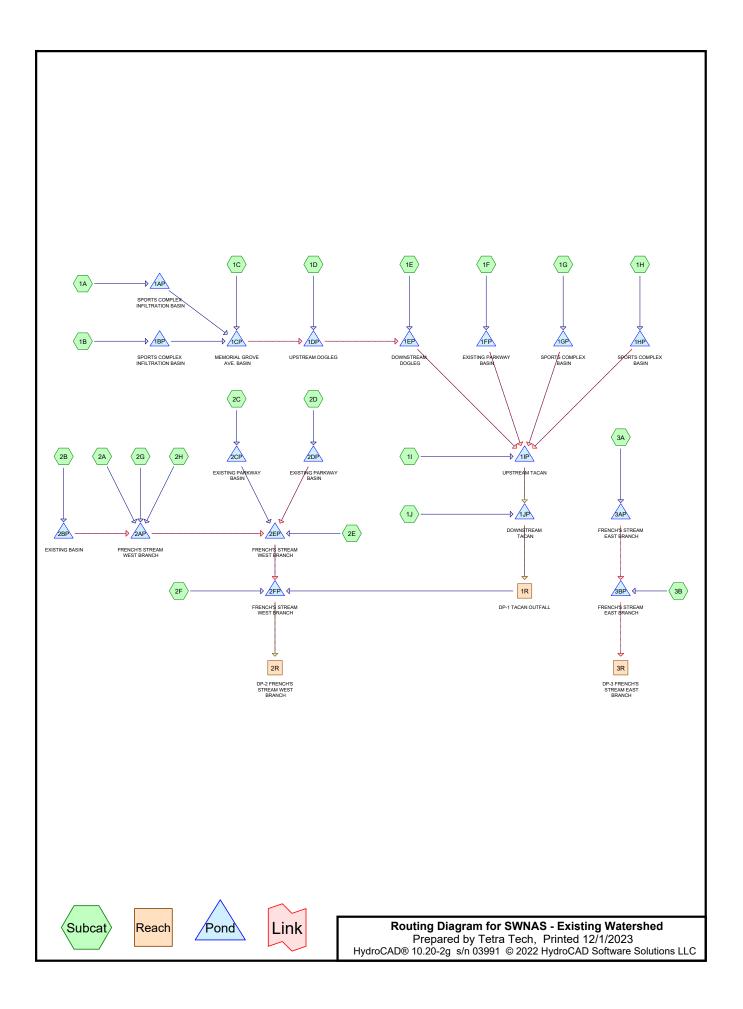
Appendix C

Stormwater Management Supporting Documentation

Stormwater Management Attachment 1: Pre-Development HydroCAD Report



SWNAS - Existing Watershed Prepared by Tetra Tech HydroCAD® 10.20-2g s/n 03991 © 2022 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area	CN	Description				
(acres)		(subcatchment-numbers)				
50.470	39	>75% Grass cover, Good, HSG A (1A, 1B, 1C, 1D, 1I, 2C, 2D, 2E)				
117.200	61	>75% Grass cover, Good, HSG B (1E, 1F, 1I, 2A, 2F, 2G, 2H, 3B)				
62.430	74	>75% Grass cover, Good, HSG C (1C, 1D, 1F, 1I, 2A, 2B, 2C, 2D)				
32.810	80	>75% Grass cover, Good, HSG D (1C, 1D, 1G, 1H, 1I, 2E, 2F, 3B)				
1.080	85	Artificial Turf (1G, 1H)				
1.560	30	Brush, Good, HSG A (1C, 1D, 1I)				
24.380	48	Brush, Good, HSG B (1I, 1J)				
0.990	65	Brush, Good, HSG C (1D, 1I)				
39.550	73	Brush, Good, HSG D (1D, 1I, 1J, 3A, 3B)				
2.700	100	Open Water (1C, 1F, 1I, 3B)				
215.480	98	Pavement (1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1I, 1J, 2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H,				
		3A, 3B)				
34.380	98	Roof (2A, 2B, 2G, 2H)				
8.150	98	Roofs (1C, 1D, 1E, 1I, 2C)				
26.950	30	Woods, Good, HSG A (1C, 1D, 1I, 2A, 2E)				
51.760	55	Woods, Good, HSG B (1I, 2F, 3A, 3B)				
18.830	70	Woods, Good, HSG C (1C, 1D, 1I, 2E)				
376.010	77	Woods, Good, HSG D (1C, 1D, 1I, 2A, 2E, 2F, 3A, 3B)				
1.620	57	Woods/grass comb., Poor, HSG A (2A)				
1,066.350	75	TOTAL AREA				

Summary for Subcatchment 1A:

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Runoff 2.29 cfs @ 12.09 hrs, Volume= 0.167 af, Depth= 2.54" = Routed to Pond 1AP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription					
*	0.	710	98	Pave	Pavement					
	0.	080	39	>75%	% Grass co	over, Good	, HSG A			
	0.	790	92	Weig	phted Aver	age				
	0.	080		10.1	3% Pervio	us Area				
	0.710 89.87% Impervious Area									
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	6.0						Direct Entry,			

Summary for Subcatchment 1B:

Runoff = 2.53 cfs @ 12.09 hrs, Volume= 0.183 af, Depth= 2.45" Routed to Pond 1BP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription					
*	0.	800	98	Pave	avement					
	0.	100	39	>75%	% Grass co	over, Good	, HSG A			
	0.	900	91	Weig	phted Aver	age				
	0.	100		11.1	1% Pervio	us Area				
	0.800 88.89% Impervious Area					vious Area				
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	6.0						Direct Entry,			

Summary for Subcatchment 1C:

Assumed pipe channel has slope 0.005 since no data given

Runoff = 37.06 cfs @ 12.61 hrs, Volume= 5.728 af, Depth= 1.49" Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

	Area	(ac) C	N Desc	cription						
*	16.	950 9	98 Pave	ement						
*	2.	060 9	98 Roof	Roofs						
*	0.	750 10	00 Ope	n Water						
				Woods, Good, HSG C						
				Woods, Good, HSG D						
				h, Good, H						
					over, Good					
					over, Good					
_					over, Good	, HSG D				
				phted Aver						
		410		0% Pervio						
	19.	760	42.8	0% Imper	ious Area/					
	Тс	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Description				
	23.4	100	0.0021	0.07		Sheet Flow,				
						Grass: Short n= 0.150 P2= 3.40"				
	4.4	94	0.0026	0.36		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	7.7	252	0.0061	0.55		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	0.1	14	0.0701	1.85		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	2.9	154	0.0155	0.87		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	1.4	438	0.0050	5.09	16.00	Pipe Channel,				
						24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'				
					~~ ~~	n= 0.013 Concrete pipe, bends & connections				
	0.8	288	0.0050	5.91	29.00	Pipe Channel,				
						30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63'				
	07	005	0 0050	0.07	47.40	n= 0.013 Concrete pipe, bends & connections				
	0.7	295	0.0050	6.67	47.16	Pipe Channel,				
						36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75'				
	2.0	1 000		7 00	74 44	n= 0.013 Concrete pipe, bends & connections				
	2.9	1,299	0.0050	7.39	71.14	Pipe Channel, 42.0" Round Area= 9.6 sf Perim= 11.0' r= 0.88'				
	0.2	93	0.0050	8.08	101.57	n= 0.013 Concrete pipe, bends & connections Pipe Channel,				
	0.2	93	0.0050	0.00	101.57	48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00'				
						TO.0 NOUNU AIGA- 12.0 SI FEIIII- 12.0 I- 1.00				

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n= 0.013 Concrete pipe, bends & connections

44.5 3,027 Total

Summary for Subcatchment 1D:

Runoff = 4.42 cfs @ 14.23 hrs, Volume= Routed to Pond 1DP : UPSTREAM DOGLEG 1.767 af, Depth= 0.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 2-year Rainfall=3.40"

	Area	(aa)		orintian						
*	Area			cription						
*				ement						
				ods, Good,						
				ods, Good, ods, Good,						
				Woods, Good, HSG D Brush, Good, HSG A						
				Brush, Good, HSG A Brush, Good, HSG C						
				Brush, Good, HSG D						
						HSG A				
				>75% Grass cover, Good, HSG A >75% Grass cover, Good, HSG C						
					over, Good	•				
				ghted Aver		,				
	-	900		7% Pervio						
		470		% Impervi						
				, e importi						
	Тс	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•				
	33.5	100	0.0244	0.05	. ,	Sheet Flow,				
						Woods: Dense underbrush n= 0.800 P2= 3.40"				
	1.1	57	0.0273	0.83		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	4.5	154	0.0130	0.57		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	2.9	116	0.0173	0.66		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	5.7	307	0.0326	0.90		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	3.8	49	0.0018	0.21		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	15.7	614	0.0170	0.65		Shallow Concentrated Flow,				
	50.0	500	0.0045	0.40		Woodland Kv= 5.0 fps				
	50.2	583	0.0015	0.19		Shallow Concentrated Flow,				
	25.0	407	0.0045	0.07		Woodland Kv= 5.0 fps				
	25.0	407	0.0015	0.27		Shallow Concentrated Flow,				
	1.5	121	0.0372	1.35		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow,				
	1.5	121	0.0372	1.35		Sharlow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps				
	142.0	2 500	Total			Short Grass Fasture $r_v = r_v U \mu s$				

143.9 2,508 Total

Summary for Subcatchment 1E:

Runoff = 25.58 cfs @ 12.09 hrs, Volume= 1.817 af, Depth= 1.93" Routed to Pond 1EP : DOWNSTREAM DOGLEG

	Area (ac)	CN	Desc	cription					
*	6.3	380	98	Pave	Pavement					
*	0.9	980	98	Roof	Roofs					
	3.9	940	61	>75%	6 Grass co	over, Good	I, HSG B			
	11.300 85 Weighted Average									
	3.940 34.87% Pervious Area					us Area				
	7.360 65.13% Impervious Area					vious Area				
		Lengt		Slope	Velocity	Capacity	Description			
	(min)	(feet	:)	(ft/ft)	(ft/sec)	(cfs)				
	6.0						Direct Entry,			

Summary for Subcatchment 1F:

Runoff = 18.83 cfs @ 12.09 hrs, Volume= 1.366 af, Depth= 1.36" Routed to Pond 1FP : EXISTING PARKWAY BASIN

Area ((ac)	CN	Desc	cription						
3.3	320	98	Pave	Pavement						
0.4	410	100	Oper	Dpen Water						
3.8	880	61	>75%	75% Grass cover, Good, HSG B						
4.4	470	74	>75%	d, HSG C						
12.0	080	77	Weig	hted Aver	age					
8.3	350		69.1	2% Pervio	us Area					
3.7	3.730 30.88% Impervious Area									
Тс	lenc	nth	Slone	Velocity	Canacity	Description				
(min)			(ft/ft)	(ft/sec)	(cfs)					
6.0						Direct Entry,				
	3.3 0.4 3.8 4.4 12.0 8.3 3.7 Tc (min)	Tc Leng (min) (fee	3.320 98 0.410 100 3.880 61 4.470 74 12.080 77 8.350 3.730 Tc Length (min) (feet)	3.320 98 Pave 0.410 100 Oper 3.880 61 >759 4.470 74 >759 12.080 77 Weig 8.350 69.12 3.730 30.86 Tc Length Slope (min) (feet) (ft/ft)	3.320 98 Pavement 0.410 100 Open Water 3.880 61 >75% Grass co 4.470 74 >75% Grass co 12.080 77 Weighted Aver 8.350 69.12% Pervio 3.730 30.88% Imperv Tc Length Slope Velocity (ft/ft) (ft/sec)	3.320 98 Pavement 0.410 100 Open Water 3.880 61 >75% Grass cover, Good 4.470 74 >75% Grass cover, Good 12.080 77 Weighted Average 8.350 69.12% Pervious Area 3.730 30.88% Impervious Area Tc Length Slope Velocity Capacity (min) (feet) (ft/ft) (ft/sec) (cfs)				

Summary for Subcatchment 1G:

Runoff = 5.30 cfs @ 12.39 hrs, Volume= 0.67 Routed to Pond 1GP : SPORTS COMPLEX BASIN

0.673 af, Depth= 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 2-year Rainfall=3.40"

_	Area	(ac) C	N Des	cription		
*	1.	850 9	8 Pave	ement		
*	0.	990 8	35 Artifi	icial Turf		
	0.	340 8	30 >75	% Grass c	over, Good	, HSG D
	3.	180 9	92 Weig	ghted Aver	age	
	1.	330		2% Pervio	•	
		850	58.1	8% Imperv	/ious Area	
				•		
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·
	26.5					Direct Entry, Artificial Turf
	1.8	346	0.0050	3.21	2.52	Pipe Channel,
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Corrugated PE, smooth interior
	0.6	116	0.0050	3.21	2.52	Pipe Channel,
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Corrugated PE, smooth interior
	0.0	11	0.0900	13.61	10.69	Pipe Channel,
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Concrete pipe, bends & connections
	0.2	40	0.0050	4.20	7.43	• •
						18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	0.1	18	0.0050	4.20	7.43	Pipe Channel,
						18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	20.2	531	Total			

29.2 531 Total

Summary for Subcatchment 1H:

Runoff = 4.04 cfs @ 12.08 hrs, Volume= 0.301 af, Depth= 2.74" Routed to Pond 1HP : SPORTS COMPLEX BASIN

	Area ((ac)	CN	Desc	cription						
*	1.0	000	98	Pave	Pavement						
*	0.0	090	85	Artifi	vrtificial Turf						
_	0.2	230	80 >75% Grass cover, Good, HSG D								
	1.320 94 Weighted Average										
	0.320 24.24% Pervious Area										
	1.0	1.000 75.76% Impervious Area									
	Tc (min)	Lengt (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
	6.0						Direct Entry,				

Summary for Subcatchment 1I:

Runoff = 138.80 cfs @ 13.50 hrs, Volume= Routed to Pond 1IP : UPSTREAM TACAN 36.843 af, Depth= 1.42"

	Area	(ac)	CN	N Desc	cription						
*	111.	920	98	B Pave	ement						
*	3.	230	98	B Roof	s						
*	0.	140	100) Opei	n Water						
	0.	900	30) Woo	ds, Good,	HSG A					
		660	55		ds, Good,						
	-	630	70		ds, Good,						
		120	77		Woods, Good, HSG D						
		850	30		Brush, Good, HSG A						
		070	48		Brush, Good, HSG B						
	0.830 65 Brush, Good, HS										
		050	73		h, Good, H						
		020	39			over, Good					
	56.110 61 >75% Grass cover, G										
						over, Good					
		090	80			over, Good	, HSG D				
	310.		78		phted Aver						
	195.				2% Pervio						
	115.	290		37.0	8% Imper	vious Area					
	Та	امم	.+6	Clana	Valaaitu	Consoitu	Description				
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
						(015)					
	47.9	1	00	0.0100	0.03		Sheet Flow,				
	00 E	e	40	0 0000	0.47		Woods: Dense underbrush n= 0.800 P2= 3.40"				
	22.5	0	40	0.0090	0.47		Shallow Concentrated Flow,				
	22 E	1.0	05	0.0100	0 50		Woodland Kv= 5.0 fps				
	33.5	1,0	05	0.0100	0.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps				
	102.0	4 7	45	Tatal							
	103.9	1,74	40	Total							

Summary for Subcatchment 1J:

Runoff = 5.24 cfs @ 12.41 hrs, Volume= Routed to Pond 1JP : DOWNSTREAM TACAN 0.811 af, Depth= 0.53"

	Area	(ac)	CN	l Dese	cription		
*	3.	780	98	B Pave	ement		
	12.	310	48	Brus	h, Good, H	ISG B	
	2.	320	73	3 Brus	h, Good, H	ISG D	
18.410 61 Weighted Average						age	
14.630 79.47% Pervious Area						us Area	
3.780 20.53% Impervious Area				20.5	3% Imperv	/ious Area	
	Тс	Leng	th	Slope	Velocity	Capacity	Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	11.7	10	00	0.0120	0.14		Sheet Flow,
							Grass: Short
	10.5	56	60	0.0160	0.89		Shallow Concentrated Flow,
_							Short Grass Pasture Kv= 7.0 fps
	22.2	66	60	Total			

Summary for Subcatchment 2A:

Runoff = 49.29 cfs @ 13.61 hrs, Volume= 14.315 af, Depth= 1.11" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

_	Area	(ac)	CN	Desc	cription					
*	4.	4.000 98 Pavement								
*	0.290 98			Roof	Roof					
	12.500 30			Woo	Woods, Good, HSG A					
	115.	050	77	Woo	Woods, Good, HSG D					
	1.	620	57	Woo	Woods/grass comb., Poor, HSG A					
	4.390 61		>75%	% Grass co	over, Good,	, HSG B				
	16.	500	74	>75%	6 Grass co	over, Good,	, HSG C			
	154.350 73		Weig	phted Aver	age					
	150.	060		97.2	2% Pervio	us Area				
	4.	290		2.78	% Impervi	ous Area				
	Тс	Lengt		Slope	Velocity	Capacity	Description			
	(min)	(feet	:)	(ft/ft)	(ft/sec)	(cfs)				
	47.9	10	0 0.	0100	0.03		Sheet Flow,			
							Woods: Dense underbrush n= 0.800 P2= 3.40"			
	37.9	1,52	50.	0180	0.67		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	11.4	48	0 0.	0100	0.70		Shallow Concentrated Flow,			
							Short Grass Pasture Kv= 7.0 fps			
	14.2	42	50.	0100	0.50		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	111.4	2,53	0 То	otal						

Summary for Subcatchment 2B:

Runoff = 125.27 cfs @ 12.08 hrs, Volume= Routed to Pond 2BP : EXISTING BASIN 9.333 af, Depth= 2.74"

	Area	(ac)	CN	Desc	Description				
*	6.	650	98	Pave	Pavement				
*	26.	600	98	Roof	Roof				
_	7.	650	50 74 >75% Grass cover, Good, HSG C						
	40.900 94 Weighted Average								
	7.650 18.70% Pervious Area					us Area			
	33.250 81.30% Impervious Area			0% Imper	ious Area/				
	Тс	Leng		Slope	Velocity	Capacity	Description		
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)			
	6.0						Direct Entry,		

Summary for Subcatchment 2C:

Runoff = 24.26 cfs @ 12.09 hrs, Volume= 1.798 af, Depth= 1.17" Routed to Pond 2CP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	Description					
*	8.	840	98	Pave	Pavement					
*	1.	680	98	Roof	Roofs					
	7.	280	39	>75%	75% Grass cover, Good, HSG A					
	0.	620	74	>75%	6 Grass co	over, Good	d, HSG C			
	18.	8.420 74 Weighted Average								
	7.	7.900 42.89% Pervious Area								
	10.	10.520 57.11% Impervious Area			1% Imperv	vious Area				
	Tc (min)	Leng		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)				
		(fee	51)	(1011)	(ivsec)	(CIS)				
	6.0						Direct Entry,			

Summary for Subcatchment 2D:

Runoff = 7.94 cfs @ 12.37 hrs, Volume= 0.993 af, Depth= 0.95" Routed to Pond 2DP : EXISTING PARKWAY BASIN

_	Area	(ac) C	N Dese	cription		
*	5.	640 9	8 Pave	ement		
	5.	310 3	39 >759	% Grass co	over, Good	, HSG A
	1.	630 7			over, Good	
	12.	580 7	70 Weid	phted Aver	ade	
		940		7% Pervio		
	-	640			ious Area	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•
	1.6	100	0.0096	1.06	. ,	Sheet Flow,
						Smooth surfaces n= 0.011 P2= 3.40"
	0.2	31	0.0112	2.15		Shallow Concentrated Flow,
						Paved Kv= 20.3 fps
	10.0	162	0.0015	0.27		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	11.3	457	0.0011	0.67		Shallow Concentrated Flow,
						Paved Kv= 20.3 fps
	0.5	43	0.0054	1.49		Shallow Concentrated Flow,
						Paved Kv= 20.3 fps
	0.3	43	0.1569	2.77		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	23.9	836	Total			

Summary for Subcatchment 2E:

Runoff = 10.25 cfs @ 13.39 hrs, Volume= 3.087 af, Depth= 0.61" Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

_	Area	(ac)	CN	Desc	cription				
*	* 3.360 98 l			Pave	Pavement				
	7.660 30		30	Woo	Woods, Good, HSG A				
	9.	500	70	Woo	Woods, Good, HSG C				
	26.	720	77	Woo	Woods, Good, HSG D				
	12.	800	39	>759	% Grass co	over, Good	, HSG A		
	0.	530	80	>759	% Grass c	over, Good	, HSG D		
60.570 63 Weighted Average									
	57.210			94.4	5% Pervio	us Area			
	3.360			5.55	% Impervi	ous Area			
	Тс	Length		Slope	Velocity	Capacity	Description		
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	30.8	100	0.	0300	0.05		Sheet Flow,		
							Woods: Dense underbrush n= 0.800 P2= 3.40"		
	59.1	1,034	ŀ 0.	0034	0.29		Shallow Concentrated Flow,		
							Woodland Kv= 5.0 fps		
	89.9	1,134	l To	otal					

Summary for Subcatchment 2F:

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38.60 cfs @ 13.15 hrs, Volume= 9.170 af, Depth= 0.89" Runoff = Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

_	Area	(ac)	CN	Desc	cription			
*	12.	830	98	Pave	ement			
	33.	890	55	Woo	ds, Good,	HSG B		
	33.300 77 Woods, Good, HSG D				ds, Good,	HSG D		
	34.	210	61			over, Good		
	8.	770	80	>75%	% Grass co	over, Good	, HSG D	
123.000 69 Weighted Average								
110.170			89.5	89.57% Pervious Area				
	12.830		10.4	3% Imper	∕ious Area			
	-					0		
	Tc	Leng		Slope	Velocity	Capacity	Description	
_	(min)	(fee	/	(ft/ft)	(ft/sec)	(cfs)		
	47.9	10	0 0	0.0100	0.03		Sheet Flow,	
	20.0	4 00		0440	0.50		Woods: Dense underbrush n= 0.800 P2= 3.40"	
	29.0	1,03	0 U	0.0140	0.59		Shallow Concentrated Flow, Woodland Kv= 5.0 fps	
	76.9	1,13	ю Т	Fotal				

Summary for Subcatchment 2G:

Assumed Tc value

Runoff = 10.95 cfs @ 13.60 hrs, Volume= 3.126 af, Depth= 2.26" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area (a	c) CN	Deso	cription				
*	6.62	20 98	B Pave	Pavement				
*	5.80	98 00	B Root	F				
_	4.14	40 6´	1 >75% Grass cover, Good, HSG B					
	16.56	16.560 89 Weighted Average						
	4.140 25.00% Pervious Area							
	12.420 75.00% Impervious Area			0% Imperv	vious Area			
	Tc L (min)	ength (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
		(ieet)	(1011)		(015)			
	120.0					Direct Entry,		

Summary for Subcatchment 2H:

Assumed Tc value

Runoff = 4.32 cfs @ 13.60 hrs, Volume= 1.244 af, Depth= 1.70" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area (ac)	CN	Desc	Description				
*	3.3	370	98	Pave	Pavement				
*	1.6	690	98	Roof	:				
	3.7	720 61 >75% Grass cover, Good, HSG B							
	8.	8.780 82 Weighted Average							
	3.7	3.720 42.37% Pervious Area							
	5.0	5.060 57.63% Impervious Area			3% Imper	ious Area			
	Та	امم	th	Clana	Valaaity	Consoity	Description		
		Leng		Slope	Velocity	Capacity	Description		
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)			
	120.0						Direct Entry,		

Summary for Subcatchment 3A:

Runoff = 34.70 cfs @ 13.05 hrs, Volume= 7.325 af, Depth= 1.42" Routed to Pond 3AP : FRENCH'S STREAM EAST BRANCH

	Area	(ac)	CN	Desc	cription		
*	5.	200	200 98 Pavement				
	0.	160	55	Woo	ds, Good,	HSG B	
	50.	970	77	Woo	ds, Good,	HSG D	
	5.	490	73	Brus	h, Good, H	ISG D	
	61.820 78 Weighted Av			ghted Aver	age		
	56.620			91.5	9% Pervio	us Area	
	5.200		8.41% Impervious Area				
	Тс	Lengt		Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	35.7	10	0.	0208	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	2.1	6	6 0.	0114	0.53		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	37.0	1,27	20.	0131	0.57		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	74.8	1,43	3 To	otal			

Summary for Subcatchment 3B:

Runoff = 51.95 cfs @ 13.44 hrs, Volume= 14.215 af, Depth= 1.29" Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

	Area	(ac)	CN	l Desc	cription				
*	9.	990	98	8 Pave	Pavement				
*	1.	400	100) Oper	n Water				
	14.	050	55	5 Woo	ds, Good,	HSG B			
	83.	920	77	' Woo	ds, Good,	HSG D			
	9.	370	73	8 Brus	h, Good, H	ISG D			
	6.	810	61			over, Good			
	6.	360	80) >75%	6 Grass co	over, Good	, HSG D		
131.900 76 Weighted Average									
	120.510 9			91.3	6% Pervio	us Area			
	11.	390		8.64	% Impervi	ous Area			
	Тс	Leng		Slope	Velocity	Capacity	Description		
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)			
	36.3	10	0	0.0200	0.05		Sheet Flow,		
							Woods: Dense underbrush n= 0.800 P2= 3.40"		
	70.7	1,50	0	0.0050	0.35		Shallow Concentrated Flow,		
							Woodland Kv= 5.0 fps		
	107.0	1,60	0	Total					

Summary for Reach 1R: DP-1 TACAN OUTFALL

 Inflow Area =
 437.470 ac, 35.83% Impervious, Inflow Depth >
 1.31" for 2-year event

 Inflow =
 64.99 cfs @
 15.18 hrs, Volume=
 47.932 af

 Outflow =
 64.99 cfs @
 15.18 hrs, Volume=
 47.932 af, Atten= 0%, Lag= 0.0 min

 Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: DP-2 FRENCH'S STREAM WEST BRANCH

Inflow Are	a =	872.630 ac, 27.98% Impervious, Inflow Depth = 1.21" for 2-year event	
Inflow	=	177.44 cfs @ 13.78 hrs, Volume= 87.973 af	
Outflow	=	177.44 cfs @ 13.78 hrs, Volume= 87.973 af, Atten= 0%, Lag= 0.0 min	I

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: DP-3 FRENCH'S STREAM EAST BRANCH

Inflow Area =	193.720 ac,	8.56% Impervious, Inflow	Depth = 1.33"	for 2-year event
Inflow =	76.28 cfs @	13.59 hrs, Volume=	21.534 af	
Outflow =	76.28 cfs @	13.59 hrs, Volume=	21.534 af, Atte	en= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area = 0.790 ac, 89.87% Impervious, Inflow Depth = 2.54" for 2-year event Inflow 2.29 cfs @ 12.09 hrs, Volume= 0.167 af = 0.78 cfs @ 12.37 hrs, Volume= Outflow = 0.167 af, Atten= 66%, Lag= 17.0 min Discarded = 0.12 cfs @ 11.44 hrs, Volume= 0.138 af Primary = 0.66 cfs @ 12.37 hrs, Volume= 0.030 af Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 170.39' @ 12.37 hrs Surf.Area= 2,201 sf Storage= 2,430 cf

Plug-Flow detention time= 125.1 min calculated for 0.167 af (100% of inflow) Center-of-Mass det. time= 125.1 min (920.7 - 795.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	168.50'	1,559 cf	24.83'W x 88.64'L x 2.33'H Field A
			5,136 cf Overall - 1,238 cf Embedded = 3,898 cf x 40.0% Voids
#2A	169.00'	1,238 cf	ADS_StormTech SC-310 +Cap x 84 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			84 Chambers in 7 Rows
#3	168.50'	85 cf	4.00'D x 6.80'H CB-Impervious
#4	175.20'	449 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
175.20	<u> </u>	0	0
176.00	300	124	124
176.50	1,000	325	449

Device	Routing	Invert	Outlet Devices
#1	Primary	170.00'	18.0" Round Culvert
	-		L= 13.0' RCP, end-section conforming to fill, Ke= 0.500
			Inlet / Outlet Invert= 170.00' / 169.85' S= 0.0115 '/' Cc= 0.900
			n= 0.013, Flow Area= 1.77 sf
#2	Discarded	168.50'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.12 cfs @ 11.44 hrs HW=168.58' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=0.66 cfs @ 12.37 hrs HW=170.39' TW=150.62' (Dynamic Tailwater) ←1=Culvert (Barrel Controls 0.66 cfs @ 2.72 fps)

Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

12 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 86.64' Row Length +12.0" End Stone x 2 = 88.64' Base Length 7 Device x 2.4.0" Wide + 6.0" Specing x 6 + 12.0" Side Stone x 2 = 24.82! Base Width

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

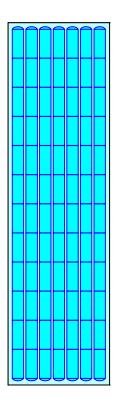
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

84 Chambers x 14.7 cf = 1,238.3 cf Chamber Storage

5,136.2 cf Field - 1,238.3 cf Chambers = 3,897.9 cf Stone x 40.0% Voids = 1,559.1 cf Stone Storage

Chamber Storage + Stone Storage = 2,797.5 cf = 0.064 afOverall Storage Efficiency = 54.5%Overall System Size = $88.64' \times 24.83' \times 2.33'$

84 Chambers 190.2 cy Field 144.4 cy Stone





Summary for Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area = 0.900 ac, 88.89% Impervious, Inflow Depth = 2.45" for 2-year event Inflow 2.53 cfs @ 12.09 hrs, Volume= 0.183 af = 0.98 cfs @ 12.33 hrs, Volume= Outflow 0.183 af, Atten= 61%, Lag= 14.4 min = Discarded = 0.13 cfs @ 11.38 hrs, Volume= 0.148 af Primary = 0.85 cfs @ 12.33 hrs, Volume= 0.035 af Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 170.82' @ 12.33 hrs Surf.Area= 2,378 sf Storage= 2,564 cf

Plug-Flow detention time= 124.3 min calculated for 0.183 af (100% of inflow) Center-of-Mass det. time= 124.3 min (924.5 - 800.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	169.00'	1,683 cf	24.83'W x 95.76'L x 2.33'H Field A
			5,549 cf Overall - 1,342 cf Embedded = 4,207 cf x 40.0% Voids
#2A	169.50'	1,342 cf	ADS_StormTech SC-310 +Cap x 91 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			91 Chambers in 7 Rows
#3	169.00'	72 cf	4.00'D x 5.70'H CB-Impervious
#4	172.70'	572 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,668 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.70	10	0	0
173.00	300	47	47
174.50	400	525	572

Device	Routing	Invert	Outlet Devices
#1	Primary	170.50'	12.0" Round Culvert X 2.00
	-		L= 23.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 170.50' / 170.20' S= 0.0130 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	169.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.13 cfs @ 11.38 hrs HW=169.06' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=0.84 cfs @ 12.33 hrs HW=170.82' TW=150.54' (Dynamic Tailwater) ←1=Culvert (Barrel Controls 0.84 cfs @ 2.85 fps)

Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTechSC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length 7 Device x 2.4.0" Wide \pm 6.0" Specing x 6 \pm 12.0" Side Stone x 2 = 24.82' Base Width

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

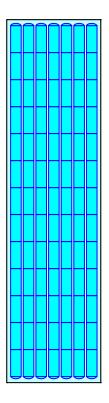
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

91 Chambers x 14.7 cf = 1,341.5 cf Chamber Storage

5,548.8 cf Field - 1,341.5 cf Chambers = 4,207.2 cf Stone x 40.0% Voids = 1,682.9 cf Stone Storage

Chamber Storage + Stone Storage = 3,024.4 cf = 0.069 afOverall Storage Efficiency = 54.5%Overall System Size = $95.76' \times 24.83' \times 2.33'$

91 Chambers 205.5 cy Field 155.8 cy Stone



Summary for Pond 1CP: MEMORIAL GROVE AVE. BASIN

Assumed slope of 0.005 for outlet culvert.

Inflow Area =	47.860 ac, 4	4.44% Impervious, Inflo	w Depth = 1.45" for 2-year event
Inflow =	37.75 cfs @	12.61 hrs, Volume=	5.793 af
Outflow =	13.43 cfs @	13.42 hrs, Volume=	5.733 af, Atten= 64%, Lag= 48.4 min
Primary =	13.43 cfs @	13.42 hrs, Volume=	5.733 af
Routed to Por	nd 1DP : UPST	REAM DOGLEG	
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af
Routed to Por	nd 1DP : UPST	REAM DOGLEG	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 151.90'@ 13.42 hrs Surf.Area= 57,158 sf Storage= 98,206 cf

Plug-Flow detention time= 195.8 min calculated for 5.732 af (99% of inflow) Center-of-Mass det. time= 190.0 min (1,067.2 - 877.2)

Volume	Invert	Avail.Sto	rage Stor	age Description	
#1	150.00'	468,17	78 cf Cus	tom Stage Data (Pr	ismatic)Listed below (Recalc)
E levietic			In a Ctar	Curre Stores	
Elevatio		Irf.Area	Inc.Store	-	
(fee	/	(sq-ft)	(cubic-feet) (cubic-feet)	
150.0	00	46,495		0 0	
151.0	00	52,090	49,293	3 49,293	
152.0	00	57,750	54,92	0 104,213	
153.0	00	63,535	60,643	3 164,855	
154.0	00	69,445	66,49	0 231,345	
155.0	00	75,475	72,46	303,805	
156.0	00	81,635	78,55	5 382,360	
157.0	00	90,000	85,81	8 468,178	
Device	Routing	Invert	Outlet De	vices	
#1	Primary	150.00'	27.0" Ro	und Culvert	
	5		L= 87.7'	RCP, end-section co	onforming to fill, Ke= 0.500
			Inlet / Out	let Invert= 150.00' / *	149.56' S= 0.0050 '/' Cc= 0.900
			n= 0.013	Concrete pipe, bend	Is & connections, Flow Area= 3.98 sf
#2	Secondary	156.00'			road-Crested Rectangular Weir
	,				0.80 1.00 1.20 1.40 1.60
					70 2.64 2.63 2.64 2.64 2.63
			Ň		

Primary OutFlow Max=13.43 cfs @ 13.42 hrs HW=151.90' TW=144.46' (Dynamic Tailwater) -1=Culvert (Barrel Controls 13.43 cfs @ 5.07 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=150.00' TW=142.50' (Dynamic Tailwater) —2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1DP: UPSTREAM DOGLEG

Inflow Area =	80.230 ac, 29.59% Impervious, Inflow	v Depth > 1.12" for 2-year event
Inflow =	16.92 cfs @ 13.73 hrs, Volume=	7.500 af
Outflow =	16.87 cfs @ 13.74 hrs, Volume=	7.500 af, Atten= 0%, Lag= 0.8 min
Primary =	8.08 cfs @ 13.75 hrs, Volume=	3.401 af
Routed to Pon	nd 1EP : DOWNSTREAM DOGLEG	
Secondary =	8.79 cfs @ 13.73 hrs, Volume=	4.099 af
Routed to Pon	nd 1EP : DOWNSTREAM DOGLEG	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 144.59' @ 14.08 hrs Surf.Area= 1,022 sf Storage= 489 cf

Plug-Flow detention time= 0.4 min calculated for 7.500 af (100% of inflow) Center-of-Mass det. time= 0.3 min (1,056.8 - 1,056.4)

Volume	Invert	Avail.Sto	rage Storage	Description		
#1	142.50'	67,80	08 cf Custom	i Stage Data (Pr	ismatic)Listed below (Recalc)	
Elevatio (fee		rf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
142.5	50	0	0	0		
144.0		180	135	135		
145.0		1,610	895	1,030		
146.0		5,900	3,755	4,785		
147.0		9,900	7,900	12,685		
148.0		14,165	12,033	24,718		
149.0		20,375	17,270	41,988		
150.0	00	31,265	25,820	67,808		
Device	Routing	Invert	Outlet Device	S		
#1	Primary	142.60'	42.0" Round	I Culvert		
#2	Secondary	142.50'	L= 782.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 142.60' / 142.26' S= 0.0004 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf 42.0'' Round Culvert L= 782.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 142.50' / 142.19' S= 0.0004 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf			
Primary	OutFlow M	ax=8.05.cfs.@	ຈີ 13.75 hrs H\	N=144 56' TW=	144 09' (Dynamic Tailwater)	

Primary OutFlow Max=8.05 cfs @ 13.75 hrs HW=144.56' TW=144.09' (Dynamic Tailwater) -1=Culvert (Outlet Controls 8.05 cfs @ 2.10 fps)

Secondary OutFlow Max=8.76 cfs @ 13.73 hrs HW=144.56' TW=144.08' (Dynamic Tailwater) 2=Culvert (Outlet Controls 8.76 cfs @ 2.14 fps)

Summary for Pond 1EP: DOWNSTREAM DOGLEG

Inflow Are	a =	91.530 ac, 3	3.98% Impervious,	Inflow Depth >	1.22" for 2-ye	ear event
Inflow	=	25.83 cfs @	12.09 hrs, Volume	e= 9.317	af	
Outflow	=	25.49 cfs @	12.10 hrs, Volume	e= 9.317	af, Atten= 1%,	Lag= 0.7 min
Primary	=	25.49 cfs @	12.10 hrs, Volume	e= 9.317	af	-
Routed	l to Por	nd 1IP : UPSTI	REAM TACAN			

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 144.18' @ 14.35 hrs Surf.Area= 1,669 sf Storage= 1,728 cf

Plug-Flow detention time= 1.4 min calculated for 9.316 af (100% of inflow) Center-of-Mass det. time= 1.4 min (1,012.7 - 1,011.3)

Volume	Inv	ert Avail.	Storage	Storage	Description	
#1	142.	10' 60),932 cf	Custor	n Stage Data (Pi	rismatic)Listed below (Recalc)
- 1			I	01	0	
Elevatio		Surf.Area		Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
142.1	10	0		0	0	
144.(00	1,520		1,444	1,444	
145.0	00	2,355		1,938	3,382	
146.0	00	4,275		3,315	6,697	
147.0	00	8,570		6,423	13,119	
148.0	00	13,120		10,845	23,964	
149.0	00	17,750		15,435	39,399	
150.0	00	25,315	2	21,533	60,932	
Device	Routing	Inve	ert Outl	et Device	s	
#1	Primary	142.1	0' 48.0	" Round	d Culvert X 2.00	
			L= 2	,830.0'	RCP, end-sectio	n conforming to fill, Ke= 0.500
			Inlet	/ Outlet	Invert= 142.10' /	134.60' S= 0.0027 '/' Cc= 0.900
			n= 0	.013, Flo	ow Area= 12.57 s	sf
			-	,	-	

Primary OutFlow Max=25.40 cfs @ 12.10 hrs HW=143.79' TW=138.78' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 25.40 cfs @ 3.71 fps)

Summary for Pond 1FP: EXISTING PARKWAY BASIN

Primary Culvert - Assumed Inverts, pipe diameter, and pipe material.

Inflow Area =	12.080 ac, 3	0.88% Impervious, Int	flow Depth = 1.36" for 2-year event				
Inflow =	18.83 cfs @	12.09 hrs, Volume=	1.366 af				
Outflow =	0.00 cfs @	0.00 hrs, Volume=	0.000 af, Atten= 100%, Lag= 0.0 min				
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af				
Routed to Pond 1IP : UPSTREAM TACAN							
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af				
Routed to Pon	Routed to Pond 1IP : UPSTREAM TACAN						

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.29' @ 24.34 hrs Surf.Area= 22,680 sf Storage= 59,490 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow) Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Sto	rage Sto	rage	Description	
#1	143.00'	197,06	68 cf Cu	stom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee		rf.Area (sq-ft)	Inc.Sto (cubic-fee		Cum.Store (cubic-feet)	
143.0	/	10,065	(00.010 100	0	0	
144.0		17,300	13,68	33	13,683	
145.0	0	19,605	18,4	53	32,135	
146.0	0	21,970	20,78	38	52,923	
147.0	0	24,385	23,1	78	76,100	
148.0		26,860	25,62		101,723	
149.0		29,935	28,39		130,120	
150.0		31,980	30,9		161,078	
151.0	0	40,000	35,99	90	197,068	
Device	Routing	Invert	Outlet D	evice	S	
#1	Primary	146.50'	24.0" Round Culvert			
#2 Secondary 150.00'		L= 98.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 146.50' / 146.00' S= 0.0051 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf 10.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63				

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=137.80' (Dynamic Tailwater) ↓ 1=Culvert (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=137.80' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1GP: SPORTS COMPLEX BASIN

Inflow Area =	3.180 ac, 5	8.18% Impervious, In	flow Depth = 2.54" for 2-year event
Inflow =	5.30 cfs @	12.39 hrs, Volume=	0.673 af
Outflow =	3.97 cfs @	12.62 hrs, Volume=	0.666 af, Atten= 25%, Lag= 13.8 min
Primary =	3.97 cfs @	12.62 hrs, Volume=	0.666 af
Routed to P	ond 1IP : UPSTI	REAM TACAN	
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af
Routed to P	ond 1IP : UPSTI	REAM TACAN	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 168.31' @ 12.62 hrs Surf.Area= 2,853 sf Storage= 3,949 cf

Plug-Flow detention time= 29.9 min calculated for 0.666 af (99% of inflow) Center-of-Mass det. time= 22.5 min (839.6 - 817.1)

Volume	Inver	t Avail.Sto	rage Storage	Description		
#1	166.00	' 10,58	38 cf Custon	n Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio (fee 166.0 167.0 168.0 169.0 170.0	200 200 200 200 200	urf.Area (sq-ft) 1,085 1,395 2,415 3,850 4,770	Inc.Store (cubic-feet) 0 1,240 1,905 3,133 4,310	Cum.Store (cubic-feet) 0 1,240 3,145 6,278 10,588		
Device	Routing	Invert	Outlet Device	es		
#1	Primary	166.30'	12.0" Round	d Culvert		
#2	Secondary	/ 169.30'	Inlet / Outlet n= 0.013 Co 9.0' long x 1 Head (feet) (L= 57.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 166.30' / 166.00' S= 0.0053 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf 9.0' long x 17.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=166.00' TW=137.80' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1HP: SPORTS COMPLEX BASIN

Inflow Area =	1.320 ac, 7	75.76% Impervious, Inflo	ow Depth = 2.74" for 2-year event
Inflow =	4.04 cfs @	12.08 hrs, Volume=	0.301 af
Outflow =	3.22 cfs @	12.14 hrs, Volume=	0.299 af, Atten= 20%, Lag= 3.6 min
Primary =	3.22 cfs @	12.14 hrs, Volume=	0.299 af
Routed to Por	nd 1IP : UPST	REAM TACAN	
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af
Routed to Por	nd 1IP : UPST	REAM TACAN	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 163.57' @ 12.14 hrs Surf.Area= 823 sf Storage= 816 cf

Plug-Flow detention time= 12.1 min calculated for 0.299 af (99% of inflow) Center-of-Mass det. time= 7.7 min (792.9 - 785.1)

Volume	Invert	Avail.Stor	age Storage	Description	
#1	161.00'	8,05	5 cf Custom	Stage Data (Pi	rismatic)Listed below (Recalc)
Elevatio (fee		rf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
161.0	/	0	0	0	
162.0		180	90	90	
163.0	00	515	348	438	
164.0	00	1,060	788	1,225	
165.0	00	3,780	2,420	3,645	
166.0	00	5,040	4,410	8,055	
Device	Routing	Invert	Outlet Device	S	
#1	Primary	162.00'	12.0" Round	Culvert	
#2	Secondary	164.50'	L= 58.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 162.00' / 161.70' S= 0.0052 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf 7.0' long x 40.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		

Primary OutFlow Max=3.21 cfs @ 12.14 hrs HW=163.56' TW=138.87' (Dynamic Tailwater) ←1=Culvert (Barrel Controls 3.21 cfs @ 4.09 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=161.00' TW=137.80' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1IP: UPSTREAM TACAN

Inflow Area =	419.060 ac, 3	6.50% Impervious, In	flow Depth = 1.35" for 2-year event
Inflow =	158.48 cfs @	13.50 hrs, Volume=	47.124 af
Outflow =	64.10 cfs @	15.27 hrs, Volume=	47.121 af, Atten= 60%, Lag= 106.5 min
Primary =	32.05 cfs @	15.27 hrs, Volume=	23.436 af
Routed to Po	ond 1JP : DOWN	NSTREAM TACAN	
Secondary =	32.05 cfs @	15.27 hrs, Volume=	23.686 af
Routed to Po	ond 1JP : DOWN	NSTREAM TACAN	
Tertiary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af
Routed to Po	ond 1JP : DOWN	NSTREAM TACAN	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 143.29' @ 15.27 hrs Surf.Area= 384,554 sf Storage= 651,132 cf

Plug-Flow detention time= 117.0 min calculated for 47.115 af (100% of inflow) Center-of-Mass det. time= 116.8 min (1,066.2 - 949.4)

Volume	Invert	Avail.Stor	rage Storage	Description	
#1	137.80'	4,634,03	30 cf Custom	n Stage Data (P	rismatic)Listed below (Recalc)
- 1	0	C A		0	
Elevatio		f.Area	Inc.Store	Cum.Store	
(fee	1	(sq-ft)	(cubic-feet)	(cubic-feet)	
137.8		0	0	0	
138.0		2,340	4,234	4,234	
139.0		5,626	48,983	53,217	
140.0		1,656	63,641	116,858	
141.(6,790	84,223	201,081	
142.0		4,769	125,780	326,860	
143.0)0 29	6,905	225,837	552,697	
144.(0 60	0,300	448,603	1,001,300	
145.0	0 1,08	4,818	842,559	1,843,859	
146.0	0 1,38	8,214	1,236,516	3,080,375	
147.0	0 1,71	9,095	1,553,655	4,634,030	
Device	Routing	Invert	Outlet Device	S	
#1	Primary	137.80'	24.0" Round	l Culvert	
					onforming to fill, Ke= 0.500
			Inlet / Outlet I	nvert= 137.80' /	137.40' S= 0.0131 '/' Cc= 0.900
			n= 0.013 Co	ncrete pipe, ben	ds & connections, Flow Area= 3.14 sf
#2	Secondary	137.80'	24.0" Round		
			L= 30.5' RC	P, end-section c	onforming to fill, Ke= 0.500
			Inlet / Outlet I	nvert= 137.80' /	137.30' S= 0.0164 '/' Cc= 0.900
			n= 0.013 Co	ncrete pipe, ben	ds & connections, Flow Area= 3.14 sf
#3	Tertiary	145.50'	30.0' long x	20.0' breadth B	Broad-Crested Rectangular Weir
	-				0.80 1.00 1.20 1.40 1.60
					70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=32.05 cfs @ 15.27 hrs HW=143.29' TW=135.71' (Dynamic Tailwater) **□1=Culvert** (Inlet Controls 32.05 cfs @ 10.20 fps)

Secondary OutFlow Max=32.05 cfs @ 15.27 hrs HW=143.29' TW=135.71' (Dynamic Tailwater) 2=Culvert (Inlet Controls 32.05 cfs @ 10.20 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=137.80' TW=133.50' (Dynamic Tailwater) -3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1JP: DOWNSTREAM TACAN

Inflow Are	a =	137.470 ac, 35.83% Impervious, Inflow Depth > 1.31" for 2-year event	
Inflow	=	64.99 cfs @ 15.17 hrs, Volume= 47.932 af	
Outflow	=	64.99 cfs @ 15.18 hrs, Volume= 47.932 af, Atten= 0%, Lag= 0.4 mi	n
Primary	=	64.99 cfs @ 15.18 hrs, Volume= 47.932 af	
Routed	l to Re	ch 1R : DP-1 TACAN OUTFALL	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 135.71' @ 15.18 hrs Surf.Area= 1,295 sf Storage= 1,432 cf

Plug-Flow detention time= 0.4 min calculated for 47.932 af (100% of inflow) Center-of-Mass det. time= 0.4 min (1,064.1 - 1,063.8)

Volume	Inve	ert Avail.St	orage Storag	e Description	
#1	133.5	50' 98,6	69 cf Custo	m Stage Data (Prismatic)Listed below	(Recalc)
Flovetia	5	Surf Area	Ina Stara	Cum Store	
Elevatio		Surf.Area	Inc.Store	Cum.Store	
(feet	t)	(sq-ft)	(cubic-feet)	(cubic-feet)	
133.5	0	0	0	0	
136.0	0	1,465	1,831	1,831	
137.0	0	5,100	3,283	5,114	
138.0	0	6,735	5,918	11,031	
139.0	0	8,330	7,533	18,564	
140.0	0	9,930	9,130	27,694	
141.0	0	11,565	10,748	38,441	
142.0	0	13,220	12,393	50,834	
143.0	0	15,005	14,113	64,946	
144.0	0	16,830	15,918	80,864	
145.0	0	18,780	17,805	98,669	
Device	Routing	Invert	Outlet Devi	ces	
#1	Primary	133.50		nd Culvert X 2.00	
			L= 899.0'	RCP, end-section conforming to fill, Ke	= 0.500
			Inlet / Outle	t Invert= 133.50' / 130.80' S= 0.0030 '/	' Cc= 0.900
				oncrete pipe, bends & connections, Flo	
			0.0.0 0		

Summary for Pond 2AP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 220.590 ac, 24.94% Impervious, Inflow Depth = 1.51" for 2-year event Inflow 86.32 cfs @ 13.49 hrs, Volume= 27.695 af = 83.23 cfs @ 13.79 hrs, Volume= Outflow = 27.695 af, Atten= 4%, Lag= 17.4 min 40.50 cfs @ 13.79 hrs, Volume= Primary = 13.266 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH Secondary = 42.73 cfs @ 13.79 hrs, Volume= 14.428 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 144.84' @ 13.79 hrs Surf.Area= 48,939 sf Storage= 30,872 cf

Plug-Flow detention time= 3.6 min calculated for 27.695 af (100% of inflow) Center-of-Mass det. time= 3.6 min (931.7 - 928.1)

Volume	Invert	Avail.Sto	rage Stora	ge Description		
#1	141.70'	1,815,20	01 cf Cust	om Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio		[In a Ctara	Curra Starra		
Elevatio feet)		f.Area (sq-ft)	Inc.Store (cubic-feet)	-		
141.7		0	<u>(10001-1001)</u> 0	0		
144.0		6,640	7,636	•		
145.0		7,230	31,935			
146.0		7,540	87,385	126,956		
147.0		6,860	167,200			
148.0		9,360	288,110	,		
149.0		0,140	499,750	, ,		
150.0	0 82	6,230	733,185	1,815,201		
Device	Routing	Invert	Outlet Dev	ices		
#1	Primary	141.70'	48.0" Rou	Ind Culvert		
#2	Secondary	141.70'	L= 126.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 141.70' / 141.60' S= 0.0008 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf 48.0" Round Culvert L= 126.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 141.70' / 141.50' S= 0.0016 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf			
B						

Primary OutFlow Max=40.50 cfs @ 13.79 hrs HW=144.84' TW=141.56' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 40.50 cfs @ 5.27 fps)

Secondary OutFlow Max=42.73 cfs @ 13.79 hrs HW=144.84' TW=141.56' (Dynamic Tailwater) 2=Culvert (Barrel Controls 42.73 cfs @ 5.56 fps)

Summary for Pond 2BP: EXISTING BASIN

Inflow Area = 40.900 ac, 81.30% Impervious, Inflow Depth = 2.74" for 2-year event Inflow 125.27 cfs @ 12.08 hrs, Volume= 9.333 af = 25.15 cfs @ 12.51 hrs, Volume= Outflow 9.010 af, Atten= 80%, Lag= 25.7 min = 25.15 cfs @ 12.51 hrs, Volume= Primary = 9.010 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.76' @ 12.51 hrs Surf.Area= 67,575 sf Storage= 163,282 cf

Plug-Flow detention time= 116.8 min calculated for 9.009 af (97% of inflow) Center-of-Mass det. time= 96.7 min (881.8 - 785.1)

Volume	Invert	Avail.Sto	rage S	storage	Description	
#1	143.00'	482,85	55 cf C	ustom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	n Sur	.Area	Inc.S	tore	Cum.Store	
(feet		(sq-ft)	(cubic-f		(cubic-feet)	
143.0		0,920	(00.0.0	0	0	
144.0		6,580	13	750	13,750	
145.0	0 2	8,700	22	640	36,390	
146.0	0 3	9,560	34	130	70,520	
147.0		3,515		538	117,058	
148.0		1,930		723	179,780	
149.0		0,230		080	255,860	
150.0		8,130		180	340,040	
151.0		5,000		565	431,605	
151.5	0 11	0,000	51	250	482,855	
Device	Routing	Invert	Outlet	Devices	3	
#1	Primary	144.00'	24.0"	Round	Culvert	
	2		L= 79.	0' RCF	, end-section c	onforming to fill, Ke= 0.500
			Inlet /	Outlet Ir	nvert= 144.00' /	143.21' S= 0.0100 '/' Cc= 0.900
				,	w Area= 3.14 sf	
#2	Secondary	150.00'				road-Crested Rectangular Weir
						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
. .			<u> </u>			

Primary OutFlow Max=25.15 cfs @ 12.51 hrs HW=147.76' TW=143.76' (Dynamic Tailwater) -1=Culvert (Inlet Controls 25.15 cfs @ 8.00 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=141.70' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2CP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Area =	18.420 ac, 5	7.11% Impervious, Inflov	v Depth = 1.17" for 2-year event				
Inflow =	24.26 cfs @	12.09 hrs, Volume=	1.798 af				
Outflow =	0.00 cfs @	0.00 hrs, Volume=	0.000 af, Atten= 100%, Lag= 0.0 min	1			
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af				
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH							

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 145.10' @ 24.34 hrs Surf.Area= 24,810 sf Storage= 78,326 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow) Center-of-Mass det. time= (not calculated: no outflow)

Volume	Inve	ert Avail.Sto	rage Storage	e Description	
#1	138.0	0' 240,9	05 cf Custor	n Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	מר	Surf.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
138.0	,	730	0	0	
138.0		1,695	-	-	
		,	1,213	1,213	
140.0		3,150	2,423	3,635	
141.0		6,840	4,995	8,630	
142.0		12,885	9,863	18,493	
143.0		17,405	15,145	33,638	
144.0		21,190	19,298	52,935	
145.0		24,465	22,828	75,763	
146.0		27,780	26,123	101,885	
147.0		31,160	29,470	131,355	
148.0		34,590	32,875	164,230	
149.0		38,295	36,443	200,673	
150.0	00	42,170	40,233	240,905	
Device	Routing	Invert	Outlet Devic	es	
#1	Primary	142.30'	30.0" Roun	d Culvert	
			L= 65.0' RC	CP, end-section c	onforming to fill, Ke= 0.500
			Inlet / Outlet	Invert= 142.30' /	141.50' S= 0.0123 '/' Cc= 0.900
			n= 0.013, Fl	low Area= 4.91 st	
#2	Device 1	146.00'	24.0" x 24.0	" Horiz. Orifice/	Grate C= 0.600
			Limited to we	eir flow at low hea	ads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=138.00' TW=138.00' (Dynamic Tailwater)

2=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond 2DP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Area =	12.580 ac, 44.83% Impervious, Inflow E	Depth = 0.95" for 2-year event
Inflow =	7.94 cfs @ 12.37 hrs, Volume=	0.993 af
Outflow =	0.32 cfs @ 20.63 hrs, Volume=	0.124 af, Atten= 96%, Lag= 495.5 min
Primary =	0.32 cfs @ 20.63 hrs, Volume=	0.124 af
Routed to Pone	d 2EP : FRÊNCH'S STREAM WEST BRA	NCH
Secondary =	0.00 cfs @ 0.00 hrs, Volume=	0.000 af
Routed to Pone	Id 2EP : FRENCH'S STREAM WEST BRA	NCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.25' @ 20.63 hrs Surf.Area= 10,635 sf Storage= 38,403 cf

Plug-Flow detention time= 601.4 min calculated for 0.124 af (12% of inflow) Center-of-Mass det. time= 441.6 min (1,329.5 - 887.9)

Volume	Invert	Avail.Sto	rage Storage [Description	
#1	139.00'	89,68	33 cf Custom	Stage Data (Pi	rismatic)Listed below (Recalc)
		C A		a a ¹	
Elevatio		urf.Area	Inc.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)	
139.0	00	105	0	0	
140.0		1,200	653	653	
141.0		2,565	1,883	2,535	
142.0		4,380	3,473	6,008	
143.0	00	6,200	5,290	11,298	
144.0		7,440	6,820	18,118	
145.0		8,800	8,120	26,238	
146.0		10,240	9,520	35,758	
147.0		11,800	11,020	46,778	
148.0		13,425	12,613	59,390	
149.0		15,130	14,278	73,668	
150.0	00	16,900	16,015	89,683	
Device	Routing	Invert	Outlet Devices		
#1	Primary	142.30'	24.0" Round		
<i>"</i> ··	. mary	112.00			onforming to fill, Ke= 0.500
					141.70' S= 0.0118 '/' Cc= 0.900
			n= 0.013, Flov		
#2	Device 1	146.20'	,		Grate C= 0.600
			Limited to weir		
#3	Secondary	['] 149.50'			road-Crested Rectangular Weir
	,				0.80 1.00 1.20 1.40 1.60
					70 2.64 2.63 2.64 2.64 2.63
			, ,		

Primary OutFlow Max=0.32 cfs @ 20.63 hrs HW=146.25' TW=139.04' (Dynamic Tailwater) 1=Culvert (Passes 0.32 cfs of 26.00 cfs potential flow) 2=Orifice/Grate (Weir Controls 0.32 cfs @ 0.76 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' TW=138.00' (Dynamic Tailwater) -3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2EP: FRENCH'S STREAM WEST BRANCH

Per site visit outlet consists of one 60-inch culvert.

Inflow Area	=	312.160 ac, 2	3.88% Impervious, Infl	ow Depth = 1.19" for 2-year event
Inflow	=	92.47 cfs @	13.72 hrs, Volume=	30.905 af
Outflow	=	91.37 cfs @	13.89 hrs, Volume=	30.905 af, Atten= 1%, Lag= 10.2 min
Primary	=	91.37 cfs @	13.89 hrs, Volume=	30.905 af
Routed t	to Poi	nd 2FP : FREN	ICH'S STREAM WEST	BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 141.57' @ 13.89 hrs Surf.Area= 25,957 sf Storage= 32,091 cf

Plug-Flow detention time= 5.0 min calculated for 30.905 af (100% of inflow) Center-of-Mass det. time= 5.0 min (942.7 - 937.7)

Volume	Inve	ert Avail.Sto	rage Storage	e Description	
#1	138.0	00' 524,16	60 cf Custor	n Stage Data (P	rismatic)Listed below (Recalc)
				•	
Elevatio	n	Surf.Area	Inc.Store	Cum.Store	
(fee	t)	(sq-ft)	(cubic-feet)	(cubic-feet)	
138.0	0	0	0	0	
140.0	0	9,600	9,600	9,600	
141.0	0	13,135	11,368	20,968	
142.0	0	35,665	24,400	45,368	
143.0	0	47,280	41,473	86,840	
144.0	0	58,400	52,840	139,680	
145.0	0	71,585	64,993	204,673	
146.0		85,230	78,408	283,080	
147.0		106,515	95,873	378,953	
148.0	0	183,900	145,208	524,160	
Device	Routing	Invert	Outlet Devic	es	
#1	Primary	138.00'	60.0" Roun	d Culvert	
					conforming to fill, Ke= 0.500
			n= 0.013 Co	oncrete pipe, ben	ds & connections, Flow Area= 19.63 sf
Drimere	OutFlow	Max=01 27 afa	@ 12 00 h		(-120.42) (Dynamia Tailwatar)
Primary	OutFlow	Max=91.37 cfs	n= 0.013 Co		135.70' S= 0.0061 '/' Cc= 0.900 ds & connections, Flow Area= 19.63 sf /=130.42' (Dynamic Tailwater)

Primary OutFlow Max=91.37 cfs @ 13.89 hrs HW=141.57' TW=130.42' (Dynamic Tailwater) -1=Culvert (Barrel Controls 91.37 cfs @ 8.54 fps)

Summary for Pond 2FP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 872.630 ac, 27.98% Impervious, Inflow Depth = 1.21" for 2-year event Inflow = 177.59 cfs @ 13.71 hrs, Volume= 88.007 af 177.44 cfs @ 13.78 hrs, Volume= Outflow = 87.973 af, Atten= 0%, Lag= 4.0 min 65.60 cfs @ 13.78 hrs, Volume= Primary = 24.686 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Secondary = 111.84 cfs @ 13.78 hrs, Volume= 63.287 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Tertiary 0.00 cfs @ 0.00 hrs, Volume= 0.000 af = Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 130.43' @ 13.78 hrs Surf.Area= 19,660 sf Storage= 44,178 cf

Plug-Flow detention time= 5.9 min calculated for 87.961 af (100% of inflow) Center-of-Mass det. time= 5.0 min (1,013.6 - 1,008.6)

Volume	Invert	Avail.Sto	rage Storage I	Description		
#1	125.90'	665,27	78 cf Custom	Stage Data (Pr	ismatic)Listed below (Recalc)	
F lavestia		-f A	la a Otana	Ourse Otherse		
Elevatio		f.Area	Inc.Store	Cum.Store		
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)		
125.9		0	0	0		
130.0		17,650	36,182	36,182		
131.0		22,340	19,995	56,177		
132.0		56,105	39,223	95,400		
133.0		76,835	66,470	161,870		
134.0		93,610	85,223	247,092		
135.0		11,175	102,393	349,485		
136.0		53,700	132,438	481,922		
137.0)0 2 ⁻	13,010	183,355	665,278		
. .						
Device	Routing	Invert				
#1	Primary	127.60'	60.0" Round			
					onforming to fill, Ke= 0.500	
			Inlet / Outlet In	vert= 126.60' /	127.60' S= -0.0294 '/' Cc= 0.900	
			n= 0.013, Flov	<i>w</i> Area= 19.63 s	f	
#2	Secondary	126.70'	72.0" Round	Culvert		
			L= 34.0' RCP	P, end-section co	onforming to fill, Ke= 0.500	
			Inlet / Outlet Invert= 125.90' / 126.70' S= -0.0235 '/' Cc= 0.900			
			n= 0.013, Flov	<i>w</i> Area= 28.27 s	f	
#3	Tertiary	135.50'	10.0' long x 2	20.0' breadth S	pillway over Path	
	-		Head (feet) 0.	20 0.40 0.60	0.80 1.00 1.20 1.40 1.60	
			Coef. (English) 2.68 2.70 2.7	70 2.64 2.63 2.64 2.64 2.63	

Primary OutFlow Max=65.60 cfs @ 13.78 hrs HW=130.43' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 65.60 cfs @ 5.73 fps)

Secondary OutFlow Max=111.84 cfs @ 13.78 hrs HW=130.43' TW=0.00' (Dynamic Tailwater) 2=Culvert (Barrel Controls 111.84 cfs @ 6.77 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=125.90' TW=0.00' (Dynamic Tailwater) -3=Spillway over Path (Controls 0.00 cfs)

Summary for Pond 3AP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 61.820 ac, 8.41% Impervious, Inflow Depth = 1.42" for 2-year event Inflow = 34.70 cfs @ 13.05 hrs, Volume= 7.325 af Outflow 34.35 cfs @ 13.10 hrs, Volume= = 7.319 af, Atten= 1%, Lag= 3.1 min 34.35 cfs @ 13.10 hrs, Volume= Primary = 7.319 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 144.79' @ 13.10 hrs Surf.Area= 3,411 sf Storage= 5,608 cf

Plug-Flow detention time= 4.0 min calculated for 7.319 af (100% of inflow) Center-of-Mass det. time= 3.2 min (913.0 - 909.8)

Volume	Invert	Avail.Stora	age Storage	Description	
#1	141.50'	125,603	3 cf Custom	n Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee 141.5 145.0 146.0 147.0	et) 50 00 00	urf.Area (sq-ft) (3,630 12,565 31,705	Inc.Store (cubic-feet) 0 6,353 8,098 22,135	Cum.Store (cubic-feet) 0 6,353 14,450 36,585	
148.0	00 1	46,330	89,018	125,603	
Device	Routing	Invert	Outlet Device	s	
#1 #2	Primary Secondary	146.70'	Inlet / Outlet I n= 0.013 Con 10.0' long x Head (feet) 0	P, end-section c nvert= 141.50' / ncrete pipe, ben 15.0' breadth S).20 0.40 0.60	conforming to fill, Ke= 0.500 142.20' S= -0.0167 '/' Cc= 0.900 ds & connections, Flow Area= 7.07 sf Spillway over Path 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=34.35 cfs @ 13.10 hrs HW=144.79' TW=132.44' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 34.35 cfs @ 5.52 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=141.50' TW=129.20' (Dynamic Tailwater) **2=Spillway over Path** (Controls 0.00 cfs)

Summary for Pond 3BP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 193.720 ac, 8.56% Impervious, Inflow Depth = 1.33" for 2-year event Inflow 82.52 cfs @ 13.31 hrs, Volume= 21.534 af = Outflow 76.28 cfs @ 13.59 hrs, Volume= = 21.534 af, Atten= 8%, Lag= 16.7 min 76.28 cfs @ 13.59 hrs, Volume= Primary = 21.534 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 132.93' @ 13.59 hrs Surf.Area= 36,830 sf Storage= 59,880 cf

Plug-Flow detention time= 8.8 min calculated for 21.531 af (100% of inflow) Center-of-Mass det. time= 8.8 min (943.4 - 934.6)

Volume	Invert	Avail.Stor	rage Storag	e Description					
#1	129.20'	1,254,59	93 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)				
				0 01					
	Elevation Surf.Area		Inc.Store	Cum.Store					
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)					
129.2	-	0	0	0					
130.0		2,770	1,108	1,108					
131.0		0,320	6,545	7,653					
132.0		0,890	20,605	28,258					
133.0		7,250	34,070	62,328					
134.0		5,960	41,605	103,933					
135.0		6,730	51,345	155,278					
136.0		8,875	62,803	218,081					
137.0		3,650	76,263	294,343					
138.0		5,010	94,330 115,475	388,673					
139.0		125,940		504,148					
140.0		1,860	143,900	648,048					
141.0		7,685	174,773	822,821					
142.0		4,700	201,193	1,024,013					
143.0	0 24	6,460	230,580	1,254,593					
Device	Routing	Invert	Outlet Devic	es					
#1	Primary	129.20'	60.0" Rour						
#1	Filliary	129.20			onforming to fill, Ke= 0.500				
					128.90' S= 0.0150 '/' Cc= 0.900				
					Flow Area= 19.63 sf				
#2	Secondary	135.10'			pillway over Path				
#2	Secondary	155.10			0.80 1.00 1.20 1.40 1.60				
					70 2.69 2.68 2.69 2.67 2.64				
			Coel. (Eligii	511) Z.49 Z.00 Z.	10 2.03 2.00 2.03 2.01 2.04				
Drimon	Drimony OutElow Max-76 28 of $(2.50 \text{ br}, 1)/(-122.02)$ T/(-0.00) (Dynamic Tailwater)								

Primary OutFlow Max=76.28 cfs @ 13.59 hrs HW=132.93' TW=0.00' (Dynamic Tailwater) **1**=**Culvert** (Barrel Controls 76.28 cfs @ 6.74 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=129.20' TW=0.00' (Dynamic Tailwater) **1**–2=Spillway over Path (Controls 0.00 cfs)

Summary for Subcatchment 1A:

Runoff = 3.68 cfs @ 12.08 hrs, Volume= 0.276 af, Depth= 4.19" Routed to Pond 1AP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription				
*	0.	710	98	Pave	ement				
	0.	080	39	>75%	% Grass co	over, Good	, HSG A		
	0.	0.790 92 Weighted Average							
	0.	080		10.1	3% Pervio	us Area			
	0.	710		89.8	7% Imperv	vious Area			
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
	6.0						Direct Entry,		

Summary for Subcatchment 1B:

Runoff = 4.12 cfs @ 12.08 hrs, Volume= 0.306 af, Depth= 4.08" Routed to Pond 1BP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription				
*	0.	800	98	Pave	ement				
	0.	100	39	>75%	% Grass co	over, Good	, HSG A		
	0.	0.900 91 Weighted Average							
	0.	100		11.11% Pervious Area					
	0.	800		88.8	9% Imper	vious Area			
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
	6.0						Direct Entry,		

Summary for Subcatchment 1C:

Assumed pipe channel has slope 0.005 since no data given

Runoff = 73.04 cfs @ 12.61 hrs, Volume= 11.111 af, Depth= 2.89" Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

	Area	(ac) C	N Desc	cription					
*				ement					
*			98 Roof						
*				n Water					
				Woods, Good, HSG A					
				Woods, Good, HSG C					
				ds, Good,					
				h, Good, H					
					over, Good				
					over, Good				
					over, Good	, HSG D			
		-		phted Aver					
		410		0% Pervio					
	19.	760	42.8	0% Imper	ious Area/				
	Тс	Length	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Description			
	23.4	100	0.0021	0.07	(013)	Sheet Flow,			
	20.4	100	0.0021	0.07		Grass: Short n= 0.150 P2= 3.40"			
	4.4	94	0.0026	0.36		Shallow Concentrated Flow,			
	7.7	0-1	0.0020	0.00		Short Grass Pasture Kv= 7.0 fps			
	7.7	252	0.0061	0.55		Shallow Concentrated Flow,			
		202	0.0001	0.00		Short Grass Pasture Kv= 7.0 fps			
	0.1	14	0.0701	1.85		Shallow Concentrated Flow,			
	••••					Short Grass Pasture Kv= 7.0 fps			
	2.9	154	0.0155	0.87		Shallow Concentrated Flow,			
						Short Grass Pasture Kv= 7.0 fps			
	1.4	438	0.0050	5.09	16.00	Pipe Channel,			
						24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'			
						n= 0.013 Concrete pipe, bends & connections			
	0.8	288	0.0050	5.91	29.00	Pipe Channel,			
						30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63'			
						n= 0.013 Concrete pipe, bends & connections			
	0.7	295	0.0050	6.67	47.16	Pipe Channel,			
						36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75'			
						n= 0.013 Concrete pipe, bends & connections			
	2.9	1,299	0.0050	7.39	71.14				
						42.0" Round Area= 9.6 sf Perim= 11.0' r= 0.88'			
						n= 0.013 Concrete pipe, bends & connections			
	0.2	93	0.0050	8.08	101.57	Pipe Channel,			
						48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00'			

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n= 0.013 Concrete pipe, bends & connections

44.5 3,027 Total

Summary for Subcatchment 1D:

Runoff = 12.72 cfs @ 14.07 hrs, Volume= Routed to Pond 1DP : UPSTREAM DOGLEG 4.440 af, Depth= 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 10-year Rainfall=5.10"

-	Area	. /		cription		
3	* 2.	270 9	98 Pave	ement		
3			98 Root	fs		
	5.	200 3	30 Woo	ds, Good,	HSG A	
	4.	720 7	70 Woo	ds, Good,	HSG C	
	10.			ds, Good,		
	0.	560 3		sh, Good, H		
				sh, Good, H		
				sh, Good, H		
					over, Good,	
					over, Good,	
_	0.	220 8			over, Good,	, HSG D
				ghted Aver		
		900		7% Pervio		
	2.	470	7.63	% Impervi	ous Area	
	Тс	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	33.5	100	0.0244	0.05		Sheet Flow,
						Woods: Dense underbrush n= 0.800 P2= 3.40"
	1.1	57	0.0273	0.83		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	4.5	154	0.0130	0.57		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	2.9	116	0.0173	0.66		Shallow Concentrated Flow,
		007	0 0000	0.00		Woodland Kv= 5.0 fps
	5.7	307	0.0326	0.90		Shallow Concentrated Flow,
	0.0	10	0.0040	0.04		Woodland Kv= 5.0 fps
	3.8	49	0.0018	0.21		Shallow Concentrated Flow,
	45 7	644	0.0470	0.05		Woodland Kv= 5.0 fps
	15.7	614	0.0170	0.65		Shallow Concentrated Flow,
	E0 0	500	0.0045	0.40		Woodland Kv= 5.0 fps
	50.2	583	0.0015	0.19		Shallow Concentrated Flow,
	25.0	407	0.0015	0.27		Woodland Kv= 5.0 fps
	25.0	407	0.0015	0.27		Shallow Concentrated Flow,
	1.5	121	0.0372	1.35		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow,
	1.0	121	0.0372	1.55		Short Grass Pasture Kv= 7.0 fps
-	1/2 0	2 509	Total			Short Grass Fasture IN- 1.0 1ps

143.9 2,508 Total

Summary for Subcatchment 1E:

Runoff = 45.35 cfs @ 12.09 hrs, Volume= 3.259 af, Depth= 3.46" Routed to Pond 1EP : DOWNSTREAM DOGLEG

	Area (ac)	CN	Desc	Description				
*	6.3	380	98	Pave	ement				
*	0.9	980	98	Roof	s				
	3.9	940	61	>75%	6 Grass co	over, Good	I, HSG B		
	11.3	300	85	Weig	hted Aver	age			
	3.9	940		34.8	7% Pervio	us Area			
	7.3	360		65.13	3% Imper	vious Area			
		Lengt		Slope	Velocity	Capacity	Description		
	(min)	(feet	:)	(ft/ft)	(ft/sec)	(cfs)			
	6.0						Direct Entry,		

Summary for Subcatchment 1F:

Runoff = 38.35 cfs @ 12.09 hrs, Volume= 2.725 af, Depth= 2.71" Routed to Pond 1FP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	cription							
*	3.	320	98	Pave	avement							
*	0.4	410	100	Ope	n Water							
	3.	880	61	>759	% Grass co	over, Good	d, HSG B					
	4.	470	74	74 >75% Grass cover, Good, HSG C								
	12.	080	77	Weig	ghted Aver	age						
	8.	350		69.1	2% Pervio	us Area						
	3.	730		30.8	8% Imper	ious Area/						
	Тс	Leng	nth	Slope	Velocity	Capacity	Description					
	(min)	(fe		(ft/ft)	(ft/sec)	(cfs)	1					
	6.0						Direct Entry,					

Summary for Subcatchment 1G:

Runoff = 8.54 cfs @ 12.39 hrs, Volume= 1.110 af, De Routed to Pond 1GP : SPORTS COMPLEX BASIN

1.110 af, Depth= 4.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 10-year Rainfall=5.10"

_	Area	(ac) C	N Des	cription		
*	1.	850 9	98 Pave	ement		
*	0.	990 8	35 Artifi	icial Turf		
	0.	340 8	30 >75°	>75% Grass cover, G		, HSG D
	3.	180 9	92 Weig	ghted Aver	rade	
		330		2% Pervio		
		850	58.1	8% Imperv	vious Area	
				• · · · · · · · · · · · · · · ·		
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	26.5	//_				Direct Entry, Artificial Turf
	1.8	346	0.0050	3.21	2.52	
	1.0	010	0.0000	0.21	2.02	12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n = 0.013 Corrugated PE, smooth interior
	0.6	116	0.0050	3.21	2.52	-
	0.0		0.0000	0.21	2.02	12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n = 0.013 Corrugated PE, smooth interior
	0.0	11	0.0900	13.61	10.69	
	0.0		0.0000	10.01	10.00	12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Concrete pipe, bends & connections
	0.2	40	0.0050	4.20	7 43	Pipe Channel,
	0.2	10	0.0000			18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	0.1	18	0.0050	4.20	7.43	
	5.1		0.0000			18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	20.2	531	Total			

29.2 531 Total

Summary for Subcatchment 1H:

Runoff = 6.33 cfs @ 12.08 hrs, Volume= 0.485 af, Depth= 4.41" Routed to Pond 1HP : SPORTS COMPLEX BASIN

	Area (a	ac) (CN	Desc	ription		
*	1.0	00	98	Pave	ement		
*	0.0	90	85	Artifi	cial Turf		
_	0.2	30	80	>75%	6 Grass co	over, Good	I, HSG D
	1.3	20	94	Weig	hted Aver	age	
	0.3	20		24.24	4% Pervio	us Area	
	1.0	00		75.76	6% Imper	ious Area/	
	Tc I (min)	Length (feet)		lope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0		•		•		Direct Entry,

Summary for Subcatchment 1I:

Runoff = 280.25 cfs @ 13.39 hrs, Volume= Routed to Pond 1IP : UPSTREAM TACAN 72.472 af, Depth= 2.80"

	Area	(ac)	CN	N Desc	cription		
*	111.	920	98	8 Pave	ement		
*	3.	230	98	8 Roof	s		
*	0.	140	100	0 Opei	n Water		
	0.	900	30	0 Woo	ds, Good,	HSG A	
		660	5		ds, Good,		
		630	7(ds, Good,		
	53.	120	7		ds, Good,		
	-	850	30		h, Good, I		
		070	48		h, Good, I		
	-	830	6		h, Good, I		
		050	7:		h, Good, I		
		020	39			over, Good	
		110	6			over, Good	
		330	74			over, Good	
		090	8			over, Good	, HSG D
	310.		78		phted Aver		
	195.				2% Pervio		
	115.	290		37.0	8% Imperv	vious Area	
	т.	1	.41-	01	\/_l;	0	Description
	Tc (mine)	Leng		Slope	Velocity	Capacity	Description
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	
	47.9	1	00	0.0100	0.03		Sheet Flow,
	00 F	~	40	0 0000	0.47		Woods: Dense underbrush n= 0.800 P2= 3.40"
	22.5	6	40	0.0090	0.47		Shallow Concentrated Flow,
	20 F	1.0	05	0.0400	0 50		Woodland Kv= 5.0 fps
	33.5	1,0	05	0.0100	0.50		Shallow Concentrated Flow,
	400.0	4 7	4 -	T . 4 . 1			Woodland Kv= 5.0 fps
	103.9	1,7	45	Total			

Summary for Subcatchment 1J:

Runoff = 18.11 cfs @ 12.35 hrs, Volume= Routed to Pond 1JP : DOWNSTREAM TACAN 2.193 af, Depth= 1.43"

	Area	(ac)	CN	l Dese	cription		
*	3.	780	98	B Pave	ement		
	12.	310	48	Brus	h, Good, H	ISG B	
	2.	320	73	3 Brus	h, Good, H	ISG D	
	18.	410	61	1 Weig	ghted Aver	age	
	14.	630		79.4	7% Pervio	us Area	
	3.	780		20.5	3% Imperv	/ious Area	
	Тс	Leng	th	Slope	Velocity	Capacity	Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	11.7	10	00	0.0120	0.14		Sheet Flow,
							Grass: Short
	10.5	56	60	0.0160	0.89		Shallow Concentrated Flow,
_							Short Grass Pasture Kv= 7.0 fps
	22.2	66	60	Total			

Summary for Subcatchment 2A:

Runoff = 111.02 cfs @ 13.49 hrs, Volume= 30.344 af, Depth= 2.36" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

_	Area	(ac) (CN Des	cription						
*	4.	000	98 Pav	ement						
*	0.	290	98 Roo	f						
	12.	500	30 Woo	Woods, Good, HSG A						
	115.	050	77 Woo	Woods, Good, HSG D						
	1.	620	57 Woo	Woods/grass comb., Poor, HSG A						
				>75% Grass cover, Good, HSG B						
	16.	500	74 >75	<u>% Grass c</u>	over, Good	, HSG C				
	154.	350	73 Wei	ghted Aver	age					
	150.	060	97.2	2% Pervio	us Area					
	4.	290	2.78	3% Impervi	ous Area					
	_				_					
	Tc	Length		Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	47.9	100	0.0100	0.03		Sheet Flow,				
						Woods: Dense underbrush n= 0.800 P2= 3.40"				
	37.9	1,525	0.0180	0.67		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	11.4	480	0.0100	0.70		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	11.4 14.2	480 425		0.70 0.50		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow,				
			0.0100			Short Grass Pasture Kv= 7.0 fps				

Summary for Subcatchment 2B:

Runoff = 196.19 cfs @ 12.08 hrs, Volume= Routed to Pond 2BP : EXISTING BASIN 15.019 af, Depth= 4.41"

	Area	(ac)	CN	Desc	Description						
*	6.	650	98	Pave	ement						
*	26.	600	98	Roof							
_	7.	650	74	>75%	% Grass co	over, Good	I, HSG C				
	40.	900	94	Weig	phted Aver	age					
	7.	650		18.7	0% Pervio	us Area					
	33.	250		81.3	0% Imper	ious Area/					
	Тс	Leng		Slope	Velocity	Capacity	Description				
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)					
	6.0						Direct Entry,				

Summary for Subcatchment 2C:

Runoff = 52.61 cfs @ 12.09 hrs, Volume= 3.752 af, Depth= 2.44" Routed to Pond 2CP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	cription							
*	8.	840	98	Pave	avement							
*	1.	680	98	Roof	s							
	7.	280	39	>75%	6 Grass co	over, Good	d, HSG A					
	0.	620	74	>75%	6 Grass co	over, Good	d, HSG C					
	18.	420	74	Weig	hted Aver	age						
	7.	900		42.8	9% Pervio	us Area						
	10.	520		57.1	1% Imperv	vious Area						
	Tc (min)	Leng		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)						
		(fee	51)	(1011)	(ivsec)	(CIS)						
	6.0						Direct Entry,					

Summary for Subcatchment 2D:

Runoff = 19.10 cfs @ 12.35 hrs, Volume= 2.213 af, Depth= 2.11" Routed to Pond 2DP : EXISTING PARKWAY BASIN

	Area	(ac) C	N Desc	cription		
*	5.	640 9	8 Pave	ement		
	5.	310 3	9 > 759	% Grass co	over, Good	, HSG A
	1.	630 7			over, Good	
	12.	580 7	'0 Weid	ghted Aver	ade	
		940		, 7% Pervio		
	5.	640	44.8	3% Imperv	/ious Area	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	1.6	100	0.0096	1.06		Sheet Flow,
						Smooth surfaces n= 0.011 P2= 3.40"
	0.2	31	0.0112	2.15		Shallow Concentrated Flow,
						Paved Kv= 20.3 fps
	10.0	162	0.0015	0.27		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	11.3	457	0.0011	0.67		Shallow Concentrated Flow,
						Paved Kv= 20.3 fps
	0.5	43	0.0054	1.49		Shallow Concentrated Flow,
						Paved Kv= 20.3 fps
	0.3	43	0.1569	2.77		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	23.9	836	Total			

Summary for Subcatchment 2E:

Runoff = 31.43 cfs @ 13.29 hrs, Volume= 7.938 af, Depth= 1.57" Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

	Area	(ac) (CN I	Desc	cription		
*	3.	360	98	Pave	ement		
	7.	660	30	Woo	ds, Good,	HSG A	
	9.	500	70	Woo	ds, Good,	HSG C	
	26.	720	77	Woo	ds, Good,	HSG D	
	12.	800	39 :	>75%	% Grass co	over, Good	, HSG A
	0.	530	80 :	>75%	% Grass co	over, Good	, HSG D
	60.	570	63	Weig	ghted Aver	age	
	57.	210	9	94.4	5% Pervio	us Area	
	3.	360	4	5.55	% Impervi	ous Area	
	_						
	Tc	Length		ope	Velocity	Capacity	Description
	(min)	(feet)	(f	t/ft)	(ft/sec)	(cfs)	
	30.8	100	0.03	300	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	59.1	1,034	0.00	034	0.29		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	89.9	1,134	Tota	al			

Summary for Subcatchment 2F:

Runoff = 96.20 cfs @ 13.07 hrs, Volume= 20.811 af, Depth= 2.03" Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

_	Area	(ac)	CN	Desc	cription		
*	12.	830	98	Pave	ement		
	33.	890	55	Woo	ds, Good,	HSG B	
	33.	300	77	Woo	ds, Good,	HSG D	
	34.	210	61			over, Good	
	8.	770	80	>75%	% Grass co	over, Good	, HSG D
	123.	000	69		ghted Aver		
	110.	170		89.5	7% Pervio	us Area	
	12.830				3% Imper	∕ious Area	
	-					0	
	Tc	Leng		Slope	Velocity	Capacity	Description
_	(min)	(fee	/	(ft/ft)	(ft/sec)	(cfs)	
	47.9	10	0 0	0.0100	0.03		Sheet Flow,
	20.0	4 00		0440	0.50		Woods: Dense underbrush n= 0.800 P2= 3.40"
	29.0	1,03	0 U	0.0140	0.59		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
	76.9	1,13	ю Т	Fotal			

Summary for Subcatchment 2G:

Assumed Tc value

Runoff = 18.52 cfs @ 13.47 hrs, Volume= 5.337 af, Depth= 3.87" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area (a	C) CN	Deso	Description						
*	6.62	20 98	B Pave	ement						
*	5.80	98 00	B Root	F						
_	4.14	-0 6´	l >759	% Grass co	over, Good	d, HSG B				
	16.56	89 08) Weig	ghted Aver	age					
	4.14	-0	25.0	0% Pervio	us Area					
	12.42	20	75.0	0% Imperv	vious Area					
	Tc L (min)	ength (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
	120.0		(1011)	(10300)	(013)	Direct Entry,				
	120.0									

Summary for Subcatchment 2H:

Assumed Tc value

Runoff = 8.14 cfs @ 13.60 hrs, Volume= 2.318 af, Depth= 3.17" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area (ac)	CN	Description					
*	3.3	370	98	Pave					
*	1.6	690	98	98 Roof					
	3.7	.720 61 >75% Grass cover, Good,					I, HSG B		
	8.7	780	82	Weig	ghted Aver	age			
	3.720 42.37% Perv				7% Pervio	us Area			
	5.060			57.6	57.63% Impervious Area				
	_								
	Тс	Leng		Slope	Velocity	Capacity	Description		
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)			
	120.0						Direct Entry,		

Summary for Subcatchment 3A:

Runoff = 69.64 cfs @ 13.04 hrs, Volume= 14.408 af, Depth= 2.80" Routed to Pond 3AP : FRENCH'S STREAM EAST BRANCH

_	Area	(ac)	CN	Desc	cription		
*	5.	5.200		Pavement			
	0.	5.200 0.160		Woods, Good, HSG B			
	50.	970	77	Woo	ds, Good,	HSG D	
	5.490 73		73	Brush, Good, HSG D			
	61.820 78		78	Weighted Average			
	56.620			91.59% Pervious Area			
	5.200			8.41% Impervious Area			
	Тс	Lengtl	ו S	lope	Velocity	Capacity	Description
_	(min)	(feet) ((ft/ft)	(ft/sec)	(cfs)	
	35.7	100	0.0)208	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	2.1	66	6 0.0)114	0.53		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	37.0	1,272	2 0.0)131	0.57		Shallow Concentrated Flow,
_							Woodland Kv= 5.0 fps
	74.8	1,438	3 To	tal			

Summary for Subcatchment 3B:

Runoff = 109.34 cfs @ 13.43 hrs, Volume= 28.778 af, Depth= 2.62" Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

	Area	(ac)	CN	Desc	cription						
*	9.	990	98	Pave	Pavement						
*	1.	1.400 100		Oper	Open Water						
	14.	14.050 55			Woods, Good, HSG B						
	83.	83.920 77			Woods, Good, HSG D						
	-	370	73		h, Good, H						
	6.	810	61			over, Good					
	6.	360	80	>75%	6 Grass co	over, Good	, HSG D				
	131.900 76 Weighted Average										
	120.510			91.3	91.36% Pervious Area						
	11.390			8.64	8.64% Impervious Area						
	_										
	Tc	Leng		Slope	Velocity	Capacity	Description				
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)					
	36.3	10	0 (0.0200	0.05		Sheet Flow,				
							Woods: Dense underbrush n= 0.800 P2= 3.40"				
	70.7	1,50	0 (0.0050	0.35		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	107.0	1,60	0 -	Total							

Summary for Reach 1R: DP-1 TACAN OUTFALL

Inflow Area = 437.470 ac, 35.83% Impervious, Inflow Depth > 2.65" for 10-year event Inflow = 77.14 cfs @ 15.72 hrs, Volume= 96.456 af Outflow = 77.14 cfs @ 15.72 hrs, Volume= 96.456 af, Atten= 0%, Lag= 0.0 min Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: DP-2 FRENCH'S STREAM WEST BRANCH

Inflow Are	a =	872.630 ac, 27.98% Impervious, Inflow Depth = 2.48" for 10-year event	
Inflow	=	293.61 cfs @ 13.63 hrs, Volume= 180.623 af	
Outflow	=	293.61 cfs @ 13.63 hrs, Volume= 180.623 af, Atten= 0%, Lag= 0.0 min	l

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: DP-3 FRENCH'S STREAM EAST BRANCH

Inflow Are	a =	193.720 ac,	8.56% Impervious, Inflow	/ Depth = 2.67"	for 10-year event
Inflow	=	153.44 cfs @	13.77 hrs, Volume=	43.180 af	
Outflow	=	153.44 cfs @	13.77 hrs, Volume=	43.180 af, Atte	en= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area =	0.790 ac, 89.87% Impervious, Inflow	Depth = 4.19" for 10-year event
Inflow =	3.68 cfs @ 12.08 hrs, Volume=	0.276 af
Outflow =	3.63 cfs @ 12.11 hrs, Volume=	0.276 af, Atten= 1%, Lag= 1.7 min
Discarded =	0.12 cfs @ 10.44 hrs, Volume=	0.170 af
Primary =	3.51 cfs @ 12.11 hrs, Volume=	0.106 af
Routed to Pond	1 1CP : MEMORIAL GROVE AVE. BASI	N

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 171.02' @ 12.11 hrs Surf.Area= 2,201 sf Storage= 2,829 cf

Plug-Flow detention time= 100.4 min calculated for 0.276 af (100% of inflow) Center-of-Mass det. time= 100.4 min (882.5 - 782.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	168.50'	1,559 cf	24.83'W x 88.64'L x 2.33'H Field A
			5,136 cf Overall - 1,238 cf Embedded = 3,898 cf x 40.0% Voids
#2A	169.00'	1,238 cf	ADS_StormTech SC-310 +Cap x 84 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			84 Chambers in 7 Rows
#3	168.50'	85 cf	4.00'D x 6.80'H CB-Impervious
#4	175.20'	449 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
175.20	10	0	0
176.00	300	124	124
176.50	1,000	325	449

Device	Routing	Invert	Outlet Devices
#1	Primary	170.00'	18.0" Round Culvert
	·		L= 13.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 170.00' / 169.85' S= 0.0115 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Discarded	168.50'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.12 cfs @ 10.44 hrs HW=168.58' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=3.37 cfs @ 12.11 hrs HW=170.99' TW=150.88' (Dynamic Tailwater) ☐ 1=Culvert (Barrel Controls 3.37 cfs @ 3.84 fps)

Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

12 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 86.64' Row Length +12.0" End Stone x 2 = 88.64' Base Length 7 Device x 2.4.0" Wide + 6.0" Specing x 6 + 12.0" Side Stone x 2 = 24.82! Base Width

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

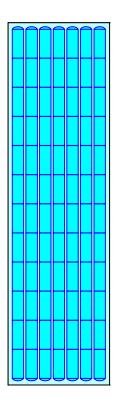
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

84 Chambers x 14.7 cf = 1,238.3 cf Chamber Storage

5,136.2 cf Field - 1,238.3 cf Chambers = 3,897.9 cf Stone x 40.0% Voids = 1,559.1 cf Stone Storage

Chamber Storage + Stone Storage = 2,797.5 cf = 0.064 afOverall Storage Efficiency = 54.5%Overall System Size = $88.64' \times 24.83' \times 2.33'$

84 Chambers 190.2 cy Field 144.4 cy Stone





Summary for Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area =	0.900 ac, 8	88.89% Impervious, Ir	flow Depth = 4.08"	for 10-year event
Inflow =	4.12 cfs @	12.08 hrs, Volume=	0.306 af	
Outflow =	3.62 cfs @	12.13 hrs, Volume=	0.306 af, Atte	en= 12%, Lag= 2.6 min
Discarded =	0.13 cfs @	10.34 hrs, Volume=	0.184 af	
Primary =	3.49 cfs @	12.13 hrs, Volume=	0.122 af	
Routed to Pond	1CP : MEM	ORIAL GROVE AVE.	BASIN	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 171.25' @ 12.13 hrs Surf.Area= 2,378 sf Storage= 2,975 cf

Plug-Flow detention time= 98.7 min calculated for 0.306 af (100% of inflow) Center-of-Mass det. time= 98.7 min (884.9 - 786.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	169.00'	1,683 cf	24.83'W x 95.76'L x 2.33'H Field A
			5,549 cf Overall - 1,342 cf Embedded = 4,207 cf x 40.0% Voids
#2A	169.50'	1,342 cf	ADS_StormTech SC-310 +Cap x 91 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			91 Chambers in 7 Rows
#3	169.00'	72 cf	4.00'D x 5.70'H CB-Impervious
#4	172.70'	572 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,668 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.70	10	0	0
173.00	300	47	47
174.50	400	525	572

Device	Routing	Invert	Outlet Devices
#1	Primary	170.50'	12.0" Round Culvert X 2.00
			L= 23.0' RCP, end-section conforming to fill, Ke= 0.500
			Inlet / Outlet Invert= 170.50' / 170.20' S= 0.0130 '/' Cc= 0.900
			n= 0.013, Flow Area= 0.79 sf
#2	Discarded	169.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.13 cfs @ 10.34 hrs HW=169.06' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=3.48 cfs @ 12.13 hrs HW=171.25' TW=150.91' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 3.48 cfs @ 3.82 fps)

Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length 7 Device x 2.4.0" Wide \pm 6.0" Specing x 6 \pm 12.0" Side Stone x 2 = 24.82' Base Width

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

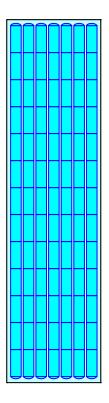
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

91 Chambers x 14.7 cf = 1,341.5 cf Chamber Storage

5,548.8 cf Field - 1,341.5 cf Chambers = 4,207.2 cf Stone x 40.0% Voids = 1,682.9 cf Stone Storage

Chamber Storage + Stone Storage = 3,024.4 cf = 0.069 afOverall Storage Efficiency = 54.5%Overall System Size = $95.76' \times 24.83' \times 2.33'$

91 Chambers 205.5 cy Field 155.8 cy Stone



Summary for Pond 1CP: MEMORIAL GROVE AVE. BASIN

Assumed slope of 0.005 for outlet culvert.

