Device 6	76.00'	54.0" W x	12.0" H Vert. Orifice/Grate C= 0.600							
#5	Device 6	76.00'	54.0" W x 12.0" H Vert. Orifice/Grate C= 0.600								
#6	Primary	68.80'	36.0" Rou	nd Culvert L= 86.0' RCP, square edge headwall, Ke= 0.500							
				et Invert= 68.80' / 66.53' S= 0.0264 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf							
#7	Secondar	y 77.50'	75.0' long	75.0' long x 10.0' breadth Broad-Crested Rectangular Weir							
			,	0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60							
			Coef. (Eng	lish) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64							

Primary OutFlow Max=42.50 cfs @ 13.08 hrs HW=76.81' (Free Discharge)

6=Culvert (Passes 42.50 cfs of 86.81 cfs potential flow)
1=Orifice/Grate (Orifice Controls 0.46 cfs @ 13.45 fps)
2=Orifice/Grate (Orifice Controls 9.57 cfs @ 6.38 fps)

-3=Orifice/Grate (Orifice Controls 11.60 cfs @ 2.88 fps) -4=Orifice/Grate (Orifice Controls 10.44 cfs @ 2.88 fps)

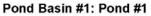
-5=Orifice/Grate (Orifice Controls 10.44 cfs @ 2.88 fps)

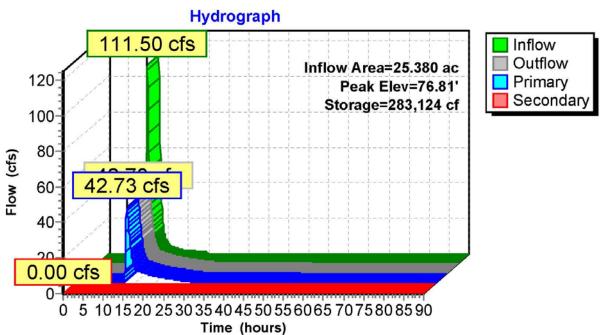
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.90' (Free Discharge) T-7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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ii. Post Development Peak Flow Conditions (Basin #3)

1) Drainage Area #3

WinTR55 NOAA A 2 YEAR Rainfall=3.34" Printed 4/30/2020

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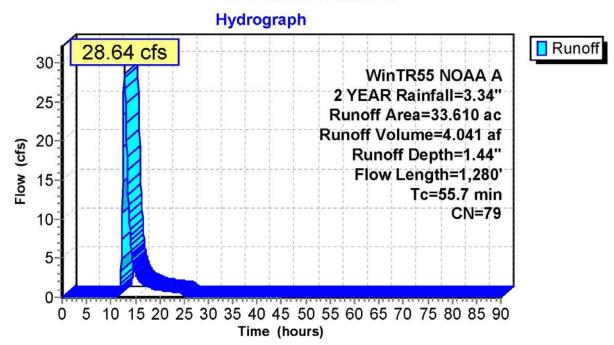
Summary for Subcatchment PA #3: PA #3

Runoff = 28.64 cfs @ 12.80 hrs, Volume= 4.041 af, Depth= 1.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 2 YEAR Rainfall=3.34"

	Area	(ac) C	N De	scription						
*	13.	350	36 Ur	ban industrial, 65% imp, HSG C						
	5.	100	98 Pa	ved parking	, HSG C					
*	5.	280	34 >7	5% Grass c	over, Good	, HSG C				
	2.	030				ewers, HSG C				
*	0.	670	31 >7	5% Grass c	over, Good	, HSG C				
*	4.	240		5% Grass c						
*	2.	940 (31 >7	5% Grass c	over, Good	, HSG C				
	33.	610	79 W	eighted Ave	rage					
	17.	802	52	.97% Pervio	us Area					
	15.	808	47	.03% Imper	vious Area					
	Тс	Length	Slop	e Velocity	Capacity	Description				
_	(min)	(feet)	(ft/f) (ft/sec)	(cfs)					
	44.9	240	0.006	3 0.09		Sheet Flow, Segment #1				
						Grass: Dense n= 0.240 P2= 3.30"				
	10.8	1,040	0.010	1.61		Shallow Concentrated Flow, Segment #2				
_						Unpaved Kv= 16.1 fps				
	55.7	1.280	Total							

Subcatchment PA #3: PA #3



WinTR55 NOAA A 10 YEAR Rainfall=5.01" Printed 4/30/2020

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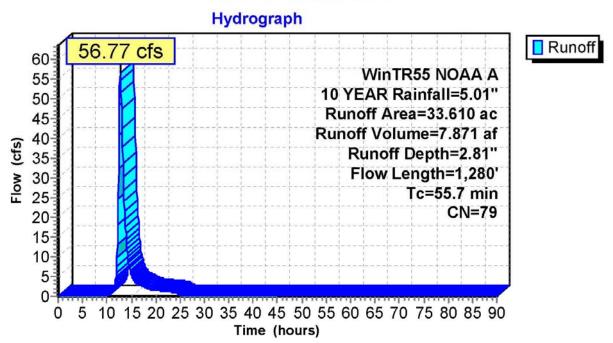
Summary for Subcatchment PA #3: PA #3

