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# **Area Listing (selected nodes)**

Area	CN	Description				
(acres)		(subcatchment-numbers)				
2.124	40	>75% Grass cover, Good, HSG A (19S, 24S, 25S, 30S)				
16.592	61	>75% Grass cover, Good, HSG B (12S, 22S, 24S, 25S, 29S, 32S, 33S, 34S, 37S,				
		41S, 42S, 47S)				
5.223	74	>75% Grass cover, Good, HSG C (17S, 19S, 20S, 22S, 24S, 34S)				
0.069	40	Meadow, non-grazed, HSG A (19S)				
1.816	58	Meadow, non-grazed, HSG B (12S, 24S)				
0.633	71	Meadow, non-grazed, HSG C (19S, 24S)				
28.941	98	Paved parking & roofs (11S, 17S, 19S, 20S, 22S, 24S, 25S, 29S, 30S, 32S, 33S,				
		37S, 41S, 42S)				
1.502	40	Woods, Good, HSG A (19S, 24S)				
0.153	70	Woods, Good, HSG C (19S)				
57.053	80	TOTAL AREA				

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# Summary for Subcatchment 11S: SEEPAGE BED #5A (BMP #7)

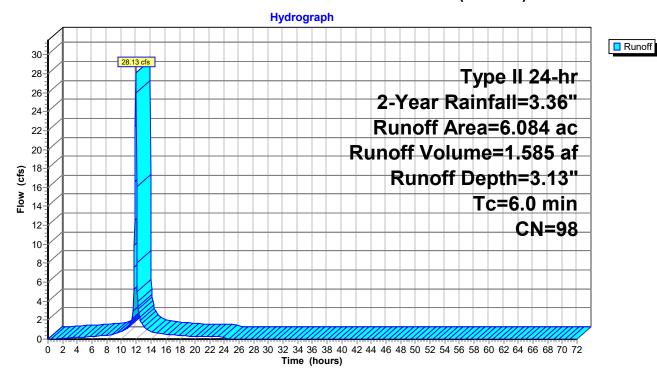
Runoff = 28.13 cfs @ 11.96 hrs, Volume= 1.585 af, Depth= 3.13"

Routed to Pond 9P : seepage pit with chambers #5A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

Area	(ac)	CN	Desc	Description					
6.	.084	98	Pave	Paved parking & roofs					
6.	.084		100.0	00% Impe	rvious Area	9			
Tc (min)	Leng		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
6.0						Direct Entry,			

# Subcatchment 11S: SEEPAGE BED #5A (BMP #7)



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# Summary for Subcatchment 12S: bio-retention basin #4a (BMP #9)

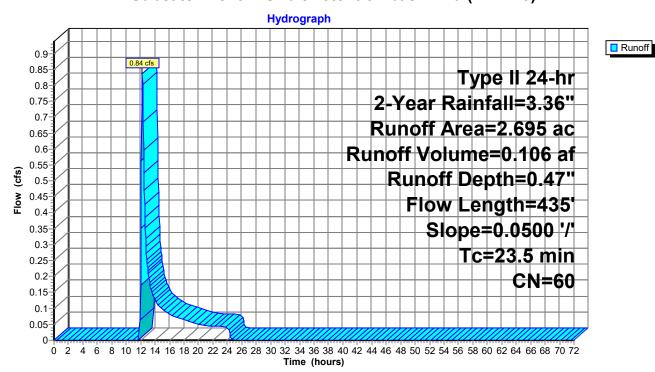
Runoff = 0.84 cfs @ 12.23 hrs, Volume= Routed to Pond 13P : bio-retention basin #4a 0.106 af, Depth= 0.47"

Nouted to Fond 13F . bio-retention basin #4a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

	$ egthinspace{-1mm} egthinspa$	$\gamma\gamma$	$\gamma\gamma$	$ \uparrow $							
	c) C	N Des	cription		<u> </u>						
1.89	96 6	61 >75% Grass cover, Good, HSG B									
0.79	0.799 58 Meadow, non-grazed, HSG B										
2.69			ghted Aver 00% Pervi		office building in subarea						
W	Your The transfer of the trans										
Tc L	_ength	Slope	Velocity	Capacity	Description						
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)							
20.5	150	0.0500	0.12		Sheet Flow,						
					Woods: Light underbrush n= 0.400 P2= 3.23"						
3.0	285	0.0500	1.57		Shallow Concentrated Flow,						
					Short Grass Pasture Kv= 7.0 fps						
23.5	435	Total									

# Subcatchment 12S: bio-retention basin #4a (BMP #9)



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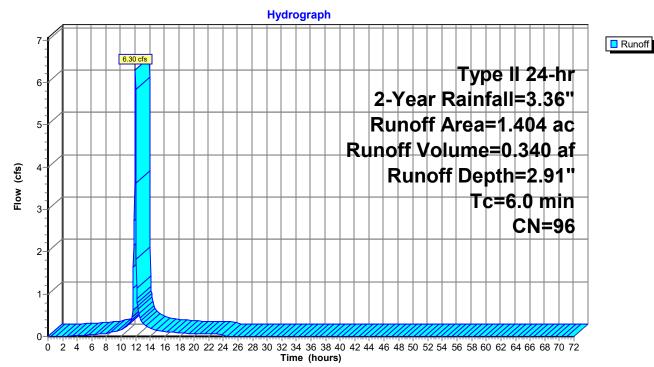
# Summary for Subcatchment 17S: SEEPAGE BED #4b (BMP #10)

Runoff = 6.30 cfs @ 11.96 hrs, Volume= 0.340 af, Depth= 2.91" Routed to Pond 15P : seepage pit with chambers #4b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

Area	(ac)	CN	Desc	Description					
1.	312	98	Pave	ed parking	& roofs				
0.	.092	74	>75%	√ Grass co	over, Good	I, HSG C			
1.404 96 Weighted Average					age				
0.092 6.55% Pervious Area									
1.312 93.45% Impervious Area				5% Imperv	ious Area				
Тс	Lengt	h :	Slope	Velocity	Capacity	Description			
(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)				
6.0						Direct Entry,			

# Subcatchment 17S: SEEPAGE BED #4b (BMP #10)



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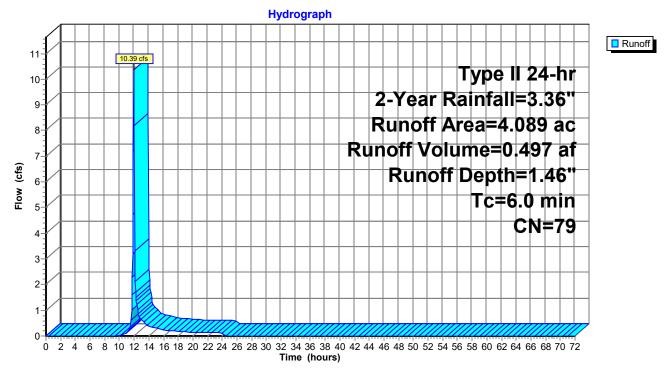
# Summary for Subcatchment 19S: SEEPAGE BED #3A (BMP #11)

Runoff = 10.39 cfs @ 11.98 hrs, Volume= 0.497 af, Depth= 1.46" Routed to Pond 16P : seepage pit with chambers #3A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

_	Area	(ac)	CN	Desc	Description						
	2.	361	98	Pave	Paved parking & roofs						
*	0.	069	40	Mea	Meadow, non-grazed, HSG A						
	0.	059	71	Mea	dow, non-g	grazed, HS	GC C				
*	0.	485	40	0 >75% Grass cover, Good, HSG A							
	0.	0.485 74 >75% Grass cover, Good, HSG C									
*	0.	0.477 40 Woods, Good, HSG A									
	0.	0.153 70 Woods, Good, HSG C									
	4.089 79 Weighted Average					age					
	1.	728		42.2	6% Pervio	us Area					
	2.	361		57.7	57.74% Impervious Area						
					-						
	Tc	Leng	jth	Slope	Velocity	Capacity	Description				
_	(min)	(fe	et)	(ft/ft)	(ft/sec)	(cfs)					
	6.0						Direct Entry,				

# Subcatchment 19S: SEEPAGE BED #3A (BMP #11)



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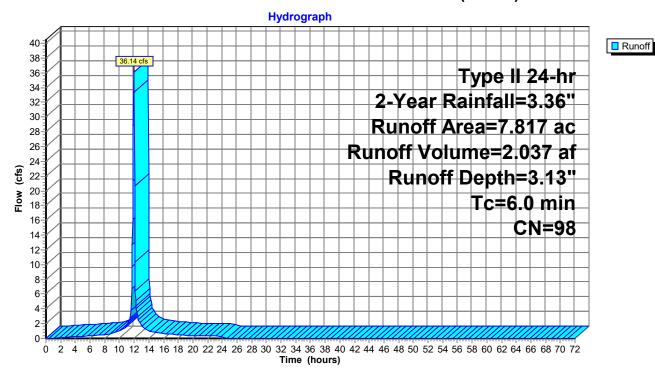
# Summary for Subcatchment 20S: SEEPAGE BED #5F (BMP 6)

Runoff = 36.14 cfs @ 11.96 hrs, Volume= 2.037 af, Depth= 3.13" Routed to Pond 14P : seepage pit with chambers #5F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

Ar	ea (ac)	CN	Desc	Description						
	7.808	98	Pave	Paved parking & roofs						
	0.009	74	>75%	>75% Grass cover, Good, HSG C						
	0.009		0.12	% Perviou	s Area					
7.808 99.88% Impervious Area					ious Area					
-	c Leng	nth	Slope	Velocity	Capacity	Description				
(mi	•	,	(ft/ft)	(ft/sec)	(cfs)	Description				
	.0	<u> </u>	(14,11)	(14,500)	(010)	Direct Entry				
U	.0					Direct Entry,				

# Subcatchment 20S: SEEPAGE BED #5F (BMP 6)



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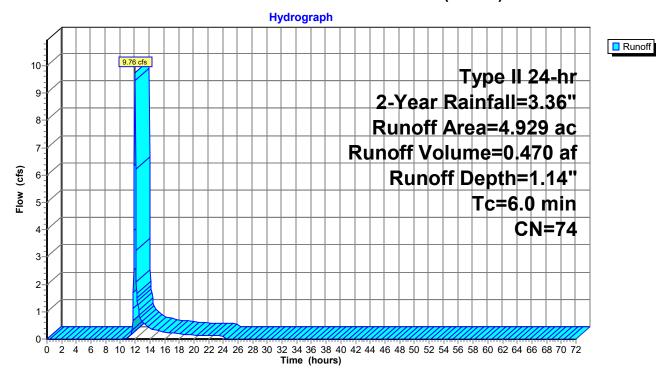
# Summary for Subcatchment 22S: SUB BASIN-5A (BMP 8)

Runoff = 9.76 cfs @ 11.98 hrs, Volume= 0.470 af, Depth= 1.14" Routed to Pond 8P : BIO-RETENTION BASIN #5A (POI 001)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

Area	ı (ac)	CN	Desc	Description						
1	.186	61	>75%	75% Grass cover, Good, HSG B						
3	3.048	74	>75%	>75% Grass cover, Good, HSG C						
	).695	98	Pave	ed parking	& roofs					
4	4.929 74 Weighted Average									
4	1.234		85.9	0% Pervio	us Area					
C	).695		14.10	0% Imperv	ious Area					
_										
Tc	Leng	jth :	Slope	Velocity	Capacity	Description				
(min)	(fe	et)	(ft/ft)	(ft/sec)	(cfs)					
6.0						Direct Entry, 6 minute min				

# Subcatchment 22S: SUB BASIN-5A (BMP 8)



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# Summary for Subcatchment 24S: bio-retention basin #3b(BMP #12)

5.51 cfs @ 12.30 hrs, Volume= 0.650 af, Depth= 0.77" Runoff

Routed to Pond 26P: bio-retention basin #3b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

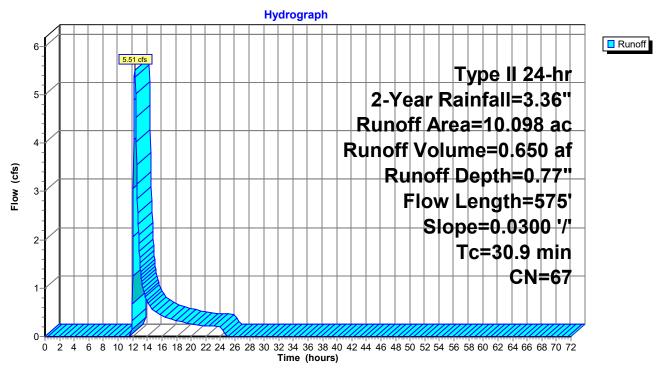
	Area	(ac)	CN	Desc	Description						
	2.	349	98	Pave	ed parking	& roofs					
	1.	017	58	Mea	dow, non-g	grazed, HS	G B				
	0.	574	71	Mea	dow, non-g	grazed, HS	GC				
	3.	499	61			over, Good					
	0.126 74 >75% Grass cover, Good, I						, HSG C				
*	1.025 40 Woods, Good, HSG A										
*	* 0.745 40 >75% Grass cover, Good, I						·				
_	0.763 74 >75% Grass cover, Good, I					over, Good	, HSG C				
	10.098 67 Weighted Average										
	7.749				4% Pervio						
	2.	349		23.20	23.26% Impervious Area						
	Тс	Lengt		Slope	Velocity	Capacity	Description				
	(min)	(fee	<u>t)</u>	(ft/ft)	(ft/sec)	(cfs)					
	25.1	15	0 (	0.0300	0.10		Sheet Flow,				
							Woods: Light underbrush n= 0.400 P2= 3.23"				
	5.8	42	5 (	0.0300	1.21		Shallow Concentrated Flow,				
							Short Grass Pasture Kv= 7.0 fps				
	30.9	57	5 -	Total							

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# Subcatchment 24S: bio-retention basin #3b(BMP #12)



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# Summary for Subcatchment 25S: BIO-RETENTION BASIN #6A (BMP 5)

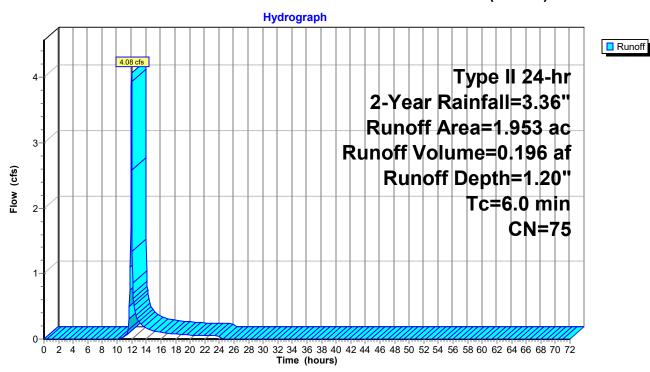
Runoff = 4.08 cfs @ 11.98 hrs, Volume= 0.196 af, Depth= 1.20"

Routed to Pond 24P: bio-retention basin #6a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

	Area (a	ac)	CN	Desc	Description							
1.119 98 Paved parking & roofs												
*	0.6	65	40	>75%	√ Grass co	over, Good	, HSG A					
	0.1	69	61	>75%	√ Grass co	over, Good	, HSG B					
	1.953 75 Weighted Average											
0.834 42.70% Pervious Area												
	1.1	19		57.30	0% Imperv	rious Area						
		Lengtl		Slope	Velocity	Capacity	Description					
_	(min)	(feet	t)	(ft/ft)	(ft/sec)	(cfs)						
	6.0						Direct Entry.					

# Subcatchment 25S: BIO-RETENTION BASIN #6A (BMP 5)



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# now for Cubactabaset 200, CMI #4

# Summary for Subcatchment 29S: SWL #1

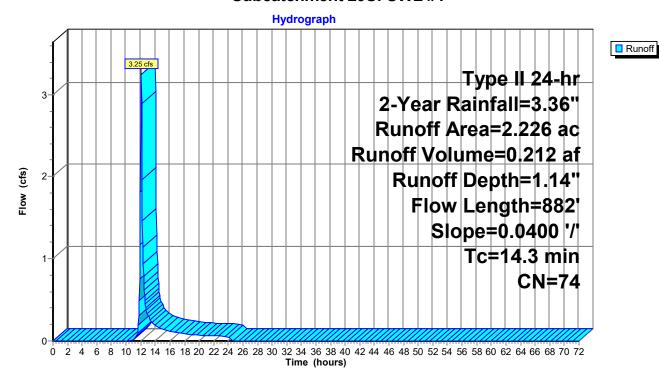
Runoff = 3.25 cfs @ 12.07 hrs, Volume= 0.212 af, Depth= 1.14"

Routed to Reach 26R: SWL-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

A	rea (	(ac) C	N Des	Description						
	0.	765	98 Pave	ed parking	& roofs					
	1.	461 (	31 >75°	% Grass co	over, Good,	, HSG B				
	2.	226	74 Wei	ghted Aver	age					
	1.461 65.63% Pervious Area									
	0.	765	34.3	7% Imper\	∕ious Area					
(m	Tc nin)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
10	0.2	150	0.0400	0.24		Sheet Flow,				
	4.1	732	0.0400	3.00		Grass: Short n= 0.150 P2= 3.23"  Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps				
14	4.3	882	Total							

#### Subcatchment 29S: SWL #1



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# Summary for Subcatchment 30S: SWL #2

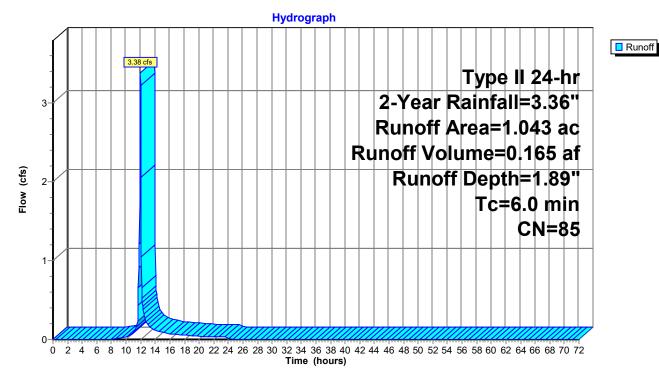
3.38 cfs @ 11.97 hrs, Volume= 0.165 af, Depth= 1.89" Runoff

Routed to Reach 27R: SWL-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

	Area	(ac)	CN	Desc	Description						
	0.	814	98	Pave	Paved parking & roofs						
*	0.	229	40	>75%	75% Grass cover, Good, HSG A						
	1.	043	85	Weig	ghted Aver	age					
	0.229 21.96% Pervious Area										
	0.814 78			78.0	4% Imperv	rious Area					
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
_	6.0	(1-2-1		()	( )	(212)	Direct Entry,				

#### Subcatchment 30S: SWL #2



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# Summary for Subcatchment 32S: SWL #3

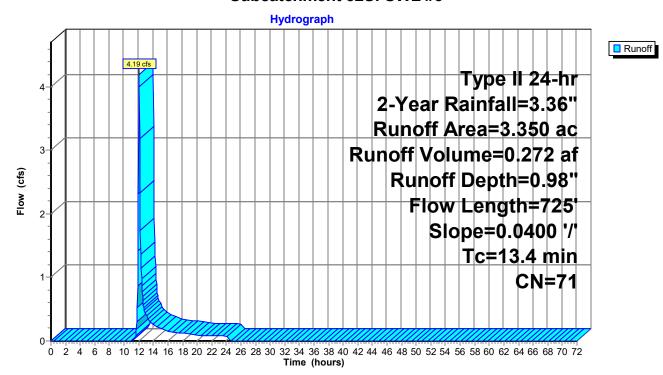
Runoff = 4.19 cfs @ 12.07 hrs, Volume= 0.272 af, Depth= 0.98"

Routed to Reach 28R: SWL-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

Area	(ac) C	N Des	Description							
0.	.930	98 Pav	Paved parking & roofs							
2.	.420	61 >75	>75% Grass cover, Good, HSG B							
3.350 71 Weighted Average										
2.420 72.24% Pervious Area										
0.	.930	27.7	'6% Imper	/ious Area						
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
10.2	150	0.0400	0.24		Sheet Flow,					
3.2	575	0.0400	3.00		Grass: Short n= 0.150 P2= 3.23"  Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps					
13.4	725	Total								

#### Subcatchment 32S: SWL #3



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# Summary for Subcatchment 33S: BIO-RETENTION BASIN #1A (BMP#1)

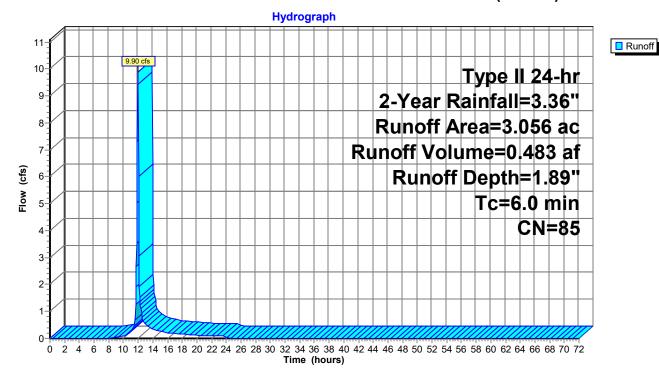
Runoff = 9.90 cfs @ 11.97 hrs, Volume= 0.483 af, Depth= 1.89"

Routed to Pond 29P: bio-retention basin #1A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

Area	a (ac)	CN	Desc	escription					
	1.978	98	Pave	ed parking	& roofs				
	1.078	61	>75%	√ Grass co	over, Good	d, HSG B			
;	3.056 85 Weighted Average								
	1.078 35.27% Pervious Area								
	1.978			3% Imperv	∕ious Area				
To	: Leng	ıth	Slope	Velocity	Capacity	Description			
(min)	_	•	(ft/ft)	(ft/sec)	(cfs)	Description			
		J()	(11/11)	(11/360)	(013)	D' (F (			
6.0	)					Direct Entry,			

# Subcatchment 33S: BIO-RETENTION BASIN #1A (BMP#1)



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# Summary for Subcatchment 34S: SWL #4

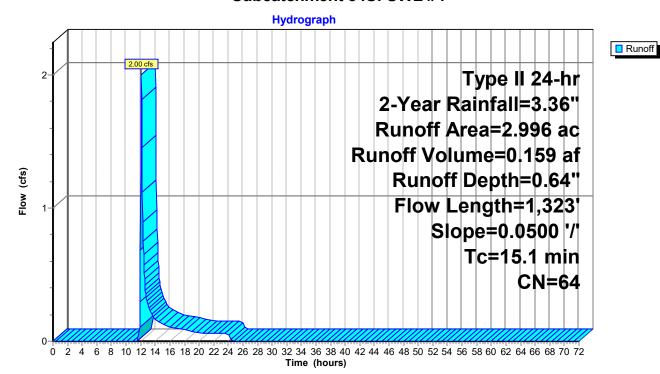
Runoff = 2.00 cfs @ 12.10 hrs, Volume= 0.159 af, Depth= 0.64"

Routed to Reach 23R: SWL-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

Area	(ac)	CN	Desc	cription					
2	2.296	61	>75%	>75% Grass cover, Good, HSG B					
	.700	74	>75%	√ Grass co	over, Good,	, HSG C			
2	2.996	64	Weig	ghted Aver	age				
2	2.996		100.	00% Pervi	ous Area				
Tc	Lengt	h S	Slope	Velocity	Capacity	Description			
(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)				
9.3	15	0 0.	0500	0.27		Sheet Flow,			
						Grass: Short n= 0.150 P2= 3.23"			
5.8	1,17	3 0.	0500	3.35		Shallow Concentrated Flow,			
						Grassed Waterway Kv= 15.0 fps			
15.1	1,32	3 To	otal						

#### Subcatchment 34S: SWL #4



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# Summary for Subcatchment 37S: BIO-RETENTION BASIN #2A (BMP #2)

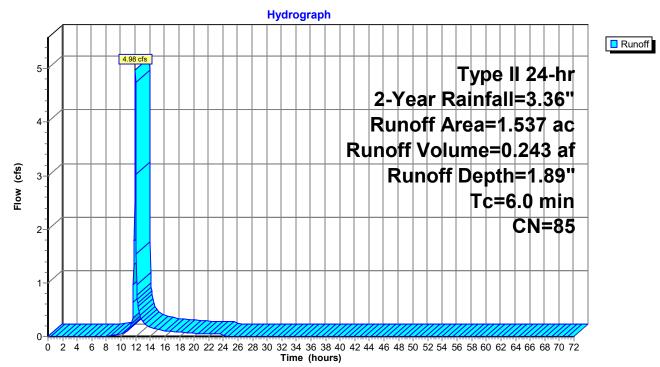
Runoff = 4.98 cfs @ 11.97 hrs, Volume= 0.243 af, Depth= 1.89"

Routed to Pond 38P: bio-retention basin #2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

Area	(ac)	CN	Desc	escription					
1.	.008	98	Pave	ed parking	& roofs				
0.	.529	61	>75%	√ Grass co	over, Good	d, HSG B			
1.	1.537 85 Weighted Average				age				
0.	0.529 34.42% Pervious Area								
1.	.008		65.58	8% Imperv	rious Area				
Тс	Long	th (	Slope	Velocity	Capacity	Description			
(min)	Leng (fee		(ft/ft)	(ft/sec)	(cfs)	Description			
	(iee	:()	(11/11)	(It/Sec)	(CIS)				
6.0						Direct Entry,			

# Subcatchment 37S: BIO-RETENTION BASIN #2A (BMP #2)



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# Summary for Subcatchment 41S: BIO-RETENTION BASIN #2C (BMP #3)

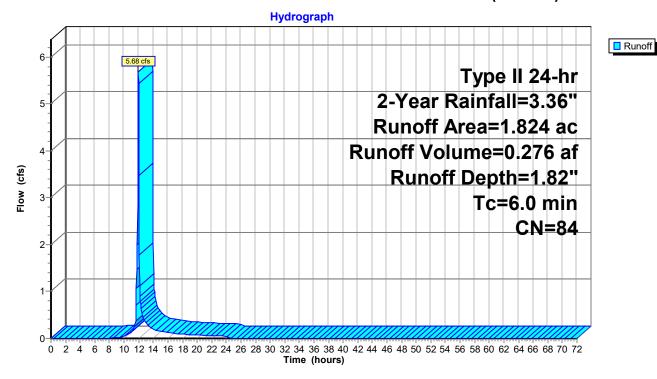
Runoff = 5.68 cfs @ 11.97 hrs, Volume= 0.276 af, Depth= 1.82"

Routed to Pond 40P: bio-retention basin #2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

Area	(ac)	CN	Desc	Description					
1.	120	98	Pave	ed parking	& roofs				
0.	.704	61	>75%	√ Grass co	over, Good	d, HSG B			
1.	1.824 84 Weighted Average				age				
0.	0.704 38.60% Pervious Area				us Area				
1.	.120		61.40	0% Imperv	ious Area				
Tc (min)	Leng		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	•			
6.0						Direct Entry,			

# Subcatchment 41S: BIO-RETENTION BASIN #2C (BMP #3)



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# Summary for Subcatchment 42S: BIO-RETENTION BASIN #2B (BMP #4)

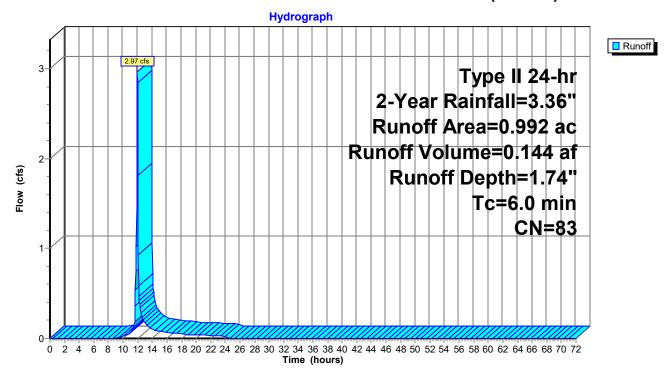
Runoff = 2.97 cfs @ 11.97 hrs, Volume= 0.144 af, Depth= 1.74"

Routed to Pond 39P: bio-retention basin #2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

 Area (	ac)	CN	Desc	ription			
 0.	598	98	Pave	d parking	& roofs		
 0.3	394	61	>75%	√ Grass co	over, Good	d, HSG B	
0.9	992	83	Weig	hted Aver	age		
0.394 39.72% Pervious Area				2% Pervio	us Area		
0.	598		60.28	3% Imperv	ious Area		
Тс	Lengt		Slope	Velocity	Capacity	·	
(min)	(feet	t)	(ft/ft)	(ft/sec)	(cfs)		
6.0						Direct Entry,	

# Subcatchment 42S: BIO-RETENTION BASIN #2B (BMP #4)



# NPDES Stormwater-REV1.1

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# **Summary for Subcatchment 47S: UNDETAINED-PROPOSED 001**

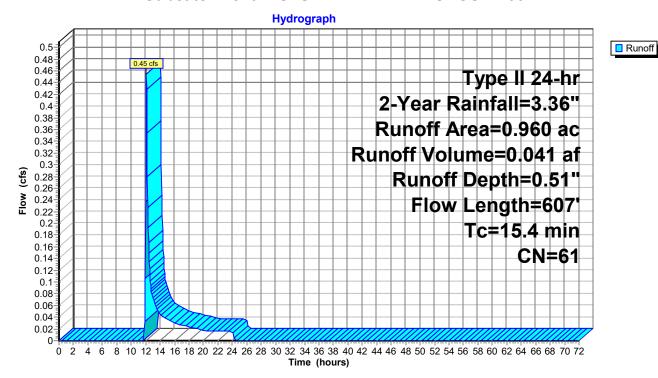
Runoff = 0.45 cfs @ 12.11 hrs, Volume= 0.041 af, Depth= 0.51"

Routed to Link 37L: Discharge 001

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 2-Year Rainfall=3.36"

_	Area	(ac) C	N Des	cription			
	0.	960 6	61 >75°	% Grass c	over, Good	, HSG B	
0.960 100.00% Pervious Area							
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
_	7.7	150	0.0800	0.32	, ,	Sheet Flow,	
_	7.7	457	0.0200	0.99		Grass: Short n= 0.150 P2= 3.23"  Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps	
_	15.4	607	Total			•	

#### Subcatchment 47S: UNDETAINED-PROPOSED 001



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# Summary for Reach 23R: SWL-4

Inflow Area = 7.095 ac, 18.49% Impervious, Inflow Depth = 0.27" for 2-Year event

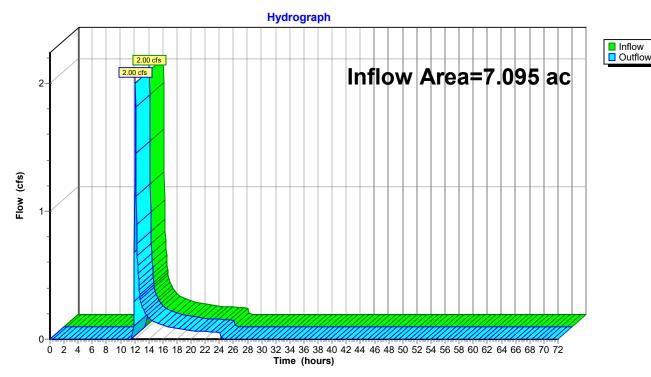
Inflow

2.00 cfs @ 12.10 hrs, Volume= 0.159 af 2.00 cfs @ 12.10 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Link 37L: Discharge 001

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

#### Reach 23R: SWL-4



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# Summary for Reach 26R: SWL-1

Inflow Area = 9.635 ac, 56.76% Impervious, Inflow Depth > 1.68" for 2-Year event

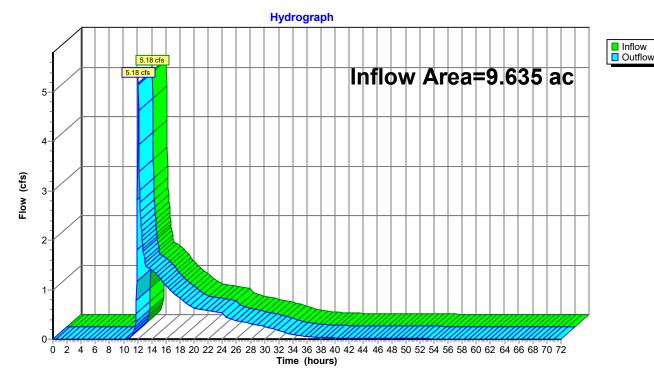
Inflow

5.18 cfs @ 12.09 hrs, Volume= 1.346 af 5.18 cfs @ 12.09 hrs, Volume= 1.346 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Reach 28R: SWL-3

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

#### Reach 26R: SWL-1



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# Summary for Reach 27R: SWL-2

Inflow Area = 2.996 ac, 64.52% Impervious, Inflow Depth = 1.44" for 2-Year event

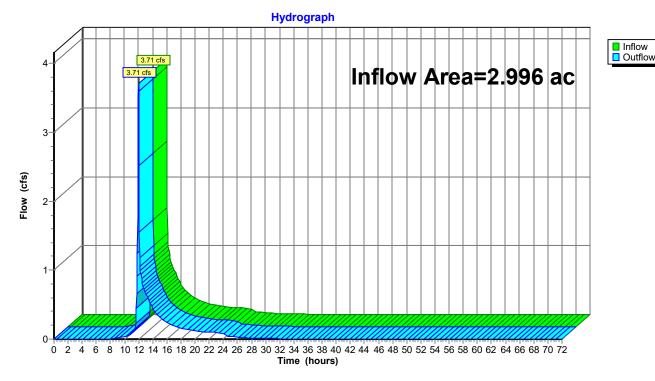
Inflow

3.71 cfs @ 11.98 hrs, Volume= 0.360 af 3.71 cfs @ 11.98 hrs, Volume= 0.360 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Reach 28R: SWL-3

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

#### Reach 27R: SWL-2



# NPDES\_Stormwater-REV1.1

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# Summary for Reach 28R: SWL-3

15.981 ac, 52.14% Impervious, Inflow Depth > 1.49" for 2-Year event Inflow Area =

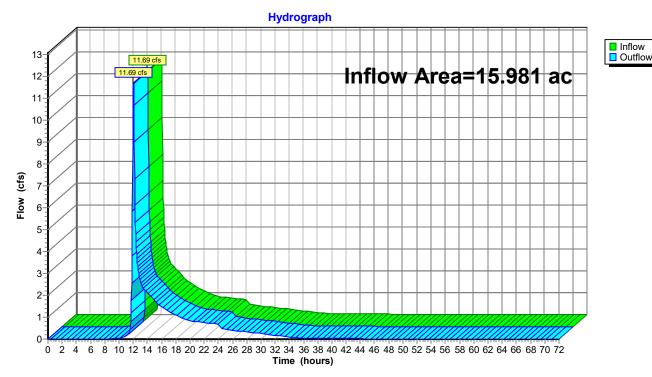
Inflow 1.979 af

11.69 cfs @ 12.04 hrs, Volume= 11.69 cfs @ 12.04 hrs, Volume= 1.979 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Pond 8P: BIO-RETENTION BASIN #5A (POI 001)

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

# Reach 28R: SWL-3



Total Tributary Area to 001 Type II 24-hr 2-Year Rainfall=3.36" Printed 11/16/2022

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#### Summary for Pond 8P: BIO-RETENTION BASIN #5A (POI 001)

Inflow Area = 34.811 ac, 65.84% Impervious, Inflow Depth > 0.84" for 2-Year event

20.54 cfs @ 12.00 hrs, Volume= Inflow 2.449 af

1.47 cfs @ 17.13 hrs, Volume= Outflow 2.449 af, Atten= 93%, Lag= 307.8 min

Discarded = 1.47 cfs @ 17.13 hrs, Volume= 2.449 af Primary 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routed to Link 37L: Discharge 001

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,868.49' @ 17.13 hrs Surf.Area= 81,393 sf Storage= 39,504 cf