Inflow Area =	47.860 ac, 4	4.44% Impervious, Inf	low Depth = 2.84" for 10-year event					
Inflow =	74.20 cfs @	12.61 hrs, Volume=	11.339 af					
Outflow =	26.36 cfs @	13.37 hrs, Volume=	11.278 af, Atten= 64%, Lag= 45.7 min					
Primary =	26.36 cfs @	13.37 hrs, Volume=	11.278 af					
Routed to Por	Routed to Pond 1DP : UPSTREAM DOGLEG							
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af					
Routed to Por	Routed to Pond 1DP : UPSTREAM DOGLEG							

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 153.47' @ 13.37 hrs Surf.Area= 66,324 sf Storage= 195,497 cf

Plug-Flow detention time= 156.5 min calculated for 11.276 af (99% of inflow) Center-of-Mass det. time= 153.5 min (1,010.8 - 857.3)

Volume	Invert	Avail.Sto	rage St	orage	Description	
#1	150.00	468,17	78 cf C l	ustom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	on S	urf.Area	Inc.St	hre	Cum.Store	
(fee		(sq-ft)	(cubic-fe		(cubic-feet)	
150.0	00	46,495		0	0	
151.0	00	52,090	49,2	93	49,293	
152.0	00	57,750	54,9		104,213	
153.0		63,535	60,6		164,855	
154.0		69,445	66,4		231,345	
155.0		75,475	72,4		303,805	
156.0		81,635	78,5		382,360	
157.0	00	90,000	85,8	18	468,178	
Device	Routing	Invert	Outlet E	Device	S	
#1	Primary	150.00'	27.0" F	Round	Culvert	
	2		L= 87.7	' RCF	^D , end-section c	onforming to fill, Ke= 0.500
			Inlet / C	utlet Ir	nvert= 150.00' /	149.56' S= 0.0050 '/' Cc= 0.900
						ds & connections, Flow Area= 3.98 sf
#2	Secondary	156.00'		-		road-Crested Rectangular Weir
			· ·	,		0.80 1.00 1.20 1.40 1.60
			Coef. (E	English	n) 2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=26.36 cfs @ 13.37 hrs HW=153.47' TW=145.63' (Dynamic Tailwater) -1=Culvert (Barrel Controls 26.36 cfs @ 6.63 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=150.00' TW=142.50' (Dynamic Tailwater) —2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1DP: UPSTREAM DOGLEG

Inflow Area	a =	80.230 ac, 29.59% Impervious, Inflow Depth > 2.35" for 10-year event	
Inflow	=	37.68 cfs @ 13.75 hrs, Volume= 15.718 af	
Outflow	=	37.00 cfs @ 13.86 hrs, Volume= 15.718 af, Atten= 2%, Lag= 6.4 r	min
Primary	=	18.18 cfs @ 13.88 hrs, Volume= 7.533 af	
Routed	to Por	1 1EP : DOWNSTREAM DOGLEG	
Secondary	/ =	18.82 cfs @ 13.84 hrs, Volume= 8.184 af	
Routed	to Por	1 1EP : DOWNSTREAM DOGLEG	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.01' @ 14.26 hrs Surf.Area= 5,943 sf Storage= 4,848 cf

Plug-Flow detention time= 1.8 min calculated for 15.718 af (100% of inflow) Center-of-Mass det. time= 1.8 min (1,006.7 - 1,005.0)

Volume	Inver	t Avail.Sto	rage Storage	e Description		
#1	142.50	' 67,80	08 cf Custon	n Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
142.5	50	0	0	0		
144.(00	180	135	135		
145.0	00	1,610	895	1,030		
146.0		5,900	3,755	4,785		
147.0		9,900	7,900	12,685		
148.0		14,165	12,033	24,718		
149.0		20,375	17,270	41,988		
150.0	00	31,265	25,820	67,808		
Device	Routing	Invert	Outlet Device	es		
#1	Primary	142.60'	42.0" Roun	d Culvert		
#2	Secondary	/ 142.50'	L= 782.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 142.60' / 142.26' S= 0.0004 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf 42.0'' Round Culvert L= 782.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 142.50' / 142.19' S= 0.0004 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf			
Drimary	Primary OutFlow Max-18.00 of @ 13.88 brs. HW-145.05' TW-145.47' (Dynamic Tailwater)					

Primary OutFlow Max=18.09 cfs @ 13.88 hrs HW=145.95' TW=145.47' (Dynamic Tailwater) -1=Culvert (Outlet Controls 18.09 cfs @ 2.45 fps)

Secondary OutFlow Max=18.73 cfs @ 13.84 hrs HW=145.94' TW=145.45' (Dynamic Tailwater) 2=Culvert (Outlet Controls 18.73 cfs @ 2.47 fps)

Summary for Pond 1EP: DOWNSTREAM DOGLEG

Inflow Are	a =	91.530 ac, 33	3.98% Impe	ervious, I	nflow Depth	> 2.49"	for 10-	year event
Inflow	=	47.87 cfs @	12.09 hrs,	Volume=	18.9	77 af		-
Outflow	=	47.09 cfs @	12.11 hrs,	Volume=	18.9	77 af, At	ten= 2%,	Lag= 0.8 min
Primary	=	47.09 cfs @	12.11 hrs,	Volume=	18.9	77 af		
Routed to Pond 1IP : UPSTREAM TACAN								

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 145.62' @ 14.68 hrs Surf.Area= 3,551 sf Storage= 5,221 cf

Plug-Flow detention time= 3.0 min calculated for 18.977 af (100% of inflow) Center-of-Mass det. time= 3.0 min (975.4 - 972.4)

Volume	١n	vert Avail.	Storage	Storage	Description	
#1	142.	10' 6	0,932 cf	Custon	n Stage Data (Pi	rismatic)Listed below (Recalc)
		~ ~ ~		<i></i>		
Elevatio		Surf.Area		Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
142.1	10	0		0	0	
144.(00	1,520		1,444	1,444	
145.0	00	2,355		1,938	3,382	
146.0	00	4,275		3,315	6,697	
147.0	00	8,570		6,423	13,119	
148.0	00	13,120	1	10,845	23,964	
149.0	00	17,750	1	15,435	39,399	
150.0	00	25,315	2	21,533	60,932	
Device	Routing	Inv	ert Outl	et Device	es	
#1	Primary	142.	10' 48.0	" Round	d Culvert X 2.00	
			L= 2	,830.0'	RCP, end-sectio	n conforming to fill, Ke= 0.500
			Inlet	/ Outlet	Invert= 142.10' /	134.60' S= 0.0027 '/' Cc= 0.900
			n= 0	.013, Flo	ow Area= 12.57 s	sf

Primary OutFlow Max=46.86 cfs @ 12.11 hrs HW=144.53' TW=139.94' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 46.86 cfs @ 4.21 fps)

Summary for Pond 1FP: EXISTING PARKWAY BASIN

Primary Culvert - Assumed Inverts, pipe diameter, and pipe material.

Inflow Area	a =	12.080 ac, 3	80.88% Impe	ervious, In	low Depth = 2.71" f	or 10-year event
Inflow	=	38.35 cfs @	12.09 hrs,	Volume=	2.725 af	
Outflow	=	1.95 cfs @	14.95 hrs,	Volume=	1.234 af, Atten	= 95%, Lag= 171.6 min
Primary	=	1.95 cfs @	14.95 hrs,	Volume=	1.234 af	
Routed	to Por	nd 1IP : UPSTI	REAM TACA	۹N		
Secondary	/ =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	
Routed	to Por	nd 1IP : UPSTI	REAM TACA	AN		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.16' @ 14.95 hrs Surf.Area= 24,770 sf Storage= 79,920 cf

Plug-Flow detention time= 453.6 min calculated for 1.234 af (45% of inflow) Center-of-Mass det. time= 333.7 min (1,162.6 - 828.8)

Volume	Invert	Avail.Sto	rage S	Storage	Description	
#1	143.00'	197,06	68 cf	Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (feet		urf.Area (sq-ft)	Inc.s (cubic-	Store feet)	Cum.Store (cubic-feet)	
143.0	<u>,</u> 0	10,065		0	0	
144.0	0	17,300	13	3,683	13,683	
145.0	0	19,605	18	3,453	32,135	
146.0	0	21,970	20),788	52,923	
147.0	0	24,385	23	8,178	76,100	
148.0		26,860		5,623	101,723	
149.0		29,935		3,398	130,120	
150.0		31,980),958	161,078	
151.0	0	40,000	35	5,990	197,068	
Device	Routing	Invert	Outlet	t Device	S	
#1	Primary	146.50'	24.0"	Round	Culvert	
#2	Secondary	150.00'	L= 98.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 146.50' / 146.00' S= 0.0051 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf 10.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63			

Primary OutFlow Max=1.95 cfs @ 14.95 hrs HW=147.16' TW=144.89' (Dynamic Tailwater) ←1=Culvert (Barrel Controls 1.95 cfs @ 3.25 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=137.80' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1GP: SPORTS COMPLEX BASIN

Inflow Area =	3.180 ac, 58.18% Impervious, Inflo	w Depth = 4.19" for 10-year event
Inflow =	8.54 cfs @ 12.39 hrs, Volume=	1.110 af
Outflow =	5.67 cfs @ 12.67 hrs, Volume=	1.102 af, Atten= 34%, Lag= 17.1 min
Primary =	5.34 cfs @ 12.67 hrs, Volume=	1.098 af
Routed to Po	nd 1IP : UPSTREAM TACAN	
Secondary =	0.33 cfs @ 12.67 hrs, Volume=	0.003 af
Routed to Po	nd 1IP : UPSTREAM TACAN	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 169.36' @ 12.67 hrs Surf.Area= 4,179 sf Storage= 7,713 cf

Plug-Flow detention time= 26.1 min calculated for 1.102 af (99% of inflow) Center-of-Mass det. time= 21.7 min (825.4 - 803.6)

Volume	Invert	Avail.Stor	age Storage	Description	
#1	166.00'	10,58	88 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
166.0	00	1,085	0	0	
167.0	00	1,395	1,240	1,240	
168.0	00	2,415	1,905	3,145	
169.0	00	3,850	3,133	6,278	
170.0	00	4,770	4,310	10,588	
Device	Routing	Invert	Outlet Device	S	
#1	Primary	166.30'	12.0" Round	Culvert	
#2	Secondary	169.30'	L= 57.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 166.30' / 166.00' S= 0.0053 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf 9.0' long x 17.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		

Secondary OutFlow Max=0.33 cfs @ 12.67 hrs HW=169.36' TW=141.60' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir (Weir Controls 0.33 cfs @ 0.64 fps)

Summary for Pond 1HP: SPORTS COMPLEX BASIN

Inflow Area =	1.320 ac, 7	5.76% Impervious, Inf	flow Depth = 4.41" for 10-year event				
Inflow =	6.33 cfs @	12.08 hrs, Volume=	0.485 af				
Outflow =	4.34 cfs @	12.17 hrs, Volume=	0.483 af, Atten= 31%, Lag= 4.9 min				
Primary =	4.34 cfs @	12.17 hrs, Volume=	0.483 af				
Routed to Por	nd 1IP : UPST	REAM TACAN					
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af				
Routed to Pond 1IP : UPSTREAM TACAN							

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 164.27' @ 12.17 hrs Surf.Area= 1,803 sf Storage= 1,616 cf

Plug-Flow detention time= 9.8 min calculated for 0.483 af (100% of inflow) Center-of-Mass det. time= 6.8 min (779.7 - 772.9)

Volume	Invert	Avail.Stor	age Storage	Description		
#1	161.00'	8,05	5 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio (fee		rf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
161.0	1	0	0	0		
162.0	-	180	90	90		
163.0	-	515	348	438		
164.0	00	1,060	788	1,225		
165.0	00	3,780	2,420	3,645		
166.0	00	5,040	4,410	8,055		
Device	Routing	Invert	Outlet Device	S		
#1	Primary	162.00'	12.0" Round	Culvert		
#2	Secondary	164.50'	L= 58.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 162.00' / 161.70' S= 0.0052 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf 7.0' long x 40.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63			

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=161.00' TW=137.80' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1IP: UPSTREAM TACAN

Inflow Area =	419.060 ac, 3	6.50% Impervious, In	flow Depth = 2.70" for 10-year event
Inflow =	322.78 cfs @	13.39 hrs, Volume=	94.267 af
Outflow =	75.62 cfs @	16.52 hrs, Volume=	94.263 af, Atten= 77%, Lag= 187.9 min
Primary =	37.81 cfs @	16.52 hrs, Volume=	47.067 af
Routed to P	ond 1JP : DOW	NSTREAM TACAN	
Secondary =	37.81 cfs @	16.52 hrs, Volume=	47.196 af
Routed to P	ond 1JP : DOWN	NSTREAM TACAN	
Tertiary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af
Routed to P	ond 1JP : DOWN	NSTREAM TACAN	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 145.05' @ 16.52 hrs Surf.Area= 1,099,064 sf Storage= 1,895,130 cf

Plug-Flow detention time= 273.9 min calculated for 94.250 af (100% of inflow) Center-of-Mass det. time= 273.7 min (1,203.9 - 930.2)

Volume	Invert	Avail.Stor	age Storage Description					
#1	137.80'	4,634,03	0 cf Custom	O cf Custom Stage Data (Prismatic)Listed below (Recalc)				
Elevatio		f.Area	Inc.Store	Cum.Store				
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)				
137.8	-	0	0	0				
138.0)0 4	2,340	4,234	4,234				
139.0		5,626	48,983	53,217				
140.0		1,656	63,641	116,858				
141.0		6,790	84,223	201,081				
142.0		4,769	125,780	326,860				
143.0		6,905	225,837	552,697				
144.0		0,300	448,603	1,001,300				
145.0	,	4,818	842,559	1,843,859				
146.0	,	8,214	1,236,516	3,080,375				
147.0	0 1,71	9,095	1,553,655	4,634,030				
Device	Douting	Invert	Outlat Davias	•				
Device	Routing		Outlet Device					
#1	Primary	137.80'	24.0" Round					
					conforming to fill, Ke= 0.500			
					137.40' S= 0.0131 '/' Cc= 0.900			
40	0				ds & connections, Flow Area= 3.14 sf			
#2	Secondary	137.80'	24.0" Round		enforming to fill Key 0 500			
					onforming to fill, Ke= 0.500 137.30' S= 0.0164 '/' Cc= 0.900			
#3	Tortion	145.50'			ds & connections, Flow Area= 3.14 sf			
#3	Tertiary	140.00			Broad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60			
					70 2.64 2.63 2.64 2.64 2.63			
				1 Z.00 Z.10 Z.	10 2.07 2.00 2.04 2.04 2.00			

Primary OutFlow Max=37.81 cfs @ 16.52 hrs HW=145.05' TW=135.92' (Dynamic Tailwater) ☐ 1=Culvert (Inlet Controls 37.81 cfs @ 12.03 fps)

Secondary OutFlow Max=37.81 cfs @ 16.52 hrs HW=145.05' TW=135.92' (Dynamic Tailwater) 2=Culvert (Inlet Controls 37.81 cfs @ 12.03 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=137.80' TW=133.50' (Dynamic Tailwater) -3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1JP: DOWNSTREAM TACAN

Inflow Are	a =	437.470 ac, 35.83% Impervious, Inflow Depth > 2.65"	for 10-year event					
Inflow	=	77.14 cfs @ 15.71 hrs, Volume= 96.456 af						
Outflow	=	77.14 cfs @ 15.72 hrs, Volume= 96.456 af, Att	en= 0%, Lag= 0.4 min					
Primary	=	77.14 cfs @ 15.72 hrs, Volume= 96.456 af						
Routed to Reach 1R : DP-1 TACAN OUTFALL								

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 135.93' @ 15.72 hrs Surf.Area= 1,421 sf Storage= 1,724 cf

Plug-Flow detention time= 0.4 min calculated for 96.443 af (100% of inflow) Center-of-Mass det. time= 0.4 min (1,197.1 - 1,196.7)

Volume	Inve	rt Avail.Sto	orage Stora	ge Description			
#1	133.50)' 98,6	69 cf Custo	om Stage Data (P	rismatic)Listed below (Recalc)		
Elevation (feet)		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)			
133.50		0	0	0			
136.00		1,465	1,831	1,831			
137.00		5,100	3,283	5,114			
138.00		6,735	5,918	11,031			
139.00		8,330	7,533	18,564			
140.00		9,930	9,130	27,694			
141.00		11,565	10,748	38,441			
142.00		13,220	12,393	50,834			
143.00		15,005	14,113	64,946			
144.00		16,830	15,918	80,864			
145.00		18,780	17,805	98,669			
Device F	Routing	Invert	Outlet Devi	ces			
#1 F	Primary	133.50'	60.0" Round Culvert X 2.00 L= 899.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 133.50' / 130.80' S= 0.0030 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 19.63 sf				

Primary OutFlow Max=77.14 cfs @ 15.72 hrs HW=135.93' TW=0.00' (Dynamic Tailwater) ←1=Culvert (Barrel Controls 77.14 cfs @ 5.97 fps)

Summary for Pond 2AP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 220.590 ac, 24.94% Impervious, Inflow Depth = 2.87" for 10-year event Inflow 162.90 cfs @ 13.49 hrs, Volume= 52.697 af = 142.57 cfs @ 13.98 hrs, Volume= Outflow = 52.697 af, Atten= 12%, Lag= 29.5 min 69.87 cfs @ 13.98 hrs, Volume= Primary = 25.483 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH Secondary = 72.70 cfs @ 13.98 hrs, Volume= 27.214 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.13' @ 13.98 hrs Surf.Area= 130,203 sf Storage= 142,749 cf

Plug-Flow detention time= 8.1 min calculated for 52.689 af (100% of inflow) Center-of-Mass det. time= 8.1 min (926.1 - 917.9)

Volume	Invert	Avail.Sto	rage Stora	ge Description			
#1	141.70'	1,815,20	01 cf Custo	om Stage Data (P	rismatic)Listed below (Recalc)		
Elevatio (fee		f.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)			
141.7	1	0	0	0			
144.0		6,640	7,636	7,636			
145.0	0 5	57,230	31,935	39,571			
146.0		17,540	87,385				
147.0		16,860	167,200	294,156			
148.0		59,360	288,110	,			
149.0		40,140	499,750				
150.0	0 82	26,230	733,185	1,815,201			
Device	Routing	Invert	Outlet Dev	ices			
#1	Primary	141.70'	48.0" Rou	nd Culvert			
#2	Secondary	141.70'	L= 126.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 141.70' / 141.60' S= 0.0008 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf 48.0'' Round Culvert L= 126.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 141.70' / 141.50' S= 0.0016 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf				
D							

Primary OutFlow Max=69.87 cfs @ 13.98 hrs HW=146.13' TW=143.46' (Dynamic Tailwater) -1=Culvert (Barrel Controls 69.87 cfs @ 6.27 fps)

Secondary OutFlow Max=72.70 cfs @ 13.98 hrs HW=146.13' TW=143.46' (Dynamic Tailwater) 2=Culvert (Barrel Controls 72.70 cfs @ 6.52 fps)

Summary for Pond 2BP: EXISTING BASIN

Inflow Area = 40.900 ac, 81.30% Impervious, Inflow Depth = 4.41" for 10-year event Inflow 196.19 cfs @ 12.08 hrs, Volume= 15.019 af = 30.75 cfs @ 12.56 hrs, Volume= Outflow 14.696 af, Atten= 84%, Lag= 28.6 min = 30.75 cfs @ 12.56 hrs, Volume= Primary = 14.696 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 149.13' @ 12.56 hrs Surf.Area= 81,286 sf Storage= 266,655 cf

Plug-Flow detention time= 125.7 min calculated for 14.696 af (98% of inflow) Center-of-Mass det. time= 112.3 min (885.2 - 772.9)

Volume	Invert	Avail.Sto	rage Sto	rage Descripti	on	
#1	143.00'	482,85	55 cf Cu	stom Stage D	ata (Pris	smatic)Listed below (Recalc)
Elevatio	n Sur	f.Area	Inc.Sto	re Cum	.Store	
(fee		(sq-ft)	(cubic-fee		c-feet)	
143.0	1	10,920		0	0	
144.0		16,580	13,75	50 1	3,750	
145.0	0 2	28,700	22,64	40 3	6,390	
146.0	0 3	39,560	34,13	30 7	0,520	
147.0	0 5	53,515	46,53	38 11	7,058	
148.0		71,930	62,72		9,780	
149.0		30,230	76,08		5,860	
150.0		38,130	84,18		0,040	
151.0		95,000	91,56		1,605	
151.5	0 11	10,000	51,25	50 48	2,855	
Device	Routing	Invert	Outlet De	evices		
#1	Primary	144.00'	24.0" R	ound Culvert		
			L= 79.0'	RCP, end-se	ction cor	nforming to fill, Ke= 0.500
			Inlet / Ou	itlet Invert= 14	4.00' / 1	43.21' S= 0.0100 '/' Cc= 0.900
			n= 0.013	, Flow Area=	3.14 sf	
#2	Secondary	150.00'				oad-Crested Rectangular Weir
						.80 1.00 1.20 1.40 1.60
			Coef. (E	nglish) 2.68 2	2.70 2.70	0 2.64 2.63 2.64 2.64 2.63
		00 7 7	0 40 50			

Primary OutFlow Max=30.75 cfs @ 12.56 hrs HW=149.13' TW=144.44' (Dynamic Tailwater) -1=Culvert (Inlet Controls 30.75 cfs @ 9.79 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=141.70' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2CP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Are	ea =	18.420 ac, 57.11% Impervious, Inflow Depth = 2.44" for 10-year event						
Inflow	=	52.61 cfs @ 12.09 hrs, Volume= 3.752 af						
Outflow	=	3.17 cfs @ 14.47 hrs, Volume= 1.413 af, Atten= 94%, Lag= 143.0 min						
Primary	=	3.17 cfs @ 14.47 hrs, Volume= 1.413 af						
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH								

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.25' @ 14.47 hrs Surf.Area= 28,608 sf Storage= 108,793 cf

Plug-Flow detention time= 354.8 min calculated for 1.413 af (38% of inflow) Center-of-Mass det. time= 228.0 min (1,064.4 - 836.5)

Volume	Inve	ert Avail.Sto	orage Storage	e Description	
#1	138.0	00' 240,9	05 cf Custor	n Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	n	Surf.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
	/				
138.0		730	0	0	
139.0		1,695	1,213	1,213	
140.0		3,150	2,423	3,635	
141.0	00	6,840	4,995	8,630	
142.0	00	12,885	9,863	18,493	
143.0	00	17,405	15,145	33,638	
144.0	00	21,190	19,298	52,935	
145.0	00	24,465	22,828	75,763	
146.0	00	27,780	26,123	101,885	
147.0	00	31,160	29,470	131,355	
148.0	00	34,590	32,875	164,230	
149.0		38,295	36,443	200,673	
150.0	00	42,170	40,233	240,905	
		,		,	
Device	Routing	Invert	Outlet Devic	es	
#1	Primary	142.30'	30.0" Roun	d Culvert	
	,		L= 65.0' RC	P. end-section c	onforming to fill, Ke= 0.500
				,	141.50' S= 0.0123 '/' Cc= 0.900
				ow Area= 4.91 s	
#2	Device 1	146.00'	,	" Horiz. Orifice/	
	2011001	1.0.00		eir flow at low hea	

Primary OutFlow Max=3.17 cfs @ 14.47 hrs HW=146.25' TW=143.44' (Dynamic Tailwater) -1=Culvert (Passes 3.17 cfs of 38.80 cfs potential flow)

1–2=Orifice/Grate (Weir Controls 3.17 cfs @ 1.62 fps)

Summary for Pond 2DP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Area =	12.580 ac, 4	4.83% Impervious, Inflo	w Depth = 2.11" for 10-year event					
Inflow =	19.10 cfs @	12.35 hrs, Volume=	2.213 af					
Outflow =	7.10 cfs @	12.85 hrs, Volume=	1.344 af, Atten= 63%, Lag= 30.1 min					
Primary =	7.10 cfs @	12.85 hrs, Volume=	1.344 af					
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH								
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af					
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH								

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.62'@ 12.85 hrs Surf.Area= 11,206 sf Storage= 42,395 cf

Plug-Flow detention time= 216.1 min calculated for 1.344 af (61% of inflow) Center-of-Mass det. time= 102.0 min (965.2 - 863.2)

Volume	Invert	Avail.Sto	rage Storage	Description				
#1	139.00'	89,68	33 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)			
- 1	0	E A		0				
Elevatio		urf.Area	Inc.Store	Cum.Store				
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)				
139.0		105	0	0				
140.0		1,200	653	653				
141.0		2,565	1,883	2,535				
142.0		4,380	3,473	6,008				
143.0		6,200	5,290	11,298				
144.(7,440	6,820	18,118				
145.0		8,800	8,120	26,238				
146.0		10,240	9,520	35,758				
147.0		11,800	11,020	46,778				
148.0		13,425	12,613	59,390				
149.0		15,130	14,278	73,668				
150.0	00	16,900	16,015	89,683				
Device	Routing	Invert	Outlet Device:	S				
#1	Primary	142.30'	24.0" Round	Culvert				
	, ,				onforming to fill, Ke= 0.500			
					141.70' S= 0.0118 '/' Cc= 0.900			
				w Area= 3.14 st				
#2	Device 1	146.20'			Grate C= 0.600			
			Limited to weir flow at low heads					
#3	Secondary	149.50'	10.0' long x 20.0' breadth Broad-Crested Rectangular Weir					
	,				0.80 1.00 1.20 1.40 1.60			
					70 2.64 2.63 2.64 2.64 2.63			
			. 3					

Primary OutFlow Max=7.10 cfs @ 12.85 hrs HW=146.62' TW=141.72' (Dynamic Tailwater) 1=Culvert (Passes 7.10 cfs of 27.56 cfs potential flow) 2=Orifice/Grate (Weir Controls 7.10 cfs @ 2.12 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' TW=138.00' (Dynamic Tailwater) -3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2EP: FRENCH'S STREAM WEST BRANCH

Per site visit outlet consists of one 60-inch culvert.

 Inflow Area =
 312.160 ac, 23.88% Impervious, Inflow Depth =
 2.44" for 10-year event

 Inflow =
 171.28 cfs @
 13.77 hrs, Volume=
 63.391 af

 Outflow =
 164.11 cfs @
 14.21 hrs, Volume=
 63.391 af, Atten= 4%, Lag= 26.4 min

 Primary =
 164.11 cfs @
 14.21 hrs, Volume=
 63.391 af

 Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 143.51' @ 14.21 hrs Surf.Area= 52,987 sf Storage= 112,572 cf

Plug-Flow detention time= 7.4 min calculated for 63.382 af (100% of inflow) Center-of-Mass det. time= 7.4 min (939.5 - 932.1)

Volume	Inver	t Avail.Sto	rage	Storage	Description			
#1	138.00)' 524,16	60 cf	Custom	Stage Data (P	rismatic)Listed below (Recalc)		
Elevation	S	Surf.Area		.Store	Cum.Store			
(feet)		(sq-ft)	(cubio	c-feet)	(cubic-feet)			
138.00		0		0	0			
140.00		9,600		9,600	9,600			
141.00		13,135	1	1,368	20,968			
142.00		35,665	2	24,400	45,368			
143.00		47,280	4	1,473	86,840			
144.00		58,400	5	52,840	139,680			
145.00		71,585	6	64,993	204,673			
146.00		85,230	7	78,408	283,080			
147.00		106,515	g	95,873	378,953			
148.00		183,900	14	5,208	524,160			
Device R	louting	Invert	Outle	et Devices	S			
#1 P	rimary	138.00'	60.0	" Round	Culvert			
			L= 380.0' RCP, end-section conforming to fill, Ke= 0.500					
			Inlet / Outlet Invert= 138.00' / 135.70' S= 0.0061 '/' Cc= 0.900					
			n= 0.013 Concrete pipe, bends & connections, Flow Area= 19.63 sf					
141.00 142.00 143.00 144.00 145.00 146.00 147.00 148.00 <u>Device R</u> #1 P	rimary	13,135 35,665 47,280 58,400 71,585 85,230 106,515 183,900 <u>Invert</u> 138.00'	1 2 4 5 6 7 9 14 0utle 60.0 L= 3 Inlet n= 0	1,368 24,400 11,473 52,840 54,993 78,408 95,873 15,208 <u>et Devices</u> t Devices t Devices	20,968 45,368 86,840 139,680 204,673 283,080 378,953 524,160 s Culvert CP, end-section hvert= 138.00' / hcrete pipe, ben	135.70' Š= 0.0061 '/' Cc= 0.900		

Primary OutFlow Max=164.11 cfs @ 14.21 hrs HW=143.51' TW=131.69' (Dynamic Tailwater) -1=Culvert (Inlet Controls 164.11 cfs @ 8.36 fps)

Summary for Pond 2FP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 872.630 ac, 27.98% Impervious, Inflow Depth = 2.48" for 10-year event Inflow = 296.18 cfs @ 13.42 hrs, Volume= 180.659 af 293.61 cfs @ 13.63 hrs, Volume= Outflow = 180.623 af, Atten= 1%, Lag= 12.9 min 119.47 cfs @ 13.63 hrs, Volume= 59.794 af Primary = Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Secondary = 174.14 cfs @ 13.63 hrs, Volume= 120.829 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 131.81'@ 13.63 hrs Surf.Area= 49,819 sf Storage= 85,540 cf

Plug-Flow detention time= 5.2 min calculated for 180.623 af (100% of inflow) Center-of-Mass det. time= 4.6 min (1,078.8 - 1,074.2)

Volume	Invert	Avail.Sto	rage Storage [Description			
#1	125.90'	665,27	78 cf Custom	Stage Data (Pr	ismatic) Listed below (Recalc)		
Flovetic		urf Araa	Inc.Store	Cum Store			
Elevatio		Irf.Area		Cum.Store			
(fee	/	(sq-ft)	(cubic-feet)	(cubic-feet)			
125.9	-	0	0	0			
130.0		17,650	36,182	36,182			
131.0		22,340	19,995	56,177			
132.0		56,105	39,223	95,400			
133.0		76,835	66,470	161,870			
134.0	00	93,610	85,223	247,092			
135.0		11,175	102,393	349,485			
136.0	0 1	53,700	132,438	481,922			
137.0	0 2	13,010	183,355	665,278			
Device	Routing	Invert	Outlet Devices	6			
#1	Primary	127.60'	60.0" Round	Culvert			
	-		L= 34.0' RCP	, end-section co	onforming to fill, Ke= 0.500		
			Inlet / Outlet In	vert= 126.60' /	127.60' S= -0.0294 '/' Cc= 0.900		
			n= 0.013, Flov	w Area= 19.63 s	sf		
#2	Secondary	126.70'	72.0" Round Culvert				
			L= 34.0' RCP, end-section conforming to fill, Ke= 0.500				
			Inlet / Outlet In	vert= 125.90' /	126.70' S= -0.0235 '/' Cc= 0.900		
			n= 0.013. Flov	w Area= 28.27 s	sf		
#3	Tertiary	135.50'	,		pillway over Path		
	····· ,				0.80 1.00 1.20 1.40 1.60		
					70 2.64 2.63 2.64 2.64 2.63		
			esen (Englion)	, =:== =:= • =:			

Primary OutFlow Max=119.47 cfs @ 13.63 hrs HW=131.81' TW=0.00' (Dynamic Tailwater) ☐ 1=Culvert (Barrel Controls 119.47 cfs @ 7.25 fps)

Secondary OutFlow Max=174.14 cfs @ 13.63 hrs HW=131.81' TW=0.00' (Dynamic Tailwater) 2=Culvert (Barrel Controls 174.14 cfs @ 7.77 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=125.90' TW=0.00' (Dynamic Tailwater) -3=Spillway over Path (Controls 0.00 cfs)

Summary for Pond 3AP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 61.820 ac, 8.41% Impervious, Inflow Depth = 2.80" for 10-year event Inflow 69.64 cfs @ 13.04 hrs, Volume= 14.408 af = Outflow 61.56 cfs @ 13.30 hrs, Volume= 14.402 af, Atten= 12%, Lag= 15.3 min = 60.25 cfs @ 13.30 hrs, Volume= Primary = 14.376 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH Secondary = 1.31 cfs @ 13.30 hrs, Volume= 0.027 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.83' @ 13.30 hrs Surf.Area= 28,525 sf Storage= 31,582 cf

Plug-Flow detention time= 5.1 min calculated for 14.402 af (100% of inflow) Center-of-Mass det. time= 4.6 min (894.7 - 890.1)

Volume	Inver	t Avail.Sto	rage St	torage De	escription		
#1	141.50	125,60	03 cf C	ustom St	tage Data (P	rismatic)Listed below (Recalc)	
Elevatio		Surf.Area (sq-ft)	Inc.St (cubic-fe		Cum.Store (cubic-feet)		
141.5	50	0		0	0		
145.0	00	3,630	6,3	353	6,353		
146.0	00	12,565	8,0	098	14,450		
147.0	00	31,705	22,	135	36,585		
148.0	00	146,330	89,0)18	125,603		
Device	Routing	Invert	Outlet I	Devices			
#1	Primary	142.20'	36.0"	Round C	ulvert		
#2	Secondary	y 146.70'	L= 42.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 141.50' / 142.20' S= -0.0167 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 7.07 sf 10.0' long x 15.0' breadth Spillway over Path Head (feet) 0.20 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				

Primary OutFlow Max=60.25 cfs @ 13.30 hrs HW=146.83' TW=134.60' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 60.25 cfs @ 8.52 fps)

Secondary OutFlow Max=1.31 cfs @ 13.30 hrs HW=146.83' TW=134.60' (Dynamic Tailwater) **2=Spillway over Path** (Weir Controls 1.31 cfs @ 0.98 fps)

Summary for Pond 3BP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 193.720 ac, 8.56% Impervious, Inflow Depth = 2.67" for 10-year event Inflow 169.73 cfs @ 13.43 hrs, Volume= 43.180 af = Outflow 153.44 cfs @ 13.77 hrs, Volume= = 43.180 af, Atten= 10%, Lag= 20.5 min 152.02 cfs @ 13.77 hrs, Volume= Primary = 43.159 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH Secondary = 1.42 cfs @ 13.77 hrs, Volume= 0.021 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 135.16' @ 13.77 hrs Surf.Area= 58,726 sf Storage= 164,766 cf

Plug-Flow detention time= 12.1 min calculated for 43.174 af (100% of inflow) Center-of-Mass det. time= 12.1 min (927.1 - 914.9)

Volume	Invert	Avail.Stor	rage Storage	Description			
#1	129.20'	1,254,59	93 cf Custom	Stage Data (Pi	rismatic)Listed below (Recalc)		
Elevatior		irf.Area	Inc.Store	Cum.Store			
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)			
129.20)	0	0	0			
130.00)	2,770	1,108	1,108			
131.00)	10,320	6,545	7,653			
132.00)	30,890	20,605	28,258			
133.00)	37,250	34,070	62,328			
134.00)	45,960	41,605	103,933			
135.00)	56,730	51,345	155,278			
136.00)	68,875	62,803	218,081			
137.00)	83,650	76,263	294,343			
138.00) 1	05,010	94,330	388,673			
139.00) 1	25,940	115,475	504,148			
140.00) 1	61,860	143,900	648,048			
141.00) 1	87,685	174,773	822,821			
142.00) 2	14,700	201,193	1,024,013			
143.00) 2	46,460	230,580	1,254,593			
. .	.						
	Routing	Invert	Outlet Device				
#1	Primary	129.20'	60.0" Round				
					onforming to fill, Ke= 0.500		
					128.90' S= 0.0150 '/' Cc= 0.900		
					Flow Area= 19.63 sf		
#2	Secondary	135.10'			pillway over Path		
					0.80 1.00 1.20 1.40 1.60		
			Coef. (English	n) 2.49 2.56 2.	70 2.69 2.68 2.69 2.67 2.64		
Primary	Primary OutFlow Max=152.01 cfs @ 13.77 hrs HW=135.16' TW=0.00' (Dynamic Tailwater)						

Primary OutFlow Max=152.01 cfs @ 13.77 hrs HW=135.16' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 152.01 cfs @ 8.20 fps)

Secondary OutFlow Max=1.42 cfs @ 13.77 hrs HW=135.16' TW=0.00' (Dynamic Tailwater) 2=Spillway over Path (Weir Controls 1.42 cfs @ 0.63 fps)

Summary for Subcatchment 1A:

Runoff = 4.56 cfs @ 12.08 hrs, Volume= 0.347 af, Depth= 5.27" Routed to Pond 1AP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription		
*	0.	710	98	Pave	ement		
	0.	080	39	>75%	% Grass co	over, Good	, HSG A
	0.	790	92	Weig	ghted Aver	age	
	0.	080		10.1	3% Pervio	us Area	
	0.	710		89.8	7% Imperv	vious Area	
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

Summary for Subcatchment 1B:

Runoff = 5.13 cfs @ 12.08 hrs, Volume= 0.386 af, Depth= 5.15" Routed to Pond 1BP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription					
*	0.	800	98	Pave	ement					
	0.	100	39	>75%	>75% Grass cover, Good, HSG A					
	0.	900	91	Weig	phted Aver	age				
	0.	100		11.1	1% Pervio	us Area				
	0.800 88.89% Impervious Area									
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	6.0						Direct Entry,			

Summary for Subcatchment 1C:

Assumed pipe channel has slope 0.005 since no data given

Runoff = 97.47 cfs @ 12.61 hrs, Volume= 14.847 af, Depth= 3.86" Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

	Area	(ac) C	N Desc	cription		
*				ement		
*			98 Roof			
*				n Water		
				ds, Good,		
				ds, Good,		
				ds, Good,		
				h, Good, H		
					over, Good	
					over, Good	
					over, Good	, HSG D
		-		phted Aver		
		410		0% Pervio		
	19.	760	42.8	0% Imper	/ious Area	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Description
	23.4	100	0.0021	0.07	(013)	Sheet Flow,
	20.4	100	0.0021	0.07		Grass: Short n= 0.150 P2= 3.40"
	4.4	94	0.0026	0.36		Shallow Concentrated Flow,
	7.7	0-1	0.0020	0.00		Short Grass Pasture Kv= 7.0 fps
	7.7	252	0.0061	0.55		Shallow Concentrated Flow,
		202	0.0001	1.85		Short Grass Pasture Kv= 7.0 fps
	0.1	14	0.0701			Shallow Concentrated Flow,
	••••					Short Grass Pasture Kv= 7.0 fps
	2.9	154	0.0155	0.87		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	1.4	438	0.0050	5.09	16.00	
						24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'
						n= 0.013 Concrete pipe, bends & connections
	0.8	288	0.0050	5.91	29.00	Pipe Channel,
						30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63'
						n= 0.013 Concrete pipe, bends & connections
	0.7	295	0.0050	6.67	47.16	Pipe Channel,
						36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75'
						n= 0.013 Concrete pipe, bends & connections
	2.9	1,299	0.0050	7.39	71.14	
						42.0" Round Area= 9.6 sf Perim= 11.0' r= 0.88'
						n= 0.013 Concrete pipe, bends & connections
	0.2	93	0.0050	8.08	101.57	Pipe Channel,
						48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00'

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n= 0.013 Concrete pipe, bends & connections

44.5 3,027 Total

Summary for Subcatchment 1D:

Runoff = 19.29 cfs @ 13.92 hrs, Volume= Routed to Pond 1DP : UPSTREAM DOGLEG 6.493 af, Depth= 2.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 25-year Rainfall=6.20"

	Area			cription							
*				ement							
*			98 Roo								
				ds, Good,							
				Woods, Good, HSG C							
				ds, Good,							
				sh, Good, H							
				sh, Good, H							
				sh, Good, H							
					over, Good						
					over, Good						
					over, Good	, HSG D					
				ghted Aver							
	-	900		7% Pervio							
	2.	470	7.63	% Impervi	ous Area						
	_		~		a 1/						
		Length	Slope	Velocity	Capacity	Description					
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	33.5	100	0.0244	0.05		Sheet Flow,					
			o o -			Woods: Dense underbrush n= 0.800 P2= 3.40"					
	1.1	57	0.0273	0.83		Shallow Concentrated Flow,					
	4 5	454	0.0400	0.57		Woodland Kv= 5.0 fps					
	4.5	154	0.0130	0.57		Shallow Concentrated Flow,					
	2.0	110	0.0470	0.00		Woodland Kv= 5.0 fps					
	2.9	116	0.0173	0.66		Shallow Concentrated Flow, Woodland Kv= 5.0 fps					
	5.7	307	0.0326	0.90		Shallow Concentrated Flow,					
	5.7	307	0.0520	0.90		Woodland Kv= 5.0 fps					
	3.8	49	0.0018	0.21		Shallow Concentrated Flow,					
	5.0	49	0.0010	0.21		Woodland Kv= 5.0 fps					
	15.7	614	0.0170	0.65		Shallow Concentrated Flow,					
	10.7	014	0.0170	0.00		Woodland Kv= 5.0 fps					
	50.2	583	0.0015	0.19		Shallow Concentrated Flow,					
	00.2	000	5.0010	0.10		Woodland Kv= 5.0 fps					
	25.0	407	0.0015	0.27		Shallow Concentrated Flow,					
	_0.0	101	0.0010	0.27		Short Grass Pasture Kv= 7.0 fps					
	1.5	121	0.0372	1.35		Shallow Concentrated Flow,					
			3.00.E			Short Grass Pasture Kv= 7.0 fps					
	1120	2 500	Tatal								

143.9 2,508 Total

Summary for Subcatchment 1E:

Runoff 58.27 cfs @ 12.09 hrs, Volume= 4.229 af, Depth= 4.49" = Routed to Pond 1EP : DOWNSTREAM DOGLEG

	Area ((ac)	CN	Desc	cription		
*	6.3	380	98	Pave	ement		
*	0.9	980	98	Roof	s		
	3.9	940	61	>75%	6 Grass co	over, Good	I, HSG B
	11.3	300	85	Weig	hted Aver	age	
	3.9	940		34.8	7% Pervio	us Area	
	7.360 65.13% Impervious Area					ious Area/	
	Тс	Lengt		Slope	Velocity	Capacity	Description
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)	
	6.0						Direct Entry,

Summary for Subcatchment 1F:

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Runoff 51.74 cfs @ 12.09 hrs, Volume= 3.679 af, Depth= 3.65" = Routed to Pond 1FP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	cription						
*	3.	320	98	Pave	Pavement						
*	0.4	410	100	Ope	n Water						
	3.	880	61	>75%	% Grass co	over, Good	d, HSG B				
	4.	470	74	>75%	% Grass co	over, Good	d, HSG C				
	12.	080	77	Weig	ghted Aver	age					
	8.	350		69.1	2% Pervio	us Area					
	3.730			30.8	8% Imperv	ious Area/					
	т.	1		Class a	Valasita.	O	Description				
	ŢĊ	Leng	-	Slope	Velocity	Capacity	Description				
	(min)	(fe	et)	(ft/ft)	(ft/sec)	(cfs)					
	6.0						Direct Entry,				

Summary for Subcatchment 1G:

Runoff = 10.61 cfs @ 12.37 hrs, Volume= 1.32 Routed to Pond 1GP : SPORTS COMPLEX BASIN

1.396 af, Depth= 5.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 25-year Rainfall=6.20"

_	Area	(ac) C	N Des	cription		
*	1.850 98		8 Pave	ement		
*	0.	990 8	35 Artifi	icial Turf		
	0.	340 8	30 >75°	% Grass c	over, Good	, HSG D
	3.	180 9	92 Weig	ghted Aver	ade	
		330		2% Pervio		
		850	58.1	8% Imperv	vious Area	
				-		
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·
	26.5	//	//_	//		Direct Entry, Artificial Turf
	1.8	346	0.0050	3.21	2.52	
		• • •		0.2.		12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Corrugated PE, smooth interior
	0.6	116	0.0050	3.21	2.52	•
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Corrugated PE, smooth interior
	0.0	11	0.0900	13.61	10.69	
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Concrete pipe, bends & connections
	0.2	40	0.0050	4.20	7.43	Pipe Channel,
						18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	0.1	18	0.0050	4.20	7.43	
		-	-	-	-	18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	20.2	531	Total			

29.2 531 Total

Summary for Subcatchment 1H:

Runoff 7.80 cfs @ 12.08 hrs, Volume= 0.604 af, Depth= 5.49" = Routed to Pond 1HP : SPORTS COMPLEX BASIN

	Area (a	ac) (CN	Desc	ription			
*	1.0	00	98	Pave	ement			
*	0.0	90	85	Artifi	cial Turf			
_	0.2	30	80	>75%	6 Grass co	over, Good	I, HSG D	
	1.320 94 Weighted Average							
	0.3	20		24.24	4% Pervio	us Area		
	1.0	00		75.76	6% Imper	ious Area/		
	Tc I (min)	Length (feet)		lope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
	6.0		•		· /		Direct Entry,	

Summary for Subcatchment 1I:

Runoff = 377.40 cfs @ 13.39 hrs, Volume= Routed to Pond 1IP : UPSTREAM TACAN 97.331 af, Depth= 3.76"

	Area	(ac)	C	N Desc	cription							
*	111.	920	9	8 Pave	ement							
*	3.	230	9	8 Roof	s							
*	0.	140	10	0 Opei	n Water							
	0.	900	3	0 Woo	Woods, Good, HSG A							
		660	5		ds, Good,							
	-	630	7		ds, Good,							
		120	7		ds, Good,							
		850	3		h, Good, I							
		070	4		h, Good, I							
	-	830	6		h, Good, I							
		050	73		h, Good, I							
		020	3			over, Good						
		110	6			over, Good						
		330	74			over, Good						
		090	8			over, Good	, HSG D					
	310.		7		phted Aver							
	195.				2% Pervio							
	115.	290		37.0	8% Imperv	vious Area						
	_			-								
	Tc	Leng		Slope	Velocity	Capacity	Description					
	(min)	(fe		(ft/ft)	(ft/sec)	(cfs)						
	47.9	1	00	0.0100	0.03		Sheet Flow,					
							Woods: Dense underbrush n= 0.800 P2= 3.40"					
	22.5	6	40	0.0090	0.47		Shallow Concentrated Flow,					
			_				Woodland Kv= 5.0 fps					
	33.5	1,0	05	0.0100	0.50		Shallow Concentrated Flow,					
							Woodland Kv= 5.0 fps					
	103.9	1,7	45	Total								

Summary for Subcatchment 1J:

Runoff = 28.41 cfs @ 12.33 hrs, Volume= Routed to Pond 1JP : DOWNSTREAM TACAN 3.284 af, Depth= 2.14"

	Area	(ac)	CN	Deso	cription		
*	3.	780	98	B Pave	ement		
	12.	310	48	Brus	h, Good, H	ISG B	
	2.	320	73	3 Brus	h, Good, H	ISG D	
	18.410 61 Weighted Average						
	14.630 79.47% Pervious Area					us Area	
3.780			20.5	3% Imperv	/ious Area		
	Tc	Leng	th	Slope	Velocity	Capacity	Description
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	11.7	10	00	0.0120	0.14		Sheet Flow,
							Grass: Short n= 0.150 P2= 3.40"
	10.5	56	60	0.0160	0.89		Shallow Concentrated Flow,
_							Short Grass Pasture Kv= 7.0 fps
	22.2	66	60	Total			

Summary for Subcatchment 2A:

Runoff = 154.99 cfs @ 13.49 hrs, Volume= 41.871 af, Depth= 3.26" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

_	Area	(ac)	CN	Desc	cription		
*	4.	000	98	Pave	ement		
*	0.	290	98	Roof			
	12.	500	30	Woo	ds, Good,	HSG A	
	115.	050	77	Woo	ds, Good,	HSG D	
		620	57		•	omb., Poor	
		390	61			over, Good,	
_	16.	500	74	>75%	% Grass co	over, Good,	HSG C
	154.	350	73	Weig	phted Aver	age	
	150.			97.2	2% Pervio	us Area	
	4.	290		2.78	% Impervi	ous Area	
						_ ··	
	Tc	Lengt		Slope	Velocity	Capacity	Description
	Tc (min)	(fee)	(ft/ft)	(ft/sec)	Capacity (cfs)	Description
		•)			• •	Sheet Flow,
	<u>(min)</u> 47.9	(feet) 10	: <u>)</u> D	(ft/ft) 0100	(ft/sec) 0.03	• •	Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.40"
_	(min)	(fee	: <u>)</u> D	(ft/ft)	(ft/sec)	• •	Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.40" Shallow Concentrated Flow,
	(min) 47.9 37.9	(feet 10 1,52	.) 0 0. 5 0.	<u>(ft/ft)</u> 0100 0180	(ft/sec) 0.03 0.67	• •	Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.40" Shallow Concentrated Flow, Woodland Kv= 5.0 fps
	<u>(min)</u> 47.9	(feet) 10	.) 0 0. 5 0.	(ft/ft) 0100	(ft/sec) 0.03	• •	Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.40" Shallow Concentrated Flow, Woodland Kv= 5.0 fps Shallow Concentrated Flow,
	(min) 47.9 37.9 11.4	(feel 10 1,52 48) 0 0. 5 0. 0 0.	<u>(ft/ft)</u> 0100 0180 0100	(ft/sec) 0.03 0.67 0.70	• •	Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.40" Shallow Concentrated Flow, Woodland Kv= 5.0 fps Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
	(min) 47.9 37.9	(feet 10 1,52) 0 0. 5 0. 0 0.	<u>(ft/ft)</u> 0100 0180	(ft/sec) 0.03 0.67	• •	Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.40" Shallow Concentrated Flow, Woodland Kv= 5.0 fps Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow,
	(min) 47.9 37.9 11.4	(feel 10 1,52 48) 5 0. 5 0. 5 0. 5 0.	<u>(ft/ft)</u> 0100 0180 0100	(ft/sec) 0.03 0.67 0.70	• •	Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.40" Shallow Concentrated Flow, Woodland Kv= 5.0 fps Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps

Summary for Subcatchment 2B:

Runoff = 241.61 cfs @ 12.08 hrs, Volume= Routed to Pond 2BP : EXISTING BASIN 18.728 af, Depth= 5.49"

	Area ((ac)	CN	Desc	cription						
*	6.	650	98	Pave	ement						
*	26.	600	98	Roof							
_	7.	650 74 >75% Grass cover, Good					I, HSG C				
	40.900 94 Weighted Average					age					
	7.650 18.70% Pervious Area					us Area					
	33.250 81.30% Impervious Area					ious Area					
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
		ופנ	<i>.</i>	(1011)	(10360)	(013)	Dive et Extra				
	6.0						Direct Entry,				

Summary for Subcatchment 2C:

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Runoff 72.47 cfs @ 12.09 hrs, Volume= 5.148 af, Depth= 3.35" = Routed to Pond 2CP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	cription		
*	8.	840	98	Pave	ement		
*	1.	680	98	Roof	s		
	7.	280	39	>75%	% Grass co	over, Good	d, HSG A
_	0.	620	74	>75%	% Grass co	over, Good	d, HSG C
	18.	8.420 74 Weighted Average					
	7.	900		42.8	9% Pervio	us Area	
	10.520 57.11% Imperviou					ious Area	
	_						
	Tc	Leng		Slope	Velocity	Capacity	Description
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	6.0						Direct Entry,

Summary for Subcatchment 2D:

Runoff = 27.18 cfs @ 12.35 hrs, Volume= 3.108 af, Depth= 2.96" Routed to Pond 2DP : EXISTING PARKWAY BASIN

Area	a (ac)	CN Des	cription		
*	5.640	98 Pav	Pavement		
:	5.310	39 >75	% Grass c	over, Good	, HSG A
	1.630	74 >75	% Grass c	over, Good	, HSG C
1:	2.580	70 Wei	ghted Aver	age	
	5.940		7% Pervio		
1	5.640	44.8	33% Imperv	vious Area	
To	: Length	n Slope	Velocity	Capacity	Description
(min)	(feet) (ft/ft)	(ft/sec)	(cfs)	
1.6	5 100	0.0096	1.06		Sheet Flow,
					Smooth surfaces n= 0.011 P2= 3.40"
0.2	3	0.0112	2.15		Shallow Concentrated Flow,
					Paved Kv= 20.3 fps
10.0	162	2 0.0015	0.27		Shallow Concentrated Flow,
					Short Grass Pasture Kv= 7.0 fps
11.3	457	0.0011	0.67		Shallow Concentrated Flow,
					Paved Kv= 20.3 fps
0.5	4 3	8 0.0054	1.49		Shallow Concentrated Flow,
					Paved Kv= 20.3 fps
0.3	43	8 0.1569	2.77		Shallow Concentrated Flow,
					Short Grass Pasture Kv= 7.0 fps
23.9	836	5 Total			

Summary for Subcatchment 2E:

Runoff = 48.10 cfs @ 13.28 hrs, Volume= 11.696 af, Depth= 2.32" Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

	Area	(ac) (CN I	Desc	cription		
*	3.	360	98	Pave	ement		
	7.	660	30	Woo	ds, Good,	HSG A	
	9.	500	70	Woo	ds, Good,	HSG C	
	26.	720	77	Woo	ds, Good,	HSG D	
	12.	800	39 :	>75%	% Grass co	over, Good	, HSG A
	0.	530	80 :	>75%	% Grass co	over, Good	, HSG D
	60.	570	63	Weig	ghted Aver	age	
	57.	210	9	94.4	5% Pervio	us Area	
	3.	360	4	5.55	% Impervi	ous Area	
	_						
	Tc	Length		ope	Velocity	Capacity	Description
	(min)	(feet)	(f	t/ft)	(ft/sec)	(cfs)	
	30.8	100	0.03	300	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	59.1	1,034	0.00	034	0.29		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	89.9	1,134	Tota	al			

Summary for Subcatchment 2F:

Runoff = 138.40 cfs @ 13.07 hrs, Volume= 29.413 af, Depth= 2.87" Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

_	Area	(ac)	CN	Desc	cription					
*	12.	830	98	Pave	ement					
	33.	890	55	Woo	ds, Good,	HSG B				
	33.	300	77	Woo	ds, Good,	HSG D				
	34.	210	61	>75%	% Grass co	over, Good	, HSG B			
	8.	770	80	>75%	% Grass co	over, Good	, HSG D			
	123.	000	69	Weig	ghted Aver	age				
110.170				89.5	89.57% Pervious Area					
12.830			10.4	3% Imper	∕ious Area					
	_									
	Tc	Leng		Slope	Velocity	Capacity	Description			
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)				
	47.9	10	0 0	0.0100	0.03		Sheet Flow,			
							Woods: Dense underbrush n= 0.800 P2= 3.40"			
	29.0	1,03	60 (0.0140	0.59		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	76.9	1,13	1 0	Fotal						

Summary for Subcatchment 2G:

Assumed Tc value

Runoff = 23.43 cfs @ 13.47 hrs, Volume= 6.803 af, Depth= 4.93" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area (a	C) CN	Deso	cription						
*	6.62	20 98	B Pave	avement						
*	5.80	98 00	B Root							
_	4.14	-0 6´	l >759	% Grass co	over, Good	d, HSG B				
	16.56	89 08) Weig	ghted Aver	age					
	4.140 25.00% Pervious Area									
	12.420 75.00% Impervious Area									
	Tc L (min)	ength (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
	120.0		(1011)	(10300)	(013)	Direct Entry,				
	120.0									

Summary for Subcatchment 2H:

Assumed Tc value

Runoff = 10.69 cfs @ 13.60 hrs, Volume= 3.052 af, Depth= 4.17" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area (ac)	CN	Desc	cription						
*	3.3	370	98	Pave	Pavement						
*	1.6	590	98	Roof							
	3.7	720	61	>75%	% Grass co	over, Good	I, HSG B				
	8.780 82 Weighted Average										
	3.720 42.37% Pervious Area										
	5.060 57.63% Impervious Area					vious Area					
	Та	اممع	th	Clana	Volocity	Conosity	Description				
	Tc	Leng		Slope	Velocity	Capacity	Description				
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)					
	120.0						Direct Entry,				

Summary for Subcatchment 3A:

Runoff = 93.55 cfs @ 13.04 hrs, Volume= 19.350 af, Depth= 3.76" Routed to Pond 3AP : FRENCH'S STREAM EAST BRANCH

	Area	(ac)	CN	Desc	cription		
*	5.200 96		Pave	ement			
	0.	160	55	Woo	ds, Good,	HSG B	
	50.	970	77	Woo	ds, Good,	HSG D	
	5.	490	73	Brus	h, Good, H	ISG D	
_	61.	.820	78	Weig	ghted Aver	age	
	56.	620		91.5	9% Pervio	us Area	
	5.200		8.41	% Impervi	ous Area		
	Тс	Lengt	n S	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	35.7	10	0.	0208	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	2.1	6	6 0.	0114	0.53		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	37.0	1,27	2 0.	0131	0.57		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	74.8	1,43	3 To	otal			

Summary for Subcatchment 3B:

Runoff = 149.28 cfs @ 13.43 hrs, Volume= 39.057 af, Depth= 3.55" Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

	Area	(ac)	CN	l Desc	cription					
*	9.	990	98	B Pave	ement					
*	1.	400	100) Opei	n Water					
	14.050 55 Woods, Good,				ds, Good,	HSG B				
	83.	920	77		ds, Good,					
	-	370	73		h, Good, H					
	6.	810	61			over, Good				
_	6.	360	80) >75%	% Grass co	over, Good	, HSG D			
	131.	900	76	6 Weig	Weighted Average					
120.510				91.3	6% Pervio	us Area				
11.390			8.64	% Impervi	ous Area					
	_									
	Tc	Leng		Slope	Velocity	Capacity	Description			
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)				
	36.3	10	00	0.0200	0.05		Sheet Flow,			
							Woods: Dense underbrush n= 0.800 P2= 3.40"			
	70.7	1,50	00	0.0050	0.35		Shallow Concentrated Flow,			
_							Woodland Kv= 5.0 fps			
	107.0	1,60	0	Total						

Summary for Reach 1R: DP-1 TACAN OUTFALL

Inflow Area = 437.470 ac, 35.83% Impervious, Inflow Depth > 3.58" for 25-year event Inflow = 95.85 cfs @ 16.66 hrs, Volume= 130.641 af Outflow = 95.85 cfs @ 16.66 hrs, Volume= 130.641 af, Atten= 0%, Lag= 0.0 min Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: DP-2 FRENCH'S STREAM WEST BRANCH

Inflow Are	a =	872.630 ac, 27.98% Impervious, Inflow Depth = 3.40" for 25-year event	
Inflow	=	363.68 cfs @ 13.54 hrs, Volume= 246.895 af	
Outflow	=	363.68 cfs @ 13.54 hrs, Volume= 246.895 af, Atten= 0%, Lag= 0.0 min	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: DP-3 FRENCH'S STREAM EAST BRANCH

Inflow Are	a =	193.720 ac,	8.56% Impervious, Inflow	Depth = 3.62"	for 25-year event
Inflow	=	222.14 cfs @	13.58 hrs, Volume=	58.401 af	
Outflow	=	222.14 cfs @	13.58 hrs, Volume=	58.401 af, Atte	en= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area =	0.790 ac, 89.87% Impervious, Inflow D	Depth = 5.27" for 25-year event
Inflow =	4.56 cfs @ 12.08 hrs, Volume=	0.347 af
Outflow =	5.02 cfs @ 12.07 hrs, Volume=	0.347 af, Atten= 0%, Lag= 0.0 min
Discarded =	0.12 cfs @ 9.74 hrs, Volume=	0.186 af
Primary =	4.89 cfs @ 12.07 hrs, Volume=	0.161 af
Routed to Pond	d 1CP : MEMORIAL GROVE AVE. BASIN	1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 171.26' @ 12.07 hrs Surf.Area= 2,201 sf Storage= 2,832 cf

Plug-Flow detention time= 91.8 min calculated for 0.347 af (100% of inflow) Center-of-Mass det. time= 91.8 min (867.9 - 776.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	168.50'	1,559 cf	24.83'W x 88.64'L x 2.33'H Field A
			5,136 cf Overall - 1,238 cf Embedded = 3,898 cf x 40.0% Voids
#2A	169.00'	1,238 cf	ADS_StormTech SC-310 +Cap x 84 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			84 Chambers in 7 Rows
#3	168.50'	85 cf	4.00'D x 6.80'H CB-Impervious
#4	175.20'	449 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
175.20	10	0	0
176.00	300	124	124
176.50	1,000	325	449

Device	Routing	Invert	Outlet Devices
#1	Primary	170.00'	18.0" Round Culvert
	-		L= 13.0' RCP, end-section conforming to fill, Ke= 0.500
			Inlet / Outlet Invert= 170.00' / 169.85' S= 0.0115 '/' Cc= 0.900
			n= 0.013, Flow Area= 1.77 sf
#2	Discarded	168.50'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.12 cfs @ 9.74 hrs HW=168.58' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=4.79 cfs @ 12.07 hrs HW=171.24' TW=151.22' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 4.79 cfs @ 4.17 fps)

Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

12 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 86.64' Row Length +12.0" End Stone x 2 = 88.64' Base Length 7 Device x 2.4.0" Wide + 6.0" Specing x 6 + 12.0" Side Stone x 2 = 24.82! Base Width

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

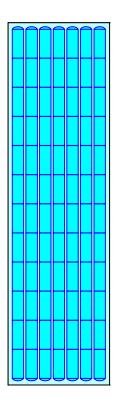
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

84 Chambers x 14.7 cf = 1,238.3 cf Chamber Storage

5,136.2 cf Field - 1,238.3 cf Chambers = 3,897.9 cf Stone x 40.0% Voids = 1,559.1 cf Stone Storage

Chamber Storage + Stone Storage = 2,797.5 cf = 0.064 afOverall Storage Efficiency = 54.5%Overall System Size = $88.64' \times 24.83' \times 2.33'$

84 Chambers 190.2 cy Field 144.4 cy Stone





Summary for Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area =	0.900 ac, 8	8.89% Impervious,	Inflow Depth = 5.	15" for 25-year event
Inflow =	5.13 cfs @	12.08 hrs, Volume	e= 0.386 af	
Outflow =	5.49 cfs @	12.08 hrs, Volume	e= 0.386 af,	Atten= 0%, Lag= 0.0 min
Discarded =	0.13 cfs @	9.62 hrs, Volume	e= 0.202 af	-
Primary =	5.36 cfs @	12.08 hrs, Volume	e= 0.185 af	
Routed to Pond	1 1CP : MEMO	ORIAL GROVE AV	E. BASIN	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 171.52' @ 12.08 hrs Surf.Area= 2,378 sf Storage= 3,056 cf

Plug-Flow detention time= 89.9 min calculated for 0.386 af (100% of inflow) Center-of-Mass det. time= 89.9 min (869.9 - 780.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	169.00'	1,683 cf	24.83'W x 95.76'L x 2.33'H Field A
			5,549 cf Overall - 1,342 cf Embedded = 4,207 cf x 40.0% Voids
#2A	169.50'	1,342 cf	ADS_StormTech SC-310 +Cap x 91 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			91 Chambers in 7 Rows
#3	169.00'	72 cf	4.00'D x 5.70'H CB-Impervious
#4	172.70'	572 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,668 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.70	10	0	0
173.00	300	47	47
174.50	400	525	572

Device	Routing	Invert	Outlet Devices
#1	Primary	170.50'	12.0" Round Culvert X 2.00
	·		L= 23.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 170.50' / 170.20' S= 0.0130 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	169.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.13 cfs @ 9.62 hrs HW=169.06' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=5.22 cfs @ 12.08 hrs HW=171.50' TW=151.24' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 5.22 cfs @ 4.14 fps)

Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length 7 Device x 2.4.0" Wide \pm 6.0" Specing x 6 \pm 12.0" Side Stone x 2 = 24.82' Base Width

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

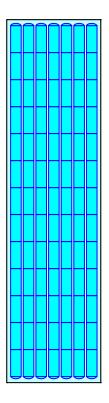
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

91 Chambers x 14.7 cf = 1,341.5 cf Chamber Storage

5,548.8 cf Field - 1,341.5 cf Chambers = 4,207.2 cf Stone x 40.0% Voids = 1,682.9 cf Stone Storage

Chamber Storage + Stone Storage = 3,024.4 cf = 0.069 afOverall Storage Efficiency = 54.5%Overall System Size = $95.76' \times 24.83' \times 2.33'$

91 Chambers 205.5 cy Field 155.8 cy Stone



Summary for Pond 1CP: MEMORIAL GROVE AVE. BASIN

Assumed slope of 0.005 for outlet culvert.

Inflow Area =	47.860 ac, 4	4.44% Impervious, Infl	ow Depth = 3.81" for 25-year event				
Inflow =	98.92 cfs @	12.61 hrs, Volume=	15.192 af				
Outflow =	33.58 cfs @	13.39 hrs, Volume=	15.130 af, Atten= 66%, Lag= 46.8 min				
Primary =	33.58 cfs @	13.39 hrs, Volume=	15.130 af				
Routed to Pond 1DP : UPSTREAM DOGLEG							
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af				
Routed to Pond 1DP : UPSTREAM DOGLEG							

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 154.51' @ 13.39 hrs Surf.Area= 72,496 sf Storage= 267,257 cf

Plug-Flow detention time= 150.0 min calculated for 15.128 af (100% of inflow) Center-of-Mass det. time= 147.8 min (996.7 - 848.9)

Volume	Invert	Avail.Sto	rage	Storage	Description	
#1	150.00'	468,17	78 cf	Custom	n Stage Data (Pi	rismatic)Listed below (Recalc)
F laviatia		6 A	lu a	01	Ourse Otherse	
Elevatio		f.Area		Store	Cum.Store	
(fee		(sq-ft)	(cubic	-teet)	(cubic-feet)	
150.0)0 4	6,495		0	0	
151.0	0 5	52,090	49	9,293	49,293	
152.0	0 5	57,750	54	4,920	104,213	
153.0	0 6	3,535	60	0,643	164,855	
154.0	0 6	9,445	6	6,490	231,345	
155.0	0 7	5,475	72	2,460	303,805	
156.0	8 00	1,635	78	8,555	382,360	
157.0	0 9	0,000	8	5,818	468,178	
Device	Routing	Invert	Outle	t Device	es	
#1	Primary	150.00'	27.0"	Round	d Culvert	
	,		L= 87	7.7' RC	P, end-section c	onforming to fill, Ke= 0.500
			Inlet /	Outlet I	Invert= 150.00' /	149.56' S= 0.0050 '/' Cc= 0.900
			n= 0.	013 Co	ncrete pipe, ben	ds & connections, Flow Area= 3.98 sf
#2	Secondary	156.00'				road-Crested Rectangular Weir
	,					0.80 1.00 1.20 1.40 1.60
						70 2.64 2.63 2.64 2.64 2.63
				、 · J····	,	

Primary OutFlow Max=33.58 cfs @ 13.39 hrs HW=154.51' TW=146.33' (Dynamic Tailwater) -1=Culvert (Barrel Controls 33.58 cfs @ 8.45 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=150.00' TW=142.50' (Dynamic Tailwater) —2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1DP: UPSTREAM DOGLEG

Inflow Area =	=	80.230 ac, 2	29.59% Impe	ervious, I	Inflow I	Depth >	3.23"	for 25	5-year event	
Inflow =	:	51.54 cfs @	13.85 hrs,	Volume=	=	21.623	af			
Outflow =	:	50.07 cfs @	13.93 hrs,	Volume=	=	21.623	af, Atte	en= 3%	, Lag= 4.9 min	
Primary =	:	24.92 cfs @	13.95 hrs,	Volume=	=	10.557	af			
Routed to Pond 1EP : DOWNSTREAM DOGLEG										
Secondary =	:	25.15 cfs @	13.92 hrs,	Volume=	=	11.066	af			
Routed to	o Pon	nd 1EP : DOW	NSTREAM I	DOGLEG	3					

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.93' @ 14.39 hrs Surf.Area= 9,612 sf Storage= 11,983 cf

Plug-Flow detention time= 3.8 min calculated for 21.623 af (100% of inflow) Center-of-Mass det. time= 3.8 min (995.1 - 991.3)

Volume	Inver	: Avail.Sto	rage Storage	e Description				
#1	142.50	67,80	08 cf Custor	n Stage Data (Pris	matic)Listed below (Recalc)			
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)				
142.5	50	0	0	0				
144.0	00	180	135	135				
145.0		1,610	895	1,030				
146.0	00	5,900	3,755	4,785				
147.0		9,900	7,900	12,685				
148.0		14,165	12,033	24,718				
149.0		20,375	17,270	41,988				
150.0	00	31,265	25,820	67,808				
Device	Routing	Invert	Outlet Devic	es				
#1	Primary	142.60'	42.0" Roun	d Culvert				
#2	Secondary		L= 782.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 142.60' / 142.26' S= 0.0004 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf 42.0" Round Culvert L= 782.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 142.50' / 142.19' S= 0.0004 '/' Cc= 0.900 n= 0.013 , Flow Area= 9.62 sf					
Drimor		10x-24 00 of a	@ 12.05 hrs		146.021 (Dynamia Tailyyatar)			

Primary OutFlow Max=24.80 cfs @ 13.95 hrs HW=146.82' TW=146.23' (Dynamic Tailwater) -1=Culvert (Outlet Controls 24.80 cfs @ 2.71 fps)

Secondary OutFlow Max=25.03 cfs @ 13.92 hrs HW=146.81' TW=146.22' (Dynamic Tailwater) 2=Culvert (Outlet Controls 25.03 cfs @ 2.70 fps)

Summary for Pond 1EP: DOWNSTREAM DOGLEG

Inflow Are	a =	91.530 ac, 3	33.98% Impervious	, Inflow Depth >	3.39"	for 25-year event	
Inflow	=	63.46 cfs @	12.09 hrs, Volum	e= 25.853	af		
Outflow	=	62.18 cfs @	12.11 hrs, Volum	e= 25.853	af, Atte	en= 2%, Lag= 0.9 min	۱
Primary	=	62.18 cfs @	12.11 hrs, Volum	e= 25.853	af		
Routed	l to Por	nd 1IP : UPSTI	REAM TACAN				

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.41' @ 14.63 hrs Surf.Area= 6,039 sf Storage= 8,815 cf

Plug-Flow detention time= 4.3 min calculated for 25.849 af (100% of inflow) Center-of-Mass det. time= 4.3 min (967.3 - 963.1)

Volume	١n	vert Avail.	Storage	Storage	Description	
#1	142.	10' 6	0,932 cf	Custon	n Stage Data (Pi	rismatic)Listed below (Recalc)
		~ ~ ~		<i></i>		
Elevatio		Surf.Area		Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
142.1	10	0		0	0	
144.(00	1,520		1,444	1,444	
145.0	00	2,355		1,938	3,382	
146.0	00	4,275		3,315	6,697	
147.0	00	8,570		6,423	13,119	
148.0	00	13,120	1	10,845	23,964	
149.0	00	17,750	1	15,435	39,399	
150.0	00	25,315	2	21,533	60,932	
Device	Routing	Inv	ert Outl	et Device	es	
#1	Primary	142.	10' 48.0	" Round	d Culvert X 2.00	
			L= 2	,830.0'	RCP, end-sectio	n conforming to fill, Ke= 0.500
			Inlet	/ Outlet	Invert= 142.10' /	134.60' S= 0.0027 '/' Cc= 0.900
			n= 0	.013, Flo	ow Area= 12.57 s	sf

Primary OutFlow Max=61.90 cfs @ 12.11 hrs HW=145.03' TW=140.71' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 61.90 cfs @ 4.38 fps)

Summary for Pond 1FP: EXISTING PARKWAY BASIN

Primary Culvert - Assumed Inverts, pipe diameter, and pipe material.

Inflow Area =	12.080 ac, 3	0.88% Impervious, Inf	low Depth = 3.65" for 25-year event						
Inflow =	51.74 cfs @	12.09 hrs, Volume=	3.679 af						
Outflow =	4.87 cfs @	13.03 hrs, Volume=	2.188 af, Atten= 91%, Lag= 56.6 min						
Primary =	4.87 cfs @	13.03 hrs, Volume=	2.188 af						
Routed to Por	Routed to Pond 1IP : UPSTREAM TACAN								
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af						
Routed to Pond 1IP : UPSTREAM TACAN									

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.58' @ 13.03 hrs Surf.Area= 25,821 sf Storage= 90,661 cf

Plug-Flow detention time= 335.8 min calculated for 2.188 af (59% of inflow) Center-of-Mass det. time= 228.4 min (1,048.6 - 820.2)

Volume	Invert	Avail.Sto	rage Storag	Description	
#1	143.00'	197,06	68 cf Custo	1 Stage Data (Prismatic) Listed be	low (Recalc)
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
143.0	0	10,065	0	0	
144.0	0	17,300	13,683	13,683	
145.0	0	19,605	18,453	32,135	
146.0	0	21,970	20,788	52,923	
147.0	0	24,385	23,178	76,100	
148.0	0	26,860	25,623	101,723	
149.0	0	29,935	28,398	130,120	
150.0	0	31,980	30,958	161,078	
151.0	0	40,000	35,990	197,068	
Device	Routing	Invert	Outlet Devic	es	
#1	Primary	146.50'	24.0" Roun	d Culvert	
#2	Secondary	150.00'	Inlet / Outlet n= 0.013 Co 10.0' long of Head (feet)	P, end-section conforming to fill, H Invert= 146.50' / 146.00' S= 0.009 ncrete pipe, bends & connections, 20.0' breadth Broad-Crested Re 0.20 0.40 0.60 0.80 1.00 1.20 1 h) 2.68 2.70 2.70 2.64 2.63 2.6	51 '/' Cc= 0.900 Flow Area= 3.14 sf c ctangular Weir I.40 1.60

Primary OutFlow Max=4.87 cfs @ 13.03 hrs HW=147.58' TW=143.54' (Dynamic Tailwater) ←1=Culvert (Barrel Controls 4.87 cfs @ 4.08 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=137.80' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1GP: SPORTS COMPLEX BASIN

Inflow Area	a =	3.180 ac, 5	58.18% Impervious,	Inflow Depth = 5.27" for 25-year event
Inflow	=	10.61 cfs @	12.37 hrs, Volume	e= 1.396 af
Outflow	=	9.07 cfs @	12.55 hrs, Volume	e= 1.388 af, Atten= 15%, Lag= 10.5 min
Primary	=	5.58 cfs @	12.55 hrs, Volume	e= 1.309 af
Routed	to Pon	d 1IP : UPST	REAM TACAN	
Secondary	/ =	3.49 cfs @	12.55 hrs, Volume	e= 0.078 af
Routed	to Pon	d 1IP : UPST	REAM TACAN	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 169.58' @ 12.55 hrs Surf.Area= 4,379 sf Storage= 8,644 cf

Plug-Flow detention time= 23.7 min calculated for 1.387 af (99% of inflow) Center-of-Mass det. time= 20.2 min (817.9 - 797.7)

Volume	Inver	t Avail.Sto	rage Storage	Description	
#1	166.00	' 10,58	38 cf Custom	n Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
166.0	-	1,085	0	0	
167.0		1,395	1,240	1,240	
168.0	00	2,415	1,905	3,145	
169.0	00	3,850	3,133	6,278	
170.0	00	4,770	4,310	10,588	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	166.30'	12.0" Round	d Culvert	
#2	Secondary		Inlet / Outlet I n= 0.013 Col 9.0' long x 1 Head (feet) (Invert= 166.30' / ncrete pipe, ben 7.0' breadth Br).20 0.40 0.60	conforming to fill, Ke= 0.500 166.00' S= 0.0053'/' Cc= 0.900 ds & connections, Flow Area= 0.79 sf road-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 .70 2.64 2.63 2.64 2.64 2.63

Secondary OutFlow Max=3.49 cfs @ 12.55 hrs HW=169.57' TW=142.09' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir (Weir Controls 3.49 cfs @ 1.41 fps)

Summary for Pond 1HP: SPORTS COMPLEX BASIN

Inflow Area =	1.320 ac, 75.76% Impervio	ous, Inflow Depth = 5	5.49" for 25-year event
Inflow =	7.80 cfs @ 12.08 hrs, Vol	ume= 0.604 at	f
Outflow =	5.12 cfs @ 12.17 hrs, Vol	ume= 0.602 a	f, Atten= 34%, Lag= 5.3 min
Primary =	4.74 cfs @ 12.17 hrs, Vol	ume= 0.600 at	f
Routed to Pone	11P : UPSTREAM TACAN		
Secondary =	0.39 cfs @ 12.17 hrs, Vol	ume= 0.002 at	f
Routed to Pone	d 1IP : UPSTREAM TACAN		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 164.58' @ 12.17 hrs Surf.Area= 2,625 sf Storage= 2,285 cf

Plug-Flow detention time= 8.9 min calculated for 0.602 af (100% of inflow) Center-of-Mass det. time= 6.6 min (774.3 - 767.7)

Volume	Invert	Avail.Stor	age Storage [Description	
#1	161.00'	8,05	5 cf Custom	Stage Data (Pi	rismatic)Listed below (Recalc)
Elevatio (fee		rf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
161.0	00	0	0	0	
162.0	00	180	90	90	
163.0	00	515	348	438	
164.0	00	1,060	788	1,225	
165.0	00	3,780	2,420	3,645	
166.0	00	5,040	4,410	8,055	
Device	Routing	Invert	Outlet Devices		
#1	Primary	162.00'	12.0" Round	Culvert	
#2	Secondary	164.50'	Inlet / Outlet In n= 0.013 Cond 7.0' long x 40 Head (feet) 0.2	vert= 162.00' / crete pipe, bend .0' breadth Br 20 0.40 0.60	onforming to fill, Ke= 0.500 161.70' S= 0.0052 '/' Cc= 0.900 ds & connections, Flow Area= 0.79 sf oad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Secondary OutFlow Max=0.38 cfs @ 12.17 hrs HW=164.57' TW=140.94' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir (Weir Controls 0.38 cfs @ 0.73 fps)

Summary for Pond 1IP: UPSTREAM TACAN

Inflow Area =	419.060 ac,	36.50% Impervious, Inflo	w Depth = 3.65 "	for 25-year event
Inflow =	435.95 cfs @	13.39 hrs, Volume=	127.361 af	
Outflow =	94.05 cfs @	16.71 hrs, Volume=	127.357 af, Att	en= 78%, Lag= 199.2 min
		16.71 hrs, Volume=	61.754 af	
Routed to	Pond 1JP : DOW	NSTREAM TACAN		
		16.71 hrs, Volume=	61.903 af	
Routed to	Pond 1JP : DOW	NSTREAM TACAN		
Tertiary =	13.95 cfs @	16.71 hrs, Volume=	3.700 af	
Routed to	Pond 1JP : DOW	NSTREAM TACAN		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 145.81'@ 16.71 hrs Surf.Area= 1,330,651 sf Storage= 2,822,453 cf

Plug-Flow detention time= 366.6 min calculated for 127.357 af (100% of inflow) Center-of-Mass det. time= 366.5 min (1,287.8 - 921.2)

Volume	Invert	Avail.Stor	age Storage	Description	
#1	137.80'	4,634,03	0 cf Custon	n Stage Data (P	rismatic)Listed below (Recalc)
Elevetie		f	In a Ctara	Curra Chara	
Elevatio (fee		f.Area	Inc.Store	Cum.Store	
· · · ·	1	(sq-ft)	(cubic-feet)	(cubic-feet)	
137.8	-	0	0	0	
138.0		2,340	4,234	4,234	
139.0		5,626	48,983	53,217	
140.0		1,656	63,641	116,858	
141.0		6,790	84,223	201,081	
142.0		54,769	125,780	326,860	
143.0		6,905	225,837	552,697	
144.0		0,300	448,603	1,001,300	
145.0	,	84,818	842,559	1,843,859	
146.0	,	8,214	1,236,516	3,080,375	
147.0	0 1,71	9,095	1,553,655	4,634,030	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	137.80'	24.0" Round		
<i>//</i> 1	i iiiiai y	107.00			onforming to fill, Ke= 0.500
					137.40' S= 0.0131 '/' Cc= 0.900
					ds & connections, Flow Area= 3.14 sf
#2	Secondary	137.80'	24.0" Round		
<i></i>	occontaily	107.00			onforming to fill, Ke= 0.500
					137.30' S= 0.0164 '/' Cc= 0.900
					ds & connections, Flow Area= 3.14 sf
#3	Tertiary	145.50'			Broad-Crested Rectangular Weir
<i>#</i> 0	rondery	1-10.00			0.80 1.00 1.20 1.40 1.60
					70 2.64 2.63 2.64 2.64 2.63
				ing 2.00 2.10 Z.	10 2.07 2.00 2.07 2.07 2.00

Primary OutFlow Max=40.05 cfs @ 16.71 hrs HW=145.81' TW=136.23' (Dynamic Tailwater) ☐ 1=Culvert (Inlet Controls 40.05 cfs @ 12.75 fps)

Secondary OutFlow Max=40.05 cfs @ 16.71 hrs HW=145.81' TW=136.23' (Dynamic Tailwater) 2=Culvert (Inlet Controls 40.05 cfs @ 12.75 fps)

Tertiary OutFlow Max=13.95 cfs @ 16.71 hrs HW=145.81' TW=136.23' (Dynamic Tailwater) -3=Broad-Crested Rectangular Weir (Weir Controls 13.95 cfs @ 1.50 fps)

Summary for Pond 1JP: DOWNSTREAM TACAN

Inflow Are	a =	437.470 ac, 3	85.83% Imp	ervious, Inflo	ow Depth >	3.58"	for 25-year event
Inflow	=	95.85 cfs @	16.65 hrs,	Volume=	130.641	af	-
Outflow	=	95.85 cfs @	16.66 hrs,	Volume=	130.641	af, Atte	en= 0%, Lag= 0.6 min
Primary	=	95.85 cfs @	16.66 hrs,	Volume=	130.641	af	
Routed	l to Rea	ach 1R : DP-1	TACAN OU	TFALL			

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 136.23' @ 16.66 hrs Surf.Area= 2,319 sf Storage= 2,276 cf

Plug-Flow detention time= 0.4 min calculated for 130.623 af (100% of inflow) Center-of-Mass det. time= 0.4 min (1,277.7 - 1,277.4)

Volume	Inve	rt Avail.Sto	orage Stora	ge Description	
#1	133.5	0' 98,6	69 cf Cust	om Stage Data (Pri	smatic)Listed below (Recalc)
Elevation (feet)		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
133.50		0	0	0	
136.00)	1,465	1,831	1,831	
137.00)	5,100	3,283	5,114	
138.00)	6,735	5,918	11,031	
139.00)	8,330	7,533	18,564	
140.00)	9,930	9,130	27,694	
141.00)	11,565	10,748		
142.00)	13,220	12,393	,	
143.00		15,005	14,113		
144.00		16,830	15,918	80,864	
145.00)	18,780	17,805	98,669	
Device I	Routing	Invert	Outlet Dev	ices	
#1 I	Primary	133.50'	60.0" Round Culvert X 2.00 L= 899.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 133.50' / 130.80' S= 0.0030 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 19.63 sf		

Primary OutFlow Max=95.85 cfs @ 16.66 hrs HW=136.23' TW=0.00' (Dynamic Tailwater) ←1=Culvert (Barrel Controls 95.85 cfs @ 6.32 fps)

Summary for Pond 2AP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 220.590 ac, 24.94% Impervious, Inflow Depth = 3.82" for 25-year event Inflow 215.82 cfs @ 13.49 hrs, Volume= 70.130 af = 168.18 cfs @ 13.96 hrs, Volume= Outflow 70.130 af, Atten= 22%, Lag= 28.4 min = 82.96 cfs @ 14.17 hrs, Volume= Primary = 34.167 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH Secondary = 85.55 cfs @ 13.96 hrs, Volume= 35.963 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.91' @ 14.17 hrs Surf.Area= 208,066 sf Storage= 275,343 cf

Plug-Flow detention time= 12.9 min calculated for 70.121 af (100% of inflow) Center-of-Mass det. time= 12.9 min (927.9 - 915.1)

Volume	Invert	Avail.Sto	rage Storag	e Description		
#1	141.70'	1,815,2	01 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
141.7		0	0			
144.0	00	6,640	7,636	7,636		
145.0		57,230	31,935	39,571		
146.0		117,540	87,385	126,956		
147.0		216,860	167,200	294,156		
148.0		359,360	288,110	582,266		
149.0		640,140	499,750	1,082,016		
150.0	30 00	326,230	733,185	1,815,201		
Device	Routing	Invert	Outlet Devic	ces		
#1	Primary	141.70'	48.0" Rour	nd Culvert		
#2	Secondary	141.70'	L= 126.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 141.70' / 141.60' S= 0.0008 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf 48.0" Round Culvert L= 126.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 141.70' / 141.50' S= 0.0016 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf			

Primary OutFlow Max=82.92 cfs @ 14.17 hrs HW=146.91' TW=145.03' (Dynamic Tailwater) **[™]1=Culvert** (Inlet Controls 82.92 cfs @ 6.60 fps)

Secondary OutFlow Max=85.43 cfs @ 13.96 hrs HW=146.87' TW=144.88' (Dynamic Tailwater) 2=Culvert (Inlet Controls 85.43 cfs @ 6.80 fps)

Summary for Pond 2BP: EXISTING BASIN

Inflow Area = 40.900 ac, 81.30% Impervious, Inflow Depth = 5.49" for 25-year event Inflow 241.61 cfs @ 12.08 hrs, Volume= 18.728 af = 33.70 cfs @ 12.59 hrs, Volume= 33.70 cfs @ 12.59 hrs, Volume= Outflow 18.405 af, Atten= 86%, Lag= 30.3 min = 18.405 af Primary = Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 149.96' @ 12.59 hrs Surf.Area= 87,833 sf Storage= 336,733 cf

Plug-Flow detention time= 138.8 min calculated for 18.405 af (98% of inflow) Center-of-Mass det. time= 127.8 min (895.4 - 767.7)

Volume	Invert	Avail.Sto	prage Storage Description					
#1	143.00'	482,85	55 cf Cu	stom S	tage Data (P	rismatic)Listed below (Recalc)		
Elevatio	n Sur	f.Area	Inc.Sto	vro	Cum.Store			
(feet		(sq-ft)	(cubic-fe		(cubic-feet)			
143.0		0,920		0	0			
140.0		6,580	13,7	-	13,750			
145.0		28,700	22,6		36,390			
146.0		9,560	34,1		70,520			
147.0	0 5	53,515	46,5	38	117,058			
148.0		1,930	62,7		179,780			
149.0		80,230	76,0		255,860			
150.0		8,130	84,1		340,040			
151.0		5,000	91,5		431,605			
151.5	0 11	0,000	51,2	50	482,855			
Device	Routing	Invert	Outlet D	evices				
#1	Primary	144.00'	24.0" R	ound C	Culvert			
	2		L= 79.0'	RCP,	end-section c	onforming to fill, Ke= 0.500		
				Inlet / Outlet Invert= 144.00' / 143.21' S= 0.0100 '/' Cc= 0.900				
			n= 0.013, Flow Area= 3.14 sf					
#2	Secondary	150.00'		10.0' long x 20.0' breadth Broad-Crested Rectangular Weir				
			· ·	,		0.80 1.00 1.20 1.40 1.60		
			Coef. (E	nglish)	2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63		
. .								