Runoff = 56.77 cfs @ 12.77 hrs, Volume= 7.871 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 10 YEAR Rainfall=5.01"

	Area	(ac) C	N De	scription						
*	13.	350	36 Ur	ban industrial, 65% imp, HSG C						
	5.	100	98 Pa	ved parking	, HSG C					
*	5.	280	34 >7	5% Grass c	over, Good	, HSG C				
	2.	030				ewers, HSG C				
*	0.	670	31 >7	5% Grass c	over, Good	, HSG C				
*	4.	240		5% Grass c						
*	2.	940 (31 >7	5% Grass c	over, Good	, HSG C				
	33.	610	79 W	eighted Ave	rage					
	17.	802	52	.97% Pervio	us Area					
	15.	808	47	.03% Imper	vious Area					
	Тс	Length	Slop	e Velocity	Capacity	Description				
_	(min)	(feet)	(ft/f) (ft/sec)	(cfs)					
	44.9	240	0.006	3 0.09		Sheet Flow, Segment #1				
						Grass: Dense n= 0.240 P2= 3.30"				
	10.8	1,040	0.010	1.61		Shallow Concentrated Flow, Segment #2				
_						Unpaved Kv= 16.1 fps				
	55.7	1.280	Total							

Subcatchment PA #3: PA #3



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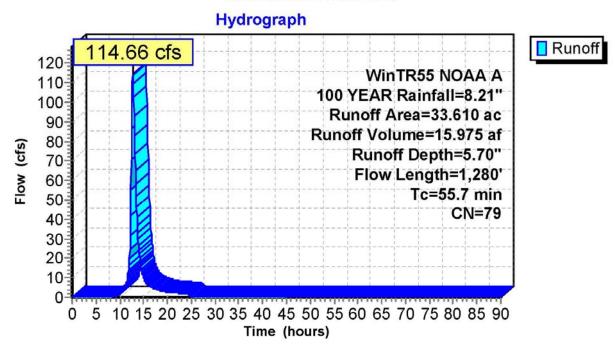
Summary for Subcatchment PA #3: PA #3

Runoff = 114.66 cfs @ 12.75 hrs, Volume= 15.975 af, Depth= 5.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 100 YEAR Rainfall=8.21"

	Area	(ac) C	N Des	cription					
*	13.	350 8	36 Urb	ban industrial, 65% imp, HSG C					
	5.	100	8 Pav	ed parking	, HSG C				
*	5.	280	34 >75	% Grass c	over, Good,	, HSG C			
	2.	030	8 Pav	ed roads w	/curbs & se	ewers, HSG C			
*	0.	670 6	31 >75	% Grass c	over, Good,	, HSG C			
*	4.	240 (over, Good,				
*	2.	940	31 >75	% Grass c	over, Good,	, HSG C			
	33.	610	79 Wei	ghted Avei	rage				
		802	52.9	7% Pervio	us Area				
	15.	808	47.0	3% Imper	vious Area				
	_								
	Тс	Length	Slope		Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	44.9	240	0.0063	0.09		Sheet Flow, Segment #1			
						Grass: Dense n= 0.240 P2= 3.30"			
	10.8	1,040	0.0100	1.61		Shallow Concentrated Flow, Segment #2			
_						Unpaved Kv= 16.1 fps			
	55.7	1.280	Total						

Subcatchment PA #3: PA #3



2) Routing for Basin #3

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Summary for Pond Basin #3: Pond #3

33.610 ac, 47.03% Impervious, Inflow Depth = 1.44" for 2 YEAR event Inflow Area =

Inflow 28.64 cfs @ 12.80 hrs, Volume= 4.041 af

Outflow 3.321 af, Atten= 95%, Lag= 275.4 min = 3.321 af

1.45 cfs @ 17.39 hrs, Volume= 1.45 cfs @ 17.39 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= Primary Secondary = 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 72.83' @ 17.39 hrs Surf.Area= 2.207 ac Storage= 3.095 af

Plug-Flow detention time= 1,700.7 min calculated for 3.318 af (82% of inflow)

Center-of-Mass det. time= 1,636.0 min (2,500.6 - 864.6)

Volume	Invert	Avail.Stora	ge Sto	orage Description	
#1	69.50'	13.505	af Cu	stom Stage Data	(Prismatic)Listed below (Recalc)
Elevation	on Surf.Are	ea In	c.Store	Cum.Store	
(fee	t) (acre	s) (ac	e-feet)	(acre-feet)	
69.5	0.00	00	0.000	0.000	
70.0	0 0.16	30	0.040	0.040	
71.0	0.50	00	0.330	0.370	
72.0	00 1.70	00	1.100	1.470	
73.0	00 2.3	10	2.005	3.475	
74.0	00 2.40	00	2.355	5.830	
75.0	00 2.50	00	2.450	8.280	
76.0	00 2.62	20	2.560	10.840	
77.0	00 2.7	10	2.665	13.505	
Device	Routing	Invert	Outlet	Devices	
#1	Device 3	69.50'	3.0" Ve	ert. Orifice/Grate	C= 0.600
#2	Device 3	72.50'	20.0" \	N x 17.0" H Vert. 0	Orifice/Grate C= 0.600
#3	Primary	69.40'	36.0"	Round Culvert L:	= 86.0' RCP, square edge headwall, Ke= 0.500
			Inlet / C	Outlet Invert= 69.40	0' / 67.50' S= 0.0221 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#4	Secondary	76.00'	120.0'	long x 10.0' brea	dth Broad-Crested Rectangular Weir