Plug-Flow detention time= 300.3 min calculated for 2.449 af (100% of inflow)

Center-of-Mass det. time= 299.8 min (1,329.5 - 1,029.7)

Volume	Inver	t Avail.Sto	rage Storage	Description	
#1	1,868.00	560,09	7 cf Custom	Stage Data (Pris	matic) Listed below (Recalc)
Elevatio	n S	urf.Area	Inc.Store	Cum.Store	
				_	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
1,868.0	00	79,525	0	0	
1,869.0	00	83,329	81,427	81,427	
1,870.0	00	88,249	85,789	167,216	
1,872.0	00	98,164	186,413	353,629	
1,874.0		108,304	206,468	560,097	
,		,	,	,	
Device	Routing	Invert	Outlet Device	S	
#1	Primary	1,865.00'	42.0" Round	Culvert	
	•	·	L= 30.0' Box	, headwall w/3 sq	uare edges, Ke= 0.500
				•	1,864.50' S= 0.0167 '/' Cc= 0.900
					oth interior, Flow Area= 9.62 sf
#2	Device 1	1,869.10'			/Grate X 4.00 C= 0.600
π∠	DCVICC 1	1,000.10		ir flow at low head	
#3	Davisa 1	1 070 50'			
#3	Device 1	1,870.50'	-	Horiz. Orifice/Gr	
11.4	D: , .	4 000 001		ir flow at low head	
#4	Discarded	1,868.00'	U.780 In/hr Ex	xfiltration over S	urtace area

**Discarded OutFlow** Max=1.47 cfs @ 17.13 hrs HW=1,868.49' (Free Discharge) **4=Exfiltration** (Exfiltration Controls 1.47 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=1,868.00' (Free Discharge)

**-1=Culvert** (Passes 0.00 cfs of 45.69 cfs potential flow)

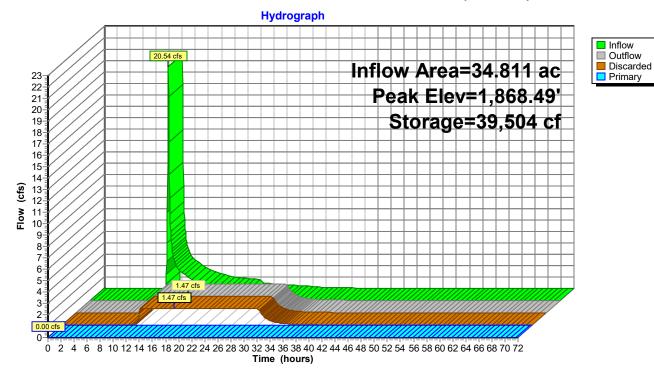
**2=Orifice/Grate** (Controls 0.00 cfs) -3=Orifice/Grate (Controls 0.00 cfs)

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#### (POI 001) Pond 8P: BIO-RETENTION BASIN #5A



Total Tributary Area to 001

Type II 24-hr 2-Year Rainfall=3.36"

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# Summary for Pond 9P: seepage pit with chambers #5A

Inflow Area = 6.084 ac,100.00% Impervious, Inflow Depth = 3.13" for 2-Year event 28.13 cfs @ 11.96 hrs, Volume= Inflow 1.585 af 1.28 cfs @ 11.10 hrs, Volume= Outflow 1.585 af, Atten= 95%, Lag= 0.0 min Discarded = 1.28 cfs @ 11.10 hrs, Volume= 1.585 af Primary 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 8P: BIO-RETENTION BASIN #5A (POI 001)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,877.13' @ 13.07 hrs Surf.Area= 42,456 sf Storage= 30,702 cf

Plug-Flow detention time= 188.2 min calculated for 1.584 af (100% of inflow) Center-of-Mass det. time= 188.0 min (939.5 - 751.5)

Volume	Invert	Avail.Storage	Storage Description
#1	1,876.00'	40,538 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			169,824 cf Overall - 68,478 cf Embedded = 101,346 cf x 40.0% Voids
#2	1,876.50'	68,478 cf	<b>Cultec R-360HD</b> x 1862 Inside #1
			Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			1862 Chambers in 19 Rows
			Cap Storage= 6.5 cf x 2 x 19 rows = 245.5 cf

109,016 cf Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,876.00	42,456	0	0
1,880.00	42,456	169,824	169,824

Device	Routing	Invert	Outlet Devices
#1	Primary	1,876.00'	24.0" Round Culvert
	•		L= 120.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,876.00' / 1,868.00' S= 0.0667 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,877.80'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,876.00'	1.300 in/hr Exfiltration over Surface area

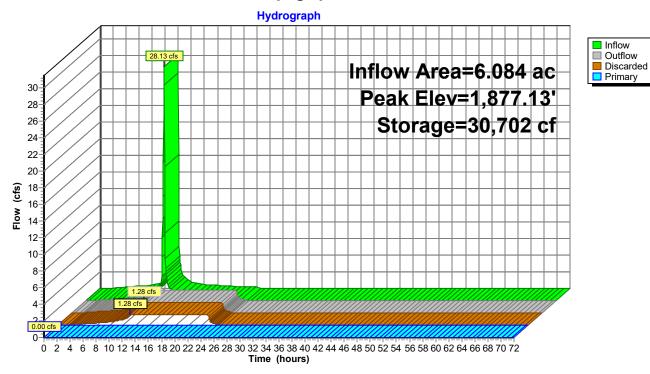
**Discarded OutFlow** Max=1.28 cfs @ 11.10 hrs HW=1,876.04' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 1.28 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,876.00' TW=1,869.56' (Fixed TW Elev= 1,869.56')

1=Culvert (Controls 0.00 cfs)

**2=Orifice/Grate** (Controls 0.00 cfs)

# Pond 9P: seepage pit with chambers #5A



Total Tributary Area to 001

Type II 24-hr 2-Year Rainfall=3.36"

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# Summary for Pond 13P: bio-retention basin #4a

Inflow Area = 2.695 ac, 0.00% Impervious, Inflow Depth = 0.47" for 2-Year event

Inflow = 0.84 cfs @ 12.23 hrs, Volume= 0.106 af

Outflow = 0.11 cfs @ 14.48 hrs, Volume= 0.106 af, Atten= 87%, Lag= 134.8 min

Discarded = 0.11 cfs @ 14.48 hrs, Volume= 0.106 af Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routed to Reach 23R: SWL-4

Invert

Volume

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,892.27' @ 14.48 hrs Surf.Area= 5,829 sf Storage= 1,560 cf

Plug-Flow detention time= 158.0 min calculated for 0.106 af (100% of inflow)

Avail.Storage Storage Description

Center-of-Mass det. time= 157.9 min ( 1,086.6 - 928.6 )

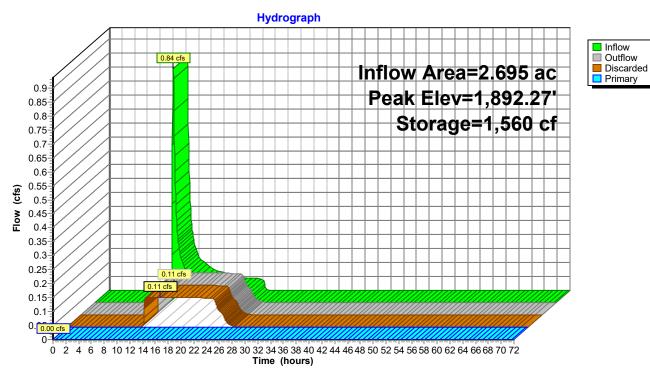
#1	1,892.00	30,7	34 cf Custom S	Stage Data (Pris	matic) Listed below (Recalc)
Elevation (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,892.0 1,894.0	00	5,542 7,636	0 13,178	0 13,178	
1,896.0		9,920	17,556	30,734	
Device	Routing	Invert	<b>Outlet Devices</b>		
#1	Discarded	1,892.00'	0.800 in/hr Exfi	iltration over Su	urface area
#2	Primary	1,894.00'	Head (feet) 0.2	20 0.40 0.60 0.	<ul><li>.0' breadth Broad-Crested Rectangular Weir</li><li>80 1.00 1.20 1.40 1.60</li><li>) 2.64 2.63 2.64 2.64 2.63</li></ul>

**Discarded OutFlow** Max=0.11 cfs @ 14.48 hrs HW=1,892.27' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,892.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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#### Pond 13P: bio-retention basin #4a



Total Tributary Area to 001

Type II 24-hr 2-Year Rainfall=3.36"

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# Summary for Pond 14P: seepage pit with chambers #5F

Inflow Area = 7.817 ac, 99.88% Impervious, Inflow Depth = 3.13" for 2-Year event 36.14 cfs @ 11.96 hrs, Volume= Inflow 2.037 af 2.24 cfs @ 11.40 hrs, Volume= Outflow 2.037 af, Atten= 94%, Lag= 0.0 min 2.24 cfs @ 11.40 hrs, Volume= Discarded = 2.037 af Primary 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 8P: BIO-RETENTION BASIN #5A (POI 001)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,869.53' @ 12.65 hrs Surf.Area= 56,925 sf Storage= 35,756 cf

Plug-Flow detention time= 114.0 min calculated for 2.037 af (100% of inflow) Center-of-Mass det. time= 113.9 min ( 865.4 - 751.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,868.50'	56,160 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			227,700 cf Overall - 87,300 cf Embedded = 140,400 cf x 40.0% Voids
#2	1,869.00'	87,300 cf	Cultec R-360HD x 2376 Inside #1
			Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			2376 Chambers in 18 Rows
			Cap Storage= 6.5 cf x 2 x 18 rows = 232.6 cf

143,460 cf Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,868.50	56,925	0	0
1,872.50	56,925	227,700	227,700

Device	Routing	Invert	Outlet Devices
#1	Primary	1,869.50'	24.0" Round Culvert
	•		L= 60.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,869.50' / 1,868.00' S= 0.0250 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,870.00'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,868.50'	1.700 in/hr Exfiltration over Surface area

**Discarded OutFlow** Max=2.24 cfs @ 11.40 hrs HW=1,868.54' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 2.24 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,868.50' TW=1,869.56' (Fixed TW Elev= 1,869.56')

1=Culvert (Controls 0.00 cfs)

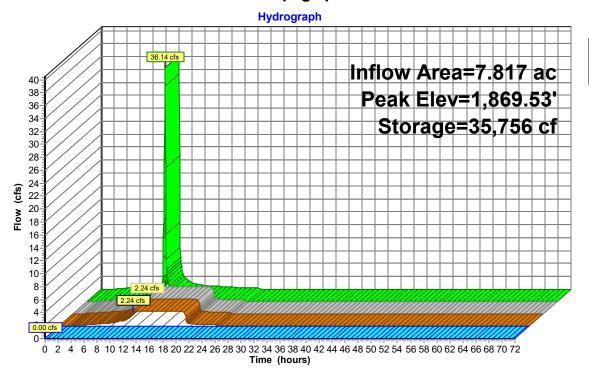
**2=Orifice/Grate** (Controls 0.00 cfs)

Inflow
Outflow

■ Discarded■ Primary

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# Pond 14P: seepage pit with chambers #5F



Total Tributary Area to 001

Type II 24-hr 2-Year Rainfall=3.36"

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# Summary for Pond 15P: seepage pit with chambers #4b

Inflow Area = 1.404 ac, 93.45% Impervious, Inflow Depth = 2.91" for 2-Year event Inflow = 0.340 af

Outflow = 0.22 cfs @ 10.90 hrs, Volume= 0.340 af, Atten= 96%, Lag= 0.0 min

Discarded = 0.22 cfs @ 10.90 hrs, Volume= 0.340 af Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routed to Reach 23R: SWL-4

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,888.27' @ 13.57 hrs Surf.Area= 12,000 sf Storage= 7,393 cf

Plug-Flow detention time= 290.7 min calculated for 0.340 af (100% of inflow) Center-of-Mass det. time= 290.7 min (1,059.8 - 769.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,887.00'	16,609 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			48,000 cf Overall - 6,477 cf Embedded = 41,523 cf x 40.0% Voids
#2	1,887.50'	6,477 cf	<b>Cultec R-360HD</b> x 175 Inside #1
			Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			175 Chambers in 5 Rows
			Cap Storage= 6.5 cf x 2 x 5 rows = 64.6 cf

23,086 cf Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,887.00	12,000	0	0
1,891.00	12,000	48,000	48,000

Device	Routing	Invert	Outlet Devices
#1	Primary	1,887.00'	24.0" Round Culvert
	•		L= 50.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,887.00' / 1,886.00' S= 0.0200 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,888.40'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,887.00'	0.800 in/hr Exfiltration over Surface area

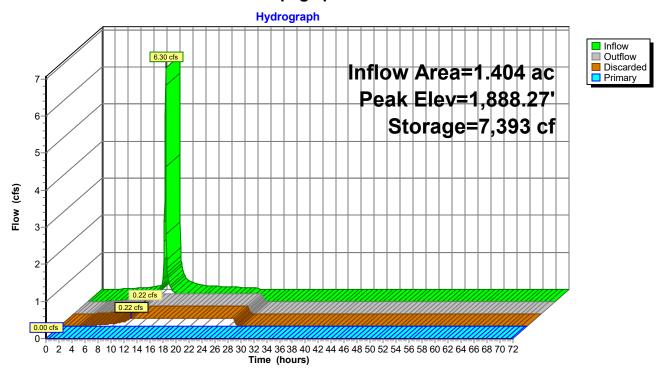
**Discarded OutFlow** Max=0.22 cfs @ 10.90 hrs HW=1,887.04' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 0.22 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,887.00' (Free Discharge)

1=Culvert (Controls 0.00 cfs)

**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 15P: seepage pit with chambers #4b



Total Tributary Area to 001 Type II 24-hr 2-Year Rainfall=3.36" Printed 11/16/2022

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# Summary for Pond 16P: seepage pit with chambers #3A

Inflow Area = 4.089 ac, 57.74% Impervious, Inflow Depth = 1.46" for 2-Year event

10.39 cfs @ 11.98 hrs, Volume= Inflow 0.497 af

0.55 cfs @ 11.70 hrs, Volume= Outflow 0.497 af, Atten= 95%, Lag= 0.0 min

Discarded = 0.55 cfs @ 11.70 hrs, Volume= 0.497 af Primary 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routed to Pond 26P: bio-retention basin #3b

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,901.71' @ 13.19 hrs Surf.Area= 26,640 sf Storage= 9,810 cf

Plug-Flow detention time= 166.6 min calculated for 0.496 af (100% of inflow)

Center-of-Mass det. time= 166.5 min (1,006.6 - 840.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,901.00'	26,373 cf	• • • • • • • • • • • • • • • • • • • •
			106,560 cf Overall - 40,628 cf Embedded = 65,932 cf x 40.0% Voids
#2	1,901.50'	40,628 cf	Cultec R-360HD x 1102 Inside #1
			Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			1102 Chambers in 19 Rows
			Cap Storage= 6.5 cf x 2 x 19 rows = 245.5 cf

67,001 cf Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,901.00	26,640	0	0
1,905.00	26,640	106,560	106,560

Device	Routing	Invert	Outlet Devices
#1	Primary	1,901.00'	24.0" Round Culvert
			L= 120.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,901.00' / 1,898.00' S= 0.0250 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,902.00'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,901.00'	0.900 in/hr Exfiltration over Surface area

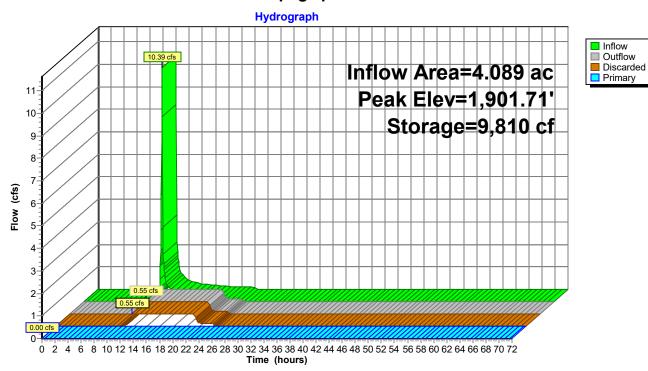
Discarded OutFlow Max=0.55 cfs @ 11.70 hrs HW=1,901.05' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 0.55 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,901.00' (Free Discharge)

-1=Culvert (Controls 0.00 cfs)

2=Orifice/Grate (Controls 0.00 cfs)

# Pond 16P: seepage pit with chambers #3A



Total Tributary Area to 001

Type II 24-hr 2-Year Rainfall=3.36"

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# Summary for Pond 24P: bio-retention basin #6a

Inflow Area = 1.953 ac, 57.30% Impervious, Inflow Depth = 1.20" for 2-Year event

Inflow = 4.08 cfs @ 11.98 hrs, Volume= 0.196 af

Outflow = 0.53 cfs @ 12.35 hrs, Volume= 0.196 af, Atten= 87%, Lag= 22.1 min

Primary = 0.53 cfs @ 12.35 hrs, Volume= 0.196 af

Routed to Reach 27R: SWL-2

Invert

Volume

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,922.57' @ 12.35 hrs Surf.Area= 6,196 sf Storage= 3,343 cf

Plug-Flow detention time= 161.9 min calculated for 0.196 af (100% of inflow)

Avail.Storage Storage Description

Center-of-Mass det. time= 163.0 min ( 1,015.6 - 852.5 )

VOIGITIO	1117	ort /tvaii.oto	rage clorage i	200011PtiO11	
#1	1,922.0	00' 31,3	52 cf Custom	Stage Data (Pri	smatic) Listed below (Recalc)
Elevatio		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,922.0		5,567	0	0	
1,924.0		7,781	13,348	13,348	
1,926.0	00	10,223	18,004	31,352	
Device	Routing	Invert	Outlet Devices	<b>;</b>	
#1	Primary	1,922.00'	24.0" Round	Culvert	
				,	form to fill, Ke= 0.700
				,	/ 1,920.25' S= 0.0350 '/' Cc= 0.900
40	Davisa 1	4 000 001		•	ooth interior, Flow Area= 3.14 sf
#2	Device 1	,	6.0 Vert. Orii	ice/Grate C= (	0.600 Limited to weir flow at low heads
#3	Device 1	1,924.50'	45.0" x 24.0" l	Horiz. Orifice/G	rate C= 0.600
			Limited to weir	flow at low hea	ds

Primary OutFlow Max=0.53 cfs @ 12.35 hrs HW=1,922.57' (Free Discharge)

**1=Culvert** (Passes 0.53 cfs of 1.66 cfs potential flow)

**2=Orifice/Grate** (Orifice Controls 0.53 cfs @ 2.72 fps)

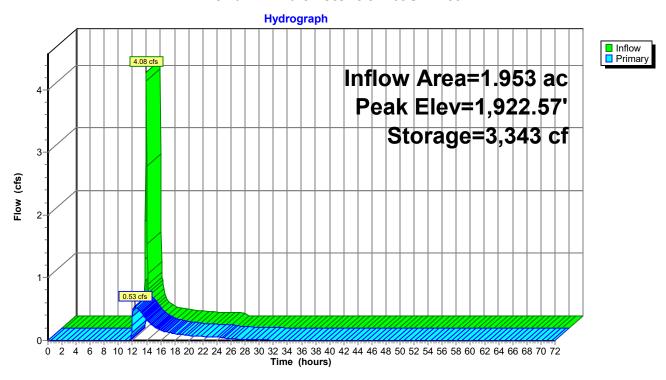
-3=Orifice/Grate (Controls 0.00 cfs)

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Pond 24P: bio-retention basin #6a



Total Tributary Area to 001 Type II 24-hr 2-Year Rainfall=3.36" Printed 11/16/2022

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#### Summary for Pond 26P: bio-retention basin #3b

Inflow Area = 14.187 ac, 33.20% Impervious, Inflow Depth = 0.55" for 2-Year event

5.51 cfs @ 12.30 hrs, Volume= Inflow 0.650 af

Outflow 0.66 cfs @ 14.22 hrs, Volume= 0.650 af, Atten= 88%, Lag= 115.2 min

Discarded = 0.66 cfs @ 14.22 hrs, Volume= 0.650 af Primary 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routed to Link 37L: Discharge 001

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,891.50' @ 14.22 hrs Surf.Area= 23,671 sf Storage= 11,493 cf

Plug-Flow detention time= 185.9 min calculated for 0.650 af (100% of inflow)

Center-of-Mass det. time= 185.9 min (1,088.9 - 903.1)

Volume	Inve	t Avail.Sto	rage Stora	age Description				
#1	1,891.00	)' 218,3	79 cf Cust	om Stage Data (Pi	rismatic) Listed below (Recalc)			
Elevation	n G	Surf.Area	Inc.Store	Cum.Store				
(fee		(sq-ft)	(cubic-feet)					
1,891.00		22,485	(00.0.00					
1,892.0		24,866	23,676	23,676				
1,894.0		29,797	54,663	•				
1,896.0		34,953	64,750	,				
1,898.0	00	40,337	75,290	218,379				
Device	Routing	Invert	Outlet Dev	vices				
#1	Primary	1,891.00'	24.0" Rou	ınd Culvert				
				•	onform to fill, Ke= 0.700			
			Inlet / Outlet Invert= 1,891.00' / 1,889.80' S= 0.0100 '/' Cc= 0.900					
				n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf				
#2	Device 1	1,892.00'	3.0" Horiz	. Orifice/Grate C	= 0.600 Limited to weir flow at low heads			
#3	Discarded	,	1.200 in/hr Exfiltration over Surface area					
#4	Device 1	1,896.60' <b>45.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600						

Limited to weir flow at low heads

Discarded OutFlow Max=0.66 cfs @ 14.22 hrs HW=1,891.50' (Free Discharge) **T—3=Exfiltration** (Exfiltration Controls 0.66 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=1,891.00' (Free Discharge)

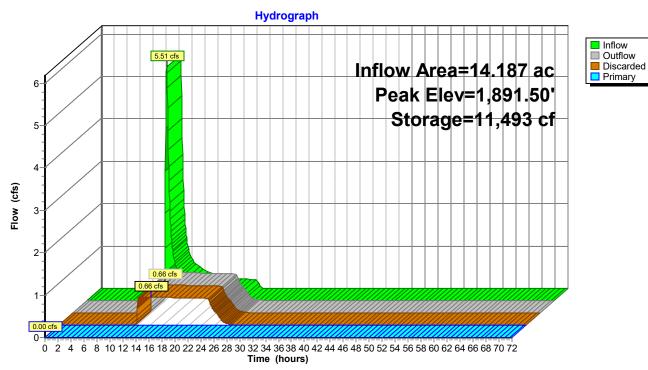
-1=Culvert (Controls 0.00 cfs)

-2=Orifice/Grate (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

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Total Tributary Area to 001

Type II 24-hr 2-Year Rainfall=3.36"

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#### Summary for Pond 29P: bio-retention basin #1A

Inflow Area = 3.056 ac, 64.73% Impervious, Inflow Depth = 1.89" for 2-Year event

Inflow = 9.90 cfs @ 11.97 hrs, Volume= 0.483 af

Outflow = 0.70 cfs @ 12.65 hrs, Volume= 0.478 af, Atten= 93%, Lag= 40.7 min

Primary = 0.70 cfs @ 12.65 hrs, Volume= 0.478 af

Routed to Pond 38P: bio-retention basin #2A

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,938.80' @ 12.65 hrs Surf.Area= 14,784 sf Storage= 10,970 cf

Plug-Flow detention time= 294.4 min calculated for 0.477 af (99% of inflow)

Center-of-Mass det. time= 290.0 min (1,110.9 - 820.8)

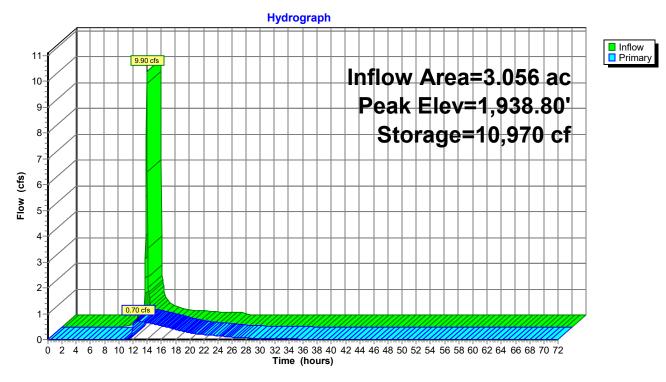
Volume	Inve	ert Avail.Sto	rage Storage	Description	
#1	1,938.0	00' 72,3	34 cf Custom	Stage Data (Pr	ismatic) Listed below (Recalc)
Elevatio		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,938.0		12,620	0	0	
1,940.0		18,027	30,647	30,647	
1,942.0		23,660	41,687	72,334	
Device	Routing	Invert	Outlet Device	S	
#1	Primary	1,936.00'	24.0" Round	Culvert	
	,	,	L= 85.0' CPF	P, mitered to cor	nform to fill, Ke= 0.700
			Inlet / Outlet I	nvert= 1,936.00'	/ 1,934.00' S= 0.0235 '/' Cc= 0.900
				,	ooth interior, Flow Area= 3.14 sf
#2	Device 1	1,938.00'	6.0" Vert. Ori	fice/Grate C=	0.600 Limited to weir flow at low heads
#3	Device 1	1,940.50'	45.0" x 24.0"	Horiz. Orifice/G	Grate C= 0.600
			Limited to wei	r flow at low hea	ads

Primary OutFlow Max=0.70 cfs @ 12.65 hrs HW=1,938.80' TW=1,936.57' (Fixed TW Elev= 1,936.57') 1=Culvert (Passes 0.70 cfs of 17.91 cfs potential flow)

**2=Orifice/Grate** (Orifice Controls 0.70 cfs @ 3.57 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

### Pond 29P: bio-retention basin #1A



Total Tributary Area to 001

Type II 24-hr 2-Year Rainfall=3.36"

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# Summary for Pond 38P: bio-retention basin #2A

Inflow Area = 4.593 ac, 65.01% Impervious, Inflow Depth > 1.88" for 2-Year event

Inflow = 5.48 cfs @ 11.97 hrs, Volume= 0.720 af

Outflow = 0.88 cfs @ 13.59 hrs, Volume= 0.720 af, Atten= 84%, Lag= 96.8 min

Primary = 0.88 cfs @ 13.59 hrs, Volume= 0.720 af

Routed to Pond 40P: bio-retention basin #2C

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,936.05' @ 13.59 hrs Surf.Area= 4,360 sf Storage= 8,330 cf

Plug-Flow detention time= 226.8 min calculated for 0.719 af (100% of inflow)

Center-of-Mass det. time= 224.1 min (1,237.3 - 1,013.2)

Volume	Inve	<u>rt Avail.Sto</u>	rage Storage	e Description	
#1	1,933.0	0' 19,06	68 cf Custon	n Stage Data (Pr	ismatic) Listed below (Recalc)
Elevation	n s	Surf.Area	Inc.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)	
1,933.0	00	1,159	0	0	
1,934.0	00	2,148	1,654	1,654	
1,936.0	00	4,297	6,445	8,099	
1,938.0	00	6,672	10,969	19,068	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	1,933.00'	24.0" Round	d Culvert	
	•		L= 115.0' C	PP, mitered to co	onform to fill, Ke= 0.700
					/ 1,931.70' S= 0.0113 '/' Cc= 0.900
					ooth interior, Flow Area= 3.14 sf
#2	Device 1	1,933.00'	3.0" Vert. Or	rifice/Grate C=	0.600 Limited to weir flow at low heads
#3	Device 1	1,936.00'		<b>' Horiz. Orifice/G</b> eir flow at low hea	

**Primary OutFlow** Max=0.87 cfs @ 13.59 hrs HW=1,936.05' (Free Discharge)

**1=Culvert** (Passes 0.87 cfs of 19.13 cfs potential flow)

**—2=Orifice/Grate** (Orifice Controls 0.40 cfs @ 8.24 fps)

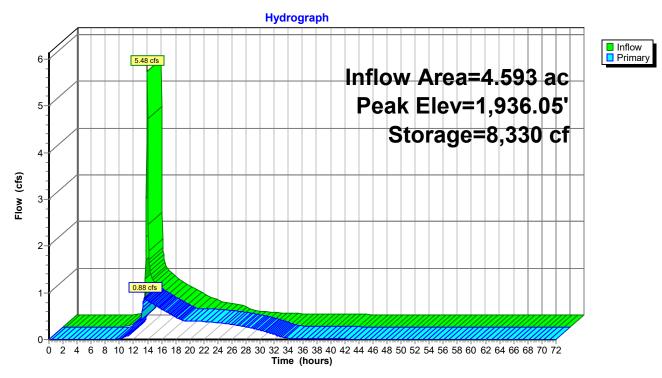
-3=Orifice/Grate (Weir Controls 0.46 cfs @ 0.76 fps)

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### Pond 38P: bio-retention basin #2A



Total Tributary Area to 001 Type II 24-hr 2-Year Rainfall=3.36" Printed 11/16/2022

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# Summary for Pond 39P: bio-retention basin #2B

Inflow Area = 0.992 ac, 60.28% Impervious, Inflow Depth = 1.74" for 2-Year event

2.97 cfs @ 11.97 hrs, Volume= Inflow 0.144 af

Outflow 0.27 cfs @ 12.51 hrs, Volume= 0.142 af, Atten= 91%, Lag= 32.2 min

0.27 cfs @ 12.51 hrs, Volume= 0.142 af Primary

Routed to Reach 26R: SWL-1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,916.33' @ 12.51 hrs Surf.Area= 9,613 sf Storage= 3,115 cf

Plug-Flow detention time= 333.0 min calculated for 0.142 af (99% of inflow)

Center-of-Mass det. time= 326.2 min (1,153.7 - 827.5)

Volume	Inve	ert Avail.Sto	rage Storage	Description	
#1	1,916.0	00' 44,18	30 cf Custon	n Stage Data (Pr	ismatic) Listed below (Recalc)
Elevatio		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,916.0	00	9,337	Ó	0	
1,918.0	00	11,016	20,353	20,353	
1,920.0	00	12,811	23,827	44,180	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	1,916.00'	24.0" Round	d Culvert	
	,	,	L= 50.0' CP	P, mitered to cor	nform to fill, Ke= 0.700
			Inlet / Outlet	Invert= 1,916.00	' / 1,914.00' S= 0.0400 '/' Cc= 0.900
			n= 0.013 Co	rrugated PE, sm	ooth interior, Flow Area= 3.14 sf
#2	Device 1	1,916.00'	6.0" Vert. Or	ifice/Grate C=	0.600 Limited to weir flow at low heads
#3	Device 1	1,917.50'	45.0" x 24.0"	' Horiz. Orifice/G	Grate C= 0.600
			Limited to we	eir flow at low hea	ads

Primary OutFlow Max=0.27 cfs @ 12.51 hrs HW=1,916.33' (Free Discharge)

**-1=Culvert** (Passes 0.27 cfs of 0.58 cfs potential flow)

**-2=Orifice/Grate** (Orifice Controls 0.27 cfs @ 1.95 fps)

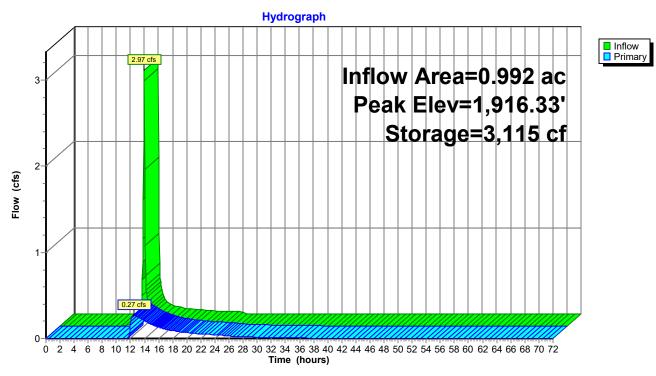
-3=Orifice/Grate (Controls 0.00 cfs)

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Total Tributary Area to 001

Type II 24-hr 2-Year Rainfall=3.36"

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#### Summary for Pond 40P: bio-retention basin #2C

Inflow Area = 6.417 ac, 63.99% Impervious, Inflow Depth > 1.86" for 2-Year event

Inflow = 5.98 cfs @ 11.97 hrs, Volume= 0.996 af

Outflow = 1.76 cfs @ 12.13 hrs, Volume= 0.992 af, Atten= 71%, Lag= 9.4 min

Primary = 1.76 cfs @ 12.13 hrs, Volume= 0.992 af

Routed to Reach 26R: SWL-1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,931.59' @ 12.13 hrs Surf.Area= 9,939 sf Storage= 5,402 cf

Plug-Flow detention time= 99.4 min calculated for 0.992 af (100% of inflow)

Center-of-Mass det. time= 87.9 min (1,210.6 - 1,122.7)

Volume	Inve	rt Avail.Sto	rage Storage	Description				
#1	1,931.00	)' 36,68	80 cf Custom	n Stage Data (Pris	matic) Listed below (Recalc)			
Elevatio		Surf.Area	Inc.Store	Cum.Store				
(fee	,	(sq-ft)	(cubic-feet)	(cubic-feet)				
1,931.0		8,511	0	0				
1,932.0	0	10,950	9,731	9,731				
1,934.0	0	15,999	26,949	36,680				
Device	Routing	Invert	Outlet Device	es				
#1	Primary	1,931.00'	24.0" Round Culvert					
	,	,	L= 35.0' CP	P. mitered to confo	orm to fill, Ke= 0.700			
				Inlet / Outlet Invert= 1,931.00' / 1,930.00' S= 0.0286 '/' Cc= 0.900				
					oth interior, Flow Area= 3.14 sf			
#2	Device 1	1,931.00'						
π	DCVICC I	1,351.00	12.0" W x 4.0" H Vert. Orifice/Grate X 3.00 C= 0.600 Limited to weir flow at low heads					
<b>4</b> 0	Davisa 1	4 000 001						
#3	Device 1	1,932.00'		Horiz. Orifice/Gra				
			rimited to Me	ir flow at low head	IS			

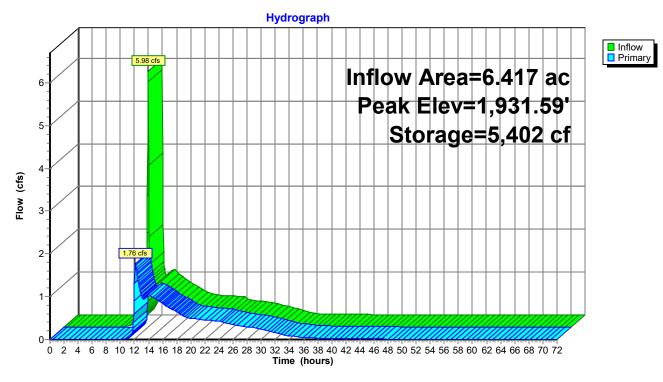
Primary OutFlow Max=1.76 cfs @ 12.13 hrs HW=1,931.58' (Free Discharge)

**\_1=Culvert** (Inlet Controls 1.76 cfs @ 2.30 fps)

**—2=Orifice/Grate** (Passes 1.76 cfs of 3.09 cfs potential flow)

-3=Orifice/Grate (Controls 0.00 cfs)

# Pond 40P: bio-retention basin #2C



Total Tributary Area to 001 Type II 24-hr 2-Year Rainfall=3.36" Printed 11/16/2022

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Inflow Primary

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#### Summary for Link 37L: Discharge 001

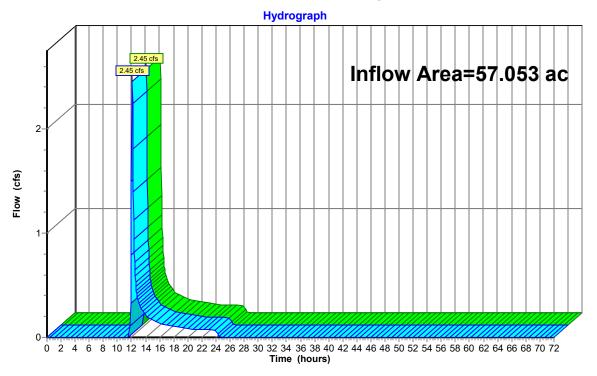
Inflow Area = 57.053 ac, 50.73% Impervious, Inflow Depth = 0.04" for 2-Year event

Inflow = 2.45 cfs @ 12.10 hrs, Volume= 0.200 af

Primary = 2.45 cfs @ 12.10 hrs, Volume= 0.200 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

# Link 37L: Discharge 001



Runoff

#### NPDES Stormwater-REV1.1

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# Summary for Subcatchment 11S: SEEPAGE BED #5A (BMP #7)

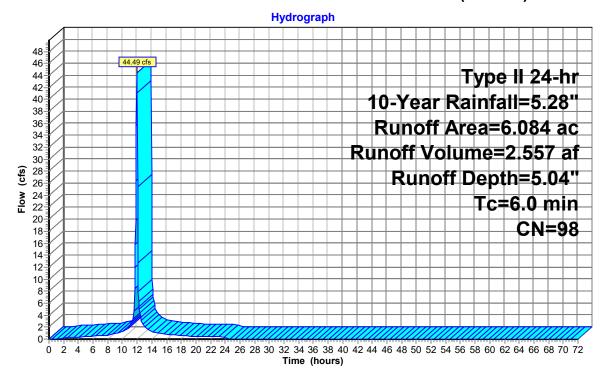
Runoff = 44.49 cfs @ 11.96 hrs, Volume= 2.557 af, Depth= 5.04"

Routed to Pond 9P : seepage pit with chambers #5A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

_	Area	(ac)	CN	Desc	Description					
	6.	.084	84 98 Paved parking & roofs							
_	6.084 100.00% Impervious Area									
	To	Longi	th <sup>9</sup>	Slope	Volocity	Capacity	Description			
	(min)	Lengt (fee		(ft/ft)	(ft/sec)	(cfs)	Description			
-	6.0	,		, ,	,	, ,	Direct Entry.			