Primary OutFlow Max=33.70 cfs @ 12.59 hrs HW=149.96' TW=144.82' (Dynamic Tailwater) -1=Culvert (Inlet Controls 33.70 cfs @ 10.73 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=141.70' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2CP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Area	a =	18.420 ac, 5	57.11% Impervious, Inflow [Depth = 3.35" for 25-year event		
Inflow	=	72.47 cfs @	12.09 hrs, Volume=	5.148 af		
Outflow	=	10.52 cfs @	12.63 hrs, Volume=	2.809 af, Atten= 85%, Lag= 32.6 min		
Primary	=	10.52 cfs @	12.63 hrs, Volume=	2.809 af		
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH						

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.54' @ 12.63 hrs Surf.Area= 29,622 sf Storage= 117,526 cf

Plug-Flow detention time= 249.7 min calculated for 2.809 af (55% of inflow) Center-of-Mass det. time= 136.5 min (963.8 - 827.3)

Volume	Inve	ert Avail.Sto	rage Storage Description			
#1	138.0	00' 240,9	05 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio	an	Surf.Area	Inc.Store	Cum.Store		
fee						
	/	(sq-ft)	(cubic-feet)	(cubic-feet)		
138.0		730	0	0		
139.0	00	1,695	1,213	1,213		
140.0	00	3,150	2,423	3,635		
141.(00	6,840	4,995	8,630		
142.0	00	12,885	9,863	18,493		
143.0	00	17,405	15,145	33,638		
144.(00	21,190	19,298	52,935		
145.0	00	24,465	22,828	75,763		
146.0	00	27,780	26,123	101,885		
147.0	00	31,160	29,470	131,355		
148.0	00	34,590	32,875	164,230		
149.0		38,295	36,443	200,673		
150.0		42,170	40,233	240,905		
		,	,	,		
Device	Routing	Invert	Outlet Devices	5		
#1	Primary	142.30'	30.0" Round	Culvert		
	,				onforming to fill, Ke= 0.500	
					141.50' S= 0.0123 '/' Cc= 0.900	
				w Area= 4.91 sf		
#2	Device 1	146.00'	,		Grate C= 0.600	
<i>11 Z</i>	201100 I	140.00		r flow at low hea		

Primary OutFlow Max=10.52 cfs @ 12.63 hrs HW=146.54' TW=141.98' (Dynamic Tailwater) -**1=Culvert** (Passes 10.52 cfs of 40.90 cfs potential flow)

1-2=Orifice/Grate (Weir Controls 10.52 cfs @ 2.41 fps)

Summary for Pond 2DP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Area =	12.580 ac, 4	4.83% Impervious, Inflo	ow Depth = 2.96" for 25-year event				
Inflow =	27.18 cfs @	12.35 hrs, Volume=	3.108 af				
Outflow =	17.45 cfs @	12.62 hrs, Volume=	2.239 af, Atten= 36%, Lag= 16.6 min				
Primary =	17.45 cfs @	12.62 hrs, Volume=	2.239 af				
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH							
		0.00 hrs, Volume=					
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH							

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.02'@ 12.62 hrs Surf.Area= 11,834 sf Storage= 47,025 cf

Plug-Flow detention time= 162.3 min calculated for 2.239 af (72% of inflow) Center-of-Mass det. time= 67.0 min (920.2 - 853.2)

Volume	Inver	t Avail.Sto	prage Storage Description			
#1	139.00)' 89,68	B3 cf Custom	Stage Data (Pr	ismatic) Listed below (Recalc)	
- 1						
Elevatio		Surf.Area	Inc.Store	Cum.Store		
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)		
139.0		105	0	0		
140.0		1,200	653	653		
141.0		2,565	1,883	2,535		
142.0		4,380	3,473	6,008		
143.0		6,200	5,290	11,298		
144.0		7,440	6,820	18,118		
145.0		8,800	8,120	26,238		
146.0		10,240	9,520	35,758		
147.0		11,800	11,020	46,778		
148.0		13,425	12,613	59,390		
149.0	00	15,130	14,278	73,668		
150.0	00	16,900	16,015	89,683		
р ·						
Device	Routing	Invert	-			
#1	Primary	142.30'	24.0" Round			
					onforming to fill, Ke= 0.500	
			Inlet / Outlet In	vert= 142.30' /	141.70' S= 0.0118 '/' Cc= 0.900	
			n= 0.013, Flov	v Area= 3.14 sf		
#2	Device 1	146.20'	0' 24.0" x 24.0" Horiz. Orifice/Grate C= 0.600			
			Limited to weir	flow at low hea	lds	
#3	Secondar	y 149.50'	0' 10.0' long x 20.0' breadth Broad-Crested Rectangular Weir			
			Head (feet) 0.	20 0.40 0.60	0.80 1.00 1.20 1.40 1.60	
			Coef. (English)) 2.68 2.70 2.7	70 2.64 2.63 2.64 2.64 2.63	

Primary OutFlow Max=17.45 cfs @ 12.62 hrs HW=147.02' TW=141.95' (Dynamic Tailwater) 1=Culvert (Passes 17.45 cfs of 29.18 cfs potential flow) 2=Orifice/Grate (Orifice Controls 17.45 cfs @ 4.36 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' TW=138.00' (Dynamic Tailwater) -3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2EP: FRENCH'S STREAM WEST BRANCH

Per site visit outlet consists of one 60-inch culvert.

Inflow Area = 312.160 ac, 23.88% Impervious, Inflow Depth = 3.34" for 25-year event Inflow = 215.04 cfs @ 13.59 hrs, Volume= 86.875 af Outflow = 193.74 cfs @ 14.39 hrs, Volume= 86.875 af, Atten= 10%, Lag= 47.5 min Primary = 193.74 cfs @ 14.39 hrs, Volume= 86.875 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 145.08' @ 14.39 hrs Surf.Area= 72,655 sf Storage= 210,329 cf

Plug-Flow detention time= 10.7 min calculated for 86.863 af (100% of inflow) Center-of-Mass det. time= 10.7 min (940.0 - 929.3)

Volume	Inve	ert Avail.Sto	rage Storage Description				
#1	138.0	00' 524,10	60 cf Custom Stage Data (Prismatic)Listed below (Recalc)				
Elevatio		Surf.Area	Inc.Store				
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)			
138.0	00	0	0	0			
140.0	00	9,600	9,600	9,600			
141.0	00	13,135	11,368	20,968			
142.0	00	35,665	24,400	45,368			
143.0	00	47,280	41,473	86,840			
144.0	00	58,400	52,840	139,680			
145.0	145.00 71,585		64,993	204,673			
146.0	00	85,230	78,408	283,080			
147.0	00	106,515	95,873	378,953			
148.0	00	183,900	145,208	524,160			
Device	Routing	Invert	Outlet Dev	vices			
#1	Primary	138.00'	60.0" Roi	und Culvert			
			L= 380.0'	RCP, end-section	conforming to fill, Ke= 0.500		
			Inlet / Outlet Invert= 138.00' / 135.70' S= 0.0061 '/' Cc= 0.900				
			n= 0.013 Concrete pipe, bends & connections, Flow Area= 19.63 sf				
Drimony	Drimany OutElow May-102 74 of @ 14.20 bro UW-145.08' TW-122.20' (Dynamic Tailwater)						

Primary OutFlow Max=193.74 cfs @ 14.39 hrs HW=145.08' TW=132.30' (Dynamic Tailwater) -1=Culvert (Barrel Controls 193.74 cfs @ 9.87 fps)

Summary for Pond 2FP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 872.630 ac, 27.98% Impervious, Inflow Depth = 3.40" for 25-year event Inflow = 373.46 cfs @ 13.25 hrs, Volume= 246.930 af 363.68 cfs @ 13.54 hrs, Volume= Outflow = 246.895 af, Atten= 3%, Lag= 17.5 min 148.57 cfs @ 13.54 hrs, Volume= 84.548 af Primary = Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Secondary = 215.11 cfs @ 13.54 hrs, Volume= 162.347 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Tertiary 0.00 cfs @ 0.00 hrs, Volume= 0.000 af = Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 132.74' @ 13.54 hrs Surf.Area= 71,401 sf Storage= 142,442 cf

Plug-Flow detention time= 5.2 min calculated for 246.860 af (100% of inflow) Center-of-Mass det. time= 5.0 min (1,119.4 - 1,114.5)

Volume	Invert	Avail.Sto	rage Storage Description				
#1	125.90'	665,27	78 cf Custom	Stage Data (Pr	ismatic)Listed below (Recalc)		
Elevatio		urf.Area	Inc.Store	Cum.Store			
(fee	-	(sq-ft)	(cubic-feet)	(cubic-feet)			
125.9		0	0	0			
130.0		17,650	36,182	36,182			
131.0		22,340	19,995	56,177			
132.0		56,105	39,223	95,400			
133.0		76,835	66,470	161,870			
134.0		93,610	85,223	247,092			
135.0		111,175	102,393	349,485			
136.0	136.00 153,700		132,438	481,922			
137.0	137.00 213,010		183,355	665,278			
Device	Routing	Invert	Outlet Device	S			
#1	Primary	127.60'	60.0" Round	Culvert			
	,		L= 34.0' RCP, end-section conforming to fill, Ke= 0.500				
					127.60' S= -0.0294 '/' Cc= 0.900		
			n= 0.013, Flo	w Area= 19.63 s	f		
#2 Secondary 126.70'		72.0" Round Culvert					
2			L= 34.0' RCP, end-section conforming to fill, Ke= 0.500				
			Inlet / Outlet Invert= 125.90' / 126.70' S= -0.0235 '/' Cc= 0.900				
			n= 0.013, Flow Area= 28.27 sf				
#3	Tertiary	135.50'	10.0' long x	20.0' breadth Sp	oillway over Path		
	-		Head (feet) 0	.20 0.40 0.60 0	0.80 1.00 1.20 1.40 1.60		
			Coef. (English	n) 2.68 2.70 2.7	70 2.64 2.63 2.64 2.64 2.63		

Primary OutFlow Max=148.57 cfs @ 13.54 hrs HW=132.74' TW=0.00' (Dynamic Tailwater) ☐ 1=Culvert (Barrel Controls 148.57 cfs @ 7.86 fps)

Secondary OutFlow Max=215.11 cfs @ 13.54 hrs HW=132.74' TW=0.00' (Dynamic Tailwater) 2=Culvert (Barrel Controls 215.11 cfs @ 8.36 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=125.90' TW=0.00' (Dynamic Tailwater) -3=Spillway over Path (Controls 0.00 cfs)

Summary for Pond 3AP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 61.820 ac, 8.41% Impervious, Inflow Depth = 3.76" for 25-year event Inflow 93.55 cfs @ 13.04 hrs, Volume= 19.350 af = Outflow 80.94 cfs @ 13.31 hrs, Volume= 19.344 af, Atten= 13%, Lag= 16.5 min = 65.43 cfs @ 13.31 hrs, Volume= Primary = 18.404 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH Secondary = 15.51 cfs @ 13.31 hrs, Volume= 0.941 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.40' @ 13.31 hrs Surf.Area= 77,102 sf Storage= 58,131 cf

Plug-Flow detention time= 6.4 min calculated for 19.342 af (100% of inflow) Center-of-Mass det. time= 6.2 min (887.8 - 881.6)

Volume	Inver	t Avail.Sto	rage St	orage Descri	ption	
#1	141.50	' 125,60	03 cf C	stom Stage	e Data (Pr	ismatic) Listed below (Recalc)
Elevatio (fee 141.5	et)	urf.Area (sq-ft) 0	Inc.St (cubic-fe		m.Store <u>bic-feet)</u> 0	
145.0 146.0 147.0 148.0	00 00 00	3,630 12,565 31,705 146,330	6,3 8,0 22,7 89,0	98 35	6,353 14,450 36,585 125,603	
Device	Routing	Invert	Outlet I	evices		
#1	Primary	142.20'	36.0" I	ound Culve	ert	
#2	Secondary	/ 146.70'	Inlet / C n= 0.01 10.0' Io Head (f	= 42.0' RCP, end-section conforming to fill, Ke= 0.500 het / Outlet Invert= 141.50' / 142.20' S= -0.0167 '/' Cc= 0.900 = 0.013 Concrete pipe, bends & connections, Flow Area= 7.07 sf 0.0' long x 15.0' breadth Spillway over Path lead (feet) 0.20 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		

Primary OutFlow Max=65.43 cfs @ 13.31 hrs HW=147.40' TW=135.63' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 65.43 cfs @ 9.26 fps)

Secondary OutFlow Max=15.51 cfs @ 13.31 hrs HW=147.40' TW=135.63' (Dynamic Tailwater) **2=Spillway over Path** (Weir Controls 15.51 cfs @ 2.23 fps)

Summary for Pond 3BP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 193.720 ac, 8.56% Impervious, Inflow Depth = 3.62" for 25-year event Inflow 229.36 cfs @ 13.43 hrs, Volume= 58.401 af = Outflow 222.14 cfs @ 13.58 hrs, Volume= 58.401 af, Atten= 3%, Lag= 9.0 min = Primary = 166.13 cfs @ 13.58 hrs, Volume= 55.050 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH Secondary = 56.01 cfs @ 13.58 hrs, Volume= 3.351 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 135.81' @ 13.58 hrs Surf.Area= 66,525 sf Storage= 204,979 cf

Plug-Flow detention time= 12.7 min calculated for 58.393 af (100% of inflow) Center-of-Mass det. time= 12.7 min (919.5 - 906.8)

Volume	Inver	Avail.Stor	rage Storage	Description				
#1	129.20	' 1,254,59	3 cf Custom	Stage Data (Pi	rismatic)Listed below (Recalc)			
	_							
Elevatio		urf.Area	Inc.Store	Cum.Store				
(fee	t)	(sq-ft)	(cubic-feet)	(cubic-feet)				
129.2	0	0	0	0				
130.0		2,770	1,108	1,108				
131.0		10,320	6,545	7,653				
132.0		30,890	20,605	28,258				
133.0	0	37,250	34,070	62,328				
134.0		45,960	41,605	103,933				
135.0		56,730	51,345	155,278				
136.0	0	68,875	62,803	218,081				
137.0		83,650	76,263	294,343				
138.0		105,010	94,330	388,673				
139.0		125,940	115,475	504,148				
140.0		161,860	143,900	648,048				
141.0		187,685	174,773	822,821				
142.0	-	214,700	201,193	1,024,013				
143.0	0	246,460	230,580	1,254,593				
Device	Routing	Invert	Outlet Device	6				
	U							
#1	Primary	129.20'	60.0" Round					
					conforming to fill, $Ke= 0.500$			
					128.90' S= 0.0150 '/' Cc= 0.900			
щ <u>о</u>	Casardam	405 401			Flow Area= 19.63 sf			
#2	Secondary	/ 135.10'		35.0' long x 10.0' breadth Spillway over Path Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60				
			Coel. (English	1) 2.49 2.50 2.	70 2.69 2.68 2.69 2.67 2.64			
Primary		/ax=166 13 cf	s @ 13 58 hrs	HW=135 81' T	N=0.00' (Dynamic Tailwater)			

Primary OutFlow Max=166.13 cfs @ 13.58 hrs HW=135.81' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 166.13 cfs @ 8.47 fps)

Secondary OutFlow Max=56.00 cfs @ 13.58 hrs HW=135.81' TW=0.00' (Dynamic Tailwater) 2=Spillway over Path (Weir Controls 56.00 cfs @ 2.26 fps)

Summary for Subcatchment 1A:

Runoff = 5.92 cfs @ 12.08 hrs, Volume= 0.457 af, Depth= 6.94" Routed to Pond 1AP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription		
*	0.	710	98	Pave	ement		
	0.	080	39	>75%	% Grass co	over, Good	, HSG A
	0.	790	92	Weig	phted Aver	age	
	0.	080		10.1	3% Pervio	us Area	
	0.	710		89.8	7% Imperv	vious Area	
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

Summary for Subcatchment 1B:

Runoff = 6.69 cfs @ 12.08 hrs, Volume= 0.512 af, Depth= 6.83" Routed to Pond 1BP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription		
*	0.	800	98	Pave	ement		
	0.	100	39	>75%	% Grass co	over, Good	, HSG A
	0.	900	91	Weig	phted Aver	age	
	0.	100		11.1	1% Pervio	us Area	
	0.	800		88.8	9% Imperv	vious Area	
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

Summary for Subcatchment 1C:

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Assumed pipe channel has slope 0.005 since no data given

Runoff = 135.86 cfs @ 12.61 hrs, Volume= 20.834 af, Depth= 5.41" Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

_	Area	(ac) C	N Desc	cription		
*				ement		
*			8 Roof			
*		750 10		n Water		
				ds, Good,		
				ds, Good,		
				ds, Good,		
				h, Good, H		
					over, Good over, Good	
					over, Good	
				phted Aver		,1166 D
		410	· ·	0% Pervio		
		760			/ious Area	
	10.	100	42.0		100371100	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	· .
	23.4	100	0.0021	0.07		Sheet Flow,
						Grass: Short
	4.4	94	0.0026	0.36		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	7.7	252	0.0061	0.55		Shallow Concentrated Flow,
			0.0704	4.05		Short Grass Pasture Kv= 7.0 fps
	0.1	14	0.0701	1.85		Shallow Concentrated Flow,
	2.0	454	0.0455	0.07		Short Grass Pasture Kv= 7.0 fps
	2.9	154	0.0155	0.87		Shallow Concentrated Flow,
	1.4	438	0.0050	5.09	16.00	Short Grass Pasture Kv= 7.0 fps Pipe Channel,
	1.4	430	0.0050	5.09	10.00	24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'
						n= 0.013 Concrete pipe, bends & connections
	0.8	288	0.0050	5.91	29.00	Pipe Channel,
	0.0	200	0.0000	0.01	20.00	30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63'
						n= 0.013 Concrete pipe, bends & connections
	0.7	295	0.0050	6.67	47.16	Pipe Channel,
	••••					36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75'
						n= 0.013 Concrete pipe, bends & connections
	2.9	1,299	0.0050	7.39	71.14	
						42.0" Round Area= 9.6 sf Perim= 11.0' r= 0.88'
						n= 0.013 Concrete pipe, bends & connections
	0.2	93	0.0050	8.08	101.57	Pipe Channel,
						48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00'

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n= 0.013 Concrete pipe, bends & connections

44.5 3,027 Total

Summary for Subcatchment 1D:

Runoff = 30.52 cfs @ 13.91 hrs, Volume= Routed to Pond 1DP : UPSTREAM DOGLEG 9.985 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 100-year Rainfall=7.90"

	•					
*	Area	· /		cription		
*		-		ement		
			98 Root			
				ods, Good, ods, Good,		
				ids, Good, ids, Good,		
				sh, Good, F		
				sh, Good, F sh, Good, F		
				sh, Good, F		
					over, Good	HSG A
					over, Good	
					over, Good	,
_	32.	370 6		ghted Aver		·
		900		7% Pervio		
	2.	470	7.63	% Impervi	ous Area	
				·		
		Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	33.5	100	0.0244	0.05		Sheet Flow,
						Woods: Dense underbrush n= 0.800 P2= 3.40"
	1.1	57	0.0273	0.83		Shallow Concentrated Flow,
		. – .				Woodland Kv= 5.0 fps
	4.5	154	0.0130	0.57		Shallow Concentrated Flow,
	~ ~	440	0.0470	0.00		Woodland Kv= 5.0 fps
	2.9	116	0.0173	0.66		Shallow Concentrated Flow,
	5.7	307	0.0326	0.90		Woodland Kv= 5.0 fps Shallow Concentrated Flow,
	5.7	307	0.0320	0.90		Woodland Kv= 5.0 fps
	3.8	49	0.0018	0.21		Shallow Concentrated Flow,
	0.0		0.0010	0.21		Woodland Kv= 5.0 fps
	15.7	614	0.0170	0.65		Shallow Concentrated Flow,
		••••		0.00		Woodland Kv= 5.0 fps
	50.2	583	0.0015	0.19		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	25.0	407	0.0015	0.27		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	1.5	121	0.0372	1.35		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	1120	2 200	Total			

143.9 2,508 Total

Summary for Subcatchment 1E:

Runoff = 78.20 cfs @ 12.09 hrs, Volume= 5.760 Routed to Pond 1EP : DOWNSTREAM DOGLEG

5.760 af, Depth= 6.12"

	Area	(ac)	CN	Desc	cription							
*	6.	380	98	Pave	Pavement							
*	0.	980	98	Roof	s							
_	3.	940	61	>75%	% Grass c	over, Good	I, HSG B					
	11.	300	85	Weig	ghted Aver	age						
	3.	940		34.8	7% Pervio	us Area						
	7.	360		65.1	3% Imperv	ious Area/						
	Тс	Leng		Slope	Velocity	Capacity	Description					
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)						
	6.0						Direct Entry,					

Summary for Subcatchment 1F:

Runoff 72.87 cfs @ 12.09 hrs, Volume= 5.217 af, Depth= 5.18" = Routed to Pond 1FP : EXISTING PARKWAY BASIN

_	Area (ac)	CN	Desc	cription							
*	3.3	320	98	Pave	avement							
*	0.4	410	100	Opei	Open Water							
	3.8	380	61	>75%	75% Grass cover, Good, HSG B							
	4.4	470	74	>75%	% Grass co	over, Good	d, HSG C					
	12.0	080	77	Weig	ghted Aver	age						
	8.3	350		69.1	2% Pervio	us Area						
	3.7	730		30.8	8% Imper\	ious Area						
	Тс	Leng	lth	Slope	Velocity	Capacity	Description					
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)						
	6.0						Direct Entry,					

Summary for Subcatchment 1G:

Runoff = 13.80 cfs @ 12.37 hrs, Volume= 1.840 af, Routed to Pond 1GP : SPORTS COMPLEX BASIN

1.840 af, Depth= 6.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 100-year Rainfall=7.90"

	Area	(ac) C	N Des	cription		
*	1.	850 9	98 Pave	ement		
*	0.	990 8	35 Artifi	icial Turf		
	0.	340 8	30 >75°	% Grass c	over, Good	, HSG D
	3.	180 9	92 Weig	ghted Aver	ade	
		330		2% Pervio	•	
		850	58.1	8% Imperv	vious Area	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	26.5			/		Direct Entry, Artificial Turf
	1.8	346	0.0050	3.21	2.52	•
	1.0	0-10	0.0000	0.21	2.02	12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n = 0.013 Corrugated PE, smooth interior
	0.6	116	0.0050	3.21	2.52	-
	0.0	110	0.0000	0.21	2.02	12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n = 0.013 Corrugated PE, smooth interior
	0.0	11	0.0900	13.61	10.69	0
	0.0		0.0000	10.01	10.00	12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Concrete pipe, bends & connections
	0.2	40	0.0050	4.20	7 43	Pipe Channel,
	0.2	-0	0.0000	1.20	7.40	18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	0.1	18	0.0050	4.20	7.43	• •
	0.1	10	0.0000	7.20	7.40	18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	20.2	531	Total			

29.2 531 Total

Summary for Subcatchment 1H:

Runoff = 10.05 cfs @ 12.08 hrs, Volume= 0.790 af, Depth= 7.18" Routed to Pond 1HP : SPORTS COMPLEX BASIN

	Area (a	ac) (CN	Desc	ription		
*	1.0	00	98	Pave	ement		
*	0.0	90	85	Artifi	cial Turf		
_	0.2	30	80	>75%	6 Grass co	over, Good	I, HSG D
	1.3	20	94	Weig	hted Aver	age	
	0.3	20		24.24	4% Pervio	us Area	
	1.0	00		75.76	6% Imper	ious Area/	
	Tc I (min)	Length (feet)		lope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0		•		· /		Direct Entry,

Summary for Subcatchment 1I:

Runoff = 531.06 cfs @ 13.39 hrs, Volume= Routed to Pond 1IP : UPSTREAM TACAN 137.302 af, Depth= 5.30"

	Area	(ac)	CN	N Desc	cription							
*	111.	920	98	B Pave	ement							
*	3.	230	98	B Roof	oofs							
*	0.	140	100) Opei	n Water							
	0.	900	30) Woo	ds, Good,	HSG A						
		660	55		ds, Good,							
	-	630	70		ds, Good,							
		120	77		ds, Good,							
		850	30		h, Good, H							
		070	48		h, Good, H							
	-	830	65		h, Good, H							
		050	73		h, Good, H							
		020	39			over, Good						
		110	6			over, Good						
		330	74			over, Good						
		090	80			over, Good	, HSG D					
	310.		78		phted Aver							
	195.				2% Pervio							
	115.	290		37.0	8% Imper	vious Area						
	Та	امم	.+6	Clana	Valaaitu	Consoitu	Description					
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
						(CIS)						
	47.9	1	00	0.0100	0.03		Sheet Flow,					
	00 E	e	40	0 0000	0.47		Woods: Dense underbrush n= 0.800 P2= 3.40"					
	22.5	0	40	0.0090	0.47		Shallow Concentrated Flow,					
	22 E	1.0	05	0.0100	0 50		Woodland Kv= 5.0 fps					
	33.5	1,0	05	0.0100	0.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps					
	102.0	4 7	45	Tatal								
	103.9	1,74	40	Total								

Summary for Subcatchment 1J:

Runoff = 46.18 cfs @ 12.31 hrs, Volume= Routed to Pond 1JP : DOWNSTREAM TACAN 5.168 af, Depth= 3.37"

	Area	(ac)	C١	l Dese	cription		
*	3.	780	98	B Pave	ement		
	12.	310	48	B Brus	h, Good, H	ISG B	
	2.	320	73	3 Brus	h, Good, H	ISG D	
	18.	410	6	1 Weig	ghted Aver	age	
	14.	630		79.4	7% Pervio	us Area	
3.780 20.53% Impervious Area						/ious Area	
	Tc	Leng	th	Slope	Velocity	Capacity	Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	11.7	10	00	0.0120	0.14		Sheet Flow,
							Grass: Short n= 0.150 P2= 3.40"
	10.5	56	60	0.0160	0.89		Shallow Concentrated Flow,
							Short Grass Pasture Kv= 7.0 fps
	22.2	66	60	Total			

Summary for Subcatchment 2A:

Runoff = 226.01 cfs @ 13.49 hrs, Volume= 60.729 af, Depth= 4.72" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area	(ac)	CN	Desc	cription						
*	4.000 98 Pavement										
*	0.290 98			Roof	Roof						
	12.	500	30	Woo	Woods, Good, HSG A						
	115.	050	77		ds, Good,						
	1.	620	57	Woo	ds/grass c	omb., Pooi	r, HSG A				
		390	61			over, Good					
	16.	500	74	>75%	% Grass co	over, Good	, HSG C				
	154.	350	73	Weig	ghted Aver	age					
	150.	060		97.2	2% Pervio	us Area					
	4.	290		2.78	% Impervi	ous Area					
	Tc	Lengt		Slope	Velocity	Capacity	Description				
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)					
	47.9	10	0 0	.0100	0.03		Sheet Flow,				
							Woods: Dense underbrush n= 0.800 P2= 3.40"				
	37.9	1,52	50	.0180	0.67		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	11.4	48	0 0	.0100	0.70		Shallow Concentrated Flow,				
							Short Grass Pasture Kv= 7.0 fps				
	14.2	42	50	.0100	0.50		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	111.4	2,53	0 T	otal							

Summary for Subcatchment 2B:

Runoff = 311.35 cfs @ 12.08 hrs, Volume= 24 Routed to Pond 2BP : EXISTING BASIN

24.480 af, Depth= 7.18"

	Area (ac)	CN	Desc	cription		
*	6.6	650	98	Pave	ement		
*	26.6	500	98	Roof			
_	7.6	650	74	>75%	6 Grass co	over, Good	I, HSG C
	40.900 94 Weighted Average						
	7.650 18.70% Pervious Area			0% Pervio	us Area		
	33.2	250		81.3	0% Imper∖	vious Area	
	Tc (min)	Lengt (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	6.0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-y	(15/10)	((010)	Direct Entry,

Summary for Subcatchment 2C:

104.23 cfs @ 12.09 hrs, Volume= 7.424 af, Depth= 4.84" Runoff = Routed to Pond 2CP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	cription				
*	8.	840	98	Pave	ement				
*	1.	680	98	Roof	Roofs				
	7.	280	39	>75%	6 Grass co	over, Good	d, HSG A		
	0.	620	74	>75%	6 Grass co	over, Good	d, HSG C		
	18.	420	74	Weig	hted Aver	age			
	7.	900		42.8	9% Pervio	us Area			
	10.	520		57.1	1% Imperv	vious Area			
	-			~	N / N · · ·	O			
		Leng		Slope	Velocity	Capacity	Description		
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)			
	6.0						Direct Entry,		

Summary for Subcatchment 2D:

Runoff = 40.34 cfs @ 12.34 hrs, Volume= 4.590 af, Depth= 4.38" Routed to Pond 2DP : EXISTING PARKWAY BASIN

	Area	(ac) C	N Desc	cription		
*	5.	640 9	8 Pave	ement		
	5.	310 3	9 > 759	% Grass co	over, Good	, HSG A
	1.	630 7			over, Good	
	12.	580 7	'0 Weid	ghted Aver	ade	
		940		, 7% Pervio		
	5.	640	44.8	3% Imperv	/ious Area	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	1.6	100	0.0096	1.06		Sheet Flow,
						Smooth surfaces n= 0.011 P2= 3.40"
	0.2	31	0.0112	2.15		Shallow Concentrated Flow,
						Paved Kv= 20.3 fps
	10.0	162	0.0015	0.27		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	11.3	457	0.0011	0.67		Shallow Concentrated Flow,
						Paved Kv= 20.3 fps
	0.5	43	0.0054	1.49		Shallow Concentrated Flow,
						Paved Kv= 20.3 fps
	0.3	43	0.1569	2.77		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	23.9	836	Total			

Summary for Subcatchment 2E:

Runoff = 76.38 cfs @ 13.28 hrs, Volume= 18.122 af, Depth= 3.59" Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

	Area	(ac) (CN I	Desc	cription		
*	3.	360	98	Pave	ement		
	7.	660	30	Woo	ds, Good,	HSG A	
	9.	500	70	Woo	ds, Good,	HSG C	
	26.	720	77	Woo	ds, Good,	HSG D	
	12.	800	39 :	>75%	% Grass co	over, Good	, HSG A
	0.	530	80 :	>75%	% Grass co	over, Good	, HSG D
	60.	570	63	Weig	ghted Aver	age	
	57.210 94			94.4	5% Pervio	us Area	
	3.360			5.55	% Impervi	ous Area	
	_						
	Tc	Length		ope	Velocity	Capacity	Description
	(min)	(feet)	(f	t/ft)	(ft/sec)	(cfs)	
	30.8	100	0.03	300	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	59.1	1,034	0.00	034	0.29		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	89.9	1,134	Tota	al			

Summary for Subcatchment 2F:

Runoff = 207.68 cfs @ 13.07 hrs, Volume= 43.714 af, Depth= 4.26" Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

	Area	(ac)	CN	Desc	cription		
*	12.	830	98	Pave	ement		
	33.	890	55	Woo	ds, Good,	HSG B	
	33.	300	77	Woo	ds, Good,	HSG D	
	34.	210	61	>75%	% Grass co	over, Good	, HSG B
	8.	770	80	>75%	6 Grass co	over, Good	, HSG D
	123.000 69			Weig	phted Aver	age	
	110.170		89.5	7% Pervio	us Area		
	12.830		10.4	3% Imper	∕ious Area		
	_			~		•	-
	Tc	Leng		Slope	Velocity	Capacity	Description
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	47.9	10)0 (0.0100	0.03		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	29.0	1,03	30 (0.0140	0.59		Shallow Concentrated Flow,
_							Woodland Kv= 5.0 fps
	76.9	1,13	30 -	Total			

Summary for Subcatchment 2G:

Assumed Tc value

Runoff = 31.00 cfs @ 13.47 hrs, Volume= 9.092 af, Depth= 6.59" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area (ac)	CN	Desc	cription		
*	6.620	98	Pave	ement		
*	5.800	98	Roof	F		
_	4.140	61	>75%	% Grass co	over, Good	d, HSG B
	16.560	89	Weig	ghted Aver	age	
	4.140		25.0	0% Pervio	us Area	
	12.420		75.0	0% Imperv	vious Area	
		ngth	Slope	Velocity	Capacity	Description
	<u>(min) (f</u>	eet)	(ft/ft)	(ft/sec)	(cfs)	
	120.0					Direct Entry,

Summary for Subcatchment 2H:

Assumed Tc value

Runoff = 14.69 cfs @ 13.47 hrs, Volume= 4.218 af, Depth= 5.76" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area (ac)	CN	Desc	cription		
*	3.3	370	98	Pave	ement		
*	1.6	690	98	Roof	-		
	3.7	720	61	>75%	% Grass co	over, Good	I, HSG B
	8.7	780	82	Weig	ghted Aver	age	
	3.7	720		42.3	7% Pervio	us Area	
	5.0	060		57.6	3% Imperv	ious Area/	
	_						
	Тс	Leng		Slope	Velocity	Capacity	Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	120.0						Direct Entry,

Summary for Subcatchment 3A:

Runoff = 131.39 cfs @ 12.97 hrs, Volume= 27.297 af, Depth= 5.30" Routed to Pond 3AP : FRENCH'S STREAM EAST BRANCH

	Area	(ac)	CN	Desc	cription		
*	5.	200	98	Pave	ement		
	0.	160	55	Woo	ds, Good,	HSG B	
	50.	970	77	Woo	ds, Good,	HSG D	
	5.	490	73	Brus	h, Good, H	ISG D	
	61.820 78 Weight		ghted Aver	age			
	56.620			91.5	9% Pervio	us Area	
	5.200		8.41% Impervious Area				
	_						
	Tc	Lengt		Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	35.7	10) 0.	0208	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	2.1	6	6 0.	0114	0.53		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	37.0	1,27	20.	0131	0.57		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	74.8	1,43	8 To	otal			

Summary for Subcatchment 3B:

Runoff = 212.96 cfs @ 13.43 hrs, Volume= 55.695 af, Depth= 5.07" Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

_	Area	(ac)	CN	Desc	cription		
*	9.	990	98	8 Pave	ement		
*	1.	400	100	Oper	n Water		
	14.	050	55	i Woo	ds, Good,	HSG B	
	83.	920	77	′ Woo	ds, Good,	HSG D	
	9.	370	73	8 Brus	h, Good, H	ISG D	
	6.	810	61			over, Good	
_	6.	360	80) >75%	% Grass co	over, Good	, HSG D
131.900 76 Weighted Average						age	
				91.3	6% Pervio	us Area	
	11.	390		8.64	% Impervi	ous Area	
	Tc	Leng		Slope	Velocity	Capacity	Description
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)	
	36.3	10	0	0.0200	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	70.7	1,50	0	0.0050	0.35		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	107.0	1,60	0	Total			

Summary for Reach 1R: DP-1 TACAN OUTFALL

Inflow Area = 437.470 ac, 35.83% Impervious, Inflow Depth > 5.10" for 100-year event Inflow = 170.79 cfs @ 16.01 hrs, Volume= 185.867 af Outflow = 170.79 cfs @ 16.01 hrs, Volume= 185.867 af, Atten= 0%, Lag= 0.0 min Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: DP-2 FRENCH'S STREAM WEST BRANCH

Inflow Are	a =	872.630 ac, 27.98% Impervious, Inflow Depth = 4.88" for 100-year event
Inflow	=	458.06 cfs @ 13.47 hrs, Volume= 354.670 af
Outflow	=	458.06 cfs @ 13.47 hrs, Volume= 354.670 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: DP-3 FRENCH'S STREAM EAST BRANCH

Inflow Are	a =	193.720 ac,	8.56% Impervious, Inflow	Depth = 5.14"	for 100-year event
Inflow	=	314.32 cfs @	13.51 hrs, Volume=	82.986 af	
Outflow	=	314.32 cfs @	13.51 hrs, Volume=	82.986 af, Atte	en= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area =	0.790 ac, 89.87% Impervious, Inflow De	epth = 6.94" for 100-year event
Inflow =	5.92 cfs @ 12.08 hrs, Volume=	0.457 af
Outflow =	5.94 cfs @ 12.08 hrs, Volume=	0.457 af, Atten= 0%, Lag= 0.0 min
Discarded =	0.12 cfs @ 8.94 hrs, Volume=	0.207 af
Primary =	5.81 cfs @ 12.08 hrs, Volume=	0.250 af
Routed to Pond	1 1CP : MEMORIAL GROVE AVE. BASIN	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 171.41' @ 12.08 hrs Surf.Area= 2,201 sf Storage= 2,834 cf

Plug-Flow detention time= 82.8 min calculated for 0.457 af (100% of inflow) Center-of-Mass det. time= 82.8 min (852.2 - 769.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	168.50'	1,559 cf	24.83'W x 88.64'L x 2.33'H Field A
			5,136 cf Overall - 1,238 cf Embedded = 3,898 cf x 40.0% Voids
#2A	169.00'	1,238 cf	ADS_StormTech SC-310 +Cap x 84 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			84 Chambers in 7 Rows
#3	168.50'	85 cf	4.00'D x 6.80'H CB-Impervious
#4	175.20'	449 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
175.20	10	0	0
176.00	300	124	124
176.50	1,000	325	449

Device	Routing	Invert	Outlet Devices
#1	Primary	170.00'	18.0" Round Culvert
	-		L= 13.0' RCP, end-section conforming to fill, Ke= 0.500
			Inlet / Outlet Invert= 170.00' / 169.85' S= 0.0115 '/' Cc= 0.900
			n= 0.013, Flow Area= 1.77 sf
#2	Discarded	168.50'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.12 cfs @ 8.94 hrs HW=168.58' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=5.80 cfs @ 12.08 hrs HW=171.41' TW=151.84' (Dynamic Tailwater) ☐ 1=Culvert (Barrel Controls 5.80 cfs @ 4.37 fps)

Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

12 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 86.64' Row Length +12.0" End Stone x 2 = 88.64' Base Length 7 Device x 2.4.0" Wide + 0.0" One circum x 2 + 12.0" Side Stone x 2 = 24.02 Dece Width

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

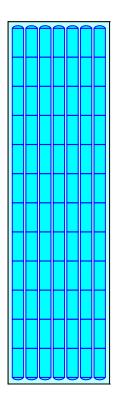
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

84 Chambers x 14.7 cf = 1,238.3 cf Chamber Storage

5,136.2 cf Field - 1,238.3 cf Chambers = 3,897.9 cf Stone x 40.0% Voids = 1,559.1 cf Stone Storage

Chamber Storage + Stone Storage = 2,797.5 cf = 0.064 afOverall Storage Efficiency = 54.5%Overall System Size = $88.64' \times 24.83' \times 2.33'$

84 Chambers 190.2 cy Field 144.4 cy Stone





Summary for Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area =	0.900 ac, 88.89% Impervious, Inflow De	epth = 6.83" for 100-year event
Inflow =	6.69 cfs @ 12.08 hrs, Volume=	0.512 af
Outflow =	6.88 cfs @ 12.08 hrs, Volume=	0.512 af, Atten= 0%, Lag= 0.0 min
Discarded =	0.13 cfs @ 8.82 hrs, Volume=	0.224 af
Primary =	6.75 cfs @ 12.08 hrs, Volume=	0.288 af
Routed to Pond	d 1CP : MEMORIAL GROVE AVE. BASIN	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 171.80'@ 12.08 hrs Surf.Area= 2,378 sf Storage= 3,060 cf

Plug-Flow detention time= 80.7 min calculated for 0.512 af (100% of inflow) Center-of-Mass det. time= 80.7 min (853.7 - 772.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	169.00'	1,683 cf	24.83'W x 95.76'L x 2.33'H Field A
			5,549 cf Overall - 1,342 cf Embedded = 4,207 cf x 40.0% Voids
#2A	169.50'	1,342 cf	ADS_StormTech SC-310 +Cap x 91 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			91 Chambers in 7 Rows
#3	169.00'	72 cf	4.00'D x 5.70'H CB-Impervious
#4	172.70'	572 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,668 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
172.70	10	0	0	
173.00	300	47	47	
174.50	400	525	572	

Device	Routing	Invert	Outlet Devices
#1	Primary	170.50'	12.0" Round Culvert X 2.00
	·		L= 23.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 170.50' / 170.20' S= 0.0130 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	169.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.13 cfs @ 8.82 hrs HW=169.06' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=6.70 cfs @ 12.08 hrs HW=171.78' TW=151.83' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 6.70 cfs @ 4.27 fps)

Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

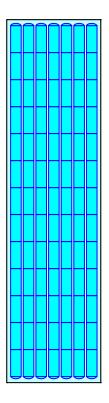
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

91 Chambers x 14.7 cf = 1,341.5 cf Chamber Storage

5,548.8 cf Field - 1,341.5 cf Chambers = 4,207.2 cf Stone x 40.0% Voids = 1,682.9 cf Stone Storage

Chamber Storage + Stone Storage = 3,024.4 cf = 0.069 afOverall Storage Efficiency = 54.5%Overall System Size = $95.76' \times 24.83' \times 2.33'$

91 Chambers 205.5 cy Field 155.8 cy Stone



Summary for Pond 1CP: MEMORIAL GROVE AVE. BASIN

Assumed slope of 0.005 for outlet culvert.

Inflow Area	=	47.860 ac, 4	4.44% Impervious, Inflow	Depth = 5.36" for 100-year event		
Inflow	=	137.75 cfs @	12.61 hrs, Volume=	21.372 af		
Outflow	=	42.71 cfs @	13.43 hrs, Volume=	21.309 af, Atten= 69%, Lag= 49.7 min		
Primary	=	42.21 cfs @	13.43 hrs, Volume=	21.298 af		
Routed t	to Po	nd 1DP : UPS1	REAM DOGLEG			
Secondary	=	0.50 cfs @	13.43 hrs, Volume=	0.012 af		
Routed to Pond 1DP : UPSTREAM DOGLEG						

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 156.07' @ 13.43 hrs Surf.Area= 82,223 sf Storage= 388,123 cf

Plug-Flow detention time= 150.3 min calculated for 21.309 af (100% of inflow) Center-of-Mass det. time= 148.4 min (987.7 - 839.3)

Volume	Invert	Avail.Stor	rage Stora	age Description
#1	150.00'	468,17	78 cf Cust	om Stage Data (Prismatic)Listed below (Recalc)
Elevatio	on Surf	Area	Inc.Store	Cum.Store
(fee		(sq-ft)	(cubic-feet)	
150.0		6,495	0	0
151.0	0 5	2,090	49,293	49,293
152.0		7,750	54,920	
153.0		3,535	60,643	
154.0	0 6	9,445	66,490	231,345
155.0	0 7	5,475	72,460	303,805
156.0	8 00	1,635	78,555	
157.0	0 9	0,000	85,818	468,178
Device	Routing	Invert	Outlet Dev	rices
#1	Primary	150.00'	27.0" Rou	und Culvert
#2	Secondary	156.00'	Inlet / Outle n= 0.013 (10.0' long Head (feet	RCP, end-section conforming to fill, Ke= 0.500 et Invert= 150.00' / 149.56' S= 0.0050 '/' Cc= 0.900 Concrete pipe, bends & connections, Flow Area= 3.98 sf x 20.0' breadth Broad-Crested Rectangular Weir) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 glish) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=42.21 cfs @ 13.43 hrs HW=156.07' TW=147.54' (Dynamic Tailwater) -1=Culvert (Barrel Controls 42.21 cfs @ 10.62 fps)

Secondary OutFlow Max=0.50 cfs @ 13.43 hrs HW=156.07' TW=147.54' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir (Weir Controls 0.50 cfs @ 0.71 fps)

Summary for Pond 1DP: UPSTREAM DOGLEG

Inflow Area =		80.230 ac, 29.59% Impervious, Inflow Depth > 4.68" for 100-year even	it
Inflow	=	71.77 cfs @ 13.91 hrs, Volume= 31.294 af	
Outflow	=	65.48 cfs @ 13.92 hrs, Volume= 31.294 af, Atten= 9%, Lag= 1.1 n	nin
Primary	=	32.74 cfs @ 13.92 hrs, Volume= 15.457 af	
Routed	l to Por	1 1EP : DOWNSTREAM DOGLEG	
Secondary	/ =	32.74 cfs @ 13.92 hrs, Volume= 15.838 af	
Routed	l to Por	1 1EP : DOWNSTREAM DOGLEG	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 148.96' @ 14.67 hrs Surf.Area= 20,149 sf Storage= 41,249 cf

Plug-Flow detention time= 7.4 min calculated for 31.290 af (100% of inflow) Center-of-Mass det. time= 7.4 min (988.1 - 980.8)

Volume	Inver	t Avail.Sto	rage Storag	e Description		
#1	142.50)' 67,80	08 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio (fee		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
142.5		0	0	0		
144.(00	180	135	135		
145.0	00	1,610	895	1,030		
146.0	00	5,900	3,755	4,785		
147.0		9,900	7,900	12,685		
148.0		14,165	12,033	24,718		
149.0		20,375	17,270	41,988		
150.0	00	31,265	25,820	67,808		
Device	Routing	Invert	Outlet Devid	ces		
#1	Primary	142.60'	42.0" Roui	nd Culvert		
#2	Secondary	y 142.50'	Inlet / Outle n= 0.013, F 42.0'' Rou L= 782.0' F Inlet / Outle	t Invert= 142.60' / low Area= 9.62 st n d Culvert RCP, end-section	conforming to fill, Ke= 0.500 142.19' S= 0.0004 '/' Cc= 0.900	
Drimary	Primary OutElow Max-32 54 ofc @ 13.02 brs. HW-148.30' TW-147.31' (Dynamic Tailwater)					

Primary OutFlow Max=32.54 cfs @ 13.92 hrs HW=148.39' TW=147.31' (Dynamic Tailwater) -1=Culvert (Outlet Controls 32.54 cfs @ 3.38 fps)

Secondary OutFlow Max=32.54 cfs @ 13.92 hrs HW=148.39' TW=147.31' (Dynamic Tailwater) 2=Culvert (Outlet Controls 32.54 cfs @ 3.38 fps)

Summary for Pond 1EP: DOWNSTREAM DOGLEG

Inflow Are	a =	91.530 ac, 3	3.98% Impervious,	Inflow Depth >	4.86" for	100-year event
Inflow	=	85.25 cfs @	12.09 hrs, Volume	e= 37.054	af	
Outflow	=	82.39 cfs @	12.12 hrs, Volume	e= 37.054	af, Atten= 3	3%, Lag= 1.4 min
Primary	=	82.39 cfs @	12.12 hrs, Volume	e= 37.054	af	-
Routed to Pond 1IP : UPSTREAM TACAN						

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.97' @ 14.84 hrs Surf.Area= 13,002 sf Storage= 23,625 cf

Plug-Flow detention time= 5.5 min calculated for 37.054 af (100% of inflow) Center-of-Mass det. time= 5.5 min (963.0 - 957.5)

Volume	Inv	ert Avail.S	Storage	Storage	Description		
#1	142.	10' 60	,932 cf	Custom	n Stage Data (P	rismatic)Listed below (Recalc)	
- 1				0	0		
Elevatio		Surf.Area		Store.	Cum.Store		
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)		
142.1	10	0		0	0		
144.(00	1,520		1,444	1,444		
145.0	00	2,355		1,938	3,382		
146.0	00	4,275		3,315	6,697		
147.0	00	8,570		6,423	13,119		
148.0	00	13,120		10,845	23,964		
149.0	00	17,750		15,435	39,399		
150.0	00	25,315	2	21,533	60,932		
Device	Routing	Inve	ert Outl	et Device	S		
#1	Primary	142.1	0' 48.0	Round	Culvert X 2.00		
			L= 2	L= 2,830.0' RCP, end-section conforming to fill, Ke= 0.500			
			Inlet / Outlet Invert= 142.10' / 134.60' S= 0.0027 '/' Cc= 0.900				
n= 0.013, Flow Area= 12.57 sf		sf					
			-	-,			

Primary OutFlow Max=81.99 cfs @ 12.12 hrs HW=145.78' TW=141.88' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 81.99 cfs @ 4.44 fps)

Summary for Pond 1FP: EXISTING PARKWAY BASIN

Primary Culvert - Assumed Inverts, pipe diameter, and pipe material.

Inflow Area =	12.080 ac, 3	0.88% Impervious, Inf	low Depth = 5.18" for 100-year event		
Inflow =	72.87 cfs @	12.09 hrs, Volume=	5.217 af		
Outflow =	13.33 cfs @	12.55 hrs, Volume=	3.726 af, Atten= 82%, Lag= 27.5 min		
Primary =	13.33 cfs @	12.55 hrs, Volume=	3.726 af		
Routed to Pond 1IP : UPSTREAM TACAN					
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af		
Routed to Pond 1IP : UPSTREAM TACAN					

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 148.54' @ 12.55 hrs Surf.Area= 28,531 sf Storage= 116,776 cf

Plug-Flow detention time= 257.0 min calculated for 3.726 af (71% of inflow) Center-of-Mass det. time= 165.6 min (975.8 - 810.2)

Volume	Invert	Avail.Sto	rage	Storage	Description	
#1	143.00'	197,00	58 cf	Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (feet		urf.Area (sq-ft)		Store -feet)	Cum.Store (cubic-feet)	
143.0	/	10,065	(cubic	0	0	
144.0		17,300	1	3,683	13,683	
145.0		19,605		8,453	32,135	
146.0	0	21,970	2	0,788	52,923	
147.0	0	24,385	2	3,178	76,100	
148.0	0	26,860		5,623	101,723	
149.0	0	29,935	2	8,398	130,120	
150.0	0	31,980	3	0,958	161,078	
151.0	0	40,000	3	5,990	197,068	
Device	Routing	Invert	Outle	et Device	S	
#1	Primary	146.50'	24.0'	Round	l Culvert	
#2	Secondary	150.00'	L= 98.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 146.50' / 146.00' S= 0.0051 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf 10.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63			

Primary OutFlow Max=13.33 cfs @ 12.55 hrs HW=148.54' TW=143.11' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 13.33 cfs @ 5.16 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=137.80' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1GP: SPORTS COMPLEX BASIN

Inflow Area =	3.180 ac, 58.18% l	mpervious, Inflow	Depth = 6.94"	for 100-year event		
Inflow =	13.80 cfs @ 12.37 h	rs, Volume=	1.840 af			
Outflow =	13.09 cfs @ 12.47 h	rs, Volume=	1.832 af, Atter	n= 5%, Lag= 6.0 min		
Primary =	5.76 cfs @ 12.47 h	rs, Volume=	1.607 af			
Routed to Pond 1IP : UPSTREAM TACAN						
Secondary =	7.33 cfs @ 12.47 h	rs, Volume=	0.225 af			
Routed to Pond 1IP : UPSTREAM TACAN						

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 169.75' @ 12.47 hrs Surf.Area= 4,540 sf Storage= 9,423 cf

Plug-Flow detention time= 20.8 min calculated for 1.832 af (100% of inflow) Center-of-Mass det. time= 18.1 min (809.0 - 790.9)

Volume	Inver	t Avail.Sto	rage Storage	Description		
#1	166.00	' 10,58	38 cf Custom	n Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
166.0	-	1,085	0	0		
167.0		1,395	1,240	1,240		
168.0	00	2,415	1,905	3,145		
169.0	00	3,850	3,133	6,278		
170.0	00	4,770	4,310	10,588		
Device	Routing	Invert	Outlet Device	s		
#1	Primary	166.30'	12.0" Round	d Culvert		
#2	Secondary		Inlet / Outlet I n= 0.013 Col 9.0' long x 1 Head (feet) (57.0' RCP, end-section conforming to fill, Ke= 0.500 et / Outlet Invert= 166.30' / 166.00' S= 0.0053 '/' Cc= 0.900 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf D' long x 17.0' breadth Broad-Crested Rectangular Weir ead (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 bef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		

Secondary OutFlow Max=7.33 cfs @ 12.47 hrs HW=169.75' TW=142.90' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir (Weir Controls 7.33 cfs @ 1.81 fps)

Summary for Pond 1HP: SPORTS COMPLEX BASIN

Inflow Area =	1.320 ac, 75.76	6% Impervious, Inflow [Depth = 7.18" for 100-year event			
Inflow =	10.05 cfs @ 12.	.08 hrs, Volume=	0.790 af			
Outflow =	7.89 cfs @ 12.	.15 hrs, Volume=	0.788 af, Atten= 21%, Lag= 3.7 min			
Primary =	5.00 cfs @ 12.	.15 hrs, Volume=	0.755 af			
Routed to Pond 1IP : UPSTREAM TACAN						
Secondary =	2.89 cfs @ 12.	.15 hrs, Volume=	0.033 af			
Routed to Pond 1IP : UPSTREAM TACAN						

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 164.79' @ 12.15 hrs Surf.Area= 3,201 sf Storage= 2,902 cf

Plug-Flow detention time= 8.2 min calculated for 0.788 af (100% of inflow) Center-of-Mass det. time= 6.2 min (767.9 - 761.7)

Volume	Invert	Avail.Stor	age Storage [Description	
#1	161.00'	8,05	5 cf Custom	Stage Data (Pi	rismatic)Listed below (Recalc)
Elevatio (fee		rf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
161.0)0	0	0	0	
162.0	00	180	90	90	
163.0	00	515	348	438	
164.0	00	1,060	788	1,225	
165.0	00	3,780	2,420	3,645	
166.0	00	5,040	4,410	8,055	
Device	Routing	Invert	Outlet Devices		
#1	Primary	162.00'	12.0" Round	Culvert	
#2	Secondary	L= 58.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 162.00' / 161.70' S= 0.0052 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.7			161.70' S= 0.0052 '/' Cc= 0.900 ds & connections, Flow Area= 0.79 sf oad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60

Secondary OutFlow Max=2.88 cfs @ 12.15 hrs HW=164.79' TW=141.97' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir (Weir Controls 2.88 cfs @ 1.44 fps)

Summary for Pond 1IP: UPSTREAM TACAN

Inflow Area =	419.060 ac, 3	36.50% Impervious, Inflo	w Depth = 5.17" for	100-year event			
Inflow =	608.26 cfs @	13.39 hrs, Volume=	180.703 af				
Outflow =	167.67 cfs @	16.05 hrs, Volume=	180.699 af, Atten=	72%, Lag= 159.9 min			
Primary =	42.08 cfs @	16.05 hrs, Volume=	72.610 af				
Routed to P	ond 1JP : DOWI	NSTREAM TACAN					
Secondary =	42.08 cfs @	16.05 hrs, Volume=	72.774 af				
Routed to P	ond 1JP : DOWI	NSTREAM TACAN					
		16.05 hrs, Volume=	35.315 af				
Routed to Pond 1JP : DOWNSTREAM TACAN							

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.54' @ 16.05 hrs Surf.Area= 1,566,257 sf Storage= 3,875,260 cf

Plug-Flow detention time= 368.4 min calculated for 180.699 af (100% of inflow) Center-of-Mass det. time= 368.3 min (1,280.4 - 912.0)

Volume	Invert	Avail.Stor	age Storage Description			
#1	137.80'	4,634,03	30 cf Custom Stage Data (Prismatic)Listed below (Recalc)			
- 1	0	6 A		0		
Elevatio		f.Area	Inc.Store	Cum.Store		
(fee	-	(sq-ft)	(cubic-feet)	(cubic-feet)		
137.8		0	0	0		
138.0		2,340	4,234	4,234		
139.0		5,626	48,983	53,217		
140.0		1,656	63,641	116,858		
141.(6,790	84,223	201,081		
142.0		64,769	125,780	326,860		
143.0)0 29	6,905	225,837	552,697		
144.(0 60	0,300	448,603	1,001,300		
145.0	0 1,08	84,818	842,559	1,843,859		
146.0	0 1,38	8,214	1,236,516	3,080,375		
147.0	0 1,71	9,095	1,553,655	4,634,030		
Device	Routing	Invert	-			
#1	Primary	137.80'	24.0" Round	l Culvert		
					onforming to fill, Ke= 0.500	
			Inlet / Outlet I	nvert= 137.80' /	137.40' S= 0.0131 '/' Cc= 0.900	
			n= 0.013 Cor	ncrete pipe, ben	ds & connections, Flow Area= 3.14 sf	
#2	Secondary	137.80'	24.0" Round	l Culvert		
			L= 30.5' RC	P, end-section c	onforming to fill, Ke= 0.500	
			Inlet / Outlet I	nvert= 137.80' /	137.30' S= 0.0164 '/' Cc= 0.900	
			n= 0.013 Cor	ncrete pipe, ben	ds & connections, Flow Area= 3.14 sf	
#3 Tertiary 145.50' 30.0' long x 20.0' breadth Broad-Crested Recta		Broad-Crested Rectangular Weir				
	-				0.80 1.00 1.20 1.40 1.60	
					70 2.64 2.63 2.64 2.64 2.63	
			, O			

Primary OutFlow Max=42.08 cfs @ 16.05 hrs HW=146.54' TW=137.35' (Dynamic Tailwater) **□1=Culvert** (Inlet Controls 42.08 cfs @ 13.39 fps)

Secondary OutFlow Max=42.08 cfs @ 16.05 hrs HW=146.54' TW=137.35' (Dynamic Tailwater) 2=Culvert (Inlet Controls 42.08 cfs @ 13.39 fps)

Tertiary OutFlow Max=83.51 cfs @ 16.05 hrs HW=146.54' TW=137.35' (Dynamic Tailwater) **3=Broad-Crested Rectangular Weir** (Weir Controls 83.51 cfs @ 2.68 fps)

Summary for Pond 1JP: DOWNSTREAM TACAN

Inflow Are	a =	437.470 ac, 35.83% Impervious, Inflow Depth > 5.10" for 100-year event					
Inflow	=	170.80 cfs @ 16.00 hrs, Volume= 185.867 af					
Outflow	=	170.79 cfs @16.01 hrs, Volume=185.867 af, Atten= 0%, Lag= 0.9 mir	۱				
Primary	=	170.79 cfs @ 16.01 hrs, Volume= 185.867 af					
Routed to Reach 1R : DP-1 TACAN OUTFALL							

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 137.35' @ 16.01 hrs Surf.Area= 5,666 sf Storage= 6,977 cf

Plug-Flow detention time= 0.5 min calculated for 185.841 af (100% of inflow) Center-of-Mass det. time= 0.5 min (1,269.1 - 1,268.7)

Volume	Inve	rt Avail.St	orage Stora	age Description	
#1	133.50)' 98,6	669 cf Cust	om Stage Data (Pr	ismatic)Listed below (Recalc)
Elevation		Surf.Area	Inc.Store (cubic-feet)	-	
(feet)		(sq-ft)	- · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
133.50		0	0	-	
136.00		1,465	1,831		
137.00		5,100	3,283	5,114	
138.00		6,735	5,918	11,031	
139.00		8,330	7,533	18,564	
140.00		9,930	9,130	27,694	
141.00		11,565	10,748	38,441	
142.00		13,220	12,393	50,834	
143.00		15,005	14,113	64,946	
144.00		16,830	15,918	80,864	
145.00		18,780	17,805	98,669	
Davias D	5 t i				
Device F	Routing	Inver	• • • • • • • • •		
#1 F	Primary	133.50	60.0" Round Culvert X 2.00 L= 899.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 133.50' / 130.80' S= 0.0030 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 19.63 sf		

Summary for Pond 2AP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 220.590 ac, 24.94% Impervious, Inflow Depth = 5.34" for 100-year event Inflow 302.63 cfs @ 13.49 hrs, Volume= 98.197 af = 174.77 cfs @ 15.02 hrs, Volume= Outflow = 98.197 af, Atten= 42%, Lag= 91.8 min 87.38 cfs @ 15.02 hrs, Volume= Primary = 48.325 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH Secondary = 87.38 cfs @ 15.02 hrs, Volume= 49.872 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 148.37' @ 14.55 hrs Surf.Area= 463,281 sf Storage= 734,502 cf

Plug-Flow detention time= 31.8 min calculated for 98.183 af (100% of inflow) Center-of-Mass det. time= 31.8 min (942.4 - 910.6)

Volume	Invert	Avail.Sto	rage Storag	e Description		
#1	141.70'	1,815,20	01 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio (fee		f.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
141.7	1	0	0			
144.0	0	6,640	7,636	7,636		
145.0		57,230	31,935	39,571		
146.0		17,540	87,385	126,956		
147.0		16,860	167,200	294,156		
148.0	0 3	59,360	288,110	582,266		
149.0		40,140	499,750	1,082,016		
150.0	0 82	26,230	733,185	1,815,201		
Device	Routing	Invert	Outlet Devic	ces		
#1	Primary	141.70'	48.0" Rour	nd Culvert		
#2	Secondary	141.70'	L= 126.0' F Inlet / Outlet n= 0.013, F 48.0'' Rour L= 126.0' F Inlet / Outlet	RCP, end-section t Invert= 141.70' <i> </i> low Area= 12.57 nd Culvert RCP, end-section	conforming to fill, Ke= 0.500 141.50' S= 0.0016 '/' Cc= 0.900	
D						

Primary OutFlow Max=87.45 cfs @ 15.02 hrs HW=148.28' TW=146.20' (Dynamic Tailwater) -1=Culvert (Inlet Controls 87.45 cfs @ 6.96 fps)

Secondary OutFlow Max=87.45 cfs @ 15.02 hrs HW=148.28' TW=146.20' (Dynamic Tailwater) 2=Culvert (Inlet Controls 87.45 cfs @ 6.96 fps)

Summary for Pond 2BP: EXISTING BASIN

Inflow Area = 40.900 ac, 81.30% Impervious, Inflow Depth = 7.18" for 100-year event Inflow 311.35 cfs @ 12.08 hrs, Volume= 24.480 af = 60.17 cfs @ 12.50 hrs, Volume= 36.61 cfs @ 12.39 hrs, Volume= Outflow 24.157 af, Atten= 81%, Lag= 24.9 min = Primary = 22.379 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH Secondary = 24.16 cfs @ 12.52 hrs, Volume= 1.778 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 150.94' @ 12.52 hrs Surf.Area= 94,618 sf Storage= 426,331 cf

Plug-Flow detention time= 152.8 min calculated for 24.157 af (99% of inflow) Center-of-Mass det. time= 144.2 min (905.9 - 761.7)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	143.00'	482,85	55 cf Custom	n Stage Data (Pr	rismatic)Listed below (Recalc)
Elevatio		f.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
143.0	/	10,920	0		
144.0		16,580	13,750	13,750	
145.0	0 2	28,700	22,640	36,390	
146.0	0 3	39,560	34,130	70,520	
147.0	0 5	53,515	46,538	117,058	
148.0		71,930	62,723	179,780	
149.0		30,230	76,080	255,860	
150.0		38,130	84,180	340,040	
151.0		95,000	91,565	431,605	
151.5	50 1 1	10,000	51,250	482,855	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	144.00'	24.0" Round	d Culvert	
	-		L= 79.0' RC	P, end-section co	onforming to fill, Ke= 0.500
			Inlet / Outlet	Invert= 144.00' /	143.21' S= 0.0100 '/' Cc= 0.900
			,	ow Area= 3.14 sf	
#2	Secondary	150.00'			road-Crested Rectangular Weir
			· · ·		0.80 1.00 1.20 1.40 1.60
			Coet. (Englis	h) 2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=36.54 cfs @ 12.39 hrs HW=150.86' TW=145.03' (Dynamic Tailwater) -1=Culvert (Inlet Controls 36.54 cfs @ 11.63 fps)

Secondary OutFlow Max=24.16 cfs @ 12.52 hrs HW=150.94' TW=145.32' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir (Weir Controls 24.16 cfs @ 2.56 fps)

Summary for Pond 2CP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

 Inflow Area =
 18.420 ac, 57.11% Impervious, Inflow Depth =
 4.84" for 100-year event

 Inflow =
 104.23 cfs @
 12.09 hrs, Volume=
 7.424 af

 Outflow =
 24.43 cfs @
 12.50 hrs, Volume=
 5.085 af, Atten= 77%, Lag= 24.5 min

 Primary =
 24.43 cfs @
 12.50 hrs, Volume=
 5.085 af

 Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.61' @ 12.50 hrs Surf.Area= 33,249 sf Storage= 150,968 cf

Plug-Flow detention time= 190.7 min calculated for 5.084 af (68% of inflow) Center-of-Mass det. time= 94.0 min (910.8 - 816.8)

Volume	Inver	t Avail.Sto	rage Storage	Description	
#1	138.00)' 240,90	05 cf Custon	n Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	on S	Surf.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
138.0	00	730	0	0	
139.0	00	1,695	1,213	1,213	
140.0	00	3,150	2,423	3,635	
141.0	00	6,840	4,995	8,630	
142.0	00	12,885	9,863	18,493	
143.0	00	17,405	15,145	33,638	
144.(00	21,190	19,298	52,935	
145.0		24,465	22,828	75,763	
146.0	00	27,780	26,123	101,885	
147.0	00	31,160	29,470	131,355	
148.0	00	34,590	32,875	164,230	
149.0	00	38,295	36,443	200,673	
150.0	00	42,170	40,233	240,905	
Device	Routing	Invert	Outlet Device	25	
#1	Primary	142.30'	30.0" Round		
π I	Thinary	142.00			onforming to fill, Ke= 0.500
					141.50' S= 0.0123 '/' Cc= 0.900
				ow Area= 4.91 sf	
#2	Device 1	146.00'	,	' Horiz. Orifice/	
				eir flow at low hea	

Primary OutFlow Max=24.43 cfs @ 12.50 hrs HW=147.61' TW=142.63' (Dynamic Tailwater) **1=Culvert** (Passes 24.43 cfs of 47.62 cfs potential flow) **2=Orifica** (Orifica Controls 24.43 cfs @ 6.11 fps)

2=Orifice/Grate (Orifice Controls 24.43 cfs @ 6.11 fps)

Summary for Pond 2DP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Area	=	12.580 ac, 4	4.83% Impervious, In	flow Depth = 4.38" for 100-year event			
Inflow :	=	40.34 cfs @	12.34 hrs, Volume=	4.590 af			
Outflow =	=	26.42 cfs @	12.60 hrs, Volume=	3.721 af, Atten= 35%, Lag= 15.9 min			
Primary :	=	26.42 cfs @	12.60 hrs, Volume=	3.721 af			
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH							
Secondary :	=	0.00 cfs @	0.00 hrs, Volume=	0.000 af			
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH							

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 148.08'@ 12.60 hrs Surf.Area= 13,563 sf Storage= 60,486 cf

Plug-Flow detention time= 124.2 min calculated for 3.721 af (81% of inflow) Center-of-Mass det. time= 48.8 min (890.8 - 842.0)

Volume	Invert	Avail.Stor	rage Storage D	Description		
#1	139.00'	89,68	33 cf Custom S	S cf Custom Stage Data (Prismatic)Listed below (Recalc)		
Elevatio		urf.Area	Inc.Store	Cum.Store		
fee		(sq-ft)	(cubic-feet)	(cubic-feet)		
139.0		105	0	0		
140.0	-	1,200	653	653		
141.0	00	2,565	1,883	2,535		
142.0		4,380	3,473	6,008		
143.0		6,200	5,290	11,298		
144.0		7,440	6,820	18,118		
145.0		8,800	8,120	26,238		
146.0		10,240	9,520	35,758		
147.0	-	11,800	11,020	46,778		
148.0		13,425	12,613	59,390		
149.0		15,130	14,278	73,668		
150.0)0	16,900	16,015	89,683		
Device	Routing	Invert	Outlet Devices			
#1	Primary	142.30'	24.0" Round	Culvert		
			L= 51.0' RCP,	end-section c	onforming to fill, Ke= 0.500	
			Inlet / Outlet Inv	vert= 142.30' /	141.70' S= 0.0118 '/' Cc= 0.900	
			n= 0.013, Flow	/ Area= 3.14 sf		
#2	Device 1	146.20'	24.0" x 24.0" F	loriz. Orifice/	Grate C= 0.600	
			Limited to weir			
#3	Secondary	149.50'			road-Crested Rectangular Weir	
					0.80 1.00 1.20 1.40 1.60	
			Coet. (English)	2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63	

Primary OutFlow Max=26.42 cfs @ 12.60 hrs HW=148.08' TW=143.06' (Dynamic Tailwater) 1=Culvert (Passes 26.42 cfs of 33.08 cfs potential flow) 2=Orifice/Grate (Orifice Controls 26.42 cfs @ 6.60 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' TW=138.00' (Dynamic Tailwater) -3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2EP: FRENCH'S STREAM WEST BRANCH

Per site visit outlet consists of one 60-inch culvert.

Inflow Area = 312.160 ac, 23.88% Impervious, Inflow Depth = 4.81" for 100-year event Inflow = 268.35 cfs @ 13.05 hrs, Volume= 125.125 af Outflow = 219.93 cfs @ 14.26 hrs, Volume= 125.125 af, Atten= 18%, Lag= 72.6 min Primary = 219.93 cfs @ 14.26 hrs, Volume= 125.125 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.34' @ 14.26 hrs Surf.Area= 92,512 sf Storage= 313,483 cf

Plug-Flow detention time= 15.4 min calculated for 125.107 af (100% of inflow) Center-of-Mass det. time= 15.4 min (951.5 - 936.0)

Volume	Inv	vert Avail.	Storage	Storage	Description	
#1	138	.00' 524	,160 cf	Custom	n Stage Data (P	rismatic)Listed below (Recalc)
					•	
Elevatio	on	Surf.Area	Inc	c.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	ic-feet)	(cubic-feet)	
138.0	00	0		0	0	
140.0	00	9,600		9,600	9,600	
141.0	00	13,135		11,368	20,968	
142.0	00	35,665		24,400	45,368	
143.0	00	47,280		41,473	86,840	
144.(00	58,400		52,840	139,680	
145.0	00	71,585		64,993	204,673	
146.0		85,230		78,408	283,080	
147.0		106,515		95,873	378,953	
148.0	00	183,900	1	45,208	524,160	
Device	Routing	j Inve	ert Out	let Device	S	
#1	Primary	v 138.0)" Round		
					,	conforming to fill, Ke= 0.500
						135.70' S= 0.0061 '/' Cc= 0.900
			n= (0.013 Coi	ncrete pipe, ben	ds & connections, Flow Area= 19.63 sf
Primary	Primary OutFlow Max=219.93 cfs @ 14.26 hrs HW=146.34' TW=133.70' (Dynamic Tailwater)					

1=Culvert (Barrel Controls 219.93 cfs @ 11.20 fps)

Summary for Pond 2FP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 872.630 ac, 27.98% Impervious, Inflow Depth = 4.88" for 100-year event Inflow = 483.24 cfs @ 13.16 hrs, Volume= 354.706 af 458.06 cfs @ 13.47 hrs, Volume= Outflow = 354.670 af, Atten= 5%, Lag= 18.7 min 189.85 cfs @ 13.47 hrs, Volume= Primary = 128.906 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Secondary = 268.20 cfs @ 13.47 hrs, Volume= 225.764 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 134.13' @ 13.47 hrs Surf.Area= 95,941 sf Storage= 259,668 cf

Plug-Flow detention time= 6.6 min calculated for 354.621 af (100% of inflow) Center-of-Mass det. time= 6.4 min (1,117.1 - 1,110.8)

Volume	Invert	Avail.Sto	rage Storage [Description	
#1	125.90'	665,27	78 cf Custom	Stage Data (Pr	ismatic) Listed below (Recalc)
Elevatio		urf.Area	Inc.Store	Cum.Store	
fee			(cubic-feet)	(cubic-feet)	
`	/	(sq-ft)	1 1		
125.9	-	0	0	0	
130.0		17,650	36,182	36,182	
131.0		22,340	19,995	56,177	
132.0		56,105	39,223	95,400	
133.0		76,835	66,470	161,870	
134.0	00	93,610	85,223	247,092	
135.0	00	111,175	102,393	349,485	
136.0	00	153,700	132,438	481,922	
137.0	00 2	213,010	183,355	665,278	
Device	Routing	Invert	Outlet Devices	6	
#1	Primary	127.60'	60.0" Round	Culvert	
	-		L= 34.0' RCP	, end-section co	onforming to fill, Ke= 0.500
			Inlet / Outlet In	vert= 126.60' /	127.60' S= -0.0294 '/' Cc= 0.900
			n= 0.013, Flow	w Area= 19.63 s	sf
#2	Secondary	126.70'	72.0" Round	Culvert	
			L= 34.0' RCP	, end-section co	onforming to fill, Ke= 0.500
			Inlet / Outlet In	vert= 125.90' /	126.70' S= -0.0235 '/' Cc= 0.900
			n= 0.013. Flov	w Area= 28.27 s	sf
#3	Tertiary	135.50'	,		pillway over Path
)				0.80 1.00 1.20 1.40 1.60
					70 2.64 2.63 2.64 2.64 2.63
			esen (Englien)	,	

Primary OutFlow Max=189.85 cfs @ 13.47 hrs HW=134.13' TW=0.00' (Dynamic Tailwater) ☐ 1=Culvert (Inlet Controls 189.85 cfs @ 9.67 fps)

Secondary OutFlow Max=268.20 cfs @ 13.47 hrs HW=134.13' TW=0.00' (Dynamic Tailwater) 2=Culvert (Barrel Controls 268.20 cfs @ 9.49 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=125.90' TW=0.00' (Dynamic Tailwater) -3=Spillway over Path (Controls 0.00 cfs)

Summary for Pond 3AP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 61.820 ac, 8.41% Impervious, Inflow Depth = 5.30" for 100-year event Inflow 131.39 cfs @ 12.97 hrs, Volume= 27.297 af = Outflow 105.51 cfs @ 13.38 hrs, Volume= = 27.291 af, Atten= 20%, Lag= 24.6 min 69.92 cfs @ 13.38 hrs, Volume= Primary = 23.972 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH Secondary = 35.59 cfs @ 13.38 hrs, Volume= 3.319 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.92' @ 13.38 hrs Surf.Area= 137,190 sf Storage= 114,298 cf

Plug-Flow detention time= 9.2 min calculated for 27.291 af (100% of inflow) Center-of-Mass det. time= 8.9 min (880.7 - 871.8)

Volume	Inver	t Avail.Sto	rage Storage	e Description	
#1	141.50)' 125,60	03 cf Custon	n Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee	et)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
141.5		0	0	0	
145.0		3,630	6,353	6,353	
146.0		12,565	8,098	14,450	
147.0	00	31,705	22,135	36,585	
148.0	00	146,330	89,018	125,603	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	142.20'	36.0" Roun	d Culvert	
#2	Secondar	y 146.70'	Inlet / Outlet n= 0.013 Co 10.0' long x Head (feet) (Invert= 141.50' / ncrete pipe, ben 15.0' breadth S 0.20 0.40 0.60	conforming to fill, Ke= 0.500 142.20' S= -0.0167 '/' Cc= 0.900 ds & connections, Flow Area= 7.07 sf Spillway over Path 0.80 1.00 1.20 1.40 1.60 .70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=69.92 cfs @ 13.38 hrs HW=147.92' TW=136.31' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 69.92 cfs @ 9.89 fps)

Secondary OutFlow Max=35.58 cfs @ 13.38 hrs HW=147.92' TW=136.31' (Dynamic Tailwater) **2=Spillway over Path** (Weir Controls 35.58 cfs @ 2.92 fps)

Summary for Pond 3BP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 193.720 ac, 8.56% Impervious, Inflow Depth = 5.14" for 100-year event Inflow 318.31 cfs @ 13.43 hrs, Volume= 82.986 af = Outflow 314.32 cfs @ 13.51 hrs, Volume= 82.986 af, Atten= 1%, Lag= 5.0 min = 184.83 cfs @ 13.51 hrs, Volume= Primary = 70.933 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH Secondary = 129.49 cfs @ 13.51 hrs, Volume= 12.053 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH

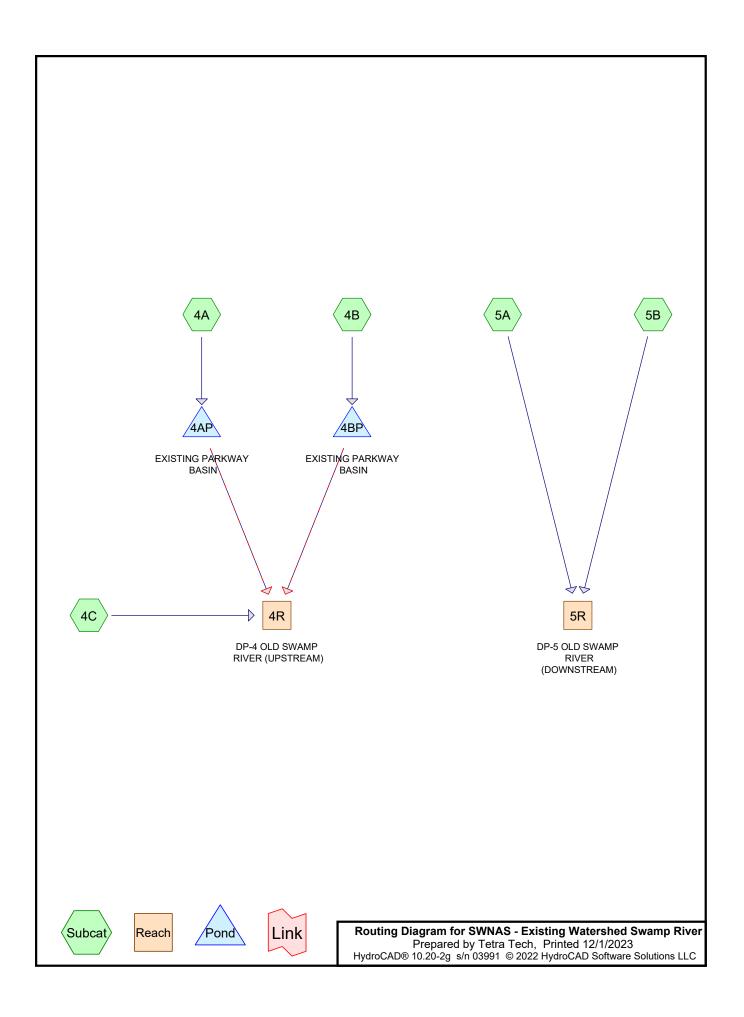
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 136.34' @ 13.51 hrs Surf.Area= 73,867 sf Storage= 242,197 cf

Plug-Flow detention time= 12.5 min calculated for 82.974 af (100% of inflow) Center-of-Mass det. time= 12.5 min (910.3 - 897.8)

Volume	Inver	t Avail.Sto	rage Storage	Description		
#1	129.20)' 1,254,59	93 cf Custon	n Stage Data (Pi	rismatic)Listed below (Recalc)	
Elevatio	n C	Surf.Area	Inc.Store	Cum.Store		
fee			(cubic-feet)	(cubic-feet)		
	,	(sq-ft)	1	/		
129.2	-	0	0	0		
130.0		2,770	1,108	1,108		
131.0		10,320	6,545	7,653		
132.0		30,890	20,605	28,258		
133.0		37,250	34,070	62,328		
134.0		45,960	41,605	103,933		
135.0		56,730	51,345	155,278		
136.0		68,875	62,803	218,081		
137.0		83,650	76,263	294,343		
138.0		105,010	94,330	388,673		
139.0	00	125,940	115,475	504,148		
140.0	00	161,860	143,900	648,048		
141.0	00	187,685	174,773	822,821		
142.0	00	214,700	201,193	1,024,013		
143.0	00	246,460	230,580	1,254,593		
D	Destin	l				
Device	Routing	Invert	Outlet Device			
#1	Primary	129.20'	60.0" Round			
			L= 20.0' CN	IP, end-section c	conforming to fill, Ke= 0.500	
			Inlet / Outlet	Invert= 129.20' /	128.90' S= 0.0150 '/' Cc= 0.900	
			n= 0.025 Co	rrugated metal,	Flow Area= 19.63 sf	
#2	Secondar	y 135.10'	35.0' long x	10.0' breadth S	pillway over Path	
			Head (feet)	0.20 0.40 0.60	0.80 1.00 1.20 1.40 1.60	
					70 2.69 2.68 2.69 2.67 2.64	
Primary	Primary OutFlow Max=184.83 cfs @ 13.51 hrs. HW=136.34' TW=0.00' (Dynamic Tailwater)					

Primary OutFlow Max=184.83 cfs @ 13.51 hrs HW=136.34' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 184.83 cfs @ 9.41 fps)

Secondary OutFlow Max=129.49 cfs @ 13.51 hrs HW=136.34' TW=0.00' (Dynamic Tailwater) 2=Spillway over Path (Weir Controls 129.49 cfs @ 2.99 fps)



SWNAS - Existing Watershed Swamp River Prepared by Tetra Tech HydroCAD® 10.20-2g s/n 03991 © 2022 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area	CN	Description
(acres)		(subcatchment-numbers)
2.660	39	>75% Grass cover, Good, HSG A (5B)
32.570	61	>75% Grass cover, Good, HSG B (4C, 5B)
0.650	74	>75% Grass cover, Good, HSG C (4C)
18.510	80	>75% Grass cover, Good, HSG D (4C, 5A, 5B)
7.520	48	Brush, Good, HSG B (4A, 4B, 4C, 5B)
1.360	73	Brush, Good, HSG D (4C)
44.260	98	Pavement (4A, 4B, 4C, 5A, 5B)
0.200	100	Water - Basin (4A)
0.400	100	Water - Basin Area (4B)
4.390	30	Woods, Good, HSG A (5A, 5B)
31.160	55	Woods, Good, HSG B (4C, 5B)
2.630	70	Woods, Good, HSG C (4C)
71.820	77	Woods, Good, HSG D (4C, 5A, 5B)
218.130	74	TOTAL AREA

Summary for Subcatchment 4A:

Runoff = 3.20 cfs @ 12.10 hrs, Volume= 0.264 af, Depth= 0.79" Routed to Pond 4AP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	Description					
*	1.	340	98	Pave	Pavement					
*	0.	200	100	Wate	er - Basin					
_	2.	440	48	Brus	h, Good, H	ISG B				
	3.980 67 Weighted Average									
	2.440 61.31% Pervious Area					us Area				
	1.540			38.6	9% Imperv	ious Area/				
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	6.0						Direct Entry,			

Summary for Subcatchment 4B:

10" RCP pipe was assumed entering main 24" pipeline and inverts were assumed 0.005.

24"RCP - inverts assumed 0.005 (2) 48" RCP were assumed 0.005 invert and only entered as 1-48" RCP

60"RCP and last 48" RCP had assumed invert at 0.005

Runoff = 11.77 cfs @ 12.09 hrs, Volume= 0.860 af, Depth= 2.54" Routed to Pond 4BP : EXISTING PARKWAY BASIN

	Area ((ac)	CN	Desc	cription		
*	3.	130	98	Pave	ement		
*	0.4	400	100	Wate	er - Basin <i>I</i>	Area	
	0.	530	48	Brus	h, Good, H	ISG B	
	4.060 92 Weighted Average						
	0.530 13.05% Pervious Area					us Area	
	3.530 86.95% Impervious			5% Imper	vious Area		
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	6.0						Direct Entry,

Summary for Subcatchment 4C:

Runoff = 18.34 cfs @ 13.73 hrs, Volume= 5.656 af, Depth= 1.06" Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

_	Area	(ac)	CN	Desc	ription						
*	3.	880	98	B Pave	Pavement						
	7.340 55 Woods, Good, HSG B										
	2.	630	70) Woo	ds, Good,	HSG C					
	34.	020	77		ds, Good,						
	2.	390	48	8 Brus	h, Good, H	ISG B					
	1.	360	73	8 Brus	h, Good, H	ISG D					
	10.	650	61	>75%	6 Grass co	over, Good	, HSG B				
	0.	650	74	l >75%	6 Grass co	over, Good	, HSG C				
	1.	350	80) >75%	<u>6 Grass co</u>	over, Good	, HSG D				
64.270 72 Weighted Average											
	60.	390		93.96	6% Pervio	us Area					
	3.	880		6.04	% Impervi	ous Area					
	Тс	Leng	th	Slope	Velocity	Capacity	Description				
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)					
	13.1	10	00	0.0230	0.13		Sheet Flow,				
							Grass: Dense n= 0.240 P2= 3.40"				
	106.9	3,20	8(0.0100	0.50		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	120.0	3,30	8	Total							

Summary for Subcatchment 5A:

Runoff = 25.45 cfs @ 12.98 hrs, Volume= 5.145 af, Depth= 1.29" Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

	Area	(ac)	CN	l Desc	cription			
*	3.	470	98	B Pave	ement			
	3.920 30 Woods, Good, HSG A							
	26.070 77 Woods, Good, HSG D					HSG D		
14.280 80 >75% Grass cover, Good, HSG D						, HSG D		
	47.740 76 Weighted Average							
	44.	270		92.7	3% Pervio	us Area		
	3.470		7.27	% Impervi	ous Area			
	Tc (min)	Lengt (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
_	20.0	10	0	0.0080	0.08		Sheet Flow,	
	48.3	1,89	0	0.0170	0.65		Grass: Dense n= 0.240 P2= 3.40" Shallow Concentrated Flow, Woodland Kv= 5.0 fps	
	68.3	1,99	0	Total				

Summary for Subcatchment 5B:

Runoff = 43.79 cfs @ 12.98 hrs, Volume= 9.096 af, Depth= 1.11" Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

_	Area	(ac)	CN	Desc	cription				
*	32.	440	98	B Pave					
	0.	470	30) Woo	ds, Good,	HSG A			
	23.	820	55	5 Woo	ds, Good,	HSG B			
		730	77		ds, Good,				
	2.	160	48		h, Good, H				
		660	39			over, Good			
		920	61			over, Good			
	2.	880	80) >75%	6 Grass co	over, Good	, HSG D		
98.080 73 Weighted Average									
	65.640				2% Pervio				
	32.	440		33.0	33.08% Impervious Area				
	та	المراجع ال	- L a	Clana	Valasity	Consister	Description		
	Tc (min)	Leng		Slope	Velocity	Capacity	Description		
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)			
	20.0	10	0	0.0080	0.08		Sheet Flow,		
	40.0	4.00	•	o o 4 o			Grass: Dense n= 0.240 P2= 3.40"		
	48.3	1,89	0	0.0170	0.65		Shallow Concentrated Flow,		
							Woodland Kv= 5.0 fps		
	68.3	1,99	0	Total					

Summary for Reach 4R: DP-4 OLD SWAMP RIVER (UPSTREAM)

Inflow Area	a =	72.310 ac, 12.38% Impervious, Inflow Depth = 0.98" for 2-y	ear event
Inflow	=	18.83 cfs @ 13.73 hrs, Volume= 5.920 af	
Outflow	=	18.83 cfs @ 13.73 hrs, Volume= 5.920 af, Atten= 0%,	Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 5R: DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Inflow Area	a =	145.820 ac, 24.63% Impervious, Inflow Depth = 1.17" for 2-year event	
Inflow	=	69.24 cfs @ 12.98 hrs, Volume= 14.241 af	
Outflow	=	69.24 cfs @ 12.98 hrs, Volume= 14.241 af, Atten= 0%, Lag= 0.0 min	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 4AP: EXISTING PARKWAY BASIN

Inflow Area = 3.980 ac, 38.69% Impervious, Inflow Depth = 0.79" for 2-year event Inflow 3.20 cfs @ 12.10 hrs, Volume= 0.264 af = 1.08 cfs @ 12.49 hrs, Volume= Outflow = 0.263 af, Atten= 66%, Lag= 23.3 min 1.08 cfs @ 12.49 hrs, Volume= Primary = 0.263 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.52' @ 12.49 hrs Surf.Area= 5,925 sf Storage= 2,898 cf

Plug-Flow detention time= 85.7 min calculated for 0.263 af (100% of inflow) Center-of-Mass det. time= 85.7 min (967.6 - 881.9)

Volume	Invert	Avail.Stor	rage Storage	Description	
#1	145.98'	34,24	5 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio		rf.Area	Inc.Store	Cum.Store	
(feet	/	(sq-ft)	(cubic-feet)	(cubic-feet)	
145.9	-	0	0	0	
146.0	0	5,020	50	50	
147.0	0	6,760	5,890	5,940	
148.0	0	8,260	7,510	13,450	
149.0	0	9,815	9,038	22,488	
150.0	0	13,700	11,758	34,245	
Device	Routing	Invert	Outlet Devices	S	
#1	Primary	145.98'	12.0" Round	Culvert	
#2	Secondary	149.50'	Inlet / Outlet In n= 0.013 Con 10.0' long x 2 Head (feet) 0	nvert= 145.98'/ ncrete pipe, ben 20.0' breadth B .20 0.40 0.60	onforming to fill, Ke= 0.500 137.17' S= 0.3830 '/' Cc= 0.900 ds & connections, Flow Area= 0.79 sf Broad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.08 cfs @ 12.49 hrs HW=146.52' TW=0.00' (Dynamic Tailwater) ☐ 1=Culvert (Inlet Controls 1.08 cfs @ 2.50 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.98' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 4BP: EXISTING PARKWAY BASIN

Inflow Area = 4.060 ac, 86.95% Impervious, Inflow Depth = 2.54" for 2-year event Inflow 11.77 cfs @ 12.09 hrs, Volume= 0.860 af = Outflow 0.00 cfs @ 0.00 hrs, Volume= = 0.000 af, Atten= 100%, Lag= 0.0 min Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 136.57' @ 24.34 hrs Surf.Area= 14,463 sf Storage= 37,451 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow) Center-of-Mass det. time= (not calculated: no outflow)

Volume	Inver	t Avail.Sto	rage Storage	Description	
#1	132.00	' 146,26	63 cf Custom	Stage Data (Pi	rismatic)Listed below (Recalc)
Elevatio	n S	urf.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
	/		1 1		
132.0	-	1,775	0	0	
133.0		4,345	3,060	3,060	
134.0		7,050	5,698	8,758	
135.0		10,730	8,890	17,648	
136.0		13,160	11,945	29,593	
137.0		15,450	14,305	43,898	
138.0	0	17,430	16,440	60,338	
139.0	0	19,460	18,445	78,783	
140.0	0	21,550	20,505	99,288	
141.0	0	23,700	22,625	121,913	
142.0	0	25,000	24,350	146,263	
Device	Routing	Invert	Outlet Device	S	
#1	Primary	136.90'	12.0" Round	l Culvert	
	-		L= 98.0' RCI	P, end-section c	onforming to fill, Ke= 0.500
			Inlet / Outlet I	nvert= 136.90' /	135.23' S= 0.0170 '/' Cc= 0.900
			n= 0.013 Cor	ncrete pipe, bend	ds & connections, Flow Area= 0.79 sf
#2	Secondary	/ 141.50'			road-Crested Rectangular Weir
	-		•		0.80 1.00 1.20 1.40 1.60
					70 2.64 2.63 2.64 2.64 2.63
			(-- 9.1-1	, •	

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=132.00' TW=0.00' (Dynamic Tailwater)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=132.00' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Subcatchment 4A:

Runoff = 8.47 cfs @ 12.09 hrs, Volume= 0.621 af, Depth= 1.87" Routed to Pond 4AP : EXISTING PARKWAY BASIN

	Area ((ac)	CN	Desc	Description					
*	1.	340	98	Pave	Pavement					
*	0.2	200	100	Wate	er - Basin					
_	2.4	440	48	Brus	h, Good, H	ISG B				
	3.980 67 Weighted Average									
	2.440 61.31% Pervious Area				1% Pervio	us Area				
	1.540			38.6	9% Imper	ious Area/				
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	6.0						Direct Entry,			

Summary for Subcatchment 4B:

10" RCP pipe was assumed entering main 24" pipeline and inverts were assumed 0.005.