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.45 cfs @ 17.39 hrs HW=72.83' (Free Discharge)

3=Culvert (Passes 1.45 cfs of 47.31 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.42 cfs @ 8.62 fps)

-2=Orifice/Grate (Orifice Controls 1.02 cfs @ 1.85 fps)

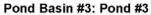
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.50' (Free Discharge)

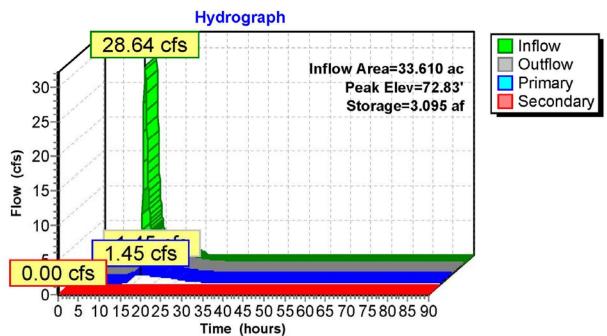
-4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Summary for Pond Basin #3: Pond #3

Inflow Area = 33.610 ac, 47.03% Impervious, Inflow Depth = 2.81" for 10 YEAR event

1nflow = 56.77 cfs @ 12.77 hrs, Volume= 7.871 af

Outflow = 7.79 cfs @ 14.51 hrs, Volume= 7.038 af, Atten= 86%, Lag= 104.2 min

Primary = 7.79 cfs @ 14.51 hrs, Volume= 7.038 af

Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 73.73' @ 14.51 hrs Surf.Area= 2.376 ac Storage= 5.188 af

Plug-Flow detention time= 965.7 min calculated for 7.038 af (89% of inflow) Center-of-Mass det. time= 918.3 min (1,768.8 - 850.5)

Volume	Inver	t A	/ail.Storage	Storage D	escription	
#1	69.50)'	13.505 af	Custom S	tage Data	(Prismatic)Listed below (Recalc)
				-		
Elevation	on Surf	.Area	Inc.St	tore Cu	ım.Store	
(fee	et) (a	cres)	(acre-fe	eet) (a	cre-feet)	
69.5	50	0.000	0.	000	0.000	
70.0	00	0.160	0.	040	0.040	
71.0	00	0.500	0.3	330	0.370	
72.0	00	1.700	1.	100	1.470	
73.0	00	2.310	2.	005	3.475	
74.0	00	2.400	2.3	355	5.830	
75.0	00	2.500	2.	450	8.280	
76.0	00	2.620	2.	560	10.840	
77.0	00	2.710	2.	665	13.505	
Device	Routing		Invert Ou	tlet Devices	i	
#1	Device 3		69.50' 3.0	" Vert. Orif	ice/Grate	C= 0.600
#2	Device 3		72.50' 20	.0" W x 17.0	" H Vert.	Orifice/Grate C= 0.600
#3	Primary		69.40' 36	.0" Round	Culvert L	= 86.0' RCP, square edge headwall, Ke= 0.500

Primary OutFlow Max=7.79 cfs @ 14.51 hrs HW=73.73' (Free Discharge)

3=Culvert (Passes 7.79 cfs of 57.27 cfs potential flow)

1=Orifice/Grate (Orifice Controls 0.48 cfs @ 9.76 fps) 2=Orifice/Grate (Orifice Controls 7.31 cfs @ 3.56 fps)

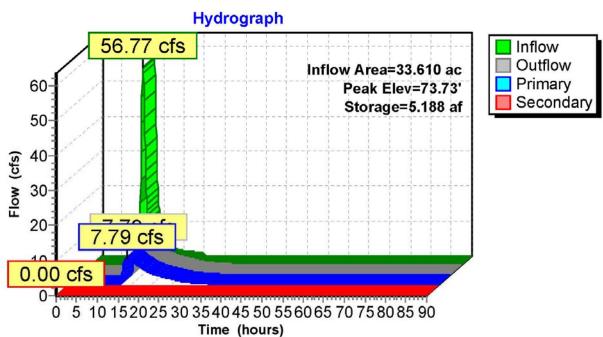
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.50' (Free Discharge)
4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Pond Basin #3: Pond #3



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Summary for Pond Basin #3: Pond #3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 75.72' @ 14.24 hrs Surf.Area= 2.586 ac Storage= 10.111 af

Plug-Flow detention time= 599.8 min calculated for 15.044 af (94% of inflow) Center-of-Mass det. time= 572.9 min (1,408.9 - 835.9)