#### Subcatchment 11S: SEEPAGE BED #5A (BMP #7)



#### NPDES Stormwater-REV1.1

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### Summary for Subcatchment 12S: bio-retention basin #4a (BMP #9)

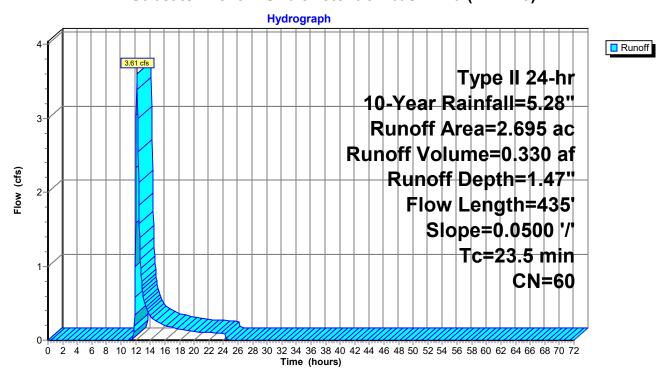
Runoff = 3.61 cfs @ 12.19 hrs, Volume= 0.330 af, Depth= 1.47"

Routed to Pond 13P: bio-retention basin #4a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

Area	(ac) C	N Des	cription					
1.	.896	51 >75% Grass cover, Good, HSG B						
0.799 58 Meadow, non-grazed, HSG B								
2.	2.695 60 Weighted Average							
2.	.695	100.	00% Pervi	ous Area				
Tc	Length	Slope	Velocity	Capacity	Description			
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
20.5	150	0.0500	0.12		Sheet Flow,			
					Woods: Light underbrush n= 0.400 P2= 3.23"			
3.0	285	0.0500	1.57		Shallow Concentrated Flow,			
					Short Grass Pasture Kv= 7.0 fps			
23.5	435	Total						

# Subcatchment 12S: bio-retention basin #4a (BMP #9)



#### NPDES Stormwater-REV1.1

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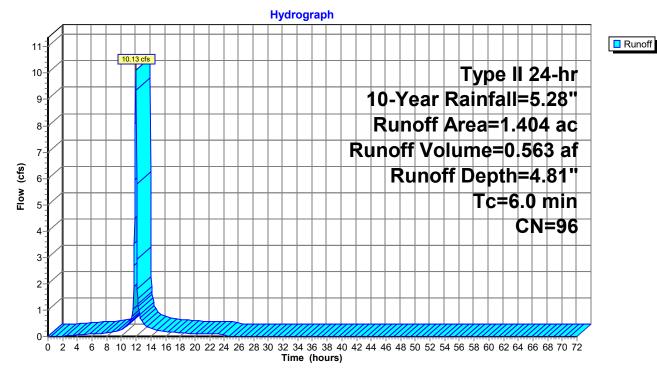
# Summary for Subcatchment 17S: SEEPAGE BED #4b (BMP #10)

Runoff = 10.13 cfs @ 11.96 hrs, Volume= 0.563 af, Depth= 4.81" Routed to Pond 15P : seepage pit with chambers #4b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

Are	a (ac)	CN	Desc	Description						
	1.312	98	Pave	ed parking	& roofs					
	0.092	74	>75%	√ Grass co	over, Good,	, HSG C				
1.404 96 Weighted Average										
0.092 6.55% Pervious Ārea										
	1.312		93.4	5% Imperv	ious Area					
_					• "	<b>-</b>				
T		,	Slope	Velocity	Capacity	Description				
(mir	) (fe	et)	(ft/ft)	(ft/sec)	(cfs)					
6.	0					Direct Entry,				

# Subcatchment 17S: SEEPAGE BED #4b (BMP #10)



#### NPDES Stormwater-REV1.1

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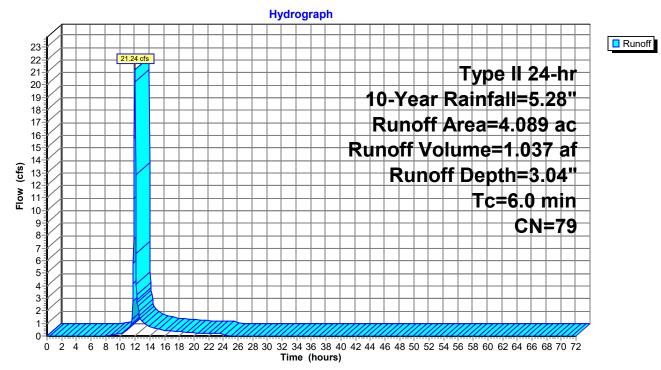
# Summary for Subcatchment 19S: SEEPAGE BED #3A (BMP #11)

Runoff = 21.24 cfs @ 11.97 hrs, Volume= 1.037 af, Depth= 3.04" Routed to Pond 16P: seepage pit with chambers #3A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

_	Area	(ac)	CN	Desc	cription						
	2.	361	98	Pave	Paved parking & roofs						
*	0.	069	40	Mea	dow, non-g	grazed, HS	SG A				
	0.	0.059 71 Meadow, non-grazed, HSG C									
*	0.	485	40	>759	% Grass co	over, Good	I, HSG A				
	0.	485	74	>759	% Grass co	over, Good	I, HSG C				
*	0.	477	40	Woo	ds, Good,	HSG A					
	0.	0.153 70 Woods, Good, HSG C									
	4.089 79 Weighted Average										
	1.	728		42.2	6% Pervio	us Area					
	2.	361		57.7	4% Imperv	ious Area					
					-						
	Tc	Leng	jth	Slope	Velocity	Capacity	Description				
_	(min)	(fe	et)	(ft/ft)	(ft/sec)	(cfs)					
	6.0						Direct Entry,				

# Subcatchment 19S: SEEPAGE BED #3A (BMP #11)



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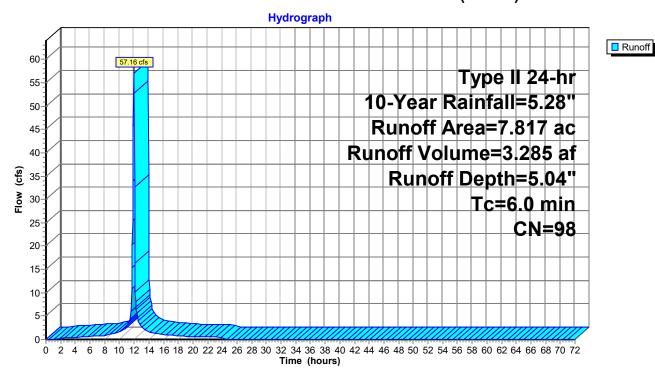
# Summary for Subcatchment 20S: SEEPAGE BED #5F (BMP 6)

Runoff = 57.16 cfs @ 11.96 hrs, Volume= 3.285 af, Depth= 5.04" Routed to Pond 14P : seepage pit with chambers #5F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

A	rea (ac)	CN	Desc	cription			
	7.808	98	Pave	ed parking	& roofs		
	0.009	74	>75%	% Grass co	over, Good	I, HSG C	
	7.817 98 Weighted Average						
	0.009 0.12% Pervious Area						
	7.808 99.88% Impervious Area				∕ious Area		
	Tc Ler	igth	Slope	Velocity	Capacity	Description	
(m		eet)	(ft/ft)	(ft/sec)	(cfs)	Description	
		JC()	(11/11)	(11/300)	(013)	Planet Foto	
	6.0					Direct Entry,	

#### Subcatchment 20S: SEEPAGE BED #5F (BMP 6)



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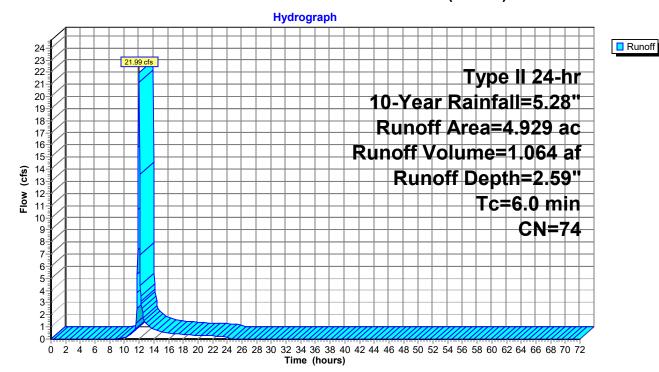
# Summary for Subcatchment 22S: SUB BASIN-5A (BMP 8)

Runoff = 21.99 cfs @ 11.97 hrs, Volume= 1.064 af, Depth= 2.59" Routed to Pond 8P : BIO-RETENTION BASIN #5A (POI 001)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

Area	ı (ac)	CN	Desc	cription		
1	.186	61	>75%	√ Grass co	over, Good	, HSG B
3	3.048	74	>75%	√ Grass co	over, Good	, HSG C
	).695	98	Pave	ed parking	& roofs	
4	1.929	74	Weig	hted Aver	age	
4	1.234		85.9	0% Pervio	us Area	
C	).695		14.10	0% Imperv	ious Area	
_						
Tc	Leng	jth :	Slope	Velocity	Capacity	Description
(min)	(fe	et)	(ft/ft)	(ft/sec)	(cfs)	
6.0						Direct Entry, 6 minute min

#### Subcatchment 22S: SUB BASIN-5A (BMP 8)



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# Summary for Subcatchment 24S: bio-retention basin #3b(BMP #12)

Runoff = 16.47 cfs @ 12.27 hrs, Volume=

1.684 af, Depth= 2.00"

Routed to Pond 26P: bio-retention basin #3b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

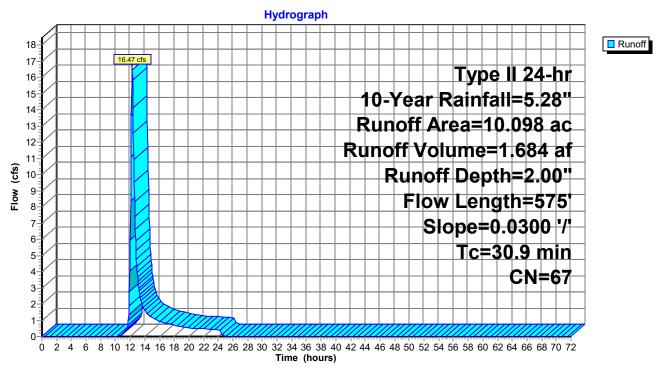
	Area	(ac)	CN	l Desc	ription		
	2.	349	98	Pave	d parking		
	1.	017	58	Mea	dow, non-g	grazed, HS	G B
	0.	574	71	Mead	dow, non-g	grazed, HS	GC
	3.	499	61	>75%	% Grass co	over, Good	, HSG B
	0.126 74 >75% Grass cover, Good, H					over, Good	, HSG C
*	1.	025	40	) Woo	ds, Good,	HSG A	
*	0.	745	40	>75%	% Grass co	over, Good	, HSG A
_	0.	763	74	>75%	% Grass co	over, Good	, HSG C
	10.098 67 Weighted Average					age	
	7.749 76.74% Pervious Area			4% Pervio	us Area		
	2.	349		23.26	3% Imperv	ious Area	
	Тс	Leng	th	Slope	Velocity	Capacity	Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	25.1	15	50	0.0300	0.10		Sheet Flow,
							Woods: Light underbrush n= 0.400 P2= 3.23"
	5.8	42	25	0.0300	1.21		Shallow Concentrated Flow,
							Short Grass Pasture Kv= 7.0 fps
-	30.9	57	75	Total	·		

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# Subcatchment 24S: bio-retention basin #3b(BMP #12)



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#### Summary for Subcatchment 25S: BIO-RETENTION BASIN #6A (BMP 5)

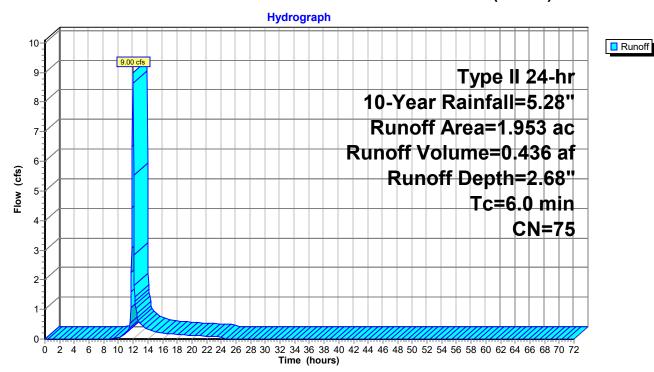
Runoff = 9.00 cfs @ 11.97 hrs, Volume= 0.436 af, Depth= 2.68"

Routed to Pond 24P: bio-retention basin #6a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

	Area (a	ac)	CN	Desc	ription			
	1.1	19	98	Pave	d parking	& roofs		
*	0.6	65	40	>75%	% Grass co	over, Good	, HSG A	
	0.1	69	61	>75%	√ Grass co	over, Good	, HSG B	
	1.9	953	75	Weig	hted Aver	age		
	0.8	334		42.70	% Pervio	us Area		
	1.119 57.30% Impervious Area							
		Lengtl		Slope	Velocity	Capacity	Description	
_	(min)	(feet	t)	(ft/ft)	(ft/sec)	(cfs)		
	6.0						Direct Entry.	

#### Subcatchment 25S: BIO-RETENTION BASIN #6A (BMP 5)



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# Summary for Subcatchment 29S: SWL #1

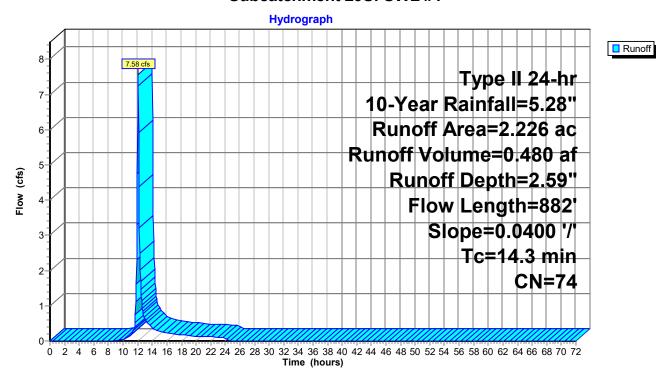
Runoff = 7.58 cfs @ 12.07 hrs, Volume= 0.480 af, Depth= 2.59"

Routed to Reach 26R: SWL-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

A	rea (	(ac) C	N Des	cription		
	0.	765	98 Pave	ed parking	& roofs	
	1.461 61			% Grass co	over, Good,	, HSG B
	2.	226	74 Wei	ghted Aver	age	
	1.	461	65.6	3% Pervio	us Area	
0.765 34.37% Impervious Area						
(m	Tc nin)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10	0.2	150	0.0400	0.24		Sheet Flow,
	4.1	732	0.0400	3.00		Grass: Short n= 0.150 P2= 3.23"  Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14	4.3	882	Total			

#### Subcatchment 29S: SWL #1



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# Summary for Subcatchment 30S: SWL #2

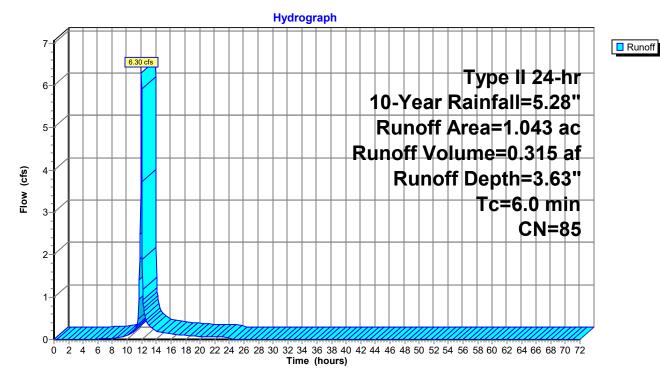
Runoff = 6.30 cfs @ 11.97 hrs, Volume= 0.315 af, Depth= 3.63"

Routed to Reach 27R: SWL-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

	Area	(ac)	CN	Desc	cription		
	0.	814	98	Pave	ed parking	& roofs	
*	0.	229	40	>75%	% Grass co	over, Good	H, HSG A
	1.	043	85	Weig	ghted Aver	age	
	0.229 21.96% Pervious Area						
	0.814			78.04% Impervious Area			
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

#### Subcatchment 30S: SWL #2



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# Summary for Subcatchment 32S: SWL #3

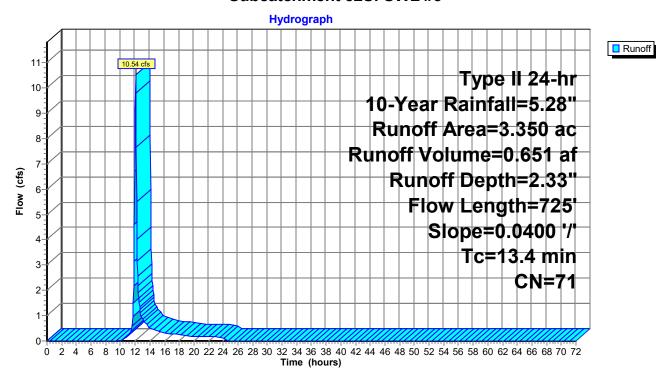
Runoff = 10.54 cfs @ 12.06 hrs, Volume= 0.651 af, Depth= 2.33"

Routed to Reach 28R: SWL-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

	Area	(ac) C	N Desc	cription				
	0.	930 9		ed parking				
	2.	, HSG B						
	3.350 71 Weighted Average							
	2.	420	72.2	4% Pervio	us Area			
	0.	930	27.7	6% Imperv	/ious Area			
	Тс	Length	Slope	Velocity	Capacity	Description		
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	10.2	150	0.0400	0.24		Sheet Flow,		
						Grass: Short n= 0.150 P2= 3.23"		
	3.2	575	0.0400	3.00		Shallow Concentrated Flow,		
_						Grassed Waterway Kv= 15.0 fps		
	13.4	725	Total					

### Subcatchment 32S: SWL #3



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# Summary for Subcatchment 33S: BIO-RETENTION BASIN #1A (BMP#1)

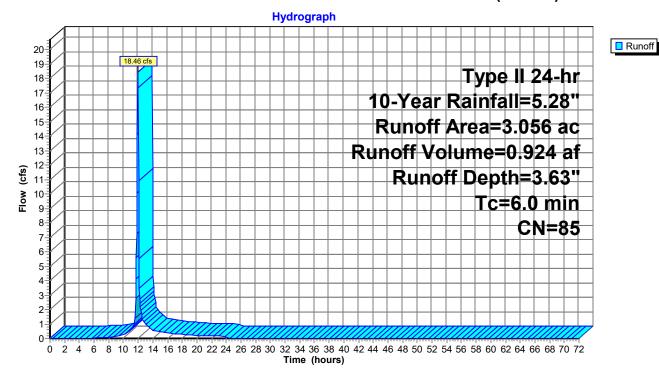
0.924 af, Depth= 3.63" Runoff 18.46 cfs @ 11.97 hrs, Volume=

Routed to Pond 29P: bio-retention basin #1A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

	Area	(ac)	CN	Desc	cription				
	1.	978	98	Pave	ed parking	& roofs			
	1.078 61 >75% Grass cover, Good,						, HSG B		
	3.056 85 Weighted Ave					age			
	1.078 35.27% Pervious					us Area			
	1.978			64.73	64.73% Impervious Area				
	_			<u> </u>			<b>–</b>		
	Tc	Leng		Slope	Velocity	Capacity	Description		
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)			
	6.0						Direct Entry,		

### Subcatchment 33S: BIO-RETENTION BASIN #1A (BMP#1)



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#### Summary for Subcatchment 34S: SWL #4

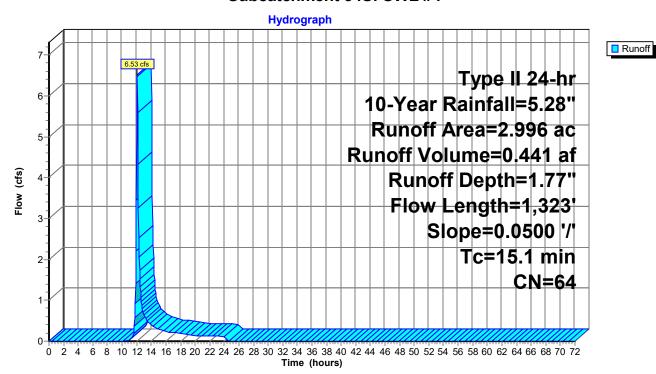
Runoff = 6.53 cfs @ 12.08 hrs, Volume= 0.441 af, Depth= 1.77"

Routed to Reach 23R: SWL-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

	Area	(ac) C	N Desc	cription				
	2.	296 6	S1 >75°	% Grass co	over, Good,	, HSG B		
	0.	, HSG C						
2.996 64 Weighted Average								
	2.	996	100.	00% Pervi	ous Area			
	Tc	Length	Slope	Velocity	Capacity	Description		
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	9.3	150	0.0500	0.27		Sheet Flow,		
						Grass: Short n= 0.150 P2= 3.23"		
	5.8	1,173	0.0500	3.35		Shallow Concentrated Flow,		
						Grassed Waterway Kv= 15.0 fps		
	15.1	1,323	Total					

#### Subcatchment 34S: SWL #4



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### Summary for Subcatchment 37S: BIO-RETENTION BASIN #2A (BMP #2)

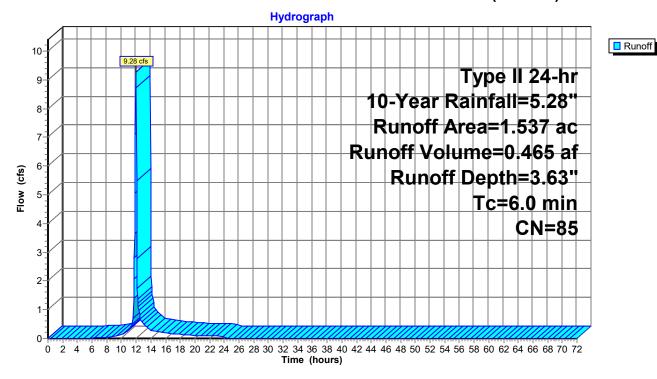
0.465 af, Depth= 3.63" Runoff 9.28 cfs @ 11.97 hrs, Volume=

Routed to Pond 38P: bio-retention basin #2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

 Area	(ac)	CN	Desc	ription				
1.	800	98	Pave	ed parking	& roofs			
 0.529 61 >75% Grass cover, Good,						, HSG B		
1.537 85 V				Weighted Average				
0.529 34.42% Pervious Area					us Area			
1.008			65.58	65.58% Impervious Area				
_					_			
Tc	Leng		Slope	Velocity	Capacity	Description		
(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)			
6.0						Direct Entry,		

### Subcatchment 37S: BIO-RETENTION BASIN #2A (BMP #2)



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# Summary for Subcatchment 41S: BIO-RETENTION BASIN #2C (BMP #3)

10.77 cfs @ 11.97 hrs, Volume= Runoff

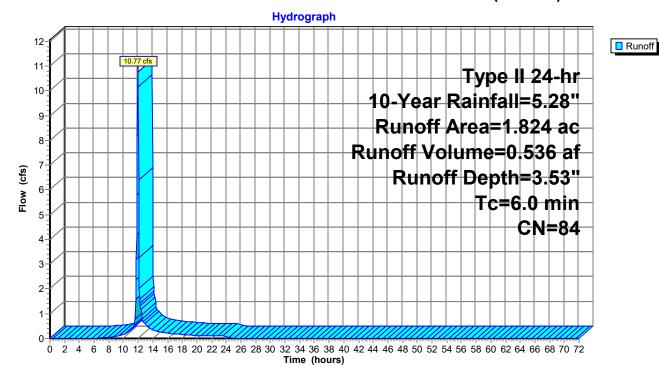
0.536 af, Depth= 3.53"

Routed to Pond 40P: bio-retention basin #2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

Area	(ac)	CN	Desc	ription				
1.	.120	98	Pave	d parking	& roofs			
0	.704	61	>75%	√ Grass co	over, Good	d, HSG B		
1.824 84 Weighted Average					age			
0.704 38.60% Pervious Area								
1.	1.120			61.40% Impervious Area				
Тс	Leng	th (	Slope	Velocity	Capacity	Description		
(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	·		
	(100	,,,	(1010)	(10/300)	(013)			
6.0						Direct Entry,		

### Subcatchment 41S: BIO-RETENTION BASIN #2C (BMP #3)



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# Summary for Subcatchment 42S: BIO-RETENTION BASIN #2B (BMP #4)

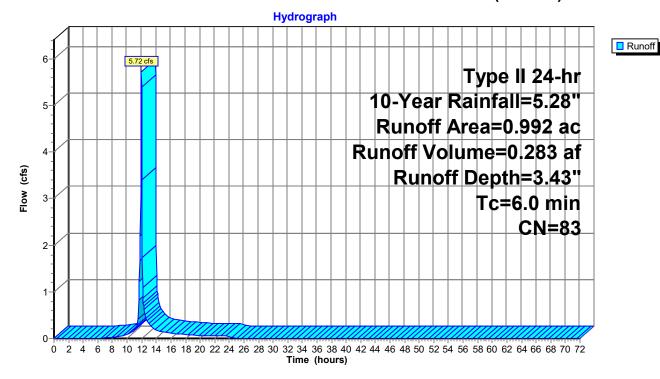
0.283 af, Depth= 3.43" Runoff 5.72 cfs @ 11.97 hrs, Volume=

Routed to Pond 39P: bio-retention basin #2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

Area	(ac)	CN	Desc	ription				
0.	598	98	Pave	d parking	& roofs			
0.	394	61	>75%	√ Grass co	over, Good	d, HSG B		
0.992 83 Weighted Ave					age			
0.	394		39.72	2% Pervio	us Area			
0.	0.598			60.28% Impervious Area				
То	Langt	h (	Clana	Valacity	Consoity	Description		
Tc	Lengt		Slope	Velocity	Capacity	Description		
(min)	(fee	ι)	(ft/ft)	(ft/sec)	(cfs)			
6.0						Direct Entry,		

### Subcatchment 42S: BIO-RETENTION BASIN #2B (BMP #4)



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# Summary for Subcatchment 47S: UNDETAINED-PROPOSED 001

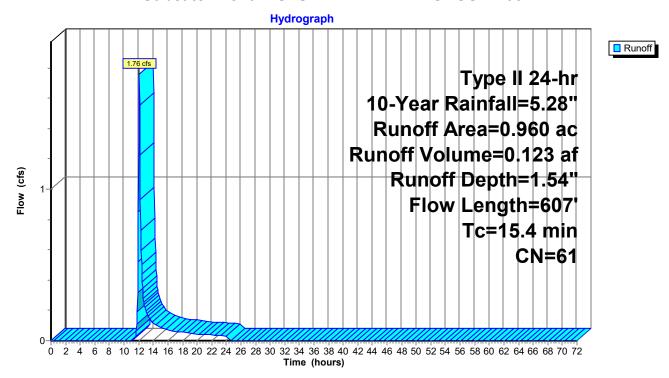
Runoff = 1.76 cfs @ 12.09 hrs, Volume= 0.123 af, Depth= 1.54"

Routed to Link 37L: Discharge 001

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 10-Year Rainfall=5.28"

_	Area	(ac) C	N Des	cription					
0.960 61 >75% Grass cover, Good, HSG B									
	0.	960	100.	00% Pervi	ous Area				
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
_	7.7	150	0.0800	0.32	,	Sheet Flow,			
_	7.7	457	0.0200	0.99		Grass: Short n= 0.150 P2= 3.23"  Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps			
	15.4	607	Total						

#### Subcatchment 47S: UNDETAINED-PROPOSED 001



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#### Summary for Reach 23R: SWL-4

Inflow Area = 7.095 ac, 18.49% Impervious, Inflow Depth = 0.95" for 10-Year event

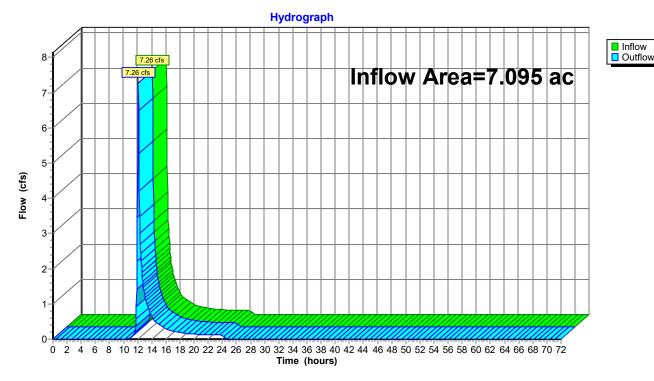
Inflow

7.26 cfs @ 12.09 hrs, Volume= 0.560 af 7.26 cfs @ 12.09 hrs, Volume= 0.560 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Link 37L: Discharge 001

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

#### Reach 23R: SWL-4



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# Summary for Reach 26R: SWL-1

9.635 ac, 56.76% Impervious, Inflow Depth > 3.33" for 10-Year event Inflow Area =

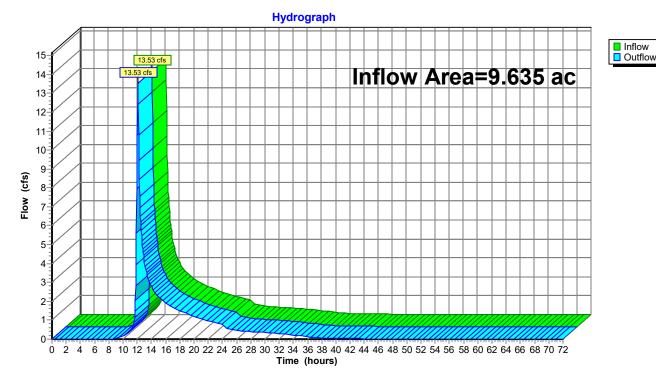
Inflow

13.53 cfs @ 12.10 hrs, Volume= 2.676 af 13.53 cfs @ 12.10 hrs, Volume= 2.676 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Reach 28R: SWL-3

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

#### Reach 26R: SWL-1



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# Summary for Reach 27R: SWL-2

Inflow Area = 2.996 ac, 64.52% Impervious, Inflow Depth = 3.01" for 10-Year event

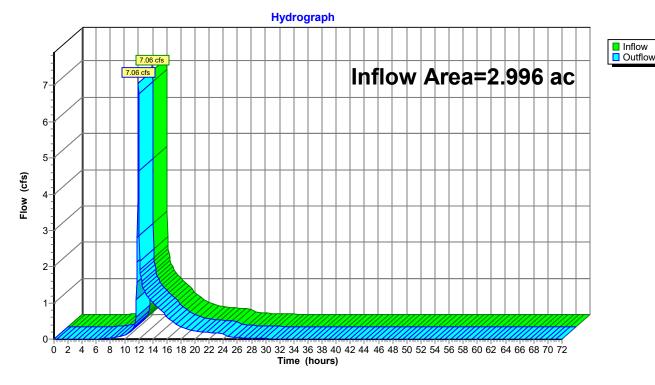
Inflow

7.06 cfs @ 11.97 hrs, Volume= 0.751 af 0.751 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Reach 28R: SWL-3

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

#### Reach 27R: SWL-2



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# Summary for Reach 28R: SWL-3

15.981 ac, 52.14% Impervious, Inflow Depth > 3.06" for 10-Year event Inflow Area =

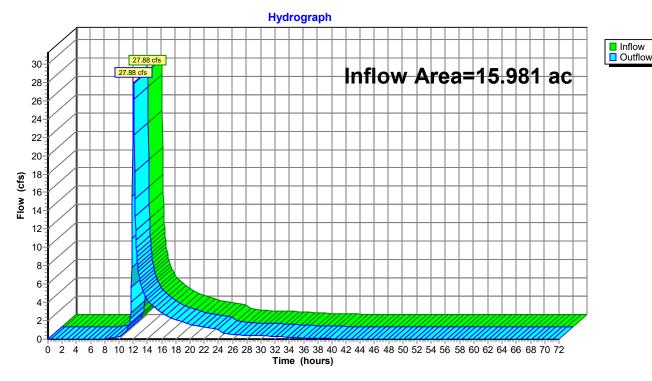
Inflow 4.078 af

27.88 cfs @ 12.05 hrs, Volume= 27.88 cfs @ 12.05 hrs, Volume= 4.078 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Pond 8P: BIO-RETENTION BASIN #5A (POI 001)

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

#### Reach 28R: SWL-3



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#### Summary for Pond 8P: BIO-RETENTION BASIN #5A (POI 001)

Inflow Area = 34.811 ac, 65.84% Impervious, Inflow Depth > 1.79" for 10-Year event

47.87 cfs @ 12.00 hrs, Volume= Inflow 5.190 af

Outflow 3.55 cfs @ 15.73 hrs, Volume= 5.190 af, Atten= 93%, Lag= 224.2 min

Discarded = 1.53 cfs @ 15.73 hrs, Volume= 4.212 af 0.978 af Primary 2.02 cfs @ 15.73 hrs, Volume=

Routed to Link 37L: Discharge 001

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,869.31' @ 15.73 hrs Surf.Area= 84,837 sf Storage= 107,196 cf

Plug-Flow detention time= 590.8 min calculated for 5.190 af (100% of inflow)

Center-of-Mass det. time= 590.6 min (1,555.0 - 964.4)