24"RCP - inverts assumed 0.005 (2) 48" RCP were assumed 0.005 invert and only entered as 1-48" RCP

60"RCP and last 48" RCP had assumed invert at 0.005

Runoff = 18.89 cfs @ 12.08 hrs, Volume= 1.417 af, Depth= 4.19" Routed to Pond 4BP : EXISTING PARKWAY BASIN

	Area (a	ac)	CN	Desc	cription		
*	3.1	30	98	Pave	ement		
*	0.4	-00	100	Wate	er - Basin <i>i</i>	Area	
	0.5	30	48	Brus	h, Good, H	ISG B	
	4.060 92 Weighted Average						
	0.530 13.05% Pervious Area					us Area	
	3.530 86.95% Impervious Area			5% Imperv	ious Area		
	Tc I (min)	Lengt (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

Summary for Subcatchment 4C:

Runoff = 41.83 cfs @ 13.73 hrs, Volume= 12.185 af, Depth= 2.28" Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

	Area	(ac)	C	N Desc	cription						
*	3.	880	98	8 Pave	Pavement						
	7.	340	5								
	2.	630	70	0 Woo	ds, Good,	HSG C					
	34.	020	7	7 Woo	ds, Good,	HSG D					
	2.	390	48	8 Brus	h, Good, H	ISG B					
	1.	360	73	3 Brus	h, Good, H	ISG D					
	10.	650	6	1 >75%	6 Grass co	over, Good	, HSG B				
	0.	650	74	4 >75%	6 Grass co	over, Good	, HSG C				
	1.	350	8	<u>) >75%</u>	<u>6 Grass co</u>	over, Good	, HSG D				
64.270 72 Weighted Average											
	60.	390		93.9	6% Pervio	us Area					
	3.	880		6.04	6.04% Impervious Area						
	Тс	Leng	th	Slope	Velocity	Capacity	Description				
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)					
	13.1	10	00	0.0230	0.13		Sheet Flow,				
							Grass: Dense n= 0.240 P2= 3.40"				
	106.9	3,20)8	0.0100	0.50		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	120.0	3,30	8	Total							

Summary for Subcatchment 5A:

Runoff = 53.02 cfs @ 12.97 hrs, Volume= 10.416 af, Depth= 2.62" Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

	Area	(ac)	CN	l Desc	cription		
*	3.	470	98	8 Pave	ement		
	3.	920	30) Woo	ds, Good,	HSG A	
	26.	070	77	' Woo	ds, Good,	HSG D	
_	14.	280	80) >75%	% Grass co	over, Good	, HSG D
	47.	740	76	6 Weig	phted Aver	age	
	44.	270		92.7	3% Pervio	us Area	
	3.	470		7.27	% Impervi	ous Area	
	Tc (min)	Lengt (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	20.0	10	0	0.0080	0.08		Sheet Flow,
	48.3	1,89	0	0.0170	0.65		Grass: Dense n= 0.240 P2= 3.40" Shallow Concentrated Flow, Woodland Kv= 5.0 fps
	68.3	1,99	0	Total			

Summary for Subcatchment 5B:

Runoff 97.52 cfs @ 12.97 hrs, Volume= 19.282 af, Depth= 2.36" = Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

_	Area	(ac)	C	N Desc	cription		
* 32.440 98 Pavement							
	0.	470	30	0 Woo	ds, Good,	HSG A	
	23.	820	5		ds, Good,		
	11.	730	7	7 Woo	ds, Good,	HSG D	
	2.	160	48	8 Brus	h, Good, H	ISG B	
	2.	660	39			over, Good	·
		920	6			over, Good	,
	2.	880	8	0 >75%	6 Grass co	over, Good	, HSG D
	98.	080	73	3 Weig	phted Aver	age	
		640		66.9	2% Pervio	us Area	
	32.	440		33.0	8% Imperv	∕ious Area	
	_			-		-	
	Tc	Leng		Slope	Velocity	Capacity	Description
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	20.0	10)0	0.0080	0.08		Sheet Flow,
							Grass: Dense n= 0.240 P2= 3.40"
	48.3	1,89	90	0.0170	0.65		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	68.3	1,99	90	Total			

Summary for Reach 4R: DP-4 OLD SWAMP RIVER (UPSTREAM)

Inflow Are	a =	72.310 ac, 12.38% Impervious, Inflow Depth = 2.20" for 10-year event	
Inflow	=	43.18 cfs @ 13.61 hrs, Volume= 13.244 af	
Outflow	=	43.18 cfs @ 13.61 hrs, Volume= 13.244 af, Atten= 0%, Lag= 0.0 m	in

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 5R: DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Inflow Area	=	145.820 ac, 24.63% Impervious, Inflow Depth = 2.44" for 10-year event	
Inflow =	=	150.54 cfs @ 12.97 hrs, Volume= 29.698 af	
Outflow =	=	150.54 cfs @ 12.97 hrs, Volume= 29.698 af, Atten= 0%, Lag= 0.0 min	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 4AP: EXISTING PARKWAY BASIN

Inflow Area = 3.980 ac, 38.69% Impervious, Inflow Depth = 1.87" for 10-year event Inflow 8.47 cfs @ 12.09 hrs, Volume= 0.621 af = 3.12 cfs @ 12.41 hrs, Volume= Outflow = 0.621 af, Atten= 63%, Lag= 19.1 min 3.12 cfs @ 12.41 hrs, Volume= Primary = 0.621 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.16' @ 12.41 hrs Surf.Area= 7,002 sf Storage= 7,049 cf

Plug-Flow detention time= 58.8 min calculated for 0.621 af (100% of inflow) Center-of-Mass det. time= 59.1 min (913.4 - 854.3)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	145.98'	34,24	15 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee		ırf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
145.9	1	0	0		
146.0	00	5,020	50	50	
147.0	00	6,760	5,890	5,940	
148.0	00	8,260	7,510	13,450	
149.0	00	9,815	9,038	22,488	
150.0	00	13,700	11,758	34,245	
Device	Routing	Invert	Outlet Devices	S	
#1	Primary	145.98'	12.0" Round	Culvert	
#2	Secondary	149.50'	L= 23.0' RCF Inlet / Outlet Ir n= 0.013 Con 10.0' long x 2 Head (feet) 0	P, end-section c nvert= 145.98' / ncrete pipe, ben 20.0' breadth E .20 0.40 0.60	conforming to fill, Ke= 0.500 137.17' S= 0.3830 '/' Cc= 0.900 ds & connections, Flow Area= 0.79 sf Broad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.12 cfs @ 12.41 hrs HW=147.16' TW=0.00' (Dynamic Tailwater) -1=Culvert (Inlet Controls 3.12 cfs @ 3.97 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.98' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 4BP: EXISTING PARKWAY BASIN

Inflow Area = 4.060 ac, 86.95% Impervious, Inflow Depth = 4.19" for 10-year event Inflow 18.89 cfs @ 12.08 hrs, Volume= 1.417 af = 0.63 cfs @ 15.66 hrs, Volume= Outflow = 0.438 af, Atten= 97%, Lag= 214.3 min Primary = 0.63 cfs @ 15.66 hrs, Volume= 0.438 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 137.30'@ 15.66 hrs Surf.Area= 16,042 sf Storage= 48,608 cf

Plug-Flow detention time= 590.5 min calculated for 0.438 af (31% of inflow) Center-of-Mass det. time= 439.8 min (1,221.9 - 782.1)

Volume	Inver	t Avail.Sto	rage Storage	Description			
#1	132.00	' 146,26	63 cf Custom	Stage Data (Prisma	atic)Listed below (Recalc)		
Elevatio	on S	urf.Area	Inc.Store	Cum.Store			
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)			
132.0	00	1,775	0	0			
133.0	00	4,345	3,060	3,060			
134.0	00	7,050	5,698	8,758			
135.0	00	10,730	8,890	17,648			
136.0	00	13,160	11,945	29,593			
137.0	00	15,450	14,305	43,898			
138.0	-	17,430	16,440	60,338			
139.0		19,460	18,445	78,783			
140.0		21,550	20,505	99,288			
141.0		23,700	22,625	121,913			
142.0	00	25,000	24,350	146,263			
Device	Routing	Invert	Outlet Device	s			
#1	Primary	136.90'	12.0" Round	Culvert			
#2	Secondary		L= 98.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= $136.90' / 135.23'$ S= $0.0170' / Cc= 0.900$ n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf 10.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63				

Primary OutFlow Max=0.63 cfs @ 15.66 hrs HW=137.30' TW=0.00' (Dynamic Tailwater) -1=Culvert (Inlet Controls 0.63 cfs @ 2.15 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=132.00' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Subcatchment 4A:

Runoff = 12.38 cfs @ 12.09 hrs, Volume= 0.890 af, Depth= 2.68" Routed to Pond 4AP : EXISTING PARKWAY BASIN

	Area ((ac)	CN	Desc	cription		
*	1.	340	98	Pave	ement		
*	0.2	200	100	Wate	er - Basin		
_	2.4	440	48	Brus	h, Good, H	ISG B	
	3.	980	67	Weig	phted Aver	age	
	2.440 61.31% Pervious Area				1% Pervio	us Area	
	1.540			38.6	9% Imper	ious Area/	
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

Summary for Subcatchment 4B:

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10" RCP pipe was assumed entering main 24" pipeline and inverts were assumed 0.005.

24"RCP - inverts assumed 0.005 (2) 48" RCP were assumed 0.005 invert and only entered as 1-48" RCP

60"RCP and last 48" RCP had assumed invert at 0.005

Runoff = 23.45 cfs @ 12.08 hrs, Volume= 1.782 af, Depth= 5.27" Routed to Pond 4BP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	cription		
*	3.	130	98	Pave	ement		
*	0.	400	100	Wate	er - Basin <i>I</i>	Area	
_	0.	530	48	Brus	h, Good, H	ISG B	
	4.	060	92	Weig	ghted Aver	age	
	0.530 13.05% Pervious Area					us Area	
	3.530			86.9	5% Imper	ious Area	
	Tc (min)	Leng (fe		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

Summary for Subcatchment 4C:

Runoff = 58.85 cfs @ 13.60 hrs, Volume= 16.911 af, Depth= 3.16" Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

	Area	(ac)	CN	Desc	ription		
*	3.	880	98	Pave	ement		
	7.	340	55	Woo	ds, Good,	HSG B	
	2.	630	70		ds, Good,		
	34.	020	77		ds, Good,		
		390	48		h, Good, H		
		360	73		h, Good, H		
		650	61			over, Good	·
		650	74			over, Good	·
	1.	350	80	>75%	6 Grass co	over, Good	, HSG D
	64.	270	72	Weig	phted Aver	age	
		390		93.9	6% Pervio	us Area	
	3.	880		6.04	% Impervi	ous Area	
	-			~		o	
	ŢĊ	Lengt		Slope	Velocity	Capacity	Description
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)	
	13.1	10	0	0.0230	0.13		Sheet Flow,
							Grass: Dense n= 0.240 P2= 3.40"
	106.9	3,20	8	0.0100	0.50		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	120.0	3,30	8	Total			

Summary for Subcatchment 5A:

Runoff = 72.20 cfs @ 12.91 hrs, Volume= 14.136 af, Depth= 3.55" Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

	Area	(ac)	CN	l Desc	cription		
*	3.	470	98	8 Pave	ement		
	3.	920	30) Woo	ds, Good,	HSG A	
	26.	070	77	' Woo	ds, Good,	HSG D	
_	14.	280	80) >75%	% Grass co	over, Good	, HSG D
	47.	740	76	6 Weig	phted Aver	age	
	44.	270		92.7	3% Pervio	us Area	
	3.	470		7.27	% Impervi	ous Area	
	Tc (min)	Lengt (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	20.0	10	0	0.0080	0.08		Sheet Flow,
	48.3	1,89	0	0.0170	0.65		Grass: Dense n= 0.240 P2= 3.40" Shallow Concentrated Flow, Woodland Kv= 5.0 fps
	68.3	1,99	0	Total			

Summary for Subcatchment 5B:

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135.56 cfs @ 12.97 hrs, Volume= 26.606 af, Depth= 3.26" Runoff = Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

	Area	(ac)	CN	l Desc	cription					
* 32.440 98 Pavement										
	0.	470	30) Woo	ds, Good,	HSG A				
	23.	820	55	5 Woo	ds, Good,	HSG B				
	11.	730	77	' Woo	Voods, Good, HSG D					
	2.	160	48	8 Brus	h, Good, H	ISG B				
	2.	660	39			over, Good				
		920	61			over, Good	•			
	2.	880	80) >75%	6 Grass co	over, Good	, HSG D			
	98.	080	73	8 Weig	hted Aver	age				
	65.	640			2% Pervio					
	32.	440		33.0	8% Imperv	vious Area				
	_			~		•	— • • •			
	ŢĊ	Leng		Slope	Velocity	Capacity	Description			
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)				
	20.0	10	0	0.0080	0.08		Sheet Flow,			
							Grass: Dense n= 0.240 P2= 3.40"			
	48.3	1,89	0	0.0170	0.65		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	68.3	1,99	0	Total						

Summary for Reach 4R: DP-4 OLD SWAMP RIVER (UPSTREAM)

Inflow Are	a =	72.310 ac, 12.38% Impervious, Inflow Depth = 3.09" for 25-year event
Inflow	=	62.26 cfs @ 13.60 hrs, Volume= 18.604 af
Outflow	=	62.26 cfs @ 13.60 hrs, Volume= 18.604 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 5R: DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Inflow Area =		145.820 ac, 24.63% Impervious, Inflow Depth = 3.35" for 25-year even	ent
Inflow	=	207.66 cfs @ 12.97 hrs, Volume= 40.743 af	
Outflow	=	207.66 cfs @ 12.97 hrs, Volume= 40.743 af, Atten= 0%, Lag= 0.	0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 4AP: EXISTING PARKWAY BASIN

Inflow Area = 3.980 ac, 38.69% Impervious, Inflow Depth = 2.68" for 25-year event Inflow 12.38 cfs @ 12.09 hrs, Volume= 0.890 af = 4.11 cfs @ 12.43 hrs, Volume= Outflow = 0.889 af, Atten= 67%, Lag= 20.3 min 4.11 cfs @ 12.43 hrs, Volume= Primary = 0.889 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.66' @ 12.43 hrs Surf.Area= 7,752 sf Storage= 10,737 cf

Plug-Flow detention time= 54.0 min calculated for 0.889 af (100% of inflow) Center-of-Mass det. time= 54.3 min (897.9 - 843.6)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	145.98'	34,24	5 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee		ırf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
145.9	1	0	0		
146.0	00	5,020	50	50	
147.0	00	6,760	5,890	5,940	
148.0	00	8,260	7,510	13,450	
149.0	00	9,815	9,038	22,488	
150.0	00	13,700	11,758	34,245	
Device	Routing	Invert	Outlet Device:	S	
#1	Primary	145.98'	12.0" Round	Culvert	
#2	Secondary	149.50'	L= 23.0' RCF Inlet / Outlet In n= 0.013 Con 10.0' long x 2 Head (feet) 0	P, end-section c nvert= 145.98' / ncrete pipe, ben 20.0' breadth E .20 0.40 0.60	conforming to fill, Ke= 0.500 137.17' S= 0.3830 '/' Cc= 0.900 ds & connections, Flow Area= 0.79 sf Broad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=4.11 cfs @ 12.43 hrs HW=147.66' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 4.11 cfs @ 5.23 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.98' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 4BP: EXISTING PARKWAY BASIN

Inflow Area = 4.060 ac, 86.95% Impervious, Inflow Depth = 5.27" for 25-year event Inflow 23.45 cfs @ 12.08 hrs, Volume= 1.782 af = 1.49 cfs @ 13.62 hrs, Volume= Outflow = 0.803 af, Atten= 94%, Lag= 92.1 min Primary = 1.49 cfs @ 13.62 hrs, Volume= 0.803 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 137.55' @ 13.62 hrs Surf.Area= 16,545 sf Storage= 52,744 cf

Plug-Flow detention time= 430.2 min calculated for 0.802 af (45% of inflow) Center-of-Mass det. time= 306.4 min (1,082.6 - 776.2)

Volume	Inver	: Avail.Sto	rage Storage	Description	
#1	132.00	' 146,26	63 cf Custom	Stage Data (Pri	smatic)Listed below (Recalc)
Elevatio	n S	urf.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
132.0	1	1,775	0		
133.0	00	4,345	3,060	3,060	
134.0	00	7,050	5,698	8,758	
135.0	00	10,730	8,890	17,648	
136.0	00	13,160	11,945	29,593	
137.0	00	15,450	14,305	43,898	
138.0		17,430	16,440	60,338	
139.0		19,460	18,445	78,783	
140.0		21,550	20,505	99,288	
141.0		23,700	22,625	121,913	
142.0	00	25,000	24,350	146,263	
Device	Routing	Invert	Outlet Device	s	
#1	Primary	136.90'	12.0" Round	l Culvert	
#2	Secondary		Inlet / Outlet I n= 0.013 Cor 10.0' long x Head (feet) 0	nvert= 136.90' / 1 ncrete pipe, bend 20.0' breadth Br 0.20 0.40 0.60 0	nforming to fill, Ke= 0.500 35.23' S= 0.0170 '/' Cc= 0.900 s & connections, Flow Area= 0.79 sf coad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 0 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.49 cfs @ 13.62 hrs HW=137.55' TW=0.00' (Dynamic Tailwater) -1=Culvert (Inlet Controls 1.49 cfs @ 2.75 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=132.00' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Subcatchment 4A:

Runoff = 18.83 cfs @ 12.09 hrs, Volume= 1.339 af, Depth= 4.04" Routed to Pond 4AP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	cription							
*	1.	340	98	Pave	Pavement							
*	0.	200	100	Wate	er - Basin							
_	2.	440	48	Brus	h, Good, H	ISG B						
	3.	3.980 67 Weighted Average										
	2.	440		61.3	1% Pervio	us Area						
	1.	540		38.6	9% Imperv	ious Area/						
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
	6.0						Direct Entry,					

Summary for Subcatchment 4B:

10" RCP pipe was assumed entering main 24" pipeline and inverts were assumed 0.005.

24"RCP - inverts assumed 0.005 (2) 48" RCP were assumed 0.005 invert and only entered as 1-48" RCP

60"RCP and last 48" RCP had assumed invert at 0.005

Runoff = 30.44 cfs @ 12.08 hrs, Volume= 2.350 af, Depth= 6.94" Routed to Pond 4BP : EXISTING PARKWAY BASIN

	Area (ac)	CN	Desc	cription		
*	3.1	130	98	Pave	ement		
*	0.4	400	100	Wate	er - Basin <i>i</i>	Area	
	0.5	530	48	Brus			
	4.0	060	92	Weig	ghted Aver	age	
	0.530 13.05% Pervious Area						
	3.5	530		86.9	5% Imperv	ious Area	
	Tc (min)	Leng (fee	,	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0	(10)		(13/10)	((010)	Direct Entry,

Summary for Subcatchment 4C:

86.52 cfs @ 13.60 hrs, Volume= 24.673 af, Depth= 4.61" Runoff = Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

_	Area	(ac)	CN	N Desc	cription		
*	3.	880	98	8 Pave	ement		
	7.	340	5	5 Woo	ds, Good,	HSG B	
	2.	630	7(ds, Good,		
	34.	020	7		ds, Good,		
	2.	390	48	8 Brus	h, Good, H	ISG B	
	1.	360	73	3 Brus	h, Good, H	ISG D	
	10.	650	6			over, Good	·
	0.	650	74			over, Good	·
_	1.	350	80	0 >75%	% Grass co	over, Good	, HSG D
	64.	270	72	2 Weig	ghted Aver	age	
	60.	390		93.9	6% Pervio	us Area	
	3.	880		6.04	% Impervi	ous Area	
	_						
	Тс	Leng		Slope	Velocity	Capacity	Description
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	13.1	10	00	0.0230	0.13		Sheet Flow,
							Grass: Dense n= 0.240 P2= 3.40"
	106.9	3,20)8	0.0100	0.50		Shallow Concentrated Flow,
_							Woodland Kv= 5.0 fps
	120.0	3,30)8	Total			

Summary for Subcatchment 5A:

102.90 cfs @ 12.90 hrs, Volume= 20.158 af, Depth= 5.07" Runoff = Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

	Area	(ac)	CN	Desc	cription		
*	3.	470	98	Pave	ement		
	3.	920	30	Woo	ds, Good,	HSG A	
	26.	070	77	Woo	ds, Good,	HSG D	
	14.	280	80	>75%	% Grass co	over, Good	, HSG D
	47.	740	76	Weig	ghted Aver	age	
	44.	270		92.7	3% Pervio	us Area	
	3.	470		7.27	% Impervi	ous Area	
	Та	Length	CI.	ope	Volocity	Consoitu	Description
	Тс	renair		nne	Velocity	Capacity	Description
	(
	(min)	(feet	(1	ft/ft)	(ft/sec)	(cfs)	
	<u>(min)</u> 20.0		(1	ft/ft)			Sheet Flow,
	20.0	(feet) 100	(f 0.0	ft/ft) 080	(ft/sec) 0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40"
		(feet	(f 0.0	ft/ft) 080	(ft/sec)		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40" Shallow Concentrated Flow,
_	20.0	(feet) 100	(f 0.0	ft/ft) 080	(ft/sec) 0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40"

Summary for Subcatchment 5B:

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197.19 cfs @ 12.91 hrs, Volume= 38.590 af, Depth= 4.72" Runoff = Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

_	Area	(ac)	CN	Desc	cription		
* 32.440 98 Pavement							
	0.	470	30	Woo	ds, Good,	HSG A	
	23.	820	55	Woo	ds, Good,	HSG B	
	11.	730	77	Woo	ds, Good,	HSG D	
	2.	160	48	Brus	h, Good, H	ISG B	
	2.	660	39			over, Good	
		920	61			over, Good	
	2.	880	80	>75%	% Grass co	over, Good	, HSG D
	98.	080	73	Weig	phted Aver	age	
	65.	640		66.92	2% Pervio	us Area	
	32.	440		33.0	8% Imperv	∕ious Area	
	_			~		•	-
	Tc	Leng		Slope	Velocity	Capacity	Description
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)	
	20.0	10	0 (0.0080	0.08		Sheet Flow,
							Grass: Dense n= 0.240 P2= 3.40"
	48.3	1,89	0 (0.0170	0.65		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	68.3	1,99	0 -	Total			

Summary for Reach 4R: DP-4 OLD SWAMP RIVER (UPSTREAM)

Inflow Are	a =	72.310 ac, 12.38% Impervious, Inflow Depth = 4.54" for 100-year event	
Inflow	=	92.99 cfs @ 13.60 hrs, Volume= 27.383 af	
Outflow	=	92.99 cfs @ 13.60 hrs, Volume= 27.383 af, Atten= 0%, Lag= 0.0 mi	in

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 5R: DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Inflow Area =		145.820 ac, 24.63% Impervious, Inflow Depth = 4.83" for 100-ye	ear event
Inflow	=	300.11 cfs @ 12.90 hrs, Volume= 58.748 af	
Outflow	=	300.11 cfs @ 12.90 hrs, Volume= 58.748 af, Atten= 0%, La	g= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 4AP: EXISTING PARKWAY BASIN

Inflow Area = 3.980 ac, 38.69% Impervious, Inflow Depth = 4.04" for 100-year event Inflow 18.83 cfs @ 12.09 hrs, Volume= 1.339 af = 5.33 cfs @ 12.46 hrs, Volume= Outflow = 1.339 af, Atten= 72%, Lag= 22.3 min 5.33 cfs @ 12.46 hrs, Volume= Primary = 1.339 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 148.47' @ 12.46 hrs Surf.Area= 8,987 sf Storage= 17,483 cf

Plug-Flow detention time= 52.7 min calculated for 1.339 af (100% of inflow) Center-of-Mass det. time= 52.9 min (884.6 - 831.7)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	145.98'	34,24	5 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee		ırf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
145.9	1	0	0		
146.0	146.00		50	50	
147.0	147.00 6,760		5,890	5,940	
148.0	00	8,260	7,510	13,450	
149.0	00	9,815	9,038	22,488	
150.0	00	13,700	11,758	34,245	
Device	Routing	Invert	Outlet Device:	S	
#1	Primary	145.98'	12.0" Round	Culvert	
#2	Secondary	149.50'	L= 23.0' RCF Inlet / Outlet In n= 0.013 Con 10.0' long x 2 Head (feet) 0	P, end-section c nvert= 145.98' / ncrete pipe, ben 20.0' breadth E .20 0.40 0.60	conforming to fill, Ke= 0.500 137.17' S= 0.3830 '/' Cc= 0.900 ds & connections, Flow Area= 0.79 sf Broad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=5.33 cfs @ 12.46 hrs HW=148.47' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 5.33 cfs @ 6.79 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.98' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 4BP: EXISTING PARKWAY BASIN

Inflow Area = 4.060 ac, 86.95% Impervious, Inflow Depth = 6.94" for 100-year event Inflow 30.44 cfs @ 12.08 hrs, Volume= 2.350 af = 3.36 cfs @ 12.74 hrs, Volume= Outflow = 1.370 af, Atten= 89%, Lag= 39.2 min Primary = 3.36 cfs @ 12.74 hrs, Volume= 1.370 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

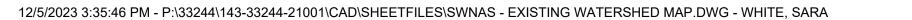
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 138.19'@ 12.74 hrs Surf.Area= 17,819 sf Storage= 63,713 cf

Plug-Flow detention time= 341.6 min calculated for 1.370 af (58% of inflow) Center-of-Mass det. time= 234.3 min (1,003.8 - 769.4)

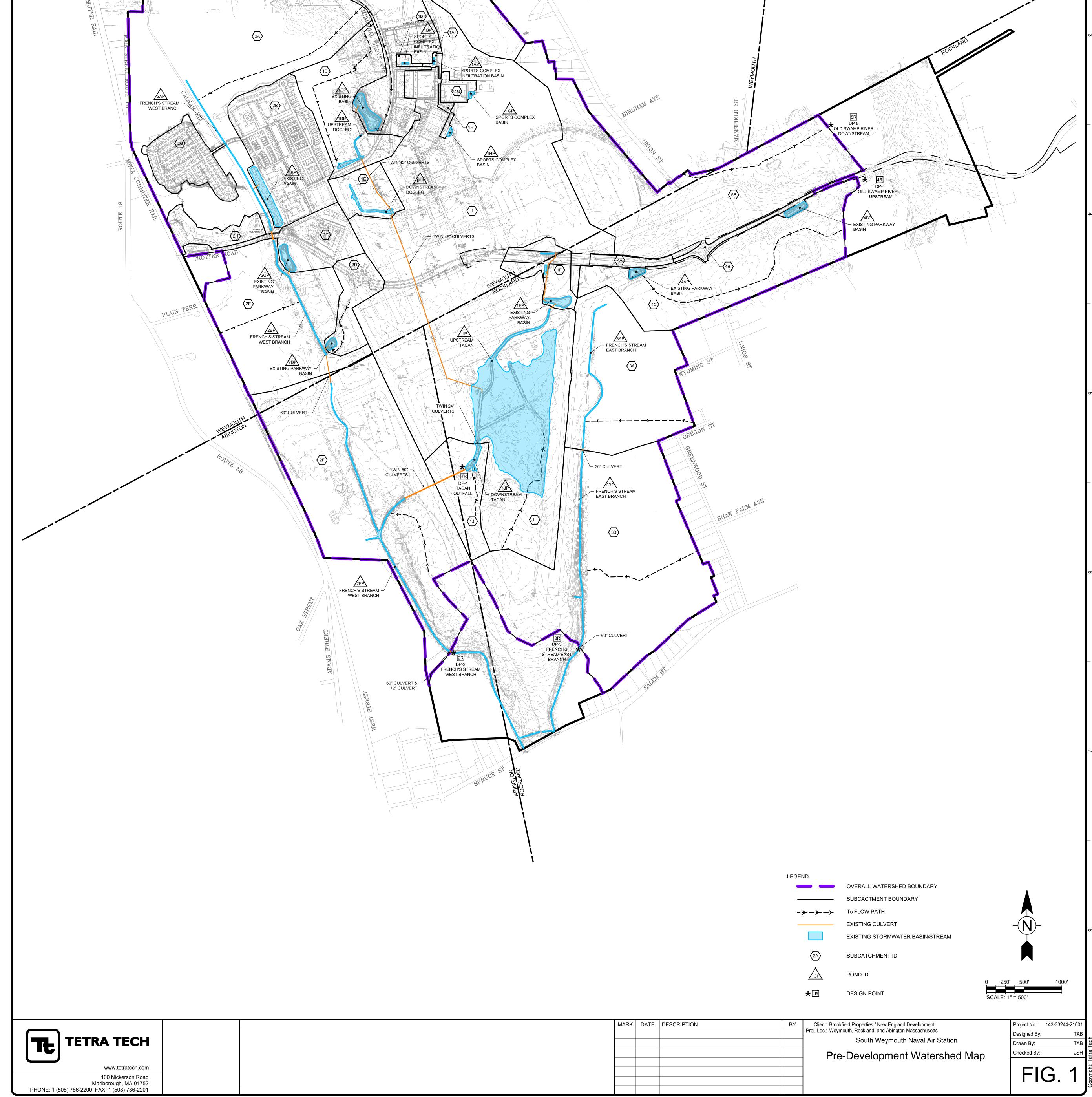
Volume	Inver	t Avail.Sto	rage Storage	Description				
#1	132.00	' 146,26	63 cf Custom	Stage Data (Pris	smatic)Listed below (Recalc)			
Elevatio	n S	urf.Area	Inc.Store	Cum.Store				
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)				
132.0	0	1,775	0	0				
133.0	00	4,345	3,060	3,060				
134.0	00	7,050	5,698	8,758				
135.0	00	10,730	8,890	17,648				
136.0		13,160	11,945	29,593				
137.0		15,450	14,305	43,898				
138.0		17,430	16,440	60,338				
139.0		19,460	18,445	78,783				
140.0		21,550	20,505	99,288				
141.0		23,700	22,625	121,913				
142.0	00	25,000	24,350	146,263				
Device	Routing	Invert	Outlet Devices	S				
#1	Primary	136.90'	12.0" Round	Culvert				
#2	Secondar		L= 98.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 136.90' / 135.23' S= 0.0170 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf 10.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63					

Primary OutFlow Max=3.36 cfs @ 12.74 hrs HW=138.19' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 3.36 cfs @ 4.28 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=132.00' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

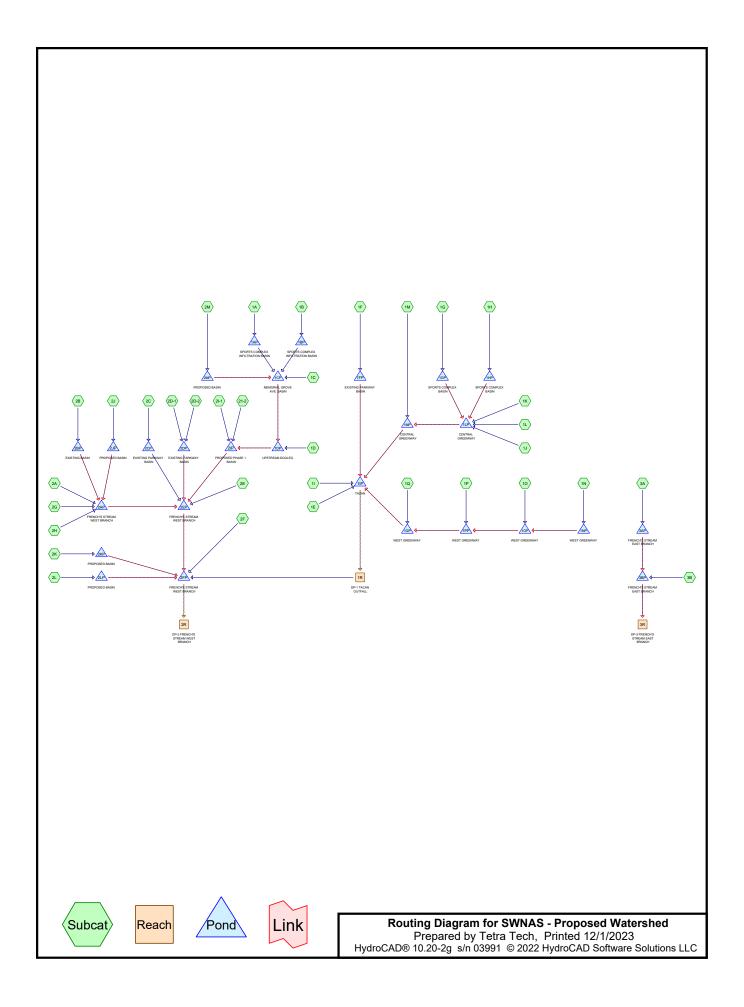


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							د_
		WHITE ST					
		CENTRAL ST SA					N
	WEBSTER ST						
MBTAC	Silea DRIVE		UNION ST				



Bar Measures 1 inch

Stormwater Management Attachment 2: Post-Development HydroCAD Report



SWNAS - Proposed Watershed Prepared by Tetra Tech HydroCAD® 10.20-2g s/n 03991 © 2022 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area	CN	Description				
(acres)		(subcatchment-numbers)				
24.340	39	>75% Grass cover, Good, HSG A (1A, 1B, 1C, 1D, 1E, 1N, 2C, 2D-2, 2E, 21-2)				
78.720	61	>75% Grass cover, Good, HSG B (1F, 1I, 1L, 1M, 2A, 2F, 2G, 2H, 3B)				
43.740	74	>75% Grass cover, Good, HSG C (1D, 1F, 1I, 1L, 1N, 1O, 1P, 1Q, 2A, 2B, 2C)				
18.270	80	>75% Grass cover, Good, HSG D (1D, 1G, 1H, 1I, 2E, 2J, 3B)				
1.080	85	Artificial Turf (1G, 1H)				
14.760	48	Brush, Good, HSG B (1I)				
34.880	73	Brush, Good, HSG D (1I, 3A, 3B)				
2.560	100	Open Water (1C, 1F, 3B)				
79.150	98	Pavement (1A, 1B, 1C, 1F, 1G, 1H, 1J, 2A, 2B, 2C, 2D-1, 2G, 2H, 3A, 3B)				
302.140	88	Proposed Development Area (1C, 1D, 1E, 1I, 1K, 1L, 1M, 1N, 1O, 1P, 1Q, 2I-1, 2J,				
		2K, 2L, 2M, 21-2)				
34.380	98	Roof (2A, 2B, 2G, 2H)				
3.740	98	Roofs (1C, 2C)				
13.130	30	Woods, Good, HSG A (1D, 2E)				
36.730	55	Woods, Good, HSG B (1I, 2F, 3A, 3B)				
13.060	70	Woods, Good, HSG C (1D, 2E)				
364.050	77	Woods, Good, HSG D (1D, 1E, 1I, 2A, 2E, 2F, 2K, 3A, 3B)				
1.620	57	Woods/grass comb., Poor, HSG A (2A)				
1,066.350	78	TOTAL AREA				

Summary for Subcatchment 1A:

Page 3

Runoff 2.29 cfs @ 12.09 hrs, Volume= 0.167 af, Depth= 2.54" = Routed to Pond 1AP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription					
*	0.	710	98	Pave	Pavement					
	0.	080	39	>75%	>75% Grass cover, Good, HSG A					
	0.	790	92	Weig	phted Aver	age				
	0.	080		10.1	3% Pervio	us Area				
	0.710 89.87% Impervious Area									
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	6.0						Direct Entry,			

Summary for Subcatchment 1B:

Page 4

Runoff 2.53 cfs @ 12.09 hrs, Volume= 0.183 af, Depth= 2.45" = Routed to Pond 1BP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription					
*	0.	800	98	Pave	Pavement					
	0.	100	39	>75%	>75% Grass cover, Good, HSG A					
	0.	900	91	Weig	phted Aver	age				
	0.	100		11.1	1% Pervio	us Area				
	0.800 88.89% Impervious Area					vious Area				
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	6.0						Direct Entry,			

Summary for Subcatchment 1C:

Assumed pipe channel has slope 0.005 since no data given

Runoff = 31.91 cfs @ 12.61 hrs, Volume= 4.867 af, Depth= 2.18" Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

	Area ((ac) C	N Des	cription						
*	2.	790 8	8 Prop	osed Dev	elopment A	rea				
*	16.9	950 9	8 Pave	ement						
*	2.0	060 9	8 Root	fs						
*	0.	750 10	0 Ope	n Water						
	4.2	270 3	89 > 759	>75% Grass cover, Good, HSG A						
	26.	820 8	88 Weig	ghted Aver	age					
	7.0	060		26.32% Pervious Area						
	19.	760	73.6	8% Imperv	∕ious Area					
				·						
	Тс	Length	Slope	Velocity	Capacity	Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	23.4	100	0.0021	0.07		Sheet Flow,				
						Grass: Short n= 0.150 P2= 3.40"				
	4.4	94	0.0026	0.36		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	7.7	252	0.0061	0.55		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	0.1	14	0.0701	1.85		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	2.9	154	0.0155	0.87		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	1.4	438	0.0050	5.09	16.00					
						24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'				
						n= 0.013 Concrete pipe, bends & connections				
	0.8	288	0.0050	5.91	29.00					
						30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63'				
	07	005	0 0050	0.07	47.40	n= 0.013 Concrete pipe, bends & connections				
	0.7	295	0.0050	6.67	47.16					
						36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75'				
	~ ~	4 000	0.0050	7 00	74 44	n= 0.013 Concrete pipe, bends & connections				
	2.9	1,299	0.0050	7.39	71.14					
						42.0" Round Area= 9.6 sf Perim= 11.0' r= 0.88'				
	0.2	02	0.0050	0.00	101 57	n= 0.013 Concrete pipe, bends & connections				
	0.2	93	0.0050	8.08	101.57	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00'				
		2.007	Tatal			n= 0.013 Concrete pipe, bends & connections				
	44.5	3,027	Total							

Summary for Subcatchment 1D:

Runoff = 6.27 cfs @ 13.15 hrs, Volume= Routed to Pond 1DP : UPSTREAM DOGLEG 1.601 af, Depth= 0.66"

	Area	(ac)	CN	Desc	cription					
*	5.	040	88	Prop	osed Dev	elopment A	rea			
	5.	200	30	Woo	ds, Good,	HSG A				
	4.	720	70	Woo	ds, Good,	HSG C				
	5.	970	77	Woo	ds, Good,	HSG D				
	4.	070	39			over, Good	,			
	4.	100	74			over, Good				
	0.	220	80	>75%	% Grass co	over, Good	, HSG D			
29.320 64 Weighted Average										
	29.320			100.	100.00% Pervious Area					
	_									
	Tc	Lengt		Slope	Velocity	Capacity	Description			
	(min)	(feet	.)	(ft/ft)	(ft/sec)	(cfs)				
	33.5	10	0 0	.0244	0.05		Sheet Flow,			
							Woods: Dense underbrush n= 0.800 P2= 3.40"			
	38.7	1,64	0 0	.0200	0.71		Shallow Concentrated Flow,			
_							Woodland Kv= 5.0 fps			
	72.2	1,74	0 T	otal						

Summary for Subcatchment 1E:

Runoff = 220.01 cfs @ 12.09 hrs, Volume= 15.659 af, Depth= 1.70" Routed to Pond 1IP : TACAN

	Area	(ac)	CN	Desc	Description							
*	63.	870	88	Prop	Proposed Development Area							
	44.	030	77	Woo	ds, Good,	HSG D						
	2.	610	39	>759	% Grass co	over, Good	I, HSG A					
	110.510 82 Weighted Average											
	110.510			100.00% Pervious Area								
	Tc (min)	Leng (fee	· .	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
	6.0						Direct Entry,					

Summary for Subcatchment 1F:

Runoff = 22.57 cfs @ 12.09 hrs, Volume= 1.603 af, Depth= 1.93" Routed to Pond 1FP : EXISTING PARKWAY BASIN

Area (a	ac)	CN	Desc	ription							
5.0	70	98	Pave	Pavement							
0.4	10	100	Oper	Open Water							
1.8	80	61	>75%	6 Grass co	over, Good	d, HSG B					
2.6	510	74	>75%	6 Grass co	over, Good	d, HSG C					
9.9	70	85	Weig	hted Aver							
4.4	.90		45.04	4% Pervio	us Area						
5.4	5.480 54.96% Impervious Area				vious Area						
Тс	long	th	Slope	Velocity	Capacity	Description					
	. U					•					
	liee	;i)	(11/11)	(it/sec)	(CIS)						
6.0						Direct Entry,					
	5.0 0.4 1.8 2.6 9.9 4.4 5.4	Tc Leng min) (fee	5.070 98 0.410 100 1.880 61 2.610 74 9.970 85 4.490 5.480 Tc Length min) (feet)	5.070 98 Pave 0.410 100 Oper 1.880 61 >759 2.610 74 >759 9.970 85 Weig 4.490 45.04 5.480 54.90 Tc Length Slope min) (feet) (ft/ft)	5.070 98 Pavement 0.410 100 Open Water 1.880 61 >75% Grass co 2.610 74 >75% Grass co 9.970 85 Weighted Aver 4.490 45.04% Pervio 5.480 54.96% Imperv Tc Length Slope win) (feet) (ft/ft)	5.07098Pavement0.410100Open Water1.88061>75% Grass cover, Good2.61074>75% Grass cover, Good9.97085Weighted Average4.49045.04% Pervious Area5.48054.96% Impervious AreaTcLengthSlopeVelocityTcLengthSlopeVelocityMin)(feet)(ft/ft)(ft/sec)					

Summary for Subcatchment 1G:

Runoff = 5.30 cfs @ 12.39 hrs, Volume= 0.67 Routed to Pond 1GP : SPORTS COMPLEX BASIN

0.673 af, Depth= 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 2-year Rainfall=3.40"

_	Area	(ac) C	N Des	cription		
*	1.	850 9	8 Pave	ement		
*	0.	990 8	35 Artifi	icial Turf		
	0.	340 8	30 >75°	% Grass c	over, Good	, HSG D
	3.	180 9	92 Weig	ghted Aver	ade	
		330		2% Pervio		
		850	58.1	8% Imperv	/ious Area	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·
_	26.5					Direct Entry, Artificial Turf
	1.8	346	0.0050	3.21	2.52	Pipe Channel,
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Corrugated PE, smooth interior
	0.6	116	0.0050	3.21	2.52	-
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Corrugated PE, smooth interior
	0.0	11	0.0900	13.61	10.69	
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Concrete pipe, bends & connections
	0.2	40	0.0050	4.20	7.43	• •
						18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	0.1	18	0.0050	4.20	7.43	• •
						18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	20.2	531	Total			

29.2 531 Total

Summary for Subcatchment 1H:

Runoff = 4.04 cfs @ 12.08 hrs, Volume= 0.301 af, Depth= 2.74" Routed to Pond 1HP : SPORTS COMPLEX BASIN

	Area ((ac)	CN	Desc	cription			
*	1.0	000	98	Pave	ement			
*	0.0	090	85	Artifi	cial Turf			
_	0.2	230	80 80 >75% Grass cover, Good, HSG D					
	1.3	320	94	Weig	ghted Aver	age		
	0.320 24.24% Pervious Area							
	1.000 75.76% Impervious Area					vious Area		
	Tc (min)	Lengt (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
	6.0						Direct Entry,	

Summary for Subcatchment 1I:

Runoff = 26.20 cfs @ 13.51 hrs, Volume= Routed to Pond 1IP : TACAN 7.760 af, Depth= 0.84"

_	Area	(ac)	CN	Desc	cription		
*	15.	650	88	Prop	osed Dev	elopment A	rea
	1.	950	55	Woo	ds, Good,	HSG B	
	7.	940	77	Woo	ds, Good,	HSG D	
	14.	760	48	Brus	h, Good, H	ISG B	
	20.	020	73	Brus	h, Good, H	ISG D	
	38.	700	61			over, Good	
	5.	070	74			over, Good	
	6.	270	80	>759	% Grass co	over, Good	, HSG D
	110.	360	68	Weig	ghted Aver	age	
	110.	360		100.	00% Pervi	ous Area	
	_						
	ŢĊ	Leng		Slope	Velocity	Capacity	Description
	(min)	(fee	/	(ft/ft)	(ft/sec)	(cfs)	
	47.9	10	0 0	0.0100	0.03		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	22.5	64	0 0	0.0090	0.47		Shallow Concentrated Flow,
			_				Woodland Kv= 5.0 fps
	33.5	1,00)5 (0.0100	0.50		Shallow Concentrated Flow,
_							Woodland Kv= 5.0 fps
	103.9	1,74	5	Total			

Summary for Subcatchment 1J:

Runoff = 14.87 cfs @ 12.08 hrs, Volume= Routed to Pond 1LP : CENTRAL GREENWAY 1.188 af, Depth= 3.17"

	Area	(ac)	CN Description				
*	4.	500	98 Pavement				
	4.	500		100.	00% Impe	rvious Area	1
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	<u>(11111)</u> 6.0	(iee	:()	(1011)	(II/Sec)	(015)	Direct Entry,

Summary for Subcatchment 1K:

Runoff 64.29 cfs @ 12.14 hrs, Volume= = Routed to Pond 1LP : CENTRAL GREENWAY

5.252 af, Depth= 2.18"

	Area	(ac)	CN	Desc	cription		
*	28.	940	88	Prop	osed Deve	elopment A	Area
	28.	940		100.	00% Pervi	ous Area	
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	10.0						Direct Entry,

Summary for Subcatchment 1L:

Runoff = 61.62 cfs @ 12.14 hrs, Volume= 5.015 af, Depth= 2.01" Routed to Pond 1LP : CENTRAL GREENWAY

	Area	(ac)	CN	Desc	Description							
*	26.	870	88	Prop	roposed Development Area							
	2.	070	61 >75% Grass cover, Good, HSG B									
	1.	000	74	>75%	% Grass co	over, Good	, HSG C					
	29.940 86 Weighted Average											
	29.940			100.	100.00% Pervious Area							
	_											
	Тс	Leng		Slope	Velocity	Capacity	Description					
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)						
	10.0						Direct Entry,					

Summary for Subcatchment 1M:

Page 15

Runoff 20.36 cfs @ 12.14 hrs, Volume= 1.656 af, Depth= 1.93" = Routed to Pond 1MP : CENTRAL GREENWAY

	Area	(ac)	CN	Desc	Description							
*	9.	0.060 88 Proposed Development Area										
	1.240 61 >75% Grass cover, Good, HSG B											
	10.	300	85	Weig	ghted Aver							
	10.300 100.00% Pervious Area											
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
	10.0	ì					Direct Entry,					

Summary for Subcatchment 1N:

Assumed slope of 0.002

Runoff	=	51.89 cfs @	12.14 hrs,	Volume=	4.223 af,	Depth= 2.01"				
Routed to Pond 1NP : WEST GREENWAY										

	Area	(ac)	CN	Desc	Description							
*	22.	110	88 Proposed Development Area									
	0.	530	39	>759	% Grass co	over, Good	d, HSG A					
	2.	570	74	>75%	% Grass co	over, Good	d, HSG C					
	25.210 86 Weighted Average											
	25.210		0 100.00%		00% Pervi	ous Area						
	Tc (min)	Leng	· .	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
		(fee	31)	(11/11)	(II/Sec)	(CIS)						
	10.0						Direct Entry,					

Summary for Subcatchment 10:

Runoff = 18.63 cfs @ 12.09 hrs, Volume= 1.327 af, Depth= 2.09" Routed to Pond 1OP : WEST GREENWAY

Area	(ac)	CN	Desc	Description							
7.	000	88	Prop	Proposed Development Area							
0.	0.610 74 >75% Grass cover, Good, HSG C										
7.	610	87	Weig	ghted Aver	age						
7.610 100.00% Pervious Area											
Tc (min)			Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
6.0	•				\$ F	Direct Entry,					
	7. 0. 7. 7. Tc (min)	7.610 7.610 Tc Leng (min) (fee	7.000 88 0.610 74 7.610 87 7.610 Tc Length (min) (feet)	7.000 88 Prop 0.610 74 >759 7.610 87 Weig 7.610 100. Tc Length Slope (min) (feet) (ft/ft)	7.000 88 Proposed Deve 0.610 74 >75% Grass co 7.610 87 Weighted Aver 7.610 100.00% Pervi Tc Length Slope Velocity (min) (feet) (ft/ft) (ft/sec)	7.00088Proposed Development A0.61074>75% Grass cover, Good7.61087Weighted Average7.610100.00% Pervious AreaTcLengthSlopeVelocityCapacity(min)(feet)(ft/ft)					

Summary for Subcatchment 1P:

Runoff = 46.73 cfs @ 12.09 hrs, Volume= 3.329 af, Depth= 2.09" Routed to Pond 1PP : WEST GREENWAY

	Area	(ac)	CN	Dese	Description							
*	17.	420	88	Prop	Proposed Development Area							
	1.	1.670 74 >75% Grass cover, Good, HSG C										
	19.	090	87	Weig	ghted Aver	age						
	19.090 100.00% Pervious Area											
	Тс	Length		Slope	Velocity	Capacity	Description					
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)						
	6.0						Direct Entry,					
							-					

Summary for Subcatchment 1Q:

Runoff = 41.44 cfs @ 12.09 hrs, Volume= 2.9 Routed to Pond 1QP : WEST GREENWAY

2.953 af, Depth= 2.09"

	Area	(ac)	CN	Desc	cription					
*	15.	15.260 88 Proposed Development Area								
1.670 74 >75% Grass cover, Good, HSG C										
	16.	930	87	Weig	ghted Aver	age				
	16.	930		100.00% Pervious Area						
	Тс	Leng		Slope	Velocity	Capacity	Description			
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)				
	6.0						Direct Entry,			

Summary for Subcatchment 2A:

61.33 cfs @ 13.40 hrs, Volume= 16.037 af, Depth= 1.36" Runoff = Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area	(ac)	CN	Desc	cription					
*	4.	000	98	Pave	Pavement					
*	0.290 98			Root	Roof					
	115.	050	77	Woo	Woods, Good, HSG D					
	1.	620	57	Woo	Woods/grass comb., Poor, HSG A					
	4.	390	61	>75%	% Grass co	over, Good	, HSG B			
	16.	500	74		>75% Grass cover, Good, HSG C					
_	141.850 77			Weig	ghted Aver	age				
	137.	560			, 8% Pervio	•				
	4.290		3.02% Impervi		ous Area					
					•					
	Tc	Lengtl	n S	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·			
	47.9	100) 0.	.0100	0.03		Sheet Flow,			
							Woods: Dense underbrush n= 0.800 P2= 3.40"			
	27.0	1,08	50.	.0180	0.67		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	11.4	480	0.	.0100	0.70		Shallow Concentrated Flow,			
							Short Grass Pasture Kv= 7.0 fps			
	14.2	42	50.	.0100	0.50		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	100.5	2,090) To	otal						

Summary for Subcatchment 2B:

Runoff = 125.27 cfs @ 12.08 hrs, Volume= Routed to Pond 2BP : EXISTING BASIN 9.333 af, Depth= 2.74"

	Area (a	c) CN	Dese	escription								
*	6.65	50 98	B Pave	Pavement								
*	26.60	00 98	Root	F								
_	7.65	50 74	>75	% Grass co	over, Good	I, HSG C						
	40.90	0 94	Weig	ghted Aver	age							
	7.65	50	18.7	0% Pervio	us Area							
	33.2	50	81.3	0% Imper	vious Area							
		ength	Slope	Velocity	Capacity	Description						
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)							
	6.0					Direct Entry,						

Summary for Subcatchment 2C:

Runoff = 40.71 cfs @ 12.08 hrs, Volume= 3.121 af, Depth= 2.95" Routed to Pond 2CP : EXISTING PARKWAY BASIN

Area	(ac)	CN	Desc	cription							
10.	340	10 98 Pavement									
1.	680	98 Roofs									
0.	0.400 39 >75% Grass cover, Good, HSG A										
0.	290	74	>75%	6 Grass co	over, Good	I, HSG C					
12.	710	96	Weig	hted Aver	age						
0.	690		5.43	% Perviou	s Area						
12.	020		94.5	7% Imperv	ious Area						
та	المع	46	Clana	Valacity	Consister	Description					
0					Description						
(min)	(fee	et)	(TT/ft)	(TT/SeC)	(CTS)						
6.0						Direct Entry,					
	10. 1. 0. 12. 12. 12. 12. Tc (min)	(min) (fee	10.340 98 1.680 98 0.400 39 0.290 74 12.710 96 0.690 12.020 Tc Length (min) (feet)	10.340 98 Pave 1.680 98 Roof 0.400 39 >75% 0.290 74 >75% 12.710 96 Weig 0.690 5.43% 12.020 94.5% Tc Length Slope (min) (feet) (ft/ft)	10.340 98 Pavement 1.680 98 Roofs 0.400 39 >75% Grass co 0.290 74 >75% Grass co 12.710 96 Weighted Aver 0.690 5.43% Perviou 12.020 94.57% Imperviou 12.020 94.57% Imperviou 12.020 94.57% Imperviou	10.340 98 Pavement 1.680 98 Roofs 0.400 39 >75% Grass cover, Good 0.290 74 >75% Grass cover, Good 12.710 96 Weighted Average 0.690 5.43% Pervious Area 12.020 94.57% Impervious Area 12.020 (ft/ft)					

Summary for Subcatchment 2D-1:

Runoff = 6.94 cfs @ 12.08 hrs, Volume= 0.554 af, Depth= 3.17" Routed to Pond 2DP : EXISTING PARKWAY BASIN

	Area (ac) CN			Description			
*	2.100 98 Pavement				ement		
	2.100 100.00% Impervious						a
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	6.0						Direct Entry,

Summary for Subcatchment 2D-2:

Runoff = 0.00 cfs @ 23.42 hrs, Volume= 0.000 af, Depth= 0.00" Routed to Pond 2DP : EXISTING PARKWAY BASIN

Area	(ac)	CN	Desc	cription						
0.	0.670 39 >75% Grass cover, Good, HSG A									
0.	0.670 100.00% Pervious Area									
Tc _(min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
6.0						Direct Entry,				

Summary for Subcatchment 2E:

Runoff = 8.30 cfs @ 13.39 hrs, Volume= 2.499 af, Depth= 0.61" Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

	Area ((ac)	CN	Desc	ription		
	7.9	930	30	Wood	ds, Good,	HSG A	
	8.3	340	70	Wood	ds, Good,	HSG C	
	22.1	160	77	Wood	ds, Good,	HSG D	
	7.0	040	39	>75%	6 Grass co	over, Good,	HSG A
	3.5	560	80	>75%	6 Grass co	over, Good,	HSG D
	49.0	030	63	Weig	hted Aver	age	
	49.0	030		100.0	0% Pervi	ous Area	
	Тс	Lengt		Slope	Velocity	Capacity	Description
1)	min)	(feet	:)	(ft/ft)	(ft/sec)	(cfs)	
	30.8	10	0 0.0	0300	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
į	59.1	1,034	4 0.0	0034	0.29		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
8	89.9	1,134	4 To	otal			

Summary for Subcatchment 2F:

Runoff = 16.19 cfs @ 13.06 hrs, Volume= 3.855 af, Depth= 0.75" Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

_	Area	(ac) (CN De	escription		
	20.	570	55 W	oods, Good	, HSG B	
	25.	620	77 W	oods, Good	, HSG D	
_	15.	770	61 >7	5% Grass c	over, Good	, HSG B
	61.	960	66 W	eighted Ave	rage	
	61.	960	10	0.00% Perv	ious Area	
	Тс	Length	Slop	e Velocity	Capacity	Description
_	(min)	(feet)	(ft/f) (ft/sec)	(cfs)	
	47.9	100	0.010	0 0.03		Sheet Flow,
						Woods: Dense underbrush n= 0.800 P2= 3.40"
	22.5	675	0.010	0 0.50		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	70.4	775	Total			·

Summary for Subcatchment 2G:

Assumed Tc value

Runoff = 10.95 cfs @ 13.60 hrs, Volume= 3.126 af, Depth= 2.26" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area (a	ac)	CN										
*	6.6	620	98	Pave	Pavement								
*	5.8	800	98	Roof									
	4.1	40	61	>75%	6 Grass co	over, Good	I, HSG B						
	16.5	60	89	Weig	hted Aver	age							
	4.1	40		25.0	0% Pervio	us Area							
	12.4	20		75.00	0% Imperv	vious Area							
		Lengt		Slope	Velocity	Capacity	Description						
	(min)	(feet	.)	(ft/ft)	(ft/sec)	(cfs)							
	120.0						Direct Entry,						

Summary for Subcatchment 2H:

Assumed Tc value

Runoff = 4.32 cfs @ 13.60 hrs, Volume= 1.244 af, Depth= 1.70" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area	(ac)	CN	Desc	cription								
*	3.	370	98	Pave	Pavement								
*	1.	690	98	Root	Roof								
	3.	720	61	>75%	% Grass co	over, Good	d, HSG B						
	8.	780	82	Weig	ghted Aver	age							
	3.	720		42.3	7% Pervio	us Area							
	5.	060		57.6	3% Imper	vious Area							
	Tc Length Slope Velocity Capacity (min) (feet) (ft/ft) (ft/sec) (cfs)				Velocity (ft/sec)	Capacity (cfs)	Description						
	(min)	(iee	er)	(ft/ft)	(II/Sec)	(CIS)							
	120.0						Direct Entry,						

Summary for Subcatchment 2I-1:

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Runoff 53.05 cfs @ 12.14 hrs, Volume= 4.334 af, Depth= 2.18" = Routed to Pond 2IP : PROPOSED PHASE 1 BASIN

	Area	(ac)	CN	Desc	cription					
*	23.	23.880 88 Proposed Development Area								
	23.	880		100.	00% Pervi	ous Area				
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)				
	10.0						Direct Entry,			

Summary for Subcatchment 2J:

Runoff = 38.48 cfs @ 12.09 hrs, Volume= Routed to Pond 2JP : PROPOSED BASIN

2.742 af, Depth= 2.09"

	Area (ac) CN Description									
*	14.430 88 Proposed Development Area									
_	1.290 80 >75% Grass cover, Good, HSG D									
	15.720 87 Weighted Average									
	15.	720		100.	00% Pervi	ous Area				
	_					-				
	Тс	Leng		Slope	Velocity	Capacity	Description			
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)				
	6.0						Direct Entry,			
							•·			

Summary for Subcatchment 2K:

45.61 cfs @ 12.09 hrs, Volume= 3.239 af, Depth= 1.85" Runoff = Routed to Pond 2KP : PROPOSED BASIN

	Area	(ac)	CN Description								
*	12.	610	88	Prop	osed Dev	elopment A	rea				
	8.	8.390 77 Woods, Good, HSG D									
	21.000 84 Weighted Average										
	21.	000		100.	00% Pervi	ous Area					
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
	6.0						Direct Entry,				

Summary for Subcatchment 2L:

27.16 cfs @ 12.09 hrs, Volume= Runoff = Routed to Pond 2LP : PROPOSED BASIN

1.940 af, Depth= 2.18"

	Area	(ac)	CN	Desc	cription						
*	10.	10.690 88 Proposed Development Area									
	10.	690		100.	00% Pervi						
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
	6.0						Direct Entry,				

Summary for Subcatchment 2M:

49.15 cfs @ 12.09 hrs, Volume= Runoff = Routed to Pond 2MP : PROPOSED BASIN

3.512 af, Depth= 2.18"

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	Area	(ac)	CN	Desc	cription		
*	19.	350	88	Prop	osed Dev	Area	
	19.350 100.00% Pervious Area				00% Pervi	ous Area	
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

Summary for Subcatchment 3A:

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34.70 cfs @ 13.05 hrs, Volume= 7.325 af, Depth= 1.42" Runoff = Routed to Pond 3AP : FRENCH'S STREAM EAST BRANCH

_	Area	(ac)	CN	Desc	cription		
*	5.	200	98	Pave	ement		
	0.	160	55	Woo	ds, Good,	HSG B	
	50.	970	77	Woo	ds, Good,	HSG D	
_	5.	490	73	Brus	h, Good, H	ISG D	
	61.	820	78	Weig	ghted Aver	age	
	56.	620		91.5	9% Pervio	us Area	
	5.200			8.41% Impervious Area			
	_						
	Tc	Lengt		Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	35.7	100) 0.	0208	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	2.1	66	6 0.	0114	0.53		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	37.0	1,272	20.	0131	0.57		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	74.8	1,438	3 To	otal			

Summary for Subcatchment 3B:

Runoff 51.95 cfs @ 13.44 hrs, Volume= 14.215 af, Depth= 1.29" = Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

	Area	(ac)	CN	Desc	cription		
*	9.	990	98	B Pave	ement		
*	1.	400	100) Opei	n Water		
	14.	050	55	5 Woo	ds, Good,	HSG B	
	83.	920	77	7 Woo	ds, Good,	HSG D	
	9.	370	73	8 Brus	h, Good, H	ISG D	
	6.	810	61	>75%	% Grass co	over, Good	, HSG B
	6.	360	80) >75%	6 Grass co	over, Good	, HSG D
	131.	900	76	6 Weig	phted Aver	age	
	120.	510		91.3	6% Pervio	us Area	
	11.	390		8.64	% Impervi	ous Area	
	Тс	Leng	th	Slope	Velocity	Capacity	Description
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	36.3	10	00	0.0200	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	70.7	1,50	00	0.0050	0.35		Shallow Concentrated Flow,
_							Woodland Kv= 5.0 fps
	107.0	1,60	00	Total			

Summary for Subcatchment 21-2:

Runoff = 9.60 cfs @ 12.15 hrs, Volume= 0.875 af, Depth= 0.89" Routed to Pond 2IP : PROPOSED PHASE 1 BASIN

	Area	(ac)	CN	Desc	cription				
*	7.	170	88	Prop	roposed Development Area				
	4.	570	39	>75	% Grass co	I, HSG A			
	11.740 69 Weighted Average				ghted Aver	age			
	11.740 100.00% Pervious Area			00% Pervi	ous Area				
	т.	1	а. 7			0	Description		
	Tc	Leng		Slope	Velocity	Capacity	Description		
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)			
	10.0						Direct Entry,		

Summary for Reach 1R: DP-1 TACAN OUTFALL

Inflow Area = 377.860 ac, 3.40% Impervious, Inflow Depth > 1.55" for 2-year event Inflow = 54.18 cfs @ 15.01 hrs, Volume= 48.916 af Outflow = 54.18 cfs @ 15.01 hrs, Volume= 48.916 af, Atten= 0%, Lag= 0.0 min Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: DP-2 FRENCH'S STREAM WEST BRANCH

Inflow Are	a =	872.630 ac, 11.83% Impervious, Inflow Depth > 1.39" for 2-year even	ıt
Inflow	=	175.24 cfs @ 13.78 hrs, Volume= 101.076 af	
Outflow	=	175.24 cfs @ 13.78 hrs, Volume= 101.076 af, Atten= 0%, Lag= 0.	0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: DP-3 FRENCH'S STREAM EAST BRANCH

Inflow Are	a =	193.720 ac,	8.56% Impervious, Inflo	w Depth = 1.33"	for 2-year event
Inflow	=	76.28 cfs @	13.59 hrs, Volume=	21.534 af	
Outflow	=	76.28 cfs @	13.59 hrs, Volume=	21.534 af, Atte	en= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area = 0.790 ac, 89.87% Impervious, Inflow Depth = 2.54" for 2-year event Inflow 2.29 cfs @ 12.09 hrs, Volume= 0.167 af = 0.78 cfs @ 12.37 hrs, Volume= Outflow = 0.167 af, Atten= 66%, Lag= 17.0 min Discarded = 0.12 cfs @ 11.44 hrs, Volume= 0.138 af 0.66 cfs @ 12.37 hrs, Volume= Primary = 0.030 af Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 170.39' @ 12.37 hrs Surf.Area= 2,201 sf Storage= 2,430 cf

Plug-Flow detention time= 125.1 min calculated for 0.167 af (100% of inflow) Center-of-Mass det. time= 125.1 min (920.7 - 795.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	168.50'	1,559 cf	24.83'W x 88.64'L x 2.33'H Field A
			5,136 cf Overall - 1,238 cf Embedded = 3,898 cf x 40.0% Voids
#2A	169.00'	1,238 cf	ADS_StormTech SC-310 +Cap x 84 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			84 Chambers in 7 Rows
#3	168.50'	85 cf	4.00'D x 6.80'H CB-Impervious
#4	175.20'	449 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
175.20	10	0	0
176.00	300	124	124
176.50	1,000	325	449

Device	Routing	Invert	Outlet Devices
#1	Primary	170.00'	18.0" Round Culvert
	-		L= 13.0' RCP, end-section conforming to fill, Ke= 0.500
			Inlet / Outlet Invert= 170.00' / 169.85' S= 0.0115 '/' Cc= 0.900
			n= 0.013, Flow Area= 1.77 sf
#2	Discarded	168.50'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.12 cfs @ 11.44 hrs HW=168.58' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=0.66 cfs @ 12.37 hrs HW=170.39' TW=151.40' (Dynamic Tailwater) ←1=Culvert (Barrel Controls 0.66 cfs @ 2.72 fps)

Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

12 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 86.64' Row Length +12.0" End Stone x 2 = 88.64' Base Length 7 Device x 24.0" Wide + 6.0" Specing x 6 + 12.0" Side Stope x 2 = 24.82' Base Width

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

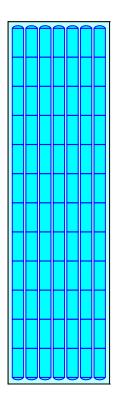
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

84 Chambers x 14.7 cf = 1,238.3 cf Chamber Storage

5,136.2 cf Field - 1,238.3 cf Chambers = 3,897.9 cf Stone x 40.0% Voids = 1,559.1 cf Stone Storage

Chamber Storage + Stone Storage = 2,797.5 cf = 0.064 afOverall Storage Efficiency = 54.5%Overall System Size = $88.64' \times 24.83' \times 2.33'$

84 Chambers 190.2 cy Field 144.4 cy Stone





Summary for Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area = 0.900 ac, 88.89% Impervious, Inflow Depth = 2.45" for 2-year event Inflow 2.53 cfs @ 12.09 hrs, Volume= 0.183 af = 0.98 cfs @ 12.33 hrs, Volume= Outflow 0.183 af, Atten= 61%, Lag= 14.4 min = Discarded = 0.13 cfs @ 11.38 hrs, Volume= 0.148 af Primary = 0.85 cfs @ 12.33 hrs, Volume= 0.035 af Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 170.82' @ 12.33 hrs Surf.Area= 2,378 sf Storage= 2,564 cf

Plug-Flow detention time= 124.3 min calculated for 0.183 af (100% of inflow) Center-of-Mass det. time= 124.3 min (924.5 - 800.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	169.00'	1,683 cf	24.83'W x 95.76'L x 2.33'H Field A
			5,549 cf Overall - 1,342 cf Embedded = 4,207 cf x 40.0% Voids
#2A	169.50'	1,342 cf	ADS_StormTech SC-310 +Cap x 91 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			91 Chambers in 7 Rows
#3	169.00'	72 cf	4.00'D x 5.70'H CB-Impervious
#4	172.70'	572 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,668 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.70	10	0	0
173.00	300	47	47
174.50	400	525	572

Device	Routing	Invert	Outlet Devices
#1	Primary	170.50'	12.0" Round Culvert X 2.00
	-		L= 23.0' RCP, end-section conforming to fill, Ke= 0.500
			Inlet / Outlet Invert= 170.50' / 170.20' S= 0.0130 '/' Cc= 0.900
			n= 0.013, Flow Area= 0.79 sf
#2	Discarded	169.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.13 cfs @ 11.38 hrs HW=169.06' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=0.84 cfs @ 12.33 hrs HW=170.82' TW=151.29' (Dynamic Tailwater) ←1=Culvert (Barrel Controls 0.84 cfs @ 2.85 fps)

Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length 7 Device x 2.4.0" Wide \pm 6.0" Specing x 6 \pm 12.0" Side Stone x 2 = 24.82' Base Width

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

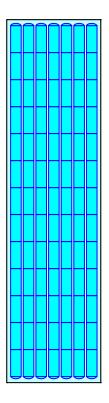
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

91 Chambers x 14.7 cf = 1,341.5 cf Chamber Storage

5,548.8 cf Field - 1,341.5 cf Chambers = 4,207.2 cf Stone x 40.0% Voids = 1,682.9 cf Stone Storage

Chamber Storage + Stone Storage = 3,024.4 cf = 0.069 afOverall Storage Efficiency = 54.5%Overall System Size = $95.76' \times 24.83' \times 2.33'$

91 Chambers 205.5 cy Field 155.8 cy Stone



Summary for Pond 1CP: MEMORIAL GROVE AVE. BASIN

Assumed slope of 0.005 for outlet culvert.

Inflow Area =	47.860 ac, 4	4.44% Impervious, Infle	ow Depth = 2.07" for 2-year event
Inflow =	51.28 cfs @	12.51 hrs, Volume=	8.274 af
Outflow =	20.41 cfs @	13.25 hrs, Volume=	8.213 af, Atten= 60%, Lag= 44.6 min
Primary =	20.41 cfs @	13.25 hrs, Volume=	8.213 af
Routed to Po	nd 1DP : UPST	REAM DOGLEG	
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af
Routed to Po	nd 1DP : UPST	REAM DOGLEG	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 152.58' @ 13.25 hrs Surf.Area= 61,121 sf Storage= 138,842 cf

Plug-Flow detention time= 171.7 min calculated for 8.213 af (99% of inflow) Center-of-Mass det. time= 166.5 min (1,020.8 - 854.3)

Volume	Invert	Avail.Sto	rage	Storage	Description	
#1	150.00'	468,17	78 cf	Custom	n Stage Data (Pi	rismatic)Listed below (Recalc)
F lavestia		. A	lu a	01	Ourse Otherse	
Elevatio		f.Area		Store	Cum.Store	
(fee	/	(sq-ft)	(Cubic	c-feet)	(cubic-feet)	
150.0		6,495		0	0	
151.0	0 5	2,090	4	9,293	49,293	
152.0	0 5	7,750	5	4,920	104,213	
153.0	0 6	3,535	6	0,643	164,855	
154.0	0 6	9,445	6	6,490	231,345	
155.0	0 7	5,475	7	2,460	303,805	
156.0	8 00	1,635	7	8,555	382,360	
157.0)0 9	0,000	8	5,818	468,178	
Device	Routing	Invert	Outle	et Device	s	
#1	Primary	150.00'	27.0	" Round	d Culvert	
			L= 8	7.7' RC	P, end-section c	onforming to fill, Ke= 0.500
			Inlet	/ Outlet I	Invert= 150.00' /	149.56' S= 0.0050 '/' Cc= 0.900
			n= 0	.013 Co	ncrete pipe, bene	ds & connections, Flow Area= 3.98 sf
#2	Secondary	156.00'				road-Crested Rectangular Weir
	,					0.80 1.00 1.20 1.40 1.60
						70 2.64 2.63 2.64 2.64 2.63
				(,	

Primary OutFlow Max=20.41 cfs @ 13.25 hrs HW=152.58' TW=144.75' (Dynamic Tailwater) -1=Culvert (Barrel Controls 20.41 cfs @ 5.61 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=150.00' TW=142.50' (Dynamic Tailwater) —2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1DP: UPSTREAM DOGLEG

Inflow Area =	=	77.180 ac, 2	7.56% Imperv	vious, Inflow [Depth > 1.53"	for 2-year event
Inflow =	=	26.62 cfs @	13.17 hrs, Vo	olume=	9.814 af	-
Outflow =	=	26.62 cfs @	13.19 hrs, Vo	olume=	9.814 af, Atte	en= 0%, Lag= 1.3 min
Primary =	=	12.84 cfs @	13.19 hrs, Vo	olume=	4.487 af	
Routed to	o Pon	d 2IP : PROP	OSED PHASE	E 1 BASIN		
Secondary =	=	13.78 cfs @	13.19 hrs, Vo	olume=	5.326 af	
Routed to	o Pon	d 2IP : PROP	OSED PHASE	E 1 BASIN		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 144.75' @ 13.19 hrs Surf.Area= 1,257 sf Storage= 676 cf

Plug-Flow detention time= 0.3 min calculated for 9.814 af (100% of inflow) Center-of-Mass det. time= 0.3 min (1,010.4 - 1,010.1)

Volume	Invert	Avail.Sto	rage Storage	e Description	
#1	142.50'	67,80	08 cf Custon	n Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
142.5	-	0	0	0	
144.0		180	135	135	
145.0	00	1,610	895	1,030	
146.0		5,900	3,755	4,785	
147.0		9,900	7,900	12,685	
148.0		14,165	12,033	24,718	
149.0		20,375	17,270	41,988	
150.0	00	31,265	25,820	67,808	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	142.60'	42.0" Roun	d Culvert	
#2	Secondary		Inlet / Outlet n= 0.013, Fla 42.0'' Roun L= 782.0' R Inlet / Outlet	Invert= 142.60' / ow Area= 9.62 st d Culvert CP, end-section	conforming to fill, Ke= 0.500 142.19' S= 0.0004 '/' Cc= 0.900
Drimon		10v-10 01 of	@ 12 10 hro		I-140.76! (Dynamia Tailwatar)

Primary OutFlow Max=12.84 cfs @ 13.19 hrs HW=144.75' TW=140.76' (Dynamic Tailwater) -1=Culvert (Barrel Controls 12.84 cfs @ 2.96 fps)

Secondary OutFlow Max=13.78 cfs @ 13.19 hrs HW=144.75' TW=140.76' (Dynamic Tailwater) 2=Culvert (Barrel Controls 13.78 cfs @ 3.00 fps)

Summary for Pond 1FP: EXISTING PARKWAY BASIN

Primary Culvert - Assumed Inverts, pipe diameter, and pipe material.

Inflow Area	a =	9.970 ac, 5	54.96% Imp	ervious, Inflo	w Depth = 1.93" for 2-year event
Inflow	=	22.57 cfs @	12.09 hrs,	Volume=	1.603 af
Outflow	=	0.16 cfs @	24.07 hrs,	Volume=	0.113 af, Atten= 99%, Lag= 719.1 min
Primary	=	0.16 cfs @	24.07 hrs,	Volume=	0.113 af
Routed	to Por	nd 1IP : TACAI	N		
Secondary	/ =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af
Routed	to Por	nd 1IP : TACA	N		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.69' @ 24.07 hrs Surf.Area= 23,631 sf Storage= 68,602 cf

Plug-Flow detention time= 1,252.5 min calculated for 0.113 af (7% of inflow) Center-of-Mass det. time= 1,052.7 min (1,876.1 - 823.4)

Volume	Invert	Avail.Sto	rage Sto	rage Description	
#1	143.00'	197,06	68 cf Cu	stom Stage Data (Pris	smatic)Listed below (Recalc)
Elevatior (feet		ırf.Area (sq-ft)	Inc.Sto (cubic-fee		
143.00	/	10,065		0 0	
144.00	-	17,300	13,68	•	
145.00)	19,605	18,4		
146.00)	21,970	20,78	8 52,923	
147.00)	24,385	23,17		
148.00		26,860	25,62		
149.00		29,935	28,39		
150.00		31,980	30,98		
151.00)	40,000	35,99	0 197,068	
Device	Routing	Invert	Outlet D	evices	
#1	Primary	146.50'	24.0" R	ound Culvert	
#2	Secondary	150.00'	Inlet / Ou n= 0.013 10.0' Ior Head (fe	tlet Invert= 146.50' / 14 Concrete pipe, bends g x 20.0' breadth Bro et) 0.20 0.40 0.60 0.	nforming to fill, Ke= 0.500 46.00' S= 0.0051 '/' Cc= 0.900 & connections, Flow Area= 3.14 sf bad-Crested Rectangular Weir 80 1.00 1.20 1.40 1.60 0 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.16 cfs @ 24.07 hrs HW=146.69' TW=135.32' (Dynamic Tailwater) ☐ 1=Culvert (Barrel Controls 0.16 cfs @ 1.62 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=133.50' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1GP: SPORTS COMPLEX BASIN

Inflow Area =	3.180 ac, 5	8.18% Impervious, Inf	flow Depth = 2.54" for 2-year event
Inflow =	5.30 cfs @	12.39 hrs, Volume=	0.673 af
Outflow =	3.97 cfs @	12.62 hrs, Volume=	0.666 af, Atten= 25%, Lag= 13.8 min
Primary =	3.97 cfs @	12.62 hrs, Volume=	0.666 af
Routed to Pond	1LP : CENT	RAL GREENWAY	
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af
Routed to Pond	1LP : CENT	RAL GREENWAY	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 168.31' @ 12.62 hrs Surf.Area= 2,853 sf Storage= 3,949 cf

Plug-Flow detention time= 29.9 min calculated for 0.666 af (99% of inflow) Center-of-Mass det. time= 22.5 min (839.6 - 817.1)

Volume	Inver	t Avail.Sto	rage Storage	Description	
#1	166.00	י' 10,58	38 cf Custon	n Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee 166.0 167.0 168.0 169.0 170.0	200 200 200 200 200	Surf.Area (sq-ft) 1,085 1,395 2,415 3,850 4,770	Inc.Store (cubic-feet) 0 1,240 1,905 3,133 4,310	Cum.Store (cubic-feet) 0 1,240 3,145 6,278 10,588	
Device	Routing	Invert	Outlet Device		
#1	Primary	166.30'	12.0" Round	d Culvert	
#2	Secondar	y 169.30'	Inlet / Outlet n= 0.013 Co 9.0' long x 1 Head (feet) (Invert= 166.30' / ncrete pipe, ben I 7.0' breadth Br 0.20 0.40 0.60	onforming to fill, Ke= 0.500 166.00' S= 0.0053 '/' Cc= 0.900 ds & connections, Flow Area= 0.79 sf oad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=166.00' TW=146.00' (Dynamic Tailwater)

Summary for Pond 1HP: SPORTS COMPLEX BASIN

Inflow Area =	1.320 ac, 7	75.76% Impervious, Inflo	w Depth = 2.74" for 2-year event
Inflow =	4.04 cfs @	12.08 hrs, Volume=	0.301 af
Outflow =	3.22 cfs @	12.14 hrs, Volume=	0.299 af, Atten= 20%, Lag= 3.6 min
Primary =	3.22 cfs @	12.14 hrs, Volume=	0.299 af
Routed to Po	nd 1LP : CENT	RAL GREENWAY	
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af
Routed to Po	nd 1LP : CENT	RAL GREENWAY	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 163.57' @ 12.14 hrs Surf.Area= 823 sf Storage= 816 cf

Plug-Flow detention time= 12.1 min calculated for 0.299 af (99% of inflow) Center-of-Mass det. time= 7.7 min (792.9 - 785.1)

Volume	Invert	Avail.Stor	age Storage	Description	
#1	161.00'	8,05	5 cf Custom	Stage Data (Pi	rismatic)Listed below (Recalc)
Elevatio (fee		rf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
161.0	/	0	0	0	
162.0		180	90	90	
163.0	00	515	348	438	
164.0	00	1,060	788	1,225	
165.0	00	3,780	2,420	3,645	
166.0	00	5,040	4,410	8,055	
Device	Routing	Invert	Outlet Device	S	
#1	Primary	162.00'	12.0" Round	Culvert	
#2	Secondary	164.50'	Inlet / Outlet In n= 0.013 Cor 7.0' long x 4 Head (feet) 0	nvert= 162.00' / ncrete pipe, bend 0.0' breadth Br .20 0.40 0.60	onforming to fill, Ke= 0.500 161.70' S= 0.0052 '/' Cc= 0.900 ds & connections, Flow Area= 0.79 sf oad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.21 cfs @ 12.14 hrs HW=163.56' TW=148.54' (Dynamic Tailwater) ←1=Culvert (Barrel Controls 3.21 cfs @ 4.09 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=161.00' TW=146.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1IP: TACAN

 Inflow Area =
 377.860 ac, 3.40% Impervious, Inflow Depth = 1.55" for 2-year event

 Inflow =
 261.57 cfs @
 12.10 hrs, Volume=
 48.918 af

 Outflow =
 54.18 cfs @
 15.01 hrs, Volume=
 48.916 af, Atten= 79%, Lag= 175.0 min

 Primary =
 54.18 cfs @
 15.01 hrs, Volume=
 48.916 af

 Routed to Reach 1R : DP-1 TACAN OUTFALL
 48.916 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 142.92'@ 15.01 hrs Surf.Area= 372,066 sf Storage= 646,032 cf

Plug-Flow detention time= 119.7 min calculated for 48.910 af (100% of inflow) Center-of-Mass det. time= 119.6 min (1,039.2 - 919.6)

Volume	Inv	ert Avail.Sto	orage Storage	Description	
#1	133.	50' 4,902,5	91 cf Custom	Stage Data (Prismatic)Listed b	elow (Recalc)
Elevatio		Surf.Area	Inc.Store	Cum.Store	
(fee	,	(sq-ft)	(cubic-feet)	(cubic-feet)	
133.5		0	0	0	
136.0		1,481	1,851	1,851	
137.0		5,097	3,289	5,140	
138.0		49,441	27,269	32,409	
139.0		64,338	56,889	89,298	
140.0		82,023	73,181	162,479	
141.(108,813	95,418	257,897	
142.(168,490	138,651	396,548	
143.(00	389,034	278,762	675,311	
144.(00	681,061	535,047	1,210,358	
145.0		1,103,941	892,501	2,102,859	
146.0		1,388,214	1,246,077	3,348,936	
147.0	00	1,719,095	1,553,655	4,902,591	
Device	Routing	Invert	Outlet Devices		
#1	Primary	133.50'	60.0" Round	Culvert X 2.00	
	,		L= 899.0' RC	P, end-section conforming to fill	, Ke= 0.500
			Inlet / Outlet Ir	vert= 133.50' / 130.80' Š= 0.0	030 '/' Cc= 0.900
			n= 0.013 Con	crete pipe, bends & connections	s, Flow Area= 19.63 sf
#2	Device [•]	1 134.00'	24.0" W x 24.	" H Vert. Low Flow Orifice C	= 0.600
			Limited to wei	flow at low heads	
#3	Device [•]	1 144.40'	Custom Weir	Orifice, Cv= 2.62 (C= 3.28)	
			Elev. (feet) 1	4.40 145.40 145.40 146.10	146.10 146.60 146.60
			147.00 ´		
			Width (feet) 5	00 5.00 15.00 15.00 25.00 2	25.00 30.00 30.00
	o (=)				· - · · · ·
Primary	/ OutFlov	v Max=54.18 cfs	3@ 15.01 hrs H	N=142.92' TW=0.00' (Dynam	lic Tallwater)

-1=Culvert (Passes 54.18 cfs of 383.77 cfs potential flow)

1-2=Low Flow Orifice (Orifice Controls 54.18 cfs @ 13.54 fps)

-3=Custom Weir/Orifice (Controls 0.00 cfs)

Summary for Pond 1LP: CENTRAL GREENWAY

Inflow Area = 67.880 ac, 10.83% Impervious, Inflow Depth = 2.20" for 2-year event Inflow 143.46 cfs @ 12.13 hrs, Volume= 12.419 af = 69.42 cfs @ 12.25 hrs, Volume= 69.42 cfs @ 12.25 hrs, Volume= Outflow 12.415 af, Atten= 52%, Lag= 6.9 min = Primary = 12.415 af Routed to Pond 1MP : CENTRAL GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1MP : CENTRAL GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 149.07' @ 12.43 hrs Surf.Area= 59,905 sf Storage= 117,720 cf

Plug-Flow detention time= 42.1 min calculated for 12.413 af (100% of inflow) Center-of-Mass det. time= 42.2 min (856.3 - 814.1)

Volume	Invert	Avail.Stor	age Storag	e Description	
#1	146.00'	397,45	57 cf Custor	m Stage Data (Prismatic)Listed below (Recalc)	
Elevatio (fee		Area sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
146.0	, ,	<u>59-11)</u> 7,910	<u>(cubic-ieet)</u> 0		
140.0),745	24,328	24,328	
148.0		1,380	37,563	61,890	
149.0		3,820	51,600	113,490	
150.0		1,055	66,438	179,928	
151.0		,090	82,073	262,000	
152.0	0 96	5,730	93,410	355,410	
152.4	2 103	3,495	42,047	397,457	
Device	Routing	Invert	Outlet Devic	es	
#1	Primary	146.00'	42.0" Roun	nd Culvert X 2.00	
#2	Secondary	152.00'	Inlet / Outlet n= 0.013 Co 130.0' long Head (feet)	RCP, end-section conforming to fill, Ke= 0.500 Invert= 146.00' / 145.00' S= 0.0063 '/' Cc= 0.9 Increte pipe, bends & connections, Flow Area= 9 x 50.0' breadth Broad-Crested Rectangular V 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 sh) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63	9.62 sf
Primary	OutFlow Max	=68 14 cfs	@ 12 25 hrs	HW=148 93' TW=147 91' (Dynamic Tailwater)	

Primary OutFlow Max=68.14 cfs @ 12.25 hrs HW=148.93' TW=147.91' (Dynamic Tailwater) -1=Culvert (Outlet Controls 68.14 cfs @ 5.36 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=146.00' TW=145.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1MP: CENTRAL GREENWAY

Inflow Area = 78.180 ac, 9.40% Impervious, Inflow Depth = 2.16" for 2-year event Inflow = 85.66 cfs @ 12.20 hrs, Volume= 14.071 af 59.95 cfs @ 12.56 hrs, Volume= 59.95 cfs @ 12.56 hrs, Volume= Outflow 14.067 af, Atten= 30%, Lag= 21.5 min = Primary = 14.067 af Routed to Pond 1IP : TACAN Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1IP : TACAN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 148.40'@ 12.56 hrs Surf.Area= 37,695 sf Storage= 77,753 cf

Plug-Flow detention time= 27.3 min calculated for 14.067 af (100% of inflow) Center-of-Mass det. time= 26.7 min (879.5 - 852.8)

Volume	Invert	Avail.Stor	age Storage	e Description		
#1	145.00'	232,41	1 cf Custor	n Stage Data (Pr	ismatic)Listed below (Recalc)	
Elevatio (fee		f.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
145.0		9,515	0	0		
146.0		6,810	13,163	13,163		
147.0 148.0		24,900 33,795	20,855 29,348	34,018 63,365		
140.0		3,485	29,348 38,640	102,005		
150.0		53,980	48,733	150,738		
151.0	00 5	58,400	56,190	206,928		
151.4	26	62,950	25,483	232,411		
Device	Routing	Invert	Outlet Device	es		
#1	Primary	145.00'	42.0" Roun			
#2	Secondary	151.00'	L= 170.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 145.00' / 143.00' S= 0.0118 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 9.62 sf 130.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63			
Primary OutFlow Max=59.95 cfs @ 12.56 hrs. HW=148.40', TW=141.63', (Dynamic Tailwater)						

Primary OutFlow Max=59.95 cfs @ 12.56 hrs HW=148.40' TW=141.63' (Dynamic Tailwater) -1=Culvert (Inlet Controls 59.95 cfs @ 6.28 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.00' TW=133.50' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1NP: WEST GREENWAY

Inflow Area = 25.210 ac, 0.00% Impervious, Inflow Depth = 2.01" for 2-year event Inflow = 51.89 cfs @ 12.14 hrs, Volume= 4.223 af Outflow 8.50 cfs @ 12.68 hrs, Volume= = 4.189 af, Atten= 84%, Lag= 32.4 min 8.50 cfs @ 12.68 hrs, Volume= Primary = 4.189 af Routed to Pond 10P : WEST GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1OP : WEST GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 148.91' @ 12.72 hrs Surf.Area= 59,740 sf Storage= 86,123 cf