Volume	Invert	Avail.Storage	Storage Description
#1	69.50'	13.505 af	Custom Stage Data (Prismatic)Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
69.50	0.000	0.000	0.000
70.00	0.160	0.040	0.040
71.00	0.500	0.330	0.370
72.00	1.700	1.100	1.470
73.00	2.310	2.005	3.475
74.00	2.400	2.355	5.830
75.00	2.500	2.450	8.280
76.00	2.620	2.560	10.840
77.00	2.710	2.665	13.505

Device	Routing	Invert	Outlet Devices
#1	Device 3	69.50'	3.0" Vert. Orifice/Grate C= 0.600
#2	Device 3	72.50'	20.0" W x 17.0" H Vert. Orifice/Grate C= 0.600
#3	Primary	69.40'	36.0" Round Culvert L= 86.0' RCP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 69.40' / 67.50' S= 0.0221 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf
#4	Secondary	76.00'	120.0' long x 10.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef (English) 2 49 2 56 2 70 2 69 2 68 2 69 2 67 2 64

Primary OutFlow Max=18.54 cfs @ 14.24 hrs HW=75.72' (Free Discharge)

3=Culvert (Passes 18.54 cfs of 74.72 cfs potential flow)

1=Orifice/Grate (Orifice Controls 0.58 cfs @ 11.89 fps)

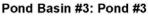
-2=Orifice/Grate (Orifice Controls 17.96 cfs @ 7.61 fps)

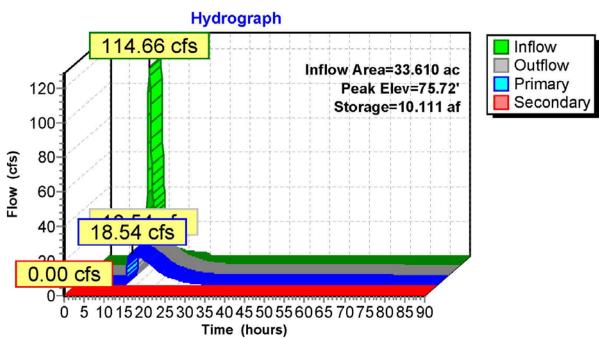
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.50' (Free Discharge)
4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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STIRES ASSOCIATES, P.A.

5. 150 Pierce Street, LLC (Pharmscript Site Plan) March 2016 i. Post Development Peak Flow Conditions (Basin #1)

1) Drainage Area #1

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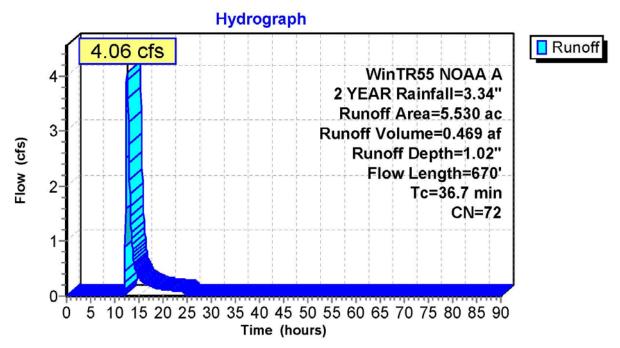
Summary for Subcatchment PA #1: PA #1

Runoff = 4.06 cfs @ 12.57 hrs, Volume= 0.469 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 2 YEAR Rainfall=3.34"

	Area	(ac) C	N Des	cription						
	3.	600	72 1/3	/3 acre lots, 30% imp, HSG B						
*	0.	0.710 90 Paved roads w/open ditches, 50% imp, HSG C								
*	1.	220	60 Bru	sh, Good, I	HSG C					
	5.	530	72 Wei	ghted Ave	age					
	4.	095	74.0	5% Pervio	us Area					
	1.	435	25.9	95% Imper	vious Area					
	Тс	Length	Slope			Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	33.8	300	0.0200	0.15		Sheet Flow, Segment #1				
						Grass: Dense n= 0.240 P2= 3.30"				
	2.9	370	0.0170	2.10		Shallow Concentrated Flow, Segment #2				
_						Unpaved Kv= 16.1 fps				
	36.7	670	Total							

Subcatchment PA #1: PA #1



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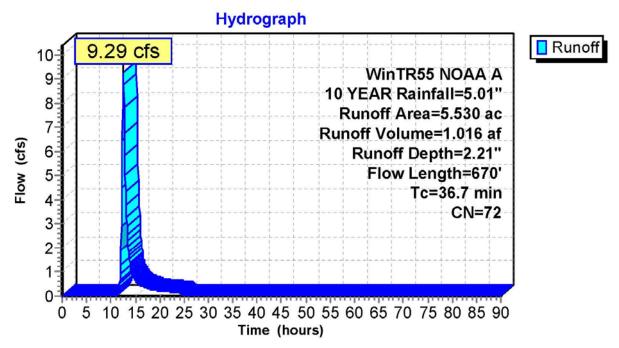
Summary for Subcatchment PA #1: PA #1