Volume	Inver	t Avail.Sto	rage Storage	Description				
#1	1,868.00	560,09	7 cf Custom	Stage Data (Pris	matic) Listed below (Recalc)			
Elevatio	n S	urf.Area	Inc.Store	Cum.Store				
				_				
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)				
1,868.0	00	79,525	0	0				
1,869.0	00	83,329	81,427	81,427				
1,870.0	00	88,249	85,789	167,216				
1,872.0	00	98,164	186,413	353,629				
1,874.0		108,304	206,468	560,097				
,		,	,	,				
Device	Routing	Invert	Outlet Device	S				
#1	Primary	1,865.00'	42.0" Round	Culvert				
	•	·	L= 30.0' Box	, headwall w/3 sq	uare edges, Ke= 0.500			
				•	1,864.50' S= 0.0167 '/' Cc= 0.900			
#2	Device 1	1,869.10'	n= 0.013 Corrugated PE, smooth interior, Flow Area= 9.62 sf <b>20.0" W x 12.0" H Vert. Orifice/Grate X 4.00</b> C= 0.600					
π∠	DCVICC 1	1,000.10						
#3	#0 Davida 4 070 F01		Limited to weir flow at low heads					
#3	Device 1	1,870.50'	72.0" x 24.0" Horiz. Orifice/Grate C= 0.600					
11.4	D: , .	4 000 001	Limited to weir flow at low heads					
#4	Discarded	1,868.00'	0.780 in/hr Exfiltration over Surface area					

**Discarded OutFlow** Max=1.53 cfs @ 15.73 hrs HW=1,869.31' (Free Discharge) **4=Exfiltration** (Exfiltration Controls 1.53 cfs)

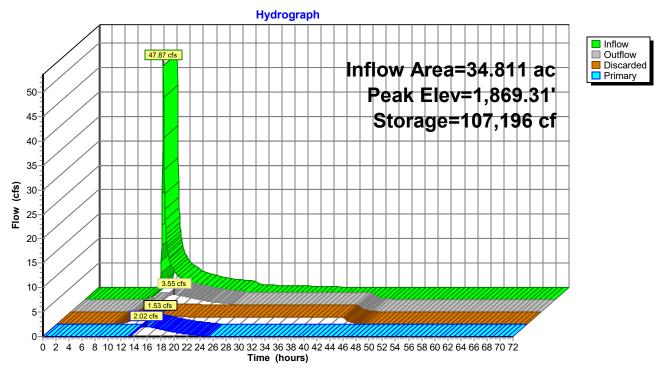
Primary OutFlow Max=2.01 cfs @ 15.73 hrs HW=1,869.31' (Free Discharge)

**-1=Culvert** (Passes 2.01 cfs of 72.94 cfs potential flow)

**2=Orifice/Grate** (Orifice Controls 2.01 cfs @ 1.46 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

#### (POI 001) Pond 8P: BIO-RETENTION BASIN #5A



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#### Summary for Pond 9P: seepage pit with chambers #5A

Inflow Area = 6.084 ac,100.00% Impervious, Inflow Depth = 5.04" for 10-Year event

Inflow = 44.49 cfs @ 11.96 hrs, Volume= 2.557 af

Outflow = 1.34 cfs @ 13.86 hrs, Volume= 2.557 af, Atten= 97%, Lag= 114.2 min

Discarded = 1.28 cfs @ 10.30 hrs, Volume= 2.546 af Primary = 0.07 cfs @ 13.86 hrs, Volume= 0.011 af Routed to Pond 8P : BIO-RETENTION BASIN #5A (POI 001)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,877.87' @ 13.86 hrs Surf.Area= 42,456 sf Storage= 55,971 cf

Plug-Flow detention time= 366.1 min calculated for 2.555 af (100% of inflow)

Center-of-Mass det. time= 366.2 min (1,109.2 - 743.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,876.00'	40,538 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			169,824 cf Overall - 68,478 cf Embedded = 101,346 cf x 40.0% Voids
#2	1,876.50'	68,478 cf	<b>Cultec R-360HD</b> x 1862 Inside #1
			Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			1862 Chambers in 19 Rows
			Cap Storage= 6.5 cf x 2 x 19 rows = 245.5 cf

109,016 cf Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,876.00	42,456	0	0
1.880.00	42.456	169.824	169.824

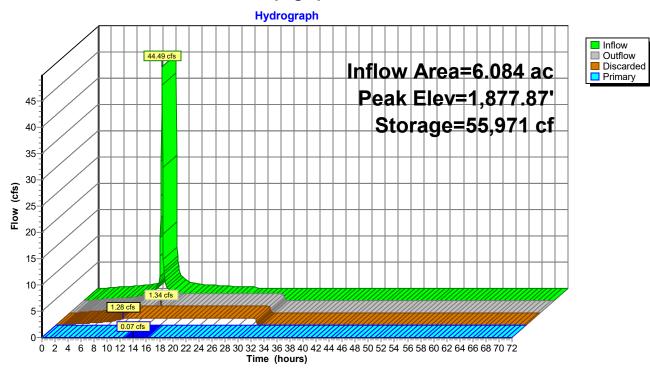
Device	Routing	Invert	Outlet Devices
#1	Primary	1,876.00'	24.0" Round Culvert
	•		L= 120.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,876.00' / 1,868.00' S= 0.0667 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,877.80'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,876.00'	1.300 in/hr Exfiltration over Surface area

**Discarded OutFlow** Max=1.28 cfs @ 10.30 hrs HW=1,876.04' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 1.28 cfs)

**Primary OutFlow** Max=0.07 cfs @ 13.86 hrs HW=1,877.87' TW=1,869.56' (Fixed TW Elev= 1,869.56') **1=Culvert** (Passes 0.07 cfs of 12.58 cfs potential flow)

**2=Orifice/Grate** (Orifice Controls 0.07 cfs @ 0.88 fps)

# Pond 9P: seepage pit with chambers #5A



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### Summary for Pond 13P: bio-retention basin #4a

Inflow Area = 2.695 ac, 0.00% Impervious, Inflow Depth = 1.47" for 10-Year event

Inflow = 3.61 cfs @ 12.19 hrs, Volume= 0.330 af

Outflow = 0.13 cfs @ 19.29 hrs, Volume= 0.330 af, Atten= 96%, Lag= 425.7 min

Discarded = 0.13 cfs @ 19.29 hrs, Volume= 0.330 af Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routed to Reach 23R: SWL-4

Invert

Volume

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,893.43' @ 19.29 hrs Surf.Area= 7,042 sf Storage= 9,017 cf

Plug-Flow detention time= 783.1 min calculated for 0.329 af (100% of inflow)

Avail Storage Storage Description

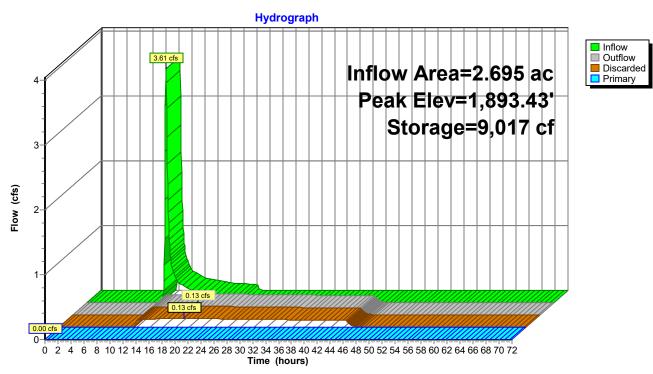
Center-of-Mass det. time= 783.5 min ( 1,667.9 - 884.4 )

VOIGITIC	IIIVCIL	Avaii.Oto	rage Clorage L	Cochpuon	
#1	1,892.00'	30,73	34 cf Custom S	Stage Data (Pri	smatic) Listed below (Recalc)
Elevation (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,892.0 1,894.0 1,896.0	00	5,542 7,636 9,920	0 13,178 17,556	0 13,178 30,734	
Device	Routing	Invert	Outlet Devices		
#1	Discarded	1,892.00'	0.800 in/hr Exf	iltration over S	Surface area
#2	Primary	1,894.00'	Head (feet) 0.2	20 0.40 0.60	<b>0.0' breadth Broad-Crested Rectangular Weir</b> 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

**Discarded OutFlow** Max=0.13 cfs @ 19.29 hrs HW=1,893.43' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,892.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

### Pond 13P: bio-retention basin #4a



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#### Summary for Pond 14P: seepage pit with chambers #5F

Inflow Area = 7.817 ac, 99.88% Impervious, Inflow Depth = 5.04" for 10-Year event 57.16 cfs @ 11.96 hrs, Volume= Inflow 3.285 af Outflow 2.47 cfs @ 13.15 hrs, Volume= 3.285 af, Atten= 96%, Lag= 71.6 min Discarded = 2.24 cfs @ 10.80 hrs, Volume= 3.247 af

Primary 0.23 cfs @ 13.15 hrs, Volume= 0.038 af Routed to Pond 8P: BIO-RETENTION BASIN #5A (POI 001)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,870.17' @ 13.15 hrs Surf.Area= 56,925 sf Storage= 64,623 cf

Plug-Flow detention time= 223.9 min calculated for 3.283 af (100% of inflow)

Center-of-Mass det. time= 223.9 min ( 966.9 - 743.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,868.50'	56,160 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			227,700 cf Overall - 87,300 cf Embedded = 140,400 cf x 40.0% Voids
#2	1,869.00'	87,300 cf	<b>Cultec R-360HD</b> x 2376 Inside #1
			Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			2376 Chambers in 18 Rows
			Cap Storage= 6.5 cf x 2 x 18 rows = 232.6 cf

143,460 cf Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,868.50	56,925	0	0
1,872.50	56,925	227,700	227,700

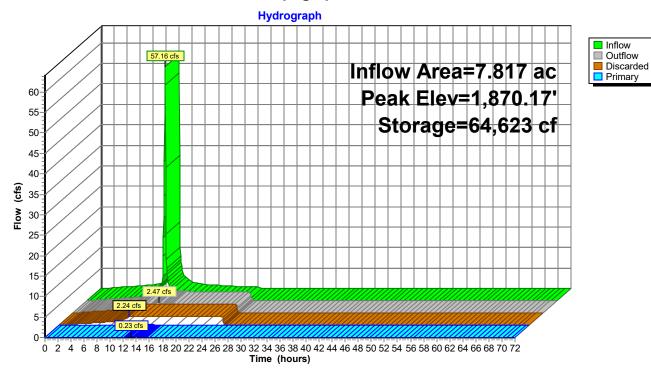
Device	Routing	Invert	Outlet Devices
#1	Primary	1,869.50'	24.0" Round Culvert
			L= 60.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,869.50' / 1,868.00' S= 0.0250 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,870.00'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,868.50'	1.700 in/hr Exfiltration over Surface area

Discarded OutFlow Max=2.24 cfs @ 10.80 hrs HW=1,868.54' (Free Discharge) **T**—**3=Exfiltration** (Exfiltration Controls 2.24 cfs)

Primary OutFlow Max=0.23 cfs @ 13.15 hrs HW=1,870.17' TW=1,869.56' (Fixed TW Elev= 1,869.56') -1=Culvert (Passes 0.23 cfs of 2.17 cfs potential flow)

**2=Orifice/Grate** (Orifice Controls 0.23 cfs @ 1.33 fps)

# Pond 14P: seepage pit with chambers #5F



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#### Summary for Pond 15P: seepage pit with chambers #4b

Inflow Area = 1.404 ac, 93.45% Impervious, Inflow Depth = 4.81" for 10-Year event

Inflow = 10.13 cfs @ 11.96 hrs, Volume= 0.563 af

Outflow = 1.18 cfs @ 12.28 hrs, Volume= 0.563 af, Atten= 88%, Lag= 19.3 min

Discarded = 0.22 cfs @ 9.90 hrs, Volume= 0.443 af Primary = 0.96 cfs @ 12.28 hrs, Volume= 0.119 af

Routed to Reach 23R: SWL-4

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,888.85' @ 12.28 hrs Surf.Area= 12,000 sf Storage= 11,101 cf

Plug-Flow detention time= 287.2 min calculated for 0.562 af (100% of inflow)

Center-of-Mass det. time= 287.3 min ( 1,044.6 - 757.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,887.00'	16,609 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			48,000 cf Overall - 6,477 cf Embedded = 41,523 cf x 40.0% Voids
#2	1,887.50'	6,477 cf	<b>Cultec R-360HD</b> x 175 Inside #1
			Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			175 Chambers in 5 Rows
			Cap Storage= 6.5 cf x 2 x 5 rows = 64.6 cf

23,086 cf Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,887.00	12,000	0	0
1.891.00	12,000	48.000	48.000

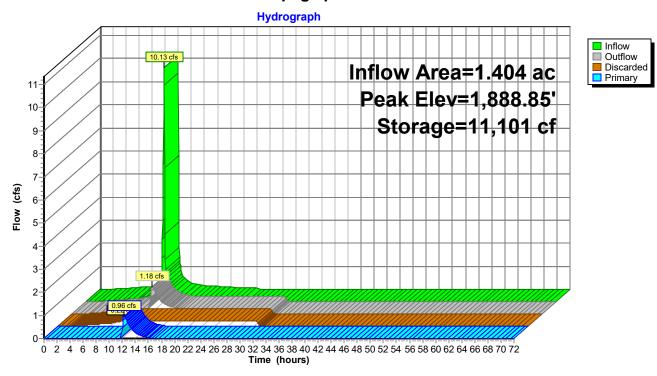
Device	Routing	Invert	Outlet Devices
#1	Primary	1,887.00'	24.0" Round Culvert
	•		L= 50.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,887.00' / 1,886.00' S= 0.0200 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,888.40'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,887.00'	0.800 in/hr Exfiltration over Surface area

**Discarded OutFlow** Max=0.22 cfs @ 9.90 hrs HW=1,887.04' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 0.22 cfs)

Primary OutFlow Max=0.96 cfs @ 12.28 hrs HW=1,888.85' (Free Discharge)

1=Culvert (Passes 0.96 cfs of 12.37 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.96 cfs @ 2.14 fps)

# Pond 15P: seepage pit with chambers #4b



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#### Summary for Pond 16P: seepage pit with chambers #3A

Inflow Area = 4.089 ac, 57.74% Impervious, Inflow Depth = 3.04" for 10-Year event

Inflow = 21.24 cfs @ 11.97 hrs, Volume= 1.037 af

Outflow = 1.10 cfs @ 13.09 hrs, Volume= 1.037 af, Atten= 95%, Lag= 67.0 min

Discarded = 0.55 cfs @ 11.25 hrs, Volume= 0.883 af Primary = 0.54 cfs @ 13.09 hrs, Volume= 0.154 af

Routed to Pond 26P: bio-retention basin #3b

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,902.31' @ 13.09 hrs Surf.Area= 26,640 sf Storage= 22,614 cf

Plug-Flow detention time= 319.2 min calculated for 1.037 af (100% of inflow)

Center-of-Mass det. time= 319.2 min ( 1,138.2 - 819.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,901.00'	26,373 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			106,560 cf Overall - 40,628 cf Embedded = 65,932 cf x 40.0% Voids
#2	1,901.50'	40,628 cf	Cultec R-360HD x 1102 Inside #1
			Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			1102 Chambers in 19 Rows
			Cap Storage= 6.5 cf x 2 x 19 rows = 245.5 cf

67,001 cf Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,901.00	26,640	0	0
1,905.00	26,640	106,560	106,560

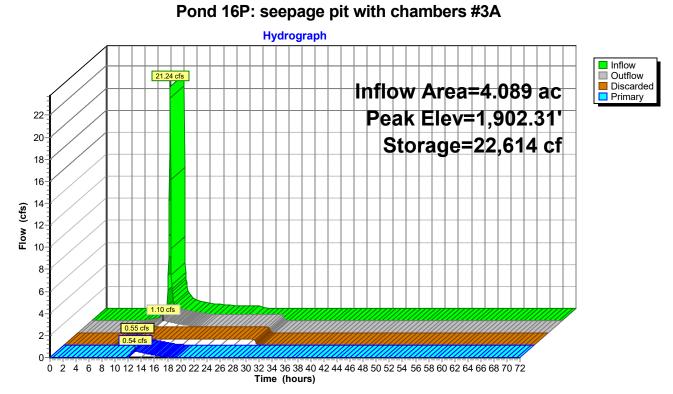
Device	Routing	Invert	Outlet Devices
#1	Primary	1,901.00'	24.0" Round Culvert
	•		L= 120.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,901.00' / 1,898.00' S= 0.0250 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,902.00'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,901.00'	0.900 in/hr Exfiltration over Surface area

**Discarded OutFlow** Max=0.55 cfs @ 11.25 hrs HW=1,901.04' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 0.55 cfs)

Primary OutFlow Max=0.54 cfs @ 13.09 hrs HW=1,902.31' (Free Discharge)

-1=Culvert (Passes 0.54 cfs of 7.46 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.54 cfs @ 1.77 fps)



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#### Summary for Pond 24P: bio-retention basin #6a

Inflow Area = 1.953 ac, 57.30% Impervious, Inflow Depth = 2.68" for 10-Year event

Inflow = 9.00 cfs @ 11.97 hrs, Volume= 0.436 af

Outflow = 0.99 cfs @ 12.40 hrs, Volume= 0.436 af, Atten= 89%, Lag= 25.8 min

Primary = 0.99 cfs @ 12.40 hrs, Volume= 0.436 af

Routed to Reach 27R: SWL-2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,923.35' @ 12.40 hrs Surf.Area= 7,060 sf Storage= 8,514 cf

Plug-Flow detention time= 141.4 min calculated for 0.435 af (100% of inflow)

Center-of-Mass det. time= 142.7 min ( 971.8 - 829.1 )

Volume	Inve	ert Avail.Sto	rage Storaç	e Description	
#1	1,922.0	00' 31,3	2 cf Custom Stage Data (Prismatic) Listed below (Recalc)		
Elevatio (fee 1,922.0 1,924.0	t)  0  0	Surf.Area (sq-ft) 5,567 7,781	Inc.Store (cubic-feet) 0 13,348	Cum.Store (cubic-feet) 0 13,348	
1,926.0	0	10,223	18,004	31,352	
Device	Routing	Invert	Outlet Devi	es	
#1	Primary	1,922.00'	Inlet / Outle	d Culvert PP, mitered to conform to fill, Invert= 1,922.00' / 1,920.25' orrugated PE, smooth interior.	S= 0.0350 '/' Cc= 0.900
#2 #3	Device 1 Device 1	1,922.00' 1,924.50'	6.0" Vert. C 45.0" x 24.0	rifice/Grate C= 0.600 Limi " Horiz. Orifice/Grate C= 0. eir flow at low heads	ted to weir flow at low heads

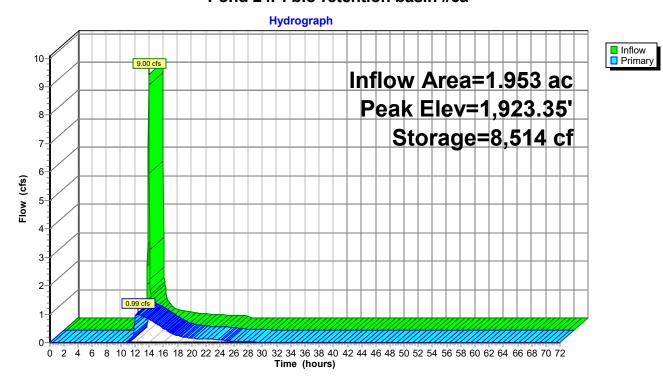
Primary OutFlow Max=0.99 cfs @ 12.40 hrs HW=1,923.35' (Free Discharge)

-1=Culvert (Passes 0.99 cfs of 7.86 cfs potential flow)

**2=Orifice/Grate** (Orifice Controls 0.99 cfs @ 5.05 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

#### Pond 24P: bio-retention basin #6a



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#### Summary for Pond 26P: bio-retention basin #3b

Inflow Area = 14.187 ac, 33.20% Impervious, Inflow Depth = 1.55" for 10-Year event

16.81 cfs @ 12.27 hrs, Volume= Inflow 1.838 af

Outflow 0.98 cfs @ 16.60 hrs, Volume= 1.838 af, Atten= 94%, Lag= 259.6 min

Discarded = 0.75 cfs @ 16.60 hrs, Volume= 1.594 af Primary 0.23 cfs @ 16.60 hrs, Volume= 0.244 af

Routed to Link 37L: Discharge 001

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,892.92' @ 16.60 hrs Surf.Area= 27,142 sf Storage= 47,684 cf

Plug-Flow detention time= 585.7 min calculated for 1.836 af (100% of inflow)

Center-of-Mass det. time= 586.0 min (1,457.0 - 871.0)

Volume	Inve	ert Avail.Sto	rage Storage	e Description	
#1	#1 1,891.00' 218,37		79 cf Custor	n Stage Data (Pr	rismatic) Listed below (Recalc)
Elevatio (fee		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,891.0	0	22,485	0	0	
1,892.0	0	24,866	23,676	23,676	
1,894.0	0	29,797	54,663	78,339	
1,896.0	0	34,953	64,750	143,089	
1,898.0	0	40,337	75,290	218,379	
Device	Routing	Invert	Outlet Devic	es	
#1	Primary	1,891.00'	24.0" Roun	d Culvert	
			L= 120.0' C	CPP, mitered to co	onform to fill, Ke= 0.700
			Inlet / Outlet	Invert= 1,891.00	' / 1,889.80' S= 0.0100 '/' Cc= 0.900
			n= 0.013 Co	orrugated PE, sm	ooth interior, Flow Area= 3.14 sf
#2	Device 1	1,892.00'	3.0" Horiz. C	Orifice/Grate C	= 0.600 Limited to weir flow at low heads

1,891.00' 1,896.60' **45.0" x 24.0" Horiz. Orifice/Grate** C= 0.600

1.200 in/hr Exfiltration over Surface area

Limited to weir flow at low heads

Discarded OutFlow Max=0.75 cfs @ 16.60 hrs HW=1,892.92' (Free Discharge) **T—3=Exfiltration** (Exfiltration Controls 0.75 cfs)

Primary OutFlow Max=0.23 cfs @ 16.60 hrs HW=1,892.92' (Free Discharge)

**-1=Culvert** (Passes 0.23 cfs of 12.92 cfs potential flow)

**-2=Orifice/Grate** (Orifice Controls 0.23 cfs @ 4.63 fps)

**-4=Orifice/Grate** (Controls 0.00 cfs)

#3

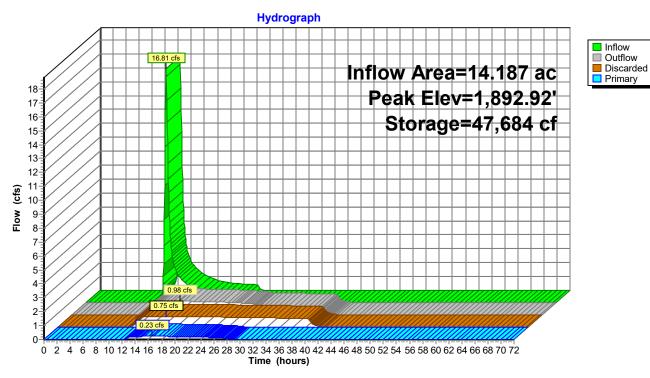
#4

Discarded

Device 1

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#### Pond 26P: bio-retention basin #3b



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#### Summary for Pond 29P: bio-retention basin #1A

Inflow Area = 3.056 ac, 64.73% Impervious, Inflow Depth = 3.63" for 10-Year event

Inflow = 18.46 cfs @ 11.97 hrs, Volume= 0.924 af

Outflow = 1.07 cfs @ 12.85 hrs, Volume= 0.919 af, Atten= 94%, Lag= 53.1 min

Primary = 1.07 cfs @ 12.85 hrs, Volume= 0.919 af

Routed to Pond 38P: bio-retention basin #2A

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,939.53' @ 12.85 hrs Surf.Area= 16,748 sf Storage= 22,421 cf

Plug-Flow detention time= 310.3 min calculated for 0.918 af (99% of inflow)

Center-of-Mass det. time= 308.4 min (1,110.7 - 802.3)

Volume	Inve	ert Avail.Sto	rage Storage D	escription				
#1	1,938.00' 72,33		34 cf Custom S	Stage Data (Pr	ismatic) Listed below (Recalc)			
Elevatio (fee 1,938.0 1,940.0	00 00	Surf.Area (sq-ft) 12,620 18,027	Inc.Store (cubic-feet) 0 30,647	Cum.Store (cubic-feet) 0 30,647				
1,942.0	00	23,660	41,687	72,334				
Device	Routing	Invert	Outlet Devices					
#1	Primary 1,936.00'		24.0" Round Culvert L= 85.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 1,936.00' / 1,934.00' S= 0.0235 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf					
#2 #3	Device 1 Device 1	1,938.00' 1,940.50'	6.0" Vert. Orifi	ce/Grate C= loriz. Orifice/G	0.600 Limited to weir flow at low heads  Grate C= 0.600			

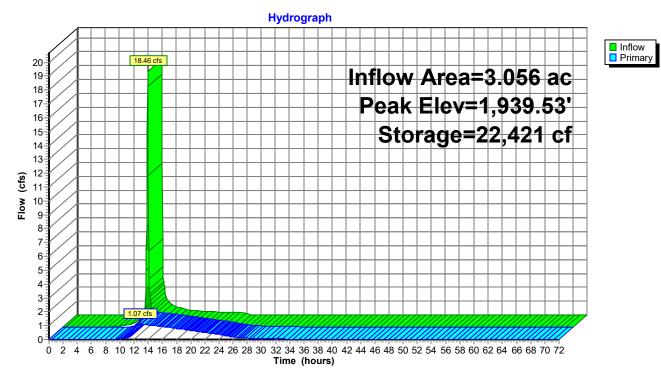
Primary OutFlow Max=1.07 cfs @ 12.85 hrs HW=1,939.53' TW=1,936.57' (Fixed TW Elev= 1,936.57')

-1=Culvert (Passes 1.07 cfs of 21.22 cfs potential flow)
-2=Orifice/Grate (Orifice Controls 1.07 cfs @ 5.44 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

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#### Pond 29P: bio-retention basin #1A



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### Summary for Pond 38P: bio-retention basin #2A

Inflow Area = 4.593 ac, 65.01% Impervious, Inflow Depth > 3.61" for 10-Year event

Inflow = 10.12 cfs @ 11.97 hrs, Volume= 1.383 af

Outflow = 6.26 cfs @ 12.07 hrs, Volume= 1.383 af, Atten= 38%, Lag= 6.0 min

Primary = 6.26 cfs @ 12.07 hrs, Volume= 1.383 af

Routed to Pond 40P: bio-retention basin #2C

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,936.29' @ 12.07 hrs Surf.Area= 4,643 sf Storage= 9,402 cf

Plug-Flow detention time= 152.6 min calculated for 1.383 af (100% of inflow)

Avail Otamana Otamana Dagamintian

Center-of-Mass det. time= 151.1 min (1,158.2 - 1,007.1)

Volume	Inve	ert Avail.Sto	rage Storage	Description	
#1	1,933.0	00' 19,0	68 cf Custom	Stage Data (Pr	ismatic) Listed below (Recalc)
Elevation	n	Surf.Area	Inc.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)	
1,933.0	00	1,159	0	0	
1,934.0	00	2,148	1,654	1,654	
1,936.0	00	4,297	6,445	8,099	
1,938.0	00	6,672	10,969	19,068	
Device	Routing	Invert	Outlet Device	S	
#1	Primary	1,933.00'	24.0" Round	Culvert	
	,	,	L= 115.0' CF	PP, mitered to co	onform to fill, Ke= 0.700
					/ 1,931.70' S= 0.0113 '/' Cc= 0.900
					ooth interior, Flow Area= 3.14 sf
#2	Device 1	.,			0.600 Limited to weir flow at low heads
#3	Device 1	1,936.00'		Horiz. Orifice/Gor flow at low hea	<b>Grate</b> C= 0.600 ads

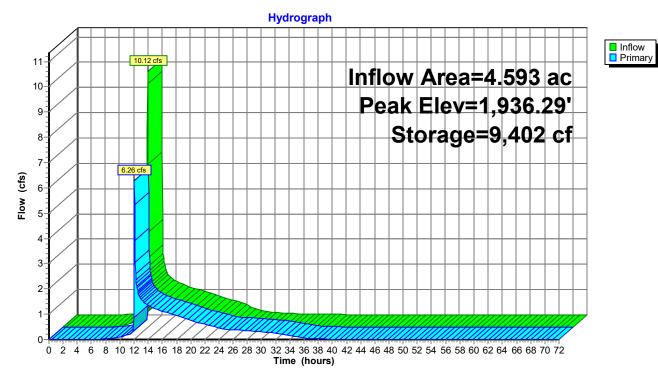
**Primary OutFlow** Max=5.69 cfs @ 12.07 hrs HW=1,936.27' (Free Discharge)

**1=Culvert** (Passes 5.69 cfs of 20.11 cfs potential flow)

**—2=Orifice/Grate** (Orifice Controls 0.42 cfs @ 8.54 fps)

-3=Orifice/Grate (Weir Controls 5.27 cfs @ 1.70 fps)

#### Pond 38P: bio-retention basin #2A



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#### Summary for Pond 39P: bio-retention basin #2B

Inflow Area = 0.992 ac, 60.28% Impervious, Inflow Depth = 3.43" for 10-Year event

Inflow = 5.72 cfs @ 11.97 hrs, Volume= 0.283 af

Outflow = 0.60 cfs @ 12.39 hrs, Volume= 0.282 af, Atten= 90%, Lag= 25.5 min

Primary = 0.60 cfs @ 12.39 hrs, Volume= 0.282 af

Routed to Reach 26R: SWL-1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,916.65' @ 12.39 hrs Surf.Area= 9,885 sf Storage= 6,275 cf

Plug-Flow detention time= 249.7 min calculated for 0.282 af (99% of inflow)

Center-of-Mass det. time= 245.8 min (1,054.0 - 808.2)

Volume	Inve	ert Avail.Sto	rage Storage	Description	
#1	1,916.0	0' 44,18	30 cf Custon	n Stage Data (Pr	ismatic) Listed below (Recalc)
Elevatio		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,916.0	00	9,337	Ó	0	
1,918.0	00	11,016	20,353	20,353	
1,920.0	00	12,811	23,827	44,180	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	1,916.00'	24.0" Round	d Culvert	
	,	,	L= 50.0' CP	P, mitered to cor	nform to fill, Ke= 0.700
			Inlet / Outlet	Invert= 1,916.00	' / 1,914.00' S= 0.0400 '/' Cc= 0.900
			n= 0.013 Co	rrugated PE, sm	ooth interior, Flow Area= 3.14 sf
#2	Device 1	1,916.00'	6.0" Vert. Or	ifice/Grate C=	0.600 Limited to weir flow at low heads
#3	Device 1	1,917.50'	45.0" x 24.0"	' Horiz. Orifice/G	Grate C= 0.600
			Limited to we	eir flow at low hea	ads

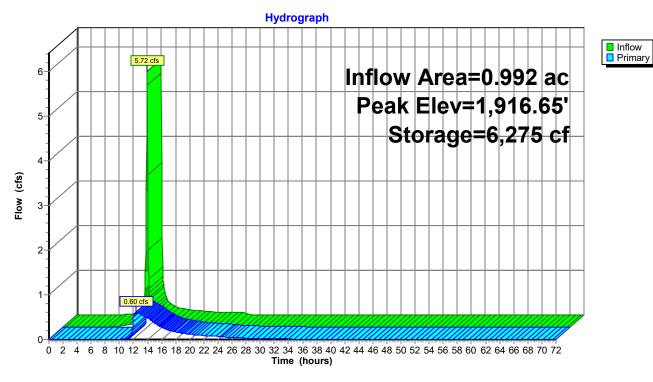
Primary OutFlow Max=0.60 cfs @ 12.39 hrs HW=1,916.65' (Free Discharge)

**1=Culvert** (Passes 0.60 cfs of 2.16 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.60 cfs @ 3.06 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

#### Pond 39P: bio-retention basin #2B



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#### Summary for Pond 40P: bio-retention basin #2C

Inflow Area = 6.417 ac, 63.99% Impervious, Inflow Depth > 3.59" for 10-Year event

Inflow = 12.67 cfs @ 12.03 hrs, Volume= 1.919 af

Outflow = 5.91 cfs @ 12.16 hrs, Volume= 1.914 af, Atten= 53%, Lag= 7.9 min

Primary = 5.91 cfs @ 12.16 hrs, Volume= 1.914 af

Routed to Reach 26R: SWL-1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,932.14' @ 12.16 hrs Surf.Area= 11,296 sf Storage= 11,254 cf

Plug-Flow detention time= 71.7 min calculated for 1.913 af (100% of inflow)

Center-of-Mass det. time= 65.8 min (1,125.4 - 1,059.6)

rage Description	rage Storaç	t Avail.Sto	Inver	Volume	
stom Stage Data (Prismatic) Listed below (Recalc)	80 cf Custo	0' 36,68	1,931.00	#1	
	Inc.Store (cubic-feet)	Surf.Area (sg-ft)	_	Elevatio	
0 0	Ó	8,511		1,931.0	
1 9,731	9,731	10,950		1,932.00	
9 36,680	26,949	15,999		1,934.0	
evices	Outlet Devi	Invert	Routing	Device	
ound Culvert	24.0" Rour	1,931.00'	Primary	#1	
CPP, mitered to conform to fill, Ke= 0.700					
	-	1,931.00'	Device 1	#2	
		4 000 001	5 d 4	110	
		1,932.00	Jevice 1	#3	
0 0 61 9,731 9 36,680 evices	0 9,731 26,949 Outlet Devide 24.0" Rour L= 35.0' C Inlet / Outle n= 0.013 C 12.0" W x 4 Limited to w 45.0" x 24.0	10,950 15,999 Invert	Routing	1,931.0 1,932.0 1,934.0 Device	

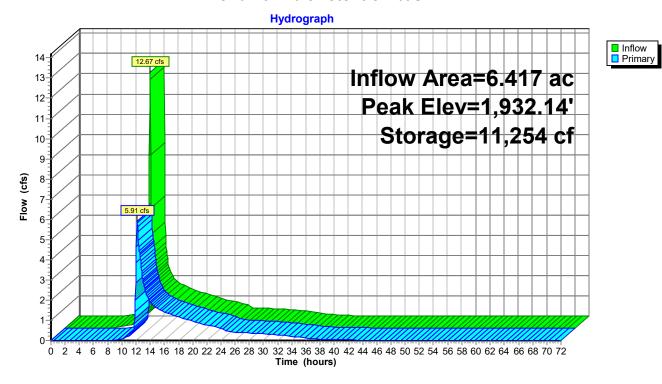
**Primary OutFlow** Max=5.88 cfs @ 12.16 hrs HW=1,932.13' (Free Discharge)

-1=Culvert (Inlet Controls 5.88 cfs @ 3.20 fps)

**—2=Orifice/Grate** (Passes < 4.73 cfs potential flow)

-3=Orifice/Grate (Passes < 1.85 cfs potential flow)

#### Pond 40P: bio-retention basin #2C



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Total Tributary Area to 001

Type II 24-hr 10-Year Rainfall=5.28"

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### Summary for Link 37L: Discharge 001

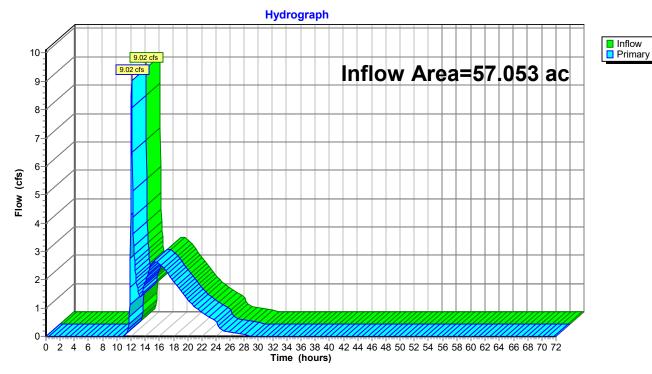
Inflow Area = 57.053 ac, 50.73% Impervious, Inflow Depth = 0.40" for 10-Year event

Inflow = 9.02 cfs @ 12.09 hrs, Volume= 1.906 af

Primary = 9.02 cfs @ 12.09 hrs, Volume= 1.906 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

### Link 37L: Discharge 001



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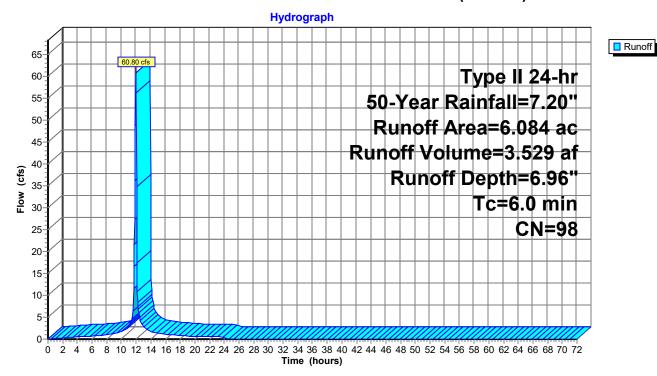
#### **Summary for Subcatchment 11S: SEEPAGE BED #5A (BMP #7)**

Runoff = 60.80 cfs @ 11.96 hrs, Volume= 3.529 af, Depth= 6.96" Routed to Pond 9P : seepage pit with chambers #5A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

_	Area	(ac)	CN	Desc	cription						
	6.	.084	98	Pave	aved parking & roofs						
_	6.	.084		100.00% Impervious Area							
	To	Longi	th <sup>9</sup>	Slope	Volocity	Capacity	Description				
	(min)	Lengt (fee		(ft/ft)	(ft/sec)	(cfs)	Description				
-	6.0	,		, ,	,	, ,	Direct Entry.				