Plug-Flow detention time= 208.8 min calculated for 4.189 af (99% of inflow) Center-of-Mass det. time= 203.9 min (1,027.5 - 823.6)

Volume	Invert A	Avail.Stor	age Stora	ge Description	
#1	147.00'	393,84	0 cf Cust	om Stage Data (P	rismatic)Listed below (Recalc)
Elevation (feet)	Surf.Ar (sq-		Inc.Store (cubic-feet)	•	
147.00	30,8		0	0	
148.00	45,6		38,213	•	
149.00	61,1	45	53,373	91,585	
150.00	77,4		69,303		
151.00	96,5		86,980	,	
152.00	104,3		100,443	,	
152.42	112,4	25	45,530	393,840	
Device R	outing	Invert	Outlet Dev	ices	
#1 Pi	rimary	147.00'	24.0" Rou	und Culvert	
#2 Secondary 152.00'		Inlet / Outl n= 0.013 (115.0' Ion Head (feet	et Invert= 147.00' / Concrete pipe, ben g x 38.0' breadth) 0.20 0.40 0.60	conforming to fill, Ke= 0.500 146.50' S= 0.0038 '/' Cc= 0.900 ds & connections, Flow Area= 3.14 sf Broad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 .70 2.64 2.63 2.64 2.64 2.63	

Primary OutFlow Max=8.50 cfs @ 12.68 hrs HW=148.91' TW=148.37' (Dynamic Tailwater) -1=Culvert (Outlet Controls 8.50 cfs @ 3.53 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=147.00' TW=146.00' (Dynamic Tailwater)

Summary for Pond 10P: WEST GREENWAY

Inflow Area = 32.820 ac, 0.00% Impervious, Inflow Depth > 2.02" for 2-year event Inflow 21.92 cfs @ 12.09 hrs, Volume= 5.516 af = Outflow 11.17 cfs @ 12.38 hrs, Volume= 5.512 af, Atten= 49%, Lag= 17.4 min = 11.17 cfs @ 12.38 hrs, Volume= Primary = 5.512 af Routed to Pond 1PP : WEST GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1PP : WEST GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 148.38' @ 12.84 hrs Surf.Area= 12,406 sf Storage= 18,185 cf

Plug-Flow detention time= 31.6 min calculated for 5.511 af (100% of inflow) Center-of-Mass det. time= 29.3 min (1,006.0 - 976.7)

Volume	Invert	Avail.Sto	rage Stora	ge Description		
#1	146.00'	110,74	4 cf Cust	om Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio (feet		ırf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
146.0	1	3,480	<u>(10001 01001)</u> 0	0		
147.0	-	6,760	5,120	•		
148.0		10,685	8,723	,		
149.0	0	15,260	12,973			
150.0	0	20,485	17,873	44,688		
151.0	0	28,355	24,420			
152.0		29,175	28,765	97,873		
152.4	2	32,120	12,872	110,744		
Device	Routing	Invert	Outlet Dev	ices		
#1	Primary	146.00'	24.0" Rou	Ind Culvert		
#2	Secondary	152.00'	L= 140.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 146.00' / 145.50' S= 0.0036 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf 115.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63			
Primary OutFlow Max-11.07 cfs @ 12.38 brs. HW-148.27' TW-147.60' (Dynamic Tailwater)						

Primary OutFlow Max=11.07 cfs @ 12.38 hrs HW=148.27' TW=147.60' (Dynamic Tailwater) —1=Culvert (Outlet Controls 11.07 cfs @ 3.89 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=146.00' TW=145.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1PP: WEST GREENWAY

Inflow Area = 51.910 ac, 0.00% Impervious, Inflow Depth > 2.04" for 2-year event Inflow 56.13 cfs @ 12.09 hrs, Volume= 8.841 af = Outflow 14.41 cfs @ 13.48 hrs, Volume= 8.807 af, Atten= 74%, Lag= 83.1 min = 14.41 cfs @ 13.48 hrs, Volume= Primary = 8.807 af Routed to Pond 1QP : WEST GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1QP : WEST GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.83' @ 13.08 hrs Surf.Area= 45,219 sf Storage= 82,150 cf

Plug-Flow detention time= 107.6 min calculated for 8.806 af (100% of inflow) Center-of-Mass det. time= 98.3 min (1,032.8 - 934.6)

Volume	Invert	Avail.Stor	age Storag	e Description				
#1	145.00'	319,95	50 cf Custo	m Stage Data (Prismatic) Listed below (Recalc)				
Elevatio		Surf.Area		Cum.Store				
(fee	et)	(sq-ft)		(cubic-feet)				
145.0)0 1	3,590	0	0				
146.0		4,145	18,868	18,868				
147.0	0 3	5,350	29,748	48,615				
148.0		7,205	41,278	89,893				
149.0		9,705	53,455	143,348				
150.0		2,855	66,280	209,628				
151.0		'8,910	75,883	285,510				
151.4	12 8	5,090	34,440	319,950				
Device	Routing	Invert	Outlet Devic	ces				
#1	Primary	145.00'	24.0" Roun	nd Culvert				
	,		L= 188.0' F	RCP, end-section conforming to fill, Ke= 0.500				
				Inlet / Outlet Invert= 145.00' / 144.50' S= 0.0027 '/' Cc= 0.900				
			n= 0.013 Co	oncrete pipe, bends & connections, Flow Area= 3.14 sf				
#2	Secondary	Secondary 151.00'		115.0' long x 50.0' breadth Broad-Crested Rectangular Weir				
				Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60				
				sh) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63				
Drimon	Drimony OutElow Max-14 41 of (2) 12 49 bro (1) W-147 91' TW-146 56' (Dynamic Tailwater)							

Primary OutFlow Max=14.41 cfs @ 13.48 hrs HW=147.81' TW=146.56' (Dynamic Tailwater) -1=Culvert (Outlet Controls 14.41 cfs @ 4.59 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.00' TW=144.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1QP: WEST GREENWAY

Inflow Area = 68.840 ac, 0.00% Impervious, Inflow Depth > 2.05" for 2-year event Inflow 51.18 cfs @ 12.09 hrs, Volume= 11.759 af = Outflow 20.55 cfs @ 12.56 hrs, Volume= 11.318 af, Atten= 60%, Lag= 28.2 min = Primary = 20.55 cfs @ 12.56 hrs, Volume= 11.318 af Routed to Pond 1IP : TACAN Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1IP : TACAN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.66' @ 12.56 hrs Surf.Area= 43,146 sf Storage= 74,424 cf

Plug-Flow detention time= 110.8 min calculated for 11.317 af (96% of inflow) Center-of-Mass det. time= 66.7 min (1,045.2 - 978.5)

Volume	Invert	Avail.Sto	rage S	torage	Description		
#1	144.00'	319,95	50 cf C	ustom	Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio		f.Area	Inc.S	toro	Cum.Store		
(fee		(sq-ft)	(cubic-f		(cubic-feet)		
`	1		(cubic-i				
144.(13,590	10	0	19 969		
145.0		24,145	,	868	18,868		
146.0		35,350	,	748	48,615		
147.0		47,205		278 455	89,893		
148.(149.(59,705		455	143,348		
149.0		72,855 78,910		280 883	209,628 285,510		
150.0		35,090	,	003 440	319,950		
150.4	+2 0	55,090	34,	440	319,950		
Device	Routing	Invert	Outlet	Devices	5		
#1	Primary	144.00'	36.0"	Round	Culvert		
	,		L= 504.0' RCP, end-section conforming to fill, Ke= 0.500				
			Inlet / Outlet Invert= 144.00' / 138.00' S= 0.0119 '/' Cc= 0.900				
			n= 0.013 Concrete pipe, bends & connections, Flow Area= 7.07 sf				
#2	Device 1	145.00'	36.0" W x 24.0" H Vert. Orifice/Grate C= 0.600				
			Limited to weir flow at low heads				
#3	Device 1	148.00'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600				
			Limited to weir flow at low heads				
#4	Secondary	149.00'	115.0' long x 50.0' breadth Broad-Crested Rectangular Weir				
	-		Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60				
			Coef. (English) 2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63	
				-	-		

Primary OutFlow Max=20.55 cfs @ 12.56 hrs HW=146.66' TW=141.63' (Dynamic Tailwater) -1=Culvert (Passes 20.55 cfs of 36.75 cfs potential flow)

2=Orifice/Grate (Orifice Controls 20.55 cfs @ 4.13 fps) **3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=144.00' TW=133.50' (Dynamic Tailwater) 4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2AP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 223.810 ac, 24.58% Impervious, Inflow Depth = 1.71" for 2-year event Inflow 104.15 cfs @ 13.29 hrs, Volume= 31.813 af = 98.29 cfs @ 13.65 hrs, Volume= Outflow = 31.813 af, Atten= 6%, Lag= 21.5 min 47.94 cfs @ 13.65 hrs, Volume= Primary = 15.281 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH Secondary = 50.36 cfs @ 13.65 hrs, Volume= 16.531 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 145.16'@ 13.65 hrs Surf.Area= 66,980 sf Storage= 49,612 cf

Plug-Flow detention time= 4.5 min calculated for 31.813 af (100% of inflow) Center-of-Mass det. time= 4.5 min (922.8 - 918.3)

Volume	Invert	Avail.Sto	rage Storage	e Description		
#1	141.70'	1,815,20	01 cf Custon	n Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio		rf.Area	Inc.Store	Cum.Store		
(fee	1	(sq-ft)	(cubic-feet)	(cubic-feet)		
141.7		0	0	0		
144.0		6,640	7,636	7,636		
145.0		57,230	31,935	39,571		
146.0		17,540	87,385	126,956		
147.0		16,860	167,200	294,156		
148.0		59,360	288,110	582,266		
149.0	0 6	40,140	499,750	1,082,016		
150.0	0 8	26,230	733,185	1,815,201		
Device	Routing	Invert	Outlet Device	es		
#1	Primary	141.70'	48.0" Roun	d Culvert		
#2	Secondary	141.70'	Inlet / Outlet Invert= 141.70' / n= 0.013, Flow Area= 12.57 48.0'' Round Culvert L= 126.0' RCP, end-section		conforming to fill, Ke= 0.500 141.50' S= 0.0016 '/' Cc= 0.900	
Primary OutFlow Max-17.04 of @ 12.65 bro HIW-145.16' TW-141.96' (Dynamia Tailwatar)						

Primary OutFlow Max=47.94 cfs @ 13.65 hrs HW=145.16' TW=141.86' (Dynamic Tailwater) -1=Culvert (Barrel Controls 47.94 cfs @ 5.55 fps)

Secondary OutFlow Max=50.36 cfs @ 13.65 hrs HW=145.16' TW=141.86' (Dynamic Tailwater) 2=Culvert (Barrel Controls 50.36 cfs @ 5.83 fps)

Summary for Pond 2BP: EXISTING BASIN

Inflow Area = 40.900 ac, 81.30% Impervious, Inflow Depth = 2.74" for 2-year event Inflow 125.27 cfs @ 12.08 hrs, Volume= 9.333 af = 25.15 cfs @ 12.51 hrs, Volume= 25.15 cfs @ 12.51 hrs, Volume= Outflow 9.010 af, Atten= 80%, Lag= 25.7 min = Primary = 9.010 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.76' @ 12.51 hrs Surf.Area= 67,575 sf Storage= 163,282 cf

Plug-Flow detention time= 117.1 min calculated for 9.009 af (97% of inflow) Center-of-Mass det. time= 97.0 min (882.2 - 785.1)

Volume	Invert	Avail.Sto	rage Sto	orage D	escription	
#1	143.00'	482,85	55 cf Cu	stom S	tage Data (P	rismatic)Listed below (Recalc)
Elevatio	n Sur	f.Area	Inc.Sto	vro	Cum.Store	
(feet		(sq-ft)	(cubic-fe		(cubic-feet)	
143.0		0,920		0	0	
144.0		6,580	13,7	-	13,750	
145.0		8,700	22,6		36,390	
146.0		9,560	34,1		70,520	
147.0	0 5	3,515	46,5	38	117,058	
148.0		1,930	62,7		179,780	
149.0		0,230	76,0		255,860	
150.0		8,130	84,1		340,040	
151.0		5,000	91,5		431,605	
151.5	0 11	0,000	51,2	50	482,855	
Device	Routing	Invert	Outlet D	evices		
#1	Primary	144.00'	24.0" R	ound C	ulvert	
	2		L= 79.0'	RCP,	end-section c	onforming to fill, Ke= 0.500
			Inlet / O	utlet Inv	ert= 144.00' /	143.21' S= 0.0100 '/' Cc= 0.900
				,	Area= 3.14 sf	
#2	Secondary	150.00'				road-Crested Rectangular Weir
			(,		0.80 1.00 1.20 1.40 1.60
			Coef. (E	nglish)	2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63
	• ·=· · ·		o 10 - 1			

Primary OutFlow Max=25.15 cfs @ 12.51 hrs HW=147.76' TW=144.21' (Dynamic Tailwater) -1=Culvert (Inlet Controls 25.15 cfs @ 8.00 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=141.70' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2CP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Are	a =	12.710 ac, 94.57% Impervious, Inflow Depth = 2.95" for 2-year event
Inflow	=	40.71 cfs @ 12.08 hrs, Volume= 3.121 af
Outflow	=	1.72 cfs @ 14.87 hrs, Volume= 0.782 af, Atten= 96%, Lag= 167.1 min
Primary	=	1.72 cfs @ 14.87 hrs, Volume= 0.782 af
Routed	to Po	IN 2EP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.16' @ 14.87 hrs Surf.Area= 28,330 sf Storage= 106,450 cf

Plug-Flow detention time= 495.6 min calculated for 0.782 af (25% of inflow) Center-of-Mass det. time= 312.1 min (1,084.4 - 772.3)

Volume	Inve	ert Avail.Sto	orage Storage	e Description	
#1	138.0	0' 240,9	05 cf Custon	n Stage Data (Pi	rismatic)Listed below (Recalc)
Elevatio	מר	Surf.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
	,	(/	· · · ·	<u>_</u>	
138.0		730	0	0	
139.0		1,695	1,213	1,213	
140.0		3,150	2,423	3,635	
141.(00	6,840	4,995	8,630	
142.0	00	12,885	9,863	18,493	
143.0	00	17,405	15,145	33,638	
144.(00	21,190	19,298	52,935	
145.0	00	24,465	22,828	75,763	
146.0	00	27,780	26,123	101,885	
147.0	00	31,160	29,470	131,355	
148.0	00	34,590	32,875	164,230	
149.0		38,295	36,443	200,673	
150.0		42,170	40,233	240,905	
		,	,	,	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	142.30'	30.0" Roun	d Culvert	
	,		L= 65.0' RC	P. end-section c	onforming to fill, Ke= 0.500
					141.50' S= 0.0123 '/' Cc= 0.900
				ow Area= 4.91 sf	
#2	Device 1	146.00'	,	" Horiz. Orifice/	
11 L	Dovido I	140.00		eir flow at low hea	

Primary OutFlow Max=1.72 cfs @ 14.87 hrs HW=146.16' TW=141.19' (Dynamic Tailwater) -1=Culvert (Passes 1.72 cfs of 38.20 cfs potential flow) -2=Orifice/Grate (Weir Controls 1.72 cfs @ 1.32 fps)

Summary for Pond 2DP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Area =	2.770 ac, 75.81% Impervious	, Inflow Depth = 2.40" for 2-year event
Inflow =	6.94 cfs @ 12.08 hrs, Volum	e= 0.554 af
Outflow =	0.00 cfs @ 0.00 hrs, Volum	e= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary =	0.00 cfs @ 0.00 hrs, Volum	e= 0.000 af
Routed to Pond	2EP : FRENCH'S STREAM W	EST BRANCH
	0.00 cfs @ 0.00 hrs, Volum	
Routed to Pond	2EP : FRENCH'S STREAM W	EST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 144.76' @ 24.34 hrs Surf.Area= 8,472 sf Storage= 24,152 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow) Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	139.00'	89,68	33 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)
-	0	C A			
Elevatio		urf.Area	Inc.Store	Cum.Store	
(fee	-	(sq-ft)	(cubic-feet)	(cubic-feet)	
139.0		105	0	0	
140.0		1,200	653	653	
141.0		2,565	1,883	2,535	
142.0		4,380	3,473	6,008	
143.0		6,200	5,290	11,298	
144.(7,440	6,820	18,118	
145.0		8,800	8,120	26,238	
146.0		10,240	9,520	35,758	
147.0		11,800	11,020	46,778	
148.0		13,425	12,613	59,390	
149.0		15,130	14,278	73,668	
150.0	00	16,900	16,015	89,683	
Device	Routing	Invert	Outlet Device:	S	
#1	Primary	142.30'	24.0" Round	Culvert	
	, ,				onforming to fill, Ke= 0.500
					141.70' S= 0.0118 '/' Cc= 0.900
				w Area= 3.14 st	
#2	Device 1	146.20'			Grate C= 0.600
			Limited to wei	r flow at low hea	ads
#3	Secondary	149.50'	10.0' long x 2	20.0' breadth B	road-Crested Rectangular Weir
	,				0.80 1.00 1.20 1.40 1.60
					70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' TW=138.00' (Dynamic Tailwater) 1=Culvert (Controls 0.00 cfs) 2=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' TW=138.00' (Dynamic Tailwater) -3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2EP: FRENCH'S STREAM WEST BRANCH

Per site visit outlet consists of one 60-inch culvert.

 Inflow Area =
 401.120 ac, 22.54% Impervious, Inflow Depth > 1.33" for 2-year event

 Inflow =
 106.39 cfs @
 13.64 hrs, Volume=
 44.394 af

 Outflow =
 104.58 cfs @
 13.84 hrs, Volume=
 44.394 af, Atten= 2%, Lag= 11.9 min

 Primary =
 104.58 cfs @
 13.84 hrs, Volume=
 44.394 af

 Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 141.90'@ 13.84 hrs Surf.Area= 33,303 sf Storage= 41,753 cf

Plug-Flow detention time= 5.2 min calculated for 44.388 af (100% of inflow) Center-of-Mass det. time= 5.1 min (1,024.6 - 1,019.5)

Volume	Inve	ert Avail.Sto	rage S	Storage	Description		
#1	138.0	0' 524,16	60 cf C	ustom	Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio	on	Surf.Area	Inc.S	tore	Cum.Store		
(fee	et)	(sq-ft)	(cubic-f	eet)	(cubic-feet)		
138.0	00	0		0	0		
140.0	00	9,600	9	,600	9,600		
141.0	00	13,135	11	,368	20,968		
142.0	00	35,665	24	,400	45,368		
143.0	00	47,280	41	,473	86,840		
144.0	00	58,400	52	,840	139,680		
145.0	00	71,585	64	,993	204,673		
146.0	00	85,230	78	,408	283,080		
147.0	00	106,515	95	,873	378,953		
148.0	00	183,900	145	,208	524,160		
Device	Routing	Invert	Outlet	Devices	3		
#1	Primary	138.00'	60.0"	Round	Culvert		
			L= 380).0' RC	P, end-section	conforming to fill, Ke= 0.500	
			Inlet /	Outlet Ir	1/ 'vert= 138.00	135.70' S= 0.0061 '/' Cc= 0.900	
			n= 0.0	13 Con	crete pipe, ben	ds & connections, Flow Area= 19.63 sf	
Drimary	Primary OutFlow Max-104 58 efe @ 13.84 bre $HW-141.00'$ TW-130.40' (Dynamic Tailwater)						

Primary OutFlow Max=104.58 cfs @ 13.84 hrs HW=141.90' TW=130.40' (Dynamic Tailwater) -1=Culvert (Barrel Controls 104.58 cfs @ 8.78 fps)

Summary for Pond 2FP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 872.630 ac, 11.83% Impervious, Inflow Depth > 1.39" for 2-year event Inflow = 175.37 cfs @ 13.72 hrs, Volume= 101.114 af Outflow 175.24 cfs @ 13.78 hrs, Volume= = 101.076 af, Atten= 0%, Lag= 3.8 min 64.54 cfs @ 13.78 hrs, Volume= Primary = 28.308 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Secondary = 110.70 cfs @ 13.78 hrs, Volume= 72.768 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 130.40'@ 13.78 hrs Surf.Area= 19,536 sf Storage= 43,659 cf

Plug-Flow detention time= 6.1 min calculated for 101.062 af (100% of inflow) Center-of-Mass det. time= 4.9 min (1,031.5 - 1,026.5)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	125.90'	665,27	78 cf Custom	Stage Data (Pr	ismatic)Listed below (Recalc)
Flovetic		f Aree	Inc Store	Cum Store	
Elevatio		f.Area	Inc.Store	Cum.Store	
(fee	1	(sq-ft)	(cubic-feet)	(cubic-feet)	
125.9	-	0	0	0	
130.0		17,650	36,182	36,182	
131.0		22,340	19,995	56,177	
132.0		56,105	39,223	95,400	
133.0		76,835	66,470	161,870	
134.0		93,610	85,223	247,092	
135.0		11,175	102,393	349,485	
136.0		53,700	132,438	481,922	
137.0)0 2 ⁻	13,010	183,355	665,278	
Device	Routing	Invert	Outlet Devices	S	
#1	Primary	127.60'	60.0" Round	Culvert	
	,		L= 34.0' RCF	P, end-section co	onforming to fill, Ke= 0.500
			Inlet / Outlet Ir	nvert= 126.60' / *	127.60' S= -0.0294 '/' Cc= 0.900
			n= 0.013, Flo	w Area= 19.63 s	f
#2	Secondary	126.70'	72.0" Round	Culvert	
	-		L= 34.0' RCF	P, end-section co	onforming to fill, Ke= 0.500
			Inlet / Outlet Ir	1/ 'vert= 125.90	126.70' S= -0.0235 '/' Cc= 0.900
			n= 0.013, Flo	w Area= 28.27 s	f
#3	Tertiary	135.50'	10.0' long x 2	20.0' breadth Sp	oillway over Path
	2		Head (feet) 0.	.20 0.40 0.60 0).80 1.00 1.20 1.40 1.60
					0 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=64.54 cfs @ 13.78 hrs HW=130.40' TW=0.00' (Dynamic Tailwater) ☐ 1=Culvert (Inlet Controls 64.54 cfs @ 5.70 fps)

Secondary OutFlow Max=110.70 cfs @ 13.78 hrs HW=130.40' TW=0.00' (Dynamic Tailwater) 2=Culvert (Barrel Controls 110.70 cfs @ 6.75 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=125.90' TW=0.00' (Dynamic Tailwater) -3=Spillway over Path (Controls 0.00 cfs)

Summary for Pond 2IP: PROPOSED PHASE 1 BASIN

Inflow Area = 112.800 ac, 18.86% Impervious, Inflow Depth > 1.60" for 2-year event Inflow = 66.09 cfs @ 12.14 hrs, Volume= 15.023 af 10.30 cfs @ 16.94 hrs, Volume= 10.30 cfs @ 16.94 hrs, Volume= Outflow = 9.301 af, Atten= 84%, Lag= 287.9 min Primary = 9.301 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 142.17' @ 16.94 hrs Surf.Area= 136,900 sf Storage= 401,200 cf

Plug-Flow detention time= 568.0 min calculated for 9.300 af (62% of inflow) Center-of-Mass det. time= 409.7 min (1,356.5 - 946.7)

Volume	Invert	Avail.Sto	rage Stora	age Description	
#1	139.00'	1,312,74	18 cf Cust	tom Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	on Surf.A	rea	Inc.Store	e Cum.Store	
(fee		q-ft)	(cubic-feet)		
139.0			(000101001		
140.0	,		119,600		
141.0			126,035	-	
142.0	,		132,530		
143.0	0 142,	360	139,075	5 517,240	
144.0	00 148,	990	145,675	662,915	
145.0	,		152,335		
146.0	,		159,040	,	
147.0	,		165,810	, ,	
148.0	00 176,	075	172,648	3 1,312,748	
Device	Routing	Invert	Outlet Dev	vices	
#1	Primary	139.00'		und Culvert	
	,, ,				conforming to fill, Ke= 0.500
			Inlet / Out	let Invert= 139.00' /	137.00' S= 0.0200 '/' Cc= 0.900
				Flow Area= 7.07 s	
#2	Device 1	141.00'			ice/Grate C= 0.600
				weir flow at low he	
#3	Device 1	142.50'			ice/Grate C= 0.600
	D · · · ·	444.00		weir flow at low he	
#4	Device 1	144.00'		6.0" Horiz. Orifice/	
#5	Secondary	146.00'		weir flow at low he	
#5	Secondary	140.00			Broad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60
			· ·	,	.70 2.64 2.63 2.64 2.64 2.63
				giioii, 2.00 2.70 2	

Primary OutFlow Max=10.30 cfs @ 16.94 hrs HW=142.17' TW=140.04' (Dynamic Tailwater) -**1=Culvert** (Passes 10.30 cfs of 43.97 cfs potential flow)

2=Orifice/Grate (Orifice Controls 10.30 cfs @ 4.12 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' TW=138.00' (Dynamic Tailwater) 5=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2JP: PROPOSED BASIN

Inflow Area = 15.720 ac, 0.00% Impervious, Inflow Depth = 2.09" for 2-year event Inflow 38.48 cfs @ 12.09 hrs, Volume= 2.742 af = 11.04 cfs @ 12.44 hrs, Volume= 11.04 cfs @ 12.44 hrs, Volume= Outflow 2.396 af, Atten= 71%, Lag= 21.3 min = Primary = 2.396 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 162.62'@ 12.44 hrs Surf.Area= 32,772 sf Storage= 50,528 cf

Plug-Flow detention time= 167.2 min calculated for 2.396 af (87% of inflow) Center-of-Mass det. time= 110.2 min (926.5 - 816.3)

Volume	Invert	Avail.Sto	rage Storage	e Description	
#1	161.00'	214,37	73 cf Custon	n Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	n Sur	f.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
161.0		<u>(34-11)</u> 29,530	0	0	
161.0		1,505	30,518	30,518	
162.0		33,540	32,523	63,040	
163.0		35,540 35,635	32,523 34,588	97,628	
164.0			34,566 36,713	,	
166.0		37,790 10,000	38,895	134,340 173,235	
167.0		12,275	38,895 41,138	214,373	
107.0	JU 4	+2,275	41,130	214,373	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	161.00'	24.0" Roun	d Culvert	
	,				onforming to fill, Ke= 0.500
					155.00' S= 0.1132 '/' Cc= 0.900
			n= 0.013 Co	ncrete pipe, ben	ds & connections, Flow Area= 3.14 sf
#2	Device 1	161.50'			ice/Grate C= 0.600
			Limited to we	eir flow at low hea	ads
#3	Device 1	164.50'	36.0" x 36.0	" Horiz. Orifice/	Grate C= 0.600
			Limited to we	eir flow at low hea	ads
#4	Secondary	165.50'	10.0' long x	20.0' breadth B	Broad-Crested Rectangular Weir
	,				0.80 1.00 1.20 1.40 1.60
					70 2.64 2.63 2.64 2.64 2.63
			、 0	,	
Primary	Primary OutFlow Max=11.04 cfs @ 12.44 hrs HW=162.62' TW=144.13' (Dynamic Tailwater)				

Primary OutFlow Max=11.04 cfs @ 12.44 hrs HW=162.62' TW=144.13' (Dynamic Tailwater)

2=Orifice/Grate (Orifice Controls 11.04 cfs @ 3.68 fps)

3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=161.00' TW=141.70' (Dynamic Tailwater) 4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2KP: PROPOSED BASIN

Inflow Area = 21.000 ac, 0.00% Impervious, Inflow Depth = 1.85" for 2-year event Inflow 45.61 cfs @ 12.09 hrs, Volume= 3.239 af = Outflow 4.67 cfs @ 12.98 hrs, Volume= = 2.235 af, Atten= 90%, Lag= 53.5 min 4.67 cfs @ 12.98 hrs, Volume= Primary = 2.235 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 149.68' @ 12.98 hrs Surf.Area= 46,503 sf Storage= 74,740 cf

Plug-Flow detention time= 296.5 min calculated for 2.235 af (69% of inflow) Center-of-Mass det. time= 198.8 min (1,025.6 - 826.8)

Volume	Invert	Avail.Stor	rage Storage	Description
#1	148.00'	249,35	50 cf Custom	n Stage Data (Prismatic)Listed below (Recalc)
Elevatio	n Si	urf.Area	Inc.Store	Cum.Store
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)
148.0	/	42,500	0	0
149.0	00	44,800	43,650	43,650
150.0	00	47,300	46,050	89,700
151.0		52,300	49,800	139,500
152.0	-	54,900	53,600	193,100
153.0	00	57,600	56,250	249,350
Device	Routing	Invert	Outlet Device	es
#1	Primary	148.00'	36.0" Round	d Culvert
	-		L= 100.0' R0	CP, end-section conforming to fill, Ke= 0.500
				Invert= 148.00' / 146.00' S= 0.0200 '/' Cc= 0.900
				ncrete pipe, bends & connections, Flow Area= 7.07 sf
#2	Device 1	149.00'		0" H Vert. Orifice/Grate C= 0.600
	During 4			eir flow at low heads
#3	Device 1	150.75'		0" H Vert. Orifice/Grate C= 0.600
#4	Device 1	152.00'		ir flow at low heads ' Horiz, Orifice/Grate C= 0.600
#4	Device 1	152.00		Fir flow at low heads
#5	Secondary	152.50'		20.0' breadth Broad-Crested Rectangular Weir
	2000114419			0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
				h) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
			(U	,

Primary OutFlow Max=4.67 cfs @ 12.98 hrs HW=149.68' TW=130.12' (Dynamic Tailwater) -1=Culvert (Passes 4.67 cfs of 17.99 cfs potential flow)

2=Orifice/Grate (Orifice Controls 4.67 cfs @ 3.11 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=148.00' TW=125.90' (Dynamic Tailwater) **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2LP: PROPOSED BASIN

Inflow Area = 10.690 ac, 0.00% Impervious, Inflow Depth = 2.18" for 2-year event Inflow 27.16 cfs @ 12.09 hrs, Volume= 1.940 af = Outflow 10.06 cfs @ 12.35 hrs, Volume= = 1.714 af, Atten= 63%, Lag= 15.9 min 10.06 cfs @ 12.35 hrs, Volume= Primary = 1.714 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 156.56' @ 12.35 hrs Surf.Area= 22,297 sf Storage= 32,284 cf

Plug-Flow detention time= 139.6 min calculated for 1.714 af (88% of inflow) Center-of-Mass det. time= 85.3 min (897.9 - 812.6)

Volume	Invert	Avail.Stor	rage Storage	Description	
#1	155.00'	121,49	0 cf Custom	Stage Data (Prismatic)List	ed below (Recalc)
Elevatio	on Si	urf.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
155.0	1	19,190	0		
156.0	00	21,160	20,175	20,175	
157.0	00	23,200	22,180	42,355	
158.0	00	25,290	24,245	66,600	
159.0	-	27,430	26,360	92,960	
160.0	00	29,630	28,530	121,490	
Device	Routing	Invert	Outlet Device	3	
#1	Primary	155.00'	24.0" Round	Culvert	
	-			P, end-section conforming to	
				vert= 155.00' / 154.50' S=	0.0100 '/' Cc= 0.900
			,	<i>w</i> Area= 3.14 sf	
#2	Device 1	155.50'	••••	0" H Vert. Orifice/Grate C	= 0.600
	During			flow at low heads	0.000
#3	Device 1	157.00'		" H Vert. Orifice/Grate C=	0.600
#4	Device 1	158.50'		flow at low heads Horiz. Orifice/Grate C= 0.	600
#4	Device I	156.50		flow at low heads	
#5	Secondary	159.00'		80.0' breadth Broad-Crest	ed Rectangular Weir
110	coornaary	100.00		20 0.40 0.60 0.80 1.00 1	
) 2.68 2.70 2.70 2.64 2.6	
			(3	,	

Primary OutFlow Max=10.06 cfs @ 12.35 hrs HW=156.56' TW=129.44' (Dynamic Tailwater) -1=Culvert (Barrel Controls 10.06 cfs @ 5.28 fps)

2=Orifice/Grate (Passes 10.06 cfs of 10.34 cfs potential flow)

-3=Orifice/Grate (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=155.00' TW=125.90' (Dynamic Tailwater) **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2MP: PROPOSED BASIN

Inflow Area = 19.350 ac, 0.00% Impervious, Inflow Depth = 2.18" for 2-year event Inflow 49.15 cfs @ 12.09 hrs, Volume= 3.512 af = 22.61 cfs @ 12.27 hrs, Volume= 22.61 cfs @ 12.27 hrs, Volume= Outflow 3.342 af, Atten= 54%, Lag= 10.9 min = Primary = 3.342 af Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 179.76' @ 12.27 hrs Surf.Area= 18,220 sf Storage= 44,575 cf

Plug-Flow detention time= 78.8 min calculated for 3.342 af (95% of inflow) Center-of-Mass det. time= 52.3 min (864.9 - 812.6)

Volume	Invert	Avail.Stor	age Storage	Description
#1	177.00'	89,40	0 cf Custom	n Stage Data (Prismatic)Listed below
Elevatio	on Si	urf.Area	Inc.Store	Cum.Store
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)
177.0	00	14,000	0	0
178.0	00	15,500	14,750	14,750
179.0	00	17,000	16,250	31,000
180.0	-	18,600	17,800	48,800
181.0		20,300	19,450	68,250
182.0	00	22,000	21,150	89,400
Device	Routing	Invert	Outlet Device	es
#1	Primary	177.00'	42.0" Round	d Culvert
	-		L= 50.0' RCF	P, end-section conforming to fill, Ke= 0.500
				Invert= 177.00' / 176.00' S= 0.0200 '/' Cc= 0.900
			,	ow Area= 9.62 sf
#2	Device 1	177.50'	••••	0" H Vert. Orifice/Grate C= 0.600
		470 501		ir flow at low heads
#3	Device 1	178.50'		.0" H Vert. Orifice/Grate C= 0.600
#4	Device 1	180.00'		ir flow at low heads ' Horiz, Orifice/Grate C= 0.600
#4	Device 1	100.00		ir flow at low heads
#5	Secondary	181.50'		20.0' breadth Broad-Crested Rectangular Weir
π υ	coornally	101.00		0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
				h) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
			(_ : j	.,

Primary OutFlow Max=22.61 cfs @ 12.27 hrs HW=179.76' TW=151.14' (Dynamic Tailwater) -1=Culvert (Passes 22.61 cfs of 46.09 cfs potential flow)

2=Orifice/Grate (Orifice Controls 10.24 cfs @ 6.83 fps)

-3=Orifice/Grate (Orifice Controls 12.37 cfs @ 4.12 fps)

-4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=177.00' TW=150.00' (Dynamic Tailwater) **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 3AP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 61.820 ac, 8.41% Impervious, Inflow Depth = 1.42" for 2-year event Inflow 34.70 cfs @ 13.05 hrs, Volume= 7.325 af = Outflow 34.35 cfs @ 13.10 hrs, Volume= = 7.319 af, Atten= 1%, Lag= 3.1 min 34.35 cfs @ 13.10 hrs, Volume= Primary = 7.319 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 144.79' @ 13.10 hrs Surf.Area= 3,411 sf Storage= 5,608 cf

Plug-Flow detention time= 4.0 min calculated for 7.319 af (100% of inflow) Center-of-Mass det. time= 3.2 min (913.0 - 909.8)

Volume	Invert	Avail.Stora	age Storage	Description	
#1	141.50'	125,603	3 cf Custom	n Stage Data (P	rismatic)Listed below (Recalc)
(fee 141.5 145.0 146.0	ElevationSurf.Area(feet)(sq-ft)141.500145.003,630146.0012,565147.0031,705		Inc.Store (cubic-feet) 0 6,353 8,098 22,135	Cum.Store (cubic-feet) 0 6,353 14,450 36,585	
148.0	00 1	46,330	89,018	125,603	
Device	Routing	Invert	Outlet Device	s	
#1 #2	Primary Secondary	146.70'	Inlet / Outlet I n= 0.013 Con 10.0' long x Head (feet) 0	P, end-section c nvert= 141.50' / ncrete pipe, ben 15.0' breadth S).20 0.40 0.60	conforming to fill, Ke= 0.500 142.20' S= -0.0167 '/' Cc= 0.900 ds & connections, Flow Area= 7.07 sf Spillway over Path 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=34.35 cfs @ 13.10 hrs HW=144.79' TW=132.44' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 34.35 cfs @ 5.52 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=141.50' TW=129.20' (Dynamic Tailwater) **2=Spillway over Path** (Controls 0.00 cfs)

Summary for Pond 3BP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 193.720 ac, 8.56% Impervious, Inflow Depth = 1.33" for 2-year event Inflow 82.52 cfs @ 13.31 hrs, Volume= 21.534 af = Outflow 76.28 cfs @ 13.59 hrs, Volume= = 21.534 af, Atten= 8%, Lag= 16.7 min Primary = 76.28 cfs @ 13.59 hrs, Volume= 21.534 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 132.93' @ 13.59 hrs Surf.Area= 36,830 sf Storage= 59,880 cf

Plug-Flow detention time= 8.8 min calculated for 21.531 af (100% of inflow) Center-of-Mass det. time= 8.8 min (943.4 - 934.6)

Volume	Invert	Avail.Stor	rage Storag	e Description					
#1	129.20'	1,254,59	93 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)				
				0 01					
	Elevation Surf.Area		Inc.Store	Cum.Store					
			(cubic-feet)	(cubic-feet)					
129.2			0	0					
130.0		2,770	1,108	1,108					
131.0		0,320	6,545	7,653					
132.0		0,890	20,605	28,258					
133.0		7,250	34,070	62,328					
134.0		5,960	41,605	103,933					
135.0		6,730	51,345	155,278					
136.0		8,875	62,803	218,081					
137.0		3,650	76,263	294,343					
138.0		5,010	94,330	388,673					
139.0		5,940	115,475	504,148					
140.0		1,860	143,900	648,048					
141.0		7,685	174,773	822,821					
142.0		4,700	201,193	1,024,013					
143.0	0 24	6,460	230,580	1,254,593					
Device	Routing	Invert	Outlet Devic	es					
#1	Primary	129.20'	60.0" Rour						
#1	Filliary	129.20			onforming to fill, Ke= 0.500				
			Inlet / Outlet Invert= 129.20' / 128.90' S= 0.0150 '/' Cc= 0.900						
#2	Secondary	135.10'		n= 0.025 Corrugated metal, Flow Area= 19.63 sf 35.0' long x 10.0' breadth Spillway over Path					
#2	Secondary	155.10			0.80 1.00 1.20 1.40 1.60				
					70 2.69 2.68 2.69 2.67 2.64				
			Coel. (Eligii	511) Z.49 Z.00 Z.	10 2.03 2.00 2.03 2.01 2.04				
Drimon		v-76 20 of	@ 12 50 hra	LIVA/-122 021 T/V	(-0.00' (Dynamia Tailwatar)				

Primary OutFlow Max=76.28 cfs @ 13.59 hrs HW=132.93' TW=0.00' (Dynamic Tailwater) **1**=**Culvert** (Barrel Controls 76.28 cfs @ 6.74 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=129.20' TW=0.00' (Dynamic Tailwater) **1**–2=Spillway over Path (Controls 0.00 cfs)

Summary for Subcatchment 1A:

Runoff = 3.68 cfs @ 12.08 hrs, Volume= 0.276 af, Depth= 4.19" Routed to Pond 1AP : SPORTS COMPLEX INFILTRATION BASIN

Area	(ac)	CN	Desc	cription		
0.	710	98	Pave	ement		
0.	080	39	>75%	6 Grass co	over, Good	, HSG A
0.	790	92	Weig	hted Aver	age	
0.	080		10.1	3% Pervio	us Area	
0.	710		89.8	7% Imperv	vious Area	
Tc (min)			Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0						Direct Entry,
	0. 0. 0. 0. 0. Tc (min)	(min) (fee	0.710 98 0.080 39 0.790 92 0.080 0.710 Tc Length 5 (min) (feet)	0.710 98 Pave 0.080 39 >759 0.790 92 Weig 0.080 10.13 0.710 89.8 Tc Length Slope (min) (feet) (ft/ft)	0.710 98 Pavement 0.080 39 >75% Grass co 0.790 92 Weighted Aver 0.080 10.13% Pervio 0.710 89.87% Imperv Tc Length Slope Velocity (min) (feet) (ft/ft) (ft/sec)	0.710 98 Pavement 0.080 39 >75% Grass cover, Good 0.790 92 Weighted Average 0.080 10.13% Pervious Area 0.710 89.87% Impervious Area Tc Length Slope Velocity Capacity (min) (feet) (ft/ft) (ft/sec) (cfs)

Summary for Subcatchment 1B:

Runoff = 4.12 cfs @ 12.08 hrs, Volume= 0.306 af, Depth= 4.08" Routed to Pond 1BP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription					
*	0.	800	98	Pave	Pavement					
	0.	100	39	>75%	% Grass co	over, Good	, HSG A			
	0.900 91 Weighted Average									
	0.100 11.11% Pervious Area									
	0.	800		88.8	9% Imperv	vious Area				
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	6.0						Direct Entry,			

Summary for Subcatchment 1C:

Assumed pipe channel has slope 0.005 since no data given

Runoff = 54.31 cfs @ 12.61 hrs, Volume= 8.413 af, Depth= 3.76" Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 10-year Rainfall=5.10"

	Area	(ac) C	N Des	cription		
*	2.	790 8	38 Prop	osed Dev	elopment A	Irea
*	16.	950 9	98 Pave	ement		
*	2.	060	98 Roo	fs		
*	0.	750 10	00 Ope	n Water		
_	4.	270 🗧	39 >75°	% Grass c	over, Good	, HSG A
	26.	820 8	38 Weig	ghted Aver	age	
	7.	060	26.3	2% Pervio	us Area	
	19.	760	73.6	8% Imperv	vious Area	
	Тс	Length	Slope		Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	23.4	100	0.0021	0.07		Sheet Flow,
						Grass: Short n= 0.150 P2= 3.40"
	4.4	94	0.0026	0.36		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	7.7	252	0.0061	0.55		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	0.1	14	0.0701	1.85		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	2.9	154	0.0155	0.87		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	1.4	438	0.0050	5.09	16.00	
						24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'
						n= 0.013 Concrete pipe, bends & connections
	0.8	288	0.0050	5.91	29.00	
						30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63'
	07	005	0 0050	0.07	47.40	n= 0.013 Concrete pipe, bends & connections
	0.7	295	0.0050	6.67	47.16	Pipe Channel,
						36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75'
	0.0	4 000	0.0050	7.00	74 44	n= 0.013 Concrete pipe, bends & connections
	2.9	1,299	0.0050	7.39	71.14	
						42.0" Round Area= 9.6 sf Perim= 11.0' r= 0.88'
	0.0	00	0.0050	0.00		n= 0.013 Concrete pipe, bends & connections
	0.2	93	0.0050	8.08	101.57	Pipe Channel,
						48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00'
_		0.00-	- / ·			n= 0.013 Concrete pipe, bends & connections
	44 5	3 0 2 7	Total			

44.5 3,027 Total

Summary for Subcatchment 1D:

Runoff = 18.51 cfs @ 13.07 hrs, Volume= Routed to Pond 1DP : UPSTREAM DOGLEG 4.021 af, Depth= 1.65"

	Area	(ac)	CN	Desc	cription		
*	5.	040	88	Prop	osed Dev	elopment A	rea
	5.	200	30	Woo	ds, Good,	HSG A	
	4.	720	70	Woo	ds, Good,	HSG C	
	5.	970	77	Woo	ds, Good,	HSG D	
	4.	070	39			over, Good	,
	4.	100	74			over, Good	
	0.	220	80	>75%	% Grass co	over, Good	, HSG D
	29.320 64 Weighted Average						
	29.	320		100.	00% Pervi	ous Area	
	_						
	Tc	Lengt		Slope	Velocity	Capacity	Description
	(min)	(feet	.)	(ft/ft)	(ft/sec)	(cfs)	
	33.5	10	0 0	.0244	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	38.7	1,64	0 0	.0200	0.71		Shallow Concentrated Flow,
_							Woodland Kv= 5.0 fps
	72.2	1,74	0 T	otal			

Summary for Subcatchment 1E:

Runoff = 409.37 cfs @ 12.09 hrs, Volume= 29.181 af, Depth= 3.17" Routed to Pond 1IP : TACAN

	Area	(ac)	CN	Desc	Description						
*	63.	870	88	Prop	Proposed Development Area						
	44.	030	77	Woo	ds, Good,	HSG D					
	2.	610	39	>759	% Grass co	over, Good	I, HSG A				
	110.510 82 Weighted Average										
	110.	510		100.	00% Pervi	ous Area					
	Тс	Leng	lth	Slope	Velocity	Capacity	Description				
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)					
	6.0						Direct Entry,				

Summary for Subcatchment 1F:

Runoff = 40.01 cfs @ 12.09 hrs, Volume= 2.875 af, Depth= 3.46" Routed to Pond 1FP : EXISTING PARKWAY BASIN

_	Area (ac)	CN	Desc	cription						
*	5.0	070	98	Pave	avement						
*	0.4	410	100	Oper	pen Water						
	1.8	380	61	>75%	% Grass co	over, Good	d, HSG B				
	2.0	610	74	>75%	% Grass co	over, Good	d, HSG C				
	9.9	970	85	Weig	ghted Aver	age					
	4.4	490		45.0	4% Pervio	us Area					
	5.4	480		54.9	6% Imper	ious Area					
	_										
	Тс	Leng	gth	Slope	Velocity	Capacity					
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)					
	6.0						Direct Entry,				

Summary for Subcatchment 1G:

Runoff = 8.54 cfs @ 12.39 hrs, Volume= 1.110 af, Depth= 4.19" Routed to Pond 1GP : SPORTS COMPLEX BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 10-year Rainfall=5.10"

_	Area	(ac) C	N Des	cription		
*	1.	850 9	8 Pave	ement		
*	0.	990 8	35 Artifi	cial Turf		
	0.				over, Good	, HSG D
_	3	180 9		ghted Aver		·
		330		2% Pervio	•	
		850			vious Area	
		000	00.1		nouo / nou	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Decemption
	26.5	(1001)	(1010)	(14000)	(010)	Direct Entry, Artificial Turf
	1.8	346	0.0050	3.21	2.52	Pipe Channel,
	1.0	540	0.0030	5.21	2.52	12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Corrugated PE, smooth interior
	0.6	116	0.0050	3.21	2.52	•
	0.0	110	0.0050	5.21	2.52	12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
	0.0	11	0.0900	13.61	10.60	n= 0.013 Corrugated PE, smooth interior
	0.0	11	0.0900	13.01	10.69	
						12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
	0.0	40	0 0050	4.00	7 40	n= 0.013 Concrete pipe, bends & connections
	0.2	40	0.0050	4.20	7.43	· · · · · · · · · · · · · · · · · · ·
						18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
	0.4	40	0 0050	4.00	7.40	n= 0.013 Concrete pipe, bends & connections
	0.1	18	0.0050	4.20	7.43	
						18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	20.2	531	Total			

29.2 531 Total

Summary for Subcatchment 1H:

Runoff = 6.33 cfs @ 12.08 hrs, Volume= 0.485 af, Depth= 4.41" Routed to Pond 1HP : SPORTS COMPLEX BASIN

	Area (a	ac) (CN	Desc	Description				
*	1.0	00	98	Pave	ement				
*	0.0	90	85	Artifi	cial Turf				
_	0.2	30	80	>75%	6 Grass co	over, Good	I, HSG D		
	1.3	20	94	Weig	hted Aver	age			
	0.3	20		24.24	4% Pervio	us Area			
	1.0	00		75.76	6% Imper	ious Area/			
	Tc I (min)	Length (feet)		lope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
	6.0		•		· /		Direct Entry,		

Summary for Subcatchment 1I:

Runoff = 66.81 cfs @ 13.50 hrs, Volume= Routed to Pond 1IP : TACAN 17.943 af, Depth= 1.95"

_	Area	(ac)	CN	Desc	cription		
*	15.	650	88	Prop	osed Dev	elopment A	rea
	1.	950	55	Woo	ds, Good,	HŚG B	
	7.	940	77	Woo	ds, Good,	HSG D	
	14.	760	48	Brus	h, Good, H	ISG B	
	20.	020	73	Brus	h, Good, H	ISG D	
	38.	700	61	>75%	% Grass co	over, Good	, HSG B
	5.	070	74			over, Good	
	6.	270	80	>75%	6 Grass co	over, Good	, HSG D
110.360 68 Weighted Average							
	110.	360		100.	00% Pervi	ous Area	
	Тс	Lengt		Slope	Velocity	Capacity	Description
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)	
	47.9	10	0 (0.0100	0.03		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	22.5	64	0 (0.0090	0.47		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	33.5	1,00	5 (0.0100	0.50		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	103.9	1,74	5 -	Fotal			

Summary for Subcatchment 1J:

Runoff = 22.46 cfs @ 12.08 hrs, Volume= Routed to Pond 1LP : CENTRAL GREENWAY 1.824 af, Depth= 4.86"

	Area	(ac)	CN	Desc	cription		
*	4.	500	98	Pave	ement		
	4.500 100.00% Impervious Area						
	Tc (min)	Leng ⁻ (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	6.0						Direct Entry,

Summary for Subcatchment 1K:

Runoff = 109.12 cfs @ 12.14 hrs, Volume= Routed to Pond 1LP : CENTRAL GREENWAY 9.078 af, Depth= 3.76"

_	Area	(ac)	CN	Desc	cription				
*	28.940 88 Proposed Development Area								
	28.	940		100.	00% Pervi	ous Area			
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
	10.0						Direct Entry,		

Summary for Subcatchment 1L:

Runoff = 107.77 cfs @ 12.14 hrs, Volume= 8.883 af, Depth= 3.56" Routed to Pond 1LP : CENTRAL GREENWAY

	Area	(ac)	CN	Desc	Description							
*	26.	870) 88 Proposed Development Area									
	2.	2.070 61 >75% Grass cover, Good, HSG B										
	1.	, HSG C										
	29.	940	86	Weig	ghted Aver	age						
	29.	940		100.	00% Pervi	ous Area						
	_											
	Tc Length Slope Velocity Capacity						Description					
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)						
	10.0						Direct Entry,					

Summary for Subcatchment 1M:

Runoff = 36.17 cfs @ 12.14 hrs, Volume= 2.970 af, Depth= 3.46" Routed to Pond 1MP : CENTRAL GREENWAY

	Area	(ac)	CN	Desc	Description							
*	9.	.060 88 Proposed Development Area										
	1.240 61 >75% Grass cover, Good, HSG B											
	10.	300	85	Weig	ghted Aver	age						
	10.	300		100.	00% Pervi	ous Area						
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
	10.0						Direct Entry,					

Summary for Subcatchment 1N:

Assumed slope of 0.002

Runoff	=	90.75 cfs @	12.14 hrs, Vo	olume=	7.480 af,	Depth= 3.	56"
Routed	l to Por	nd 1NP : WES	Γ GREENWAY	Y			

	Area (a	ac)	c) CN Description								
*	22.1	22.110 88 Proposed Development Area									
	0.5	30	39	>75%	% Grass co	over, Good	d, HSG A				
	2.5	70	74	>75%	% Grass co	over, Good	d, HSG C				
	25.210 86 Weighted Average										
	25.2	10		100.	00% Pervi	ous Area					
					Velocity (ft/sec)	Capacity (cfs)					
						(0.0)	Direct Entry,				

Summary for Subcatchment 10:

Runoff 32.04 cfs @ 12.09 hrs, Volume= 2.322 af, Depth= 3.66" = Routed to Pond 1OP : WEST GREENWAY

	Area	(ac)	CN	Desc	Description								
*	7.	000	88	Prop	Proposed Development Area								
	0.	0.610 74 >75% Grass cover, Good, HSG C											
	7.	610	87	Weig	ghted Aver	age							
	7.	610		100.	00% Pervi	ous Area							
	Tc Length Slope Velocity Capacity						Description						
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)							
	6.0						Direct Entry,						

Summary for Subcatchment 1P:

Runoff = 80.38 cfs @ 12.09 hrs, Volume= 5.825 af, Depth= 3.66" Routed to Pond 1PP : WEST GREENWAY

	Area	(ac)	CN	Dese	Description							
*	17.	420	88	Prop	roposed Development Area							
	1.	670 74 >75% Grass cover, Good, HSG C										
	19.	19.090 87 Weighted Average										
	19.	090		100.	00% Pervi	ous Area						
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
	6.0						Direct Entry,					

Summary for Subcatchment 1Q:

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71.29 cfs @ 12.09 hrs, Volume= 5.166 af, Depth= 3.66" Runoff = Routed to Pond 1QP : WEST GREENWAY

	Area	(ac)	CN	Desc	Description							
*	15.	260	88 Proposed Development Area									
	1.670 74 >75% Grass cover, Good, HSG C											
	16.	930	87	Weig	ghted Aver	age						
	16.	930		100.	00% Pervi	ous Area						
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
	6.0		/	()	(14222)	()	Direct Entry,					

Summary for Subcatchment 2A:

126.52 cfs @ 13.29 hrs, Volume= 31.997 af, Depth= 2.71" Runoff = Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area	(ac)	CN	Desc	cription					
*	4.	000	98	Pave	Pavement					
*	0.	290	98	Roof	Roof					
	115.	050	77	Woo	ds, Good,	HSG D				
	1.	620	57	Woo	Woods/grass comb., Poor, HSG A					
	4.	390	61	>75% Grass cover, Good						
	16.	500	74 >75		% Grass co	over, Good	, HSG C			
	141.	850	77	Weig	phted Aver	age				
	137.	560		96.9	, 8% Pervio	us Area				
	4.	290		3.02	% Impervi	ous Area				
	Tc	Lengt	h	Slope	Velocity	Capacity	Description			
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)	·			
	47.9	10	0 0	.0100	0.03		Sheet Flow,			
							Woods: Dense underbrush n= 0.800 P2= 3.40"			
	27.0	1,08	50	.0180	0.67		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	11.4	48	0 0	.0100	0.70		Shallow Concentrated Flow,			
							Short Grass Pasture Kv= 7.0 fps			
	14.2	42	5 0	.0100	0.50		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	100.5	2,09	0 T	otal						

Summary for Subcatchment 2B:

Runoff = 196.19 cfs @ 12.08 hrs, Volume= Routed to Pond 2BP : EXISTING BASIN 15.019 af, Depth= 4.41"

	Area	(ac)	CN	Desc	Description						
*	6.	650	98	Pave	ement						
*	26.	600	98	Roof							
_	7.	650	74	>75%	% Grass co	over, Good	I, HSG C				
	40.	900	94	Weig	phted Aver	age					
	7.	650		18.7	0% Pervio	us Area					
	33.	250		81.3	0% Imper	ious Area/					
	Тс	Leng		Slope	Velocity	Capacity	Description				
_	(min) (feet) (ft/ft) (ft/sec) (cfs)					(cfs)					
	6.0						Direct Entry,				

Summary for Subcatchment 2C:

Runoff = 62.44 cfs @ 12.08 hrs, Volume= 4.906 af, Depth= 4.63" Routed to Pond 2CP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	Description							
*	10.	340	98	Pave	avement							
*	1.	680	98	Roof	s							
	0.	400	39	>75%	6 Grass co	over, Good	d, HSG A					
	0.	290	74	>75%	6 Grass co	over, Good	d, HSG C					
	12.	710	96	Weig	hted Aver	age						
	0.	690		5.43	% Perviou	s Area						
	12.	020		94.5	7% Imperv	vious Area						
	Тс	Leng	lth	Slope	Velocity	Capacity	Description					
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	•					
	6.0						Direct Entry,					

Summary for Subcatchment 2D-1:

Runoff = 10.48 cfs @ 12.08 hrs, Volume= 0.851 af, Depth= 4.86" Routed to Pond 2DP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	cription		
*	2.100 98 Pavement				ement		
	2.100 100.00% Impervious Area					rvious Area	a
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

Summary for Subcatchment 2D-2:

Runoff = 0.03 cfs @ 12.46 hrs, Volume= 0.012 af, Depth= 0.22" Routed to Pond 2DP : EXISTING PARKWAY BASIN

Area	(ac)	CN	Desc	cription							
0.	670	39	>75%	>75% Grass cover, Good, HSG A							
0.											
Tc _(min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
6.0						Direct Entry,					

Summary for Subcatchment 2E:

Runoff = 25.44 cfs @ 13.29 hrs, Volume= 6.425 af, Depth= 1.57" Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Area	(ac) C	N Des	cription		
7.	930	30 Woo	ods, Good,	HSG A	
8.					
22.	160	77 Woo	ods, Good,	HSG D	
7.	040	39 >75	% Grass c	over, Good	, HSG A
3.	560	30 >75	% Grass c	over, Good	HSG D
49.	030	63 Wei	ghted Aver	age	
49.	030	100.	00% Pervi	ous Area	
-		<u></u>		.	
Тс	Length	Slong	Velocity	Capacity	Description
		Slope			•
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
					Sheet Flow,
(min)	(feet)	(ft/ft)	(ft/sec)		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.40"
(min)	(feet)	(ft/ft)	(ft/sec)		
<u>(min)</u> 30.8	(feet) 100	(ft/ft) 0.0300	(ft/sec) 0.05		Woods: Dense underbrush n= 0.800 P2= 3.40"

Summary for Subcatchment 2F:

Runoff = 44.14 cfs @ 12.99 hrs, Volume= 9.274 af, Depth= 1.80" Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

_	Area	(ac) C	N Des	cription					
	20.	570	55 Woo	ods, Good,	HSG B				
	25.	620	77 Woo	Noods, Good, HSG D					
	15.	770 (61 >75	% Grass c	over, Good	, HSG B			
	61.	960	66 Wei	ghted Aver	age				
	61.	960		00% Pervi					
	Tc	Length	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·			
_	47.9	100	0.0100	0.03		Sheet Flow,			
	-					Woods: Dense underbrush n= 0.800 P2= 3.40"			
	22.5	675	0.0100	0.50		Shallow Concentrated Flow,			
						Woodland $Kv = 5.0 \text{ fps}$			
_	70.4	775	Total			· · · · ·			

Summary for Subcatchment 2G:

Assumed Tc value

Runoff = 18.52 cfs @ 13.47 hrs, Volume= 5.337 af, Depth= 3.87" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area (a	C) CN	Deso	Description							
*	6.62	20 98	B Pave	Pavement							
*	5.80	98 00	B Root	F							
_	4.14	-0 6´	l >759	% Grass co	over, Good	d, HSG B					
	16.56	89 08) Weig	ghted Aver	age						
	4.14	-0	25.0	0% Pervio	us Area						
	12.42	20	75.0	0% Imperv	vious Area						
	Tc L (min)	ength (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
	120.0		(1011)	(10300)	(013)	Direct Entry,					
	120.0										

Summary for Subcatchment 2H:

Assumed Tc value

Runoff = 8.14 cfs @ 13.60 hrs, Volume= 2.318 af, Depth= 3.17" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area ((ac)	CN	Desc	escription							
*	3.3	370	98	Pave	Pavement							
*	1.6	690	98	Roof	:							
	3.7	720	61	>75%	% Grass co	over, Good	I, HSG B					
	8.7	780	82	Weig	hted Aver	age						
	3.7	720		42.3	, 7% Pervio	us Area						
	5.0	060		57.6	3% Imperv	ious Area						
	_			~		•						
	Tc	Leng	th	Slope	Velocity	Capacity	Description					
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)						
	120.0						Direct Entry,					

Summary for Subcatchment 2I-1:

Runoff = 90.04 cfs @ 12.14 hrs, Volume= 7.490 af, Depth= 3.76" Routed to Pond 2IP : PROPOSED PHASE 1 BASIN

	Area	(ac)	CN	Desc	cription		
*	23.	880	88	Prop	osed Deve	elopment A	Area
	23.	880		100.	00% Pervi	ous Area	
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	10.0						Direct Entry,

Summary for Subcatchment 2J:

Runoff = 66.19 cfs @ 12.09 hrs, Volume= 4.797 af, Depth= 3.66" Routed to Pond 2JP : PROPOSED BASIN

	Area	(ac)	CN	Desc	Description								
*	14.430 88 Proposed Development Area												
1.290 80 >75% Grass cover, Good, HSG D													
	15.	720	87	Weig	ghted Aver	age							
	15.720 10				00% Pervi	ous Area							
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description						
	6.0						Direct Entry,						
							-						

Summary for Subcatchment 2K:

Runoff = 82.14 cfs @ 12.09 hrs, Volume= 5.884 af, Depth= 3.36" Routed to Pond 2KP : PROPOSED BASIN

	Area	(ac)	CN	Desc	escription								
*	12.	610	88	Prop	oposed Development Area								
	8.	390	390 77 Woods, Good, HSG D										
	21.	000	84	Weig	ghted Aver	age							
	21.	000		100.	00% Pervi	ous Area							
	Tc (min)	5				Capacity (cfs)	Description						
	6.0						Direct Entry,						

Summary for Subcatchment 2L:

Runoff = 46.03 cfs @ 12.09 hrs, Volume= 3.353 af, Depth= 3.76" Routed to Pond 2LP : PROPOSED BASIN

	Area	(ac)	CN	Desc	cription				
*	10.690 88 Proposed Development Area								
	10.	690		100.	00% Pervi	ous Area			
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
	6.0						Direct Entry,		

Summary for Subcatchment 2M:

Runoff = 83.32 cfs @ 12.09 hrs, Volume= Routed to Pond 2MP : PROPOSED BASIN

6.069 af, Depth= 3.76"

	Area	(ac)	CN	Desc	cription		
*	19.	350	88	Prop	osed Dev	elopment A	Area
	19.	350		100.	00% Pervi	ous Area	
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

Summary for Subcatchment 3A:

Runoff = 69.64 cfs @ 13.04 hrs, Volume= 14.408 af, Depth= 2.80" Routed to Pond 3AP : FRENCH'S STREAM EAST BRANCH

			CN	Desc	cription					
*	5.200 98		Pave	ement						
	0.	160	55	Woo	Woods, Good, HSG B					
	50.	970	77	Woo	ds, Good,	HSG D				
	5.	490	73	Brush, Good, HSG D						
	61.820 78		Weig	ghted Aver	age					
	56.620			91.5	9% Pervio	us Area				
	5.200			8.41% Impervious Area						
	Тс	Lengt	h S	Slope	Velocity	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	35.7	10	0.	0208	0.05		Sheet Flow,			
							Woods: Dense underbrush n= 0.800 P2= 3.40"			
	2.1	6	3 0.	0114	0.53		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	37.0	1,27	2 0.	0131	0.57		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	74.8	1,43	8 To	otal						

Summary for Subcatchment 3B:

Runoff = 109.34 cfs @ 13.43 hrs, Volume= 28.778 af, Depth= 2.62" Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

_	Area	(ac)	CN	Desc	cription		
*	9.	990	98	Pave	ement		
*	1.	400	100	Ope	n Water		
	14.	050	55	Woo	ds, Good,	HSG B	
	83.	920	77	Woo	ds, Good,	HSG D	
	9.	370	73	Brus	h, Good, H	ISG D	
	6.	810	61			over, Good	
_	6.	360	80	>75%	6 Grass co	over, Good	, HSG D
	131.900 76 Weighted Average						
	120.510 91				6% Pervio	us Area	
	11.	390		8.64	% Impervi	ous Area	
	Тс	Lengt		Slope	Velocity	Capacity	Description
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)	
	36.3	10	0 0	0.0200	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	70.7	1,50	0 0	0.0050	0.35		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	107.0	1,60	0 Т	otal			

Summary for Subcatchment 21-2:

Runoff 1.986 af, Depth= 2.03" = 23.84 cfs @ 12.15 hrs, Volume= Routed to Pond 2IP : PROPOSED PHASE 1 BASIN

	Area	(ac)	CN	Desc	cription		
*	7.	170	88	Prop	osed Dev	elopment A	Area
_	4.	570	39	>75	% Grass co	over, Good	d, HSG A
	11.	740	69	Weig	ghted Aver	age	
	11.	740		100.	00% Pervi	ous Area	
	_						
	Tc	Leng		Slope	Velocity	Capacity	Description
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	10.0						Direct Entry,

Summary for Reach 1R: DP-1 TACAN OUTFALL

Inflow Area = 377.860 ac, 3.40% Impervious, Inflow Depth > 2.96" for 10-year event Inflow = 62.29 cfs @ 16.45 hrs, Volume= 93.114 af Outflow = 62.29 cfs @ 16.45 hrs, Volume= 93.114 af, Atten= 0%, Lag= 0.0 min Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: DP-2 FRENCH'S STREAM WEST BRANCH

Inflow Are	a =	872.630 ac, 11.83% Impervious, Inflow Depth > 2.76" for	10-year event
Inflow	=	266.28 cfs @ 13.73 hrs, Volume= 200.400 af	
Outflow	=	266.28 cfs @ 13.73 hrs, Volume= 200.400 af, Atten= 0)%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: DP-3 FRENCH'S STREAM EAST BRANCH

Inflow Are	ea =	193.720 ac,	8.56% Impervious, Inflow	/ Depth = 2.67"	for 10-year event
Inflow	=	153.44 cfs @	13.77 hrs, Volume=	43.180 af	
Outflow	=	153.44 cfs @	13.77 hrs, Volume=	43.180 af, Atte	en= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area = 0.790 ac, 89.87% Impervious, Inflow Depth = 4.19" for 10-year event Inflow 3.68 cfs @ 12.08 hrs, Volume= 0.276 af = 3.63 cfs @ 12.11 hrs, Volume= Outflow = 0.276 af, Atten= 1%, Lag= 1.7 min Discarded = 0.12 cfs @ 10.44 hrs, Volume= 0.170 af 3.51 cfs @ 12.11 hrs, Volume= Primary = 0.106 af Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 171.02' @ 12.11 hrs Surf.Area= 2,201 sf Storage= 2,829 cf

Plug-Flow detention time= 100.4 min calculated for 0.276 af (100% of inflow) Center-of-Mass det. time= 100.4 min (882.5 - 782.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	168.50'	1,559 cf	24.83'W x 88.64'L x 2.33'H Field A
			5,136 cf Overall - 1,238 cf Embedded = 3,898 cf x 40.0% Voids
#2A	169.00'	1,238 cf	ADS_StormTech SC-310 +Cap x 84 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			84 Chambers in 7 Rows
#3	168.50'	85 cf	4.00'D x 6.80'H CB-Impervious
#4	175.20'	449 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
175.20	10	0	0
176.00	300	124	124
176.50	1,000	325	449

Device	Routing	Invert	Outlet Devices
#1	Primary	170.00'	18.0" Round Culvert
	-		L= 13.0' RCP, end-section conforming to fill, Ke= 0.500
			Inlet / Outlet Invert= 170.00' / 169.85' S= 0.0115 '/' Cc= 0.900
			n= 0.013, Flow Area= 1.77 sf
#2	Discarded	168.50'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.12 cfs @ 10.44 hrs HW=168.58' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=3.37 cfs @ 12.11 hrs HW=170.99' TW=151.64' (Dynamic Tailwater) ←1=Culvert (Barrel Controls 3.37 cfs @ 3.84 fps)

Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

12 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 86.64' Row Length +12.0" End Stone x 2 = 88.64' Base Length 7 Device x 2.4.0" Wide + 6.0" Specing x 6 + 12.0" Side Stone x 2 = 24.82' Base Width

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

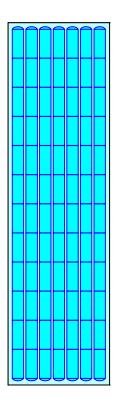
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

84 Chambers x 14.7 cf = 1,238.3 cf Chamber Storage

5,136.2 cf Field - 1,238.3 cf Chambers = 3,897.9 cf Stone x 40.0% Voids = 1,559.1 cf Stone Storage

Chamber Storage + Stone Storage = 2,797.5 cf = 0.064 afOverall Storage Efficiency = 54.5%Overall System Size = $88.64' \times 24.83' \times 2.33'$

84 Chambers 190.2 cy Field 144.4 cy Stone





Summary for Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area =	0.900 ac, 8	88.89% Impervious, Ir	flow Depth = 4.08"	for 10-year event
Inflow =	4.12 cfs @	12.08 hrs, Volume=	0.306 af	
Outflow =	3.62 cfs @	12.13 hrs, Volume=	0.306 af, Atte	en= 12%, Lag= 2.6 min
Discarded =	0.13 cfs @	10.34 hrs, Volume=	0.184 af	
Primary =	3.49 cfs @	12.13 hrs, Volume=	0.122 af	
Routed to Pond	1CP : MEM	ORIAL GROVE AVE.	BASIN	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 171.25' @ 12.13 hrs Surf.Area= 2,378 sf Storage= 2,975 cf

Plug-Flow detention time= 98.7 min calculated for 0.306 af (100% of inflow) Center-of-Mass det. time= 98.7 min (884.9 - 786.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	169.00'	1,683 cf	24.83'W x 95.76'L x 2.33'H Field A
			5,549 cf Overall - 1,342 cf Embedded = 4,207 cf x 40.0% Voids
#2A	169.50'	1,342 cf	ADS_StormTech SC-310 +Cap x 91 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			91 Chambers in 7 Rows
#3	169.00'	72 cf	4.00'D x 5.70'H CB-Impervious
#4	172.70'	572 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,668 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.70	10	0	0
173.00	300	47	47
174.50	400	525	572

Device	Routing	Invert	Outlet Devices
#1	Primary	170.50'	12.0" Round Culvert X 2.00
	·		L= 23.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 170.50' / 170.20' S= 0.0130 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	169.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.13 cfs @ 10.34 hrs HW=169.06' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=3.48 cfs @ 12.13 hrs HW=171.25' TW=151.70' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 3.48 cfs @ 3.82 fps)

Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

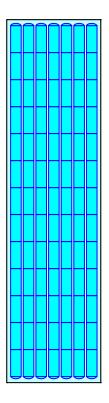
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

91 Chambers x 14.7 cf = 1,341.5 cf Chamber Storage

5,548.8 cf Field - 1,341.5 cf Chambers = 4,207.2 cf Stone x 40.0% Voids = 1,682.9 cf Stone Storage

Chamber Storage + Stone Storage = 3,024.4 cf = 0.069 afOverall Storage Efficiency = 54.5%Overall System Size = $95.76' \times 24.83' \times 2.33'$

91 Chambers 205.5 cy Field 155.8 cy Stone



Summary for Pond 1CP: MEMORIAL GROVE AVE. BASIN

Assumed slope of 0.005 for outlet culvert.

Inflow Area =	47.860 ac, 4	4.44% Impervious, Inflo	ow Depth = 3.65" for 10-year event
Inflow =	84.65 cfs @	12.20 hrs, Volume=	14.541 af
Outflow =	32.27 cfs @	13.25 hrs, Volume=	14.478 af, Atten= 62%, Lag= 62.8 min
Primary =	32.27 cfs @	13.25 hrs, Volume=	14.478 af
Routed to	Pond 1DP : UPST	REAM DOGLEG	
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af
Routed to	Pond 1DP : UPST	REAM DOGLEG	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 154.30' @ 13.25 hrs Surf.Area= 71,256 sf Storage= 252,476 cf

Plug-Flow detention time= 152.7 min calculated for 14.478 af (100% of inflow) Center-of-Mass det. time= 149.5 min (984.4 - 834.9)

Volume	Invert	Avail.Sto	rage Stora	age Description
#1	150.00'	468,17	78 cf Cust	tom Stage Data (Prismatic)Listed below (Recalc)
Elevetie		f A	In a Ctara	Cum Store
Elevatio		urf.Area	Inc.Store	
(fee	/	(sq-ft)	(cubic-feet)	
150.0		46,495	0	-
151.0		52,090	49,293	
152.0	00	57,750	54,920) 104,213
153.0	00	63,535	60,643	3 164,855
154.0	00	69,445	66,490) 231,345
155.0	00	75,475	72,460	303,805
156.0	00	81,635	78,555	5 382,360
157.0	00	90,000	85,818	8 468,178
Device	Routing	Invert	Outlet Dev	/ices
#1	Primary	150.00'	27.0" Rou	und Culvert
	-		L= 87.7' F	RCP, end-section conforming to fill, Ke= 0.500
			Inlet / Outle	et Invert= 150.00' / 149.56' S= 0.0050 '/' Cc= 0.900
			n= 0.013 (Concrete pipe, bends & connections, Flow Area= 3.98 sf
#2	Secondary	156.00'		x 20.0' breadth Broad-Crested Rectangular Weir
			-	t) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			•	glish) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
			()	

Primary OutFlow Max=32.27 cfs @ 13.25 hrs HW=154.30' TW=145.66' (Dynamic Tailwater) -1=Culvert (Barrel Controls 32.27 cfs @ 8.12 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=150.00' TW=142.50' (Dynamic Tailwater) —2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1DP: UPSTREAM DOGLEG

Inflow Area =	77.180 ac, 27.56% Impervious, Inflov	v Depth > 2.88" for 10-year event
Inflow =	50.51 cfs @ 13.08 hrs, Volume=	18.500 af
Outflow =	50.37 cfs @ 13.13 hrs, Volume=	18.500 af, Atten= 0%, Lag= 3.1 min
Primary =	24.69 cfs @ 13.13 hrs, Volume=	8.731 af
Routed to	Pond 2IP : PROPOSED PHASE 1 BASIN	
Secondary =	25.69 cfs @ 13.13 hrs, Volume=	9.769 af
Routed to	Pond 2IP : PROPOSED PHASE 1 BASIN	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 145.67' @ 13.13 hrs Surf.Area= 4,505 sf Storage= 3,093 cf

Plug-Flow detention time= 0.5 min calculated for 18.497 af (100% of inflow) Center-of-Mass det. time= 0.5 min (971.8 - 971.2)

Volume	Invert	: Avail.Sto	rage Storag	e Description		
#1	142.50	67,80	08 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
142.5	50	0	0	0		
144.(00	180	135	135		
145.0	00	1,610	895	1,030		
146.0		5,900	3,755	4,785		
147.0		9,900	7,900	12,685		
148.0		14,165	12,033	24,718		
149.0		20,375	17,270	41,988		
150.0	00	31,265	25,820	67,808		
Device	Routing	Invert	Outlet Devic	es		
#1	Primary	142.60'	42.0" Roun	d Culvert		
#2	Secondary	y 142.50'	L= 782.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= $142.60' / 142.26' = 0.0004' / Cc = 0.900$ n= 0.013, Flow Area= 9.62 sf 42.0'' Round Culvert L= 782.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= $142.50' / 142.19' = 0.0004' / Cc = 0.900$ n= 0.013, Flow Area= 9.62 sf			
Primary OutFlow Max-24.60 of @ 13.13 brs. HW-145.67' TW-142.37' (Dynamic Tailwater)						

Primary OutFlow Max=24.69 cfs @ 13.13 hrs HW=145.67' TW=142.37' (Dynamic Tailwater) -1=Culvert (Barrel Controls 24.69 cfs @ 3.67 fps)

Secondary OutFlow Max=25.68 cfs @ 13.13 hrs HW=145.67' TW=142.37' (Dynamic Tailwater) 2=Culvert (Barrel Controls 25.68 cfs @ 3.68 fps)

Summary for Pond 1FP: EXISTING PARKWAY BASIN

Primary Culvert - Assumed Inverts, pipe diameter, and pipe material.

Inflow Area =	9.970 ac, 54.96% Impervious, Inflow	/ Depth = 3.46" for 10-year event				
Inflow =	40.01 cfs @ 12.09 hrs, Volume=	2.875 af				
Outflow =	2.42 cfs @ 13.94 hrs, Volume=	1.384 af, Atten= 94%, Lag= 111.4 min				
Primary =	2.42 cfs @ 13.94 hrs, Volume=	1.384 af				
Routed to Po	ond 1IP : TACAN					
Secondary =	0.00 cfs @ 0.00 hrs, Volume=	0.000 af				
Routed to Pond 1IP : TACAN						

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.23' @ 13.94 hrs Surf.Area= 24,966 sf Storage= 81,891 cf

Plug-Flow detention time= 418.6 min calculated for 1.384 af (48% of inflow) Center-of-Mass det. time= 304.2 min (1,111.0 - 806.8)

Volume	Invert	Avail.Sto	rage Storag	e Description	
#1	143.00'	197,06	68 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)
Elevatior (feet		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
143.00))	10,065	0	0	
144.00	C	17,300	13,683	13,683	
145.00	C	19,605	18,453	32,135	
146.00	C	21,970	20,788	52,923	
147.00	C	24,385	23,178	76,100	
148.00		26,860	25,623	101,723	
149.00		29,935	28,398	130,120	
150.00		31,980	30,958	161,078	
151.00	C	40,000	35,990	197,068	
Device	Routing	Invert	Outlet Devid	ces	
#1	Primary	146.50'	24.0" Roui		
#2	Secondary	150.00'	L= 98.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 146.50' / 146.00' S= 0.0051 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf 10.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		

Primary OutFlow Max=2.42 cfs @ 13.94 hrs HW=147.23' TW=144.29' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 2.42 cfs @ 3.44 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=133.50' (Dynamic Tailwater) —2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1GP: SPORTS COMPLEX BASIN

Inflow Area = 3.180 ac, 58.18% Impervious, Inflow Depth = 4.19" for 10-year event Inflow = 8.54 cfs @ 12.39 hrs, Volume= 1.110 af 5.67 cfs @ 12.67 hrs, Volume= 1.102 af, Atten= 34%, Lag= 17.1 min Outflow = 5.34 cfs @ 12.67 hrs, Volume= Primary = 1.098 af Routed to Pond 1LP : CENTRAL GREENWAY Secondary = 0.33 cfs @ 12.67 hrs, Volume= 0.003 af Routed to Pond 1LP : CENTRAL GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 169.36' @ 12.67 hrs Surf.Area= 4,179 sf Storage= 7,713 cf

Plug-Flow detention time= 26.1 min calculated for 1.102 af (99% of inflow) Center-of-Mass det. time= 21.7 min (825.4 - 803.6)

Volume	Invert	Avail.Stor	age Storage	Description	
#1	166.00'	10,58	8 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
166.0	00	1,085	0	0	
167.0	00	1,395	1,240	1,240	
168.0	00	2,415	1,905	3,145	
169.0	00	3,850	3,133	6,278	
170.0	00	4,770	4,310	10,588	
Device	Routing	Invert	Outlet Device	S	
#1	Primary	166.30'	12.0" Round	Culvert	
#2	Secondary	169.30'	L= 57.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= $166.30' / 166.00'$ S= $0.0053' / Cc= 0.900$ n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf 9.0' long x 17.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		

Primary OutFlow Max=5.34 cfs @ 12.67 hrs HW=169.36' TW=150.34' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 5.34 cfs @ 6.79 fps)

Secondary OutFlow Max=0.33 cfs @ 12.67 hrs HW=169.36' TW=150.34' (Dynamic Tailwater) **2=Broad-Crested Rectangular Weir** (Weir Controls 0.33 cfs @ 0.64 fps)

Summary for Pond 1HP: SPORTS COMPLEX BASIN

Inflow Area =	1.320 ac, 7	5.76% Impervious, In	flow Depth = 4.41" for 10-year event
Inflow =	6.33 cfs @	12.08 hrs, Volume=	0.485 af
Outflow =	4.34 cfs @	12.17 hrs, Volume=	0.483 af, Atten= 31%, Lag= 4.9 min
Primary =	4.34 cfs @	12.17 hrs, Volume=	0.483 af
Routed to Por	nd 1LP : CENT	RAL GREENWAY	
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af
Routed to Por	nd 1LP : CENT	RAL GREENWAY	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 164.27' @ 12.17 hrs Surf.Area= 1,803 sf Storage= 1,616 cf

Plug-Flow detention time= 9.8 min calculated for 0.483 af (100% of inflow) Center-of-Mass det. time= 6.8 min (779.7 - 772.9)

Volume	Invert	Avail.Stor	age Storage [Description	
#1	161.00'	8,05	5 cf Custom	Stage Data (Pi	rismatic)Listed below (Recalc)
Elevatio (fee		rf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
161.0)0	0	0	0	
162.0	00	180	90	90	
163.0	00	515	348	438	
164.0	00	1,060	788	1,225	
165.0	00	3,780	2,420	3,645	
166.0	00	5,040	4,410	8,055	
Device	Routing	Invert	Outlet Devices		
#1	Primary	162.00'	12.0" Round	Culvert	
#2	Secondary	164.50'	L= 58.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 162.00' / 161.70' S= 0.0052 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf 7.0' long x 40.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=161.00' TW=146.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1IP: TACAN

Inflow Area = 377.860 ac. 3.40% Impervious, Inflow Depth = 2.96" for 10-year event Inflow 491.57 cfs @ 12.09 hrs, Volume= 93.116 af = Outflow 62.29 cfs @ 16.45 hrs, Volume= 93.114 af, Atten= 87%, Lag= 261.3 min = 62.29 cfs @ 16.45 hrs, Volume= Primary = 93.114 af Routed to Reach 1R : DP-1 TACAN OUTFALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 144.68' @ 16.45 hrs Surf.Area= 967,868 sf Storage= 1,769,529 cf

Plug-Flow detention time= 310.7 min calculated for 93.114 af (100% of inflow) Center-of-Mass det. time= 310.6 min (1,219.0 - 908.4)

Volume	Inve	rt Avail.Stor	rage Storage	e Description	
#1	133.50	0' 4,902,59	1 cf Custon	n Stage Data (Prismatic)Listed below (Recalc)	—
F lavetia			la a Otana	Quint Others	
Elevatio		Surf.Area	Inc.Store	Cum.Store	
(feet	,	(sq-ft)	(cubic-feet)	(cubic-feet)	
133.5		0	0	0	
136.0		1,481	1,851	1,851	
137.0		5,097	3,289	5,140	
138.0		49,441	27,269	32,409	
139.0		64,338	56,889	89,298	
140.0		82,023	73,181	162,479	
141.0		108,813	95,418	257,897	
142.0		168,490	138,651	396,548	
143.0		389,034	278,762	675,311	
144.0	0	681,061	535,047	1,210,358	
145.0	0 1	,103,941	892,501	2,102,859	
146.0	0 1	,388,214	1,246,077	3,348,936	
147.0	0 1	,719,095	1,553,655	4,902,591	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	133.50'	60.0" Round	d Culvert X 2.00	_
				CP, end-section conforming to fill, Ke= 0.500	
				Invert= 133.50' / 130.80' S= 0.0030 '/' Cc= 0.900	
				poncrete pipe, bends & connections, Flow Area= 19.63 sf	
#2	Device 1	134.00'		4.0" H Vert. Low Flow Orifice C= 0.600	
	Denice	10 1100	-	eir flow at low heads	
#3	Device 1	144.40'		ir/Orifice, Cv= 2.62 (C= 3.28)	
110	Dovide 1			144.40 145.40 145.40 146.10 146.10 146.60 146.60	
			147.00		
				5.00 5.00 15.00 15.00 25.00 25.00 30.00 30.00	
D.:		Mar. 00.00 (@ 40 45 hms 1		

Primary OutFlow Max=62.29 cfs @ 16.45 hrs HW=144.68' TW=0.00' (Dynamic Tailwater)

-**1=Culvert** (Passes 62.29 cfs of 428.45 cfs potential flow)

-3=Custom Weir/Orifice (Weir Controls 2.40 cfs @ 1.73 fps)

Summary for Pond 1LP: CENTRAL GREENWAY

Inflow Area = 67.880 ac, 10.83% Impervious, Inflow Depth = 3.78" for 10-year event Inflow = 242.86 cfs @ 12.13 hrs, Volume= 21.369 af 104.16 cfs @ 12.19 hrs, Volume= 104.16 cfs @ 12.19 hrs, Volume= Outflow 21.364 af, Atten= 57%, Lag= 3.7 min = Primary = 21.364 af Routed to Pond 1MP : CENTRAL GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1MP : CENTRAL GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 150.47' @ 12.49 hrs Surf.Area= 81,605 sf Storage= 216,572 cf

Plug-Flow detention time= 42.6 min calculated for 21.361 af (100% of inflow) Center-of-Mass det. time= 42.7 min (842.6 - 799.8)

Volume	Invert	Avail.Stor	age Storag	e Description	
#1	146.00'	397,45	57 cf Custor	n Stage Data (P	rismatic)Listed below (Recalc)
Elevatio		urf.Area	Inc.Store	Cum.Store	
(fee	,	(sq-ft)	(cubic-feet)	(cubic-feet)	
146.0		17,910	0	0	
147.0		30,745	24,328	24,328	
148.0		44,380	37,563	61,890	
149.0	00	58,820	51,600	113,490	
150.0	00	74,055	66,438	179,928	
151.0	00	90,090	82,073	262,000	
152.0	00	96,730	93,410	355,410	
152.4	12 1	103,495	42,047	397,457	
Device	Routing	Invert	Outlet Devic	es	
#1	Primary	146.00'	42.0" Roun	d Culvert X 2.00)
	,		L= 160.0' R	CP. end-section	conforming to fill, Ke= 0.500
					145.00' Š= 0.0063 '/' Cc= 0.900
					ds & connections, Flow Area= 9.62 sf
#2	Secondary	152.00'			Broad-Crested Rectangular Weir
	,				0.80 1.00 1.20 1.40 1.60
			· · ·		.70 2.64 2.63 2.64 2.64 2.63
			、 υ	,	
Drimony	Drimany OutElow May=101.50 of \bigcirc 12.10 bro HW=140.02' TW=148.72' (Dynamic Toilwater)				

Primary OutFlow Max=101.59 cfs @ 12.19 hrs HW=149.92' TW=148.72' (Dynamic Tailwater) -1=Culvert (Inlet Controls 101.59 cfs @ 5.28 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=146.00' TW=145.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1MP: CENTRAL GREENWAY

Inflow Area = 78.180 ac, 9.40% Impervious, Inflow Depth = 3.74" for 10-year event Inflow 136.66 cfs @ 12.18 hrs, Volume= 24.335 af = 80.21 cfs @ 12.64 hrs, Volume= 80.21 cfs @ 12.64 hrs, Volume= Outflow 24.331 af, Atten= 41%, Lag= 27.7 min = Primary = 24.331 af Routed to Pond 1IP : TACAN Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1IP : TACAN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 149.75' @ 12.64 hrs Surf.Area= 51,335 sf Storage= 137,467 cf

Plug-Flow detention time= 26.7 min calculated for 24.327 af (100% of inflow) Center-of-Mass det. time= 26.5 min (865.1 - 838.6)

Volume	Invert	Avail.Sto	rage Storage	e Description	
#1	145.00'	232,41	11 cf Custor	n Stage Data (P	rismatic)Listed below (Recalc)
⊏lauratian	C		la a Otana	Ourse Otherse	
Elevation		rf.Area	Inc.Store	Cum.Store	
(feet)		(sq-ft)	(cubic-feet)	(cubic-feet)	
145.00		9,515	0	0	
146.00)	16,810	13,163	13,163	
147.00) :	24,900	20,855	34,018	
148.00) :	33,795	29,348	63,365	
149.00) 4	43,485	38,640	102,005	
150.00) :	53,980	48,733	150,738	
151.00) :	58,400	56,190	206,928	
151.42		62,950	25,483	232,411	
Device I	Routing	Invert	Outlet Devic	es	
#1 I	Primary	145.00'	42.0" Roun	d Culvert	
	,		L= 170.0' R	CP. end-section	conforming to fill, Ke= 0.500
				,	143.00' S= 0.0118 '/' Cc= 0.900
			n= 0.013 Co	oncrete pipe, ben	ds & connections, Flow Area= 9.62 sf
#2 \$	Secondary	151.00'			Broad-Crested Rectangular Weir
	,				0.80 1.00 1.20 1.40 1.60
					70 2.64 2.63 2.64 2.64 2.63
					10 2.07 2.00 2.07 2.07 2.00
Primary OutFlow Max=80.21 cfs @ 12.64 hrs HW=149.75' TW=143.27' (Dynamic Tailwater)					

1=Culvert (Inlet Controls 80.21 cfs @ 8.34 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.00' TW=133.50' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1NP: WEST GREENWAY

Inflow Area = 25.210 ac, 0.00% Impervious, Inflow Depth = 3.56" for 10-year event Inflow = 90.75 cfs @ 12.14 hrs, Volume= 7.480 af Outflow 9.21 cfs @ 16.04 hrs, Volume= 7.445 af, Atten= 90%, Lag= 234.3 min = 9.21 cfs @ 16.04 hrs, Volume= Primary = 7.445 af Routed to Pond 10P : WEST GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1OP : WEST GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 150.10' @ 13.16 hrs Surf.Area= 79,457 sf Storage= 169,117 cf

Plug-Flow detention time= 245.8 min calculated for 7.444 af (100% of inflow) Center-of-Mass det. time= 243.3 min (1,050.7 - 807.4)

Volume	Invert	Avail.Stor	age Stora	age Description	
#1	147.00'	393,84	0 cf Cus	tom Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	n Surf	.Area	Inc.Store	e Cum.Store	
(fee	t) (sq-ft)	(cubic-feet) (cubic-feet)	
147.0	0 3	0,825	() 0	
148.0	0 4	5,600	38,213	38,213	
149.0	0 6	1,145	53,373	91,585	
150.0	0 7	7,460	69,303	3 160,888	
151.0		6,500	86,980	,	
152.0		4,385	100,443	,	
152.4	2 11	2,425	45,530) 393,840	
Device	Routing	Invert	Outlet Dev	vices	
#1	Primary	147.00'	24.0" Ro	und Culvert	
			L= 130.0'	RCP, end-section	conforming to fill, Ke= 0.500
			Inlet / Out	let Invert= 147.00' /	146.50' S= 0.0038 '/' Cc= 0.900
					ds & connections, Flow Area= 3.14 sf
#2	Secondary	152.00'		0	Broad-Crested Rectangular Weir
					0.80 1.00 1.20 1.40 1.60
			Coef. (Eng	glish) 2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=9.24 cfs @ 16.04 hrs HW=149.62' TW=149.22' (Dynamic Tailwater) -1=Culvert (Outlet Controls 9.24 cfs @ 2.95 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=147.00' TW=146.00' (Dynamic Tailwater)