Runoff = 9.29 cfs @ 12.54 hrs, Volume= 1.016 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 10 YEAR Rainfall=5.01"

	Area	(ac) C	N Des	cription				
	3.600 72 1/3 acre lots, 30% imp, HSG B							
*	* 0.710 90 Paved roads w/open ditches, 50% imp, HSG C							
*	* 1.220 60 Brush, Good, HSG C							
	5.530 72 Weighted Average							
	4.	095	74.0	5% Pervio	us Area			
	1.	435	25.9	5% Imperv	ious Area			
	Tc	Length	Slope	Velocity	Capacity	Description		
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	33.8	300	0.0200	0.15		Sheet Flow, Segment #1		
						Grass: Dense n= 0.240 P2= 3.30"		
	2.9	370	0.0170	2.10		Shallow Concentrated Flow, Segment #2		
						Unpaved Kv= 16.1 fps		
	36.7	670	Total					

Subcatchment PA #1: PA #1



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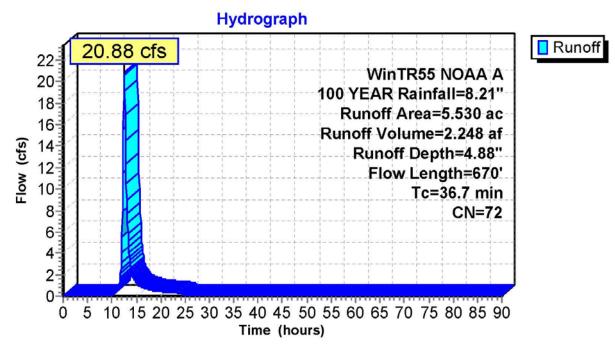
Summary for Subcatchment PA #1: PA #1

Runoff = 20.88 cfs @ 12.52 hrs, Volume= 2.248 af, Depth= 4.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 100 YEAR Rainfall=8.21"

	Area	(ac) C	N Desc	cription				
	3.600 72 1/3 acre lots, 30% imp, HSG B							
*	* 0.710 90 Paved roads w/open ditches, 50% imp, HSG C							
*	* 1.220 60 Brush, Good, HSG C							
	5.	530 7	2 Weig	hted Aver	age			
	4.	095	74.0	5% Pervio	us Area			
	1.	435	25.9	5% Imperv	ious Area			
	Tc	Length	Slope	Velocity	Capacity	Description		
	(min)	10						
	(111111)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
_	33.8	(feet) 300	(ft/ft) 0.0200	(ft/sec) 0.15	(cfs)	Sheet Flow, Segment #1		
-					(cfs)	Sheet Flow, Segment #1 Grass: Dense n= 0.240 P2= 3.30"		
-		300			(cfs)			
_	33.8	300	0.0200	0.15	(cfs)	Grass: Dense n= 0.240 P2= 3.30"		

Subcatchment PA #1: PA #1



2) Drainage Area #2

WinTR55 NOAA A 2 YEAR Rainfall=3.34"

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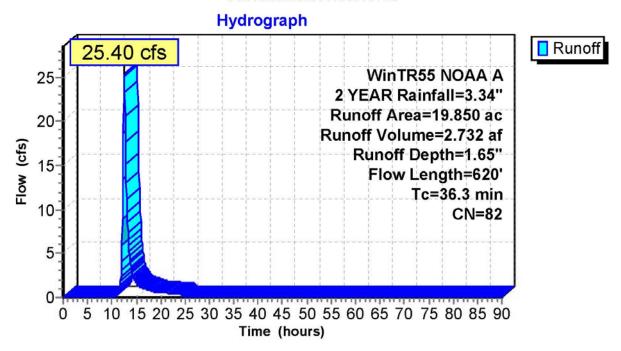
Summary for Subcatchment PA #2: PA #2

Runoff = 25.40 cfs @ 12.52 hrs, Volume= 2.732 af, Depth= 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 2 YEAR Rainfall=3.34"

	Area	(ac)	CN	Desc	ription						
*	13.	380	86	Urba	Jrban industrial, 65% imp, HSG C						
	2.	000	98	Pave	Paved parking, HSG C						
*	4.	060	64	>75%	6 Grass co	ver, Good,	HSG C				
*	0.	410	61	Brus	h, Good, F	ISG C					
	19.	850	82	Weig	hted Aver	age					
	9.	153		46.1	1% Pervio	us Area					
	10.0	697		53.89	9% Imperv	ious Area					
	_										
	Тс	Length		Slope	Velocity	Capacity	Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	33.8	300	0.	0200	0.15		Sheet Flow, Segment #1				
							Grass: Dense n= 0.240 P2= 3.30"				
	2.5	320	0.	0112	2.15		Shallow Concentrated Flow, Segment #2				
_							Paved Kv= 20.3 fps				
	36.3	620) To	otal							

Subcatchment PA #2: PA #2



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Runoff

Summary for Subcatchment PA #2: PA #2

Runoff = 47.72 cfs @ 12.50 hrs, Volume= 5.108 af, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 10 YEAR Rainfall=5.01"