#### Subcatchment 11S: SEEPAGE BED #5A (BMP #7)



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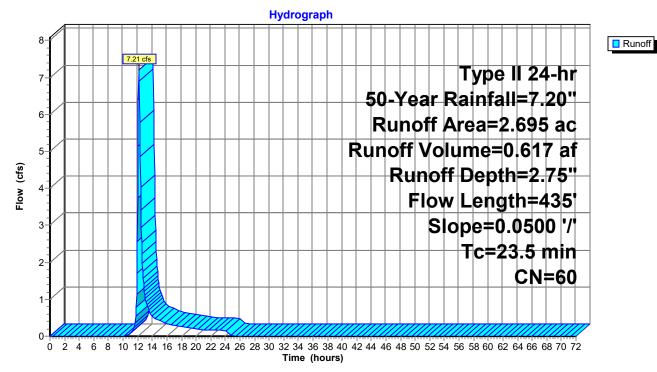
## Summary for Subcatchment 12S: bio-retention basin #4a (BMP #9)

Runoff = 7.21 cfs @ 12.18 hrs, Volume= Routed to Pond 13P : bio-retention basin #4a 0.617 af, Depth= 2.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

Area	(ac) C	N Des	cription				
1.	1.896 61 >75% Grass cover, Good, HSG B						
0.	.799 ;	58 Mea	dow, non-g	grazed, HS	G B		
2.	.695	30 Wei	ghted Aver	age			
2.	.695	100.	00% Pervi	ous Area			
Tc	Length	Slope	Velocity	Capacity	Description		
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
20.5	150	0.0500	0.12		Sheet Flow,		
					Woods: Light underbrush n= 0.400 P2= 3.23"		
3.0	285	0.0500	1.57		Shallow Concentrated Flow,		
					Short Grass Pasture Kv= 7.0 fps		
23.5	435	Total					

# Subcatchment 12S: bio-retention basin #4a (BMP #9)



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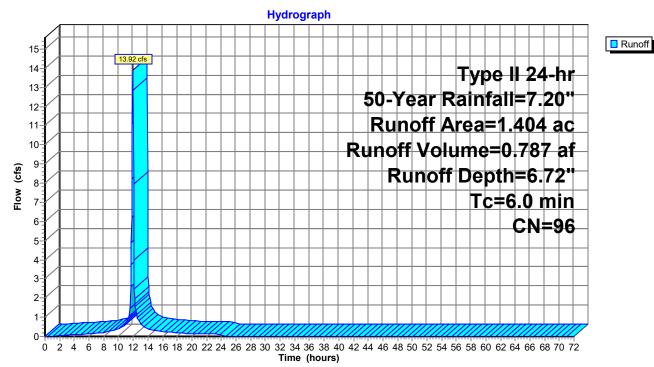
### Summary for Subcatchment 17S: SEEPAGE BED #4b (BMP #10)

Runoff = 13.92 cfs @ 11.96 hrs, Volume= 0.787 af, Depth= 6.72" Routed to Pond 15P : seepage pit with chambers #4b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

Are	a (ac)	CN	Desc	Description							
	1.312	98	Pave	ed parking	& roofs						
	0.092	74	>75%	√ Grass co	over, Good,	, HSG C					
	1.404	96	Weig	hted Aver	age						
0.092 6.55% Pervious Area											
	1.312		93.4	5% Imperv	ious Area						
_					• "	<b>–</b>					
T		,	Slope	Velocity	Capacity	Description					
(mir	) (fe	et)	(ft/ft)	(ft/sec)	(cfs)						
6.	0					Direct Entry,					

### Subcatchment 17S: SEEPAGE BED #4b (BMP #10)



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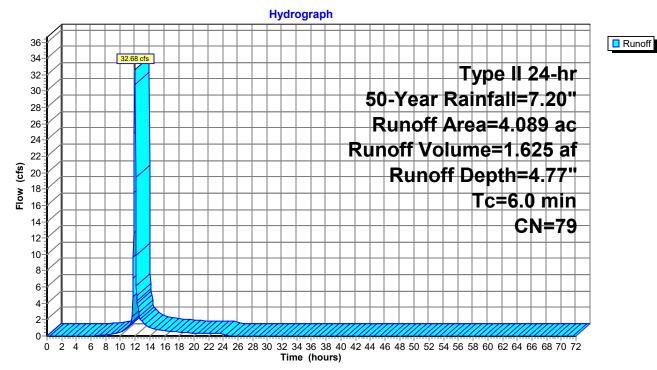
## Summary for Subcatchment 19S: SEEPAGE BED #3A (BMP #11)

Runoff = 32.68 cfs @ 11.97 hrs, Volume= 1.625 af, Depth= 4.77" Routed to Pond 16P : seepage pit with chambers #3A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

	Area	(ac)	CN	Desc	Description					
	2.	361	98	Pave	ed parking	& roofs				
*	0.	069	40	Mea	dow, non-g	grazed, HS	SG A			
	0.	059	71	Mea	dow, non-g	grazed, HS	SG C			
*	0.	485	40	>759	% Grass co	over, Good	I, HSG A			
	0.	485	74	>759	% Grass co	over, Good	I, HSG C			
*	0.	477	40	40 Woods, Good, HSG A						
	0.	153	70	Woo	ds, Good,	HSG C				
	4.	089	79	Wei	ghted Aver	age				
	1.	728		42.2	6% Pervio	us Area				
	2.361 57.74% Impervio				4% Imperv	ious Area				
	Tc	Leng	gth	Slope	Velocity	Capacity	Description			
	(min)	(fe	et)	(ft/ft)	(ft/sec)	(cfs)				
	6.0						Direct Entry,			

### Subcatchment 19S: SEEPAGE BED #3A (BMP #11)



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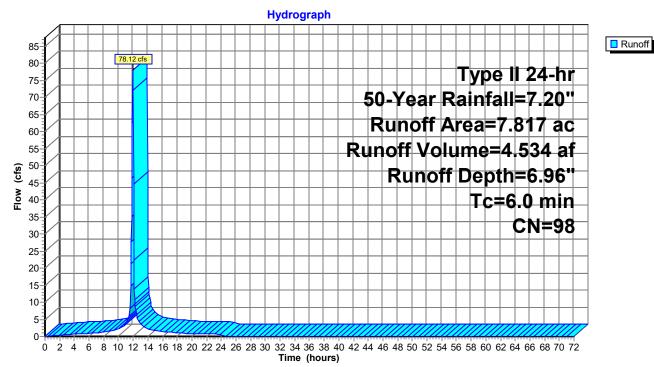
#### Summary for Subcatchment 20S: SEEPAGE BED #5F (BMP 6)

Runoff = 78.12 cfs @ 11.96 hrs, Volume= 4.534 af, Depth= 6.96" Routed to Pond 14P : seepage pit with chambers #5F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

Ar	ea (ac)	CN	Desc	Description						
	7.808	98	Pave	ed parking	& roofs					
	0.009	74	>75%	√ Grass co	over, Good	H, HSG C				
	7.817	98	Weig	ghted Aver	age					
	0.009		0.12	% Perviou	s Area					
	7.808		99.88	8% Imperv	ious Area					
-	c Leng	nth	Slope	Velocity	Capacity	Description				
(mi	•	,	(ft/ft)	(ft/sec)	(cfs)	Description				
	.0	<u> </u>	(14,11)	(14,500)	(010)	Direct Entry				
U	.0					Direct Entry,				

### Subcatchment 20S: SEEPAGE BED #5F (BMP 6)



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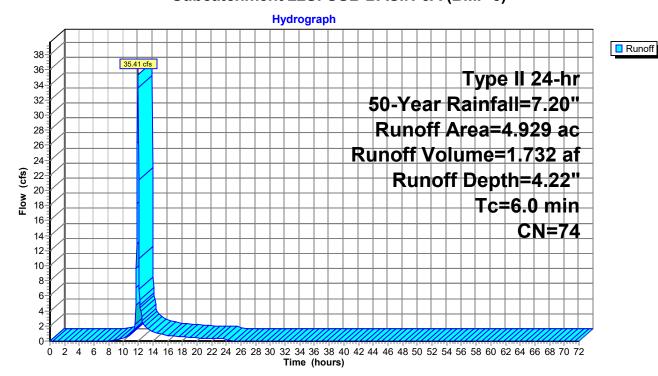
### Summary for Subcatchment 22S: SUB BASIN-5A (BMP 8)

Runoff = 35.41 cfs @ 11.97 hrs, Volume= 1.732 af, Depth= 4.22" Routed to Pond 8P : BIO-RETENTION BASIN #5A (POI 001)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

Are	a (ac)	CN	Desc	cription		
	1.186	61	>75%	√ Grass co	over, Good	, HSG B
	3.048	74	>75%	% Grass co	over, Good	, HSG C
	0.695 98 Paved parking & roofs					
	4.929	74	Weig	ghted Aver	age	
	4.234		85.9	0% Pervio	us Area	
	0.695		14.1	0% Imperv	ious Area	
Т	c Ler	ıgth	Slope	Velocity	Capacity	Description
(mir	n) (fo	eet)	(ft/ft)	(ft/sec)	(cfs)	
6.	0					Direct Entry, 6 minute min

## Subcatchment 22S: SUB BASIN-5A (BMP 8)



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# Summary for Subcatchment 24S: bio-retention basin #3b(BMP #12)

Runoff = 29.45 cfs @ 12.26 hrs, Volume=

2.918 af, Depth= 3.47"

Routed to Pond 26P: bio-retention basin #3b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

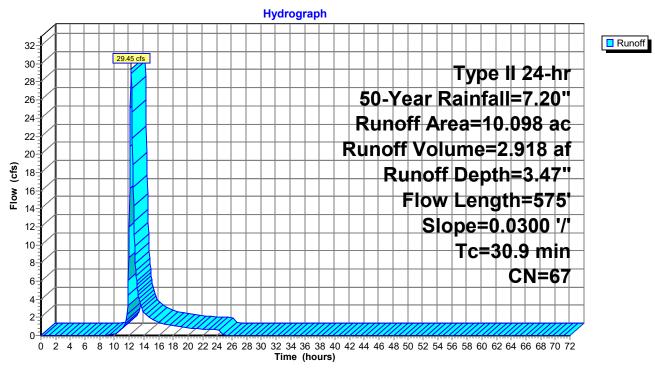
	Area	(ac)	CN	l Desc	cription		
	2.	349	98	B Pave	ed parking	& roofs	
	1.	017	58	8 Mea	dow, non-g	grazed, HS	G B
	0.	574	71			grazed, HS	
	3.499 61 >75% Grass cover, Good, HSG B						
	0.126 74 >75% Grass cover, Good, HSG C						
*	1.	025	40		ds, Good,		
*	0.	745	40	) >75%	% Grass co	over, Good	, HSG A
	0.	763	74	>75%	% Grass co	over, Good	, HSG C
	10.	098	67	7 Weig	ghted Aver	age	
	7.	749			4% Pervio		
	2.	349		23.2	6% Imperv	ious Area	
	Тс	Leng		Slope	Velocity	Capacity	Description
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	25.1	15	50	0.0300	0.10		Sheet Flow,
							Woods: Light underbrush n= 0.400 P2= 3.23"
	5.8	42	25	0.0300	1.21		Shallow Concentrated Flow,
							Short Grass Pasture Kv= 7.0 fps
	30.9	57	<b>7</b> 5	Total			

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# Subcatchment 24S: bio-retention basin #3b(BMP #12)



Runoff

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#### Summary for Subcatchment 25S: BIO-RETENTION BASIN #6A (BMP 5)

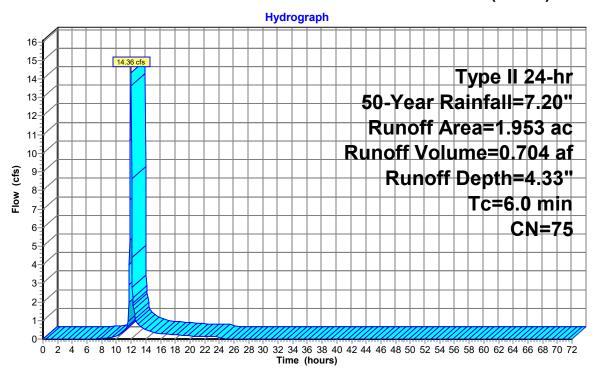
Runoff = 14.36 cfs @ 11.97 hrs, Volume= 0.704 af, Depth= 4.33"

Routed to Pond 24P: bio-retention basin #6a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

_	Area	(ac)	CN	Desc	cription		
	1.119 98 Paved parking & roofs						
*	0.	665	40	>75%	% Grass co	over, Good	I, HSG A
	0.	169	61	>75%	% Grass co	over, Good	I, HSG B
	1.953 75 Weighted Average						
0.834 42.70% Pervious Area							
	1.119			57.3	0% Imperv	ious Area	
	Тс	Leng	ıth	Slope	Velocity	Capacity	Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	6.0						Direct Entry,

#### Subcatchment 25S: BIO-RETENTION BASIN #6A (BMP 5)



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## Summary for Subcatchment 29S: SWL #1

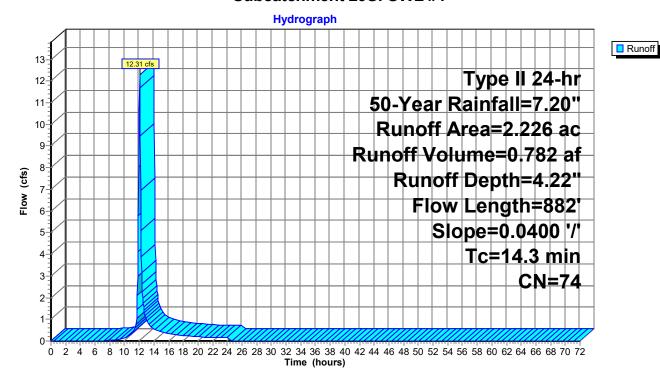
Runoff = 12.31 cfs @ 12.06 hrs, Volume= 0.782 af, Depth= 4.22"

Routed to Reach 26R: SWL-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

Area	(ac) (	N Des	cription		
0.	0.765 98 Paved parking & roofs				
1.	461	61 >75	% Grass c	over, Good	, HSG B
2.	2.226 74		ighted Ave	rage	
1.	461	65.6	3% Pervio	us Area	
0.	765	34.3	37% Imper	vious Area	
Tc (min)	Length (feet)	Slope (ft/ft)	,	Capacity (cfs)	Description
10.2	150	0.0400	0.24		Sheet Flow,
4.1	732	0.0400	3.00		Grass: Short n= 0.150 P2= 3.23"  Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.3	882	Total	·		

#### Subcatchment 29S: SWL #1



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#### Summary for Subcatchment 30S: SWL #2

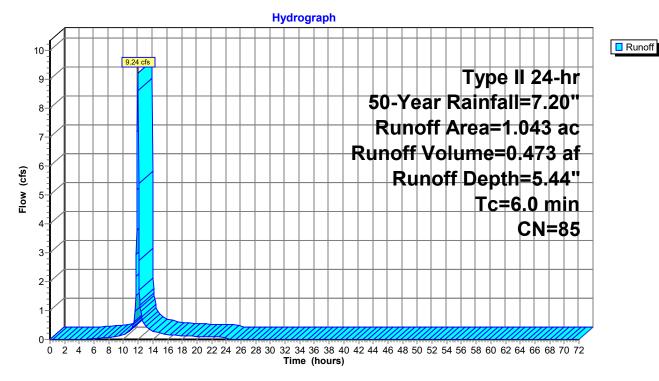
Runoff = 9.24 cfs @ 11.96 hrs, Volume= 0.473 af, Depth= 5.44"

Routed to Reach 27R: SWL-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

	Area	(ac)	CN	Desc	cription				
	0.	814	98	Pave	ed parking	& roofs			
*	0.	229	40	>75%	√ Grass co	over, Good	d, HSG A		
	1.	043	85	Weig	ghted Aver	age			
	0.229			21.9	21.96% Pervious Area				
	0.814		78.04% Impervious Area						
	Тс	Leng		Slope	Velocity	Capacity	·		
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)			
	6.0						Direct Entry,		

#### Subcatchment 30S: SWL #2



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#### Summary for Subcatchment 32S: SWL #3

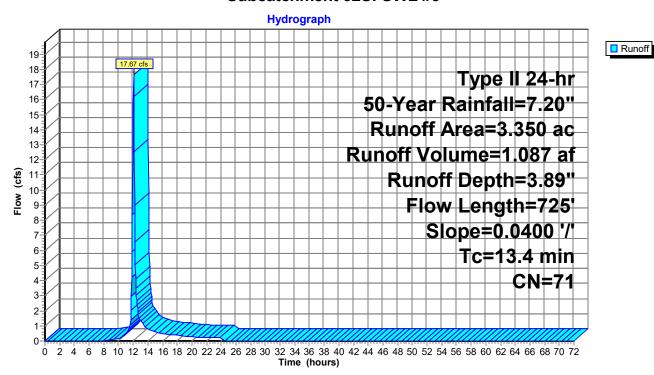
Runoff = 17.67 cfs @ 12.05 hrs, Volume= 1.087 af, Depth= 3.89"

Routed to Reach 28R: SWL-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

Area	(ac)	CN Des	scription					
0	.930	98 Pav	ed parking	& roofs				
2	.420	61 >75	% Grass c	over, Good	, HSG B			
3	3.350 71		Weighted Average					
2	.420	72.	24% Pervic	us Area				
0	.930	27.	76% Imper	∕ious Area				
Tc	Length	•	•	Capacity	Description			
(min)	(feet	(ft/ft)	(ft/sec)	(cfs)				
10.2	150	0.0400	0.24		Sheet Flow,			
					Grass: Short n= 0.150 P2= 3.23"			
3.2	575	0.0400	3.00		Shallow Concentrated Flow,			
					Grassed Waterway Kv= 15.0 fps			
13.4	725	Total						

#### Subcatchment 32S: SWL #3



#### NPDES Stormwater-REV1.1

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### Summary for Subcatchment 33S: BIO-RETENTION BASIN #1A (BMP#1)

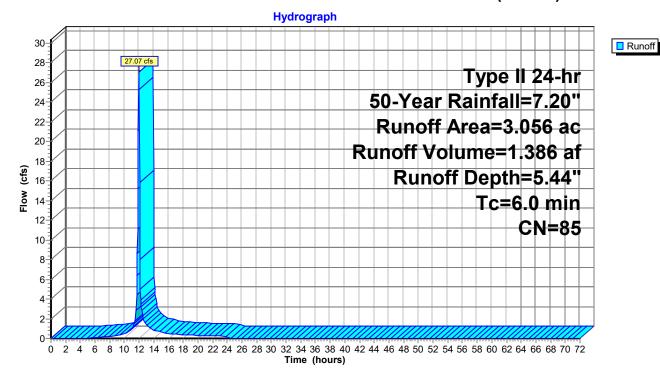
Runoff = 27.07 cfs @ 11.96 hrs, Volume= 1.386 af, Depth= 5.44"

Routed to Pond 29P: bio-retention basin #1A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

Area	a (ac)	CN	Desc	Description				
	1.978	98	Pave	ed parking	& roofs			
	1.078	61	>75%	√ Grass co	over, Good	d, HSG B		
;	3.056 85 Weighted Average				age			
	1.078 35.27% Pervious Area				us Area			
	1.978 64.73% Im			3% Imperv	∕ious Area			
To	: Leng	ıth	Slope	Velocity	Capacity	Description		
(min)	_	,	(ft/ft)	(ft/sec)	(cfs)	Description		
-		J()	(11/11)	(11/360)	(013)	D' (F (		
6.0	)					Direct Entry,		

### Subcatchment 33S: BIO-RETENTION BASIN #1A (BMP#1)



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#### Summary for Subcatchment 34S: SWL #4

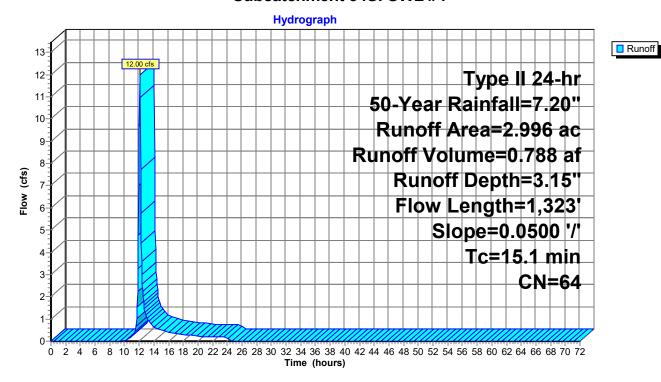
Runoff = 12.00 cfs @ 12.08 hrs, Volume= 0.788 af, Depth= 3.15"

Routed to Reach 23R: SWL-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

Area	(ac)	CN Des	cription			
2	.296	61 >75	% Grass c	over, Good	, HSG B	
0	.700	74 >75	% Grass c	over, Good	, HSG C	
2	.996	64 Wei	ghted Avei	rage		
2	.996	100	.00% Pervi	ous Area		
Tc	Length		Velocity	Capacity	Description	
(min)	(feet	(ft/ft)	(ft/sec)	(cfs)		
9.3	150	0.0500	0.27		Sheet Flow,	
					Grass: Short n= 0.150 P2= 3.23"	
5.8	1,173	0.0500	3.35		Shallow Concentrated Flow,	
					Grassed Waterway Kv= 15.0 fps	
15.1	1,323	Total				

#### Subcatchment 34S: SWL #4



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# Summary for Subcatchment 37S: BIO-RETENTION BASIN #2A (BMP #2)

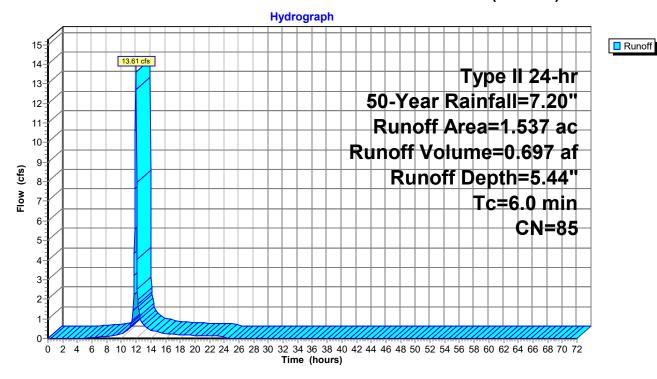
Runoff = 13.61 cfs @ 11.96 hrs, Volume= 0.697 af, Depth= 5.44"

Routed to Pond 38P: bio-retention basin #2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

Area	(ac)	CN	Desc	Description					
1.	.008	98	Pave	ed parking	& roofs				
0.	.529	61	>75%	√ Grass co	over, Good	d, HSG B			
1.	1.537 85 Weighted Average			hted Aver	age				
0.	0.529 34.42% Pervious Area			2% Pervio	us Area				
1.	1.008			65.58% Impervious Area					
Tc	Long	th (	Slope	Velocity	Capacity	Description			
	Leng		•	,	. ,	Description			
(min)	(fee	<del>(</del> )	(ft/ft)	(ft/sec)	(cfs)				
6.0						Direct Entry,			

### Subcatchment 37S: BIO-RETENTION BASIN #2A (BMP #2)



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### Summary for Subcatchment 41S: BIO-RETENTION BASIN #2C (BMP #3)

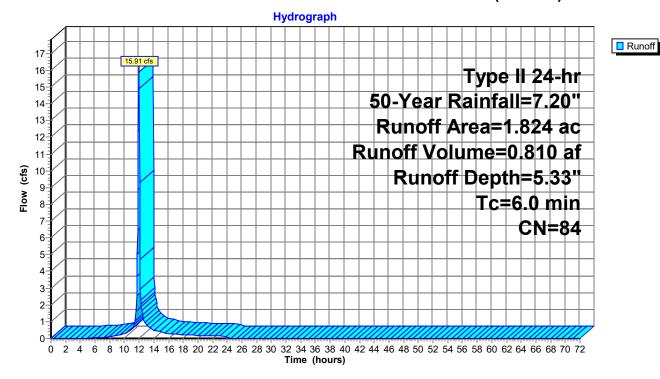
Runoff = 15.91 cfs @ 11.97 hrs, Volume= 0.810 af, Depth= 5.33"

Routed to Pond 40P: bio-retention basin #2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

Area	(ac)	CN	Desc	Description				
1.	120	98	Pave	ed parking	& roofs			
0.	.704	61	>75%	% Grass co	over, Good	H, HSG B		
1.824 84 Weighted Average								
0.	0.704 38.60% Pervious Area				us Area			
1.	.120		61.40	0% Imperv	ious Area			
Tc	Lengt	h S	Slope	Velocity	Capacity	Description		
(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	Bookinplion		
6.0	·		•	,	, ,	Direct Entry,		

### Subcatchment 41S: BIO-RETENTION BASIN #2C (BMP #3)



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# Summary for Subcatchment 42S: BIO-RETENTION BASIN #2B (BMP #4)

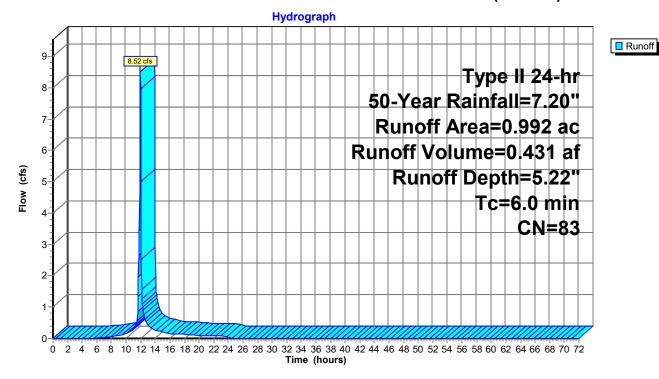
Runoff = 8.52 cfs @ 11.97 hrs, Volume= 0.431 af, Depth= 5.22"

Routed to Pond 39P: bio-retention basin #2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

Area	(ac)	CN	Desc	Description				
0.	598	98	Pave	d parking	& roofs			
0.	394	61	>75%	√ Grass co	over, Good	d, HSG B		
0.	0.992 83 Weighted Average				age			
0.	0.394 39.72% Pervious Area				us Area			
0.	598		60.28	3% Imperv	ious Area			
То	Langt	h (	Clana	Valacity	Consoity	Description		
Tc	Lengt		Slope	Velocity	Capacity	Description		
(min)	(fee	ι)	(ft/ft)	(ft/sec)	(cfs)			
6.0						Direct Entry,		

### Subcatchment 42S: BIO-RETENTION BASIN #2B (BMP #4)



#### NPDES Stormwater-REV1.1

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# **Summary for Subcatchment 47S: UNDETAINED-PROPOSED 001**

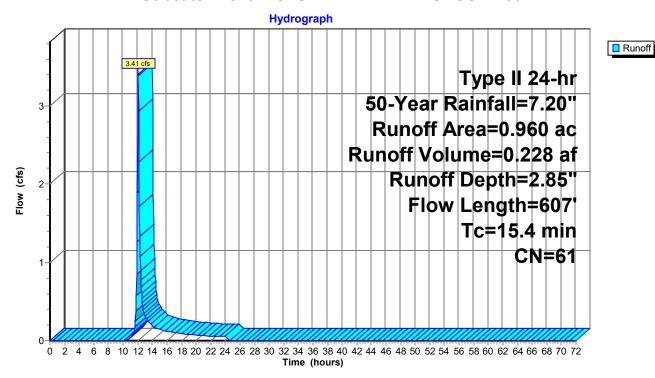
Runoff = 3.41 cfs @ 12.08 hrs, Volume= 0.228 af, Depth= 2.85"

Routed to Link 37L: Discharge 001

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 50-Year Rainfall=7.20"

	Area	(ac) C	N Des	cription		
	0.	960 6	31 >75°	% Grass co	over, Good	, HSG B
	0.	960	100.	00% Pervi	ous Area	
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	7.7	150	0.0800	0.32	,	Sheet Flow,
_	7.7	457	0.0200	0.99		Grass: Short n= 0.150 P2= 3.23"  Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
	15 4	607	Total			

#### Subcatchment 47S: UNDETAINED-PROPOSED 001



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#### Summary for Reach 23R: SWL-4

Inflow Area = 7.095 ac, 18.49% Impervious, Inflow Depth = 2.10" for 50-Year event

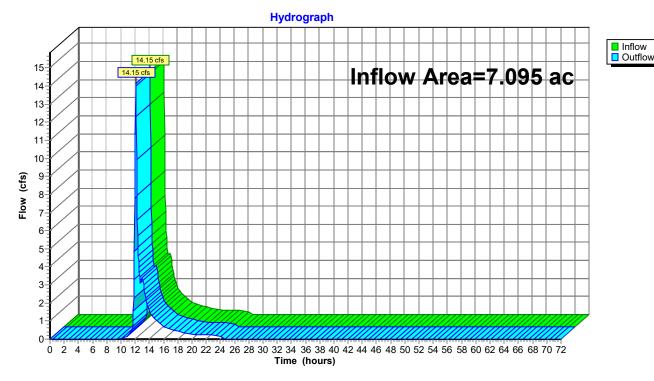
Inflow

14.15 cfs @ 12.08 hrs, Volume= 1.239 af 12.08 hrs, Volume= 1.239 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Link 37L: Discharge 001

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

### Reach 23R: SWL-4



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# Summary for Reach 26R: SWL-1

9.635 ac, 56.76% Impervious, Inflow Depth > 5.10" for 50-Year event Inflow Area =

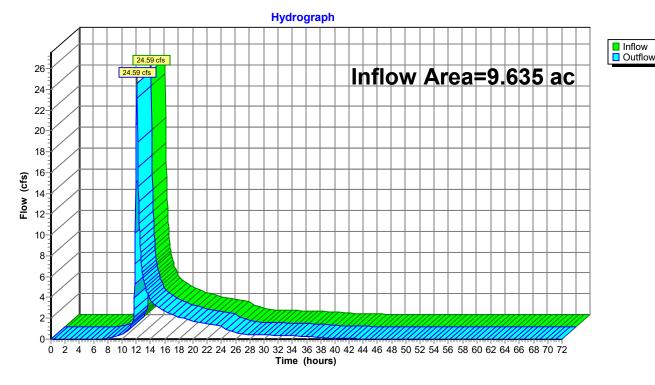
Inflow

24.59 cfs @ 12.08 hrs, Volume= 4.094 af 24.59 cfs @ 12.08 hrs, Volume= 4.094 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Reach 28R: SWL-3

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

#### Reach 26R: SWL-1



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# Summary for Reach 27R: SWL-2

2.996 ac, 64.52% Impervious, Inflow Depth = 4.71" for 50-Year event Inflow Area =

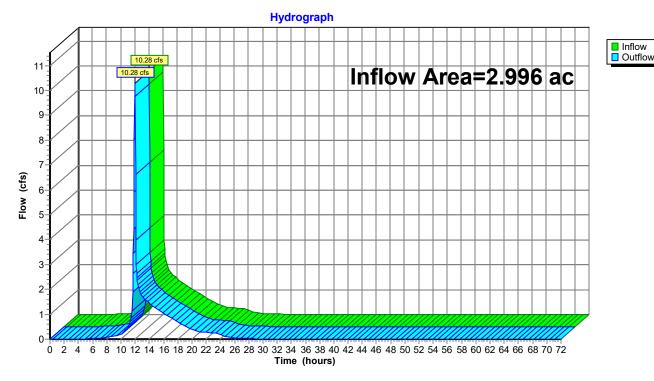
Inflow

10.28 cfs @ 11.97 hrs, Volume= 1.177 af 10.28 cfs @ 11.97 hrs, Volume= 1.177 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Reach 28R: SWL-3

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

#### Reach 27R: SWL-2



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# Summary for Reach 28R: SWL-3

15.981 ac, 52.14% Impervious, Inflow Depth > 4.77" for 50-Year event Inflow Area =

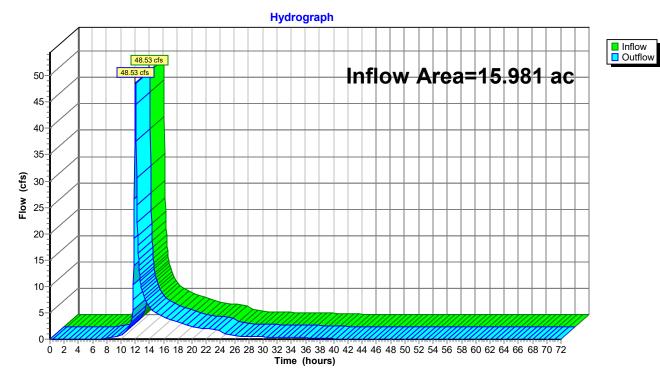
Inflow 6.358 af

48.53 cfs @ 12.04 hrs, Volume= 48.53 cfs @ 12.04 hrs, Volume= 6.358 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Pond 8P: BIO-RETENTION BASIN #5A (POI 001)

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

### Reach 28R: SWL-3



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#### Summary for Pond 8P: BIO-RETENTION BASIN #5A (POI 001)

Inflow Area = 34.811 ac, 65.84% Impervious, Inflow Depth = 3.16" for 50-Year event

79.99 cfs @ 12.00 hrs, Volume= Inflow 9.174 af

Outflow 11.64 cfs @ 13.56 hrs, Volume= 9.174 af, Atten= 85%, Lag= 93.6 min

Discarded = 1.57 cfs @ 13.56 hrs, Volume= 4.607 af Primary 10.07 cfs @ 13.56 hrs, Volume= 4.567 af

Routed to Link 37L: Discharge 001

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,869.70' @ 13.56 hrs Surf.Area= 86,796 sf Storage= 141,373 cf

Plug-Flow detention time= 399.0 min calculated for 9.167 af (100% of inflow)

Center-of-Mass det. time= 398.7 min (1,333.3 - 934.7)

Volume	Inve	rt Avail.Sto	rage Storage	Description	
#1	1,868.0	0' 560,09	7 cf Custom	n Stage Data (Prisi	matic) Listed below (Recalc)
Elevation (feet)		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,868.00		79,525	0	0	
1,869.00		83,329	81,427	81,427	
1,870.00		88,249	85,789	167,216	
1,872.00		98,164	186,413	353,629	
1,874.00	1	108,304	206,468	560,097	
Device I	Routing	Invert	Outlet Device	es	
#1 I	Primary	1,865.00'	42.0" Round	l Culvert	
	•		L= 30.0' Box	k, headwall w/3 squ	uare edges, Ke= 0.500
			Inlet / Outlet I	Invert= 1,865.00' /	1,864.50' S= 0.0167 '/' Cc= 0.900
			n= 0.013 Co	rrugated PE, smoo	th interior, Flow Area= 9.62 sf
#2 I	Device 1	1,869.10'		•	Grate X 4.00 C= 0.600
		,	Limited to we	ir flow at low heads	5
#3 I	Device 1	1,870.50'		Horiz. Orifice/Gra	