Summary for Pond 10P: WEST GREENWAY

Inflow Area = 32.820 ac, 0.00% Impervious, Inflow Depth > 3.57" for 10-year event Inflow 37.39 cfs @ 12.08 hrs, Volume= 9.767 af = Outflow 12.86 cfs @ 12.08 hrs, Volume= = 9.763 af, Atten= 66%, Lag= 0.0 min 12.86 cfs @ 12.08 hrs, Volume= Primary = 9.763 af Routed to Pond 1PP : WEST GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1PP : WEST GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 149.73' @ 13.11 hrs Surf.Area= 19,081 sf Storage= 39,373 cf

Plug-Flow detention time= 41.3 min calculated for 9.763 af (100% of inflow) Center-of-Mass det. time= 40.0 min (1,031.2 - 991.2)

Volume	Invert	Avail.Stor	age Storag	e Description		
#1	146.00'	110,74	4 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)	
Elevetien	C	unf Auron	In a Starra	Curra Chara		
Elevation (feet)		rf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
146.00		3,480	<u>(cubic-icet)</u> 0	0		
140.00		3,400 6,760	5,120	5,120		
148.00		10,685	8,723	13,843		
149.00		15,260	12,973	26,815		
150.00		20,485	17,873	44,688		
151.00		28,355	24,420	69,108		
152.00		29,175	28,765	97,873		
152.42		32,120	12,872	110,744		
	Routing	Invert	Outlet Devic	ces		
#1 F	Primary	146.00'	24.0" Rour			
				,	conforming to fill, Ke= 0.500	
					145.50' S= 0.0036 '/' Cc= 0.900	
					ds & connections, Flow Area= 3.14 sf	
#2 \$	Secondary	152.00'			Broad-Crested Rectangular Weir	
					0.80 1.00 1.20 1.40 1.60	
			Coef. (Engli	sh) 2.68 2.70 2	.70 2.64 2.63 2.64 2.64 2.63	
Drimary (Primary OutFlow Max=12.34 cfs @ 12.08 brs HW=148.57' TW=147.84' (Dynamic Tailwater)					

Primary OutFlow Max=12.34 cfs @ 12.08 hrs HW=148.57' TW=147.84' (Dynamic Tailwater) -1=Culvert (Outlet Controls 12.34 cfs @ 3.97 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=146.00' TW=145.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1PP: WEST GREENWAY

Inflow Area = 51.910 ac, 0.00% Impervious, Inflow Depth = 3.60" for 10-year event Inflow 93.22 cfs @ 12.09 hrs, Volume= 15.588 af = 18.67 cfs @ 14.09 hrs, Volume= 18.67 cfs @ 14.09 hrs, Volume= Outflow 15.553 af, Atten= 80%, Lag= 120.1 min = Primary = 15.553 af Routed to Pond 1QP : WEST GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1QP : WEST GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 149.08' @ 13.12 hrs Surf.Area= 60,696 sf Storage= 147,885 cf

Plug-Flow detention time= 115.6 min calculated for 15.553 af (100% of inflow) Center-of-Mass det. time= 110.1 min (1,055.0 - 945.0)

Volume	Invert	Avail.Stor	age Storage	Description		
#1	145.00'	319,95	0 cf Custon	n Stage Data (Prismat	ic) Listed below (Recalc)	
Elevatio (fee		f.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
145.0	1	<u>(34-11)</u> 13,590	<u>(cubic-ieet)</u> 0	0		
145.0		24,145	18,868	18,868		
147.0		35,350	29,748	48,615		
148.0		47,205	41,278	89,893		
149.0		59,705	53,455	143,348		
150.0		72,855	66,280	209,628		
151.0	00 7	78,910	75,883	285,510		
151.4	2 8	35,090	34,440	319,950		
Device	Routing	Invert	Outlet Device	es		
#1	Primary	145.00'	24.0" Roun	d Culvert		
#2	Secondary	151.00'	L= 188.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 145.00' / 144.50' S= 0.0027 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf 115.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.63			
Primary OutFlow Max=18.67 cfs @ 14.09 hrs. HW=148.98', TW=146.88', (Dynamic Tailwater)						

Primary OutFlow Max=18.67 cfs @ 14.09 hrs HW=148.98' TW=146.88' (Dynamic Tailwater) -1=Culvert (Outlet Controls 18.67 cfs @ 5.94 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.00' TW=144.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1QP: WEST GREENWAY

Inflow Area = 68.840 ac, 0.00% Impervious, Inflow Depth > 3.61" for 10-year event Inflow 84.38 cfs @ 12.09 hrs, Volume= 20.718 af = 33./1 cfs @ 12.46 hrs, Volume= 33.71 cfs @ 12.46 hrs, Volume= Outflow 20.277 af, Atten= 60%, Lag= 22.7 min = Primary = 20.277 af Routed to Pond 1IP : TACAN Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1IP : TACAN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.43' @ 12.46 hrs Surf.Area= 52,531 sf Storage= 111,139 cf

Plug-Flow detention time= 85.0 min calculated for 20.277 af (98% of inflow) Center-of-Mass det. time= 58.6 min (1,050.2 - 991.6)

Volume	Invert	Avail.Stor	rage Storage	Description		
#1	144.00'	319,95	50 cf Custom	n Stage Data (Pr	ismatic)Listed below (Recalc)	
Elevatio	n Su	rf.Area	Inc.Store	Cum.Store		
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)		
144.(, 00 ·	13,590	0	0		
145.0		24,145	18,868	18,868		
146.0		35,350	29,748	48,615		
147.0		47,205	41,278	89,893		
148.0		59,705	53,455	143,348		
149.0		72,855	66,280	209,628		
150.0		78,910	75,883	285,510		
150.4	12 8	85,090	34,440	319,950		
Device	Routing	Invert	Outlet Device	es		
#1	Primary	144.00'	36.0" Round	d Culvert		
	-		L= 504.0' R	CP, end-section of	conforming to fill, Ke= 0.500	
					138.00' S= 0.0119 '/' Cc= 0.900	
					ls & connections, Flow Area= 7.07 sf	
#2	Device 1	145.00'	36.0" W x 24.0" H Vert. Orifice/Grate C= 0.600			
			Limited to weir flow at low heads			
#3	Device 1	148.00'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600			
	a 1		Limited to weir flow at low heads			
#4	Secondary	149.00'	0			
			Head (feet) 0.20 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			
			Coer. (Englis	n) 2.68 2.70 2.7	10 2.04 2.03 2.04 2.04 2.03	

Primary OutFlow Max=33.71 cfs @ 12.46 hrs HW=147.43' TW=143.04' (Dynamic Tailwater) -1=Culvert (Passes 33.71 cfs of 47.23 cfs potential flow)

2=Orifice/Grate (Orifice Controls 33.71 cfs @ 5.62 fps) **3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=144.00' TW=133.50' (Dynamic Tailwater) 4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2AP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 223.810 ac, 24.58% Impervious, Inflow Depth = 3.15" for 10-year event Inflow 189.72 cfs @ 13.29 hrs, Volume= 58.801 af = 157.60 cfs @ 13.86 hrs, Volume= Outflow = 58.801 af, Atten= 17%, Lag= 34.0 min 77.34 cfs @ 13.86 hrs, Volume= 28.487 af Primary = Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH Secondary = 80.26 cfs @ 13.86 hrs, Volume= 30.314 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.51' @ 13.86 hrs Surf.Area= 167,968 sf Storage= 199,436 cf

Plug-Flow detention time= 10.1 min calculated for 58.793 af (100% of inflow) Center-of-Mass det. time= 10.1 min (916.5 - 906.4)

Volume	Invert	Avail.Sto	rage Storag	e Description		
#1	141.70'	1,815,20	01 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio	n Su	rf.Area	Inc.Store	Cum.Store		
(fee	t)	(sq-ft)	(cubic-feet)	(cubic-feet)		
141.7	0	0	0	0		
144.0	0	6,640	7,636	7,636		
145.0	0	57,230	31,935	39,571		
146.0		17,540	87,385	126,956		
147.0		16,860	167,200	294,156		
148.0		59,360	288,110	582,266		
149.0		40,140	499,750	1,082,016		
150.0	0 8	26,230	733,185	1,815,201		
Device	Routing	Invert	Outlet Devic	ces		
#1	Primary	141.70'	48.0" Rour	nd Culvert		
#2	Secondary	141.70'	L= 126.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 141.70' / 141.60' S= 0.0008 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf 48.0" Round Culvert L= 126.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 141.70' / 141.50' S= 0.0016 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf			
Drimony OutFlow May=77.24 of @ 12.96 bro LIW=146.51! TW=142.90! (Dynamic Tailyystar)						

Primary OutFlow Max=77.34 cfs @ 13.86 hrs HW=146.51' TW=143.80' (Dynamic Tailwater) -1=Culvert (Barrel Controls 77.34 cfs @ 6.49 fps)

Secondary OutFlow Max=80.26 cfs @ 13.86 hrs HW=146.51' TW=143.80' (Dynamic Tailwater) 2=Culvert (Barrel Controls 80.26 cfs @ 6.73 fps)

Summary for Pond 2BP: EXISTING BASIN

Inflow Area = 40.900 ac, 81.30% Impervious, Inflow Depth = 4.41" for 10-year event Inflow 196.19 cfs @ 12.08 hrs, Volume= 15.019 af = 30.75 cfs @ 12.56 hrs, Volume= 30.75 cfs @ 12.56 hrs, Volume= Outflow 14.696 af, Atten= 84%, Lag= 28.6 min = Primary = 14.696 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 149.13' @ 12.56 hrs Surf.Area= 81,286 sf Storage= 266,655 cf

Plug-Flow detention time= 129.2 min calculated for 14.696 af (98% of inflow) Center-of-Mass det. time= 115.8 min (888.7 - 772.9)

Volume	Invert	Avail.Sto	rage St	orage [Description	
#1	143.00'	482,85	55 cf C	ustom	Stage Data (Pi	rismatic)Listed below (Recalc)
Elevatio		rf.Area	Inc.St	oro	Cum.Store	
fee		(sq-ft)	(cubic-fe		(cubic-feet)	
143.0	,	<u>(34-11)</u> 10,920		0		
		,	40-	-	0	
144.0		16,580	13,7		13,750	
145.0		28,700	22,6		36,390	
146.0		39,560	34,		70,520	
147.0		53,515	46,5		117,058	
148.0	0	71,930	62,7	723	179,780	
149.0	0	80,230	76,0	080	255,860	
150.0	0	88,130	84,1	80	340,040	
151.0	0	95,000	91,5	565	431,605	
151.5	50 1	10,000	51,2	250	482,855	
Device	Routing	Invert	Outlet I	Devices		
#1	Primary	144.00'	24.0" I	Round	Culvert	
	-		L= 79.0	' RCP	, end-section c	onforming to fill, Ke= 0.500
			Inlet / C	outlet In	vert= 144.00' /	143.21' S= 0.0100 '/' Cc= 0.900
			n= 0.01	3. Flov	v Area= 3.14 sf	
#2	Secondary	150.00'		,		road-Crested Rectangular Weir
	cecentuary	100100		-		0.80 1.00 1.20 1.40 1.60
						70 2.64 2.63 2.64 2.64 2.63
				_ngnan)	2.00 2.10 2.	10 2.04 2.00 2.04 2.04 2.00
	- ·-· ··					

Primary OutFlow Max=30.75 cfs @ 12.56 hrs HW=149.13' TW=144.93' (Dynamic Tailwater) -1=Culvert (Inlet Controls 30.75 cfs @ 9.79 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=141.70' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2CP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Area =		12.710 ac, 9	94.57% Impervious, Inflow	Depth = 4.63" for 10-year event	
Inflow	=	62.44 cfs @	12.08 hrs, Volume=	4.906 af	
Outflow	=	16.66 cfs @	12.43 hrs, Volume=	2.567 af, Atten= 73%, Lag= 21.1 min	
Primary	=	16.66 cfs @	12.43 hrs, Volume=	2.567 af	
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH					

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.75' @ 12.43 hrs Surf.Area= 30,311 sf Storage= 123,632 cf

Plug-Flow detention time= 269.8 min calculated for 2.567 af (52% of inflow) Center-of-Mass det. time= 151.9 min (913.9 - 761.9)

Volume	Inve	rt Avail.Sto	rage Storage	e Description		
#1	138.0	0' 240,90	05 cf Custon	5 cf Custom Stage Data (Prismatic)Listed below (Recalc)		
Flovetic		Curf Aree	Inc Store	Cum Store		
Elevatio		Surf.Area	Inc.Store	Cum.Store		
(fee	/	(sq-ft)	(cubic-feet)	(cubic-feet)		
138.0		730	0	0		
139.0	00	1,695	1,213	1,213		
140.0	00	3,150	2,423	3,635		
141.(00	6,840	4,995	8,630		
142.0	00	12,885	9,863	18,493		
143.0	00	17,405	15,145	33,638		
144.(00	21,190	19,298	52,935		
145.0	00	24,465	22,828	75,763		
146.00		27,780	26,123	101,885		
147.00		31,160	29,470	131,355		
148.0	00	34,590	32,875	164,230		
149.0	00	38,295	36,443	200,673		
150.0	00	42,170	40,233	240,905		
		,	,	,		
Device	Routing	Invert	Outlet Device	es		
#1	Primary	142.30'	30.0" Roun	d Culvert		
	2		L= 65.0' RC	P, end-section c	onforming to fill, Ke= 0.500	
			Inlet / Outlet	Invert= 142.30' /	141.50' S= 0.0123 '/' Cc= 0.900	
			n= 0.013, Fl	ow Area= 4.91 sf		
#2	Device 1	146.00'	,	" Horiz. Orifice/		
				eir flow at low hea		

Primary OutFlow Max=16.66 cfs @ 12.43 hrs HW=146.75' TW=141.46' (Dynamic Tailwater) **1=Culvert** (Passes 16.66 cfs of 42.27 cfs potential flow)

2=Orifice/Grate (Orifice Controls 16.66 cfs @ 4.17 fps)

Summary for Pond 2DP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Area =	2.770 ac, 7	5.81% Impervious, Inflow	/ Depth = 3.74" for 10-year event		
Inflow =	10.48 cfs @	12.08 hrs, Volume=	0.863 af		
Outflow =	0.00 cfs @	0.00 hrs, Volume=	0.000 af, Atten= 100%, Lag= 0.0 min	۱	
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af		
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH					
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af		
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH					

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.18' @ 24.34 hrs Surf.Area= 10,518 sf Storage= 37,608 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow) Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Sto	rage Storage	ge Storage Description			
#1	139.00'	89,68	83 cf Custom Stage Data (Prismatic)Listed below (Reca		r ismatic) Listed below (Recalc)		
- 1	0	C A					
Elevatio		urf.Area	Inc.Store	Cum.Store			
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)			
139.0		105	0	0			
140.0		1,200	653	653			
141.0		2,565	1,883	2,535			
142.0		4,380	3,473	6,008			
143.0		6,200	5,290	11,298			
144.(7,440	6,820	18,118			
145.0		8,800	8,120	26,238			
146.0		10,240	9,520	35,758			
147.0		11,800	11,020	46,778			
148.0		13,425	12,613	59,390			
149.0		15,130	14,278	73,668			
150.0	00	16,900	16,015	89,683			
Device	Routing	Invert	Outlet Devices	S			
#1	Primary	142.30'	24.0" Round	Culvert			
	, ,				onforming to fill, Ke= 0.500		
				Inlet / Outlet Invert= 142.30' / 141.70' S= 0.0118 '/' Cc= 0.900			
				w Area= 3.14 sf			
#2	Device 1	146.20'			Grate C= 0.600		
			Limited to wei	r flow at low hea	ads		
#3	Secondary	149.50'	10.0' long x 2	20.0' breadth B	road-Crested Rectangular Weir		
	,			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60			
					70 2.64 2.63 2.64 2.64 2.63		
				-			

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' TW=138.00' (Dynamic Tailwater) 1=Culvert (Controls 0.00 cfs) 2=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' TW=138.00' (Dynamic Tailwater) -3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2EP: FRENCH'S STREAM WEST BRANCH

Per site visit outlet consists of one 60-inch culvert.

Inflow Area = 401.120 ac, 22.54% Impervious, Inflow Depth > 2.69" for 10-year event Inflow = 183.10 cfs @ 13.65 hrs, Volume= 90.044 af Outflow = 173.89 cfs @ 14.15 hrs, Volume= 90.044 af, Atten= 5%, Lag= 30.0 min Primary = 173.89 cfs @ 14.15 hrs, Volume= 90.044 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 143.88' @ 14.15 hrs Surf.Area= 57,100 sf Storage= 132,926 cf

Plug-Flow detention time= 8.0 min calculated for 90.044 af (100% of inflow) Center-of-Mass det. time= 8.0 min (1,009.3 - 1,001.3)

Volume	Inve	ert Avail.Sto	rage	Storage	Description	
#1	138.0	0' 524,16	60 cf	Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	on	Surf.Area	Inc.	Store	Cum.Store	
(fee	et)	(sq-ft)	(cubic	-feet)	(cubic-feet)	
138.0	00	0		0	0	
140.0	00	9,600		9,600	9,600	
141.0	00	13,135	1	1,368	20,968	
142.0	00	35,665	2	4,400	45,368	
143.0	00	47,280	4	1,473	86,840	
144.0	00	58,400	5	2,840	139,680	
145.0	00	71,585	6	4,993	204,673	
146.0	00	85,230	7	8,408	283,080	
147.0	00	106,515	9	5,873	378,953	
148.0	00	183,900	14	5,208	524,160	
Device	Routing	Invert	Outle	et Devices	S	
#1	Primary	138.00'	60.0'	' Round	Culvert	
			L= 38	30.0' RC	P, end-section	conforming to fill, Ke= 0.500
			Inlet	/ Outlet Ir	nvert= 138.00' /	135.70' S= 0.0061 '/' Cc= 0.900
			n= 0.	013 Con	icrete pipe, ben	ds & connections, Flow Area= 19.63 sf
Drimary		May-173 80 of	6 @ 1/	1 15 hre	HIN/-1/3 88' T	W-131 15' (Dynamic Tailwater)

Primary OutFlow Max=173.89 cfs @ 14.15 hrs HW=143.88' TW=131.45' (Dynamic Tailwater)

Summary for Pond 2FP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 872.630 ac, 11.83% Impervious, Inflow Depth > 2.76" for 10-year event Inflow = 266.61 cfs @ 13.55 hrs, Volume= 200.438 af Outflow 266.28 cfs @ 13.73 hrs, Volume= = 200.400 af, Atten= 0%, Lag= 11.0 min 107.75 cfs @ 13.73 hrs, Volume= Primary = 65.702 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Secondary = 158.54 cfs @ 13.73 hrs, Volume= 134.697 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 131.47' @ 13.73 hrs Surf.Area= 38,299 sf Storage= 70,508 cf

Plug-Flow detention time= 5.1 min calculated for 200.400 af (100% of inflow) Center-of-Mass det. time= 4.5 min (1,104.3 - 1,099.7)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	125.90'	665,27	78 cf Custom	Stage Data (Pr	ismatic)Listed below (Recalc)
Flovetic		f Aree	Inc Store	Cum Store	
Elevatio		f.Area	Inc.Store	Cum.Store	
(fee	1	(sq-ft)	(cubic-feet)	(cubic-feet)	
	125.90 0		0	0	
130.0		17,650	36,182	36,182	
131.0		22,340	19,995	56,177	
132.0		56,105	39,223	95,400	
133.0		76,835	66,470	161,870	
134.0		93,610	85,223	247,092	
135.0		11,175	102,393	349,485	
136.0		53,700	132,438	481,922	
137.0)0 2 ⁻	13,010	183,355	665,278	
Device	Routing	Invert	Outlet Devices	S	
#1	Primary	127.60'	60.0" Round	Culvert	
	,		L= 34.0' RCF	P, end-section co	onforming to fill, Ke= 0.500
			Inlet / Outlet Ir	nvert= 126.60' / *	127.60' S= -0.0294 '/' Cc= 0.900
			n= 0.013, Flo	w Area= 19.63 s	f
#2	Secondary	126.70'	72.0" Round	Culvert	
	-		L= 34.0' RCF	P, end-section co	onforming to fill, Ke= 0.500
			Inlet / Outlet Ir	1/ 'vert= 125.90	126.70' S= -0.0235 '/' Cc= 0.900
			n= 0.013, Flo	w Area= 28.27 s	f
#3	Tertiary	135.50'	10.0' long x 2	20.0' breadth Sp	oillway over Path
	2		Head (feet) 0.	.20 0.40 0.60 0).80 1.00 1.20 1.40 1.60
					0 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=107.74 cfs @ 13.73 hrs HW=131.47' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 107.74 cfs @ 7.01 fps)

Secondary OutFlow Max=158.54 cfs @ 13.73 hrs HW=131.47' TW=0.00' (Dynamic Tailwater) 2=Culvert (Barrel Controls 158.54 cfs @ 7.54 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=125.90' TW=0.00' (Dynamic Tailwater) -3=Spillway over Path (Controls 0.00 cfs)

Summary for Pond 2IP: PROPOSED PHASE 1 BASIN

Inflow Area = 112.800 ac, 18.86% Impervious, Inflow Depth > 2.98" for 10-year event Inflow = 127.44 cfs @ 12.14 hrs, Volume= 27.977 af 36.28 cfs @ 15.85 hrs, Volume= 36.28 cfs @ 15.85 hrs, Volume= Outflow = 22.251 af, Atten= 72%, Lag= 222.5 min Primary = 22.251 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 144.31' @ 15.32 hrs Surf.Area= 151,040 sf Storage= 708,876 cf

Plug-Flow detention time= 435.2 min calculated for 22.248 af (80% of inflow) Center-of-Mass det. time= 335.0 min (1,252.5 - 917.6)

Volume	Invert	Avail.Stor	rage Stor	age Description	
#1	139.00'	1,312,74	18 cf Cus	tom Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	on Surf.A	rea	Inc.Store	e Cum.Store	
(fee		(sq-ft)		-	
139.0			cubic-feet <u>)</u> ($) \qquad 0$	
140.0	,		119,60		
141.0	0 129,	270	126,03	5 245,635	
142.0			132,530	,	
143.0	,		139,07		
144.0)		145,67		
145.0	,		152,33	,	
146.0	,		159,040 165,810		
147.0	,	169,220 176,075		, ,	
148.0	JU 170,	075	172,648	3 1,312,748	
Device	Routing	Invert	Outlet De	vices	
#1	Primary	139.00'	36.0" Ro	und Culvert	
					conforming to fill, Ke= 0.500
					137.00' S= 0.0200 '/' Cc= 0.900
				Flow Area= 7.07 st	
#2	Device 1	141.00'			ice/Grate C= 0.600
#3	Device 1	142.50'		weir flow at low hea	ads i ce/Grate C= 0.600
#3	Device I	142.50		weir flow at low heat	
#4	Device 1	144.00'		6.0" Horiz. Orifice/	
<i>1</i> 7	Device 1	144.00		weir flow at low hea	
#5	Secondary	146.00'			Broad-Crested Rectangular Weir
	2		•		0.80 1.00 1.20 1.40 1.60
			Coef. (En	glish) 2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=36.36 cfs @ 15.85 hrs HW=144.25' TW=142.63' (Dynamic Tailwater) **1=Culvert** (Passes 36.36 cfs of 43.40 cfs potential flow)

2=Orifice/Grate (Orifice Controls 15.35 cfs @ 6.14 fps)

3=Orifice/Grate (Orifice Controls 16.01 cfs @ 5.34 fps)

-4=Orifice/Grate (Weir Controls 4.99 cfs @ 1.64 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' TW=138.00' (Dynamic Tailwater) 5=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2JP: PROPOSED BASIN

Inflow Area = 15.720 ac, 0.00% Impervious, Inflow Depth = 3.66" for 10-year event Inflow 66.19 cfs @ 12.09 hrs, Volume= 4.797 af = 18.29 cfs @ 12.44 hrs, Volume= 18.29 cfs @ 12.44 hrs, Volume= Outflow 4.451 af, Atten= 72%, Lag= 21.3 min = Primary = 4.451 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 163.62'@ 12.44 hrs Surf.Area= 34,830 sf Storage= 84,092 cf

Plug-Flow detention time= 130.9 min calculated for 4.451 af (93% of inflow) Center-of-Mass det. time= 93.5 min (894.0 - 800.5)

Volume	Invert	Avail.Sto	rage Storage	e Description	
#1	161.00'	214,37	73 cf Custon	m Stage Data (Prismatic)Listed below (Recalc)	
Elevatio	n Sur	f.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
· · · · ·	161.00 29,530		0	0	
162.0		1,505	30,518	30,518	
163.0		3,540	32,523	63,040	
164.0		5,635	34,588	97,628	
165.0		57,790	36,713	134,340	
166.0		0,000	38,895	173,235	
167.0		2,275	41,138	214,373	
Device	Routing	Invert	Outlet Device	ces	
#1	Primary	161.00'	24.0" Roun	nd Culvert	
	-		L= 53.0' RC	CP, end-section conforming to fill, Ke= 0.500	
			Inlet / Outlet	Invert= 161.00' / 155.00' S= 0.1132 '/' Cc= 0.900	
				oncrete pipe, bends & connections, Flow Area= 3.14 sf	
#2	Device 1	161.50'	36.0" W x 12	2.0" H Vert. Orifice/Grate C= 0.600	
				eir flow at low heads	
#3	Device 1	164.50'		"Horiz. Orifice/Grate C= 0.600	
	. .			eir flow at low heads	
#4	Secondary	165.50'		x 20.0' breadth Broad-Crested Rectangular Weir	
				0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60	
			Coet. (Englis	sh) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63	
Primary	OutFlow Ma	x=18 29 cfs	@ 12 44 hrs	HW=163.62' TW=144.73' (Dynamic Tailwater)	

Primary OutFlow Max=18.29 cfs @ 12.44 hrs HW=163.62' TW=144.73' (Dynamic Tailwater)

2=Orifice/Grate (Orifice Controls 18.29 cfs @ 6.10 fps)

3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=161.00' TW=141.70' (Dynamic Tailwater) 4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2KP: PROPOSED BASIN

Inflow Area = 21.000 ac, 0.00% Impervious, Inflow Depth = 3.36" for 10-year event Inflow 82.14 cfs @ 12.09 hrs, Volume= 5.884 af = 10.01 cfs @ 12.73 hrs, Volume= 10.01 cfs @ 12.73 hrs, Volume= Outflow = 4.879 af, Atten= 88%, Lag= 38.3 min Primary = 4.879 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 150.92' @ 12.73 hrs Surf.Area= 51,905 sf Storage= 135,380 cf

Plug-Flow detention time= 247.9 min calculated for 4.879 af (83% of inflow) Center-of-Mass det. time= 178.2 min (988.0 - 809.7)

Volume	Invert	Avail.Stor	rage Storage	Description			
#1	148.00'	249,35	50 cf Custom	n Stage Data (Prismatic)Listed below (Recalc)			
Elevatio	n Su	rf.Area	Inc.Store	Cum.Store			
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)			
	148.00 42,500		0	0			
149.0		44,800	43,650	43,650			
150.0		47,300	46,050	89,700			
151.0		52,300	49,800	139,500			
152.0		54,900	53,600	193,100			
153.0	00	57,600	56,250	249,350			
Device	Routing	Invert	Outlet Device	9S			
#1	Primary	148.00'	36.0" Round	d Culvert			
	-		L= 100.0' RC	CP, end-section conforming to fill, Ke= 0.500			
			Inlet / Outlet Invert= 148.00' / 146.00' S= 0.0200 '/' Cc= 0.900				
				ncrete pipe, bends & connections, Flow Area= 7.07 sf			
#2	Device 1	149.00'		0" H Vert. Orifice/Grate C= 0.600			
#2	Davias 1	150 751		ir flow at low heads			
#3	Device 1	150.75'	•••••	0" H Vert. Orifice/Grate C= 0.600 ir flow at low heads			
#4	Device 1	152.00'		Horiz. Orifice/Grate C= 0.600			
<i>1</i> 7	Device 1	102.00		ir flow at low heads			
#5	Secondary	152.50'		20.0' breadth Broad-Crested Rectangular Weir			
			•	0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60			
				h) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63			

Primary OutFlow Max=10.01 cfs @ 12.73 hrs HW=150.92' TW=130.90' (Dynamic Tailwater) -1=Culvert (Passes 10.01 cfs of 40.83 cfs potential flow)

-2=Orifice/Grate (Orifice Controls 9.33 cfs @ 6.22 fps)

-3=Orifice/Grate (Orifice Controls 0.68 cfs @ 1.33 fps)

-4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=148.00' TW=125.90' (Dynamic Tailwater) **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2LP: PROPOSED BASIN

Inflow Area = 10.690 ac, 0.00% Impervious, Inflow Depth = 3.76" for 10-year event Inflow 46.03 cfs @ 12.09 hrs, Volume= 3.353 af = 17.21 cfs @ 12.34 hrs, Volume= Outflow = 3.127 af, Atten= 63%, Lag= 15.0 min Primary = 17.21 cfs @ 12.34 hrs, Volume= 3.127 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 157.32' @ 12.34 hrs Surf.Area= 23,879 sf Storage= 50,005 cf

Plug-Flow detention time= 107.0 min calculated for 3.127 af (93% of inflow) Center-of-Mass det. time= 71.4 min (868.6 - 797.2)

Volume	Invert	Avail.Stor	age Storage [Description	
#1	155.00'	121,49	0 cf Custom	Stage Data (Prismatic)	Listed below (Recalc)
Elevatio	n Si	urf.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
155.0	1	19,190	0		
156.0	-	21,160	20,175	20,175	
157.0	0	23,200	22,180	42,355	
158.0	0	25,290	24,245	66,600	
159.0		27,430	26,360	92,960	
160.0	0	29,630	28,530	121,490	
Device	Routing	Invert	Outlet Devices		
#1	Primary	155.00'	24.0" Round	Culvert	
	2		L= 50.0' RCP	, end-section conformin	g to fill, Ke= 0.500
			Inlet / Outlet In	vert= 155.00' / 154.50'	S= 0.0100 '/' Cc= 0.900
			,	/ Area= 3.14 sf	
#2	Device 1	155.50'	AA AU \\. 40 A		
		155.50		" H Vert. Orifice/Grate	e C= 0.600
			Limited to weir	flow at low heads	
#3	Device 1	157.00'	Limited to weir 36.0" W x 8.0"	flow at low heads H Vert. Orifice/Grate	
		157.00'	Limited to weir 36.0" W x 8.0" Limited to weir	flow at low heads H Vert. Orifice/Grate flow at low heads	C= 0.600
#3 #4	Device 1 Device 1		Limited to weir 36.0" W x 8.0" Limited to weir 24.0" x 24.0" H	flow at low heads H Vert. Orifice/Grate flow at low heads Ioriz. Orifice/Grate	C= 0.600
#4	Device 1	157.00' 158.50'	Limited to weir 36.0" W x 8.0" Limited to weir 24.0" x 24.0" H Limited to weir	flow at low heads H Vert. Orifice/Grate flow at low heads loriz. Orifice/Grate C flow at low heads	C= 0.600 = 0.600
		157.00'	Limited to weir 36.0" W x 8.0" Limited to weir 24.0" x 24.0" H Limited to weir 10.0' long x 3	flow at low heads H Vert. Orifice/Grate flow at low heads Ioriz. Orifice/Grate Ca flow at low heads 0.0' breadth Broad-Cre	C= 0.600 = 0.600 ested Rectangular Weir
#4	Device 1	157.00' 158.50'	Limited to weir 36.0" W x 8.0" Limited to weir 24.0" x 24.0" H Limited to weir 10.0' long x 3 Head (feet) 0.2	flow at low heads H Vert. Orifice/Grate flow at low heads loriz. Orifice/Grate C flow at low heads	C= 0.600 = 0.600 ested Rectangular Weir 0 1.20 1.40 1.60

Primary OutFlow Max=17.21 cfs @ 12.34 hrs HW=157.32' TW=130.20' (Dynamic Tailwater) -1=Culvert (Barrel Controls 17.21 cfs @ 5.92 fps)

2=Orifice/Grate (Passes < 16.53 cfs potential flow)

-3=Orifice/Grate (Passes < 1.78 cfs potential flow)

-4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=155.00' TW=125.90' (Dynamic Tailwater) **5=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Pond 2MP: PROPOSED BASIN

Inflow Area = 19.350 ac, 0.00% Impervious, Inflow Depth = 3.76" for 10-year event Inflow 83.32 cfs @ 12.09 hrs, Volume= 6.069 af = 54.02 cfs @ 12.18 hrs, Volume= 54.02 cfs @ 12.18 hrs, Volume= Outflow = 5.900 af, Atten= 35%, Lag= 5.5 min Primary = 5.900 af Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 180.70' @ 12.18 hrs Surf.Area= 19,786 sf Storage= 62,372 cf

Plug-Flow detention time= 59.9 min calculated for 5.899 af (97% of inflow) Center-of-Mass det. time= 43.5 min (840.7 - 797.2)

Volume	Invert	Avail.Stor	rage Storage	Description
#1	177.00'	89,40	00 cf Custom	n Stage Data (Prismatic)Listed below
Elevatio	on Su	ırf.Area	Inc.Store	Cum.Store
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)
177.0	177.00 14,000		0	0
178.0	00	15,500	14,750	14,750
179.0	00	17,000	16,250	31,000
180.0	00	18,600	17,800	48,800
181.0	-	20,300	19,450	68,250
182.0	00	22,000	21,150	89,400
Device	Routing	Invert	Outlet Device	es
#1	Primary	177.00'	42.0" Round	d Culvert
				P, end-section conforming to fill, Ke= 0.500
				Invert= 177.00' / 176.00' S= 0.0200 '/' Cc= 0.900
		(- 0)	,	ow Area= 9.62 sf
#2	Device 1	177.50'		0" H Vert. Orifice/Grate C= 0.600
	During 4			eir flow at low heads
#3	Device 1	178.50'		2.0" H Vert. Orifice/Grate C= 0.600
#4	Device 1	180.00'		eir flow at low heads ' Horiz, Orifice/Grate C= 0.600
#4	Device I	100.00		First flow at low heads
#5	Secondary	181.50'		20.0' breadth Broad-Crested Rectangular Weir
π0	Coondary	101.00		0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
				h) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
			e son (Englio	,

Primary OutFlow Max=53.99 cfs @ 12.18 hrs HW=180.70' TW=151.92' (Dynamic Tailwater) -1=Culvert (Passes 53.99 cfs of 64.64 cfs potential flow)

2=Orifice/Grate (Orifice Controls 12.40 cfs @ 8.26 fps)

-3=Orifice/Grate (Orifice Controls 18.75 cfs @ 6.25 fps)

-4=Orifice/Grate (Weir Controls 22.85 cfs @ 2.73 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=177.00' TW=150.00' (Dynamic Tailwater) **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 3AP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 61.820 ac, 8.41% Impervious, Inflow Depth = 2.80" for 10-year event Inflow 69.64 cfs @ 13.04 hrs, Volume= 14.408 af = Outflow 61.56 cfs @ 13.30 hrs, Volume= 14.402 af, Atten= 12%, Lag= 15.3 min = 60.25 cfs @ 13.30 hrs, Volume= Primary = 14.376 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH Secondary = 1.31 cfs @ 13.30 hrs, Volume= 0.027 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.83' @ 13.30 hrs Surf.Area= 28,525 sf Storage= 31,582 cf

Plug-Flow detention time= 5.1 min calculated for 14.402 af (100% of inflow) Center-of-Mass det. time= 4.6 min (894.7 - 890.1)

Volume	Inver	t Avail.Sto	rage St	torage De	escription	
#1	141.50	141.50' 125,6		3 cf Custom Stage Data (Prismatic)Listed below (Recalc)		rismatic)Listed below (Recalc)
Elevatio		Surf.Area (sq-ft)		ore eet)	Cum.Store (cubic-feet)	
141.5	50	0		0	0	
145.0	00	3,630	6,3	353	6,353	
146.0	00	12,565	8,0	098	14,450	
147.0	00	31,705		135	36,585	
148.0	00	146,330		89,018 12		
Device	Routing	Invert	Outlet I	Devices		
#1	Primary	142.20'	36.0"	Round C	ulvert	
#2	,		Inlet / 0 n= 0.01 10.0' lo Head (1	Outlet Inve 3 Concre ong x 15. eet) 0.20	ert= 141.50' <i> </i> ete pipe, ben .0' breadth S) 0.40 0.60	onforming to fill, Ke= 0.500 142.20' S= -0.0167 '/' Cc= 0.900 ds & connections, Flow Area= 7.07 sf pillway over Path 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=60.25 cfs @ 13.30 hrs HW=146.83' TW=134.60' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 60.25 cfs @ 8.52 fps)

Secondary OutFlow Max=1.31 cfs @ 13.30 hrs HW=146.83' TW=134.60' (Dynamic Tailwater) **2=Spillway over Path** (Weir Controls 1.31 cfs @ 0.98 fps)

Summary for Pond 3BP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 193.720 ac, 8.56% Impervious, Inflow Depth = 2.67" for 10-year event Inflow 169.73 cfs @ 13.43 hrs, Volume= 43.180 af = Outflow 153.44 cfs @ 13.77 hrs, Volume= 43.180 af, Atten= 10%, Lag= 20.5 min = 152.02 cfs @ 13.77 hrs, Volume= Primary = 43.159 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH Secondary = 1.42 cfs @ 13.77 hrs, Volume= 0.021 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 135.16' @ 13.77 hrs Surf.Area= 58,726 sf Storage= 164,766 cf

Plug-Flow detention time= 12.1 min calculated for 43.174 af (100% of inflow) Center-of-Mass det. time= 12.1 min (927.1 - 914.9)

Volume	Inve	rt Avail.Sto	orage Storage	Description						
#1	129.2	0' 1,254,5	93 cf Custom	Stage Data (Pr	rismatic)Listed below (Recalc)					
_										
Elevatio		Surf.Area	Inc.Store	Cum.Store						
(fee	,	(sq-ft)	(cubic-feet)	(cubic-feet)						
129.2	-	0	0	0						
130.0		2,770	1,108	1,108						
131.0	00	10,320	6,545	7,653						
132.0		30,890	20,605	28,258						
133.0		37,250	34,070	62,328						
134.0	00	45,960	41,605	103,933						
135.0	00	56,730	51,345	155,278						
136.0	00	68,875	62,803	218,081						
137.0	00	83,650	76,263	294,343						
138.0	00	105,010	94,330	388,673						
139.0	00	125,940	115,475	504,148						
140.0	00	161,860	143,900	648,048						
141.0	00	187,685	174,773	822,821						
142.0	00	214,700	201,193	1,024,013						
143.0	00	246,460	230,580	1,254,593						
Device	Routing	Invert	Outlet Devices							
#1	Primary	129.20'	60.0" Round							
					onforming to fill, Ke= 0.500					
					128.90' S= 0.0150 '/' Cc= 0.900					
					Flow Area= 19.63 sf					
#2	Seconda	ry 135.10'			pillway over Path					
			Head (feet) 0	.20 0.40 0.60	0.80 1.00 1.20 1.40 1.60					
			Coef. (English	n) 2.49 2.56 2. ⁻	70 2.69 2.68 2.69 2.67 2.64					
Duinu	0.451	Mar. 450.04								
Primarv		Primary OutFlow Max=152.01 cfs @ 13.77 hrs HW=135.16' TW=0.00' (Dvnamic Tailwater)								

Primary OutFlow Max=152.01 cfs @ 13.77 hrs HW=135.16' TW=0.00' (Dynamic Tailwater) -1=Culvert (Barrel Controls 152.01 cfs @ 8.20 fps)

Secondary OutFlow Max=1.42 cfs @ 13.77 hrs HW=135.16' TW=0.00' (Dynamic Tailwater) 2=Spillway over Path (Weir Controls 1.42 cfs @ 0.63 fps)

Summary for Subcatchment 1A:

Runoff = 4.56 cfs @ 12.08 hrs, Volume= 0.347 af, Depth= 5.27" Routed to Pond 1AP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription				
*	0.	710	98	Pave	Pavement				
	0.	080	39	>75%	% Grass co	over, Good	, HSG A		
	0.790 92 Weighted Average								
	0.080 10.13% Pervious Area								
	0.	710		89.8	7% Imperv	vious Area			
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
	6.0						Direct Entry,		

Summary for Subcatchment 1B:

Runoff = 5.13 cfs @ 12.08 hrs, Volume= 0.386 af, Depth= 5.15" Routed to Pond 1BP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription					
*	0.	800	98	Pave	Pavement					
	0.	100	39	>75%	% Grass co	over, Good	, HSG A			
	0.900 91 Weighted Average									
	0.	100		11.1	1% Pervio	us Area				
	0.	800		88.89	9% Imperv	vious Area				
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	6.0						Direct Entry,			

Summary for Subcatchment 1C:

Assumed pipe channel has slope 0.005 since no data given

Runoff = 68.81 cfs @ 12.61 hrs, Volume= 10.770 af, Depth= 4.82" Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 25-year Rainfall=6.20"

	Area (ac) C	N Desc	cription		
*	2.	790 8	8 Prop	osed Dev	elopment A	rea
*	16.9			ement	I	
*			8 Root	s		
*		750 10		n Water		
	4.2				over, Good	, HSG A
	26.8			hted Aver		
		060		2% Pervio		
	19.7				/ious Area	
				• /•		
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•
	23.4	100	0.0021	0.07		Sheet Flow,
						Grass: Short n= 0.150 P2= 3.40"
	4.4	94	0.0026	0.36		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	7.7	252	0.0061	0.55		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	0.1	14	0.0701	1.85		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	2.9	154	0.0155	0.87		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	1.4	438	0.0050	5.09	16.00	
						24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'
						n= 0.013 Concrete pipe, bends & connections
	0.8	288	0.0050	5.91	29.00	
						30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63'
						n= 0.013 Concrete pipe, bends & connections
	0.7	295	0.0050	6.67	47.16	Pipe Channel,
						36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75'
						n= 0.013 Concrete pipe, bends & connections
	2.9	1,299	0.0050	7.39	71.14	Pipe Channel,
						42.0" Round Area= 9.6 sf Perim= 11.0' r= 0.88'
						n= 0.013 Concrete pipe, bends & connections
	0.2	93	0.0050	8.08	101.57	
						48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00'
_						n= 0.013 Concrete pipe, bends & connections
	44 5	3 027	Total			

44.5 3,027 Total

Summary for Subcatchment 1D:

Runoff = 27.98 cfs @ 13.00 hrs, Volume= Routed to Pond 1DP : UPSTREAM DOGLEG 5.881 af, Depth= 2.41"

	Area	(ac)	CN	Desc	cription		
*	5.	040	88	Prop	osed Dev	elopment A	rea
	5.	200	30	Woo	ds, Good,		
	4.	720	70	Woo	ds, Good,	HSG C	
	5.	970	77		ds, Good,		
	4.	070	39			over, Good	
	4.	100	74			over, Good	
	0.	220	80	>75%	% Grass co	over, Good	, HSG D
29.320 64 Weighted Average							
	29.	320		100.	00% Pervi	ous Area	
	_						
	Tc	Lengt		Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	33.5	100) ()	.0244	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	38.7	1,640) ()	.0200	0.71		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	72.2	1,740) Т	otal			

Summary for Subcatchment 1E:

Runoff = 535.14 cfs @ 12.09 hrs, Volume= 38.416 af, Depth= 4.17" Routed to Pond 1IP : TACAN

	Area	(ac)	CN	Dese	Description								
*	63.	870	88	3 Proposed Development Area									
	44.	030	77	Woo	ds, Good,	HSG D							
	2.	610	39	>759	% Grass co	over, Good	I, HSG A						
	110.	510	82	Weig	ghted Aver	age							
	110.510 100.00%				00% Pervi	ous Area							
	Tc (min)	Leng (fee	· .	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description						
	6.0						Direct Entry,						

Summary for Subcatchment 1F:

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Runoff 51.41 cfs @ 12.09 hrs, Volume= 3.732 af, Depth= 4.49" = Routed to Pond 1FP : EXISTING PARKWAY BASIN

_	Area ((ac)	CN	Desc	cription						
*	5.0	070	98	Pave	ement						
*	0.4	410	100	Opei	n Water						
	1.8	880	61 >75% Grass cover, Good, HSG B								
	2.0	610	74	74 >75% Grass cover, Good, HSG C							
	9.9	970	85	85 Weighted Average							
	4.4	490		45.0	4% Pervio	us Area					
	5.4	480		54.9	6% Imperv	ious Area					
	Тс	Leng	ıth	Slope	Velocity	Capacity	Description				
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)					
	6.0						Direct Entry,				

Summary for Subcatchment 1G:

Runoff = 10.61 cfs @ 12.37 hrs, Volume= 1.3 Routed to Pond 1GP : SPORTS COMPLEX BASIN

1.396 af, Depth= 5.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 25-year Rainfall=6.20"

_	Area	(ac) C	N Des	cription		
*	1.	850 9	98 Pave	Pavement		
*	0.	990 8	35 Artifi	icial Turf		
	0.	340 8	30 >75°	% Grass c	over, Good	, HSG D
	3.	180 9	92 Weig	ghted Aver	ade	
		330		2% Pervio		
		850	-		vious Area	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	26.5	//_		/		Direct Entry, Artificial Turf
	1.8	346	0.0050	3.21	2.52	•
	1.0	040	0.0000	0.21	2.02	12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Corrugated PE, smooth interior
	0.6	116	0.0050	3.21	2.52	•
	0.0		0.0000	0.21	2.02	12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Corrugated PE, smooth interior
	0.0	11	0.0900	13.61	10.69	
	0.0		0.0000	10.01	10.00	12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Concrete pipe, bends & connections
	0.2	40	0.0050	4.20	7 43	Pipe Channel,
	0.2	10	0.0000			18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	0.1	18	0.0050	4.20	7.43	
	0.1	.0	5.0000	0		18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	20.2	531	Total			

29.2 531 Total

Summary for Subcatchment 1H:

Runoff = 7.80 cfs @ 12.08 hrs, Volume= 0.604 af, Depth= 5.49" Routed to Pond 1HP : SPORTS COMPLEX BASIN

	Area (a	c) CN	Des	cription							
*	1.00	00 98	B Pave	ement							
*	0.09	90 8	5 Artifi	rtificial Turf							
_	0.23	30 8) >75°	75% Grass cover, Good, HSG D							
	1.32	20 94	1 Weig	ghted Aver	age						
	0.32	20	24.2	4% Pervio	us Area						
	1.00	00	75.7	6% Imper	ious Area/						
	Tc L (min)	ength (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
	6.0					Direct Entry,					

Summary for Subcatchment 1I:

Runoff = 96.96 cfs @ 13.40 hrs, Volume= Routed to Pond 1IP : TACAN 25.524 af, Depth= 2.78"

_	Area	(ac)	CN	Desc	cription			
*	15.	650	88	Prop	osed Deve	elopment A	rea	
	1.950 55 Woods, Good, HSG B							
	7.	940	77	Woo	ds, Good,	HSG D		
	14.	760	48		h, Good, H			
	20.	020	73	Brus	h, Good, H	ISG D		
	38.	700	61			over, Good		
	5.	070	74			over, Good		
_	6.	270	80	>75%	<u>6 Grass co</u>	over, Good	, HSG D	
	110.	360	68	Weig	phted Aver	age		
	110.	360		100.	00% Pervi	ous Area		
	Тс	Lengt	th	Slope	Velocity	Capacity	Description	
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)		
	47.9	10	0	0.0100	0.03		Sheet Flow,	
							Woods: Dense underbrush n= 0.800 P2= 3.40"	
	22.5	64	.0 (0.0090	0.47		Shallow Concentrated Flow,	
							Woodland Kv= 5.0 fps	
	33.5	1,00	5 (0.0100	0.50		Shallow Concentrated Flow,	
_							Woodland Kv= 5.0 fps	
	103.9	1,74	5	Total				

Summary for Subcatchment 1J:

Runoff = 27.35 cfs @ 12.08 hrs, Volume= Routed to Pond 1LP : CENTRAL GREENWAY 2.236 af, Depth= 5.96"

_	Area (ac) C			Desc	cription		
*	* 4.500 98			Pave	ement		
	4.	500	100.00% Impervious Are				a
	Tc	Leng		Slope	Velocity		Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	6.0						Direct Entry,

Summary for Subcatchment 1K:

Runoff = 138.09 cfs @ 12.14 hrs, Volume= 11.621 af, Depth= 4.82" Routed to Pond 1LP : CENTRAL GREENWAY

	Area	(ac)	CN	Desc	cription					
*	28.	28.940 88 Proposed Development Area								
	28.	940		100.	00% Pervi	ous Area				
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	10.0						Direct Entry,			

Summary for Subcatchment 1L:

Runoff = 137.82 cfs @ 12.14 hrs, Volume= 11.476 af, Depth= 4.60" Routed to Pond 1LP : CENTRAL GREENWAY

	Area	(ac)	CN	Desc	Description							
*	26.	870	0 88 Proposed Development Area									
	2.	070	61	>75	% Grass co	over, Good	I, HSG B					
	1.	000	74	>759	% Grass co	over, Good	I, HSG C					
	29.	940	86	Weig	ghted Aver	age						
	29.	940		100.	00% Pervi	ous Area						
	_											
	Тс	Leng		Slope	Velocity	Capacity	Description					
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)						
	10.0						Direct Entry,					

Summary for Subcatchment 1M:

Runoff = 46.50 cfs @ 12.14 hrs, Volume= 3.855 af, Depth= 4.49" Routed to Pond 1MP : CENTRAL GREENWAY

	Area	(ac)	CN Description									
*	* 9.060 88 Proposed Development Area											
	1.	240	61	>75	% Grass co	over, Good	I, HSG B					
10.300 85 Weighted Average												
	10.	300		100.	00% Pervi	ous Area						
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
	10.0	(100		(1411)	(10000)	(010)	Direct Entry,					

Summary for Subcatchment 1N:

Assumed slope of 0.002

Runoff	=	116.05 cfs @	12.14 hrs,	Volume=	9.663 af,	Depth= 4.60"
Routed	d to Po	ond 1NP : WES	T GREENW	/AY		

	Area (a	ac)	CN	Desc	Description								
*	22.1	10	88	Prop	osed Deve	Area							
	0.5	530	39	>75%	% Grass co	over, Good	d, HSG A						
	2.5	570	74	>75%	% Grass co	over, Good	d, HSG C						
	25.210 86 Weighted Average												
	0				00% Pervi	ous Area							
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)							
					,/		Direct Entry,						

Summary for Subcatchment 10:

Runoff 40.74 cfs @ 12.09 hrs, Volume= 2.986 af, Depth= 4.71" = Routed to Pond 1OP : WEST GREENWAY

Area	(ac)	CN	Desc	cription							
7.	000	88	Prop	Proposed Development Area							
0.	610	74	>75	75% Grass cover, Good, HSG C							
7.610 87 Weighted Average											
7.	610		100.	00% Pervi	ous Area						
Tc (min)			Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
6.0	•				\$ F	Direct Entry,					
	7. 0. 7. 7. Tc (min)	7.610 Tc Leng (min) (fee	7.000 88 0.610 74 7.610 87 7.610 Tc Length (min) (feet)	7.000 88 Prop 0.610 74 >759 7.610 87 Weig 7.610 100. Tc Length Slope (min) (feet) (ft/ft)	7.000 88 Proposed Deve 0.610 74 >75% Grass co 7.610 87 Weighted Aver 7.610 100.00% Pervi Tc Length Slope Velocity (min) (feet) (ft/ft) (ft/sec)	7.00088Proposed Development A0.61074>75% Grass cover, Good7.61087Weighted Average7.610100.00% Pervious AreaTcLengthSlopeVelocityCapacity(min)(feet)(ft/ft)					

Summary for Subcatchment 1P:

Runoff = 102.19 cfs @ 12.09 hrs, Volume= Routed to Pond 1PP : WEST GREENWAY

7.491 af, Depth= 4.71"

Area	(ac)	CN	Desc	cription							
17.	420	88	Prop	Proposed Development Area							
1.	670	74	>75	75% Grass cover, Good, HSG C							
19.090 87 Weighted Average											
19.	19.090 100.00% Pervious Area										
Tc				Velocity	Capacity	Description					
(min)	(tee	et)	(ft/ft)	(ft/sec)	(CIS)						
6.0						Direct Entry,					
	17. 1. 19. 19. Tc (min)	19.090 Tc Leng (min) (fee	17.420 88 1.670 74 19.090 87 19.090 Tc Length (min) (feet)	17.420 88 Prop 1.670 74 >759 19.090 87 Weig 19.090 100. Tc Length Slope (min) (feet) (ft/ft)	17.420 88 Proposed Deve 1.670 74 >75% Grass co 19.090 87 Weighted Aver 19.090 100.00% Pervi Tc Length Slope Velocity (min) (feet) (ft/ft) (ft/sec)	17.42088Proposed Development A1.67074>75% Grass cover, Good19.09087Weighted Average19.090100.00% Pervious AreaTcLengthSlopeVelocityCapacity(min)(feet)(ft/ft)					

Summary for Subcatchment 1Q:

Runoff = 90.63 cfs @ 12.09 hrs, Volume= 6.643 af, Depth= 4.71" Routed to Pond 1QP : WEST GREENWAY

	Area	(ac)	CN	Desc	cription							
*	15.	260	88	Prop	Proposed Development Area							
	1.	670	74	>75	75% Grass cover, Good, HSG C							
	16.	930	87	Weig	ghted Aver							
	16.	930		100.	00% Pervi	ous Area						
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
	6.0	(100		(10,11)	(14000)	(0.0)	Direct Entry,					

Summary for Subcatchment 2A:

Runoff = 171.79 cfs @ 13.29 hrs, Volume= 43.197 af, Depth= 3.65" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

_	Area	(ac)	CN	Desc	cription		
*	4.	000	98	Pave	ement		
*	0.	290	98	Root			
	115.	050	77	Woo	ds, Good,	HSG D	
	1.	620	57	Woo	ds/grass c	omb., Poor	r, HSG A
	4.	390	61	>75%	% Grass co	over, Good	, HSG B
_	16.	500	74	>75%	% Grass co	over, Good	, HSG C
	141.	850	77	Weig	phted Aver	age	
	137.	560		96.9	8% Pervio	us Area	
	4.	290		3.02	% Impervi	ous Area	
	Тс	Lengt		Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	47.9	10	O C	.0100	0.03		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	27.0	1,08	50.	.0180	0.67		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	11.4	48) O	.0100	0.70		Shallow Concentrated Flow,
							Short Grass Pasture Kv= 7.0 fps
	14.2	42	50.	.0100	0.50		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	100.5	2,09	о т	otal			

Summary for Subcatchment 2B:

Runoff = 241.61 cfs @ 12.08 hrs, Volume= Routed to Pond 2BP : EXISTING BASIN 18.728 af, Depth= 5.49"

	Area ((ac)	CN	Desc	Description							
*	6.	650	98	Pave	Pavement							
*	26.	600	98	Roof	Roof							
_	7.	650	74	>75%	% Grass co	over, Good	I, HSG C					
	40.900 94 Weighted Average					age						
	7.	650		18.7	0% Pervio	us Area						
	33.	250		81.3	0% Imper	ious Area						
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
		ופנ	<i>.</i> .,	(1011)	(10360)	(013)	Direct Fretry					
	6.0						Direct Entry,					

Summary for Subcatchment 2C:

Runoff = 76.39 cfs @ 12.08 hrs, Volume= 6.065 af, Depth= 5.73" Routed to Pond 2CP : EXISTING PARKWAY BASIN

Area	(ac)	CN	Desc	cription								
10.	340	98	Pave	Pavement								
1.	680	98	Roof	Roofs								
0.	400	39	>75%	>75% Grass cover, Good, HSG A								
0.	290	74	>75%	6 Grass co	over, Good	d, HSG C						
12.	710	96	Weig	hted Aver	age							
0.	690		5.43	% Perviou	s Area							
12.	020		94.5	7% Imperv	ious Area/							
Тс	Long	th	Slone	Velocity	Canacity	Description						
				,		Description						
	(iee	<i>s</i> ()	(1711)	(ivsec)	(CIS)							
6.0						Direct Entry,						
	10. 1. 0. 0. 12. 0.	(min) (fee	10.340 98 1.680 98 0.400 39 0.290 74 12.710 96 0.690 12.020 Tc Length (min) (feet)	10.340 98 Pave 1.680 98 Roof 0.400 39 >75% 0.290 74 >75% 12.710 96 Weig 0.690 5.43% 12.020 94.5% Tc Length Slope (min) (feet) (ft/ft)	10.340 98 Pavement 1.680 98 Roofs 0.400 39 >75% Grass co 0.290 74 >75% Grass co 12.710 96 Weighted Aver 0.690 5.43% Perviou 12.020 94.57% Imperviou 12.020 (ft/ft)	10.340 98 Pavement 1.680 98 Roofs 0.400 39 >75% Grass cover, Good 0.290 74 >75% Grass cover, Good 12.710 96 Weighted Average 0.690 5.43% Pervious Area 12.020 94.57% Impervious Area Tc Length Slope Velocity Capacity (min) (feet) (ft/ft) (ft/sec) (cfs)						

Summary for Subcatchment 2D-1:

Runoff = 12.76 cfs @ 12.08 hrs, Volume= 1.043 af, Depth= 5.96" Routed to Pond 2DP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	cription		
*	2.	100	98	Pave	ement		
	2.100 100.00% Impervious Area				00% Impe	rvious Area	a
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

Summary for Subcatchment 2D-2:

Runoff = 0.14 cfs @ 12.33 hrs, Volume= 0.028 af, Depth= 0.50" Routed to Pond 2DP : EXISTING PARKWAY BASIN

Area	(ac)	CN	Desc	cription		
0.	670	39	>75%	6 Grass co	over, Good	I, HSG A
0.	670		100.	00% Pervi	ous Area	
Tc _(min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0						Direct Entry,

Summary for Subcatchment 2E:

Runoff = 38.94 cfs @ 13.28 hrs, Volume= 9.468 af, Depth= 2.32" Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Area	(ac) C	N Dese	cription		
7.	930 3	80 Woo	ds, Good,	HSG A	
8.	340 7	'0 Woo	ds, Good,	HSG C	
22.	160 7	7 Woo	ds, Good,	HSG D	
7.	040 3	89 > 759	% Grass c	over, Good	, HSG A
3.	560 8	30 >75°	% Grass c	over, Good	HSG D
49.	030 6	3 Weig	ghted Aver	age	
49.	030	100.	00% Pervi	ous Area	
-				• •	
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
		(1.4,1.4)	(14,000)		
30.8	100	0.0300	0.05	(010)	Sheet Flow,
30.8	100			(010)	Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.40"
30.8 59.1	100 1,034			(010)	
		0.0300	0.05	(010)	Woods: Dense underbrush n= 0.800 P2= 3.40"

Summary for Subcatchment 2F:

Runoff = 65.37 cfs @ 12.98 hrs, Volume= 13.370 af, Depth= 2.59" Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

_	Area	(ac) C	N Des	cription		
	20.	570	55 Woo	ods, Good,	HSG B	
	25.	620	77 Woo	ods, Good,	HSG D	
	15.	770	61 >75	% Grass c	over, Good	, HSG B
	61.	960	66 Wei	ghted Aver	rage	
	61.	960		.00% Pervi		
	Tc	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·
_	47.9	100	0.0100	0.03		Sheet Flow,
	-					Woods: Dense underbrush n= 0.800 P2= 3.40"
	22.5	675	0.0100	0.50		Shallow Concentrated Flow,
						Woodland $Kv = 5.0 \text{ fps}$
_	70.4	775	Total			·

Summary for Subcatchment 2G:

Assumed Tc value

Runoff = 23.43 cfs @ 13.47 hrs, Volume= 6.803 af, Depth= 4.93" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area (ac)	CN	Desc	cription					
*	6.620	98	Pave	Pavement					
*	5.800	98	Roof	F					
_	4.140	61	>75%	% Grass co	over, Good	d, HSG B			
	16.560	89	Weig	ghted Aver	age				
	4.140		25.0	0% Pervio	us Area				
	12.420		75.0	0% Imperv	vious Area				
		ngth	Slope	Velocity	Capacity	Description			
	<u>(min) (f</u>	eet)	(ft/ft)	(ft/sec)	(cfs)				
	120.0					Direct Entry,			

Summary for Subcatchment 2H:

Assumed Tc value

Runoff = 10.69 cfs @ 13.60 hrs, Volume= 3.052 af, Depth= 4.17" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area ((ac)	CN	Desc	cription						
*	3.3	370	98	Pave	Pavement						
*	1.6	690	98	Roof	Roof						
	3.7	720	61	>75%	% Grass co	over, Good	I, HSG B				
	8.7	780	82	Weig	hted Aver	age					
	3.7	3.720 42.37% Pervious Area									
	5.0	060		57.6	3% Imperv	ious Area					
	_			~		•					
	Tc	Leng	th	Slope	Velocity	Capacity	Description				
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)					
	120.0						Direct Entry,				

Summary for Subcatchment 2I-1:

Runoff = 113.95 cfs @ 12.14 hrs, Volume= 9.589 af, Depth= 4.82" Routed to Pond 2IP : PROPOSED PHASE 1 BASIN

	Area	(ac)	CN	Desc	cription					
*	23.	880	80 88 Proposed Development Area							
	23.880 100.00% Pervious Area									
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	10.0						Direct Entry,			

Summary for Subcatchment 2J:

Runoff = 84.15 cfs @ 12.09 hrs, Volume= 6.1 Routed to Pond 2JP : PROPOSED BASIN

6.169 af, Depth= 4.71"

	Area	(ac)	CN	Desc	cription				
*	14.	430	88	Prop	osed Dev	elopment A	Area		
_	1.	290	80	>75	% Grass co	over, Good	d, HSG D		
	15.720 87 Weighted Average								
	15.720 100.00% Pervious Area								
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
	6.0						Direct Entry,		
							-		

Summary for Subcatchment 2K:

Runoff = 106.14 cfs @ 12.09 hrs, Volume= Routed to Pond 2KP : PROPOSED BASIN

7.672 af, Depth= 4.38"

	Area	(ac)	CN	Dese	cription					
*	12.	610	88	Prop	osed Dev	elopment A	vrea			
	8.	390	77	Woo	ds, Good,	HSG D				
	21.000 84 Weighted Average									
	21.	000		100.						
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	6.0						Direct Entry,			

Summary for Subcatchment 2L:

Runoff = 58.22 cfs @ 12.09 hrs, Volume= 4.293 af, Depth= 4.82" Routed to Pond 2LP : PROPOSED BASIN

	Area	(ac)	CN	Desc	cription						
*	10.	690	88	Prop	roposed Development Area						
	10.690 100.00% Pervious Area										
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
_	6.0						Direct Entry,				

Summary for Subcatchment 2M:

Runoff = 105.39 cfs @ 12.09 hrs, Volume= Routed to Pond 2MP : PROPOSED BASIN 7.770 af, Depth= 4.82"

	Area	(ac)	CN	Desc	cription						
*	19.	350	88	Prop	roposed Development Area						
	19.350 100.00% Pervious Area										
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
	6.0						Direct Entry,				

Summary for Subcatchment 3A:

Runoff = 93.55 cfs @ 13.04 hrs, Volume= 19.350 af, Depth= 3.76" Routed to Pond 3AP : FRENCH'S STREAM EAST BRANCH

	Area	(ac)	CN D)esc	ription		
*	5.	200	98 P	ave	ement		
	0.	160	55 V	Voo	ds, Good,	HSG B	
	50.	970	77 V	Woods, Good, HSG D			
	5.	490	73 B	srus	h, Good, H	ISG D	
	61.820 78			Veig	hted Aver	age	
	56.620				9% Pervio		
	5.200		8	8.41% Impervious Area			
	_						
	ŢĊ	Lengt		•	Velocity	Capacity	Description
	(min)	(feet			(ft/sec)	(cfs)	
	35.7	100	0.02	80	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	2.1	66	§ 0.01	14	0.53		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	37.0	1,272	2 0.01	31	0.57		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	74.8	1,438	3 Tota	I			

Summary for Subcatchment 3B:

Runoff = 149.28 cfs @ 13.43 hrs, Volume= 39.057 af, Depth= 3.55" Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

	Area	(ac)	CN	l Desc	cription		
*	9.	990	98	B Pave	ement		
*	1.	400	100) Opei	n Water		
	14.	050	55	5 Woo	ds, Good,	HSG B	
	83.	920	77	7 Woo	ds, Good,	HSG D	
	-	370	73		h, Good, H		
	6.	810	61			over, Good	
	6.	360	80) >75%	% Grass co	over, Good	, HSG D
131.900 76 Weighted Average							
	120.510 91.36% Pervious Area						
	11.390 8.64% Impervious Are					ous Area	
	_						
	Tc	Leng		Slope	Velocity	Capacity	Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	36.3	10	00	0.0200	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	70.7	1,50	00	0.0050	0.35		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	107.0	1,60	00	Total			

Summary for Subcatchment 21-2:

Runoff = 34.24 cfs @ 12.14 hrs, Volume= 2.807 af, Depth= 2.87" Routed to Pond 2IP : PROPOSED PHASE 1 BASIN

	Area	(ac)	CN	Desc	cription				
*	7.	170	88	Prop	osed Deve	elopment A	Area		
	4.	570	39	>75	% Grass co	over, Good	I, HSG A		
	11.740 69 Weighted Average								
	11.740 100.00% Pervious Area								
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
	10.0						Direct Entry,		

Summary for Reach 1R: DP-1 TACAN OUTFALL

377.860 ac, 3.40% Impervious, Inflow Depth > 3.93" for 25-year event Inflow Area = 77.39 cfs @ 16.48 hrs, Volume= 123.614 af Inflow = 77.39 cfs @ 16.48 hrs, Volume= Outflow = 123.614 af, Atten= 0%, Lag= 0.0 min Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: DP-2 FRENCH'S STREAM WEST BRANCH

Inflow Are	a =	872.630 ac, 11.83% Impervious, Inflow Depth > 3.71" for 25-year even	nt
Inflow	=	316.61 cfs @ 13.50 hrs, Volume= 269.560 af	
Outflow	=	316.61 cfs @ 13.50 hrs, Volume= 269.560 af, Atten= 0%, Lag= 0.0) min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: DP-3 FRENCH'S STREAM EAST BRANCH

Inflow Are	a =	193.720 ac,	8.56% Impervious, Inflow	Depth = 3.62"	for 25-year event
Inflow	=	222.14 cfs @	13.58 hrs, Volume=	58.401 af	
Outflow	=	222.14 cfs @	13.58 hrs, Volume=	58.401 af, Atte	en= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area =	0.790 ac, 89.87% Impervious, Inflow D	Depth = 5.27" for 25-year event
Inflow =	4.56 cfs @ 12.08 hrs, Volume=	0.347 af
Outflow =	5.02 cfs @ 12.07 hrs, Volume=	0.347 af, Atten= 0%, Lag= 0.0 min
Discarded =	0.12 cfs @ 9.74 hrs, Volume=	0.186 af
Primary =	4.89 cfs @ 12.07 hrs, Volume=	0.161 af
Routed to Pond	1 1CP : MEMORIAL GROVE AVE. BASIN	1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 171.26'@ 12.07 hrs Surf.Area= 2,201 sf Storage= 2,832 cf

Plug-Flow detention time= 91.8 min calculated for 0.347 af (100% of inflow) Center-of-Mass det. time= 91.8 min (867.9 - 776.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	168.50'	1,559 cf	24.83'W x 88.64'L x 2.33'H Field A
			5,136 cf Overall - 1,238 cf Embedded = 3,898 cf x 40.0% Voids
#2A	169.00'	1,238 cf	ADS_StormTech SC-310 +Cap x 84 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			84 Chambers in 7 Rows
#3	168.50'	85 cf	4.00'D x 6.80'H CB-Impervious
#4	175.20'	449 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
175.20	10	0	0
176.00	300	124	124
176.50	1,000	325	449

Device	Routing	Invert	Outlet Devices
#1	Primary	170.00'	18.0" Round Culvert
	-		L= 13.0' RCP, end-section conforming to fill, Ke= 0.500
			Inlet / Outlet Invert= 170.00' / 169.85' S= 0.0115 '/' Cc= 0.900
			n= 0.013, Flow Area= 1.77 sf
#2	Discarded	168.50'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.12 cfs @ 9.74 hrs HW=168.58' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=4.79 cfs @ 12.07 hrs HW=171.24' TW=151.99' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 4.79 cfs @ 4.17 fps)

Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

12 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 86.64' Row Length +12.0" End Stone x 2 = 88.64' Base Length 7 Device x 2.4.0" Wide + 6.0" Specing x 6 + 12.0" Side Stone x 2 = 24.82! Base Width

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

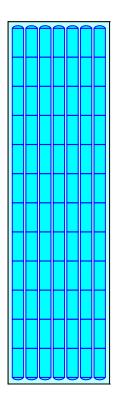
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

84 Chambers x 14.7 cf = 1,238.3 cf Chamber Storage

5,136.2 cf Field - 1,238.3 cf Chambers = 3,897.9 cf Stone x 40.0% Voids = 1,559.1 cf Stone Storage

Chamber Storage + Stone Storage = 2,797.5 cf = 0.064 afOverall Storage Efficiency = 54.5%Overall System Size = $88.64' \times 24.83' \times 2.33'$

84 Chambers 190.2 cy Field 144.4 cy Stone





Summary for Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area =	0.900 ac, 88.89% Impervious, Inflo	w Depth = 5.15" for 25-year event
Inflow =	5.13 cfs @ 12.08 hrs, Volume=	0.386 af
Outflow =	5.49 cfs @ 12.08 hrs, Volume=	0.386 af, Atten= 0%, Lag= 0.0 min
Discarded =	0.13 cfs @ 9.62 hrs, Volume=	0.202 af
Primary =	5.36 cfs @ 12.08 hrs, Volume=	0.185 af
Routed to Pond	I 1CP : MEMORIAL GROVE AVE. BA	SIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 171.52' @ 12.08 hrs Surf.Area= 2,378 sf Storage= 3,056 cf

Plug-Flow detention time= 89.9 min calculated for 0.386 af (100% of inflow) Center-of-Mass det. time= 89.9 min (869.9 - 780.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	169.00'	1,683 cf	24.83'W x 95.76'L x 2.33'H Field A
			5,549 cf Overall - 1,342 cf Embedded = 4,207 cf x 40.0% Voids
#2A	169.50'	1,342 cf	ADS_StormTech SC-310 +Cap x 91 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			91 Chambers in 7 Rows
#3	169.00'	72 cf	4.00'D x 5.70'H CB-Impervious
#4	172.70'	572 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,668 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.70	10	0	0
173.00	300	47	47
174.50	400	525	572

Device	Routing	Invert	Outlet Devices
#1	Primary	170.50'	12.0" Round Culvert X 2.00
	·		L= 23.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 170.50' / 170.20' S= 0.0130 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	169.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.13 cfs @ 9.62 hrs HW=169.06' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=5.22 cfs @ 12.08 hrs HW=171.50' TW=152.04' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 5.22 cfs @ 4.14 fps)

Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTechSC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length 7 Device x 2.4.0" Wide \pm 0.0" Cap singly 0.4.10 OF Side Stone x 2 = 24.02 Device Width

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

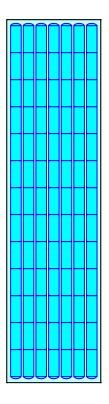
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

91 Chambers x 14.7 cf = 1,341.5 cf Chamber Storage

5,548.8 cf Field - 1,341.5 cf Chambers = 4,207.2 cf Stone x 40.0% Voids = 1,682.9 cf Stone Storage

Chamber Storage + Stone Storage = 3,024.4 cf = 0.069 afOverall Storage Efficiency = 54.5%Overall System Size = $95.76' \times 24.83' \times 2.33'$

91 Chambers 205.5 cy Field 155.8 cy Stone



Summary for Pond 1CP: MEMORIAL GROVE AVE. BASIN

Assumed slope of 0.005 for outlet culvert.

Inflow Area =	47.860 ac, 4	14.44% Impervious, Inf	flow Depth = 4.69" for 25-year event
Inflow =	113.71 cfs @	12.25 hrs, Volume=	18.716 af
Outflow =	38.48 cfs @	13.27 hrs, Volume=	18.653 af, Atten= 66%, Lag= 61.3 min
Primary =	38.48 cfs @	13.27 hrs, Volume=	18.653 af
Routed to F	ond 1DP : UPS	FREAM DOGLEG	
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af
Routed to F	ond 1DP : UPS	FREAM DOGLEG	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 155.35' @ 13.27 hrs Surf.Area= 77,627 sf Storage= 330,546 cf

Plug-Flow detention time= 150.6 min calculated for 18.653 af (100% of inflow) Center-of-Mass det. time= 148.1 min (974.6 - 826.5)

Volume	Invert	Avail.Sto	rage Sto	rage Description	
#1	150.00'	468,17	78 cf Cu	stom Stage Data (Pr	rismatic)Listed below (Recalc)
F lavestia				Ourse Otherse	
Elevatio		urf.Area	Inc.Sto		
(fee	,	(sq-ft)	(cubic-fee		
150.0		46,495		0 0	
151.0	00	52,090	49,29	93 49,293	
152.0	00	57,750	54,92	20 104,213	
153.0	00	63,535	60,64	3 164,855	
154.0	00	69,445	66,49	0 231,345	
155.0	00	75,475	72,46	303,805	
156.0	00	81,635	78,55	5 382,360	
157.0	00	90,000	85,81	8 468,178	
Device	Routing	Invert	Outlet De	evices	
#1	Primary	150.00'	27.0" R	ound Culvert	
	5		L= 87.7'	RCP, end-section co	onforming to fill, Ke= 0.500
			Inlet / Ou	Itlet Invert= 150.00' /	149.56' S= 0.0050 '/' Cc= 0.900
			n= 0.013	Concrete pipe, bend	ds & connections, Flow Area= 3.98 sf
#2	Secondary	156.00'			road-Crested Rectangular Weir
	,				0.80 1.00 1.20 1.40 1.60
			•	,	70 2.64 2.63 2.64 2.64 2.63
			(

Primary OutFlow Max=38.48 cfs @ 13.27 hrs HW=155.35' TW=146.23' (Dynamic Tailwater) -1=Culvert (Barrel Controls 38.48 cfs @ 9.68 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=150.00' TW=142.50' (Dynamic Tailwater) —2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1DP: UPSTREAM DOGLEG

Inflow Area = 77.180 ac, 27.56% Impervious, Inflow Depth > 3.81" for 25-year event Inflow 66.03 cfs @ 13.07 hrs, Volume= 24.535 af = 65.63 cfs @ 13.13 hrs, Volume= Outflow 24.535 af, Atten= 1%, Lag= 3.7 min = 32.41 cfs @ 13.13 hrs, Volume= Primary = 11.779 af Routed to Pond 2IP : PROPOSED PHASE 1 BASIN Secondary = 33.22 cfs @ 13.13 hrs, Volume= 12.755 af Routed to Pond 2IP : PROPOSED PHASE 1 BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.28' @ 15.58 hrs Surf.Area= 7,011 sf Storage= 6,577 cf

Plug-Flow detention time= 1.6 min calculated for 24.535 af (100% of inflow) Center-of-Mass det. time= 1.6 min (961.2 - 959.6)

Volume	Invert	Avail.Sto	rage Storage	e Description	
#1	142.50'	67,80	08 cf Custor	n Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
142.5	1	0	0	0	
144.0		180	135	135	
145.0	0	1,610	895	1,030	
146.0		5,900	3,755	4,785	
147.0		9,900	7,900	12,685	
148.0		14,165	12,033	24,718	
149.0		20,375	17,270	41,988	
150.0	0	31,265	25,820	67,808	
Device	Routing	Invert	Outlet Devic	es	
#1	Primary	142.60'	42.0" Roun	d Culvert	
#2	Secondary		Inlet / Outlet n= 0.013, Fl 42.0" Roun L= 782.0' R Inlet / Outlet	Invert= 142.60' / ow Area= 9.62 st d Culvert CP, end-section	conforming to fill, Ke= 0.500 142.19' S= 0.0004 '/' Cc= 0.900

Primary OutFlow Max=32.41 cfs @ 13.13 hrs HW=146.27' TW=143.46' (Dynamic Tailwater) -1=Culvert (Barrel Controls 32.41 cfs @ 4.00 fps)

Secondary OutFlow Max=33.22 cfs @ 13.13 hrs HW=146.27' TW=143.46' (Dynamic Tailwater) 2=Culvert (Barrel Controls 33.22 cfs @ 3.99 fps)

Summary for Pond 1FP: EXISTING PARKWAY BASIN

Primary Culvert - Assumed Inverts, pipe diameter, and pipe material.