	Area	(ac) (CN	Desc	ription								
*	13.	380	86	Urba	n industria	l, 65% imp	o, HSG C						
	2.	000	98	Pave	d parking,	HSG C							
*	4.	060	64	>759	6 Grass co	ver, Good,	, HSG C						
*	0.	410	61	Brus	h, Good, F	ISG C							
	19.	850	82	Weig	hted Aver	age							
	9.	153		46.1	1% Pervio	us Area							
	10.	697		53.89	53.89% Impervious Area								
	Tc	Length	5	Slope	Velocity	Capacity	Description						
_	(min)	(feet)		(ft/ft)	(ft/sec)	(cfs)							
	33.8	300	0.	0200	0.15		Sheet Flow, Segment #1						
							Grass: Dense n= 0.240 P2= 3.30"						
	2.5	320	0.	0112	2.15		Shallow Concentrated Flow, Segment #2						
							Paved Kv= 20.3 fps						
	36.3	620	To	otal									

Subcatchment PA #2: PA #2

Hydrograph 47.72 cfs 50-WinTR55 NOAA A 45 10 YEAR Rainfall=5.01" 40 Runoff Area=19.850 ac 35 Runoff Volume=5.108 af (cfs) Runoff Depth=3.09" 30-Flow Length=620' Flow 25 Tc=36.3 min 20 CN=82 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 Time (hours)

WinTR55 NOAA A 100 YEAR Rainfall=8.21"

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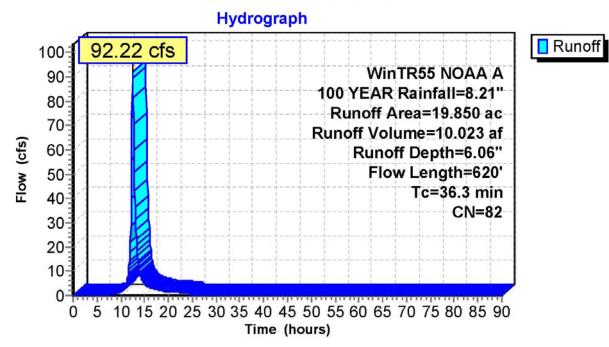
Summary for Subcatchment PA #2: PA #2

Runoff = 92.22 cfs @ 12.49 hrs, Volume= 10.023 af, Depth= 6.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs WinTR55 NOAA A 100 YEAR Rainfall=8.21"

	Area	(ac) (ON I	Descr	ription											
*	13.	380	86 I	Urbar	n industria	I, 65% imp	, HSG C									
	2.	000	98	Paved	aved parking, HSG C											
*	4.	060	64	>75%	Grass co	ver, Good,	HSG C									
*	0.	410	61 I	Brush	, Good, F	ISG C										
	19.850 82 Weighted Average															
	9.	153		46.11	% Perviou	us Area										
	10.	697		53.89	% Imperv	ious Area										
	Тс	Length			Velocity	Capacity	Description									
_	(min)	(feet)	(f	t/ft)	(ft/sec)	(cfs)										
	33.8	300	00 0.0200 0.15		0.15		Sheet Flow, Segment #1									
							Grass: Dense n= 0.240 P2= 3.30"									
	2.5	320	0.01	112	2.15		Shallow Concentrated Flow, Segment #2									
_							Paved Kv= 20.3 fps									
	36.3	620	Tota	al												

Subcatchment PA #2: PA #2



3) Routing for Basin #1

WinTR55 NOAA A 2 YEAR Rainfall=3.34"

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Summary for Pond Basin #1: Pond #1

25.380 ac, 47.80% Impervious, Inflow Depth = 1.51" for 2 YEAR event Inflow Area = Inflow 29.35 cfs @ 12.52 hrs, Volume= 3.201 af = 2.349 af, Atten= 98%, Lag= 493.4 min Outflow =

0.64 cfs @ 20.75 hrs, Volume= 0.64 cfs @ 20.75 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= 2.349 af Primary 0.000 af Secondary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 74.23' @ 20.75 hrs Surf.Area= 44,818 sf Storage= 116,808 cf

Plug-Flow detention time= 2,031.3 min calculated for 2.347 af (73% of inflow)

Center-of-Mass det. time= 1,954.5 min (2,797.6 - 843.1)