Limited to weir flow at low heads

0.780 in/hr Exfiltration over Surface area

**Discarded OutFlow** Max=1.57 cfs @ 13.56 hrs HW=1,869.70' (Free Discharge) **4=Exfiltration** (Exfiltration Controls 1.57 cfs)

Primary OutFlow Max=10.06 cfs @ 13.56 hrs HW=1,869.70' (Free Discharge)

**-1=Culvert** (Passes 10.06 cfs of 77.84 cfs potential flow)

1,868.00'

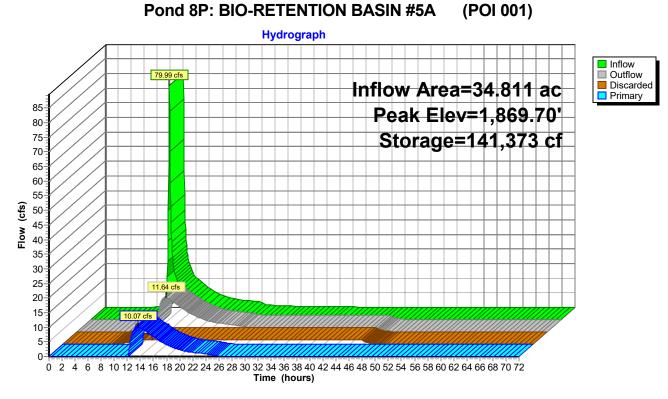
**2=Orifice/Grate** (Orifice Controls 10.06 cfs @ 2.50 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

#4

Discarded

Dand OD, DIO DETENTION DAOIN #EA /DOLOO



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Routed to Pond 8P: BIO-RETENTION BASIN #5A

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### Summary for Pond 9P: seepage pit with chambers #5A

(POI 001)

Inflow Area = 6.084 ac,100.00% Impervious, Inflow Depth = 6.96" for 50-Year event
Inflow = 60.80 cfs @ 11.96 hrs, Volume= 3.529 af

Outflow = 2.87 cfs @ 13.01 hrs, Volume= 3.529 af, Atten= 95%, Lag= 63.1 min
Discarded = 1.60 cfs @ 9.05 hrs, Volume= 3.000 af

Primary = 1.60 cfs @ 13.01 hrs, Volume= 0.530 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,878.50' @ 13.01 hrs Surf.Area= 42,456 sf Storage= 75,688 cf

Plug-Flow detention time= 373.0 min calculated for 3.527 af (100% of inflow) Center-of-Mass det. time= 373.2 min (1,111.5 - 738.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,876.00'	40,538 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
#2	1,876.50'	68.478 cf	169,824 cf Overall - 68,478 cf Embedded = 101,346 cf x 40.0% Voids <b>Cultec R-360HD</b> x 1862 Inside #1
	.,	,	Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap 1862 Chambers in 19 Rows
			Cap Storage= 6.5 cf x 2 x 19 rows = 245.5 cf
		109,016 cf	Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,876.00	42,456	0	0
1,880.00	42,456	169,824	169,824

Device	Routing	Invert	Outlet Devices
#1	Primary	1,876.00'	24.0" Round Culvert
	•		L= 120.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,876.00' / 1,868.00' S= 0.0667 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,877.80'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,876.00'	1.300 in/hr Exfiltration over Surface area

**Discarded OutFlow** Max=1.28 cfs @ 9.05 hrs HW=1,876.04' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 1.28 cfs)

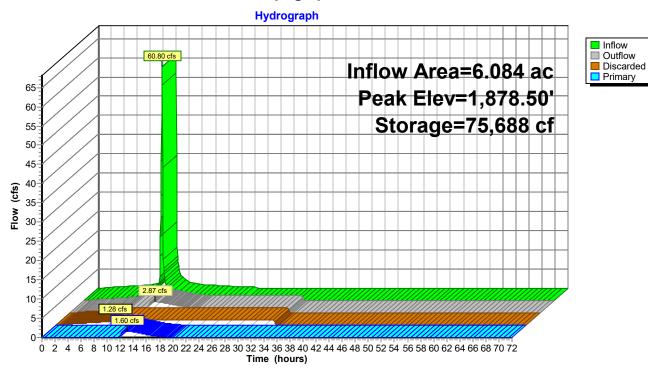
Primary OutFlow Max=1.60 cfs @ 13.01 hrs HW=1,878.50' TW=1,869.56' (Fixed TW Elev= 1,869.56')

1=Culvert (Passes 1.60 cfs of 16.36 cfs potential flow)

2=Orifice/Grate (Orifice Controls 1.60 cfs @ 3.19 fps)

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# Pond 9P: seepage pit with chambers #5A



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#### Summary for Pond 13P: bio-retention basin #4a

Inflow Area = 2.695 ac, 0.00% Impervious, Inflow Depth = 2.75" for 50-Year event

Inflow = 7.21 cfs @ 12.18 hrs, Volume= 0.617 af

Outflow = 1.00 cfs @ 13.06 hrs, Volume= 0.617 af, Atten= 86%, Lag= 52.6 min

Discarded = 0.14 cfs @ 13.06 hrs, Volume= 0.454 af Primary = 0.86 cfs @ 13.06 hrs, Volume= 0.163 af

Routed to Reach 23R: SWL-4

Invert

Volume

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,894.06' @ 13.06 hrs Surf.Area= 7,706 sf Storage= 13,651 cf

Plug-Flow detention time= 778.6 min calculated for 0.616 af (100% of inflow)

Avail Storage Storage Description

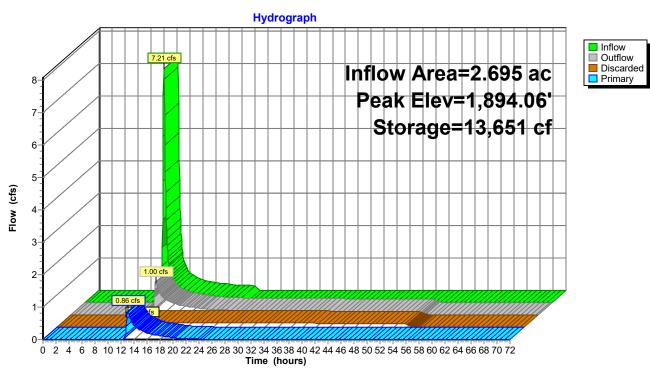
Center-of-Mass det. time= 779.4 min ( 1,644.2 - 864.8 )

VOIGITIC	HIVCH	/ Wall.Old	rage Clorage D	Cochphon	
#1	1,892.00'	30,73	34 cf Custom S	Stage Data (Pris	smatic) Listed below (Recalc)
Elevatio		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,892.0		5,542	0	0	
1,894.0		7,636	13,178	13,178	
1,896.0	00	9,920	17,556	30,734	
Device	Routing	Invert	Outlet Devices		
#1	Discarded	1,892.00'	0.800 in/hr Exf	iltration over S	urface area
#2	Primary	1,894.00'			.0' breadth Broad-Crested Rectangular Wei
			` ,		.80 1.00 1.20 1.40 1.60
			Coef. (English)	2.68 2.70 2.7	0 2.64 2.63 2.64 2.64 2.63

**Discarded OutFlow** Max=0.14 cfs @ 13.06 hrs HW=1,894.06' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=0.82 cfs @ 13.06 hrs HW=1,894.06' (Free Discharge) 2=Broad-Crested Rectangular Weir (Weir Controls 0.82 cfs @ 0.66 fps)

### Pond 13P: bio-retention basin #4a



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### Summary for Pond 14P: seepage pit with chambers #5F

Inflow Area = 7.817 ac, 99.88% Impervious, Inflow Depth = 6.96" for 50-Year event 78.12 cfs @ 11.96 hrs, Volume= Inflow 4.534 af Outflow 3.99 cfs @ 12.91 hrs, Volume= 4.534 af, Atten= 95%, Lag= 57.1 min 2.24 cfs @ 10.20 hrs, Volume= Discarded = 3.979 af Primary = 1.75 cfs @ 12.91 hrs, Volume= 0.555 af Routed to Pond 8P: BIO-RETENTION BASIN #5A (POI 001)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,870.79' @ 12.91 hrs Surf.Area= 56,925 sf Storage= 90,722 cf

Plug-Flow detention time= 255.8 min calculated for 4.531 af (100% of inflow) Center-of-Mass det. time= 255.8 min (994.1 - 738.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,868.50'	56,160 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			227,700 cf Overall - 87,300 cf Embedded = 140,400 cf x 40.0% Voids
#2	1,869.00'	87,300 cf	<b>Cultec R-360HD</b> x 2376 Inside #1
			Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			2376 Chambers in 18 Rows
			Cap Storage= 6.5 cf x 2 x 18 rows = 232.6 cf
	•	140 400 of	Total Available Ctarage

143,460 cf Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,868.50	56,925	0	0
1.872.50	56,925	227,700	227.700

Device	Routing	Invert	Outlet Devices
#1	Primary	1,869.50'	24.0" Round Culvert
			L= 60.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,869.50' / 1,868.00' S= 0.0250 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,870.00'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,868.50'	1.700 in/hr Exfiltration over Surface area

**Discarded OutFlow** Max=2.24 cfs @ 10.20 hrs HW=1,868.54' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 2.24 cfs)

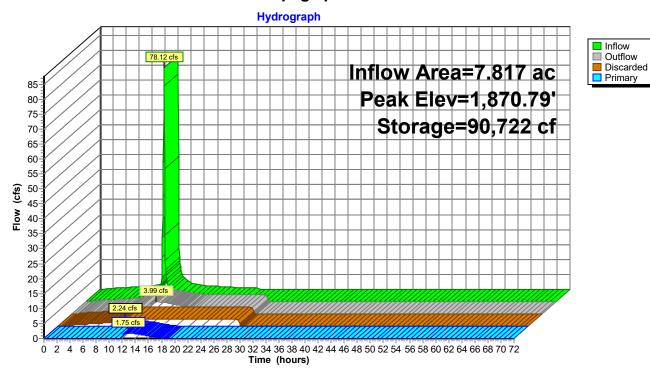
Primary OutFlow Max=1.75 cfs @ 12.91 hrs HW=1,870.79' TW=1,869.56' (Fixed TW Elev= 1,869.56')

1=Culvert (Passes 1.75 cfs of 7.29 cfs potential flow)

2=Orifice/Grate (Orifice Controls 1.75 cfs @ 3.50 fps)

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# Pond 14P: seepage pit with chambers #5F



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#### Summary for Pond 15P: seepage pit with chambers #4b

Inflow Area = 1.404 ac, 93.45% Impervious, Inflow Depth = 6.72" for 50-Year event

Inflow = 13.92 cfs @ 11.96 hrs, Volume= 0.787 af

Outflow = 2.45 cfs @ 12.16 hrs, Volume= 0.787 af, Atten= 82%, Lag= 12.1 min

Discarded = 0.22 cfs @ 8.60 hrs, Volume= 0.498 af Primary = 2.23 cfs @ 12.16 hrs, Volume= 0.288 af

Routed to Reach 23R: SWL-4

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,889.51' @ 12.16 hrs Surf.Area= 12,000 sf Storage= 15,212 cf

Plug-Flow detention time= 244.7 min calculated for 0.786 af (100% of inflow)

Center-of-Mass det. time= 244.9 min ( 995.3 - 750.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,887.00'	16,609 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			48,000 cf Overall - 6,477 cf Embedded = 41,523 cf x 40.0% Voids
#2	1,887.50'	6,477 cf	<b>Cultec R-360HD</b> x 175 Inside #1
			Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			175 Chambers in 5 Rows
			Cap Storage= 6.5 cf x 2 x 5 rows = 64.6 cf

23,086 cf Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,887.00	12,000	0	0
1,891.00	12,000	48,000	48,000

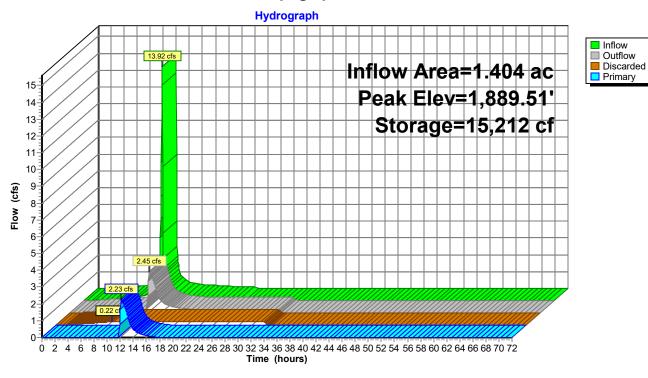
Device	Routing	Invert	Outlet Devices
#1	Primary	1,887.00'	24.0" Round Culvert
	•		L= 50.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,887.00' / 1,886.00' S= 0.0200 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,888.40'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,887.00'	0.800 in/hr Exfiltration over Surface area

**Discarded OutFlow** Max=0.22 cfs @ 8.60 hrs HW=1,887.04' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 0.22 cfs)

Primary OutFlow Max=2.22 cfs @ 12.16 hrs HW=1,889.51' (Free Discharge)

1=Culvert (Passes 2.22 cfs of 16.40 cfs potential flow)
2=Orifice/Grate (Orifice Controls 2.22 cfs @ 4.45 fps)

# Pond 15P: seepage pit with chambers #4b



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### Summary for Pond 16P: seepage pit with chambers #3A

Inflow Area = 4.089 ac, 57.74% Impervious, Inflow Depth = 4.77" for 50-Year event

Inflow = 32.68 cfs @ 11.97 hrs, Volume= 1.625 af

Outflow = 2.45 cfs @ 12.57 hrs, Volume= 1.625 af, Atten= 93%, Lag= 36.0 min

Discarded = 0.55 cfs @ 10.50 hrs, Volume= 1.026 af Primary = 1.89 cfs @ 12.57 hrs, Volume= 0.599 af

Routed to Pond 26P: bio-retention basin #3b

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,902.88' @ 12.57 hrs Surf.Area= 26,640 sf Storage= 34,342 cf

Plug-Flow detention time= 277.9 min calculated for 1.623 af (100% of inflow)

Center-of-Mass det. time= 278.1 min ( 1,084.3 - 806.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,901.00'	26,373 cf	<b>O</b> ( )
			106,560 cf Overall - 40,628 cf Embedded = 65,932 cf x 40.0% Voids
#2	1,901.50'	40,628 cf	<b>Cultec R-360HD</b> x 1102 Inside #1
			Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			1102 Chambers in 19 Rows
			Cap Storage= 6.5 cf x 2 x 19 rows = 245.5 cf

67,001 cf Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,901.00	26,640	0	0
1,905.00	26,640	106,560	106,560

Device	Routing	Invert	Outlet Devices
#1	Primary	1,901.00'	24.0" Round Culvert
	•		L= 120.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,901.00' / 1,898.00' S= 0.0250 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,902.00'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,901.00'	0.900 in/hr Exfiltration over Surface area

**Discarded OutFlow** Max=0.55 cfs @ 10.50 hrs HW=1,901.04' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 0.55 cfs)

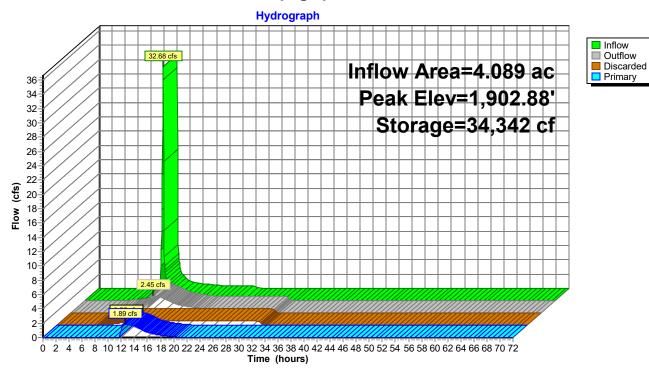
Primary OutFlow Max=1.89 cfs @ 12.57 hrs HW=1,902.88' (Free Discharge)

-1=Culvert (Passes 1.89 cfs of 12.60 cfs potential flow)

2=Orifice/Grate (Orifice Controls 1.89 cfs @ 3.79 fps)

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# Pond 16P: seepage pit with chambers #3A



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#### Summary for Pond 24P: bio-retention basin #6a

Inflow Area = 1.953 ac, 57.30% Impervious, Inflow Depth = 4.33" for 50-Year event

Inflow = 14.36 cfs @ 11.97 hrs, Volume= 0.704 af

Outflow = 1.31 cfs @ 12.48 hrs, Volume= 0.704 af, Atten= 91%, Lag= 30.7 min

Primary = 1.31 cfs @ 12.48 hrs, Volume= 0.704 af

Routed to Reach 27R: SWL-2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,924.16' @ 12.48 hrs Surf.Area= 7,981 sf Storage= 14,640 cf

Plug-Flow detention time= 155.1 min calculated for 0.704 af (100% of inflow)

Center-of-Mass det. time= 154.8 min ( 970.2 - 815.4 )

Volume	Inve	ert Avail.Sto	rage Storage D	escription	
#1	1,922.0	0' 31,3	52 cf Custom S	tage Data (Pr	ismatic) Listed below (Recalc)
Elevatio	• •	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,922.0		5,567	0	0	
1,924.0	0	7,781	13,348	13,348	
1,926.0	00	10,223	18,004	31,352	
Device	Routing	Invert	Outlet Devices		
#1	Primary	1,922.00'	24.0" Round C	ulvert	
"	· · · · · · · · · · · · · · · ·	.,00	L= 50.0' CPP, Inlet / Outlet Inv	mitered to cor ert= 1,922.00'	nform to fill, Ke= 0.700 ' / 1,920.25' S= 0.0350 '/' Cc= 0.900 ooth interior, Flow Area= 3.14 sf
#2	Device 1	1,922.00'	6.0" Vert. Orific	ce/Grate C=	0.600 Limited to weir flow at low heads
#3	Device 1	1,924.50'	<b>45.0" x 24.0" H</b> Limited to weir f		Grate C= 0.600 ads

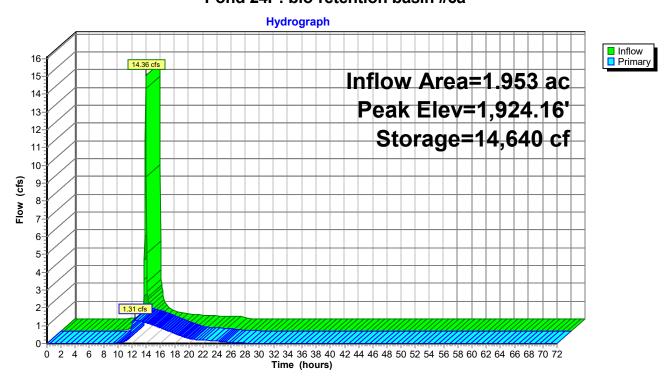
Primary OutFlow Max=1.31 cfs @ 12.48 hrs HW=1,924.16' (Free Discharge)

-1=Culvert (Passes 1.31 cfs of 14.40 cfs potential flow)

**2=Orifice/Grate** (Orifice Controls 1.31 cfs @ 6.66 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

Pond 24P: bio-retention basin #6a



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#### Summary for Pond 26P: bio-retention basin #3b

Inflow Area = 14.187 ac, 33.20% Impervious, Inflow Depth = 2.97" for 50-Year event

31.26 cfs @ 12.26 hrs, Volume= Inflow 3.517 af

Outflow 1.29 cfs @ 18.43 hrs, Volume= 3.517 af, Atten= 96%, Lag= 370.3 min

Discarded = 0.89 cfs @ 18.43 hrs, Volume= 2.745 af Primary 0.40 cfs @ 18.43 hrs, Volume= 0.772 af

Routed to Link 37L: Discharge 001

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,894.85' @ 18.43 hrs Surf.Area= 31,977 sf Storage= 104,463 cf

Plug-Flow detention time= 937.6 min calculated for 3.514 af (100% of inflow)

Center-of-Mass det. time= 938.2 min (1,796.5 - 858.3)

Volume	Inve	t Avail.Sto	rage Stora	ge Description	
#1	1,891.00	)' 218,37	9 cf Custo	om Stage Data (Pr	rismatic) Listed below (Recalc)
Elevation (feet)	-	Surf.Area (sq-ft)	Inc.Store (cubic-feet)		
1,891.00	)	22,485	0	0	
1,892.00	)	24,866	23,676	23,676	
1,894.00	)	29,797	54,663	78,339	
1,896.00	)	34,953	64,750	143,089	
1,898.00	)	40,337	75,290	218,379	
Device	Routing	Invert	Outlet Dev	ices	
#1	Primary	1,891.00'	24.0" Rou	nd Culvert	
	•	•	L= 120.0'	CPP, mitered to co	onform to fill, Ke= 0.700
			Inlet / Outle	et Invert= 1,891.00	' / 1,889.80' S= 0.0100 '/' Cc= 0.900
			n= 0.013 (	Corrugated PE, sm	ooth interior, Flow Area= 3.14 sf
#2	Device 1	1,892.00'	<b>3.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads		
#3	Discarded	1,891.00'	1.200 in/hr	Exfiltration over	Surface area
#4	Device 1	1,896.60'	45.0" x 24.	0" Horiz. Orifice/C	Grate C= 0.600

Limited to weir flow at low heads

Discarded OutFlow Max=0.89 cfs @ 18.43 hrs HW=1,894.85' (Free Discharge) **1 1 2 Exfiltration** (Exfiltration Controls 0.89 cfs)

Primary OutFlow Max=0.40 cfs @ 18.43 hrs HW=1,894.85' (Free Discharge)

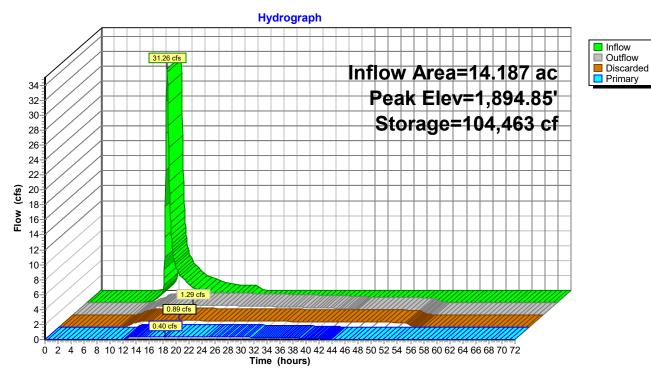
**-1=Culvert** (Passes 0.40 cfs of 22.52 cfs potential flow)

**-2=Orifice/Grate** (Orifice Controls 0.40 cfs @ 8.12 fps)

**—4=Orifice/Grate** (Controls 0.00 cfs)

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#### Pond 26P: bio-retention basin #3b



Invert

Volume

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#### Summary for Pond 29P: bio-retention basin #1A

Inflow Area = 3.056 ac, 64.73% Impervious, Inflow Depth = 5.44" for 50-Year event

Inflow = 27.07 cfs @ 11.96 hrs, Volume= 1.386 af

Outflow = 1.33 cfs @ 13.04 hrs, Volume= 1.381 af, Atten= 95%, Lag= 64.4 min

Primary = 1.33 cfs @ 13.04 hrs, Volume= 1.381 af

Routed to Pond 38P: bio-retention basin #2A

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,940.22' @ 13.04 hrs Surf.Area= 18,650 sf Storage= 34,704 cf

Avail Storage Storage Description

Plug-Flow detention time= 354.8 min calculated for 1.381 af (100% of inflow)

Center-of-Mass det. time= 352.1 min (1,143.0 - 790.9)

VOIGITIE	IIIVC	Avaii.010	rage Storage i	Jescription	
#1	1,938.0	00' 72,33	34 cf Custom	Stage Data (Pri	smatic) Listed below (Recalc)
Elevation	on	Surf.Area	Inc.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)	
1,938.0	00	12,620	0	0	
1,940.0	00	18,027	30,647	30,647	
1,942.0	00	23,660	41,687	72,334	
Device	Routing	Invert	Outlet Devices	<b>;</b>	
#1	Primary	1,936.00'		, mitered to con	form to fill, Ke= 0.700 / 1,934.00' S= 0.0235 '/' Cc= 0.900
				•	ooth interior, Flow Area= 3.14 sf
#2	Device 1	1,938.00'	6.0" Vert. Orif	ice/Grate C= (	0.600 Limited to weir flow at low heads
#3	Device 1	1,940.50'		Horiz. Orifice/G flow at low hea	<b>rate</b> C= 0.600 ds

**Primary OutFlow** Max=1.33 cfs @ 13.04 hrs HW=1,940.22' TW=1,936.57' (Fixed TW Elev= 1,936.57')

—1=Culvert (Passes 1.33 cfs of 23.95 cfs potential flow)

**—2=Orifice/Grate** (Orifice Controls 1.33 cfs @ 6.76 fps)

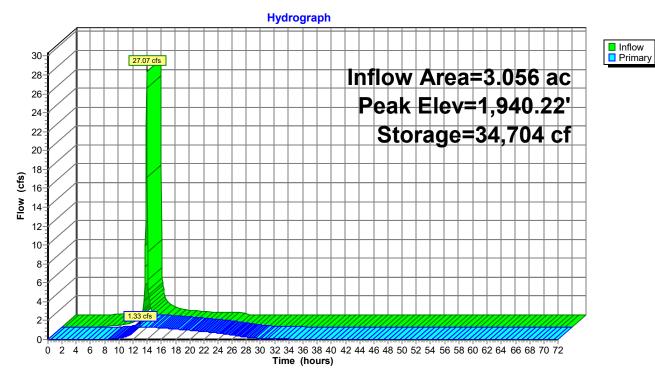
-3=Orifice/Grate (Controls 0.00 cfs)

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#### Pond 29P: bio-retention basin #1A



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#### Summary for Pond 38P: bio-retention basin #2A

Inflow Area = 4.593 ac, 65.01% Impervious, Inflow Depth > 5.43" for 50-Year event

Inflow = 14.68 cfs @ 11.97 hrs, Volume= 2.078 af

Outflow = 13.71 cfs @ 12.00 hrs, Volume= 2.077 af, Atten= 7%, Lag= 2.2 min

Primary = 13.71 cfs @ 12.00 hrs, Volume= 2.077 af

Routed to Pond 40P: bio-retention basin #2C

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,936.50' @ 12.00 hrs Surf.Area= 4,890 sf Storage= 10,393 cf

Plug-Flow detention time= 120.4 min calculated for 2.077 af (100% of inflow) Center-of-Mass det. time= 119.3 min (1,144.2 - 1,024.8)

Volume	Inver	t Avail.	.Storage	Storage Description		
#1	1,933.00	)' 1	9,068 cf	Custom	Stage Data (Pr	rismatic) Listed below (Recalc)
Elevation (feet)		Surf.Area (sq-ft)		.Store c-feet)	Cum.Store (cubic-feet)	
1,933.00		1,159		0	0	
1,934.00		2,148		1,654	1,654	
1,936.00		4,297		6,445	8,099	
1,938.00		6,672	1	0,969	19,068	
Device F	Routing	Inv	ert Outle	et Device	es	
#1 F	Primary	1,933.			I Culvert	onform to fill, Ke= 0.700

L= 115.0' CPP, mitered to conform to fill, Ke= 0.700
Inlet / Outlet Invert= 1,933.00' / 1,931.70' S= 0.0113 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

#2 Device 1 1,933.00' 3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

#3 Device 1 1,936.00' 45.0" x 24.0" Horiz. Orifice/Grate C= 0.600
Limited to weir flow at low heads

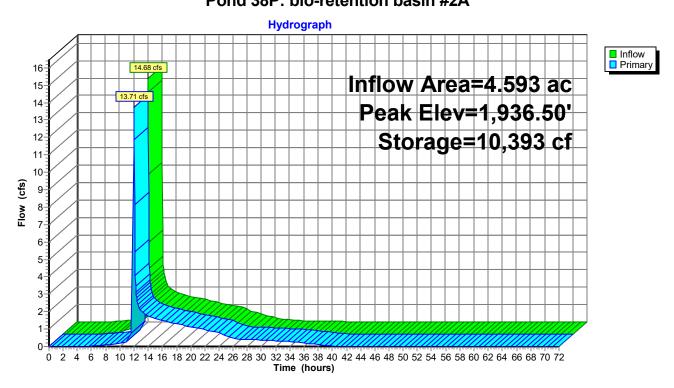
**Primary OutFlow** Max=13.59 cfs @ 12.00 hrs HW=1,936.50' (Free Discharge)

**1=Culvert** (Passes 13.59 cfs of 21.09 cfs potential flow)

**—2=Orifice/Grate** (Orifice Controls 0.43 cfs @ 8.84 fps)

-3=Orifice/Grate (Weir Controls 13.16 cfs @ 2.30 fps)

Pond 38P: bio-retention basin #2A



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#### Summary for Pond 39P: bio-retention basin #2B

Inflow Area = 0.992 ac, 60.28% Impervious, Inflow Depth = 5.22" for 50-Year event

Inflow = 8.52 cfs @ 11.97 hrs, Volume= 0.431 af

Outflow = 0.82 cfs @ 12.43 hrs, Volume= 0.429 af, Atten= 90%, Lag= 27.6 min

Primary = 0.82 cfs @ 12.43 hrs, Volume= 0.429 af

Routed to Reach 26R: SWL-1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,917.00' @ 12.43 hrs Surf.Area= 10,177 sf Storage= 9,760 cf

Plug-Flow detention time= 229.5 min calculated for 0.429 af (100% of inflow)

Center-of-Mass det. time= 226.8 min (1,023.0 - 796.3)

Volume	Inve	ert Avail.Sto	rage Storage	Description		
#1	1,916.0	0' 44,18	30 cf Custon	n Stage Data (Pr	ismatic) Listed below (Recalc)	
Elevatio		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
1,916.0	00	9,337	Ó	0		
1,918.0	00	11,016	20,353	20,353		
1,920.0	00	12,811	23,827	44,180		
Device	Routing	Invert	Outlet Device	es		
#1	Primary	1,916.00'	24.0" Round	d Culvert		
	,	,	L= 50.0' CP	P, mitered to cor	nform to fill, Ke= 0.700	
			Inlet / Outlet Invert= 1,916.00' / 1,914.00' S= 0.0400 '/' Cc= 0.900			
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf			
#2	Device 1	1,916.00'	6.0" Vert. Or	ifice/Grate C=	0.600 Limited to weir flow at low heads	
#3	Device 1	1,917.50'	45.0" x 24.0"	' Horiz. Orifice/G	Grate C= 0.600	
			Limited to we	eir flow at low hea	ads	

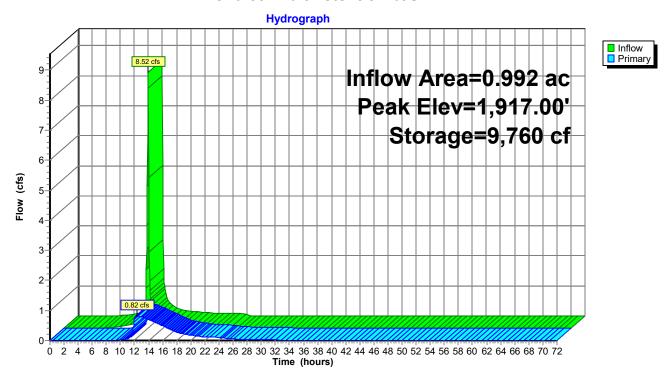
Primary OutFlow Max=0.82 cfs @ 12.43 hrs HW=1,917.00' (Free Discharge)

**1=Culvert** (Passes 0.82 cfs of 4.72 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.82 cfs @ 4.17 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

#### Pond 39P: bio-retention basin #2B



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#### Summary for Pond 40P: bio-retention basin #2C

Inflow Area = 6.417 ac, 63.99% Impervious, Inflow Depth = 5.40" for 50-Year event

Inflow = 29.08 cfs @ 11.98 hrs, Volume= 2.887 af

Outflow = 11.90 cfs @ 12.12 hrs, Volume= 2.882 af, Atten= 59%, Lag= 8.0 min

Primary = 11.90 cfs @ 12.12 hrs, Volume= 2.882 af

Routed to Reach 26R: SWL-1

Invert

Volume

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,932.79' @ 12.12 hrs Surf.Area= 12,937 sf Storage= 19,132 cf

Avail Storage Storage Description

Plug-Flow detention time= 60.3 min calculated for 2.880 af (100% of inflow)

Center-of-Mass det. time= 56.2 min (1,102.0 - 1,045.8)

volullie	IIIVE	nt Avaii.Sic	Avail.Storage Storage Description				
#1	1,931.0	0' 36,6	80 cf Custom	n Stage Data (Pr	ismatic) Listed below (Recalc)		
Elevatio		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)			
1,931.0		8,511	0	0			
1,932.0		10,950	9,731	9,731			
1,934.0		15,999	26,949	36,680			
Dovice	Douting	Invert	Outlet Device	20			
Device	Routing	Invert	Outlet Device	28			
#1	Primary	1,931.00'	24.0" Round	d Culvert			
			L= 35.0' CPP, mitered to conform to fill, Ke= 0.700				
			Inlet / Outlet Invert= 1,931.00' / 1,930.00' S= 0.0286 '/' Cc= 0.900				
			n= 0.013 Co	rrugated PE, sm	ooth interior, Flow Area= 3.14 sf		
#2 Device 1 1,931.00'		12.0" W x 4.0" H Vert. Orifice/Grate X 3.00 C= 0.600					
			Limited to we	ir flow at low hea	ads		
#3	Device 1	vice 1 1,932.00' <b>45.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600					
			Limited to we	ir flow at low hea	ads		

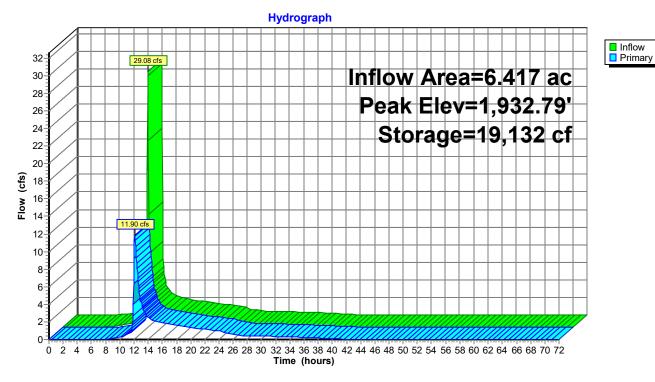
**Primary OutFlow** Max=11.81 cfs @ 12.12 hrs HW=1,932.78' (Free Discharge)

-1=Culvert (Inlet Controls 11.81 cfs @ 4.00 fps)

**2=Orifice/Grate** (Passes < 6.11 cfs potential flow)

-3=Orifice/Grate (Passes < 25.75 cfs potential flow)

#### Pond 40P: bio-retention basin #2C



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Total Tributary Area to 001

Type II 24-hr 50-Year Rainfall=7.20"

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# Summary for Link 37L: Discharge 001

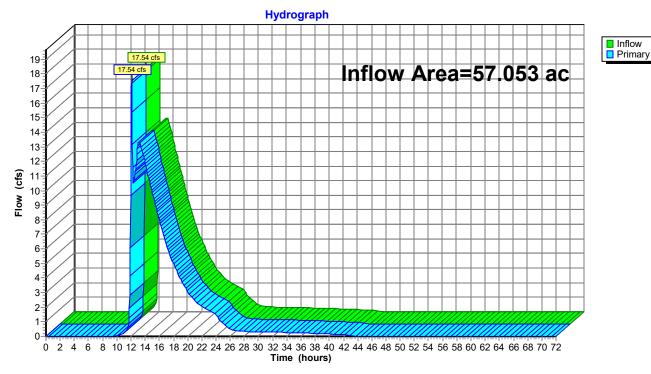
Inflow Area = 57.053 ac, 50.73% Impervious, Inflow Depth = 1.43" for 50-Year event

Inflow = 17.54 cfs @ 12.08 hrs, Volume= 6.806 af

Primary = 17.54 cfs @ 12.08 hrs, Volume= 6.806 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

# Link 37L: Discharge 001



#### NPDES Stormwater-REV1.1

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### Summary for Subcatchment 11S: SEEPAGE BED #5A (BMP #7)

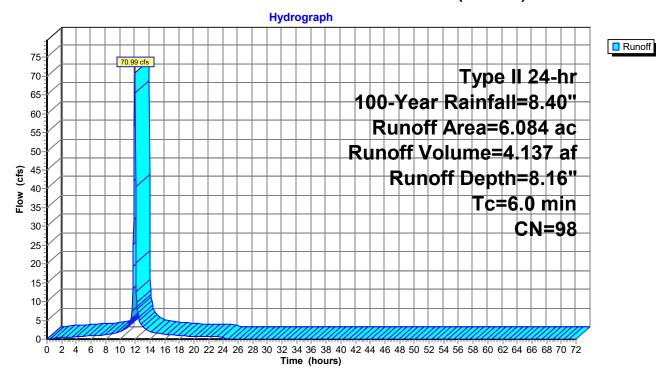
Runoff = 70.99 cfs @ 11.96 hrs, Volume= 4.137 af, Depth= 8.16" Routed to Pond 9P : seepage pit with chambers #5A

Trouted to Folia 31 . Scepage pit with chambers #0A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

_	Area	(ac)	CN Description						
6.084 98 Paved parking & roofs									
_	6.084			100.00% Impervious Area					
	То	Longt	h (	Clana	Volocity	Consoity	Description		
	(min)	Lengtl (feet		Slope (ft/ft)	(ft/sec)	(cfs)	Description		
-	6.0	(122	,	()	( )	()	Direct Entry.		