Inflow Area =	9.970 ac, 5	4.96% Impervio	us, Inflow Dept	h= 4.49"	for 25-year event
Inflow =	51.41 cfs @	12.09 hrs, Volu	ıme= 3.	732 af	-
Outflow =	6.04 cfs @	12.73 hrs, Volu	ıme= 2.	241 af, Atte	n= 88%, Lag= 38.7 min
Primary =	6.04 cfs @	12.73 hrs, Volu	ıme= 2.	241 af	
Routed to	Pond 1IP : TACA	Ν			
Secondary =	0.00 cfs @	0.00 hrs, Volu	ıme= 0.	000 af	
Routed to	Pond 1IP : TACAI	Ν			

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.72' @ 12.73 hrs Surf.Area= 26,178 sf Storage= 94,419 cf

Plug-Flow detention time= 327.4 min calculated for 2.240 af (60% of inflow) Center-of-Mass det. time= 224.4 min (1,023.8 - 799.4)

Volume	Invert	Avail.Sto	rage Storag	e Description		
#1	143.00'	197,06	68 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)	
Elevatior (feet		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
143.00))	10,065	0	0		
144.00	C	17,300	13,683	13,683		
145.00	C	19,605	18,453	32,135		
146.00	C	21,970	20,788	52,923		
147.00	C	24,385	23,178	76,100		
148.00		26,860	25,623	101,723		
149.00		29,935	28,398	130,120		
150.00		31,980	30,958	161,078		
151.00	C	40,000	35,990	197,068		
Device	Routing	Invert	Outlet Devid	ces		
#1	Primary	146.50'	24.0" Roui			
#2	Secondary	150.00'	L= 98.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= $146.50' / 146.00'$ S= $0.0051' / Cc= 0.900$ n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf 10.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63			

Primary OutFlow Max=6.04 cfs @ 12.73 hrs HW=147.72' TW=143.95' (Dynamic Tailwater) ←1=Culvert (Barrel Controls 6.04 cfs @ 4.29 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=133.50' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1GP: SPORTS COMPLEX BASIN

Inflow Area = 3.180 ac, 58.18% Impervious, Inflow Depth = 5.27" for 25-year event Inflow = 10.61 cfs @ 12.37 hrs, Volume= 1.396 af 9.07 cfs @ 12.55 hrs, Volume= Outflow = 1.388 af, Atten= 15%, Lag= 10.5 min 5.58 cfs @ 12.55 hrs, Volume= Primary = 1.309 af Routed to Pond 1LP : CENTRAL GREENWAY Secondary = 3.49 cfs @ 12.55 hrs, Volume= 0.078 af Routed to Pond 1LP : CENTRAL GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 169.58' @ 12.55 hrs Surf.Area= 4,379 sf Storage= 8,644 cf

Plug-Flow detention time= 23.7 min calculated for 1.387 af (99% of inflow) Center-of-Mass det. time= 20.2 min (817.9 - 797.7)

Volume	Invert	Avail.Stor	age Storage	Description	
#1	166.00'	10,58	8 cf Custom	i Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee 166.0 167.0	et) 00	ırf.Area (sq-ft) 1,085 1,395	Inc.Store (cubic-feet) 0 1,240	Cum.Store (cubic-feet) 0 1,240	
168.0 169.0 170.0	00 00 00	2,415 3,850 4,770	1,905 3,133 4,310	3,145 6,278 10,588	
	Routing		Outlet Device	-	
#1 #2	Primary Secondary	166.30' 169.30'	12.0" Round Culvert L= 57.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 166.30' / 166.00' S= 0.0053 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf 9.0' long x 17.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		

Primary OutFlow Max=5.58 cfs @ 12.55 hrs HW=169.57' TW=151.37' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 5.58 cfs @ 7.10 fps)

Secondary OutFlow Max=3.49 cfs @ 12.55 hrs HW=169.57' TW=151.37' (Dynamic Tailwater) **2=Broad-Crested Rectangular Weir** (Weir Controls 3.49 cfs @ 1.41 fps)

Summary for Pond 1HP: SPORTS COMPLEX BASIN

Inflow Area =	1.320 ac, 75.76% Impervious, Inflov	w Depth = 5.49" for 25-year event							
Inflow =	7.80 cfs @ 12.08 hrs, Volume=	0.604 af							
Outflow =	5.12 cfs @ 12.17 hrs, Volume=	0.602 af, Atten= 34%, Lag= 5.3 min							
Primary =	4.74 cfs @ 12.17 hrs, Volume=	0.600 af							
Routed to Po	ond 1LP : CENTRAL GREENWAY								
Secondary =	0.39 cfs @ 12.17 hrs, Volume=	0.002 af							
Routed to Po	Routed to Pond 1LP : CENTRAL GREENWAY								

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 164.58' @ 12.17 hrs Surf.Area= 2,625 sf Storage= 2,285 cf

Plug-Flow detention time= 8.9 min calculated for 0.602 af (100% of inflow) Center-of-Mass det. time= 6.6 min (774.3 - 767.7)

Volume	Invert	Avail.Stor	age Storage [Description	
#1	161.00'	8,05	5 cf Custom	Stage Data (Pi	rismatic)Listed below (Recalc)
Elevatio (fee		rf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
161.0	00	0	0	0	
162.0	00	180	90	90	
163.0	00	515	348	438	
164.0	00	1,060	788	1,225	
165.0	00	3,780	2,420	3,645	
166.0	00	5,040	4,410	8,055	
Device	Routing	Invert	Outlet Devices		
#1	Primary	162.00'	12.0" Round	Culvert	
#2	Secondary	164.50'	L= 58.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= $162.00' / 161.70'$ S= $0.0052' / Cc= 0.900$ n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf 7.0' long x 40.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		

Secondary OutFlow Max=0.38 cfs @ 12.17 hrs HW=164.57' TW=150.45' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir (Weir Controls 0.38 cfs @ 0.73 fps)

Summary for Pond 1IP: TACAN

Inflow Area = 377.860 ac. 3.40% Impervious, Inflow Depth = 3.93" for 25-year event Inflow 638.03 cfs @ 12.09 hrs, Volume= 123.616 af = Outflow 77.39 cfs @ 16.48 hrs, Volume= 123.614 af, Atten= 88%, Lag= 263.6 min = 77.39 cfs @ 16.48 hrs, Volume= Primary = 123.614 af Routed to Reach 1R : DP-1 TACAN OUTFALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 145.36'@ 16.48 hrs Surf.Area= 1,206,490 sf Storage= 2,519,595 cf

Plug-Flow detention time= 385.3 min calculated for 123.597 af (100% of inflow) Center-of-Mass det. time= 385.2 min (1,292.2 - 907.0)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	133.50'	4,902,59	91 cf Custom	Stage Data (Pr	rismatic)Listed below (Recalc)
-					
Elevation		Area	Inc.Store	Cum.Store	
(feet)	(:	sq-ft)	(cubic-feet)	(cubic-feet)	
133.50		0	0	0	
136.00		1,481	1,851	1,851	
137.00		5,097	3,289	5,140	
138.00	49	9,441	27,269	32,409	
139.00	64	4,338	56,889	89,298	
140.00	82	2,023	73,181	162,479	
141.00	108	3,813	95,418	257,897	
142.00	168	3,490	138,651	396,548	
143.00	389	9,034	278,762	675,311	
144.00	68	1,061	535,047	1,210,358	
145.00	1,103	3,941	892,501	2,102,859	
146.00	1,388	3,214	1,246,077	3,348,936	
147.00	1,719	9,095	1,553,655	4,902,591	
Daviaa D	outing	Invert	Outlat Daviage	_	
	outing	Invert	Outlet Devices		
#1 P	rimary	133.50'		Culvert X 2.00	
				,	conforming to fill, Ke= 0.500
					130.80' S= 0.0030 '/' Cc= 0.900
					ds & connections, Flow Area= 19.63 sf
#2 D	evice 1	134.00'			Flow Orifice C= 0.600
				r flow at low hea	
#3 D	evice 1	144.40'		/Orifice, Cv= 2.	
			· · ·	44.40 145.40 1	145.40 146.10 146.10 146.60 146.60
			147.00		
			vvidth (feet) 5	5.00 5.00 15.00) 15.00 25.00 25.00 30.00 30.00
			<u> </u>		

Primary OutFlow Max=77.39 cfs @ 16.48 hrs HW=145.36' TW=0.00' (Dynamic Tailwater)

-1=Culvert (Passes 77.39 cfs of 444.62 cfs potential flow)

1-2=Low Flow Orifice (Orifice Controls 61.97 cfs @ 15.49 fps)

—3=Custom Weir/Orifice (Weir Controls 15.42 cfs @ 3.21 fps)

Summary for Pond 1LP: CENTRAL GREENWAY

Inflow Area = 67.880 ac, 10.83% Impervious, Inflow Depth = 4.83" for 25-year event Inflow 306.99 cfs @ 12.13 hrs, Volume= 27.323 af = 110.51 cfs @ 12.21 hrs, Volume= 110.51 cfs @ 12.21 hrs, Volume= Outflow 27.319 af, Atten= 64%, Lag= 4.5 min = Primary = 27.319 af Routed to Pond 1MP : CENTRAL GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1MP : CENTRAL GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 151.37' @ 12.53 hrs Surf.Area= 92,532 sf Storage= 295,581 cf

Plug-Flow detention time= 45.9 min calculated for 27.315 af (100% of inflow) Center-of-Mass det. time= 46.1 min (839.5 - 793.4)

Volume	Invert	Avail.Stor	rage S	Storage	Description	
#1	146.00'	397,45	57 cf C	Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevation	Surf.A		Inc.S		Cum.Store	
(feet)		q-ft)	(cubic-f	feet)	(cubic-feet)	
146.00	17,	910		0	0	
147.00	30,	745	24	,328	24,328	
148.00	44,	380	37	,563	61,890	
149.00	58,	820	51	,600	113,490	
150.00	74,	055	66	,438	179,928	
151.00	90,	090	82	,073	262,000	
152.00	96,	730	93	,410	355,410	
152.42	103,4	495	42	,047	397,457	
Device R	outing	Invert	Outlet	Device	S	
#1 P	rimary	146.00'	42.0"	Round	Culvert X 2.00)
	,, ,		-			conforming to fill, Ke= 0.500
						' 145.00' S= 0.0063 '/' Cc= 0.900
			n= 0.0	13 Cor	ncrete pipe, ber	ids & connections, Flow Area= 9.62 sf
#2 S	econdary	152.00'				Broad-Crested Rectangular Weir
	,					0.80 1.00 1.20 1.40 1.60
				· /		.70 2.64 2.63 2.64 2.64 2.63
						W-140.22' (Dynamic Tailwatar)

Primary OutFlow Max=108.20 cfs @ 12.21 hrs HW=150.69' TW=149.33' (Dynamic Tailwater) -1=Culvert (Inlet Controls 108.20 cfs @ 5.62 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=146.00' TW=145.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1MP: CENTRAL GREENWAY

Inflow Area = 78.180 ac, 9.40% Impervious, Inflow Depth = 4.78" for 25-year event Inflow 154.94 cfs @ 12.15 hrs, Volume= 31.174 af = 89.03 cfs @ 12.72 hrs, Volume= 89.03 cfs @ 12.72 hrs, Volume= Outflow 31.170 af, Atten= 43%, Lag= 34.1 min = Primary = 31.170 af Routed to Pond 1IP : TACAN Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1IP : TACAN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 150.44' @ 12.72 hrs Surf.Area= 55,939 sf Storage= 175,096 cf

Plug-Flow detention time= 28.5 min calculated for 31.166 af (100% of inflow) Center-of-Mass det. time= 28.4 min (863.3 - 835.0)

Volume	Invert	Avail.Stor	rage S	Storage [Description		
#1	145.00'	232,41	1 cf (Custom S	Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio		rf.Area	lno (Store	Cum.Store		
feet		(sq-ft)	(cubic-		(cubic-feet)		
145.00	/	9,515	(00.0.0	0	0		
146.00	0	16,810	13	3,163	13,163		
147.00	0	24,900),855	34,018		
148.00		33,795		9,348	63,365		
149.00		43,485		3,640	102,005		
150.00		53,980		3,733	150,738		
151.00		58,400		6,190	206,928		
151.42	2	62,950	25	5,483	232,411		
Device	Routing	Invert	Outlet	t Devices	i		
#1	Primary	145.00'	42.0"	Round	Culvert		
	5		L= 17	0.0' RCI	P, end-section	conforming to fill, Ke= 0.500	
			Inlet /	Outlet In	vert= 145.00' /	143.00' S= 0.0118 '/' Cc= 0.900	
						ds & connections, Flow Area= 9.62 sf	
#2	Secondary	151.00'				Broad-Crested Rectangular Weir	
						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	
Primary	Primary OutFlow Max=89.03 cfs @ 12.72 brs. HW=150.44', TW=143.94', (Dynamic Tailwater)						

Primary OutFlow Max=89.03 cfs @ 12.72 hrs HW=150.44' TW=143.94' (Dynamic Tailwater) -1=Culvert (Inlet Controls 89.03 cfs @ 9.25 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.00' TW=133.50' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1NP: WEST GREENWAY

Inflow Area = 25.210 ac, 0.00% Impervious, Inflow Depth = 4.60" for 25-year event Inflow 116.05 cfs @ 12.14 hrs, Volume= 9.663 af = 9.83 cfs @ 16.99 hrs, Volume= 9.628 af, Atten= 92%, Lag= 291.3 min Outflow = 9.83 cfs @ 16.99 hrs, Volume= Primary = 9.628 af Routed to Pond 10P : WEST GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1OP : WEST GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 150.82' @ 13.68 hrs Surf.Area= 93,007 sf Storage= 230,483 cf

Plug-Flow detention time= 289.3 min calculated for 9.626 af (100% of inflow) Center-of-Mass det. time= 287.3 min (1,087.5 - 800.2)

Volume	Invert	Avail.Stor	age Storage	Description	
#1	147.00'	393,84	0 cf Custom	n Stage Data (Pi	rismatic)Listed below (Recalc)
Elevatio (fee 147.0 148.0 149.0 150.0 151.0 152.0	et) 00 3 00 4 00 6 00 7 00 7 00 9	f.Area (sq-ft) 30,825 45,600 61,145 77,460 96,500 04,385	Inc.Store (cubic-feet) 0 38,213 53,373 69,303 86,980 100,443	Cum.Store (cubic-feet) 0 38,213 91,585 160,888 247,868 348,310	
152.4		12,425	45,530	393,840	
Device	Routing	Invert	Outlet Device	es	
#1 #2	Primary	147.00'	24.0" Round L= 130.0' RC Inlet / Outlet I n= 0.013 Con 115.0' long 2 Head (feet) C	d Culvert CP, end-section Invert= 147.00' / ncrete pipe, bend x 38.0' breadth 0.20 0.40 0.60	conforming to fill, Ke= 0.500 146.50' S= 0.0038 '/' Cc= 0.900 ds & connections, Flow Area= 3.14 sf Broad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=9.86 cfs @ 16.99 hrs HW=150.26' TW=149.79' (Dynamic Tailwater) -1=Culvert (Outlet Controls 9.86 cfs @ 3.14 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=147.00' TW=146.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 10P: WEST GREENWAY

Inflow Area = 32.820 ac, 0.00% Impervious, Inflow Depth > 4.61" for 25-year event Inflow 45.75 cfs @ 12.08 hrs, Volume= 12.614 af = Outflow 12.55 cfs @ 12.10 hrs, Volume= 12.610 af, Atten= 73%, Lag= 1.5 min = 12.55 cfs @ 12.10 hrs, Volume= Primary = 12.610 af Routed to Pond 1PP : WEST GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1PP : WEST GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 150.43' @ 13.47 hrs Surf.Area= 23,900 sf Storage= 54,316 cf

Plug-Flow detention time= 49.4 min calculated for 12.610 af (100% of inflow) Center-of-Mass det. time= 48.3 min (1,066.2 - 1,017.9)

Volume	Inver	t Avail.Sto	rage Storag	e Description		
#1	146.00	' 110,74	14 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
146.0	1	3,480	0	0		
147.0		6,760	5,120	5,120		
148.0	00	10,685	8,723	13,843		
149.0	00	15,260	12,973	26,815		
150.0	00	20,485	17,873	44,688		
151.0		28,355	24,420	69,108		
152.0		29,175	28,765	97,873		
152.4	2	32,120	12,872	110,744		
Device	Routing	Invert	Outlet Devic	ces		
#1	Primary	146.00'	24.0" Rour	nd Culvert		
	-		L= 140.0' F	RCP, end-section	conforming to fill, Ke= 0.500	
					145.50' S= 0.0036 '/' Cc= 0.900	
					ids & connections, Flow Area= 3.14 sf	
#2	Secondary	/ 152.00'			Broad-Crested Rectangular Weir	
			· · ·		0.80 1.00 1.20 1.40 1.60	
			Coet. (Engli	sh) 2.68 2.70 2	.70 2.64 2.63 2.64 2.64 2.63	
Primary OutFlow Max=12.03 of $@$ 12.10 hrs $HW/=140.20'$ TW/=148.56' (Dynamic Tailwater)						

Primary OutFlow Max=12.03 cfs @ 12.10 hrs HW=149.29' TW=148.56' (Dynamic Tailwater) -1=Culvert (Outlet Controls 12.03 cfs @ 3.83 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=146.00' TW=145.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1PP: WEST GREENWAY

Inflow Area = 51.910 ac, 0.00% Impervious, Inflow Depth = 4.65" for 25-year event Inflow 114.71 cfs @ 12.09 hrs, Volume= 20.100 af = 20.63 cfs @ 14.54 hrs, Volume= Outflow 20.064 af, Atten= 82%, Lag= 147.4 min = 20.63 cfs @ 14.54 hrs, Volume= Primary = 20.064 af Routed to Pond 1QP : WEST GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1QP : WEST GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 149.75' @ 13.22 hrs Surf.Area= 69,546 sf Storage= 191,710 cf

Plug-Flow detention time= 124.9 min calculated for 20.062 af (100% of inflow) Center-of-Mass det. time= 120.6 min (1,085.2 - 964.6)

Volume	Invert	Avail.Stor	rage Storag	e Description			
#1	145.00'	319,95	50 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)		
Elevatio	n Su	ırf.Area	Inc.Store	Cum.Store			
(feet		(sq-ft)	(cubic-feet)	(cubic-feet)			
145.0	0	13,590	0	0			
146.0	0	24,145	18,868	18,868			
147.0	0	35,350	29,748	48,615			
148.0	0	47,205	41,278	89,893			
149.0	0	59,705	53,455	143,348			
150.0	0	72,855	66,280	209,628			
151.0		78,910	75,883	285,510			
151.4	2	85,090	34,440	319,950			
Device	Routing	Invert	Outlet Devic	ces			
#1	Primary	145.00'	24.0" Rour				
π I	Timary	140.00			conforming to fill, Ke= 0.500		
				,	' 144.50' S= 0.0027 '/' Cc= 0.900		
					ids & connections, Flow Area= 3.14 sf		
#2	Secondary	151.00'			Broad-Crested Rectangular Weir		
	,				0.80 1.00 1.20 1.40 1.60		
			· · ·		.70 2.64 2.63 2.64 2.64 2.63		
Primary	Primary OutFlow Max=20.64 cfs @ 14.54 brs HW=149.59' TW=147.02' (Dynamic Tailwater)						

Primary OutFlow Max=20.64 cfs @ 14.54 hrs HW=149.59' TW=147.02' (Dynamic Tailwater) -1=Culvert (Outlet Controls 20.64 cfs @ 6.57 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.00' TW=144.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1QP: WEST GREENWAY

Inflow Area = 68.840 ac, 0.00% Impervious, Inflow Depth > 4.66" for 25-year event Inflow 104.74 cfs @ 12.09 hrs, Volume= 26.708 af = Outflow 39.15 cfs @ 12.47 hrs, Volume= 26.266 af, Atten= 63%, Lag= 22.8 min = Primary = 39.15 cfs @ 12.47 hrs, Volume= 26.266 af Routed to Pond 1IP : TACAN Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1IP : TACAN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.88' @ 12.47 hrs Surf.Area= 58,240 sf Storage= 136,437 cf

Plug-Flow detention time= 78.2 min calculated for 26.266 af (98% of inflow) Center-of-Mass det. time= 57.0 min (1,069.6 - 1,012.7)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	144.00'	319,95	50 cf Custom	n Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	ND S U	rf.Area	Inc.Store	Cum.Store	
fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
<u>`</u>	/		1	· · · · · · · · · · · · · · · · · · ·	
144.0		13,590	19 969	19.969	
145.0 146.0		24,145	18,868 29,748	18,868	
140.0		35,350	29,748 41,278	48,615 89,893	
147.0		47,205 59,705	53,455	143,348	
148.0		72,855	66,280	209,628	
149.0		78,910	75,883	285,510	
150.4		85,090	34,440	319,950	
100	r∠ (55,050	57,770	010,000	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	144.00'	36.0" Round	d Culvert	
	-		L= 504.0' R	CP, end-section	conforming to fill, Ke= 0.500
			Inlet / Outlet	Invert= 144.00' /	138.00' S= 0.0119 '/' Cc= 0.900
			n= 0.013 Co	ncrete pipe, ben	ds & connections, Flow Area= 7.07 sf
#2	Device 1	145.00'	36.0" W x 24	.0" H Vert. Orifi	ice/Grate C= 0.600
			Limited to we	ir flow at low hea	ads
#3	Device 1	148.00'	24.0" x 24.0"	' Horiz. Orifice/	Grate C= 0.600
				ir flow at low hea	
#4	Secondary	149.00'			Broad-Crested Rectangular Weir
					0.80 1.00 1.20 1.40 1.60
			Coef. (Englis	h) 2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=39.15 cfs @ 12.47 hrs HW=147.88' TW=143.64' (Dynamic Tailwater) -1=Culvert (Passes 39.15 cfs of 52.54 cfs potential flow)

2=Orifice/Grate (Orifice Controls 39.15 cfs @ 6.52 fps) **3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=144.00' TW=133.50' (Dynamic Tailwater) 4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2AP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 223.810 ac, 24.58% Impervious, Inflow Depth = 4.14" for 25-year event Inflow 247.39 cfs @ 13.29 hrs, Volume= 77.280 af = 182.14 cfs @ 13.85 hrs, Volume= Outflow = 77.280 af, Atten= 26%, Lag= 33.6 min 90.43 cfs @ 13.96 hrs, Volume= Primary = 37.852 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH Secondary = 92.38 cfs @ 13.85 hrs, Volume= 39.428 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.31' @ 14.07 hrs Surf.Area= 261,717 sf Storage= 369,480 cf

Plug-Flow detention time= 16.9 min calculated for 77.269 af (100% of inflow) Center-of-Mass det. time= 16.9 min (920.1 - 903.3)

Volume	Invert	Avail.Sto	rage Storag	ge Description	
#1	141.70'	1,815,20	01 cf Custo	om Stage Data (P	rismatic)Listed below (Recalc)
		£		Ourse Others	
Elevatio		f.Area	Inc.Store (cubic-feet)	Cum.Store	
(fee		(sq-ft)		(cubic-feet)	
141.7		0	0	0	
144.0		6,640	7,636	7,636	
145.0	0 5	57,230	31,935	39,571	
146.0	0 11	7,540	87,385	126,956	
147.0	0 21	6,860	167,200	294,156	
148.0	0 35	59,360	288,110	582,266	
149.0	0 64	0,140	499,750	1,082,016	
150.0	0 82	26,230	733,185	1,815,201	
Davias	Douting	Invort	Outlet Devi		
Device	Routing	Invert	Outlet Devi		
#1	Primary	141.70'	48.0" Rou		
			L= 126.0'	RCP, end-section	conforming to fill, Ke= 0.500
			Inlet / Outle	t Invert= 141.70' /	141.60' S= 0.0008 '/' Cc= 0.900
			n= 0.013, F	Flow Area= 12.57	sf
#2	Secondary	141.70'	48.0" Rou	nd Culvert	
	-		L= 126.0'	RCP, end-section	conforming to fill, Ke= 0.500
					141.50' S= 0.0016 '/' Cc= 0.900
				low Area= 12.57	
D			O 10 00 l		

Primary OutFlow Max=90.33 cfs @ 13.96 hrs HW=147.31' TW=145.08' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 90.33 cfs @ 7.19 fps)

Secondary OutFlow Max=92.20 cfs @ 13.85 hrs HW=147.28' TW=144.96' (Dynamic Tailwater) 2=Culvert (Inlet Controls 92.20 cfs @ 7.34 fps)

Summary for Pond 2BP: EXISTING BASIN

Inflow Area = 40.900 ac, 81.30% Impervious, Inflow Depth = 5.49" for 25-year event Inflow 241.61 cfs @ 12.08 hrs, Volume= 18.728 af = 33.32 cfs @ 12.42 hrs, Volume= 33.32 cfs @ 12.42 hrs, Volume= Outflow 18.405 af, Atten= 86%, Lag= 20.4 min = 18.405 af Primary = Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 149.97' @ 12.60 hrs Surf.Area= 87,865 sf Storage= 337,084 cf

Plug-Flow detention time= 144.7 min calculated for 18.405 af (98% of inflow) Center-of-Mass det. time= 133.7 min (901.4 - 767.7)

Volume	Invert	Avail.Sto	rage Sto	rage Description		
#1	143.00'	482,85	55 cf Cu	stom Stage Data (F	Prismatic)Listed below (Recalc)	
Elevatio	n Sur	f.Area	Inc.Sto	re Cum.Store		
(feet		(sq-ft)	(cubic-fee			
143.0		0,920		0 0		
140.0		6,580	13,75			
145.0		8,700	22,64	,		
146.0		9,560	34,13			
147.0	0 5	3,515	46,53	38 117,058		
148.0		1,930	62,72	,		
149.0		0,230	76,08	,		
150.0		8,130	84,18	,		
151.0		5,000	91,56	,		
151.5	0 11	0,000	51,28	50 482,855		
Device	Routing	Invert	Outlet D	evices		
#1	Primary	144.00'	24.0" R	ound Culvert		
	2		L= 79.0'	RCP, end-section	conforming to fill, Ke= 0.500	
			Inlet / Ou	itlet Invert= 144.00'	/ 143.21' S= 0.0100 '/' Cc= 0.900	
			n= 0.013	, Flow Area= 3.14 s	sf	
#2	Secondary	150.00'			Broad-Crested Rectangular Weir	
			· · ·	,	0.80 1.00 1.20 1.40 1.60	
			Coef. (E	nglish) 2.68 2.70 2	2.70 2.64 2.63 2.64 2.64 2.63	
. .						

Primary OutFlow Max=33.25 cfs @ 12.42 hrs HW=149.85' TW=145.02' (Dynamic Tailwater) -1=Culvert (Inlet Controls 33.25 cfs @ 10.58 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=141.70' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2CP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Area =		12.710 ac, 9	94.57% Impervious, Inflow	Depth = 5.73" for 25-year event			
Inflow	=	76.39 cfs @	12.08 hrs, Volume=	6.065 af			
Outflow	=	22.56 cfs @	12.40 hrs, Volume=	3.726 af, Atten= 70%, Lag= 19.1 min			
Primary	=	22.56 cfs @	12.40 hrs, Volume=	3.726 af			
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH							

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.37' @ 12.40 hrs Surf.Area= 32,437 sf Storage= 143,191 cf

Plug-Flow detention time= 235.2 min calculated for 3.726 af (61% of inflow) Center-of-Mass det. time= 129.5 min (887.0 - 757.5)

Volume	Inve	rt Avail.Sto	rage Storage	Description	
#1	138.0	0' 240,90	05 cf Custom Stage Data (Prismatic)Listed below (Recalc)		
Elevatio	מר	Surf.Area	Inc.Store	Cum.Store	
fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
· · · · ·	,		1 1		
138.0		730	0	0	
139.0		1,695	1,213	1,213	
140.0	00	3,150	2,423	3,635	
141.(00	6,840	4,995	8,630	
142.0	00	12,885	9,863	18,493	
143.0	00	17,405	15,145	33,638	
144.(00	21,190	19,298	52,935	
145.0	00	24,465	22,828	75,763	
146.0	00	27,780	26,123	101,885	
147.0	00	31,160	29,470	131,355	
148.0	00	34,590	32,875	164,230	
149.0	00	38,295	36,443	200,673	
150.0	00	42,170	40,233	240,905	
		,	,	,	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	142.30'	30.0" Round	d Culvert	
	-		L= 65.0' RC	P, end-section c	onforming to fill, Ke= 0.500
					141.50' S= 0.0123 '/' Cc= 0.900
			n= 0.013, Flo	ow Area= 4.91 sf	
#2	Device 1	146.00'		'Horiz. Orifice/	
				ir flow at low hea	

Primary OutFlow Max=22.56 cfs @ 12.40 hrs HW=147.37' TW=141.87' (Dynamic Tailwater) -1=Culvert (Passes 22.56 cfs of 46.21 cfs potential flow) -2=Orificae/Crete (Orificae Controls 22.56 cfs @ 5.64 free)

2=Orifice/Grate (Orifice Controls 22.56 cfs @ 5.64 fps)

Summary for Pond 2DP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Area =	2.770 ac, 7	75.81% Impervious, Infl	ow Depth = 4.64"	for 25-year event			
Inflow =	12.80 cfs @	12.08 hrs, Volume=	1.071 af	-			
Outflow =	0.49 cfs @	15.34 hrs, Volume=	0.203 af, Atte	en= 96%, Lag= 195.3 min			
Primary =	0.49 cfs @	15.34 hrs, Volume=	0.203 af				
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH							
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af				
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH							

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.27' @ 15.34 hrs Surf.Area= 10,662 sf Storage= 38,583 cf

Plug-Flow detention time= 643.0 min calculated for 0.203 af (19% of inflow) Center-of-Mass det. time= 361.7 min (1,111.9 - 750.1)

Volume	Invert	Avail.Sto	rage Storage Description		
#1	#1 139.00' 89,683 cf Custom		Stage Data (Pr	ismatic) Listed below (Recalc)	
				a a <i>i</i>	
Elevatio		urf.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
139.0		105	0	0	
140.0		1,200	653	653	
141.0		2,565	1,883	2,535	
142.0	-	4,380	3,473	6,008	
143.0	-	6,200	5,290	11,298	
144.0	-	7,440	6,820	18,118	
145.0		8,800	8,120	26,238	
146.0		10,240	9,520	35,758	
147.0	-	11,800	11,020	46,778	
148.0		13,425	12,613	59,390	
149.0		15,130	14,278	73,668	
150.0	00	16,900	16,015	89,683	
Б					
Device	Routing	Invert	-		
#1	Primary	142.30'	24.0" Round		
					onforming to fill, Ke= 0.500
					141.70' S= 0.0118 '/' Cc= 0.900
			,	w Area= 3.14 sf	
#2	Device 1	146.20'			
				r flow at low hea	
#3 Secondary 149.50' 10.0' long x 20.0' breadth Broad-Crested					
					0.80 1.00 1.20 1.40 1.60
			Coef. (English	n) 2.68 2.70 2.1	70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.49 cfs @ 15.34 hrs HW=146.27' TW=145.17' (Dynamic Tailwater) 1=Culvert (Passes 0.49 cfs of 15.87 cfs potential flow) 2=Orifice/Grate (Weir Controls 0.49 cfs @ 0.87 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' TW=138.00' (Dynamic Tailwater) -3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2EP: FRENCH'S STREAM WEST BRANCH

Per site visit outlet consists of one 60-inch culvert.

Inflow Area = 401.120 ac, 22.54% Impervious, Inflow Depth > 3.65" for 25-year event Inflow = 216.74 cfs @ 13.75 hrs, Volume= 121.881 af Outflow = 199.15 cfs @ 14.71 hrs, Volume= 121.880 af, Atten= 8%, Lag= 57.9 min Primary = 199.15 cfs @ 14.71 hrs, Volume= 121.880 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 145.33' @ 14.71 hrs Surf.Area= 76,038 sf Storage= 228,758 cf

Plug-Flow detention time= 11.2 min calculated for 121.880 af (100% of inflow) Center-of-Mass det. time= 11.2 min (1,012.5 - 1,001.3)

Volume	Inve	ert Avail.Sto	rage Storage Description			
#1	138.0	00' 524,10	60 cf Custom Stage Data (Prismatic)Listed below (Recalc)			
Elevation		Surf.Area	Inc.Stor			
(fee	et)	(sq-ft)	(cubic-feet	t) (cubic-feet)		
138.0	00	0		0 0		
140.0	00	9,600	9,60	0 9,600		
141.0	00	13,135	11,36	8 20,968		
142.0	00	35,665	24,40	0 45,368		
143.0	00	47,280	41,47	3 86,840		
144.0	00	58,400	52,84	0 139,680		
145.0	00	71,585	64,99	3 204,673		
146.0	00	85,230	78,40	8 283,080		
147.0	00	106,515	95,87	3 378,953		
148.0	00	183,900	145,20	8 524,160		
Device	Routing	Invert	Outlet De	vices		
#1	Primary	138.00'	60.0" Ro	ound Culvert		
			L= 380.0'	RCP, end-section	conforming to fill, Ke= 0.500	
	Inlet / Outlet Invert= 138.00' / 135.70' S= 0.0061 '/' Cc= 0.900			' 135.70' S= 0.0061 '/' Cc= 0.900		
	n= 0.013 Concrete pipe, bends & connections, Flow Area= 19.63 st					
Drimary OutElow Max-100 15 of @ 14 71 bre H\M-145 33' T\M-131 03' (Dynamic Tailwater)						

Primary OutFlow Max=199.15 cfs @ 14.71 hrs HW=145.33' TW=131.93' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 199.15 cfs @ 10.14 fps)

Summary for Pond 2FP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 872.630 ac, 11.83% Impervious, Inflow Depth > 3.71" for 25-year event Inflow = 319.71 cfs @ 13.22 hrs, Volume= 269.598 af Outflow 316.61 cfs @ 13.50 hrs, Volume= = 269.560 af, Atten= 1%, Lag= 16.8 min 129.23 cfs @ 13.50 hrs, Volume= Primary = 92.535 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Secondary = 187.38 cfs @ 13.50 hrs, Volume= 177.025 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 132.11' @ 13.50 hrs Surf.Area= 58,288 sf Storage= 101,424 cf

Plug-Flow detention time= 5.1 min calculated for 269.522 af (100% of inflow) Center-of-Mass det. time= 4.7 min (1,136.7 - 1,132.0)

Volume	Invert	Avail.Sto	rage Storage	Description				
#1	125.90'	665,27	78 cf Custom	Stage Data (Pr	ismatic)Listed below (Recalc)			
Elevatio		f.Area	Inc.Store	Cum.Store				
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)				
125.9	-	0	0	0				
130.0		7,650	36,182	36,182				
131.0		2,340	19,995	56,177				
132.0		6,105	39,223	95,400				
133.0)0 7	6,835	66,470	161,870				
134.0)0 9	93,610	85,223	247,092				
135.0		1,175	102,393	349,485				
136.0	0 15	53,700	132,438	481,922				
137.0	0 21	3,010	183,355	665,278				
Device	Routing	Invert	Outlet Devices	6				
#1	Primary	127.60'	60.0" Round	Culvert				
	,		L= 34.0' RCF	, end-section co	onforming to fill, Ke= 0.500			
				Inlet / Outlet Invert= 126.60' / 127.60' S= -0.0294 '/' Cc= 0.900				
			n= 0.013, Flov	w Area= 19.63 s	sf			
#2	Secondary	126.70'	72.0" Round					
		y		L= 34.0' RCP, end-section conforming to fill, Ke= 0.500				
					126.70' S= -0.0235 '/' Cc= 0.900			
			n= 0.013. Flov	w Area= 28.27 s	sf			
#3	Tertiary	135.50'	10.0' long x 20.0' breadth Spillway over Path					
	3		Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60					
					70 2.64 2.63 2.64 2.64 2.63			
			(J	,				

Primary OutFlow Max=129.23 cfs @ 13.50 hrs HW=132.11' TW=0.00' (Dynamic Tailwater) ☐ 1=Culvert (Barrel Controls 129.23 cfs @ 7.45 fps)

Secondary OutFlow Max=187.38 cfs @ 13.50 hrs HW=132.11' TW=0.00' (Dynamic Tailwater) 2=Culvert (Barrel Controls 187.38 cfs @ 7.96 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=125.90' TW=0.00' (Dynamic Tailwater) -3=Spillway over Path (Controls 0.00 cfs)

Summary for Pond 2IP: PROPOSED PHASE 1 BASIN

Inflow Area = 112.800 ac, 18.86% Impervious, Inflow Depth = 3.93" for 25-year event Inflow = 169.61 cfs @ 12.14 hrs, Volume= 36.931 af 57.56 cfs @ 17.56 hrs, Volume= 57.56 cfs @ 17.56 hrs, Volume= Outflow 31.204 af, Atten= 66%, Lag= 325.3 min = Primary = 31.204 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 145.99' @ 15.85 hrs Surf.Area= 162,334 sf Storage= 972,688 cf

Plug-Flow detention time= 409.1 min calculated for 31.204 af (84% of inflow) Center-of-Mass det. time= 327.6 min (1,236.4 - 908.8)

Volume	Invert	Avail.Stor	rage Stor	age Description	
#1	139.00'	1,312,74	18 cf Cus	tom Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	on Surf.A	rea	Inc.Store	e Cum.Store	
(fee		(sq-ft)) (cubic-feet)	
139.0		116,400		$) \qquad 0$	
140.0	,		119,60		
141.0	0 129,	270	126,03	5 245,635	
142.0			132,530	,	
143.0	,		139,07	,	
144.0)		145,67	,	
145.0	,		152,33	,	
146.0	,		159,040	,	
147.0	,		165,81	, ,	
148.0	00 176,	075	172,648	3 1,312,748	
Device	Routing	Invert	Outlet De	vices	
#1	Primary	139.00'	36.0" Ro	und Culvert	
					conforming to fill, Ke= 0.500
					137.00' S= 0.0200 '/' Cc= 0.900
				Flow Area= 7.07 st	
#2	Device 1	141.00'			ice/Grate C= 0.600
#3	Device 1	142.50'		weir flow at low hea	ads i ce/Grate C= 0.600
#3	Device I	142.50		weir flow at low heat	
#4	Device 1	144.00'		6.0" Horiz. Orifice/	
<i>1</i> 7	Device I	144.00		weir flow at low hea	
#5	Secondary	146.00'			Broad-Crested Rectangular Weir
	2		•		0.80 1.00 1.20 1.40 1.60
			Coef. (En	glish) 2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=57.64 cfs @ 17.56 hrs HW=145.22' TW=142.35' (Dynamic Tailwater) -1=Culvert (late Controls 57.64 cfs @ 2.45 free)

-1=Culvert (Inlet Controls 57.64 cfs @ 8.15 fps)

2=Orifice/Grate (Passes < 20.39 cfs potential flow)

-3=Orifice/Grate (Passes < 21.49 cfs potential flow)

-4=Orifice/Grate (Passes < 47.92 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' TW=138.00' (Dynamic Tailwater) 5=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2JP: PROPOSED BASIN

Inflow Area = 15.720 ac, 0.00% Impervious, Inflow Depth = 4.71" for 25-year event Inflow 84.15 cfs @ 12.09 hrs, Volume= 6.169 af = 21.56 cfs @ 12.46 hrs, Volume= 21.56 cfs @ 12.46 hrs, Volume= Outflow 5.823 af, Atten= 74%, Lag= 22.4 min = Primary = 5.823 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 164.24' @ 12.46 hrs Surf.Area= 36,146 sf Storage= 106,135 cf

Plug-Flow detention time= 120.7 min calculated for 5.822 af (94% of inflow) Center-of-Mass det. time= 90.2 min (883.7 - 793.5)

Volume	Invert	Avail.Sto	rage Storage	e Description				
#1	161.00'	214,37	73 cf Custon	n Stage Data (Pri	smatic)Listed below (Recalc)			
Elevatio	on Surf	.Area	Inc.Store	Cum.Store				
(fee		sq-ft)	(cubic-feet)	(cubic-feet)				
161.0		9,530	0 0					
162.0		1,505	30,518	30,518				
163.0		3,540	32,523	63,040				
164.0	00 3	5,635	34,588	97,628				
165.0	00 3	7,790	36,713	134,340				
166.0		0,000	38,895 41,138	173,235				
167.0	0 42	42,275		214,373				
Device	Routing	Invert	Outlet Device	es				
#1	Primary	161.00'	24.0" Roun	d Culvert				
	-				nforming to fill, Ke= 0.500			
					55.00' S= 0.1132 '/' Cc= 0.900			
					s & connections, Flow Area= 3.14 sf			
#2	Device 1	161.50'			e/Grate C= 0.600			
що	Davias 1	164 50		eir flow at low head				
#3	Device 1	164.50'		" Horiz. Orifice/G				
#4	Secondary	165.50'						
π -	Occondary	econdary 100.00		10.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60				
					0 2.64 2.63 2.64 2.64 2.63			
			(- 9-	,				
	OutFlow Max				-145.09' (Dynamic Tailwater)			

-1=Culvert (Passes 21.56 cfs of 22.62 cfs potential flow)

2=Orifice/Grate (Orifice Controls 21.56 cfs @ 7.19 fps)

3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=161.00' TW=141.70' (Dynamic Tailwater) 4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2KP: PROPOSED BASIN

Inflow Area = 21.000 ac, 0.00% Impervious, Inflow Depth = 4.38" for 25-year event Inflow 106.14 cfs @ 12.09 hrs, Volume= 7.672 af = 17.84 cfs @ 12.56 hrs, Volume= Outflow = 6.668 af, Atten= 83%, Lag= 28.3 min Primary = 17.84 cfs @ 12.56 hrs, Volume= 6.668 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 151.60' @ 12.56 hrs Surf.Area= 53,855 sf Storage= 171,236 cf

Plug-Flow detention time= 225.1 min calculated for 6.667 af (87% of inflow) Center-of-Mass det. time= 166.9 min (969.2 - 802.3)

Volume	Invert	Avail.Stor	rage Storage	Description	
#1	148.00'	249,35	50 cf Custom	Stage Data (Prismatic)Listed below (Recalc)	
Elevatio	n Si	urf.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
148.0	1	42,500	0	0	
149.0	-	44,800	43,650	5	
150.0	00	47,300	46,050	89,700	
151.0	-	52,300	49,800	139,500	
152.0		54,900	53,600	193,100	
153.0	00	57,600	56,250	249,350	
Device	Routing	Invert	Outlet Device	S	
#1	Primary	148.00'	36.0" Round	Culvert	
			L= 100.0' RC	CP, end-section conforming to fill, Ke= 0.500	
				nvert= 148.00' / 146.00' S= 0.0200 '/' Cc= 0.	
				crete pipe, bends & connections, Flow Area=	7.07 sf
#2	Device 1	149.00'		"HVert. Orifice/Grate C= 0.600	
#2	Device 1	150 751		r flow at low heads	
#3	Device I	150.75'		" H Vert. Orifice/Grate C= 0.600 r flow at low heads	
#4	Device 1	152.00'		Horiz. Orifice/Grate C= 0.600	
<i>n</i> - t	201100 1	102.00		r flow at low heads	
#5	Secondary	152.50'	10.0' long x	20.0' breadth Broad-Crested Rectangular W	/eir
	,			.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60	
			Coef. (English	n) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63	1

Primary OutFlow Max=17.84 cfs @ 12.56 hrs HW=151.60' TW=131.16' (Dynamic Tailwater) -1=Culvert (Passes 17.84 cfs of 49.30 cfs potential flow)

2=Orifice/Grate (Orifice Controls 11.06 cfs @ 7.37 fps)

-3=Orifice/Grate (Orifice Controls 6.78 cfs @ 3.39 fps)

-4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=148.00' TW=125.90' (Dynamic Tailwater) **5=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Pond 2LP: PROPOSED BASIN

Inflow Area = 10.690 ac, 0.00% Impervious, Inflow Depth = 4.82" for 25-year event Inflow 58.22 cfs @ 12.09 hrs, Volume= 4.293 af = 19.90 cfs @ 12.36 hrs, Volume= Outflow = 4.066 af, Atten= 66%, Lag= 16.8 min Primary = 19.90 cfs @ 12.36 hrs, Volume= 4.066 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 157.82' @ 12.36 hrs Surf.Area= 24,919 sf Storage= 62,144 cf

Plug-Flow detention time= 97.2 min calculated for 4.066 af (95% of inflow) Center-of-Mass det. time= 67.8 min (858.1 - 790.4)

Volume	Invert	Avail.Stor	rage Storage [Description		
#1	155.00'	121,49	0 cf Custom	Stage Data (Pris	matic)Listed below (Recalc)	
Elevatio	on Su	urf.Area	Inc.Store	Cum.Store		
(fee	t)	(sq-ft)	(cubic-feet)	(cubic-feet)		
155.0	0	19,190	0	0		
156.0	00	21,160	20,175	20,175 20,175		
157.0	0	23,200	22,180	42,355		
158.0	-	25,290	24,245	66,600		
159.0		27,430	26,360	92,960		
160.0	00	29,630	28,530	121,490		
Device	Routing	Invert	Outlet Devices			
#1	Primary	155.00'	24.0" Round	Culvert		
	2		L= 50.0' RCP	, end-section con	forming to fill, Ke= 0.500	
					54.50' S= 0.0100 '/' Cc= 0.900	
			,	v Area= 3.14 sf		
#2	Device 1	155.50'	•••••		e/Grate C= 0.600	
	D · · · ·			flow at low head		
#3	Device 1	157.00'	36.0" W x 8.0" H Vert. Orifice/Grate C= 0.600			
#1	Davias 1	159 501		flow at low heads	-	
#4	Device 1	158.50'		Horiz. Orifice/Gr		
#5	Secondary	159.00'			s ad-Crested Rectangular Weir	
#5	Secondary	159.00			80 1.00 1.20 1.40 1.60	
) 2.64 2.63 2.64 2.64 2.63	
				, 2.30 2.10 2.10	2.01 2.00 2.01 2.01 2.00	

Primary OutFlow Max=19.90 cfs @ 12.36 hrs HW=157.82' TW=130.72' (Dynamic Tailwater) -1=Culvert (Barrel Controls 19.90 cfs @ 6.33 fps)

2=Orifice/Grate (Passes < 19.44 cfs potential flow)

-3=Orifice/Grate (Passes < 6.59 cfs potential flow)

-4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=155.00' TW=125.90' (Dynamic Tailwater) **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2MP: PROPOSED BASIN

Inflow Area = 19.350 ac, 0.00% Impervious, Inflow Depth = 4.82" for 25-year event 7.770 af Inflow 105.39 cfs @ 12.09 hrs, Volume= = 71.51 cfs @ 12.17 hrs, Volume= 71.51 cfs @ 12.17 hrs, Volume= Outflow = 7.601 af, Atten= 32%, Lag= 5.1 min Primary = 7.601 af Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 181.13' @ 12.17 hrs Surf.Area= 20,526 sf Storage= 71,059 cf

Plug-Flow detention time= 53.1 min calculated for 7.600 af (98% of inflow) Center-of-Mass det. time= 40.0 min (830.4 - 790.4)

Volume	Invert	Avail.Sto	rage Storage	e Description			
#1	177.00'	89,40	00 cf Custon	n Stage Data (Prismatic)Listed below			
Elevatio	on Si	urf.Area	Inc.Store	Cum.Store			
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)			
177.0	1	14,000	0	0			
178.0	00	15,500	14,750	14,750			
179.0	-	17,000	16,250	31,000			
180.0		18,600	17,800	48,800			
181.0		20,300	19,450	68,250			
182.0	00	22,000	21,150	89,400			
Device	Routing	Invert	Outlet Device	es			
#1	Primary	177.00'	42.0" Round	d Culvert			
	2		L= 50.0' RC	CP, end-section conforming to fill, Ke= 0.500			
				Invert= 177.00' / 176.00' S= 0.0200 '/' Cc= 0.900			
			,	low Area= 9.62 sf			
#2	Device 1	177.50'		0" H Vert. Orifice/Grate C= 0.600			
		(= 0 = 0)		eir flow at low heads			
#3	Device 1	178.50'	36.0" W x 12.0" H Vert. Orifice/Grate C= 0.600				
#1	Davias 1	100.001		eir flow at low heads			
#4	Device 1	180.00'		" Horiz. Orifice/Grate C= 0.600 eir flow at low heads			
#5	Secondary	181.50'		20.0' breadth Broad-Crested Rectangular Weir			
π u	Coondary	101.00		0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60			
				sh) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63			
			(-j •				

Primary OutFlow Max=71.51 cfs @ 12.17 hrs HW=181.13' TW=152.50' (Dynamic Tailwater) -1=Culvert (Inlet Controls 71.51 cfs @ 7.43 fps)

2=Orifice/Grate (Passes < 13.28 cfs potential flow)

-3=Orifice/Grate (Passes < 21.05 cfs potential flow)

-4=Orifice/Grate (Passes < 46.12 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=177.00' TW=150.00' (Dynamic Tailwater) **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 3AP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 61.820 ac, 8.41% Impervious, Inflow Depth = 3.76" for 25-year event Inflow 93.55 cfs @ 13.04 hrs, Volume= 19.350 af = Outflow 80.94 cfs @ 13.31 hrs, Volume= 19.344 af, Atten= 13%, Lag= 16.5 min = 65.43 cfs @ 13.31 hrs, Volume= Primary = 18.404 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH Secondary = 15.51 cfs @ 13.31 hrs, Volume= 0.941 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.40' @ 13.31 hrs Surf.Area= 77,102 sf Storage= 58,131 cf

Plug-Flow detention time= 6.4 min calculated for 19.342 af (100% of inflow) Center-of-Mass det. time= 6.2 min (887.8 - 881.6)

Volume	Inver	t Avail.Sto	rage Storag	ge Description	
#1	141.50	' 125,60	03 cf Custo	om Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee 141.5	et)	urf.Area (sq-ft) 0	Inc.Store (cubic-feet) 0	Cum.Store (cubic-feet) 0	
145.0 146.0 147.0 148.0	00 00 00	3,630 12,565 31,705 146,330	6,353 8,098 22,135 89,018	6,353 14,450 36,585 125,603	
Device	Routing	Invert	Outlet Devi	ces	
#1	Primary	142.20'	36.0" Rou	nd Culvert	
#2	Secondary	/ 146.70'	Inlet / Outle n= 0.013 C 10.0' long Head (feet)	t Invert= 141.50' / oncrete pipe, ben x 15.0' breadth S 0.20 0.40 0.60	conforming to fill, Ke= 0.500 142.20' S= -0.0167 '/' Cc= 0.900 ds & connections, Flow Area= 7.07 sf Spillway over Path 0.80 1.00 1.20 1.40 1.60 .70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=65.43 cfs @ 13.31 hrs HW=147.40' TW=135.63' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 65.43 cfs @ 9.26 fps)

Secondary OutFlow Max=15.51 cfs @ 13.31 hrs HW=147.40' TW=135.63' (Dynamic Tailwater) **2=Spillway over Path** (Weir Controls 15.51 cfs @ 2.23 fps)

Summary for Pond 3BP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 193.720 ac, 8.56% Impervious, Inflow Depth = 3.62" for 25-year event Inflow 229.36 cfs @ 13.43 hrs, Volume= 58.401 af = Outflow 222.14 cfs @ 13.58 hrs, Volume= 58.401 af, Atten= 3%, Lag= 9.0 min = 166.13 cfs @ 13.58 hrs, Volume= Primary = 55.050 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH Secondary = 56.01 cfs @ 13.58 hrs, Volume= 3.351 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 135.81' @ 13.58 hrs Surf.Area= 66,525 sf Storage= 204,979 cf

Plug-Flow detention time= 12.7 min calculated for 58.393 af (100% of inflow) Center-of-Mass det. time= 12.7 min (919.5 - 906.8)

Volume	Inve	rt Avail.Sto	rage Storage	Description					
#1	129.20)' 1,254,59	93 cf Custom	Stage Data (Pi	rismatic)Listed below (Recalc)				
				-					
Elevatio		Surf.Area	Inc.Store	Cum.Store					
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)					
129.2	20	0	0	0					
130.0	00	2,770	1,108	1,108					
131.0	00	10,320	6,545	7,653					
132.0	00	30,890	20,605	28,258					
133.0	00	37,250	34,070	62,328					
134.0	00	45,960	41,605	103,933					
135.0		56,730	51,345	155,278					
136.0	00	68,875	62,803	218,081					
137.0	00	83,650	76,263	294,343					
138.0		105,010	94,330	388,673					
139.0	00	125,940	115,475	504,148					
140.0	00	161,860	143,900	648,048					
141.0	00	187,685	174,773	822,821					
142.0	00	214,700	201,193	1,024,013					
143.0	00	246,460	230,580	1,254,593					
Device	Routing	Invert	Outlet Devices	2					
-	0								
#1	Primary	129.20'	60.0" Round						
					conforming to fill, Ke= 0.500				
					128.90' S= 0.0150 '/' Cc= 0.900				
	0	405 401			Flow Area= 19.63 sf				
#2	Secondar	y 135.10'			pillway over Path				
					0.80 1.00 1.20 1.40 1.60				
			Coet. (English	1) 2.49 2.56 2.	70 2.69 2.68 2.69 2.67 2.64				
Primary	Primary OutFlow Max=166 13 cfs @ 13 58 brs_HW=135 81'_TW=0.00'_ (Dynamic Tailwater)								

Primary OutFlow Max=166.13 cfs @ 13.58 hrs HW=135.81' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 166.13 cfs @ 8.47 fps)

Secondary OutFlow Max=56.00 cfs @ 13.58 hrs HW=135.81' TW=0.00' (Dynamic Tailwater) 2=Spillway over Path (Weir Controls 56.00 cfs @ 2.26 fps)

Summary for Subcatchment 1A:

Runoff = 5.92 cfs @ 12.08 hrs, Volume= 0.457 af, Depth= 6.94" Routed to Pond 1AP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription				
*	0.	710	98	Pave	Pavement				
	0.	080	39	>75%	75% Grass cover, Good, HSG A				
	0.790 92 Weighted Average								
	0.	080		10.1	3% Pervio	us Area			
	0.710 89.87% Impervious Area								
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
	6.0						Direct Entry,		

Summary for Subcatchment 1B:

Runoff = 6.69 cfs @ 12.08 hrs, Volume= 0.512 af, Depth= 6.83" Routed to Pond 1BP : SPORTS COMPLEX INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription				
*	0.	800	98	Pave	Pavement				
	0.	100	39	>75%	•75% Grass cover, Good, HSG A				
	0.900 91 Weighted Average								
	0.	100		11.1	1% Pervio	us Area			
	0.800 88.89% Impervious Area					vious Area			
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
	6.0						Direct Entry,		

Summary for Subcatchment 1C:

Assumed pipe channel has slope 0.005 since no data given

14.461 af, Depth= 6.47" Runoff = 91.06 cfs @ 12.60 hrs, Volume= Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 100-year Rainfall=7.90"

	Area (ac) C	N Desc	cription		
*					elonment A	rea
*	I I				clopinent	
*			8 Root			
*				n Water		
					over, Good	HSG A
_				phted Aver		,1007
		020 C		2% Pervio		
		760			/ious Area	
	13.	100	75.0		nous Alea	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Description
_	23.4	100	0.0021	0.07	(010)	Sheet Flow,
	23.4	100	0.0021	0.07		Grass: Short $n= 0.150$ P2= 3.40"
	4.4	94	0.0026	0.36		Shallow Concentrated Flow,
	7.7	34	0.0020	0.00		Short Grass Pasture Kv= 7.0 fps
	7.7	252	0.0061	0.55		Shallow Concentrated Flow,
	1.1	202	0.0001	0.00		Short Grass Pasture Kv= 7.0 fps
	0.1	14	0.0701	1.85		Shallow Concentrated Flow,
	0.1	17	0.0701	1.00		Short Grass Pasture Kv= 7.0 fps
	2.9	154	0.0155	0.87		Shallow Concentrated Flow,
	2.0		0.0100	0.01		Short Grass Pasture Kv= 7.0 fps
	1.4	438	0.0050	5.09	16.00	
				0.00		24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'
						n= 0.013 Concrete pipe, bends & connections
	0.8	288	0.0050	5.91	29.00	
						30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63'
						n= 0.013 Concrete pipe, bends & connections
	0.7	295	0.0050	6.67	47.16	Pipe Channel,
						36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75'
						n= 0.013 Concrete pipe, bends & connections
	2.9	1,299	0.0050	7.39	71.14	Pipe Channel,
						42.0" Round Area= 9.6 sf Perim= 11.0' r= 0.88'
						n= 0.013 Concrete pipe, bends & connections
	0.2	93	0.0050	8.08	101.57	
						48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00'
_						n= 0.013 Concrete pipe, bends & connections
	44.5	3 0 2 7	Total			

44.5 3,027 Total

Summary for Subcatchment 1D:

Runoff = 44.05 cfs @ 12.99 hrs, Volume= Routed to Pond 1DP : UPSTREAM DOGLEG 9.044 af, Depth= 3.70"

_	Area	(ac)	CN	Desc	cription				
*	5.	040	88	Prop	Proposed Development Area				
	5.	200	30	Woo	ds, Good,	HSG A			
	4.	720	70	Woo	ds, Good,	HSG C			
	5.	970	77	Woo	ds, Good,	HSG D			
	4.	070	39			over, Good	,		
	4.	100	74			over, Good			
	0.	220	80	>75%	% Grass co	over, Good	, HSG D		
	29.320 64 Weighted Average								
	29.	320		100.	00% Pervi	ous Area			
	_								
	Tc	Lengt		Slope	Velocity	Capacity	Description		
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	33.5	100) 0.	0244	0.05		Sheet Flow,		
							Woods: Dense underbrush n= 0.800 P2= 3.40"		
	38.7	1,640	0.	0200	0.71		Shallow Concentrated Flow,		
							Woodland Kv= 5.0 fps		
	72.2	1,740) To	otal					

Summary for Subcatchment 1E:

Runoff = 730.46 cfs @ 12.09 hrs, Volume= 53.090 af, Depth= 5.76" Routed to Pond 1IP : TACAN

	Area	(ac)	CN	Desc	Description						
*	63.	870	88	Prop	Proposed Development Area						
	44.	030	77	Woo	/oods, Good, HSG D						
	2.	610 39 >75% Grass cover, Good, HSG A									
	110.510 82 Weighted Average										
	110.510			100.	00% Pervi	ous Area					
	_										
	Тс	Leng		Slope	Velocity	Capacity	Description				
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)					
	6.0						Direct Entry,				
							•				

Summary for Subcatchment 1F:

Runoff 69.00 cfs @ 12.09 hrs, Volume= 5.082 af, Depth= 6.12" = Routed to Pond 1FP : EXISTING PARKWAY BASIN

_	Area (ac)	CN	Desc	cription							
*	5.0	070	98	Pave	ement							
*	0.4	410	100	Ope	pen Water							
	1.8	380	61	>75%	75% Grass cover, Good, HSG B							
	2.6	510	74	>75%	5% Grass cover, Good, HSG C							
	9.9	970	85	Weig	ghted Aver	age						
	4.4	190		45.0	4% Pervio	us Area						
	5.4	480		54.9	6% Imperv	ious Area/						
	Та	امم	uth	Slana	Valaaitu	Conosity	Description					
		Leng	,	Slope	Velocity	Capacity						
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)						
	6.0						Direct Entry,					

Summary for Subcatchment 1G:

Runoff = 13.80 cfs @ 12.37 hrs, Volume= 1.840 af, Routed to Pond 1GP : SPORTS COMPLEX BASIN

1.840 af, Depth= 6.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 100-year Rainfall=7.90"

	Area	(ac) C	N Des	cription		
*	1.	850 9	98 Pave	ement		
*	0.	990 8	35 Artifi	icial Turf		
	0.	340 8	30 >75°	% Grass c	over, Good	, HSG D
	3.	180 9	92 Weig	ghted Aver	ade	
		330		2% Pervio	•	
		850	58.1	8% Imperv	vious Area	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•
	26.5			/		Direct Entry, Artificial Turf
	1.8	346	0.0050	3.21	2.52	•
	1.0	0-10	0.0000	0.21	2.02	12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n = 0.013 Corrugated PE, smooth interior
	0.6	116	0.0050	3.21	2.52	-
	0.0	110	0.0000	0.21	2.02	12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n = 0.013 Corrugated PE, smooth interior
	0.0	11	0.0900	13.61	10.69	0
	0.0		0.0000	10.01	10.00	12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
						n= 0.013 Concrete pipe, bends & connections
	0.2	40	0.0050	4.20	7 43	Pipe Channel,
	0.2	-0	0.0000	1.20	7.40	18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	0.1	18	0.0050	4.20	7.43	• •
	0.1	10	0.0000	7.20	7.40	18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
						n= 0.013 Concrete pipe, bends & connections
	20.2	531	Total			

29.2 531 Total

Summary for Subcatchment 1H:

Runoff = 10.05 cfs @ 12.08 hrs, Volume= 0.790 af, Depth= 7.18" Routed to Pond 1HP : SPORTS COMPLEX BASIN

	Area (a	c) CN	Des	cription		
*	1.00	00 98	B Pave	ement		
*	0.09	90 8	5 Artifi	icial Turf		
_	0.23	30 8) >75°	% Grass co	over, Good	I, HSG D
	1.32	20 94	1 Weig	ghted Aver	age	
	0.32	20	24.2	4% Pervio	us Area	
	1.00	00	75.7	6% Imper	ious Area/	
	Tc L (min)	ength (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0					Direct Entry,

Summary for Subcatchment 1I:

Runoff = 147.28 cfs @ 13.39 hrs, Volume= Routed to Pond 1IP : TACAN 38.179 af, Depth= 4.15"

_	Area	(ac)	CN	Desc	cription				
*	15.650 88 Proposed Development Area								
	1.950 55 Woods, Good, HSG B								
	7.	940	77		ds, Good,				
	14.	760	48		h, Good, H				
		020	73		h, Good, H				
	38.	700	61			over, Good			
	5.	070	74			over, Good			
	6.	270	80	>75%	% Grass co	over, Good	, HSG D		
	110.	360	68	Weig	phted Aver	age			
	110.	360		100.	00% Pervi	ous Area			
	_								
	Tc	Lengt		Slope	Velocity	Capacity	Description		
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)			
	47.9	10	0 (0.0100	0.03		Sheet Flow,		
							Woods: Dense underbrush n= 0.800 P2= 3.40"		
	22.5	64	0 0	0.0090	0.47		Shallow Concentrated Flow,		
							Woodland Kv= 5.0 fps		
	33.5	1,00	5 (0.0100	0.50		Shallow Concentrated Flow,		
							Woodland Kv= 5.0 fps		
	103.9	1,74	5 7	Fotal					

Summary for Subcatchment 1J:

Runoff = 34.90 cfs @ 12.08 hrs, Volume= Routed to Pond 1LP : CENTRAL GREENWAY 2.873 af, Depth= 7.66"

_	Area	(ac)	CN	Desc	cription		
*	4.	500	98	Pave	ement		
	4.	500		100.	00% Impe	rvious Area	a
	Tc	Leng		Slope	Velocity		Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	6.0						Direct Entry,

Summary for Subcatchment 1K:

Runoff = 182.56 cfs @ 12.14 hrs, Volume= Routed to Pond 1LP : CENTRAL GREENWAY

15.605 af, Depth= 6.47"

	Area	(ac)	CN	Desc	cription		
*	28.	Area					
	28.	940		100.	00% Pervi	ous Area	
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	10.0						Direct Entry,

Summary for Subcatchment 1L:

Runoff = 184.08 cfs @ 12.14 hrs, Volume= 15.555 af, Depth= 6.23" Routed to Pond 1LP : CENTRAL GREENWAY

	Area	(ac)	CN	Desc	Description							
*	26.	870	88	Prop	osed Deve	elopment A	Area					
	2.	070	61	>75	% Grass co	over, Good	I, HSG B					
	1.	000	74	>75%	% Grass co	over, Good	I, HSG C					
	29.940 86 Weighted Average											
	29.	940		100.	00% Pervi	ous Area						
	Тс	Leng		Slope	Velocity	Capacity	Description					
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)						
	10.0						Direct Entry,					
							•					

Summary for Subcatchment 1M:

Runoff = 62.45 cfs @ 12.14 hrs, Volume= 5.250 af, Depth= 6.12" Routed to Pond 1MP : CENTRAL GREENWAY

	Area	(ac)	(ac) CN Description									
*	* 9.060 88 Proposed Development Area											
1.240 61 >75% Grass cover, Good, HSG B												
	10.	10.300 85 Weighted Average										
	10.	300		100.	00% Pervi	ous Area						
	Тс	Leng		Slope	Velocity	Capacity	Description					
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)						
	10.0						Direct Entry,					

Summary for Subcatchment 1N:

Assumed slope of 0.002

Runoff	=	155.00 cfs @	12.14 hrs,	Volume=	13.098 af,	Depth= 6.23"
Routed	d to Po	ond 1NP : WES	Γ GREENW	AY		

	Area	(ac) CN Description								
*	22.	110	88	Prop	osed Deve	elopment A	Area			
	0.	530	39	>75	% Grass co	over, Good	d, HSG A			
	2.	570	74	>75%	% Grass co	over, Good	d, HSG C			
	25.	210	86	Weig	ghted Aver	age				
	25.210 100.00% P			00% Pervi	ous Area					
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	10.0	•		. /	· · ·		Direct Entry,			

Summary for Subcatchment 10:

Runoff = 54.10 cfs @ 12.08 hrs, Volume= 4.028 af, Depth= 6.35" Routed to Pond 1OP : WEST GREENWAY

	Area	(ac)	CN	Desc	Description								
*	7.	000	88	Prop	osed Dev	elopment A	Area						
	0.	610	74	>75	% Grass co	over, Good	d, HSG C						
	7.	610	87	Weig	ghted Aver	age							
	7.	610		100.	00% Pervi	ous Area							
	Тс	Leng		Slope	Velocity	Capacity	Description						
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)							
	6.0						Direct Entry,						

Summary for Subcatchment 1P:

Runoff = 135.71 cfs @ 12.08 hrs, Volume= 10.1 Routed to Pond 1PP : WEST GREENWAY

10.106 af, Depth= 6.35"

	Area	(ac)	CN	Desc	Description								
*	17.	420	88	Prop	osed Dev	elopment A	Area						
	1.670 74 >75% Grass cover, Good, HSG C												
	19.	090	87	Weig	ghted Aver	age							
	19.	090		100.	00% Pervi	ous Area							
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description						
	6.0	(100		(13,11)	(1,000)	(010)	Direct Entry,						

Summary for Subcatchment 1Q:

Runoff = 120.35 cfs @ 12.08 hrs, Volume= 8.962 af, Depth= 6.35" Routed to Pond 1QP : WEST GREENWAY

	Area	(ac)	CN	Desc	Description						
*	15.	260	88	Prop	roposed Development Area						
	1.	670	74	4 >75% Grass cover, Good, HSG C							
16.930 87 Weighted Average											
	16.930 100.00% Pervious Area					ous Area					
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
	(min)	(iee	<i>.</i> ()	(11/11)	(II/Sec)	(CIS)					
	6.0						Direct Entry,				

Summary for Subcatchment 2A:

Runoff = 243.75 cfs @ 13.29 hrs, Volume= 61.264 af, Depth= 5.18" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area	(ac)	CN	Desc	cription					
*	4.	000	98	Pave	Pavement					
*	0.290 98		Root	Roof						
	115.	050	77	Woo	Woods, Good, HSG D					
	1.	620	57	Woo	Woods/grass comb., Poor, HSG A					
	4.	390	61	>75%	>75% Grass cover, Good, HSG B					
	16.	500	74		>75% Grass cover, Good, HSG C					
_	141.850 77			Weig	ghted Aver	age				
	137.	560			, 8% Pervio	•				
	4.290		3.02% Impervious Area							
					•					
	Tc	Lengtl	n S	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·			
	47.9	100) 0.	.0100	0.03		Sheet Flow,			
							Woods: Dense underbrush n= 0.800 P2= 3.40"			
	27.0	1,08	50.	.0180	0.67		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	11.4	480	0.	.0100	0.70		Shallow Concentrated Flow,			
							Short Grass Pasture Kv= 7.0 fps			
	14.2	42	50.	.0100	0.50		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	100.5	2,090) To	otal						

Summary for Subcatchment 2B:

Runoff = 311.35 cfs @ 12.08 hrs, Volume= 24 Routed to Pond 2BP : EXISTING BASIN

24.480 af, Depth= 7.18"

	Area ((ac)	CN	Desc	Description				
*	6.	650	98	Pave	ement				
*	26.	600	98	Roof					
_	7.	.650 74 >75% Grass cover, Good					I, HSG C		
	40.900 94 Weighted Average					age			
	7.	650		18.7	0% Pervio	us Area			
	33.	250		81.3	0% Imper	ious Area			
	Tc Length (min) (feet)			Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
		ופנ	<i>.</i>	(1011)	(10360)	(013)	Direct Fretry		
	6.0						Direct Entry,		

Summary for Subcatchment 2C:

Runoff = 97.87 cfs @ 12.08 hrs, Volume= 7.860 af, Depth= 7.42" Routed to Pond 2CP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	Description						
*	10.	340	98	Pave	Pavement						
*	1.	680	98	Roof	s						
	0.	400	39	>75%	% Grass co	over, Good	d, HSG A				
_	0.	290	74	>75%	% Grass co	over, Good	d, HSG C				
	12.710 96 Weighted Average										
	0.	690		5.43	% Perviou	s Area					
	12.	020		94.5	7% Imper∖	ious Area					
	Tc Lena		ith	Slope	Velocity	Capacity	Description				
				(ft/sec)	(cfs)	Boosipion					
	6.0			· · · /	, , ,		Direct Entry,				

Summary for Subcatchment 2D-1:

Runoff = 16.29 cfs @ 12.08 hrs, Volume= 1.341 af, Depth= 7.66" Routed to Pond 2DP : EXISTING PARKWAY BASIN

	Area (ac) CN Description			cription			
*	2.	100	98	98 Pavement			
	2.100 100.00% Impervious Area					rvious Area	3
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

Summary for Subcatchment 2D-2:

Runoff = 0.56 cfs @ 12.12 hrs, Volume= 0.062 af, Depth= 1.12" Routed to Pond 2DP : EXISTING PARKWAY BASIN

Area	(ac)	CN	Desc	Description						
0.	670	39	>75%	6 Grass co	I, HSG A					
0.	0.670 100.00% Pervious Area									
Tc _(min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
6.0						Direct Entry,				

Summary for Subcatchment 2E:

Runoff = 61.83 cfs @ 13.28 hrs, Volume= 14.669 af, Depth= 3.59" Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Area	(ac) C	N Dese	cription			
7.	930 3	80 Woo				
8.	340 7	'0 Woo	ds, Good,	HSG C		
22.	160 7	7 Woo	ds, Good,	HSG D		
7.040 39 >75% Grass cover, Good, HSG A						
3.	560 8	30 >75°	% Grass c	over, Good	HSG D	
49.	030 6	3 Weig	ghted Aver	age		
49.	030	100.	00% Pervi	ous Area		
-				• •		
Tc	Length	Slope	Velocity	Capacity	Description	
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
		(1.4,1.4)	(14,000)			
30.8	100	0.0300	0.05	(010)	Sheet Flow,	
30.8	100			(010)	Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.40"	
30.8 59.1	100 1,034			(010)		
		0.0300	0.05	(010)	Woods: Dense underbrush n= 0.800 P2= 3.40"	

Summary for Subcatchment 2F:

Runoff = 100.81 cfs @ 12.92 hrs, Volume= 20.270 af, Depth= 3.93" Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Area (ac) CN Description									
	20.	570	55 Woo	ods, Good,	HSG B				
	25.	620	77 Woo	Woods, Good, HSG D					
	15.770 61 >75% Grass cover, Good, H					, HSG B			
	61.960 66 Weighted Average								
	61.	960	100	.00% Pervi	ious Area				
	Тс	Length	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	47.9	100	0.0100	0.03		Sheet Flow,			
						Woods: Dense underbrush n= 0.800 P2= 3.40"			
	22.5	675	0.0100	0.50		Shallow Concentrated Flow,			
						Woodland Kv= 5.0 fps			
_	70.4	775	Total			·			

Summary for Subcatchment 2G:

Assumed Tc value

Runoff = 31.00 cfs @ 13.47 hrs, Volume= 9.092 af, Depth= 6.59" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area (ac)	CN	Desc	Description					
*	6.620	98	Pave	ement					
*	5.800	98	Roof						
_	4.140	61	>75%	% Grass co	over, Good	d, HSG B			
	16.560	89	Weig	phted Aver	age				
	4.140		25.0	0% Pervio	us Area				
	12.420		75.0	0% Imperv	vious Area				
		ngth	Slope	Velocity	Capacity	Description			
	<u>(min) (f</u>	eet)	(ft/ft)	(ft/sec)	(cfs)				
	120.0					Direct Entry,			

Summary for Subcatchment 2H:

Assumed Tc value

Runoff = 14.69 cfs @ 13.47 hrs, Volume= 4.218 af, Depth= 5.76" Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

	Area (ac)	CN	Desc	Description					
*	3.3	370	98	Pave	Pavement					
*	1.6	690	98	Roof	-					
	3.7	.720 61 >75% Grass cover, Good					I, HSG B			
	8.780 82 Weighted Average									
	3.7	720		42.3	7% Pervio	us Area				
	5.0	060		57.6	3% Imperv	ious Area				
	_									
	Tc Length		Slope	Velocity	Capacity	Description				
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)				
	120.0						Direct Entry,			

Summary for Subcatchment 2I-1:

Runoff = 150.64 cfs @ 12.14 hrs, Volume= 12.876 af, Depth= 6.47" Routed to Pond 2IP : PROPOSED PHASE 1 BASIN

	Area (ac) CN Description						
*	* 23.880 88 Proposed Development Ar						Area
	23.880 100.00% Pervious Area						
_	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	
	10.0						Direct Entry,

Summary for Subcatchment 2J:

Runoff = 111.75 cfs @ 12.08 hrs, Volume= 8.322 af, Depth= 6.35" Routed to Pond 2JP : PROPOSED BASIN

	Area	(ac)	CN	Desc	cription						
*	14.	430	88	Prop	Proposed Development Area						
	1.	290	80	>75	% Grass co	over, Good	I, HSG D				
	15.720 87 Weighted Average										
	15.	720		100.	00% Pervi	ous Area					
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
	6.0	(100	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(Iuity	(10000)	(010)	Direct Entry,				

Summary for Subcatchment 2K:

Runoff = 143.23 cfs @ 12.09 hrs, Volume= 10.499 af, Depth= 6.00" Routed to Pond 2KP : PROPOSED BASIN

	Area	(ac)	CN	Desc	cription				
*	12.	610	88	Prop	osed Dev	elopment A	rea		
	8.	390	77	Woo	ds, Good,	HSG D			
	21.000 84 Weighted Average								
	21.000 100.00% Pervious Area								
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
	6.0						Direct Entry,		

Summary for Subcatchment 2L:

Runoff = 76.93 cfs @ 12.08 hrs, Volume= Routed to Pond 2LP : PROPOSED BASIN

5.764 af, Depth= 6.47"

	Area	(ac)	CN	Desc	cription		
*	10.	690	88	Prop	osed Deve	elopment A	Area
	10.	690		100.	00% Pervi	ous Area	
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0	-					Direct Entry,

Summary for Subcatchment 2M:

Runoff = 139.25 cfs @ 12.08 hrs, Volume= 10 Routed to Pond 2MP : PROPOSED BASIN

10.434 af, Depth= 6.47"

	Area	(ac)	CN	Desc	cription		
*	19.	350	88	Prop	osed Dev	elopment A	Area
	19.	350		100.	00% Pervi	ous Area	
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

Summary for Subcatchment 3A:

Runoff = 131.39 cfs @ 12.97 hrs, Volume= 27.297 af, Depth= 5.30" Routed to Pond 3AP : FRENCH'S STREAM EAST BRANCH

	Area	(ac)	CN	Desc	cription		
*	5.	200	98	Pave	ement		
	0.	160	55	Woo	ds, Good,	HSG B	
	50.	970	77	Woo	ds, Good,	HSG D	
	5.	490	73	Brus	h, Good, H	ISG D	
	61.	820	78	Weig	ghted Aver	age	
		620		••	9% Pervio		
	5.200			8.41% Impervious Area			
	_					.	— • • •
	Tc	Lengt		Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	35.7	10) 0.	0208	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	2.1	6	3 0.	0114	0.53		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	37.0	1,27	20.	0131	0.57		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	74.8	1,43	3 To	otal			

Summary for Subcatchment 3B:

Runoff = 212.96 cfs @ 13.43 hrs, Volume= 55.695 af, Depth= 5.07" Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

_	Area	(ac)	CN	Desc	cription		
*	9.	990	98	Pave	ement		
*	1.	400	100	Ope	n Water		
	14.	050	55	Woo	ds, Good,	HSG B	
	83.	920	77	Woo	ds, Good,	HSG D	
	9.	370	73	Brus	h, Good, H	ISG D	
	6.	810	61			over, Good	
_	6.	360	80	>75%	6 Grass co	over, Good	, HSG D
	131.	900	76	Weig	phted Aver	age	
	120.	510		91.3	6% Pervio	us Area	
	11.	390		8.64	% Impervi	ous Area	
	Тс	Lengt		Slope	Velocity	Capacity	Description
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)	
	36.3	10	0 0	0.0200	0.05		Sheet Flow,
							Woods: Dense underbrush n= 0.800 P2= 3.40"
	70.7	1,50	0 0	0.0050	0.35		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	107.0	1,60	0 Т	otal			

Summary for Subcatchment 21-2:

Runoff = 51.28 cfs @ 12.14 hrs, Volume= 4.172 af, Depth= 4.26" Routed to Pond 2IP : PROPOSED PHASE 1 BASIN

	Area	(ac)	CN	Desc	cription						
*	7.	170	88	Prop	Proposed Development Area						
_	4.	570	39	>75	% Grass co	over, Good	I, HSG A				
	11.740 69 Weighted Average										
	11.740 100.00% Pervious Area										
	Тс	Leng		Slope	Velocity	Capacity	Description				
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)					
	10.0						Direct Entry,				
							•·				

Summary for Reach 1R: DP-1 TACAN OUTFALL

Inflow Area = 377.860 ac, 3.40% Impervious, Inflow Depth > 5.48" for 100-year event Inflow = 121.54 cfs @ 15.95 hrs, Volume= 172.424 af Outflow = 121.54 cfs @ 15.95 hrs, Volume= 172.424 af, Atten= 0%, Lag= 0.0 min Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: DP-2 FRENCH'S STREAM WEST BRANCH

Inflow Are	a =	872.630 ac, 11.83% Impervious, Inflov	v Depth > 5.23"	for 100-year event
Inflow	=	392.51 cfs @ 13.51 hrs, Volume=	380.682 af	
Outflow	=	392.51 cfs @ 13.51 hrs, Volume=	380.682 af, Atte	en= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: DP-3 FRENCH'S STREAM EAST BRANCH

Inflow Area =		193.720 ac,	8.56% Impervious, Inflow	Depth = 5.14"	for 100-year event
Inflow	=	314.32 cfs @	13.51 hrs, Volume=	82.986 af	
Outflow	=	314.32 cfs @	13.51 hrs, Volume=	82.986 af, Atte	en= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area =	0.790 ac, 89.87% Impervious, Inflow De	epth = 6.94" for 100-year event
Inflow =	5.92 cfs @ 12.08 hrs, Volume=	0.457 af
Outflow =	5.94 cfs @ 12.08 hrs, Volume=	0.457 af, Atten= 0%, Lag= 0.0 min
Discarded =	0.12 cfs @ 8.94 hrs, Volume=	0.207 af
Primary =	5.81 cfs @ 12.08 hrs, Volume=	0.250 af
Routed to Pond	1 1CP : MEMORIAL GROVE AVE. BASIN	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 171.41' @ 12.08 hrs Surf.Area= 2,201 sf Storage= 2,834 cf

Plug-Flow detention time= 82.8 min calculated for 0.457 af (100% of inflow) Center-of-Mass det. time= 82.8 min (852.2 - 769.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	168.50'	1,559 cf	24.83'W x 88.64'L x 2.33'H Field A
			5,136 cf Overall - 1,238 cf Embedded = 3,898 cf x 40.0% Voids
#2A	169.00'	1,238 cf	ADS_StormTech SC-310 +Cap x 84 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			84 Chambers in 7 Rows
#3	168.50'	85 cf	4.00'D x 6.80'H CB-Impervious
#4	175.20'	449 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
175.20	10	0	0
176.00	300	124	124
176.50	1,000	325	449

Device	Routing	Invert	Outlet Devices
#1	Primary	170.00'	18.0" Round Culvert
	-		L= 13.0' RCP, end-section conforming to fill, Ke= 0.500
			Inlet / Outlet Invert= 170.00' / 169.85' S= 0.0115 '/' Cc= 0.900
			n= 0.013, Flow Area= 1.77 sf
#2	Discarded	168.50'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.12 cfs @ 8.94 hrs HW=168.58' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=5.80 cfs @ 12.08 hrs HW=171.41' TW=152.81' (Dynamic Tailwater) ☐ 1=Culvert (Barrel Controls 5.80 cfs @ 4.37 fps)

Pond 1AP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

12 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 86.64' Row Length +12.0" End Stone x 2 = 88.64' Base Length 7 Device x 2.4.0" Wide + 0.0" Conceine x 0.4.00" Side Stone x 2 = 24.02 Dece Width

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

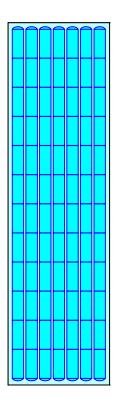
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

84 Chambers x 14.7 cf = 1,238.3 cf Chamber Storage

5,136.2 cf Field - 1,238.3 cf Chambers = 3,897.9 cf Stone x 40.0% Voids = 1,559.1 cf Stone Storage

Chamber Storage + Stone Storage = 2,797.5 cf = 0.064 afOverall Storage Efficiency = 54.5%Overall System Size = $88.64' \times 24.83' \times 2.33'$

84 Chambers 190.2 cy Field 144.4 cy Stone





Summary for Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN

Inflow Area =	0.900 ac, 88.89%	Impervious, Inflow De	epth = 6.83" fo	or 100-year event	
Inflow =	6.69 cfs @ 12.08	hrs, Volume=	0.512 af		
Outflow =	6.88 cfs @ 12.08	hrs, Volume=	0.512 af, Atten=	= 0%, Lag= 0.0 min	
Discarded =	0.13 cfs @ 8.82	hrs, Volume=	0.224 af		
Primary =	6.75 cfs @ 12.08	hrs, Volume=	0.288 af		
Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN					

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 171.80' @ 12.08 hrs Surf.Area= 2,378 sf Storage= 3,060 cf

Plug-Flow detention time= 80.7 min calculated for 0.512 af (100% of inflow) Center-of-Mass det. time= 80.7 min (853.7 - 772.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	169.00'	1,683 cf	24.83'W x 95.76'L x 2.33'H Field A
			5,549 cf Overall - 1,342 cf Embedded = 4,207 cf x 40.0% Voids
#2A	169.50'	1,342 cf	ADS_StormTech SC-310 +Cap x 91 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			91 Chambers in 7 Rows
#3	169.00'	72 cf	4.00'D x 5.70'H CB-Impervious
#4	172.70'	572 cf	Ponding at CB (Prismatic)Listed below (Recalc)
		3,668 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.70	10	0	0
173.00	300	47	47
174.50	400	525	572

Device	Routing	Invert	Outlet Devices
#1	Primary	170.50'	12.0" Round Culvert X 2.00
	·		L= 23.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 170.50' / 170.20' S= 0.0130 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Discarded	169.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.13 cfs @ 8.82 hrs HW=169.06' (Free Discharge) **2=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=6.70 cfs @ 12.08 hrs HW=171.78' TW=152.80' (Dynamic Tailwater) ☐ 1=Culvert (Inlet Controls 6.70 cfs @ 4.27 fps)

Pond 1BP: SPORTS COMPLEX INFILTRATION BASIN - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length) Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

7 Rows x 34.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 24.83' Base Width

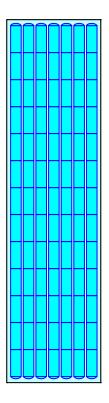
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

91 Chambers x 14.7 cf = 1,341.5 cf Chamber Storage

5,548.8 cf Field - 1,341.5 cf Chambers = 4,207.2 cf Stone x 40.0% Voids = 1,682.9 cf Stone Storage

Chamber Storage + Stone Storage = 3,024.4 cf = 0.069 afOverall Storage Efficiency = 54.5%Overall System Size = $95.76' \times 24.83' \times 2.33'$

91 Chambers 205.5 cy Field 155.8 cy Stone



Summary for Pond 1CP: MEMORIAL GROVE AVE. BASIN

Assumed slope of 0.005 for outlet culvert.

Inflow Area =	= 47.860 ac, 4	4.44% Impervious, Inflow	Depth = 6.33" for 100-year event			
Inflow =	154.87 cfs @	12.43 hrs, Volume=	25.264 af			
Outflow =	59.97 cfs @	13.15 hrs, Volume=	25.200 af, Atten= 61%, Lag= 43.1 min			
Primary =	45.10 cfs @	13.15 hrs, Volume=	24.244 af			
Routed to Pond 1DP : UPSTREAM DOGLEG						
		13.15 hrs, Volume=	0.956 af			
Routed to Pond 1DP : UPSTREAM DOGLEG						

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 156.68' @ 13.15 hrs Surf.Area= 87,287 sf Storage= 439,423 cf

Plug-Flow detention time= 146.5 min calculated for 25.200 af (100% of inflow) Center-of-Mass det. time= 144.6 min (961.9 - 817.3)

Volume	Invert	Avail.Sto	prage Storage Description			
#1	150.00'	468,17	78 cf	Custom	n Stage Data (P	rismatic)Listed below (Recalc)
	0	C A		<u></u>		
Elevatio		Irf.Area		Store	Cum.Store	
(fee	t)	(sq-ft)	(cubic	-teet)	(cubic-feet)	
150.0	0	46,495		0	0	
151.0	0	52,090	4	9,293	49,293	
152.0	0	57,750	5	4,920	104,213	
153.0	0	63,535	6	0,643	164,855	
154.0	0	69,445	6	6,490	231,345	
155.0	0	75,475	7	2,460	303,805	
156.0	0	81,635	7	8,555	382,360	
157.0	0	90,000	8	5,818	468,178	
Device	Routing	Invert	Outle	t Device	S	
#1	Primary	150.00'	27.0'	' Round	l Culvert	
	-		L= 87	7.7' RCI	P, end-section c	onforming to fill, Ke= 0.500
			Inlet	/ Outlet I	nvert= 150.00' /	149.56' S= 0.0050 '/' Cc= 0.900
			n= 0.	013 Cor	ncrete pipe, ben	ds & connections, Flow Area= 3.98 sf
#2	Secondary	156.00'	10.0'	long x	20.0' breadth E	Broad-Crested Rectangular Weir
	-		Head	l(feet)C	0.20 0.40 0.60	0.80 1.00 1.20 1.40 1.60
			Coef	. (Engĺisł	h) 2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=45.10 cfs @ 13.15 hrs HW=156.68' TW=148.15' (Dynamic Tailwater) -1=Culvert (Inlet Controls 45.10 cfs @ 11.34 fps)

Secondary OutFlow Max=14.87 cfs @ 13.15 hrs HW=156.68' TW=148.15' (Dynamic Tailwater) —2=Broad-Crested Rectangular Weir (Weir Controls 14.87 cfs @ 2.20 fps)

Summary for Pond 1DP: UPSTREAM DOGLEG

Inflow Area = 77.180 ac, 27.56% Impervious, Inflow Depth > 5.32" for 100-year event Inflow 103.20 cfs @ 13.08 hrs, Volume= 34.245 af = 98.50 cfs @ 13.26 hrs, Volume= Outflow 34.245 af, Atten= 5%, Lag= 11.1 min = 48.90 cfs @ 13.26 hrs, Volume= Primary = 16.737 af Routed to Pond 2IP : PROPOSED PHASE 1 BASIN Secondary = 49.60 cfs @ 13.26 hrs, Volume= 17.508 af Routed to Pond 2IP : PROPOSED PHASE 1 BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 148.22'@ 13.26 hrs Surf.Area= 15,507 sf Storage= 27,924 cf

Plug-Flow detention time= 4.4 min calculated for 34.245 af (100% of inflow) Center-of-Mass det. time= 4.4 min (949.8 - 945.4)

Volume	Inver	t Avail.Sto	rage Storag	e Description	
#1	142.50)' 67,80	08 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
142.5	,	0	0	0	
144.0		180	135	135	
145.0	00	1,610	895	1,030	
146.0		5,900	3,755	4,785	
147.0		9,900	7,900	12,685	
148.0		14,165	12,033	24,718	
149.0		20,375	17,270	41,988	
150.0	00	31,265	25,820	67,808	
Device	Routing	Invert	Outlet Devic	es	
#1	Primary	142.60'	42.0" Roun	nd Culvert	
#2	Secondar		L= 782.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 142.60' / 142.26' S= 0.0004 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf		
Primery OutFlow May-19.00 of @ 42.00 hrs. UN/-149.02 TM/-145.24 (Dynamic Teiluyster)					

Primary OutFlow Max=48.90 cfs @ 13.26 hrs HW=148.22' TW=145.34' (Dynamic Tailwater) -1=Culvert (Barrel Controls 48.90 cfs @ 5.08 fps)

Secondary OutFlow Max=49.59 cfs @ 13.26 hrs HW=148.22' TW=145.34' (Dynamic Tailwater) 2=Culvert (Barrel Controls 49.59 cfs @ 5.15 fps)

Summary for Pond 1FP: EXISTING PARKWAY BASIN

Primary Culvert - Assumed Inverts, pipe diameter, and pipe material.