Volume	Invert	Avail.Sto	rage S	torage Desc	ription							
#1	68.90'					rismatic)Listed below (Recalc)						
Elevation	on Su	urf.Area	Inc.S	ore C	um.Store							
(fee	et)	(sq-ft)	(cubic-f	eet) (ci	ubic-feet)							
68.9		0		0	0							
70.0		9,148	5,	031	5,031							
71.0		21,344		246	20,277							
72.0		25,700	- 1 CO - CO	522	43,799							
73.0		30,492		096	71,895							
74.0		40,075		284	107,179							
75.0		60,984		530	157,708							
76.0		70,132		558	223,266							
77.0		79,715	2	924	298,190							
78.0	00	89,298	84,	507	382,696							
Device	Routing	Invert	Outlet	Devices								
#1	Device 6	68.90'	2.5" V	rt. Orifice/G	Grate C=	0.600						
#2	Device 6	74.00'				e/Grate C= 0.600						
#3	Device 6	76.00'	The second second			ce/Grate C= 0.600						
#4	Device 6	76.00'	54.0" W x 12.0" H Vert. Orifice/Grate C= 0.600									
#5	Device 6	76.00'	54.0" W x 12.0" H Vert. Orifice/Grate C= 0.600									
#6	Primary	68.80'	36.0"	36.0" Round Culvert L= 86.0' RCP, square edge headwall, Ke= 0.500								
	-		Inlet / 0	Outlet Invert=	68.80' / 6	66.53' S= 0.0264 '/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf						
#7	Secondary	77.50'	75.0' ld	ng x 10.0' l	breadth B	road-Crested Rectangular Weir						
			Head (feet) 0.20 0	.40 0.60	0.80 1.00 1.20 1.40 1.60						
			Coef. (English) 2.4	9 2.56 2.	70 2.69 2.68 2.69 2.67 2.64						

Primary OutFlow Max=0.64 cfs @ 20.75 hrs HW=74.23' (Free Discharge)

6=Culvert (Passes 0.64 cfs of 67.44 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.38 cfs @ 11.00 fps) -2=Orifice/Grate (Orifice Controls 0.26 cfs @ 1.53 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

-5=Orifice/Grate (Controls 0.00 cfs)

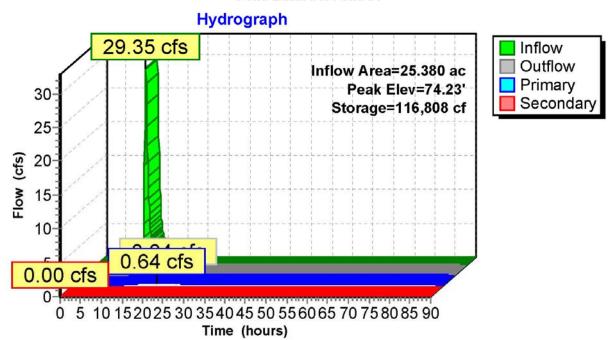
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.90' (Free Discharge) 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Pond Basin #1: Pond #1



WinTR55 NOAA A 10 YEAR Rainfall=5.01"

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Summary for Pond Basin #1: Pond #1

25.380 ac, 47.80% Impervious, Inflow Depth = 2.90" for 10 YEAR event Inflow Area = Inflow 56.98 cfs @ 12.51 hrs, Volume= 6.124 af = 4.60 cfs @ 14.41 hrs, Volume= 4.60 cfs @ 14.41 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= Outflow = 5.139 af, Atten= 92%, Lag= 114.0 min 5.139 af Primary 0.000 af Secondary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 75.44' @ 14.41 hrs Surf.Area= 65,050 sf Storage= 185,716 cf

Plug-Flow detention time= 1,127.7 min calculated for 5.134 af (84% of inflow)

Center-of-Mass det. time= 1,070.5 min (1,900.3 - 829.7)

Volume	Invert	Avail Sto	rage S	Storage	Description							
#1	68.90				Stage Data (Pr	rismatic) is	ted below	(Recalc)				
	00.00	002,0	000.	Justoni	Otage Data (1)	mana jelo	ica bolon	(1100010)				
Elevation	on S	urf.Area	Inc.Store		Cum.Store							
(fee	et)	(sq-ft)	(cubic-feet)		(cubic-feet)							
68.9	90	0	0		0							
70.0	00	9,148	5,	031	5,031							
71.0	00	21,344	15,246		20,277							
72.0		25,700		522	43,799							
73.0		30,492		096	71,895							
74.0		40,075		284	107,179							
75.0		60,984		530	157,708							
76.0		70,132		558	223,266							
77.0		79,715		924	298,190							
78.0	00	89,298	84,	507	382,696							
Davisa	Douting	Invest	Outlet	Davisse								
Device	Routing	Invert		Devices	100 1000 100							
#1	Device 6	68.90'			fice/Grate C=							
#2	Device 6	74.00'	9.0" W x 24.0" H Vert. Orifice/Grate C= 0.600									
#3	Device 6	76.00'	60.0" W x 12.0" H Vert. Orifice/Grate C= 0.600									
#4	Device 6	76.00'	54.0" W x 12.0" H Vert. Orifice/Grate C= 0.600									
#5	Device 6	76.00'		54.0" W x 12.0" H Vert. Orifice/Grate C= 0.600								
#6	Primary	68.80'	36.0" Round Culvert L= 86.0' RCP, square edge headwall, Ke= 0.500									
	0	77.50		Inlet / Outlet Invert= 68.80' / 66.53' S= 0.0264'/' Cc= 0.900 n= 0.011, Flow Area= 7.07 sf								
#7	Secondary	77.50'		-	10.0' breadth B			•	r			
					.20 0.40 0.60							
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									