#### Subcatchment 11S: SEEPAGE BED #5A (BMP #7)



## **NPDES Stormwater-REV1.1**

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#### Summary for Subcatchment 12S: bio-retention basin #4a (BMP #9)

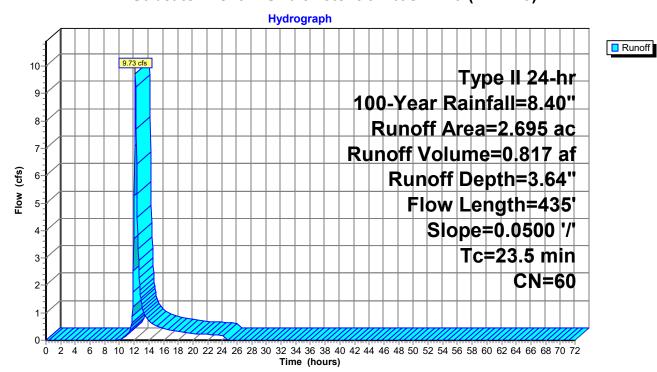
9.73 cfs @ 12.17 hrs, Volume= 0.817 af, Depth= 3.64" Runoff

Routed to Pond 13P: bio-retention basin #4a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

_	Area	(ac) C	N Desc	Description						
	1.	896 6	61 >75°	>75% Grass cover, Good, HSG B						
_	0.	799 t	58 Mea	Meadow, non-grazed, HSG B						
	2.	695 6	30 Weig	ghted Aver	age					
	2.	695	100.	00% Pervi	ous Area					
	Tc	Length	Slope	Velocity	Capacity	Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	20.5	150	0.0500	0.12		Sheet Flow,				
						Woods: Light underbrush n= 0.400 P2= 3.23"				
	3.0	285	0.0500	1.57		Shallow Concentrated Flow,				
_						Short Grass Pasture Kv= 7.0 fps				
	23.5	435	Total							

## Subcatchment 12S: bio-retention basin #4a (BMP #9)



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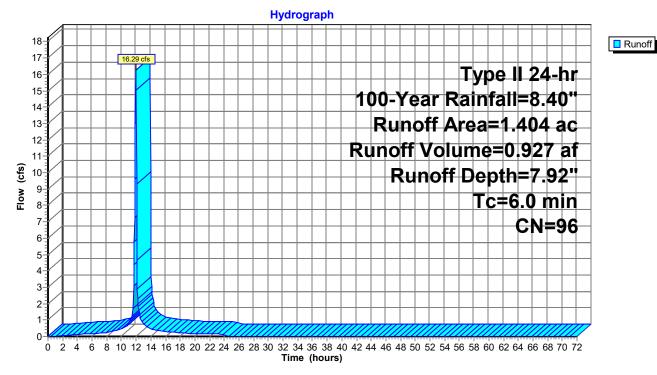
## Summary for Subcatchment 17S: SEEPAGE BED #4b (BMP #10)

Runoff = 16.29 cfs @ 11.96 hrs, Volume= 0.927 af, Depth= 7.92" Routed to Pond 15P : seepage pit with chambers #4b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

Area	a (ac)					
•	1.312	98	Pave	ed parking	& roofs	
(	0.092	74	>75%	√ Grass co	over, Good	H, HSG C
•	1.404	96	Weig	ghted Aver	age	
(	0.092		6.55	% Perviou	s Area	
•	1.312		93.4	5% Imperv	ious Area	
To (min)	_	,	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	)					Direct Entry,

## Subcatchment 17S: SEEPAGE BED #4b (BMP #10)



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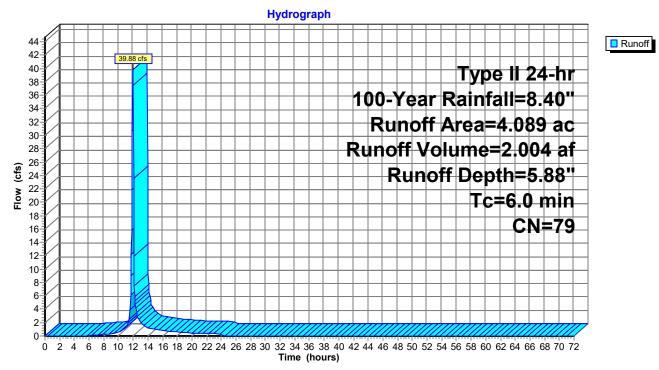
## Summary for Subcatchment 19S: SEEPAGE BED #3A (BMP #11)

Runoff = 39.88 cfs @ 11.97 hrs, Volume= 2.004 af, Depth= 5.88" Routed to Pond 16P : seepage pit with chambers #3A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

	Area	(ac)	CN	Desc	cription						
	2.	2.361 98 Paved parking & roofs									
*	0.	069	40	Mea	dow, non-g	grazed, HS	SG A				
	0.	0.059 71 Meadow, non-grazed, HSG C									
*	0.	0.485 40 >75% Grass cover, Good, HSG A									
	0.	485	74	>759	% Grass co	over, Good	I, HSG C				
*	0.	0.477 40 Woods, Good, HSG A									
	0.153 70 Woods, Good, HSG C										
	4.	089	79	Wei	ghted Aver	age					
	1.	728		42.2	6% Pervio	us Area					
	2.	361		57.7	57.74% Impervious Area						
	Tc	Leng	gth	Slope	Velocity	Capacity	Description				
	(min)	(fe	et)	(ft/ft)	(ft/sec)	(cfs)					
	6.0						Direct Entry,				

## Subcatchment 19S: SEEPAGE BED #3A (BMP #11)



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## Summary for Subcatchment 20S: SEEPAGE BED #5F (BMP 6)

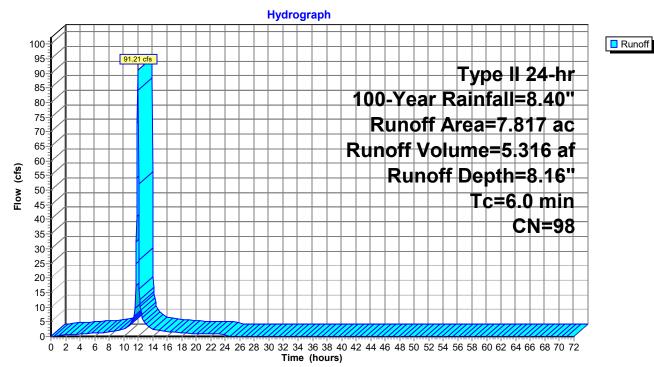
Runoff = 91.21 cfs @ 11.96 hrs, Volume= 5.316 af, Depth= 8.16" Routed to Pond 14P : seepage pit with chambers #5F

Trouted to Folia 141 . Goopage pit with chambers 1/61

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

	Area	(ac)	CN	Desc	cription			
	7.	808	98	Pave	ed parking	& roofs		
	0.	009	74	>75%	√ Grass co	over, Good	, HSG C	
	7.	817	98	Weig	ghted Aver	age		
	0.	009		0.12	% Perviou	s Area		
	7.	808		99.88	8% Imperv	ious Area		
	_							
	Tc	Leng		Slope	Velocity	Capacity	Description	
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)		
	6.0						Direct Entry,	

## Subcatchment 20S: SEEPAGE BED #5F (BMP 6)



Runoff

## NPDES Stormwater-REV1.1

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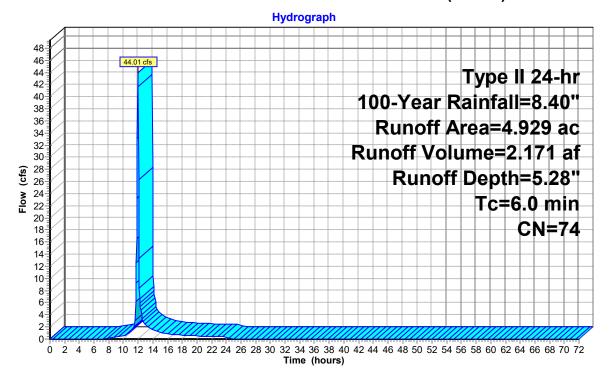
#### Summary for Subcatchment 22S: SUB BASIN-5A (BMP 8)

Runoff = 44.01 cfs @ 11.97 hrs, Volume= 2.171 af, Depth= 5.28" Routed to Pond 8P : BIO-RETENTION BASIN #5A (POI 001)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

Area	(ac)	CN	Desc	ription		
1.	.186	61	>75%	6 Grass co	over, Good	, HSG B
3.	.048	74	>75%	% Grass co	over, Good	, HSG C
0.	.695	98	Pave	ed parking	& roofs	
4.	.929	74	Weig	hted Aver	age	
4.	.234		85.9	0% Pervio	us Area	
0.	.695		14.10	0% Imperv	ious Area	
_	_					
Tc	Leng	th :	Slope	Velocity	Capacity	Description
(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
6.0						Direct Entry, 6 minute min

## Subcatchment 22S: SUB BASIN-5A (BMP 8)



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# Summary for Subcatchment 24S: bio-retention basin #3b(BMP #12)

Runoff = 38.09 cfs @ 12.26 hrs, Volume=

3.749 af, Depth= 4.46"

Routed to Pond 26P: bio-retention basin #3b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

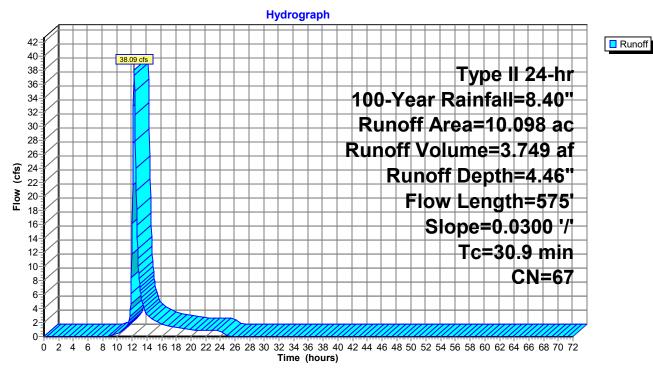
	Area	(ac)	CN	l Desc	ription		
	2.	349	98	Pave	d parking	& roofs	
	1.	017	58	Mea	dow, non-g	grazed, HS	G B
	0.	574	71	Mead	dow, non-g	grazed, HS	GC
	3.	499	61	>75%	% Grass co	over, Good	, HSG B
	0.	126	74	>75%	% Grass co	over, Good	, HSG C
*	1.	025	40	) Woo	ds, Good,	HSG A	
*	0.	745	40	>75%	% Grass co	over, Good	, HSG A
_	0.	763	74	>75%	% Grass co	over, Good	, HSG C
	10.	098	67	' Weig	hted Aver	age	
	7.	749		76.74	4% Pervio	us Area	
	2.	349		23.26	3% Imperv	ious Area	
	Тс	Leng	th	Slope	Velocity	Capacity	Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	25.1	15	50	0.0300	0.10		Sheet Flow,
							Woods: Light underbrush n= 0.400 P2= 3.23"
	5.8	42	25	0.0300	1.21		Shallow Concentrated Flow,
							Short Grass Pasture Kv= 7.0 fps
-	30.9	57	75	Total	·		

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# Subcatchment 24S: bio-retention basin #3b(BMP #12)



Runoff

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## Summary for Subcatchment 25S: BIO-RETENTION BASIN #6A (BMP 5)

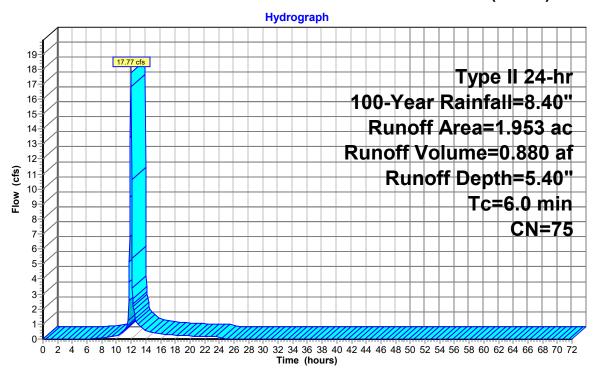
17.77 cfs @ 11.97 hrs, Volume= 0.880 af, Depth= 5.40" Runoff

Routed to Pond 24P: bio-retention basin #6a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

_	Area	(ac)	CN	Desc	cription		
	1.						
*	0.	665	40	>75%	% Grass co	over, Good	I, HSG A
	0.	169	61	>75%	% Grass co	over, Good	I, HSG B
	1.	953	75	Weig	ghted Aver	age	
	0.	834		42.7	0% Pervio	us Area	
	1.	119		57.3	0% Imperv	ious Area	
	Тс	Leng	ıth	Slope	Velocity	Capacity	Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	6.0						Direct Entry,

## Subcatchment 25S: BIO-RETENTION BASIN #6A (BMP 5)



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## Summary for Subcatchment 29S: SWL #1

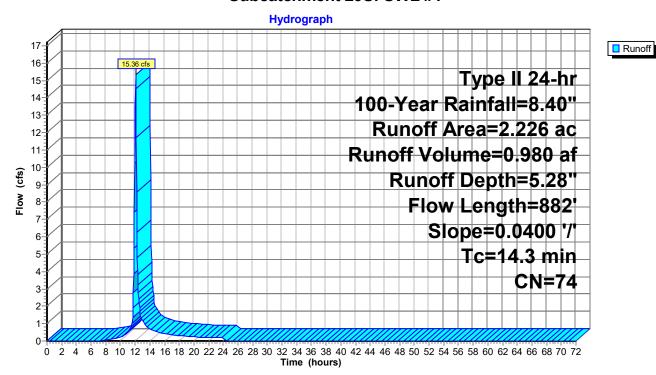
15.36 cfs @ 12.06 hrs, Volume= 0.980 af, Depth= 5.28" Runoff

Routed to Reach 26R: SWL-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

_	Area	(ac) (	N Des	cription		
	0.	765	98 Pave	ed parking	& roofs	
	1.	461	61 >75°	% Grass co	over, Good	, HSG B
	2.	226	74 Wei	ghted Aver	age	
	1.	461	65.6	3% Pervio	us Area	
	0.	765	34.3	7% Imperv	ious Area	
	Tc	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	10.2	150	0.0400	0.24		Sheet Flow,
						Grass: Short n= 0.150 P2= 3.23"
	4.1	732	0.0400	3.00		Shallow Concentrated Flow,
						Grassed Waterway Kv= 15.0 fps
	14.3	882	Total			•

#### Subcatchment 29S: SWL #1



## NPDES Stormwater-REV1.1

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## Summary for Subcatchment 30S: SWL #2

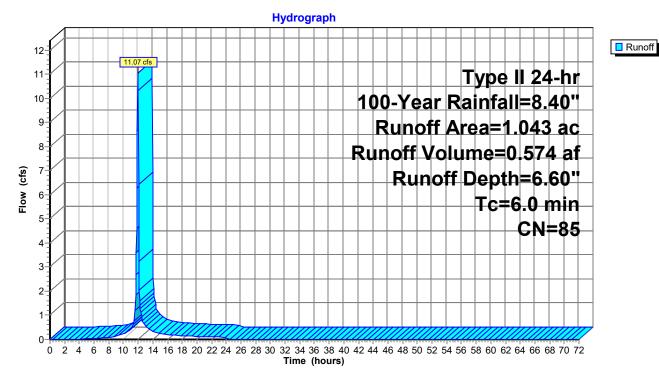
Runoff = 11.07 cfs @ 11.96 hrs, Volume= 0.574 af, Depth= 6.60"

Routed to Reach 27R: SWL-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

	Area	(ac)	CN	Desc	cription		
	0.	814	98	Pave	ed parking	& roofs	
*	0.	229	40	>75%	% Grass co	H, HSG A	
	1.	043	85	Weig	ghted Aver	age	
	0.	229		21.9	6% Pervio	us Area	
	0.814			78.04% Impervious Area			
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

#### Subcatchment 30S: SWL #2



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## Summary for Subcatchment 32S: SWL #3

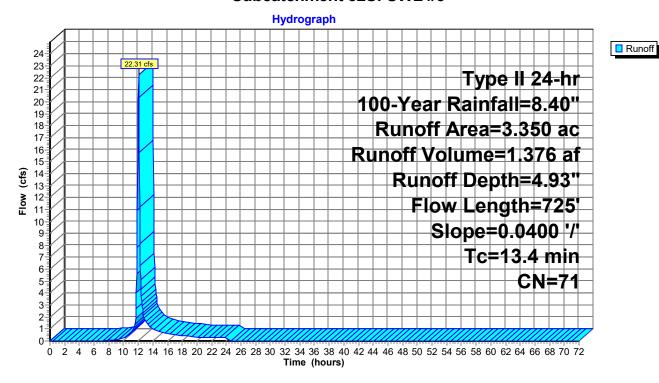
Runoff = 22.31 cfs @ 12.05 hrs, Volume= 1.376 af, Depth= 4.93"

Routed to Reach 28R: SWL-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

	Area	(ac) C	N Desc	cription			
	0.	930 9		ed parking			
2.420 61 >75% Grass cover, Good, HSG B							
	3.	350 7	71 Weig	ghted Aver	age		
	2.	420	72.2	4% Pervio	us Area		
	0.	930	27.7	6% Imperv	/ious Area		
	Тс	Length	Slope	Velocity	Capacity	Description	
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
	10.2	150	0.0400	0.24		Sheet Flow,	
						Grass: Short n= 0.150 P2= 3.23"	
	3.2	575	0.0400	3.00		Shallow Concentrated Flow,	
_						Grassed Waterway Kv= 15.0 fps	
	13.4	725	Total				

#### Subcatchment 32S: SWL #3



#### **NPDES Stormwater-REV1.1**

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## Summary for Subcatchment 33S: BIO-RETENTION BASIN #1A (BMP#1)

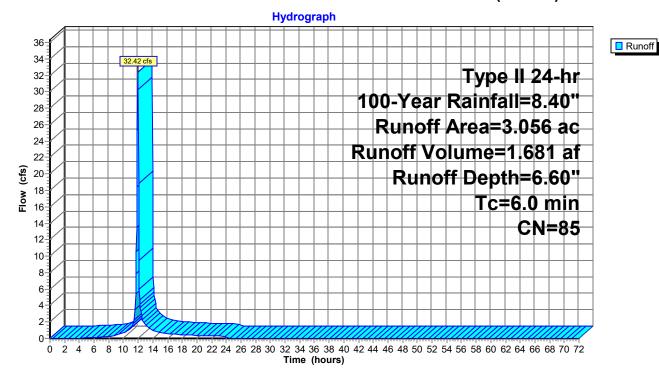
Runoff = 32.42 cfs @ 11.96 hrs, Volume= 1.681 af, Depth= 6.60"

Routed to Pond 29P: bio-retention basin #1A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

	Area (a	ac) C	N Des	scription			
	1.9	78 9	8 Pav	ed parking	& roofs		
	1.0	78 6	1 >75	% Grass c	over, Good	, HSG B	
	3.0	56 8	5 We	ighted Avei	rage		
	1.0	78	35.2	27% Pervio	us Area		
	1.9	78	64.	73% Imper	ious Area		
(	Tc l	Length (feet)	Slope (ft/ft)	,	Capacity (cfs)	Description	
	6.0					Direct Entry,	

## Subcatchment 33S: BIO-RETENTION BASIN #1A (BMP#1)



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## Summary for Subcatchment 34S: SWL #4

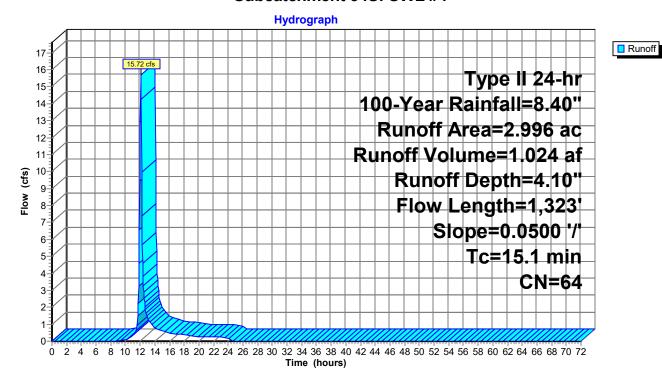
Runoff = 15.72 cfs @ 12.07 hrs, Volume= 1.024 af, Depth= 4.10"

Routed to Reach 23R: SWL-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

Area	(ac)	CN	Desc	cription						
2.296 61			>75%	>75% Grass cover, Good, HSG B						
	.700	74	>75%	>75% Grass cover, Good, HSG C						
2	2.996	64	Weig	ghted Aver	age					
2	2.996		100.	00% Pervi	ous Area					
Tc	Lengt	h S	Slope	Velocity	Capacity	Description				
(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)					
9.3	15	0 0.	0500	0.27		Sheet Flow,				
						Grass: Short n= 0.150 P2= 3.23"				
5.8	1,17	3 0.	0500	3.35		Shallow Concentrated Flow,				
						Grassed Waterway Kv= 15.0 fps				
15.1	1,32	3 To	otal							

#### Subcatchment 34S: SWL #4



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## Summary for Subcatchment 37S: BIO-RETENTION BASIN #2A (BMP #2)

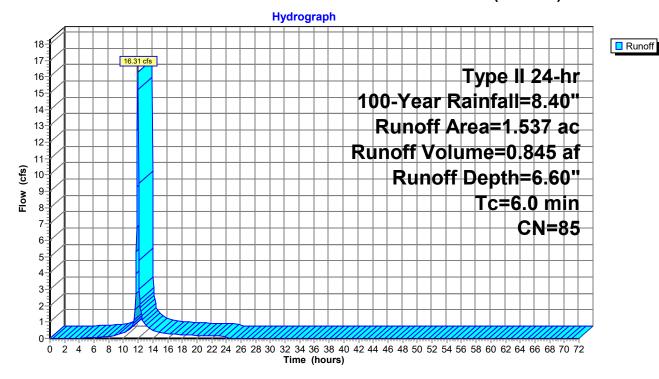
Runoff = 16.31 cfs @ 11.96 hrs, Volume= 0.845 af, Depth= 6.60"

Routed to Pond 38P: bio-retention basin #2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

Area	(ac)	CN	Desc	ription		
1.	1.008 98 Paved parking & roofs				& roofs	
0.	0.529 61 >75% Grass cover, Good,				over, Good	d, HSG B
1.	537	85	Weig	ghted Aver	age	
0.	0.529 34.42% Pervious Area				us Area	
1.	800		65.58	8% Imperv	ious Area	
т.	1	u_ <i>(</i>	21	\	O:h.	Decembration
Tc	Lengi		Slope	Velocity	Capacity	Description
(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
6.0						Direct Entry,

## Subcatchment 37S: BIO-RETENTION BASIN #2A (BMP #2)



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## Summary for Subcatchment 41S: BIO-RETENTION BASIN #2C (BMP #3)

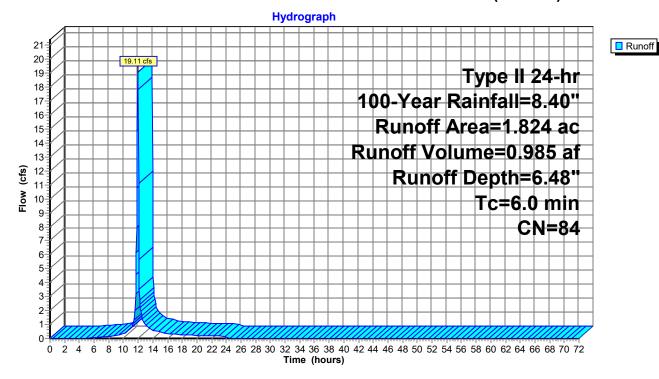
Runoff = 19.11 cfs @ 11.96 hrs, Volume= 0.985 af, Depth= 6.48"

Routed to Pond 40P: bio-retention basin #2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

Area	(ac)	CN	Desc	ription		
1.	.120	98	Pave	d parking	& roofs	
0	0.704 61 >75% Grass cover, Good,				over, Good	d, HSG B
1.	.824	84	Weig	hted Aver	age	
0.	0.704 38.60% Pervious Area				us Area	
1.	.120		61.40	0% Imperv	ious Area	
Тс	Leng	th (	Slope	Velocity	Capacity	Description
(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	·
	(100	,,,	(1010)	(10/300)	(013)	
6.0						Direct Entry,

## Subcatchment 41S: BIO-RETENTION BASIN #2C (BMP #3)



## NPDES Stormwater-REV1.1

Type II 24-hr 100-Year Rainfall=8.40"

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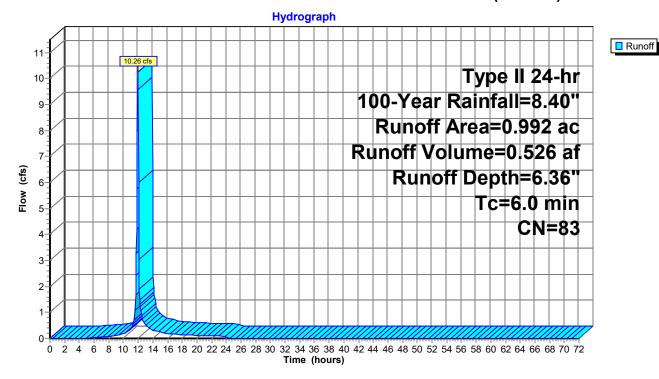
## Summary for Subcatchment 42S: BIO-RETENTION BASIN #2B (BMP #4)

Runoff = 10.26 cfs @ 11.96 hrs, Volume= 0.526 af, Depth= 6.36" Routed to Pond 39P : bio-retention basin #2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

	Area (	(ac)	CN	Desc	ription			
	0.598 98 Paved parking & roofs					& roofs		
	0.	394	61	>75%	√ Grass co	over, Good	H, HSG B	
	0.	992	83	Weig	hted Aver	age		
	0.394 39.72% Pervious Area				2% Pervio	us Area		
	0.	598		60.28	8% Imperv	∕ious Area		
_	Tc (min)	Lengi (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
	6.0						Direct Entry,	

## Subcatchment 42S: BIO-RETENTION BASIN #2B (BMP #4)



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## Summary for Subcatchment 47S: UNDETAINED-PROPOSED 001

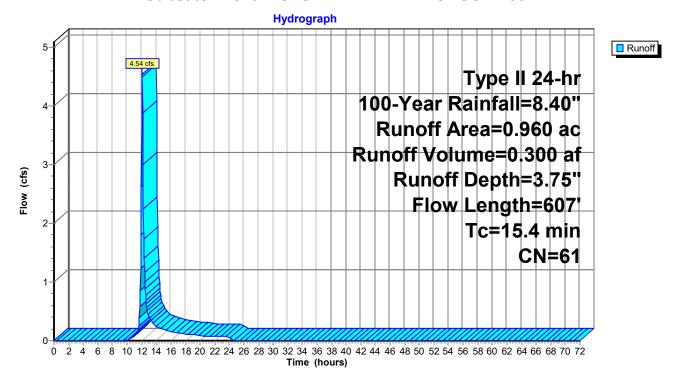
Runoff = 4.54 cfs @ 12.08 hrs, Volume= 0.300 af, Depth= 3.75"

Routed to Link 37L: Discharge 001

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Type II 24-hr 100-Year Rainfall=8.40"

	Area	(ac) C	N Des	cription		
	0.	960 6	61 >75°	% Grass co	over, Good	, HSG B
0.960 100.00% Pervious Area						
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	7.7	150	0.0800	0.32	, ,	Sheet Flow,
	7.7	457	0.0200	0.99		Grass: Short n= 0.150 P2= 3.23"  Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
_	15.4	607	Total	•	•	

#### Subcatchment 47S: UNDETAINED-PROPOSED 001



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## Summary for Reach 23R: SWL-4

7.095 ac, 18.49% Impervious, Inflow Depth = 3.01" for 100-Year event Inflow Area =

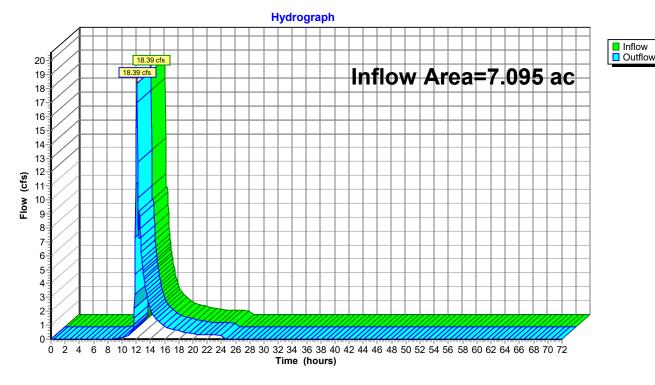
Inflow 1.782 af

18.39 cfs @ 12.08 hrs, Volume= 18.39 cfs @ 12.08 hrs, Volume= Outflow 1.782 af, Atten= 0%, Lag= 0.0 min

Routed to Link 37L: Discharge 001

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

#### Reach 23R: SWL-4



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## Summary for Reach 26R: SWL-1

9.635 ac, 56.76% Impervious, Inflow Depth > 6.23" for 100-Year event Inflow Area =

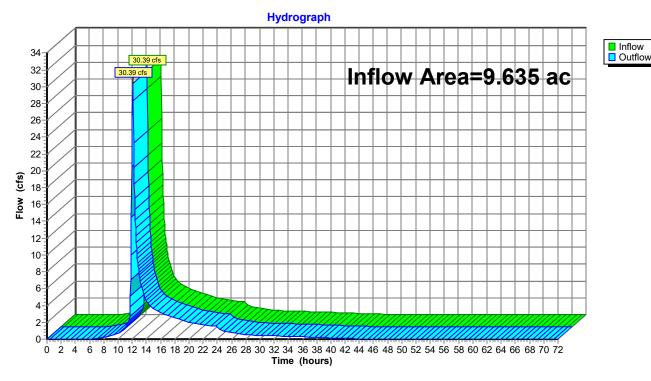
Inflow 5.003 af

30.39 cfs @ 12.07 hrs, Volume= 30.39 cfs @ 12.07 hrs, Volume= 5.003 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Reach 28R: SWL-3

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

#### Reach 26R: SWL-1



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## Summary for Reach 27R: SWL-2

2.996 ac, 64.52% Impervious, Inflow Depth = 5.82" for 100-Year event Inflow Area =

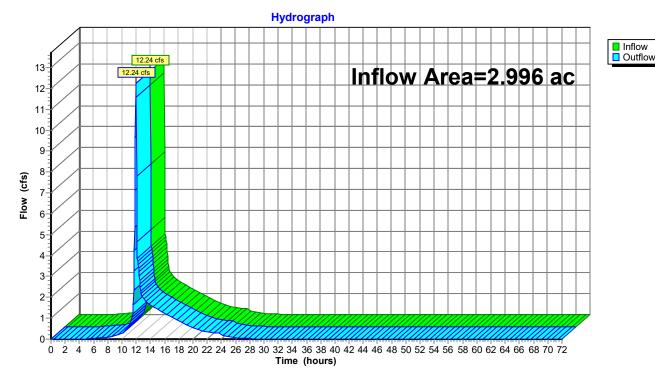
Inflow

12.24 cfs @ 11.97 hrs, Volume= 1.453 af 12.24 cfs @ 11.97 hrs, Volume= 1.453 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Reach 28R: SWL-3

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

#### Reach 27R: SWL-2



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## Summary for Reach 28R: SWL-3

15.981 ac, 52.14% Impervious, Inflow Depth = 5.88" for 100-Year event Inflow Area =

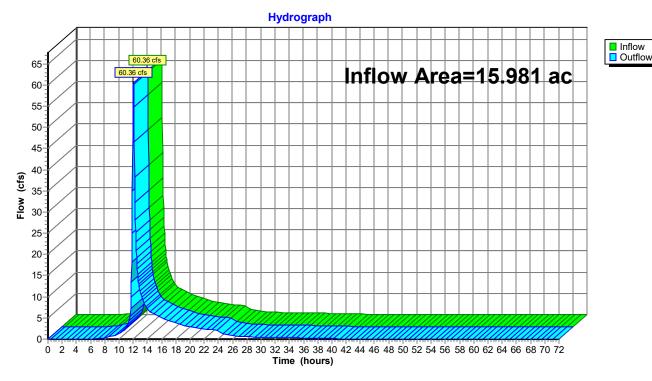
Inflow 7.832 af

60.36 cfs @ 12.04 hrs, Volume= 60.36 cfs @ 12.04 hrs, Volume= 7.832 af, Atten= 0%, Lag= 0.0 min Outflow

Routed to Pond 8P: BIO-RETENTION BASIN #5A (POI 001)

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

#### Reach 28R: SWL-3



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## Summary for Pond 8P: BIO-RETENTION BASIN #5A (POI 001)

Inflow Area = 34.811 ac, 65.84% Impervious, Inflow Depth = 4.11" for 100-Year event

Inflow = 101.83 cfs @ 12.00 hrs, Volume= 11.922 af

Outflow = 18.29 cfs @ 13.01 hrs, Volume= 11.922 af, Atten= 82%, Lag= 60.4 min

Discarded = 1.59 cfs @ 13.01 hrs, Volume= 4.818 af Primary = 16.70 cfs @ 13.01 hrs, Volume= 7.104 af

Routed to Link 37L : Discharge 001

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,869.95' @ 13.01 hrs Surf.Area= 87,990 sf Storage= 162,572 cf

Plug-Flow detention time= 332.3 min calculated for 11.913 af (100% of inflow)

Center-of-Mass det. time= 332.0 min ( 1,259.5 - 927.5 )