Primary OutFlow Max=4.60 cfs @ 14.41 hrs HW=75.44' (Free Discharge)

6=Culvert (Passes 4.60 cfs of 77.20 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.42 cfs @ 12.22 fps)
-2=Orifice/Grate (Orifice Controls 4.18 cfs @ 3.86 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

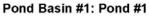
-5=Orifice/Grate (Controls 0.00 cfs)

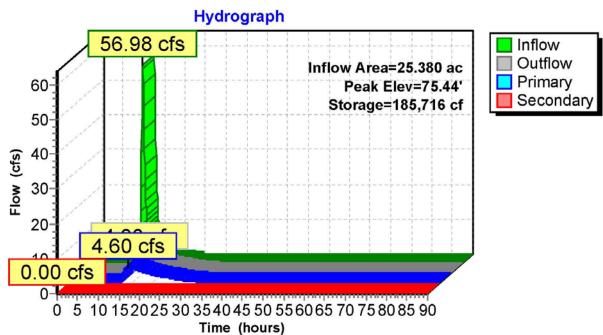
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.90' (Free Discharge) 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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WinTR55 NOAA A 100 YEAR Rainfall=8.21"

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Summary for Pond Basin #1: Pond #1

25.380 ac, 47.80% Impervious, Inflow Depth = 5.80" for 100 YEAR event Inflow Area = 113.04 cfs @ 12.50 hrs, Volume= Inflow = 12.272 af 44.72 cfs @ 13.06 hrs, Volume= 44.72 cfs @ 13.06 hrs, Volume= 0.00 cfs @ 0.00 hrs, Volume= Outflow = 11.229 af, Atten= 60%, Lag= 33.7 min = 11.229 af Primary

Secondary = 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-90.00 hrs, dt= 0.08 hrs Peak Elev= 76.84' @ 13.06 hrs Surf.Area= 78,181 sf Storage= 285,556 cf

Plug-Flow detention time= 604.4 min calculated for 11.229 af (92% of inflow)

Center-of-Mass det. time= 564.5 min (1,380.2 - 815.7)

Volume	Invert	Avail.Sto	rage S	Storage I	Description							
#1	68.90				Stage Data (Pr	ismatic)L	isted belo	w (Recalc)				
								,				
Elevation	on S	Surf.Area		Store	Cum.Store							
(fee	et)	(sq-ft)		feet)	(cubic-feet)							
68.9	90	0	0		0							
70.0	00	9,148	5	,031	5,031							
71.0		21,344	15,246		20,277							
72.0		25,700		,522	43,799							
73.0		30,492		,096	71,895							
74.0		40,075		,284	107,179							
75.0		60,984		,530	157,708							
76.0		70,132		,558	223,266							
77.0		79,715		,924	298,190							
78.0	00	89,298	84	,507	382,696							
Desire	Destina	I	0.41-4	D								
Device	Routing	Invert		Devices								
#1	Device 6	68.90'			ice/Grate C= (
#2	Device 6	74.00'	7 7 7 7 mm 5 1	9.0" W x 24.0" H Vert. Orifice/Grate C= 0.600								
#3	Device 6	76.00'	60.0" W x 12.0" H Vert. Orifice/Grate C= 0.600									
#4	Device 6	76.00'	54.0" W x 12.0" H Vert. Orifice/Grate C= 0.600									
#5	Device 6	76.00'		54.0" W x 12.0" H Vert. Orifice/Grate C= 0.600								
#6	Primary	68.80'			Culvert L= 86.							
					vert= 68.80' / 66					11, Flow Area	= 7.07 sf	
#7	Secondary	77.50'			0.0' breadth Br				eir			
				,	20 0.40 0.60 (
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									

Primary OutFlow Max=44.56 cfs @ 13.06 hrs HW=76.84' (Free Discharge)

-6=Culvert (Passes 44.56 cfs of 87.02 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.46 cfs @ 13.48 fps) -2=Orifice/Grate (Orifice Controls 9.66 cfs @ 6.44 fps) -3=Orifice/Grate (Orifice Controls 12.30 cfs @ 2.94 fps)

-4=Orifice/Grate (Orifice Controls 11.07 cfs @ 2.94 fps)

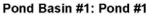
-5=Orifice/Grate (Orifice Controls 11.07 cfs @ 2.94 fps)

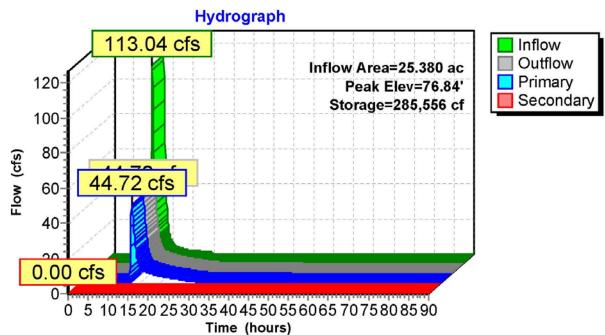
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=68.90' (Free Discharge) T-7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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ii. Post Development Peak Flow Conditions (Basin #3)