Volume	Inve	rt Avail.Sto	rage Storage	Description	
#1	1,868.0	0' 560,09	97 cf Custom	Stage Data (Prisr	natic) Listed below (Recalc)
Elevation (feet 1,868.00 1,869.00 1,870.00	) ) ) )	Surf.Area (sq-ft) 79,525 83,329 88,249	Inc.Store (cubic-feet) 0 81,427 85,789	Cum.Store (cubic-feet) 0 81,427 167,216	
1,872.00 1,874.00		98,164 108,304	186,413 206,468	353,629 560,097	
•	Routing	Invert	Outlet Device	es	
#1	Primary	1,865.00'	Inlet / Outlet	k, headwall w/3 squ Invert= 1,865.00' / ′	nare edges, Ke= 0.500 1,864.50' S= 0.0167 '/' Cc= 0.900 th interior, Flow Area= 9.62 sf
#2	Device 1	1,869.10'	20.0" W x 12	·	<b>Grate X 4.00</b> C= 0.600
#3	Device 1	1,870.50'		Horiz. Orifice/Gra	

Limited to weir flow at low heads

0.780 in/hr Exfiltration over Surface area

**Discarded OutFlow** Max=1.59 cfs @ 13.01 hrs HW=1,869.95' (Free Discharge) **4=Exfiltration** (Exfiltration Controls 1.59 cfs)

**Primary OutFlow** Max=16.69 cfs @ 13.01 hrs HW=1,869.95' (Free Discharge)

**1=Culvert** (Passes 16.69 cfs of 82.83 cfs potential flow)

1,868.00'

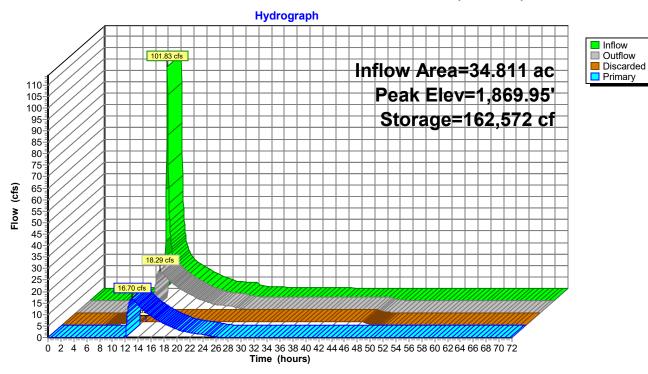
2=Orifice/Grate (Orifice Controls 16.69 cfs @ 2.95 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

#4

Discarded

#### (POI 001) Pond 8P: BIO-RETENTION BASIN #5A



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## Summary for Pond 9P: seepage pit with chambers #5A

Inflow Area = 6.084 ac,100.00% Impervious, Inflow Depth = 8.16" for 100-Year event 70.99 cfs @ 11.96 hrs, Volume= Inflow 4.137 af Outflow 3.61 cfs @ 12.92 hrs, Volume= 4.137 af, Atten= 95%, Lag= 57.3 min Discarded = 1.28 cfs @ 8.60 hrs, Volume= 3.190 af 0.947 af Primary 2.33 cfs @ 12.92 hrs, Volume= Routed to Pond 8P: BIO-RETENTION BASIN #5A (POI 001)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,879.00' @ 12.92 hrs Surf.Area= 42,456 sf Storage= 89,570 cf

Plug-Flow detention time= 367.1 min calculated for 4.137 af (100% of inflow) Center-of-Mass det. time= 367.0 min (1,103.4 - 736.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,876.00'	40,538 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
40	4 070 501	00 470 -	169,824 cf Overall - 68,478 cf Embedded = 101,346 cf x 40.0% Voids
#2	1,876.50'	68,478 CT	<b>Cultec R-360HD</b> x 1862 Inside #1 Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			1862 Chambers in 19 Rows
			Cap Storage= 6.5 cf x 2 x 19 rows = 245.5 cf
		109,016 cf	Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,876.00	42,456	0	0
1,880.00	42,456	169,824	169,824

Device	Routing	Invert	Outlet Devices
#1	Primary	1,876.00'	24.0" Round Culvert
			L= 120.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,876.00' / 1,868.00' S= 0.0667 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,877.80'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,876.00'	1.300 in/hr Exfiltration over Surface area

**Discarded OutFlow** Max=1.28 cfs @ 8.60 hrs HW=1,876.04' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 1.28 cfs)

Primary OutFlow Max=2.33 cfs @ 12.92 hrs HW=1,879.00' TW=1,869.56' (Fixed TW Elev= 1,869.56')

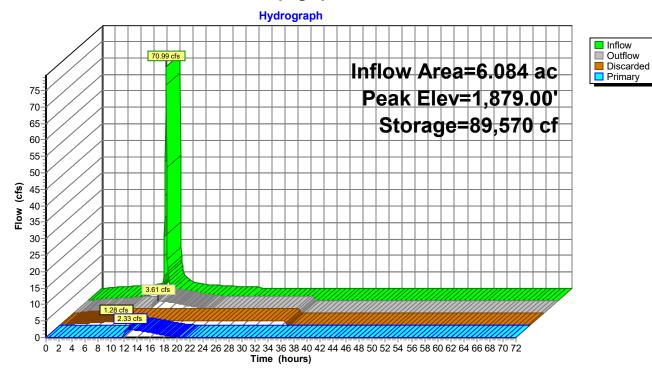
1=Culvert (Passes 2.33 cfs of 18.85 cfs potential flow)

2=Orifice/Grate (Orifice Controls 2.33 cfs @ 4.67 fps)

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# Pond 9P: seepage pit with chambers #5A



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## Summary for Pond 13P: bio-retention basin #4a

Inflow Area = 2.695 ac, 0.00% Impervious, Inflow Depth = 3.64" for 100-Year event

Inflow 9.73 cfs @ 12.17 hrs, Volume= 0.817 af

Outflow 3.87 cfs @ 12.51 hrs, Volume= 0.817 af, Atten= 60%, Lag= 20.1 min

Discarded = 0.14 cfs @ 12.51 hrs, Volume= 0.459 af Primary 3.73 cfs @ 12.51 hrs, Volume= 0.357 af

Routed to Reach 23R: SWL-4

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,894.17' @ 12.51 hrs Surf.Area= 7,826 sf Storage= 14,466 cf

Plug-Flow detention time= 595.4 min calculated for 0.817 af (100% of inflow)

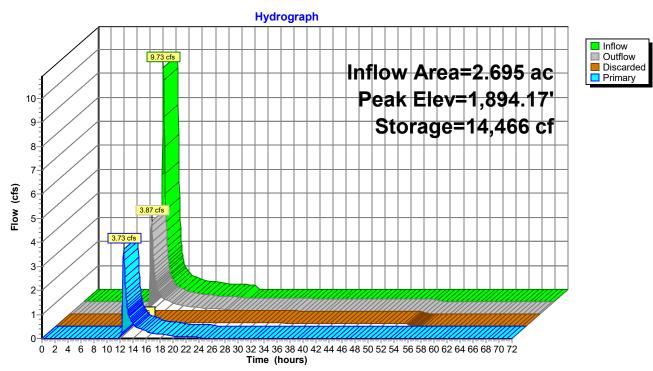
Center-of-Mass det. time= 595.1 min (1,451.6 - 856.5)

Volume	Invert	Avail.Sto	rage Storage D	Description	
#1	1,892.00'	30,7	34 cf Custom \$	Stage Data (Pr	ismatic) Listed below (Recalc)
Elevation (feet		ırf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,892.0	0	5,542	0	0	
1,894.0	0	7,636	13,178	13,178	
1,896.0	0	9,920	17,556	30,734	
Device	Routing	Invert	Outlet Devices		
#1	Discarded	1,892.00'	0.800 in/hr Exf	filtration over	Surface area
#2	Primary	1,894.00'	20.0' long + 3.	.0 '/' SideZ x 2	20.0' breadth Broad-Crested Rectangular Weir
	_		Head (feet) 0.2	20 0.40 0.60	0.80 1.00 1.20 1.40 1.60
			Coef. (English)	2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.14 cfs @ 12.51 hrs HW=1,894.17' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=3.67 cfs @ 12.51 hrs HW=1,894.17' (Free Discharge) 2=Broad-Crested Rectangular Weir (Weir Controls 3.67 cfs @ 1.08 fps)

## Pond 13P: bio-retention basin #4a



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## Summary for Pond 14P: seepage pit with chambers #5F

Inflow Area = 7.817 ac, 99.88% Impervious, Inflow Depth = 8.16" for 100-Year event 91.21 cfs @ 11.96 hrs, Volume= Inflow 5.316 af Outflow 4.63 cfs @ 12.92 hrs, Volume= 5.316 af, Atten= 95%, Lag= 57.5 min Discarded = 2.24 cfs @ 9.85 hrs, Volume= 4.343 af Primary 2.39 cfs @ 12.92 hrs, Volume= 0.972 af Routed to Pond 8P: BIO-RETENTION BASIN #5A (POI 001)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,871.24' @ 12.92 hrs Surf.Area= 56,925 sf Storage= 108,429 cf

Plug-Flow detention time= 268.8 min calculated for 5.316 af (100% of inflow) Center-of-Mass det. time= 268.8 min (1,005.1 - 736.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,868.50'	56,160 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			227,700 cf Overall - 87,300 cf Embedded = 140,400 cf x 40.0% Voids
#2	1,869.00'	87,300 cf	<b>Cultec R-360HD</b> x 2376 Inside #1
			Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			2376 Chambers in 18 Rows
			Cap Storage= 6.5 cf x 2 x 18 rows = 232.6 cf
		143,460 cf	Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,868.50	56,925	0	0
1,872.50	56,925	227,700	227,700

Device	Routing	Invert	Outlet Devices
#1	Primary	1,869.50'	24.0" Round Culvert
			L= 60.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,869.50' / 1,868.00' S= 0.0250 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,870.00'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,868.50'	1.700 in/hr Exfiltration over Surface area

**Discarded OutFlow** Max=2.24 cfs @ 9.85 hrs HW=1,868.54' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 2.24 cfs)

Primary OutFlow Max=2.39 cfs @ 12.92 hrs HW=1,871.24' TW=1,869.56' (Fixed TW Elev= 1,869.56')

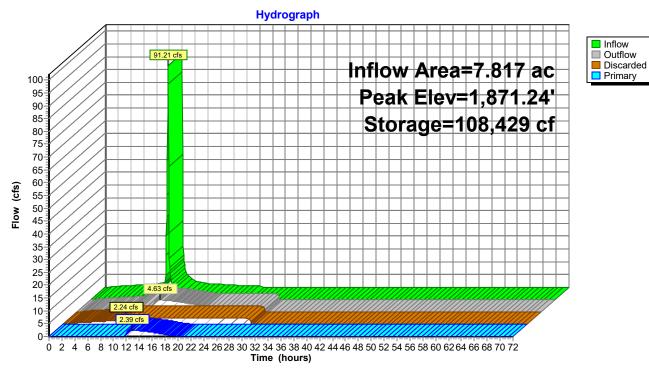
1=Culvert (Passes 2.39 cfs of 11.50 cfs potential flow)

2=Orifice/Grate (Orifice Controls 2.39 cfs @ 4.78 fps)

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# Pond 14P: seepage pit with chambers #5F



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## Summary for Pond 15P: seepage pit with chambers #4b

Inflow Area = 1.404 ac, 93.45% Impervious, Inflow Depth = 7.92" for 100-Year event

Inflow = 16.29 cfs @ 11.96 hrs, Volume= 0.927 af

Outflow = 3.00 cfs @ 12.16 hrs, Volume= 0.927 af, Atten= 82%, Lag= 11.8 min

Discarded = 0.22 cfs @ 7.85 hrs, Volume= 0.526 af Primary = 2.78 cfs @ 12.16 hrs, Volume= 0.400 af

Routed to Reach 23R: SWL-4

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,889.99' @ 12.16 hrs Surf.Area= 12,000 sf Storage= 17,989 cf

Plug-Flow detention time= 227.6 min calculated for 0.926 af (100% of inflow)

Center-of-Mass det. time= 227.8 min ( 975.3 - 747.4 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,887.00'	16,609 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			48,000 cf Overall - 6,477 cf Embedded = 41,523 cf x 40.0% Voids
#2	1,887.50'	6,477 cf	<b>Cultec R-360HD</b> x 175 Inside #1
			Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			175 Chambers in 5 Rows
			Cap Storage= 6.5 cf x 2 x 5 rows = 64.6 cf
			· -

23,086 cf Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,887.00	12,000	0	0
1,891.00	12,000	48,000	48,000

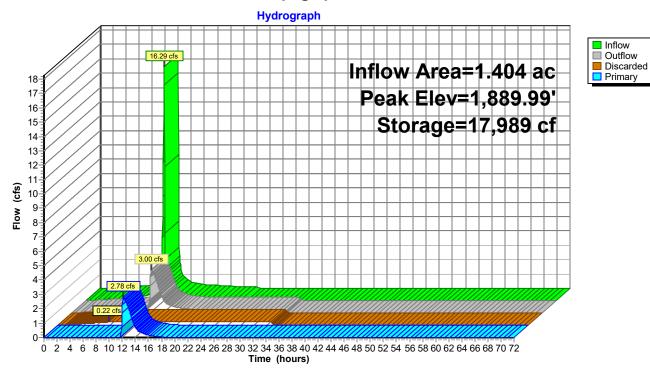
Device	Routing	Invert	Outlet Devices
#1	Primary	1,887.00'	24.0" Round Culvert
			L= 50.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,887.00' / 1,886.00' S= 0.0200 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,888.40'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,887.00'	0.800 in/hr Exfiltration over Surface area

**Discarded OutFlow** Max=0.22 cfs @ 7.85 hrs HW=1,887.04' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 0.22 cfs)

Primary OutFlow Max=2.78 cfs @ 12.16 hrs HW=1,889.98' (Free Discharge)

-1=Culvert (Passes 2.78 cfs of 18.80 cfs potential flow)
-2=Orifice/Grate (Orifice Controls 2.78 cfs @ 5.55 fps)

Pond 15P: seepage pit with chambers #4b



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## Summary for Pond 16P: seepage pit with chambers #3A

Inflow Area = 4.089 ac, 57.74% Impervious, Inflow Depth = 5.88" for 100-Year event

Inflow = 39.88 cfs @ 11.97 hrs, Volume= 2.004 af

Outflow = 3.04 cfs @ 12.55 hrs, Volume= 2.004 af, Atten= 92%, Lag= 35.0 min

Discarded = 0.55 cfs @ 10.05 hrs, Volume= 1.093 af Primary = 2.49 cfs @ 12.55 hrs, Volume= 0.911 af

Routed to Pond 26P: bio-retention basin #3b

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,903.32' @ 12.55 hrs Surf.Area= 26,640 sf Storage= 43,007 cf

Plug-Flow detention time= 264.4 min calculated for 2.003 af (100% of inflow)

Center-of-Mass det. time= 264.6 min (1,064.8 - 800.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,901.00'	26,373 cf	<b>O</b> ( )
			106,560 cf Overall - 40,628 cf Embedded = 65,932 cf x 40.0% Voids
#2	1,901.50'	40,628 cf	<b>Cultec R-360HD</b> x 1102 Inside #1
			Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf
			Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap
			1102 Chambers in 19 Rows
			Cap Storage= 6.5 cf x 2 x 19 rows = 245.5 cf

67,001 cf Total Available Storage

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
1,901.00	26,640	0	0
1,905.00	26,640	106,560	106,560

Device	Routing	Invert	Outlet Devices
#1	Primary	1,901.00'	24.0" Round Culvert
			L= 120.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 1,901.00' / 1,898.00' S= 0.0250 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	1,902.00'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
			Limited to weir flow at low heads
#3	Discarded	1,901.00'	0.900 in/hr Exfiltration over Surface area

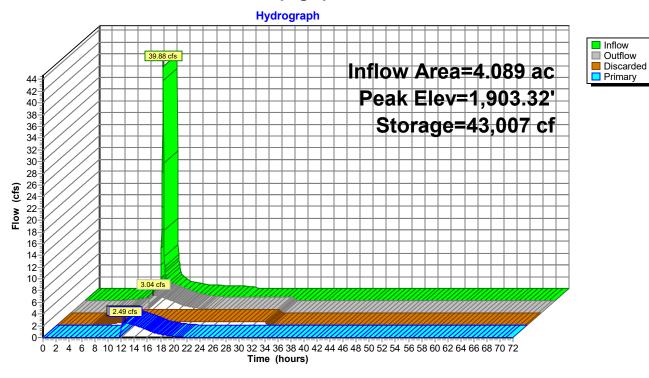
**Discarded OutFlow** Max=0.55 cfs @ 10.05 hrs HW=1,901.04' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 0.55 cfs)

Primary OutFlow Max=2.49 cfs @ 12.55 hrs HW=1,903.32' (Free Discharge)

**1=Culvert** (Passes 2.49 cfs of 15.34 cfs potential flow) **2=Orifice/Grate** (Orifice Controls 2.49 cfs @ 4.97 fps)

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# Pond 16P: seepage pit with chambers #3A



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## Summary for Pond 24P: bio-retention basin #6a

Inflow Area = 1.953 ac, 57.30% Impervious, Inflow Depth = 5.40" for 100-Year event

Inflow = 17.77 cfs @ 11.97 hrs, Volume= 0.880 af

Outflow = 2.25 cfs @ 12.28 hrs, Volume= 0.879 af, Atten= 87%, Lag= 18.7 min

Primary = 2.25 cfs @ 12.28 hrs, Volume= 0.879 af

Routed to Reach 27R: SWL-2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,924.58' @ 12.28 hrs Surf.Area= 8,484 sf Storage= 18,034 cf

Plug-Flow detention time= 157.3 min calculated for 0.879 af (100% of inflow)

Center-of-Mass det. time= 158.6 min ( 967.7 - 809.1 )

Volume	Inve	rt Avail.Sto	rage Storage D	Description	
#1	1,922.0	0' 31,3	52 cf Custom S	Stage Data (Pri	ismatic) Listed below (Recalc)
Elevatio	t)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,922.0		5,567	0	0	
1,924.0	0	7,781	13,348	13,348	
1,926.0	00	10,223	18,004	31,352	
Device	Routing	Invert	Outlet Devices		
#1	Primary	1,922.00'	24.0" Round (	Culvert	
"		.,	L= 50.0' CPP, Inlet / Outlet In n= 0.013 Corru	, mitered to cor vert= 1,922.00' ugated PE, smo	nform to fill, Ke= 0.700 / 1,920.25' S= 0.0350 '/' Cc= 0.900 poth interior, Flow Area= 3.14 sf
#2	Device 1	1,922.00'	6.0" Vert. Orifi	ce/Grate C=	0.600 Limited to weir flow at low heads
#3	Device 1	1,924.50'	<b>45.0" x 24.0" F</b> Limited to weir		irate C= 0.600 ads

Primary OutFlow Max=2.23 cfs @ 12.28 hrs HW=1,924.58' (Free Discharge)

**1=Culvert** (Passes 2.23 cfs of 16.75 cfs potential flow)

2=Orifice/Grate (Orifice Controls 1.44 cfs @ 7.34 fps)

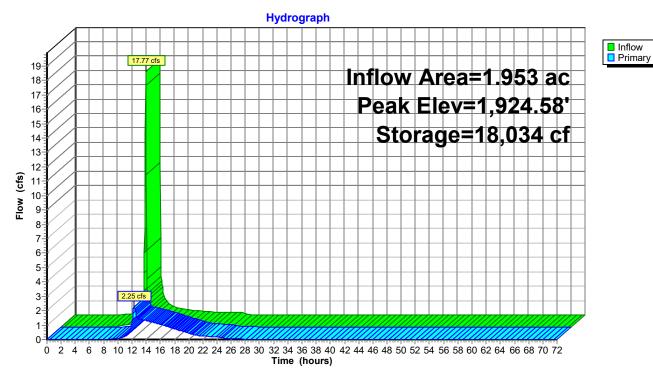
-3=Orifice/Grate (Weir Controls 0.78 cfs @ 0.90 fps)

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#### Pond 24P: bio-retention basin #6a



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## Summary for Pond 26P: bio-retention basin #3b

Inflow Area = 14.187 ac, 33.20% Impervious, Inflow Depth = 3.94" for 100-Year event

Inflow = 40.51 cfs @ 12.26 hrs, Volume= 4.660 af

Outflow = 1.45 cfs @ 19.24 hrs, Volume= 4.660 af, Atten= 96%, Lag= 418.8 min

Discarded = 0.97 cfs @ 19.24 hrs, Volume= 3.511 af Primary = 0.48 cfs @ 19.24 hrs, Volume= 1.150 af

Routed to Link 37L: Discharge 001

Invert

Volume

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,896.05' @ 19.24 hrs Surf.Area= 35,078 sf Storage= 144,709 cf

Plug-Flow detention time= 1,136.0 min calculated for 4.657 af (100% of inflow)

Avail Storage Storage Description

Center-of-Mass det. time= 1,136.9 min ( 1,993.4 - 856.5 )

VOIGITIC	IIIVCIL	Avaii.0t0	rage Ciorage	Description	
#1	1,891.00'	218,37	79 cf Custom	Stage Data (Pris	smatic) Listed below (Recalc)
Elevation		urf.Area	Inc.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)	
1,891.0	00	22,485	0	0	
1,892.0	00	24,866	23,676	23,676	
1,894.0	00	29,797	54,663	78,339	
1,896.0	00	34,953	64,750	143,089	
1,898.0	00	40,337	75,290	218,379	
Davisas	Davitina	lan comb	Outlet Davies	_	
Device	Routing	Invert	Outlet Devices	<u> </u>	
#1	Primary	1,891.00'	24.0" Round	Culvert	
			L= 120.0' CF	PP, mitered to cor	nform to fill, Ke= 0.700
			Inlet / Outlet In	nvert= 1,891.00' <i>i</i>	/ 1,889.80' S= 0.0100 '/' Cc= 0.900
			n= 0.013 Cor	rugated PE, smo	oth interior, Flow Area= 3.14 sf
#2	Device 1	1,892.00'	3.0" Horiz. Or	rifice/Grate C=	0.600 Limited to weir flow at low heads
#3	Discarded	1,891.00'	1.200 in/hr Ex	cfiltration over S	urface area
#4	Device 1	1,896.60'	45.0" x 24.0"	Horiz. Orifice/Gi	rate C= 0.600
			Limited to wei	r flow at low head	ds

**Discarded OutFlow** Max=0.97 cfs @ 19.24 hrs HW=1,896.05' (Free Discharge) **3=Exfiltration** (Exfiltration Controls 0.97 cfs)

Primary OutFlow Max=0.48 cfs @ 19.24 hrs HW=1,896.05' (Free Discharge)

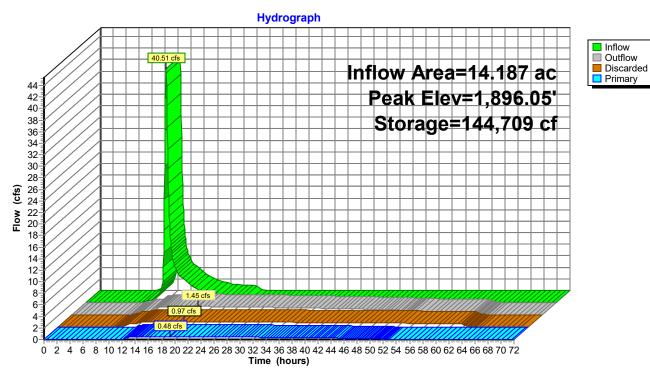
1=Culvert (Passes 0.48 cfs of 26.85 cfs potential flow)

**2=Orifice/Grate** (Orifice Controls 0.48 cfs @ 9.69 fps)

4=Orifice/Grate (Controls 0.00 cfs)

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#### Pond 26P: bio-retention basin #3b



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## Summary for Pond 29P: bio-retention basin #1A

Inflow Area = 3.056 ac, 64.73% Impervious, Inflow Depth = 6.60" for 100-Year event

Inflow = 32.42 cfs @ 11.96 hrs, Volume= 1.681 af

Outflow = 2.19 cfs @ 12.61 hrs, Volume= 1.675 af, Atten= 93%, Lag= 38.6 min

Primary = 2.19 cfs @ 12.61 hrs, Volume= 1.675 af

Routed to Pond 38P: bio-retention basin #2A

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,940.57' @ 12.61 hrs Surf.Area= 19,639 sf Storage= 41,425 cf

Plug-Flow detention time= 365.8 min calculated for 1.675 af (100% of inflow)

Center-of-Mass det. time= 363.4 min (1,149.0 - 785.6)

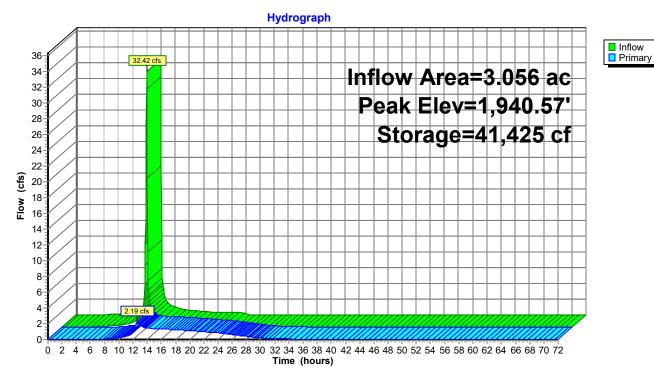
Volume	Inve	ert Avail.Sto	rage Storage	Description	
#1	1,938.0	00' 72,3	34 cf Custon	n Stage Data (Pr	ismatic) Listed below (Recalc)
Elevatio (fee 1,938.0 1,940.0	<u>t)</u> 00	Surf.Area (sq-ft) 12,620 18,027	Inc.Store (cubic-feet) 0 30,647	Cum.Store (cubic-feet) 0 30,647	
1,942.0		23,660	41,687	72,334	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	1,936.00'	Inlet / Outlet	P, mitered to cor Invert= 1,936.00'	nform to fill, Ke= 0.700 //1,934.00' S= 0.0235 '/' Cc= 0.900 ooth interior, Flow Area= 3.14 sf
#2 #3	Device 1 Device 1	1,938.00' 1,940.50'	6.0" Vert. Or 45.0" x 24.0"	•	0.600 Limited to weir flow at low heads  Grate C= 0.600

**Primary OutFlow** Max=2.17 cfs @ 12.61 hrs HW=1,940.57' TW=1,936.57' (Fixed TW Elev= 1,936.57') **1=Culvert** (Passes 2.17 cfs of 25.23 cfs potential flow)

2=Orifice/Grate (Orifice Controls 1.44 cfs @ 7.34 fps)

—3=Orifice/Grate (Weir Controls 0.73 cfs @ 0.88 fps)

#### Pond 29P: bio-retention basin #1A



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## Summary for Pond 38P: bio-retention basin #2A

Inflow Area = 4.593 ac, 65.01% Impervious, Inflow Depth > 6.58" for 100-Year event

Inflow = 17.49 cfs @ 11.97 hrs, Volume= 2.520 af

Outflow = 16.60 cfs @ 12.00 hrs, Volume= 2.519 af, Atten= 5%, Lag= 1.8 min

Primary = 16.60 cfs @ 12.00 hrs, Volume= 2.519 af

Routed to Pond 40P: bio-retention basin #2C

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 1,936.57' @ 12.00 hrs Surf.Area= 4,973 sf Storage= 10,737 cf

Plug-Flow detention time= 107.8 min calculated for 2.517 af (100% of inflow)

Center-of-Mass det. time= 106.9 min (1,134.0 - 1,027.1)

Volume	Inve	ert Avail.Sto	rage Storage	Description	
#1	1,933.0	00' 19,0	68 cf Custom	Stage Data (Pr	rismatic) Listed below (Recalc)
Elevatio		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
1,933.0	00	1,159	0	0	
1,934.0	00	2,148	1,654	1,654	
1,936.0	00	4,297	6,445	8,099	
1,938.0	00	6,672	10,969	19,068	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	1,933.00'	24.0" Round	Culvert	
	•	,	Inlet / Outlet I	nvert= 1,933.00	onform to fill, Ke= 0.700 ' / 1,931.70' S= 0.0113 '/' Cc= 0.900 ooth interior, Flow Area= 3.14 sf
#2	Device 1	1,933.00'		,	0.600 Limited to weir flow at low heads
#3	Device 1	1,936.00'		Horiz. Orifice/O	Grate C= 0.600 ads

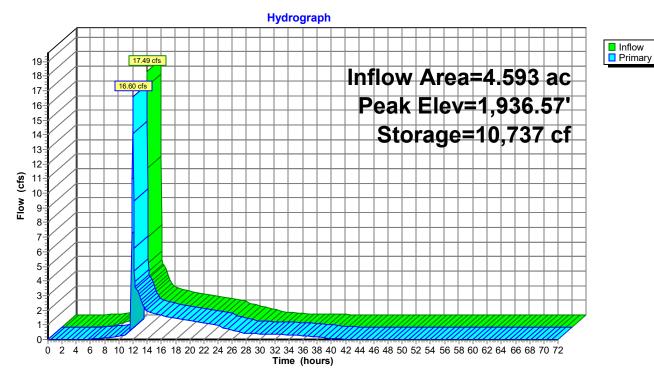
**Primary OutFlow** Max=16.42 cfs @ 12.00 hrs HW=1,936.57' (Free Discharge)

**1=Culvert** (Passes 16.42 cfs of 21.38 cfs potential flow)

**—2=Orifice/Grate** (Orifice Controls 0.44 cfs @ 8.93 fps)

-3=Orifice/Grate (Weir Controls 15.98 cfs @ 2.46 fps)

#### Pond 38P: bio-retention basin #2A



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## Summary for Pond 39P: bio-retention basin #2B

Inflow Area = 0.992 ac, 60.28% Impervious, Inflow Depth = 6.36" for 100-Year event

Inflow = 10.26 cfs @ 11.96 hrs, Volume= 0.526 af

Outflow = 0.93 cfs @ 12.45 hrs, Volume= 0.524 af, Atten= 91%, Lag= 29.2 min

Primary = 0.93 cfs @ 12.45 hrs, Volume= 0.524 af

Routed to Reach 26R: SWL-1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,917.22' @ 12.45 hrs Surf.Area= 10,359 sf Storage= 11,987 cf

Plug-Flow detention time= 226.6 min calculated for 0.524 af (100% of inflow)

Center-of-Mass det. time= 224.3 min (1,015.0 - 790.7)

Volume	Inve	ert Avail.Sto	rage Storage [	Description	
#1	1,916.0	00' 44,18	80 cf Custom 9	Stage Data (Pr	ismatic) Listed below (Recalc)
Elevatio (fee 1,916.0 1,918.0 1,920.0	t) 00 00	Surf.Area (sq-ft) 9,337 11,016 12,811	Inc.Store (cubic-feet) 0 20,353 23,827	Cum.Store (cubic-feet) 0 20,353 44,180	
Device	Routing	Invert	Outlet Devices		
#1	Primary	1,916.00'	24.0" Round		
#2 #3	Device 1 Device 1	,	Inlet / Outlet In n= 0.013 Corr 6.0" Vert. Orifi	vert= 1,916.00 ugated PE, smale ice/Grate C= Horiz. Orifice/G	nform to fill, Ke= 0.700 1/1,914.00' S= 0.0400'/' Cc= 0.900 ooth interior, Flow Area= 3.14 sf 0.600 Limited to weir flow at low heads Grate C= 0.600 ads

Primary OutFlow Max=0.93 cfs @ 12.45 hrs HW=1,917.22' (Free Discharge)

-1=Culvert (Passes 0.93 cfs of 6.63 cfs potential flow)

**2=Orifice/Grate** (Orifice Controls 0.93 cfs @ 4.74 fps)

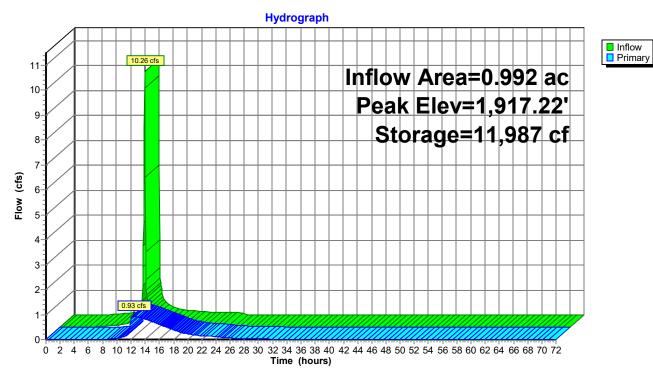
-3=Orifice/Grate (Controls 0.00 cfs)

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#### Pond 39P: bio-retention basin #2B



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## Summary for Pond 40P: bio-retention basin #2C

Inflow Area = 6.417 ac, 63.99% Impervious, Inflow Depth = 6.55" for 100-Year event

Inflow = 35.33 cfs @ 11.98 hrs, Volume= 3.504 af

Outflow = 14.40 cfs @ 12.11 hrs, Volume= 3.499 af, Atten= 59%, Lag= 8.1 min

Primary = 14.40 cfs @ 12.11 hrs, Volume= 3.499 af

Routed to Reach 26R: SWL-1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 1,933.16' @ 12.11 hrs Surf.Area= 13,888 sf Storage= 24,182 cf

Plug-Flow detention time= 56.5 min calculated for 3.499 af (100% of inflow)

Center-of-Mass det. time= 52.5 min (1,089.3 - 1,036.8)

rage Description	rage Storaç	t Avail.Sto	Inver	Volume
stom Stage Data (Prismatic) Listed below (Recalc)	80 cf Custo	0' 36,68	1,931.00	#1
	Inc.Store (cubic-feet)	Surf.Area (sg-ft)	_	Elevatio
0 0	Ó	8,511		1,931.0
1 9,731	9,731	10,950		1,932.0
9 36,680	26,949	15,999		1,934.0
evices	Outlet Devi	Invert	Routing	Device
ound Culvert	24.0" Rour	1,931.00'	Primary	#1
CPP, mitered to conform to fill, Ke= 0.700				
	-	1,931.00'	Device 1	#2
		4 000 001	5 d	110
		1,932.00	Jevice 1	#3
0 0 61 9,731 9 36,680 evices	0 9,731 26,949 Outlet Devide 24.0" Rour L= 35.0' C Inlet / Outle n= 0.013 C 12.0" W x 4 Limited to w 45.0" x 24.0	10,950 15,999 Invert	Routing	1,931.0 1,932.0 1,934.0 Device

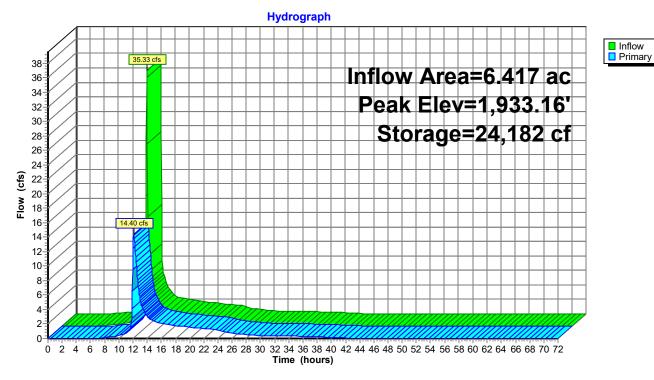
**Primary OutFlow** Max=14.34 cfs @ 12.11 hrs HW=1,933.15' (Free Discharge)

-1=Culvert (Inlet Controls 14.34 cfs @ 4.56 fps)

**—2=Orifice/Grate** (Passes < 6.79 cfs potential flow)

-3=Orifice/Grate (Passes < 38.79 cfs potential flow)

## Pond 40P: bio-retention basin #2C



Total Tributary Area to 001

Type II 24-hr 100-Year Rainfall=8.40"

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Inflow Primary

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## Summary for Link 37L: Discharge 001

Inflow Area = 57.053 ac, 50.73% Impervious, Inflow Depth = 2.17" for 100-Year event

Inflow = 25.39 cfs @ 12.12 hrs, Volume= 10.335 af

Primary = 25.39 cfs @ 12.12 hrs, Volume= 10.335 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

## Link 37L: Discharge 001