Inflow Area	a =	9.970 ac, 5	4.96% Impe	ervious, I	nflow Depth = 6.12" for 100-year event	
Inflow	=	69.00 cfs @	12.09 hrs,	Volume=	5.082 af	
Outflow	=	14.01 cfs @	12.51 hrs,	Volume=	3.591 af, Atten= 80%, Lag= 25.7 min	
Primary	=	14.01 cfs @	12.51 hrs,	Volume=	3.591 af	
Routed to Pond 1IP : TACAN						
Secondary	/ =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	
Routed to Pond 1IP : TACAN						

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 148.63' @ 12.51 hrs Surf.Area= 28,783 sf Storage= 119,124 cf

Plug-Flow detention time= 263.8 min calculated for 3.591 af (71% of inflow) Center-of-Mass det. time= 173.0 min (963.9 - 790.9)

Volume	Invert	Avail.Sto	orage Storage Description		
#1	143.00'	197,06	68 cf Cus	tom Stage Data (P	Prismatic)Listed below (Recalc)
Elevatio (feet		urf.Area (sq-ft)	Inc.Store (cubic-feet	-	
143.0	/	10,065	(
144.0	0	17,300	13,683	3 13,683	
145.0	0	19,605	18,453	3 32,135	
146.0	0	21,970	20,788	3 52,923	
147.0	0	24,385	23,178	3 76,100	
148.0	-	26,860	25,623		
149.0	-	29,935	28,398	,	
150.0		31,980	30,958	,	
151.0	0	40,000	35,990) 197,068	
Device	Routing	Invert	Outlet Dev	vices	
#1	Primary	146.50'	24.0" Ro	und Culvert	
#2	Secondary	150.00'	L= 98.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 146.50' / 146.00' S= 0.0051 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 s 00' 10.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		/ 146.00' S= 0.0051 '/' Cc= 0.900 nds & connections, Flow Area= 3.14 sf Broad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60

Primary OutFlow Max=14.01 cfs @ 12.51 hrs HW=148.63' TW=144.47' (Dynamic Tailwater) ←1=Culvert (Barrel Controls 14.01 cfs @ 5.22 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.00' TW=133.50' (Dynamic Tailwater) —2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1GP: SPORTS COMPLEX BASIN

Inflow Area = 3.180 ac, 58.18% Impervious, Inflow Depth = 6.94" for 100-year event Inflow 13.80 cfs @ 12.37 hrs, Volume= 1.840 af = 13.09 cfs @ 12.47 hrs, Volume= 1.832 af, Atten= 5%, Lag= 6.0 min Outflow = Primary = 5.76 cfs @ 12.47 hrs, Volume= 1.607 af Routed to Pond 1LP : CENTRAL GREENWAY Secondary = 7.33 cfs @ 12.47 hrs, Volume= 0.225 af Routed to Pond 1LP : CENTRAL GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 169.75' @ 12.47 hrs Surf.Area= 4,540 sf Storage= 9,423 cf

Plug-Flow detention time= 20.8 min calculated for 1.832 af (100% of inflow) Center-of-Mass det. time= 18.1 min (809.0 - 790.9)

Volume	Invert	Avail.Stor	rage Storage	Description	
#1	166.00'	10,58	88 cf Custom	i Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee 166.0 167.0	et) 00	urf.Area (sq-ft) 1,085 1,395	Inc.Store (cubic-feet) 0 1,240	Cum.Store (cubic-feet) 0 1,240	
168.0 169.0 170.0	00 00 00	2,415 3,850 4,770	1,905 3,133 4,310	3,145 6,278 10,588	
Device	Routing		Outlet Device	-	
#1 #2	Primary Secondary	166.30' 169.30'	12.0" Round Culvert L= 57.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 166.30' / 166.00' S= 0.0053 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 s 9.0' long x 17.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		

Primary OutFlow Max=5.76 cfs @ 12.47 hrs HW=169.75' TW=152.34' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 5.76 cfs @ 7.34 fps)

Secondary OutFlow Max=7.33 cfs @ 12.47 hrs HW=169.75' TW=152.34' (Dynamic Tailwater) **2=Broad-Crested Rectangular Weir** (Weir Controls 7.33 cfs @ 1.81 fps)

Summary for Pond 1HP: SPORTS COMPLEX BASIN

Inflow Area =	1.320 ac, 7	5.76% Impervious, In	flow Depth = 7.18" for 100-year event			
Inflow =	10.05 cfs @	12.08 hrs, Volume=	0.790 af			
Outflow =	7.89 cfs @	12.15 hrs, Volume=	0.788 af, Atten= 21%, Lag= 3.7 min			
Primary =	5.00 cfs @	12.15 hrs, Volume=	0.755 af			
Routed to Pond 1LP : CENTRAL GREENWAY						
Secondary =	2.89 cfs @	12.15 hrs, Volume=	0.033 af			
Routed to Pond 1LP : CENTRAL GREENWAY						

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 164.79' @ 12.15 hrs Surf.Area= 3,201 sf Storage= 2,902 cf

Plug-Flow detention time= 8.2 min calculated for 0.788 af (100% of inflow) Center-of-Mass det. time= 6.2 min (767.9 - 761.7)

Volume	Invert	Avail.Stor	age Storage [Description	
#1	161.00'	8,05	5 cf Custom	Stage Data (Pi	rismatic)Listed below (Recalc)
Elevatio (fee		rf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
161.0)0	0	0	0	
162.0	00	180	90	90	
163.0	00	515	348	438	
164.0	00	1,060	788	1,225	
165.0	00	3,780	2,420	3,645	
166.0	00	5,040	4,410	8,055	
Device	Routing	Invert	Outlet Devices		
#1	Primary	162.00'	12.0" Round	Culvert	
#2	Secondary	164.50'	L= 58.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= $162.00' / 161.70'$ S= $0.0052' /'$ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf 7.0' long x 40.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		

Secondary OutFlow Max=2.88 cfs @ 12.15 hrs HW=164.79' TW=151.13' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir (Weir Controls 2.88 cfs @ 1.44 fps)

Summary for Pond 1IP: TACAN

Inflow Area = 377.860 ac, 3.40% Impervious, Inflow Depth = 5.48" for 100-year event Inflow = 863.23 cfs @ 12.09 hrs, Volume= 172.426 af Outflow = 121.54 cfs @ 15.95 hrs, Volume= 172.424 af, Atten= 86%, Lag= 231.6 min Primary = 121.54 cfs @ 15.95 hrs, Volume= 172.424 af Routed to Reach 1R : DP-1 TACAN OUTFALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.12' @ 15.95 hrs Surf.Area= 1,429,074 sf Storage= 3,522,887 cf

Plug-Flow detention time= 415.4 min calculated for 172.424 af (100% of inflow) Center-of-Mass det. time= 415.3 min (1,324.2 - 908.8)

Volume	Inver	t Avail.Stor	rage Storage	Description	
#1	133.50	4,902,59	1 cf Custom	n Stage Data (Pr	rismatic)Listed below (Recalc)
Elevetien		und Anna a	Inc. Ctore	Curra Starra	
Elevation		urf.Area	Inc.Store	Cum.Store	
(feet)		(sq-ft)	(cubic-feet)	(cubic-feet)	
133.50		0	0	0	
136.00		1,481	1,851	1,851	
137.00		5,097	3,289	5,140	
138.00		49,441	27,269	32,409	
139.00		64,338	56,889	89,298	
140.00		82,023	73,181	162,479	
141.00		108,813	95,418	257,897	
142.00		168,490	138,651	396,548	
143.00)	389,034	278,762	675,311	
144.00)	681,061	535,047	1,210,358	
145.00) 1,	103,941	892,501	2,102,859	
146.00) 1,	388,214	1,246,077	3,348,936	
147.00) 1,	719,095	1,553,655	4,902,591	
Device	Routing	Invert	Outlet Device		
-	0				
#1	Primary	133.50'		d Culvert X 2.00	
					conforming to fill, Ke= 0.500
					130.80' S= 0.0030 '/' Cc= 0.900
					ds & connections, Flow Area= 19.63 sf
#2	Device 1	134.00'	-		Flow Orifice C= 0.600
				ir flow at low hea	
#3	Device 1	144.40'		r/Orifice, Cv= 2.	
			Elev. (feet) 147.00	144.40 145.40 ´	145.40 146.10 146.10 146.60 146.60
				5.00 5.00 15.00	15.00 25.00 25.00 30.00 30.00
			o / - o - l		

Primary OutFlow Max=121.54 cfs @ 15.95 hrs HW=146.12' TW=0.00' (Dynamic Tailwater)

-**1=Culvert** (Passes 121.54 cfs of 462.01 cfs potential flow)

1-2=Low Flow Orifice (Orifice Controls 64.21 cfs @ 16.05 fps)

-3=Custom Weir/Orifice (Weir Controls 57.32 cfs @ 3.56 fps)

Summary for Pond 1LP: CENTRAL GREENWAY

Inflow Area = 67.880 ac, 10.83% Impervious, Inflow Depth = 6.48" for 100-year event Inflow = 407.92 cfs @ 12.13 hrs, Volume= 36.653 af 175.95 cfs @ 12.37 hrs, Volume= 125.13 cfs @ 12.25 hrs, Volume= Outflow 36.648 af, Atten= 57%, Lag= 14.3 min = Primary = 34.785 af Routed to Pond 1MP : CENTRAL GREENWAY Secondary = 73.95 cfs @ 12.43 hrs, Volume= 1.863 af Routed to Pond 1MP : CENTRAL GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 152.35' @ 12.43 hrs Surf.Area= 102,440 sf Storage= 390,710 cf

Plug-Flow detention time= 48.1 min calculated for 36.643 af (100% of inflow) Center-of-Mass det. time= 48.2 min (834.1 - 785.8)

Volume	Invert	Avail.Stor	rage Storag	ge Description	
#1	146.00'	397,45	57 cf Custo	om Stage Data (Prismatic)Listed below (Recalc)	
Elevation	Surf.A	vrea	Inc.Store	Cum.Store	
(feet)	(so	q-ft)	(cubic-feet)	(cubic-feet)	
146.00	17,	910	0	0	
147.00	30,	745	24,328	24,328	
148.00	44,	380	37,563	61,890	
149.00	58,	820	51,600	113,490	
150.00	,	055	66,438	179,928	
151.00	,	090	82,073	262,000	
152.00	,	730	93,410	355,410	
152.42	103,	495	42,047	397,457	
Device R	outing	Invert	Outlet Devid	ces	
#1 P	rimary	146.00'	42.0" Roui	nd Culvert X 2.00	
	econdary	152.00'	L= 160.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 146.00' / 145.00' S= 0.0063 '/' Cc= 0 n= 0.013 Concrete pipe, bends & connections, Flow Area=		

Primary OutFlow Max=123.22 cfs @ 12.25 hrs HW=152.03' TW=150.26' (Dynamic Tailwater) -1=Culvert (Inlet Controls 123.22 cfs @ 6.40 fps)

Secondary OutFlow Max=73.93 cfs @ 12.43 hrs HW=152.35' TW=151.29' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir (Weir Controls 73.93 cfs @ 1.60 fps)

Summary for Pond 1MP: CENTRAL GREENWAY

Inflow Area = 78.180 ac, 9.40% Impervious, Inflow Depth = 6.43" for 100-year event Inflow = 206.04 cfs @ 12.35 hrs, Volume= 41.898 af 176.52 cfs @ 12.50 hrs, Volume= 99.51 cfs @ 12.50 hrs, Volume= Outflow 41.895 af, Atten= 14%, Lag= 8.9 min = Primary = 40.139 af Routed to Pond 1IP : TACAN 77.01 cfs @ 12.50 hrs, Volume= Secondary = 1.756 af Routed to Pond 1IP : TACAN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 151.36' @ 12.50 hrs Surf.Area= 62,344 sf Storage= 228,908 cf

Plug-Flow detention time= 29.9 min calculated for 41.895 af (100% of inflow) Center-of-Mass det. time= 29.7 min (858.8 - 829.1)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	145.00'	232,47	11 cf Custon	Stage Data (Prismatic)Listed below (Recalc)
Elevatio		urf.Area	Inc.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)	
145.0	00	9,515	0	0	
146.0	00	16,810	13,163	13,163	
147.0	00	24,900	20,855	34,018	
148.0		33,795	29,348	63,365	
149.0		43,485	38,640	102,005	
150.0	00	53,980	48,733	150,738	
151.0	00	58,400	56,190	206,928	
151.4	12	62,950	25,483	232,411	
Device	Routing	Invert	Outlet Device	S	
#1	Primary	145.00'	42.0" Roun	Culvert	
	,		L= 170.0' R	CP, end-section conforming to fill, Ke=	0.500
			Inlet / Outlet	nvert= 145.00' / 143.00' S= 0.0118 '/'	Cc= 0.900
			n= 0.013 Co	ncrete pipe, bends & connections, Flow	/ Area= 9.62 sf
#2	Secondary	151.00'	130.0' long	20.0' breadth Broad-Crested Rectai	ngular Weir
	-		Head (feet)	.20 0.40 0.60 0.80 1.00 1.20 1.40	1.60
			Coef. (Englis	n) 2.68 2.70 2.70 2.64 2.63 2.64 2.0	64 2.63

Primary OutFlow Max=99.51 cfs @ 12.50 hrs HW=151.36' TW=144.45' (Dynamic Tailwater) -1=Culvert (Inlet Controls 99.51 cfs @ 10.34 fps)

Secondary OutFlow Max=76.97 cfs @ 12.50 hrs HW=151.36' TW=144.45' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir (Weir Controls 76.97 cfs @ 1.63 fps)

Summary for Pond 1NP: WEST GREENWAY

Inflow Area = 25.210 ac, 0.00% Impervious, Inflow Depth = 6.23" for 100-year event Inflow 155.00 cfs @ 12.14 hrs, Volume= 13.098 af = 10.51 cfs @ 19.01 hrs, Volume= Outflow 13.060 af, Atten= 93%, Lag= 412.2 min = 10.51 cfs @ 19.01 hrs, Volume= Primary = 13.060 af Routed to Pond 10P : WEST GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1OP : WEST GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 151.84' @ 14.20 hrs Surf.Area= 103,091 sf Storage= 331,289 cf

Plug-Flow detention time= 366.8 min calculated for 13.060 af (100% of inflow) Center-of-Mass det. time= 364.9 min (1,156.8 - 791.9)

Volume	Invert	Avail.Stor	age Storag	e Description		
#1	147.00'	393,84	0 cf Custor	n Stage Data (Pr	ismatic)Listed below (Recalc)	
Elevatio (fee		.Area sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
147.0		0,825	0	0		
148.0		5,600	38,213	38,213		
149.0	0 6	1,145	53,373	91,585		
150.0	0 7	7,460	69,303	160,888		
151.0	0 9	6,500	86,980	247,868		
152.0		4,385	100,443	348,310		
152.4	2 11	2,425	45,530	393,840		
Device	Routing	Invert	Outlet Devic	es		
#1	Primary	147.00'	24.0" Roun	d Culvert		
#2	Secondary	152.00'	L= 130.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 147.00' / 146.50' S= 0.0038 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf 115.0' long x 38.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63			
Drimary	Primary OutFlow Max-10.54 cfs @ 10.01 brs. HW-150.06' TW-150.42' (Dynamic Tailwater)					

Primary OutFlow Max=10.54 cfs @ 19.01 hrs HW=150.96' TW=150.42' (Dynamic Tailwater) -1=Culvert (Outlet Controls 10.54 cfs @ 3.35 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=147.00' TW=146.00' (Dynamic Tailwater)

Summary for Pond 10P: WEST GREENWAY

Inflow Area = 32.820 ac, 0.00% Impervious, Inflow Depth > 6.25" for 100-year event Inflow 56.21 cfs @ 12.08 hrs, Volume= 17.088 af = Outflow 13.45 cfs @ 17.18 hrs, Volume= 17.084 af, Atten= 76%, Lag= 306.3 min = 13.45 cfs @ 17.18 hrs, Volume= Primary = 17.084 af Routed to Pond 1PP : WEST GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1PP : WEST GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 151.42'@ 13.87 hrs Surf.Area= 28,697 sf Storage= 81,019 cf

Plug-Flow detention time= 64.1 min calculated for 17.084 af (100% of inflow) Center-of-Mass det. time= 63.3 min (1,132.5 - 1,069.2)

Volume	Invert	Avail.Sto	rage Stora	ge Description		
#1	146.00'	110,74	14 cf Custo	om Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio (fee		ırf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
146.0	/	3,480	<u>(cubic-ieet)</u> 0	0		
140.0		5,400 6,760	5,120	5,120		
148.0		10,685	8,723	13,843		
149.0		15,260	12,973	26,815		
150.0		20,485	17,873	44,688		
151.0	00	28,355	24,420	69,108		
152.0	0	29,175	28,765	97,873		
152.4	2	32,120	12,872	110,744		
Device	Routing	Invert	Outlet Devi	ces		
#1	Primary	146.00'	24.0" Rou	nd Culvert		
#2	Secondary		L= 140.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 146.00' / 145.50' S= 0.0036 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf 115.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63			
Drimony OutElow Moved 2 46 of @ 17.18 hrs. LIN/=150.01, TN/=140.00, (Dynamia Tailwatar)						

Primary OutFlow Max=13.46 cfs @ 17.18 hrs HW=150.91' TW=149.99' (Dynamic Tailwater) -1=Culvert (Outlet Controls 13.46 cfs @ 4.29 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=146.00' TW=145.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1PP: WEST GREENWAY

Inflow Area = 51.910 ac, 0.00% Impervious, Inflow Depth = 6.29" for 100-year event Inflow 148.27 cfs @ 12.08 hrs, Volume= 27.189 af = 22.65 cfs @ 14.53 hrs, Volume= 22.65 cfs @ 14.53 hrs, Volume= Outflow 27.152 af, Atten= 85%, Lag= 146.8 min = Primary = 27.152 af Routed to Pond 1QP : WEST GREENWAY Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1QP : WEST GREENWAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 150.67' @ 13.38 hrs Surf.Area= 76,907 sf Storage= 259,733 cf

Plug-Flow detention time= 143.8 min calculated for 27.148 af (100% of inflow) Center-of-Mass det. time= 140.5 min (1,143.9 - 1,003.5)

Volume	Invert	Avail.Stor	age Storag	e Description		
#1	145.00'	319,95	50 cf Custor	n Stage Data (Pris	matic)Listed below (Recalc)	
Elevatio (fee		rf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
145.0	1	13,590	0	0		
146.0	00	24,145	18,868	18,868		
147.0	00	35,350	29,748	48,615		
148.0		47,205	41,278	89,893		
149.0		59,705	53,455	143,348		
150.0		72,855	66,280	209,628		
151.0		78,910	75,883	285,510		
151.4	2	85,090	34,440	319,950		
Device	Routing	Invert	Outlet Devic	es		
#1	Primary	145.00'	24.0" Roun	d Culvert		
#2	Secondary	151.00'	L= 188.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 145.00' / 144.50' S= 0.0027 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf 115.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63			
Primary OutFlow Max=22 66 cfs @ 14 53 hrs HW=150 55' TW=147 45' (Dynamic Tailwater)						

Primary OutFlow Max=22.66 cfs @ 14.53 hrs HW=150.55' TW=147.45' (Dynamic Tailwater) -1=Culvert (Outlet Controls 22.66 cfs @ 7.21 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.00' TW=144.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 1QP: WEST GREENWAY

Inflow Area = 68.840 ac, 0.00% Impervious, Inflow Depth > 6.30" for 100-year event Inflow 135.84 cfs @ 12.09 hrs, Volume= 36.114 af = 51.64 cfs @ 12.34 hrs, Volume= Outflow 35.671 af, Atten= 62%, Lag= 15.3 min = Primary = 51.64 cfs @ 12.34 hrs, Volume= 35.671 af Routed to Pond 1IP : TACAN Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 1IP : TACAN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 148.44' @ 12.44 hrs Surf.Area= 65,542 sf Storage= 171,143 cf

Plug-Flow detention time=75.8 min calculated for 35.671 af (99% of inflow) Center-of-Mass det. time= 58.8 min (1,113.8 - 1,055.0)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	144.00'	319,95	50 cf Custom	n Stage Data (Pi	rismatic)Listed below (Recalc)
Elevatio	on Surf.	Aroa	Inc.Store	Cum.Store	
(fee		sq-ft)	(cubic-feet)	(cubic-feet)	
144.0		,590	0	0	
144.0		,145	18,868	18,868	
146.0		,350	29,748	48,615	
147.0		,205	41,278	89,893	
148.0		,705	53,455	143,348	
149.0		,855	66,280	209,628	
150.0		,910	75,883	285,510	
150.4	12 85	,090	34,440	319,950	
Device	Routing	Invert	Outlet Device	S	
#1	Primary	144.00'	36.0" Round	l Culvert	
					conforming to fill, Ke= 0.500
					138.00' S= 0.0119 '/' Cc= 0.900
					ds & connections, Flow Area= 7.07 sf
#2	Device 1	145.00'			ce/Grate C= 0.600
				ir flow at low hea	
#3	Device 1	148.00'			Grate C= 0.600
ща		4 4 0 0 01		ir flow at low hea	
#4	Secondary	149.00'			Broad-Crested Rectangular Weir
					0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63
			Coel. (English	1) 2.00 2.10 2.	10 2.04 2.03 2.04 2.04 2.03

Primary OutFlow Max=51.52 cfs @ 12.34 hrs HW=148.42' TW=144.17' (Dynamic Tailwater) -1=Culvert (Outlet Controls 51.52 cfs @ 7.29 fps)

2=Orifice/Grate (Passes < 44.61 cfs potential flow)

-3=Orifice/Grate (Passes < 7.12 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=144.00' TW=133.50' (Dynamic Tailwater) -4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2AP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 223.810 ac, 24.58% Impervious, Inflow Depth = 5.72" for 100-year event Inflow 343.07 cfs @ 13.29 hrs, Volume= 106.708 af = 178.16 cfs @ 13.09 hrs, Volume= Outflow = 106.708 af, Atten= 48%, Lag= 0.0 min 89.01 cfs @ 13.10 hrs, Volume= Primary = 52.693 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH Secondary = 89.86 cfs @ 13.06 hrs, Volume= 54.015 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 148.68' @ 14.62 hrs Surf.Area= 551,529 sf Storage= 893,977 cf

Plug-Flow detention time= 44.6 min calculated for 106.708 af (100% of inflow) Center-of-Mass det. time= 44.6 min (944.2 - 899.6)

Volume	Invert	Avail.Sto	rage Storag	e Description		
#1	141.70'	1,815,20	01 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)	
Elevatio (feet		f.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
141.7	1	0	0			
144.0	0	6,640	7,636	7,636		
145.0		57,230	31,935	39,571		
146.0		7,540	87,385	126,956		
147.0		6,860	167,200	294,156		
148.0	0 35	59,360	288,110	582,266		
149.0		10,140	499,750	1,082,016		
150.0	0 82	26,230	733,185	1,815,201		
Device	Routing	Invert	Outlet Devic	es		
#1	Primary	141.70'	48.0" Roun	d Culvert		
#2	Secondary	141.70'	L= 126.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 141.70' / 141.60' S= 0.0008 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf 48.0" Round Culvert L= 126.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 141.70' / 141.50' S= 0.0016 '/' Cc= 0.900 n= 0.013 , Flow Area= 12.57 sf			
D	Primary OutFlass Mass-00.07 of @ 40.40 hrs. UNA-447.071 TNA-445.401 (Dumaria Taihuatan)					

Primary OutFlow Max=88.37 cfs @ 13.10 hrs HW=147.27' TW=145.13' (Dynamic Tailwater) -1=Culvert (Inlet Controls 88.37 cfs @ 7.03 fps)

Secondary OutFlow Max=89.18 cfs @ 13.06 hrs HW=147.19' TW=145.02' (Dynamic Tailwater) 2=Culvert (Inlet Controls 89.18 cfs @ 7.10 fps)

Summary for Pond 2BP: EXISTING BASIN

Inflow Area = 40.900 ac, 81.30% Impervious, Inflow Depth = 7.18" for 100-year event Inflow 311.35 cfs @ 12.08 hrs, Volume= 24.480 af = 58.98 cfs @ 12.50 hrs, Volume= Outflow 24.157 af, Atten= 81%, Lag= 25.0 min = 35.29 cfs @ 12.32 hrs, Volume= Primary = 22.182 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH Secondary = 24.57 cfs @ 12.52 hrs, Volume= 1.976 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 150.96' @ 12.52 hrs Surf.Area= 94,691 sf Storage= 427,340 cf

Plug-Flow detention time= 164.8 min calculated for 24.157 af (99% of inflow) Center-of-Mass det. time= 156.2 min (917.9 - 761.7)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	143.00'	482,85	55 cf Custon	n Stage Data (Pr	ismatic)Listed below (Recalc)
Elevatio	on Su	rf.Area	Inc.Store	Cum.Store	
(fee	t)	(sq-ft)	(cubic-feet)	(cubic-feet)	
143.0	00	10,920	0	0	
144.0	0	16,580	13,750	13,750	
145.0	0	28,700	22,640	36,390	
146.0	0	39,560	34,130	70,520	
147.0	00	53,515	46,538	117,058	
148.0		71,930	62,723	179,780	
149.0		80,230	76,080	255,860	
150.0		88,130	84,180	340,040	
151.0		95,000	91,565	431,605	
151.5	50 1	10,000	51,250	482,855	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	144.00'	24.0" Round	d Culvert	
	2		L= 79.0' RC	P, end-section co	onforming to fill, Ke= 0.500
			Inlet / Outlet	nvert= 144.00' /	143.21' S= 0.0100 '/' Cc= 0.900
			n= 0.013, Flo	ow Area= 3.14 sf	
#2	Secondary	150.00'	•		road-Crested Rectangular Weir
			· · ·		0.80 1.00 1.20 1.40 1.60
			Coef. (Englis	h) 2.68 2.70 2.7	70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=35.20 cfs @ 12.32 hrs HW=150.71' TW=145.30' (Dynamic Tailwater) -1=Culvert (Inlet Controls 35.20 cfs @ 11.20 fps)

Secondary OutFlow Max=24.57 cfs @ 12.52 hrs HW=150.96' TW=145.83' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir (Weir Controls 24.57 cfs @ 2.57 fps)

Summary for Pond 2CP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Area	a =	12.710 ac, 9	94.57% Impervious, Inflow	Depth = 7.42" for 100-year event		
Inflow	=	97.87 cfs @	12.08 hrs, Volume=	7.860 af		
Outflow	=	29.31 cfs @	12.40 hrs, Volume=	5.521 af, Atten= 70%, Lag= 18.8 min		
Primary	=	29.31 cfs @	12.40 hrs, Volume=	5.521 af		
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH						

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 148.32' @ 12.40 hrs Surf.Area= 35,758 sf Storage= 175,315 cf

Plug-Flow detention time= 224.5 min calculated for 5.521 af (70% of inflow) Center-of-Mass det. time= 130.3 min (882.9 - 752.6)

Volume	Inve	rt Avail.Sto	rage Storage	e Description	
#1	138.0	0' 240,90	05 cf Custor	m Stage Data (P	rismatic)Listed below (Recalc)
Flovetic		Curf Aree	Inc Store	Cum Store	
Elevatio		Surf.Area	Inc.Store	Cum.Store	
(fee	/	(sq-ft)	(cubic-feet)	(cubic-feet)	
138.0		730	0	0	
139.0	00	1,695	1,213	1,213	
140.0	00	3,150	2,423	3,635	
141.(00	6,840	4,995	8,630	
142.0	00	12,885	9,863	18,493	
143.0	00	17,405	15,145	33,638	
144.0	00	21,190	19,298	52,935	
145.0	00	24,465	22,828	75,763	
146.0	00	27,780	26,123	101,885	
147.0	00	31,160	29,470	131,355	
148.0	00	34,590	32,875	164,230	
149.0		38,295	36,443	200,673	
150.0		42,170	40,233	240,905	
		,	,	,	
Device	Routing	Invert	Outlet Devic	es	
#1	Primary	142.30'	30.0" Roun	d Culvert	
	2		L= 65.0' R0	CP, end-section c	onforming to fill, Ke= 0.500
			Inlet / Outlet	Invert= 142.30' /	141.50' S= 0.0123 '/' Cc= 0.900
			n= 0.013, F	low Area= 4.91 sf	
#2	Device 1	146.00'	,	" Horiz. Orifice/	
				eir flow at low hea	

Primary OutFlow Max=29.30 cfs @ 12.40 hrs HW=148.32' TW=142.62' (Dynamic Tailwater) -1=Culvert (Passes 29.30 cfs of 51.59 cfs potential flow) -2=Orificae/Crote (Orificae Controls 20.20 cfs @ 7.22 fpc)

2=Orifice/Grate (Orifice Controls 29.30 cfs @ 7.33 fps)

Summary for Pond 2DP: EXISTING PARKWAY BASIN

Existing basin information taken from Weymouth Patriot Parkway Utility As-Builts, prepared by LM Heavy Civil Construction LLC, dated October 15, 2018.

Inflow Area =	2.770 ac, 7	75.81% Impervious, Inflow	v Depth = 6.08" for 100-year event			
Inflow =	16.78 cfs @	12.08 hrs, Volume=	1.403 af			
Outflow =	2.33 cfs @	12.60 hrs, Volume=	0.534 af, Atten= 86%, Lag= 31.0 min			
Primary =	2.33 cfs @	12.60 hrs, Volume=	0.534 af			
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH						
		0.00 hrs, Volume=				
Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH						

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.86'@ 15.89 hrs Surf.Area= 11,575 sf Storage= 45,091 cf

Plug-Flow detention time= 412.1 min calculated for 0.534 af (38% of inflow) Center-of-Mass det. time= 241.5 min (990.5 - 749.0)

Volume	Invert	Avail.Stor	rage Storage D	escription	
#1	139.00'	89,68	33 cf Custom S	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio		urf.Area	Inc.Store	Cum.Store	
fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
139.0		105	0	0	
140.0		1,200	653	653	
141.0	00	2,565	1,883	2,535	
142.0		4,380	3,473	6,008	
143.0		6,200	5,290	11,298	
144.0		7,440	6,820	18,118	
145.0		8,800	8,120	26,238	
146.0		10,240	9,520	35,758	
147.0		11,800	11,020	46,778	
148.0		13,425	12,613	59,390	
149.00 15,130		14,278	73,668		
150.0)0	16,900	16,015	89,683	
Device	Routing	Invert	Outlet Devices		
#1	Primary	142.30'	24.0" Round	Culvert	
			L= 51.0' RCP,	end-section c	onforming to fill, Ke= 0.500
			Inlet / Outlet Inv	/ert= 142.30' /	141.70' S= 0.0118 '/' Cc= 0.900
			n= 0.013, Flow	/ Area= 3.14 sf	
#2	Device 1	146.20'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600		
	Limited to weir flow at low heads				
#3	Secondary	149.50'			
					0.80 1.00 1.20 1.40 1.60
			Coet. (English)	2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.33 cfs @ 12.60 hrs HW=146.40' TW=143.39' (Dynamic Tailwater) 1=Culvert (Passes 2.33 cfs of 26.24 cfs potential flow) 2=Orifice/Grate (Weir Controls 2.33 cfs @ 1.46 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' TW=138.00' (Dynamic Tailwater) -3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2EP: FRENCH'S STREAM WEST BRANCH

Per site visit outlet consists of one 60-inch culvert.

Inflow Area = 401.120 ac, 22.54% Impervious, Inflow Depth > 5.18" for 100-year event Inflow = 262.29 cfs @ 13.09 hrs, Volume= 172.995 af Outflow = 231.42 cfs @ 15.17 hrs, Volume= 172.995 af, Atten= 12%, Lag= 124.6 min Primary = 231.42 cfs @ 15.17 hrs, Volume= 172.995 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.95' @ 15.17 hrs Surf.Area= 105,396 sf Storage= 373,381 cf

Plug-Flow detention time= 17.2 min calculated for 172.971 af (100% of inflow) Center-of-Mass det. time= 17.1 min (1,026.1 - 1,009.0)

Volume	Inv	vert Avail.S	torage	Storage	Description	
#1	138	.00' 524,	160 cf	Custom	n Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	Elevation Surf.Area		Inc	Store.	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
138.0	00	0		0	0	
140.0	00	9,600		9,600	9,600	
141.(00	13,135	1	11,368	20,968	
142.0	00	35,665	2	24,400	45,368	
143.0	00	47,280	2	1,473	86,840	
144.0	00	58,400	5	52,840	139,680	
145.0	145.00 7		6	64,993	204,673	
146.0	146.00 85,230		7	78,408	283,080	
147.00 10		106,515	ę	95,873	378,953	
148.00		183,900	14	15,208	524,160	
Device	Routing	lnver	t Outl	et Device	S	
#1	Primary	/ 138.00)' 60.0	" Round	l Culvert	
			L= 3	80.0' R0	CP, end-section	conforming to fill, Ke= 0.500
			Inlet	/ Outlet I	nvert= 138.00' /	' 135.70' S= 0.0061 '/' Cc= 0.900
	n= 0.013 Concrete pipe, bends & connections, Flow Area= 19.63					ids & connections, Flow Area= 19.63 sf
Primary OutFlow Max=231.42 cfs @ 15.17 hrs HW=146.95' TW=133.05' (Dynamic Tailwater)						

1=Culvert (Barrel Controls 231.42 cfs @ 11.79 fps)

Summary for Pond 2FP: FRENCH'S STREAM WEST BRANCH

Inflow Area = 872.630 ac, 11.83% Impervious, Inflow Depth > 5.24" for 100-year event Inflow = 403.94 cfs @ 13.15 hrs, Volume= 380.721 af Outflow 392.51 cfs @ 13.51 hrs, Volume= = 380.682 af, Atten= 3%, Lag= 21.7 min 159.00 cfs @ 13.51 hrs, Volume= Primary = 136.870 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Secondary = 233.51 cfs @ 13.51 hrs, Volume= 243.812 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 2R : DP-2 FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 133.20' @ 13.51 hrs Surf.Area= 80,170 sf Storage= 177,475 cf

Plug-Flow detention time= 6.0 min calculated for 380.682 af (100% of inflow) Center-of-Mass det. time= 5.7 min (1,155.1 - 1,149.4)

Volume	Invert	Avail.Sto	rage Storage	Description		
#1	125.90'	665,27	78 cf Custom	Stage Data (Pr	ismatic)Listed below (Recalc)	
F lavestia		£	la a Otana	Ourse Otherse		
	Elevation Surf.Area		Inc.Store	Cum.Store		
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)		
	125.90 0		0	0		
130.0		7,650	36,182	36,182		
131.0		22,340	19,995	56,177		
132.0		56,105	39,223	95,400		
133.0)0 7	76,835	66,470	161,870		
134.0	0 9	93,610	85,223	247,092		
135.0		1,175	102,393	349,485		
136.0	0 15	53,700	132,438	481,922		
137.0	137.00 213,010		183,355	665,278		
Device	Routing	Invert	Outlet Devices	3		
#1	Primary	127.60'	60.0" Round	Culvert		
,		L= 34.0' RCP, end-section conforming to fill, Ke= 0.500				
					127.60' S= -0.0294 '/' Cc= 0.900	
			n= 0.013, Flov	w Area= 19.63 s	sf	
#2 Secondary 126.70'		72.0" Round Culvert				
,		L= 34.0' RCP, end-section conforming to fill, Ke= 0.500				
					126.70' S= -0.0235 '/' Cc= 0.900	
			n= 0.013. Flov	w Area= 28.27 s	sf	
#3 Tertiary 135.50'		135.50'	10.0' long x 20.0' breadth Spillway over Path			
	,		Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60			
					70 2.64 2.63 2.64 2.64 2.63	
			、 J	,		

Primary OutFlow Max=159.00 cfs @ 13.51 hrs HW=133.20' TW=0.00' (Dynamic Tailwater) ☐ 1=Culvert (Barrel Controls 159.00 cfs @ 8.11 fps)

Secondary OutFlow Max=233.51 cfs @ 13.51 hrs HW=133.20' TW=0.00' (Dynamic Tailwater) 2=Culvert (Barrel Controls 233.51 cfs @ 8.63 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=125.90' TW=0.00' (Dynamic Tailwater) -3=Spillway over Path (Controls 0.00 cfs)

Summary for Pond 2IP: PROPOSED PHASE 1 BASIN

Inflow Area = 112.800 ac, 18.86% Impervious, Inflow Depth = 5.46" for 100-year event Inflow = 232.37 cfs @ 12.14 hrs, Volume= 51.293 af 59.57 cfs @ 19.75 hrs, Volume= 59.57 cfs @ 19.75 hrs, Volume= Outflow = 45.564 af, Atten= 74%, Lag= 456.8 min Primary = 33.812 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH Secondary = 39.63 cfs @ 15.62 hrs, Volume= 11.751 af Routed to Pond 2EP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.16' @ 15.30 hrs Surf.Area= 170,290 sf Storage= 1,166,595 cf

Plug-Flow detention time= 369.2 min calculated for 45.564 af (89% of inflow) Center-of-Mass det. time= 306.2 min (1,205.3 - 899.1)

Volume	Invert	Avail.Sto	rage Stora	age Description		
#1	139.00'	1,312,748 cf Custom Stage Data (Prismatic)Listed below (Recalc)				
Elevatio	on Surf.A	rea	Inc.Store	e Cum.Store		
(fee		q-ft)	(cubic-feet)			
139.0			(000101001			
140.0	,		119,600			
141.0			126,035	-		
142.0	,		132,530			
143.0	0 142,	360	139,075	5 517,240		
144.0	00 148,	990	145,675	662,915		
145.0	,		152,335			
146.0	,		159,040	,		
147.0	,		165,810	, ,		
148.0	00 176,	075	172,648	3 1,312,748		
Device	Routing	Invert	Outlet Dev	vices		
#1	Primary	139.00'	36.0" Round Culvert			
			conforming to fill, Ke= 0.500			
			Inlet / Out	let Invert= 139.00' /	137.00' S= 0.0200 '/' Cc= 0.900	
		n= 0.013, Flow Area= 7.07 sf				
#2	Device 1	141.00'	36.0" W x 10.0" H Vert. Orifice/Grate C= 0.600			
			Limited to weir flow at low heads			
#3	Device 1	142.50'	36.0" W x 12.0" H Vert. Orifice/Grate C= 0.600			
		444.00	Limited to weir flow at low heads			
#4	Device 1	144.00'				
#5	Secondary	146.00'	Limited to weir flow at low heads 20.0' long x 20.0' breadth Broad-Crested Rectangular Weir			
#5	Secondary	140.00			0.80 1.00 1.20 1.40 1.60	
Coef. (English) 2.68 2.70 2.64 2.63 2.64 2.64 2.63						
				giioii, 2.00 2.70 2		

Primary OutFlow Max=59.66 cfs @ 19.75 hrs HW=145.33' TW=142.26' (Dynamic Tailwater)

2=Orifice/Grate (Passes < 21.10 cfs potential flow) **3=Orifice/Grate** (Passes < 22.02 cfs potential flow)

-4=Orifice/Grate (Passes < 50.05 cfs potential flow)

Secondary OutFlow Max=39.73 cfs @ 15.62 hrs HW=147.14' TW=146.91' (Dynamic Tailwater) 5=Broad-Crested Rectangular Weir (Weir Controls 39.73 cfs @ 1.74 fps)

Summary for Pond 2JP: PROPOSED BASIN

Inflow Area = 15.720 ac, 0.00% Impervious, Inflow Depth = 6.35" for 100-year event Inflow 111.75 cfs @ 12.08 hrs, Volume= 8.322 af = 26.81 cfs @ 12.47 hrs, Volume= Outflow = 7.976 af, Atten= 76%, Lag= 23.2 min 26.81 cfs @ 12.47 hrs, Volume= Primary = 7.976 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2AP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 165.14' @ 12.47 hrs Surf.Area= 38,103 sf Storage= 139,715 cf

Plug-Flow detention time= 111.8 min calculated for 7.976 af (96% of inflow) Center-of-Mass det. time= 87.8 min (873.2 - 785.4)

Volume	Invert	Avail.Sto	rage Storage	Description				
#1	#1 161.00' 214,373		73 cf Custom	n Stage Data (Prismatic)Listed below (Recalc)				
Elevation Surf.Area		Inc.Store	Cum.Store					
(fee	et) (s	sq-ft)	(cubic-feet)	(cubic-feet)				
161.0	0 29	,530	0	0				
162.0	00 31	,505	30,518	30,518				
163.0	0 33	,540	32,523	63,040				
164.0	0 35	,635	34,588	97,628				
165.0		,790	36,713	134,340				
166.0		,000	38,895	173,235				
167.0	0 42	,275	41,138	214,373				
Device	Routing	Invert	Outlet Device	es				
#1	Primary	161.00'	24.0" Round Culvert					
	,		L= 53.0' RCP, end-section conforming to fill, Ke= 0.500					
			Inlet / Outlet I	Invert= 161.00' / 155.00' S= 0.1132 '/' Cc= 0.900				
			n= 0.013 Cor	ncrete pipe, bends & connections, Flow Area= 3.14 sf				
#2	Device 1	161.50'	36.0" W x 12	2.0" H Vert. Orifice/Grate C= 0.600				
				eir flow at low heads				
#3	Device 1	164.50'		"Horiz. Orifice/Grate C= 0.600				
				eir flow at low heads				
#4	Secondary	165.50'		20.0' breadth Broad-Crested Rectangular Weir				
				Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60				
			Coet. (English	h) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63				
Drimer		-06 01 ef-	@ 10 17 hrs 1	100-165 141 $100-145$ 201 (Dunamia Tailutatar)				
				HW=165.14' TW=145.70' (Dynamic Tailwater)				
	T_1=Culvert (Inlet Controls 26.81 cfs @ 8.53 fps)							

2=Orifice/Grate (Passes < 25.58 cfs potential flow)

---3=Orifice/Grate (Passes < 20.17 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=161.00' TW=141.70' (Dynamic Tailwater) -4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 2KP: PROPOSED BASIN

Inflow Area = 21.000 ac, 0.00% Impervious, Inflow Depth = 6.00" for 100-year event Inflow 143.23 cfs @ 12.09 hrs, Volume= 10.499 af = 33.75 cfs @ 12.48 hrs, Volume= Outflow 9.494 af, Atten= 76%, Lag= 23.7 min = Primary = 33.75 cfs @ 12.48 hrs, Volume= 9.494 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 12.48 hrs, Volume= 0.000 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 152.50' @ 12.48 hrs Surf.Area= 56,254 sf Storage= 220,968 cf

Plug-Flow detention time= 198.6 min calculated for 9.493 af (90% of inflow) Center-of-Mass det. time= 151.9 min (945.4 - 793.5)

Volume	Invert	Avail.Stor	rage Storage	Description	
#1	148.00'	249,35	50 cf Custom	Stage Data (Prismatic)Listed	below (Recalc)
Elevatio	n Si	urf.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
148.0	00	42,500	0	0	
149.0	00	44,800	43,650	43,650	
150.0	00	47,300	46,050	89,700	
151.0	00	52,300	49,800	139,500	
152.0	-	54,900	53,600	193,100	
153.0	00	57,600	56,250	249,350	
Device	Routing	Invert	Outlet Device	3	
#1	Primary	148.00'	36.0" Round	Culvert	
	2			P, end-section conforming to fi	
				overt= 148.00' / 146.00' S= 0.0	
				crete pipe, bends & connectior	
#2	Device 1	149.00'		'H Vert. Orifice/Grate C= 0.6	500
				flow at low heads	
#3	Device 1	150.75'		"H Vert. Orifice/Grate C= 0.6	500
#4	Device 1	152 001		[·] flow at low heads Horiz. Orifice/Grate C= 0.600	
#4	Device I	152.00'		flow at low heads	J
#5	Secondary	152.50'		20.0' breadth Broad-Crested	Roctangular Woir
π0	Coondary	102.00		20 0.40 0.60 0.80 1.00 1.20	
) 2.68 2.70 2.70 2.64 2.63	
			· · · · · · · · · · · · · · · · ·	,	

Primary OutFlow Max=33.75 cfs @ 12.48 hrs HW=152.50' TW=131.69' (Dynamic Tailwater) -1=Culvert (Passes 33.75 cfs of 58.96 cfs potential flow)

2=Orifice/Grate (Orifice Controls 13.02 cfs @ 8.68 fps)

-3=Orifice/Grate (Orifice Controls 11.44 cfs @ 5.72 fps)

-4=Orifice/Grate (Weir Controls 9.29 cfs @ 2.32 fps)

Secondary OutFlow Max=0.00 cfs @ 12.48 hrs HW=152.50' TW=131.69' (Dynamic Tailwater) **5=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.10 fps)

Summary for Pond 2LP: PROPOSED BASIN

Inflow Area = 10.690 ac, 0.00% Impervious, Inflow Depth = 6.47" for 100-year event Inflow 76.93 cfs @ 12.08 hrs, Volume= 5.764 af = 24.21 cfs @ 12.39 hrs, Volume= Outflow = 5.538 af, Atten= 69%, Lag= 18.3 min Primary = 24.21 cfs @ 12.39 hrs, Volume= 5.538 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Pond 2FP : FRENCH'S STREAM WEST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 158.56' @ 12.39 hrs Surf.Area= 26,494 sf Storage= 81,164 cf

Plug-Flow detention time= 87.2 min calculated for 5.537 af (96% of inflow) Center-of-Mass det. time= 64.5 min (847.0 - 782.5)

Volume	Invert	Avail.Stor	age Storage	Description		
#1	155.00'	121,49	0 cf Custom	Stage Data (Prismatic)List	ted below (Recalc)	
Elevatio	on Si	urf.Area	Inc.Store	Cum.Store		
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)		
155.0	00	19,190	0	0		
156.0	00	21,160	20,175	20,175		
157.0	-	23,200	22,180	42,355		
158.0	-	25,290	24,245	66,600		
159.0	-	27,430	26,360	92,960		
160.0	00	29,630	28,530	121,490		
Device	Routing	Invert	Outlet Device	5		
#1	Primary	155.00'	24.0" Round	Culvert		
	-		L= 50.0' RC	P, end-section conforming to	o fill, Ke= 0.500	
				nvert= 155.00' / 154.50' S=	: 0.0100 '/' Cc= 0.900	
			,	w Area= 3.14 sf		
#2	Device 1	155.50'	••••	0" H Vert. Orifice/Grate C	= 0.600	
				r flow at low heads		
#3	Device 1	157.00'	36.0" W x 8.0" H Vert. Orifice/Grate C= 0.600			
ЩА	Davida a 1			r flow at low heads	<u></u>	
#4	Device 1	158.50'		Horiz. Orifice/Grate C= 0. r flow at low heads	.600	
#5 Seconda		159.00'		30.0' breadth Broad-Crest	od Poetangular Woir	
#5	Secondary	159.00		.20 0.40 0.60 0.80 1.00 ²		
				i) 2.68 2.70 2.70 2.64 2.6		
			Cool. (English	, 2.00 2.10 2.10 2.04 2.0	2.01 2.01 2.00	

Primary OutFlow Max=24.21 cfs @ 12.39 hrs HW=158.56' TW=131.43' (Dynamic Tailwater) -1=Culvert (Inlet Controls 24.21 cfs @ 7.71 fps)

2=Orifice/Grate (Passes < 23.09 cfs potential flow)

-3=Orifice/Grate (Passes < 10.64 cfs potential flow)

-4=Orifice/Grate (Passes < 0.41 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=155.00' TW=125.90' (Dynamic Tailwater) **5=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Pond 2MP: PROPOSED BASIN

Inflow Area = 19.350 ac, 0.00% Impervious, Inflow Depth = 6.47" for 100-year event Inflow 139.25 cfs @ 12.08 hrs, Volume= 10.434 af = 89.94 cfs @ 12.18 hrs, Volume= 82.52 cfs @ 12.18 hrs, Volume= 10.264 af, Atten= 35%, Lag= 5.5 min Outflow = Primary = 10.189 af Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN Secondary = 7.42 cfs @ 12.18 hrs, Volume= 0.075 af Routed to Pond 1CP : MEMORIAL GROVE AVE. BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 181.92' @ 12.18 hrs Surf.Area= 21,869 sf Storage= 87,767 cf

Plug-Flow detention time= 47.0 min calculated for 10.264 af (98% of inflow) Center-of-Mass det. time= 36.7 min (819.2 - 782.5)

Volume	Invert	Avail.Stor	rage Storage	e Description		
#1	177.00'	89,40	00 cf Custom	n Stage Data (Prismatic)Listed below		
Elevation Surf.Area		Inc.Store	Cum.Store			
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)		
177.0	00	14,000	0	0		
178.0	00	15,500	14,750	14,750		
179.0	00	17,000	16,250	31,000		
180.0		18,600	17,800	48,800		
181.0		20,300	19,450	68,250		
182.0	00	22,000	21,150	89,400		
Device	Routing	Invert	Outlet Device	es		
#1	Primary	177.00'	42.0" Round Culvert			
				P, end-section conforming to fill, Ke= 0.500		
			Inlet / Outlet Invert= 177.00' / 176.00' S= 0.0200 '/' Cc= 0.900			
		(- 0)		ow Area= 9.62 sf		
#2	Device 1	177.50'		0" H Vert. Orifice/Grate C= 0.600		
	During 4			eir flow at low heads		
#3	Device 1	178.50'	36.0" W x 12.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads			
#1	Device 1	180.00'				
#4 Device 1 180.00'		36.0" x 36.0" Horiz. Orifice/Grate C= 0.600				
#5	Limited to weir flow at low heads					

Primary OutFlow Max=82.50 cfs @ 12.18 hrs HW=181.92' TW=153.37' (Dynamic Tailwater) -1=Culvert (Inlet Controls 82.50 cfs @ 8.58 fps)

2=Orifice/Grate (Passes < 14.75 cfs potential flow)

-3=Orifice/Grate (Passes < 24.66 cfs potential flow)

-4=Orifice/Grate (Passes < 60.07 cfs potential flow)

Secondary OutFlow Max=7.39 cfs @ 12.18 hrs HW=181.92' TW=153.37' (Dynamic Tailwater) **5=Broad-Crested Rectangular Weir** (Weir Controls 7.39 cfs @ 1.75 fps)

Summary for Pond 3AP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 61.820 ac, 8.41% Impervious, Inflow Depth = 5.30" for 100-year event Inflow 131.39 cfs @ 12.97 hrs, Volume= 27.297 af = 105.51 cfs @ 13.38 hrs, Volume= Outflow = 27.291 af, Atten= 20%, Lag= 24.6 min 69.92 cfs @ 13.38 hrs, Volume= Primary = 23.972 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH Secondary = 35.59 cfs @ 13.38 hrs, Volume= 3.319 af Routed to Pond 3BP : FRENCH'S STREAM EAST BRANCH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.92' @ 13.38 hrs Surf.Area= 137,190 sf Storage= 114,298 cf

Plug-Flow detention time= 9.2 min calculated for 27.291 af (100% of inflow) Center-of-Mass det. time= 8.9 min (880.7 - 871.8)

Volume	Inver	t Avail.Sto	rage Storage	Description	
#1	141.50	' 125,60	03 cf Custon	n Stage Data (P	rismatic)Listed below (Recalc)
ElevationSurf.Area(feet)(sq-ft)141.500145.003,630146.0012,565147.0031,705		(sq-ft) 0 3,630 12,565	Inc.Store (cubic-feet) 0 6,353 8,098 22,135	Cum.Store (cubic-feet) 0 6,353 14,450 36,585	
148.0	00	146,330	89,018	125,603	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	142.20'	36.0" Round		
#2 Secondary 1		y 146.70'	Inlet / Outlet n= 0.013 Co 10.0' long x Head (feet) (Invert= 141.50' / ncrete pipe, ben 15.0' breadth \$ 0.20 0.40 0.60	conforming to fill, Ke= 0.500 142.20' S= -0.0167 '/' Cc= 0.900 ds & connections, Flow Area= 7.07 sf Spillway over Path 0.80 1.00 1.20 1.40 1.60 .70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=69.92 cfs @ 13.38 hrs HW=147.92' TW=136.31' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 69.92 cfs @ 9.89 fps)

Secondary OutFlow Max=35.58 cfs @ 13.38 hrs HW=147.92' TW=136.31' (Dynamic Tailwater) **2=Spillway over Path** (Weir Controls 35.58 cfs @ 2.92 fps)

Summary for Pond 3BP: FRENCH'S STREAM EAST BRANCH

Inflow Area = 193.720 ac, 8.56% Impervious, Inflow Depth = 5.14" for 100-year event Inflow 318.31 cfs @ 13.43 hrs, Volume= 82.986 af = Outflow 314.32 cfs @ 13.51 hrs, Volume= 82.986 af, Atten= 1%, Lag= 5.0 min = 70.933 af Primary = 184.83 cfs @ 13.51 hrs, Volume= Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH Secondary = 129.49 cfs @ 13.51 hrs, Volume= 12.053 af Routed to Reach 3R : DP-3 FRENCH'S STREAM EAST BRANCH

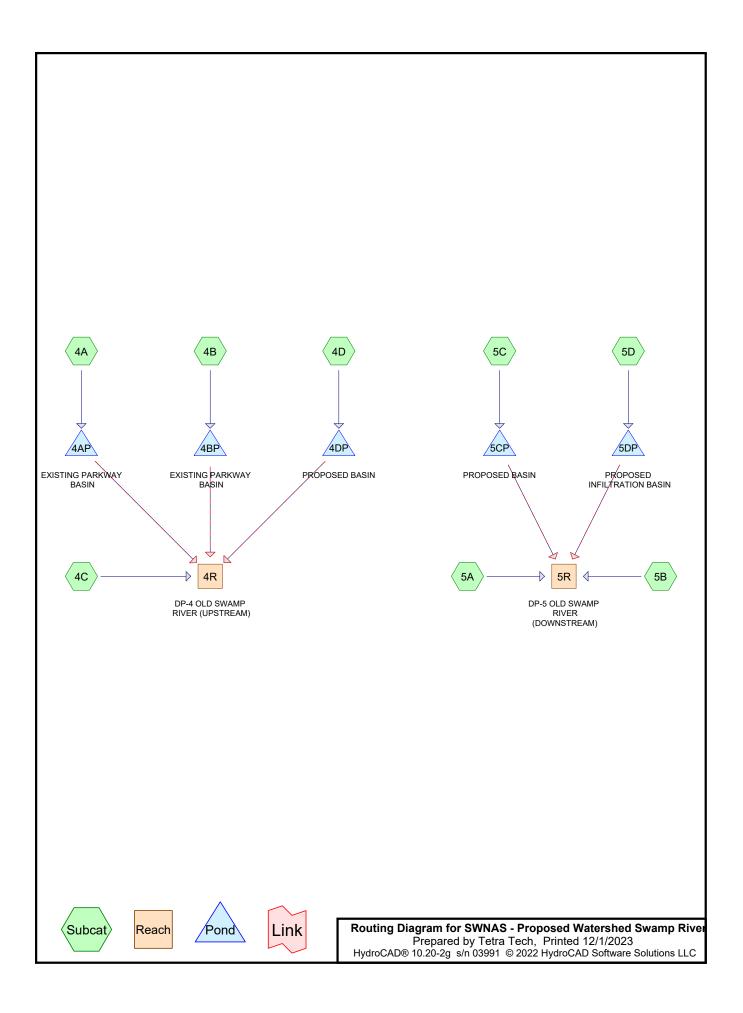
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 136.34' @ 13.51 hrs Surf.Area= 73,867 sf Storage= 242,197 cf

Plug-Flow detention time= 12.5 min calculated for 82.974 af (100% of inflow) Center-of-Mass det. time= 12.5 min (910.3 - 897.8)

Volume	Invert	Avail.Sto	rage Storage	Description				
#1	129.20'	1,254,59	3 cf Custom	Stage Data (Pi	rismatic)Listed below (Recalc)			
	_							
Elevatio		urf.Area	Inc.Store	Cum.Store				
(fee	t)	(sq-ft)	(cubic-feet)	(cubic-feet)				
129.2	20	0	0	0				
130.0	0	2,770	1,108	1,108				
131.0	0	10,320	6,545	7,653				
132.0	0	30,890	20,605	28,258				
133.0	0	37,250	34,070	62,328				
134.0	0	45,960	41,605	103,933				
135.0	0	56,730	51,345	155,278				
136.0	0	68,875	62,803	218,081				
137.0	0	83,650	76,263	294,343				
138.0	0 1	05,010	94,330	388,673				
139.0		25,940	115,475	504,148				
140.0	0 1	61,860	143,900	648,048				
141.0		87,685	174,773	822,821				
142.0	0 2	214,700	201,193	1,024,013				
143.0	0 2	246,460	230,580	1,254,593				
Device	Routing	Invert	Outlet Device:	S				
#1	Primary	129.20'	60.0" Round					
					onforming to fill, Ke= 0.500			
					128.90' S= 0.0150 '/' Cc= 0.900			
					Flow Area= 19.63 sf			
#2	Secondary	135.10'			pillway over Path			
			Head (feet) 0	.20 0.40 0.60	0.80 1.00 1.20 1.40 1.60			
			Coef. (English	n) 2.49 2.56 2.	70 2.69 2.68 2.69 2.67 2.64			
Primary	Primary OutFlow Max=184.83 cfs @ 13.51 brs_HW=136.34'_TW=0.00'_(Dynamic Tailwater)							

Primary OutFlow Max=184.83 cfs @ 13.51 hrs HW=136.34' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 184.83 cfs @ 9.41 fps)

Secondary OutFlow Max=129.49 cfs @ 13.51 hrs HW=136.34' TW=0.00' (Dynamic Tailwater) 2=Spillway over Path (Weir Controls 129.49 cfs @ 2.99 fps)



SWNAS - Proposed Watershed Swamp River

Prepared by Tetra Tech HydroCAD® 10.20-2g s/n 03991 © 2022 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area	CN	Description
(acres)		(subcatchment-numbers)
12.120	61	>75% Grass cover, Good, HSG B (4C, 5B)
1.500	74	>75% Grass cover, Good, HSG C (4C, 4D)
1.350	80	>75% Grass cover, Good, HSG D (4C)
5.360	48	Brush, Good, HSG B (4A, 4B, 4C)
1.360	73	Brush, Good, HSG D (4C)
7.470	98	Pavement (4A, 4B, 4C)
88.710	88	Proposed Development Area (4D, 5C, 5D)
0.600	100	Water - Basin Area (4A, 4B)
36.490	55	Woods, Good, HSG B (4C, 5A, 5B, 5D)
2.630	70	Woods, Good, HSG C (4C)
60.540	77	Woods, Good, HSG D (4C, 5A, 5C)
218.130	77	TOTAL AREA

Summary for Subcatchment 4A:

Runoff = 3.20 cfs @ 12.10 hrs, Volume= 0.264 af, Depth= 0.79" Routed to Pond 4AP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	Description					
*	1.	340	98	Pave	ement					
*	0.	200	100	Wate	er - Basin J	Area				
	2.	440	48	Brus	h, Good, H	ISG B				
	3.	980	67	Weig	ghted Aver	age				
	2.	440		61.3	1% Pervio	us Area				
	1.	540		38.6	9% Imperv	/ious Area				
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	6.0						Direct Entry,			

Summary for Subcatchment 4B:

10" RCP pipe was assumed entering main 24" pipeline and inverts were assumed 0.005.

24"RCP - inverts assumed 0.005 (2) 48" RCP were assumed 0.005 invert and only entered as 1-48" RCP

60"RCP and last 48" RCP had assumed invert at 0.005

Runoff = 11.77 cfs @ 12.09 hrs, Volume= 0.860 af, Depth= 2.54" Routed to Pond 4BP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	Description					
*	3.	130	98	Pave	ement					
*	0.	400	100	Wate	er - Basin <i>I</i>	Area				
	0.	530	48	Brus	h, Good, H	ISG B				
	4.060 92 Weighted Average									
	0.	530		13.0	5% Pervio	us Area				
	3.	530		86.9	5% Imper	ious Area/				
	т.	1			14.1	0	Description			
	Tc	Leng		Slope	Velocity	Capacity	Description			
	(min)	(fe	et)	(ft/ft)	(ft/sec)	(cfs)				
	6.0						Direct Entry,			

Summary for Subcatchment 4C:

Runoff = 17.58 cfs @ 13.73 hrs, Volume= 5.362 af, Depth= 1.11" Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

_	Area	(ac)	C	N Desc	cription					
*	3.	000	98	8 Pave	avement					
	7.	340	5	5 Woo	ds, Good,	HSG B				
		630	70		ds, Good,					
	35.	350	7		ds, Good,					
		390	48		h, Good, H					
	1.	360	73		h, Good, H					
		750	6			over, Good	·			
		650	74			over, Good	·			
	1.	350	8	0 >75%	% Grass co	over, Good	, HSG D			
	57.	820	73	3 Weig	ghted Aver	age				
	-	820		94.8	1% Pervio	us Area				
	3.	000		5.19	% Impervi	ous Area				
	_			~		• •	-			
	ŢĊ	Leng		Slope	Velocity	Capacity	Description			
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)				
	13.1	10	00	0.0230	0.13		Sheet Flow,			
							Grass: Dense n= 0.240 P2= 3.40"			
	106.9	3,20)8	0.0100	0.50		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	120.0	3,30)8	Total						

Summary for Subcatchment 4D:

Runoff = 15.19 cfs @ 12.09 hrs, Volume= 1.080 af, Depth= 2.01" Routed to Pond 4DP : PROPOSED BASIN

	Area	(ac)	CN	Desc	Description						
*	5.	600	88	Prop	Proposed Development Area						
	0.	850	74	>75	% Grass co	over, Good	d, HSG C				
	6.450 86 Weighted Average										
	6.450 100.00% Pervious Area										
	Тс	Leng	th	Slope	Velocity	Capacity	Description				
_	(min)	(min) (feet) (ft/ft) (ft/sec) (cfs)				(cfs)					
	6.0						Direct Entry,				

Summary for Subcatchment 5A:

Assume Tc 10% less than existing conditions.

Runoff = 17.84 cfs @ 12.10 hrs, Volume= 1.336 af, Depth= 1.11" Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Area	(ac)	CN	Desc	cription		
2.	.670	55	Woo	ds, Good,	HSG B	
11.	730	77	Woo	ds, Good,	HSG D	
14	.400	73	Weig	ghted Aver	age	
14.	14.400 100.00% Pervious Area				ous Area	
Та	المعام	46	Clana	Volesity	Consister	Description
Tc	Leng		Slope	Velocity	Capacity	Description
(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
6.0						Direct Entry,

Summary for Subcatchment 5B:

Runoff = 2.60 cfs @ 13.67 hrs, Volume= 1.009 af, Depth= 0.38" Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

_	Area	(ac) C	N Dese	cription			
23.560 55 Woods, Good, HSG B							
8.370 61 >75% Grass cover, Good, HSG B							
	31.	930 5	57 Weig	ghted Aver	age		
	31.	930	100.	00% Pervi	ous Area		
	Tc	Length	Slope	Velocity	Capacity	Description	
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
	47.9	100	0.0100	0.03		Sheet Flow,	
						Woods: Dense underbrush n= 0.800 P2= 3.40"	
	48.2	1,445	0.0100	0.50		Shallow Concentrated Flow,	
						Woodland Kv= 5.0 fps	
	96.1	1,545	Total				

Summary for Subcatchment 5C:

Runoff = 107.94 cfs @ 12.09 hrs, Volume= 7.668 af, Depth= 1.93" Routed to Pond 5CP : PROPOSED BASIN

	Area	(ac)	CN	Dese	Description							
*	34.	230	88	Prop	roposed Development Area							
	13.	13.460 77 Woods, Good, HSG D										
	47.690 85 Weighted Average											
	47.690 100.00% Pervious Area					ous Area						
	т.		а.	0		0	Description					
	Тс	Leng		Slope	Velocity	Capacity	Description					
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)						
	6.0						Direct Entry,					
							• ·					

Summary for Subcatchment 5D:

Runoff = 122.02 cfs @ 12.09 hrs, Volume= 8.677 af, Depth= 2.01" Routed to Pond 5DP : PROPOSED INFILTRATION BASIN

	Area	(ac)	CN	Desc	Description							
*	48.880 88 Proposed Development Area											
	2.920 55 Woods, Good, HSG B											
	51.800 86 Weighted Average											
	51.800 100.00% Pervious Area					ous Area						
	ŢĊ	Leng		Slope	Velocity	Capacity	Description					
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)						
	6.0						Direct Entry,					
	/	(iee	÷()	(1011)	(II/Sec)	(CIS)	Direct Entry,					

Summary for Reach 4R: DP-4 OLD SWAMP RIVER (UPSTREAM)

Inflow Are	a =	72.310 ac, 11.16% Impervious, Inflow Depth = 0.93" for 2-year eve	ent
Inflow	=	8.07 cfs @ 13.73 hrs, Volume= 5.626 af	
Outflow	=	8.07 cfs @ 13.73 hrs, Volume= 5.626 af, Atten= 0%, Lag= 0).0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 5R: DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Inflow Are	a =	145.820 ac,	0.00% Impervious, In	nflow Depth > 0.87"	for 2-year event
Inflow	=	26.62 cfs @	12.12 hrs, Volume=	10.556 af	
Outflow	=	26.62 cfs @	12.12 hrs, Volume=	10.556 af, Atte	en= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 4AP: EXISTING PARKWAY BASIN

Inflow Area = 3.980 ac, 38.69% Impervious, Inflow Depth = 0.79" for 2-year event Inflow 3.20 cfs @ 12.10 hrs, Volume= 0.264 af = 1.08 cfs @ 12.49 hrs, Volume= Outflow = 0.263 af, Atten= 66%, Lag= 23.3 min 1.08 cfs @ 12.49 hrs, Volume= Primary = 0.263 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.52' @ 12.49 hrs Surf.Area= 5,925 sf Storage= 2,898 cf

Plug-Flow detention time= 85.7 min calculated for 0.263 af (100% of inflow) Center-of-Mass det. time= 85.7 min (967.6 - 881.9)

Volume	Invert	Avail.Stor	rage Storage	Description	
#1	145.98'	34,24	5 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio		rf.Area	Inc.Store	Cum.Store	
(feet	/	(sq-ft)	(cubic-feet)	(cubic-feet)	
145.9	-	0	0	0	
146.0	0	5,020	50	50	
147.0	0	6,760	5,890	5,940	
148.0	0	8,260	7,510	13,450	
149.0	0	9,815	9,038	22,488	
150.0	0	13,700	11,758	34,245	
Device	Routing	Invert	Outlet Devices	S	
#1	Primary	145.98'	12.0" Round	Culvert	
#2	Secondary	149.50'	Inlet / Outlet In n= 0.013 Con 10.0' long x 2 Head (feet) 0	nvert= 145.98'/ ncrete pipe, ben 20.0' breadth B .20 0.40 0.60	onforming to fill, Ke= 0.500 137.17' S= 0.3830 '/' Cc= 0.900 ds & connections, Flow Area= 0.79 sf Broad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.08 cfs @ 12.49 hrs HW=146.52' TW=0.00' (Dynamic Tailwater) ☐ 1=Culvert (Inlet Controls 1.08 cfs @ 2.50 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.98' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 4BP: EXISTING PARKWAY BASIN

Inflow Area = 4.060 ac, 86.95% Impervious, Inflow Depth = 2.54" for 2-year event Inflow 11.77 cfs @ 12.09 hrs, Volume= 0.860 af = Outflow 0.00 cfs @ 0.00 hrs, Volume= = 0.000 af, Atten= 100%, Lag= 0.0 min Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 136.57' @ 24.34 hrs Surf.Area= 14,463 sf Storage= 37,451 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow) Center-of-Mass det. time= (not calculated: no outflow)

Volume	Inve	ert Avail.Sto	orage Storage	Description	
#1	132.0	0' 146,2	63 cf Custom	Stage Data (Pr	ismatic)Listed below (Recalc)
Elevatio	מר	Surf.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
132.0	/	1,775	0	0	
133.0		4,345	3,060	3,060	
134.0		7,050	5,698	8,758	
135.0		10,730	8,890	17,648	
136.0	00	13,160	11,945	29,593	
137.0	00	15,450	14,305	43,898	
138.0	00	17,430	16,440	60,338	
139.0		19,460	18,445	78,783	
140.0		21,550	20,505	99,288	
141.0		23,700	22,625	121,913	
142.0	00	25,000	24,350	146,263	
Device	Routing	Invert	Outlet Device	S	
#1	Primary	136.90'	12.0" Round	Culvert	
	,		L= 98.0' RCF	P, end-section co	onforming to fill, Ke= 0.500
					135.23' S= 0.0170 '/' Cc= 0.900
					ls & connections, Flow Area= 0.79 sf
#2	Seconda	ry 141.50'	•		road-Crested Rectangular Weir
					0.80 1.00 1.20 1.40 1.60
			Coet. (English	1) 2.68 2.70 2.7	70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=132.00' TW=0.00' (Dynamic Tailwater)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=132.00' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 4DP: PROPOSED BASIN

Inflow Area = 6.450 ac, 0.00% Impervious, Inflow Depth = 2.01" for 2-year event Inflow 15.19 cfs @ 12.09 hrs, Volume= 1.080 af = 0.00 cfs @ 0.00 hrs, Volume= Outflow = 0.000 af, Atten= 100%, Lag= 0.0 min Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 136.83' @ 24.34 hrs Surf.Area= 27,652 sf Storage= 47,063 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow) Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Stor	rage Storage	e Description			
#1	135.00'	146,20)5 cf Custom	n Stage Data (Prismatic)Listed below			
Elevetie		ν f Δ κα α	Inc. Ctore	Curra Chara			
Elevatio		rf.Area	Inc.Store	Cum.Store			
(fee	/	<u>(sq-ft)</u>	(cubic-feet)	(cubic-feet)			
135.0		23,585	0	0			
136.0		25,780	24,683	24,683			
137.0		28,030	26,905	51,588			
138.0		30,340	29,185	80,773			
139.0		32,700	31,520	112,293			
140.0	00	35,125	33,913	146,205			
Device	Routing	Invert	Outlet Device	es			
#1	Primary	135.00'	15.0" Round	d Culvert			
			L= 50.0' RC	CP, end-section conforming to fill, Ke= 0.500			
			Inlet / Outlet I	Invert= 135.00' / 134.50' S= 0.0100 '/' Cc= 0.900			
			n= 0.013, Flow Area= 1.23 sf				
#2	Device 1	137.50'	12.0" W x 3.0	.0" H Vert. Orifice/Grate C= 0.600			
			Limited to weir flow at low heads				
#3	Device 1	138.90'	24.0" x 24.0"	"Horiz. Orifice/Grate C= 0.600			
			Limited to we	eir flow at low heads			
#4	Secondary	139.00'	10.0' long x	20.0' breadth Broad-Crested Rectangular Weir			
	,			0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60			
				sh) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63			
			()	,			

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=135.00' TW=0.00' (Dynamic Tailwater) -1=Culvert (Controls 0.00 cfs)

-2=Orifice/Grate (Controls 0.00 cfs)

-3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=135.00' TW=0.00' (Dynamic Tailwater) **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5CP: PROPOSED BASIN

Inflow Area = 47.690 ac, 0.00% Impervious, Inflow Depth = 1.93" for 2-year event Inflow = 107.94 cfs @ 12.09 hrs, Volume= 7.668 af 15.36 cfs @ 12.64 hrs, Volume= 15.36 cfs @ 12.64 hrs, Volume= Outflow 7.549 af, Atten= 86%, Lag= 32.8 min = Primary = 7.549 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 173.65' @ 12.64 hrs Surf.Area= 98,839 sf Storage= 157,264 cf

Plug-Flow detention time= 258.8 min calculated for 7.549 af (98% of inflow) Center-of-Mass det. time= 249.5 min (1,073.0 - 823.4)

Volume	Invert	Avail.Sto	rage Storage	Description			
#1	172.00'	628,43	38 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)		
Elevatio	n Su	rf.Area	Inc.Store	Cum.Store			
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)			
172.0	1	91,826	0	0			
173.0		96,055	93,941	93,941			
174.(00 1	00,340	98,198	192,138			
175.0		04,600	102,470	294,608			
176.0		09,000	106,800	401,408			
177.0		13,530	111,265	512,673			
178.0	0 1	18,000	115,765	628,438			
Device	Routing	Invert	Outlet Device	S			
#1	Primary	172.00'	42.0" Round	l Culvert			
				,	conforming to fill, Ke= 0.500		
					170.00' S= 0.0200 '/' Cc= 0.900		
			n= 0.013 Concrete pipe, bends & connections, Flow Area= 9.62 sf				
#2	Device 1	172.00'	36.0" W x 12.0" H Vert. Orifice/Grate C= 0.600				
	D · · · ·	470 751		ir flow at low hea			
#3	Device 1	173.75'			ice/Grate C= 0.600		
#4	Device 1	175.25'		ir flow at low hea	ads Grate C= 0.600		
#4	Device I	175.25		ir flow at low hea			
#5	Secondary	176.60'			Broad-Crested Rectangular Weir		
#5	Coordary	170.00	•		0.80 1.00 1.20 1.40 1.60		
					70 2.64 2.63 2.64 2.64 2.63		
			、 U	,			

Primary OutFlow Max=15.36 cfs @ 12.64 hrs HW=173.65' TW=0.00' (Dynamic Tailwater) 1=Culvert (Passes 15.36 cfs of 19.50 cfs potential flow) 2=Orifice/Grate (Orifice Controls 15.36 cfs @ 5.12 fps)

3=Orifice/Grate (Controls 0.00 cfs)

4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=172.00' TW=0.00' (Dynamic Tailwater) 5=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 5DP: PROPOSED INFILTRATION BASIN

Inflow Area = 51.800 ac, 0.00% Impervious, Inflow Depth = 2.01" for 2-year event Inflow 122.02 cfs @ 12.09 hrs, Volume= 8.677 af = Outflow 7.88 cfs @ 13.93 hrs, Volume= = 8.677 af, Atten= 94%, Lag= 110.2 min Discarded = 5.57 cfs @ 13.93 hrs, Volume= 8.015 af 2.31 cfs @ 13.93 hrs, Volume= Primary = 0.662 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM) 0.00 cfs @ 0.00 hrs, Volume= Secondary = 0.000 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 143.89' @ 13.93 hrs Surf.Area= 99,851 sf Storage= 180,706 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 286.6 min (1,106.5 - 819.9)

Volume	Invert	Avail.Sto	rage Storage D	escription			
#1	142.00'	628,43	38 cf Custom S	Stage Data (Pr	ismatic) Listed below (Recalc)		
Elevatio		Area	Inc.Store	Cum.Store			
(fee		sq-ft)	(cubic-feet)	(cubic-feet)			
142.0		1,825	0	0			
143.0		6,055	93,940	93,940			
144.0),340	98,198	192,138			
145.0		4,600	102,470	294,608			
146.0		9,000	106,800	401,408			
147.0		3,530	111,265	512,673			
148.0	00 118	3,000	115,765	628,438			
Device	Pouting	Invert	Outlet Devices				
	Routing			D l 4			
#1	Primary	142.00'	42.0" Round (
					conforming to fill, Ke= 0.500 140.00' S= 0.0200 '/' Cc= 0.900		
					ds & connections, Flow Area= 9.62 sf		
#2	Device 1	143.50'					
#2	Device I	145.50	36.0" W x 12.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads				
#3	Device 1	145.75'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600				
#5	Device I	140.70	Limited to weir				
#4	Secondary	147.30'			road-Crested Rectangular Weir		
<i>n</i> -	occontaily	147.00			0.80 1.00 1.20 1.40 1.60		
					70 2.64 2.63 2.64 2.64 2.63		
#5	Discarded	142.00'	2.410 in/hr Exf				
110	Diccaldod	112.00					

Discarded OutFlow Max=5.57 cfs @ 13.93 hrs HW=143.89' (Free Discharge) **5=Exfiltration** (Exfiltration Controls 5.57 cfs)

Primary OutFlow Max=2.31 cfs @ 13.93 hrs HW=143.89' TW=0.00' (Dynamic Tailwater) 1=Culvert (Passes 2.31 cfs of 24.71 cfs potential flow) 2=Orifice/Grate (Orifice Controls 2.31 cfs @ 1.99 fps) 3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=142.00' TW=0.00' (Dynamic Tailwater) 4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Subcatchment 4A:

Runoff = 8.47 cfs @ 12.09 hrs, Volume= 0.621 af, Depth= 1.87" Routed to Pond 4AP : EXISTING PARKWAY BASIN

	Area ((ac)	CN	Desc	Description				
*	1.	340	98	Pave	ement				
*	0.2	200	100	Wate	er - Basin <i>I</i>	Area			
	2.4	440	48	Brus	h, Good, H	ISG B			
	3.980 67 Weighted Average					age			
	2.440 61.31% Pervious Area				1% Pervio	us Area			
	1.	540		38.6	9% Imper	ious Area/			
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
	6.0	(10)		(1010)	(1000)	(010)	Direct Entry,		
	0.0						,,,		

Summary for Subcatchment 4B:

10" RCP pipe was assumed entering main 24" pipeline and inverts were assumed 0.005.

24"RCP - inverts assumed 0.005 (2) 48" RCP were assumed 0.005 invert and only entered as 1-48" RCP

60"RCP and last 48" RCP had assumed invert at 0.005

Runoff = 18.89 cfs @ 12.08 hrs, Volume= 1.417 af, Depth= 4.19" Routed to Pond 4BP : EXISTING PARKWAY BASIN

	Area (a	ac)	CN	Desc	cription		
*	3.1	30	98	Pave	ement		
*	0.4	-00	100	Wate	er - Basin <i>i</i>	Area	
	0.5	30	48	Brus	h, Good, H	ISG B	
	4.060 92 Weighted Average					age	
	0.530 13.05% Pervious Area				5% Pervio	us Area	
	3.5	30		86.9	5% Imperv	ious Area	
	Tc I (min)	Lengt (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0						Direct Entry,

Summary for Subcatchment 4C:

Runoff = 39.18 cfs @ 13.61 hrs, Volume= 11.367 af, Depth= 2.36" Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

_	Area	(ac)	CN	N Desc	ription		
*	3.	000	98	8 Pave	ement		
	7.	340	5	5 Woo	ds, Good,	HSG B	
		630	70		ds, Good,		
	35.	350	7	7 Woo	ds, Good,	HSG D	
	2.	390	48	8 Brus	h, Good, H	ISG B	
	1.	360	73	3 Brus	h, Good, H	ISG D	
	3.	750	6			over, Good	·
	0.	650	74			over, Good	·
	1.	350	8) >75%	6 Grass co	over, Good	, HSG D
	57.	820	73		hted Aver		
	54.	820		94.8	1% Pervio	us Area	
	3.	000		5.19	% Impervi	ous Area	
	Тс	Leng		Slope	Velocity	Capacity	Description
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	13.1	10	00	0.0230	0.13		Sheet Flow,
							Grass: Dense n= 0.240 P2= 3.40"
	106.9	3,20)8	0.0100	0.50		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	120.0	3,30)8	Total			

Summary for Subcatchment 4D:

Runoff = 26.53 cfs @ 12.09 hrs, Volume= 1.914 af, Depth= 3.56" Routed to Pond 4DP : PROPOSED BASIN

	Area	(ac)	CN	Desc	cription						
*	5.	600	88	Prop	Proposed Development Area						
	0.	850	74	>75	>75% Grass cover, Good, HSG C						
	6.450 86 Weighted Average										
	6.450 100.00% Pervious Area					ous Area					
	Тс	Leng		Slope	Velocity	Capacity	Description				
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)					
	6.0						Direct Entry,				

Summary for Subcatchment 5A:

Assume Tc 10% less than existing conditions.

Runoff = 39.60 cfs @ 12.09 hrs, Volume= 2.831 af, Depth= 2.36" Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Area	(ac)	CN	Desc	cription		
2.	2.670 55 Woods, Good, HSG B					
11.	.730	77	Woo	ds, Good,	HSG D	
14	.400	73	Weig	ghted Aver	age	
14.	14.400			00% Pervi	ous Area	
Тс	Leng	lth	Slope	Velocity	Capacity	Description
(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
6.0						Direct Entry,

Summary for Subcatchment 5B:

Runoff 10.68 cfs @ 13.45 hrs, Volume= 3.082 af, Depth= 1.16" = Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Area	(ac) C	N Des	cription		
23	.560 5	55 Woo	ds, Good,	HSG B	
8	.370 6	61 >75°	% Grass co	over, Good	, HSG B
31	.930 5	57 Weig	ghted Aver	age	
31	.930	100.	00% Pervi	ous Area	
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
47.9	100	0.0100	0.03		Sheet Flow,
					Woods: Dense underbrush n= 0.800 P2= 3.40"
48.2	1,445	0.0100	0.50		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
96.1	1,545	Total			

Summary for Subcatchment 5C:

Runoff = 191.38 cfs @ 12.09 hrs, Volume= 13.753 af, Depth= 3.46" Routed to Pond 5CP : PROPOSED BASIN

Area (ac)	CN	Desc	cription						
34.2	230	88	Prop	Proposed Development Area						
13.4	160	77	Woo	ds, Good,	HSG D					
47.690 85 Weighted Average										
47.690 100.00% Pervious Area					ous Area					
Tc (min)	5			Velocity (ft/sec)	Capacity (cfs)	Description				
6.0						Direct Entry,				
	34.2 13.4 47.6 47.6 Tc min)	47.690 Tc Lengt min) (feet	34.230 88 13.460 77 47.690 85 47.690 Tc Length S min) (feet)	34.230 88 Prop 13.460 77 Woo 47.690 85 Weig 47.690 100.0 Tc Length Slope min) (feet) (ft/ft)	34.23088Proposed Deve13.46077Woods, Good,47.69085Weighted Aver47.690100.00%PerviTcLengthSlopeVelocitymin)(feet)(ft/ft)(ft/sec)	34.23088Proposed Development A13.46077Woods, Good, HSG D47.69085Weighted Average47.690100.00% Pervious AreaTcLengthSlopeVelocityCapacitymin)(feet)(ft/ft)				

Summary for Subcatchment 5D:

Runoff = 213.05 cfs @ 12.09 hrs, Volume= 15.369 af, Depth= 3.56" Routed to Pond 5DP : PROPOSED INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription		
* 48.880 88 Proposed Development Area							Area
_	2.	.920	55	Woo	ds, Good,	HSG B	
	51.	.800	86	Weig	ghted Aver	age	
	51.800			100.	00% Pervi	ous Area	
	То	Long	th	Slope	Volocity	Canacity	Description
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	6.0			. /	· · ·		Direct Entry,

Summary for Reach 4R: DP-4 OLD SWAMP RIVER (UPSTREAM)

Inflow Are	a =	72.310 ac, 11.16% Impervious, Inflow Depth = 2.13" for 10-year eve	nt
Inflow	=	40.55 cfs @ 13.60 hrs, Volume= 12.815 af	
Outflow	=	40.55 cfs @ 13.60 hrs, Volume= 12.815 af, Atten= 0%, Lag= 0.0) min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 5R: DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Inflow Area	=	145.820 ac,	0.00% Impervious, Inflow	v Depth > 2.06"	for 10-year event
Inflow	=	60.95 cfs @	12.38 hrs, Volume=	24.977 af	
Outflow	=	60.95 cfs @	12.38 hrs, Volume=	24.977 af, Atte	en= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 4AP: EXISTING PARKWAY BASIN

Inflow Area = 3.980 ac, 38.69% Impervious, Inflow Depth = 1.87" for 10-year event Inflow 8.47 cfs @ 12.09 hrs, Volume= 0.621 af = 3.12 cfs @ 12.41 hrs, Volume= Outflow = 0.621 af, Atten= 63%, Lag= 19.1 min 3.12 cfs @ 12.41 hrs, Volume= Primary = 0.621 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.16' @ 12.41 hrs Surf.Area= 7,002 sf Storage= 7,049 cf

Plug-Flow detention time= 58.8 min calculated for 0.621 af (100% of inflow) Center-of-Mass det. time= 59.1 min (913.4 - 854.3)

Volume	Invert	Avail.Stor	rage Storage	Description	
#1	145.98'	34,24	5 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee		ırf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
145.9	98	0	0	0	
146.0	00	5,020	50	50	
147.0	00	6,760	5,890	5,940	
148.0	00	8,260	7,510	13,450	
149.0	00	9,815	9,038	22,488	
150.0	00	13,700	11,758	34,245	
Device	Routing	Invert	Outlet Devices	6	
#1	Primary	145.98'	12.0" Round	Culvert	
#2 Secondary		149.50'	L= 23.0' RCF Inlet / Outlet Ir n= 0.013 Con 10.0' long x 2 Head (feet) 0.	P, end-section c nvert= 145.98' / crete pipe, ben 20.0' breadth E .20 0.40 0.60	onforming to fill, Ke= 0.500 137.17' S= 0.3830 '/' Cc= 0.900 ds & connections, Flow Area= 0.79 sf Broad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.12 cfs @ 12.41 hrs HW=147.16' TW=0.00' (Dynamic Tailwater) -1=Culvert (Inlet Controls 3.12 cfs @ 3.97 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.98' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 4BP: EXISTING PARKWAY BASIN

Inflow Area = 4.060 ac, 86.95% Impervious, Inflow Depth = 4.19" for 10-year event Inflow 18.89 cfs @ 12.08 hrs, Volume= 1.417 af = 0.63 cfs @ 15.66 hrs, Volume= Outflow = 0.438 af, Atten= 97%, Lag= 214.3 min Primary = 0.63 cfs @ 15.66 hrs, Volume= 0.438 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 137.30'@ 15.66 hrs Surf.Area= 16,042 sf Storage= 48,608 cf

Plug-Flow detention time= 590.5 min calculated for 0.438 af (31% of inflow) Center-of-Mass det. time= 439.8 min (1,221.9 - 782.1)

Volume	Inver	Avail.Sto	rage Storage	Description	
#1	132.00	' 146,26	63 cf Custom	Stage Data (Pris	matic)Listed below (Recalc)
Elevatio	on S	urf.Area	Inc.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)	
132.0	00	1,775	0	0	
133.0	00	4,345	3,060	3,060	
134.0	00	7,050	5,698	8,758	
135.0	00	10,730	8,890	17,648	
136.0	00	13,160	11,945	29,593	
137.0	00	15,450	14,305	43,898	
138.0	-	17,430	16,440	60,338	
139.0		19,460	18,445	78,783	
140.0		21,550	20,505	99,288	
141.0		23,700	22,625	121,913	
142.0	00	25,000	24,350	146,263	
Device	Routing	Invert	Outlet Device	s	
#1	Primary	136.90'	12.0" Round	Culvert	
#2	Secondary		Inlet / Outlet In n= 0.013 Cor 10.0' long x 2 Head (feet) 0	nvert= 136.90' / 13 ncrete pipe, bends 20.0' breadth Bro .20 0.40 0.60 0.8	forming to fill, Ke= 0.500 5.23' S= 0.0170 '/' Cc= 0.900 & connections, Flow Area= 0.79 sf ad-Crested Rectangular Weir 30 1.00 1.20 1.40 1.60 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.63 cfs @ 15.66 hrs HW=137.30' TW=0.00' (Dynamic Tailwater) -1=Culvert (Inlet Controls 0.63 cfs @ 2.15 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=132.00' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 4DP: PROPOSED BASIN

Inflow Area = 6.450 ac, 0.00% Impervious, Inflow Depth = 3.56" for 10-year event Inflow 26.53 cfs @ 12.09 hrs, Volume= 1.914 af = 0.40 cfs @ 20.25 hrs, Volume= Outflow = 0.389 af, Atten= 99%, Lag= 489.8 min Primary = 0.40 cfs @ 20.25 hrs, Volume= 0.389 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 137.75' @ 20.25 hrs Surf.Area= 29,757 sf Storage= 73,409 cf

Plug-Flow detention time= 820.5 min calculated for 0.389 af (20% of inflow) Center-of-Mass det. time= 659.1 min (1,462.7 - 803.7)

Volume	Invert	Avail.Sto	rage Storage	e Description						
#1	135.00'	146,20	05 cf Custor	m Stage Data (Prismatic)Listed below						
Elevatio		unf Anna a	In a Ctara	Curre Stare						
Elevatio		urf.Area	Inc.Store	Cum.Store						
(fee	,	(sq-ft)	(cubic-feet)	(cubic-feet)						
135.0		23,585	0	0						
136.0		25,780	24,683	24,683						
137.0)0	28,030	26,905	51,588						
138.0	00	30,340	29,185	80,773						
139.0	00	32,700	31,520	112,293						
140.0	00	35,125	33,913	146,205						
Device	Routing	Invert	Outlet Device	es						
#1	Primary	135.00'	15.0" Roun	d Culvert						
	-		L= 50.0' RC	CP, end-section conforming to fill, Ke= 0.500						
			Inlet / Outlet	Invert= 135.00' / 134.50' S= 0.0100 '/' Cc= 0.900						
			n= 0.013. Fl	low Area= 1.23 sf						
#2	Device 1	137.50'	· · ·	.0" H Vert. Orifice/Grate C= 0.600						
				eir flow at low heads						
#3	Device 1	138.90'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600							
110	Doneo	100100	Limited to weir flow at low heads							
#4	Secondary	139.00'		(20.0' breadth Broad-Crested Rectangular Weir						
<i>n</i> - t	occontaily	100.00	Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60							
				sh) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63						
				511 2.00 2.10 2.10 2.04 2.03 2.04 2.04 2.03						
D	Primary QutFlow May-0.40 of @ 20.25 hrs. UN/-127.75! TM/-0.00! (Dynamia Tailuystar)									

Primary OutFlow Max=0.40 cfs @ 20.25 hrs HW=137.75' TW=0.00' (Dynamic Tailwater) -1=Culvert (Passes 0.40 cfs of 8.52 cfs potential flow) -2=Orifice/Grate (Orifice Controls 0.40 cfs @ 1.60 fps)

3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=135.00' TW=0.00' (Dynamic Tailwater) **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5CP: PROPOSED BASIN

Inflow Area = 47.690 ac, 0.00% Impervious, Inflow Depth = 3.46" for 10-year event Inflow = 191.38 cfs @ 12.09 hrs, Volume= 13.753 af 33.13 cfs @ 12.55 hrs, Volume= Outflow 13.631 af, Atten= 83%, Lag= 28.1 min = 33.13 cfs @ 12.55 hrs, Volume= Primary = 13.631 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 174.86' @ 12.55 hrs Surf.Area= 104,024 sf Storage= 280,494 cf

Plug-Flow detention time= 211.1 min calculated for 13.631 af (99% of inflow) Center-of-Mass det. time= 205.6 min (1,012.3 - 806.8)

Volume	Invert	Avail.Sto	rage Storage	Description					
#1	172.00'	628,43	38 cf Custon	n Stage Data (P	rismatic)Listed below (Recalc)				
Elevatio	n Si	urf.Area	Inc.Store	Cum.Store					
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)					
172.0		91,826	0	0					
173.0		96,055	93,941	93,941					
174.0		00,340	98,198	192,138					
175.0	00 1	04,600	102,470	294,608					
176.0		09,000	106,800	401,408					
177.0		13,530	111,265	512,673					
178.0)0 1	18,000	115,765	628,438					
Device	Routing	Invert	Outlet Device	es					
#1	Primary	172.00'	42.0" Round	d Culvert					
			L= 100.0' RCP, end-section conforming to fill, Ke= 0.500						
			Inlet / Outlet Invert= 172.00' / 170.00' S= 0.0200 '/' Cc= 0.900						
40	Davias 1	470.001	n= 0.013 Concrete pipe, bends & connections, Flow Area= 9.62 sf 36.0" W x 12.0" H Vert. Orifice/Grate C= 0.600						
#2	Device 1	172.00'							
#3	Device 1	173.75'		eir flow at low hea					
#3	Device I	175.75		36.0" W x 12.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads					
#4	Device 1	175.25'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600						
				Limited to weir flow at low heads					
#5	Secondary	176.60'	10.0' long x	10.0' long x 20.0' breadth Broad-Crested Rectangular Weir					
	-				0.80 1.00 1.20 1.40 1.60				
			Coef. (Englis	h) 2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63				

Primary OutFlow Max=33.13 cfs @ 12.55 hrs HW=174.86' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Passes 33.13 cfs of 48.57 cfs potential flow)

2=Orifice/Grate (Orifice Controls 22.17 cfs @ 7.39 fps)

-3=Orifice/Grate (Orifice Controls 10.96 cfs @ 3.65 fps)

-4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=172.00' TW=0.00' (Dynamic Tailwater) 5=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 5DP: PROPOSED INFILTRATION BASIN

Inflow Area = 51.800 ac, 0.00% Impervious, Inflow Depth = 3.56" for 10-year event Inflow 213.05 cfs @ 12.09 hrs, Volume= 15.369 af = Outflow 21.26 cfs @ 12.92 hrs, Volume= = 15.369 af, Atten= 90%, Lag= 49.9 min Discarded = 5.87 cfs @ 12.92 hrs, Volume= 9.937 af 15.39 cfs @ 12.92 hrs, Volume= Primary = 5.433 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM) 0.00 cfs @ 0.00 hrs, Volume= Secondary = 0.000 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 145.15' @ 12.92 hrs Surf.Area= 105,275 sf Storage= 310,715 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 257.4 min (1,061.1 - 803.7)

Volume	Invert	Avail.Sto	rage Storage D	Description				
#1	142.00'	628,43	38 cf Custom S	Stage Data (Pr	ismatic)Listed below (Recalc)			
				a a				
Elevatio		Area	Inc.Store	Cum.Store				
(fee		sq-ft)	(cubic-feet)	(cubic-feet)				
142.0		1,825	0	0				
143.0		6,055	93,940	93,940				
144.0		0,340	98,198	192,138				
145.0		4,600	102,470	294,608				
146.0		9,000	106,800	401,408				
147.0		3,530	111,265	512,673				
148.0	0 118	8,000	115,765	628,438				
Device	Routing	Invert	Outlet Devices					
#1	Primary	142.00'	42.0" Round	Culvert				
	,		L= 100.0' RCF	P, end-section of	conforming to fill, Ke= 0.500			
			Inlet / Outlet Invert= 142.00' / 140.00' S= 0.0200 '/' Cc= 0.900					
			n= 0.013 Concrete pipe, bends & connections, Flow Area= 9.62 sf					
#2	Device 1	143.50'	36.0" W x 12.0" H Vert. Orifice/Grate C= 0.600					
			Limited to weir flow at low heads					
#3	Device 1	145.75'	24.0" x 24.0" H	Horiz. Orifice/G	Grate C= 0.600			
			Limited to weir	flow at low hea	ds			
#4	Secondary	147.30'	10.0' long x 20.0' breadth Broad-Crested Rectangular Weir					
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60					
					70 2.64 2.63 2.64 2.64 2.63			
#5	Discarded	142.00'	2.410 in/hr Ex	filtration over	Surface area			

Discarded OutFlow Max=5.87 cfs @ 12.92 hrs HW=145.15' (Free Discharge) **5=Exfiltration** (Exfiltration Controls 5.87 cfs)

Primary OutFlow Max=15.39 cfs @ 12.92 hrs HW=145.15' TW=0.00' (Dynamic Tailwater) -1=Culvert (Passes 15.39 cfs of 55.19 cfs potential flow) -2=Orifice/Crote (Orifice Controls 15.20 cfs @ 5.12 fps)

2=Orifice/Grate (Orifice Controls 15.39 cfs @ 5.13 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=142.00' TW=0.00' (Dynamic Tailwater) 4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Subcatchment 4A:

Runoff = 12.38 cfs @ 12.09 hrs, Volume= 0.890 af, Depth= 2.68" Routed to Pond 4AP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	cription		
*	1.	340	98	Pave	ement		
*	0.	200	100	Wate	er - Basin J	Area	
	2.	440	48	Brus	h, Good, H	ISG B	
	3.980 67 Weighted Average					age	
	2.440 61.31% Pervious Area					us Area	
	1.	540		38.6	9% Imperv	/ious Area	
	Tc (min)	5 1 5 1 5			Description		
	6.0						Direct Entry,

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10" RCP pipe was assumed entering main 24" pipeline and inverts were assumed 0.005.

24"RCP - inverts assumed 0.005 (2) 48" RCP were assumed 0.005 invert and only entered as 1-48" RCP

60"RCP and last 48" RCP had assumed invert at 0.005

Runoff = 23.45 cfs @ 12.08 hrs, Volume= 1.782 af, Depth= 5.27" Routed to Pond 4BP : EXISTING PARKWAY BASIN

	Area (ac)	CN	Desc	cription		
*	3.1	130	98	Pave	ement		
*	0.4	400	100	Wate	er - Basin <i>i</i>	Area	
	0.5	530	48	Brus	h, Good, H	ISG B	
	4.060 92 Weighted Average						
	0.5	530		13.0	5% Pervio	us Area	
	3.5	530		86.9	5% Imperv	ious Area	
	Tc (min)	Leng (fee	,	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0	(10)		(13/10)	((010)	Direct Entry,

Summary for Subcatchment 4C:

54.71 cfs @ 13.60 hrs, Volume= 15.685 af, Depth= 3.26" Runoff = Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

_	Area	(ac)	C	N Desc	cription		
*	3.	000	98	8 Pave	ement		
	7.	340	5	5 Woo	ds, Good,	HSG B	
		630	70		ds, Good,		
	35.	350	7		ds, Good,		
		390	48		h, Good, H		
	1.	360	73		h, Good, H		
		750	6			over, Good	·
		650	74			over, Good	·
	1.	350	8	0 >75%	% Grass co	over, Good	, HSG D
	57.820 73 Weighted Average					age	
	-	820		94.8	1% Pervio	us Area	
	3.	000		5.19	% Impervi	ous Area	
	_			~		• •	-
	ŢĊ	Leng		Slope	Velocity	Capacity	Description
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	13.1	10	00	0.0230	0.13		Sheet Flow,
							Grass: Dense n= 0.240 P2= 3.40"
	106.9	3,20)8	0.0100	0.50		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	120.0	3,30)8	Total			

Summary for Subcatchment 4D:

Runoff = 33.91 cfs @ 12.09 hrs, Volume= 2.472 af, Depth= 4.60" Routed to Pond 4DP : PROPOSED BASIN

	Area	(ac)	CN	Desc	cription							
*	5.	600	88	Prop	Proposed Development Area							
	0.	850	74	>75	75% Grass cover, Good, HSG C							
	6.450 86 Weighted Average											
	6.	450		100.	00% Pervi	ous Area						
	Tc Length		th	Slope	Velocity	Capacity	Description					
_	(min) (feet)		(ft/ft)	(ft/sec)	(cfs)							
	6.0						Direct Entry,					

Summary for Subcatchment 5A:

Assume Tc 10% less than existing conditions.

Runoff = 54.97 cfs @ 12.09 hrs, Volume= 3.906 af, Depth= 3.26" Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Area	(ac)	CN	Desc	cription		
2.	.670	55	Woo	ds, Good,	HSG B	
11.	730	77	Woo	ds, Good,	HSG D	
14.400 73 Weighted Average						
14.	.400		100.	00% Pervi	ous Area	
Тс	Leng	th	Slope	Velocity	Capacity	Description
(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	·
6.0						Direct Entry,

Summary for Subcatchment 5B:

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17.84 cfs @ 13.35 hrs, Volume= 4.786 af, Depth= 1.80" Runoff = Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Area	(ac) C	N Dese	cription					
23.	23.560 55		Woods, Good, HSG B					
8.	.370 6	61 > 759	>75% Grass cover, Good, HSG B					
31.	.930 5	57 Weig	Weighted Average					
31.	930	100.	00% Pervi	ous Area				
Tc	Length	Slope	Velocity	Capacity	Description			
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
47.9	100	0.0100	0.03		Sheet Flow,			
					Woods: Dense underbrush n= 0.800 P2= 3.40"			
48.2	1,445	0.0100	0.50		Shallow Concentrated Flow,			
	-				Woodland Kv= 5.0 fps			
96.1	1,545	Total						

Summary for Subcatchment 5C:

Runoff = 245.93 cfs @ 12.09 hrs, Volume= 17.850 af, Depth= 4.49" Routed to Pond 5CP : PROPOSED BASIN

rea (ac)	CN	Desc	cription						
34.230	88	Prop	Proposed Development Area						
13.460	77	Woo	Voods, Good, HSG D						
47.690 85 Weighted Average									
47.690		100.	00% Pervi	ous Area					
Tc Length S (min) (feet)		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
6.0					Direct Entry,				
1	34.230 13.460 47.690 47.690 Tc Leng in) (fee	34.230 88 13.460 77 47.690 85 47.690 85 47.690 85 in) (feet)	34.230 88 Prop 13.460 77 Woo 47.690 85 Weig 47.690 100. Tc Length Slope in) (feet) (ft/ft)	34.23088Proposed Deve13.46077Woods, Good,47.69085Weighted Aver47.690100.00%PerviTcLengthSlopeVelocityin)(feet)(ft/ft)(ft/sec)	34.23088Proposed Development A13.46077Woods, Good, HSG D47.69085Weighted Average47.690100.00% Pervious AreaTcLengthSlopeVelocityCapacityin)(feet)(ft/ft)				

Summary for Subcatchment 5D:

Runoff = 272.29 cfs @ 12.09 hrs, Volume= 19.856 af, Depth= 4.60" Routed to Pond 5DP : PROPOSED INFILTRATION BASIN

	Area	(ac)	CN	Desc	cription						
*	48.	880	88	Prop	Proposed Development Area						
	2.	2.920 55 Woods, Good, HSG B									
	51.800 86 Weighted Average										
	51.	800		100.	00% Pervi	ous Area					
	Tc Length			Slope	Velocity	Capacity	Description				
	(min) (feet)		(ft/ft)	(ft/sec)	(cfs)						
	6.0						Direct Entry,				
	/	(iee	÷()	(1011)	(II/Sec)	(CIS)	Direct Entry,				

Summary for Reach 4R: DP-4 OLD SWAMP RIVER (UPSTREAM)

Inflow Are	a =	72.310 ac, 11.16% Impervious, Inflow Depth = 3.04" for 25-year event	
Inflow	=	58.70 cfs @ 13.60 hrs, Volume= 18.325 af	
Outflow	=	58.70 cfs @ 13.60 hrs, Volume= 18.325 af, Atten= 0%, Lag= 0.0 n	nin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 5R: DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Inflow Area	=	145.820 ac,	0.00% Impervious, I	nflow Depth > 2.92	" for 25-year event
Inflow =	=	94.55 cfs @	12.12 hrs, Volume=	35.470 af	
Outflow =	=	94.55 cfs @	12.12 hrs, Volume=	: 35.470 af, A	Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 4AP: EXISTING PARKWAY BASIN

Inflow Area = 3.980 ac, 38.69% Impervious, Inflow Depth = 2.68" for 25-year event Inflow 12.38 cfs @ 12.09 hrs, Volume= 0.890 af = 4.11 cfs @ 12.43 hrs, Volume= Outflow = 0.889 af, Atten= 67%, Lag= 20.3 min 4.11 cfs @ 12.43 hrs, Volume= Primary = 0.889 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.66' @ 12.43 hrs Surf.Area= 7,752 sf Storage= 10,737 cf

Plug-Flow detention time= 54.0 min calculated for 0.889 af (100% of inflow) Center-of-Mass det. time= 54.3 min (897.9 - 843.6)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	1 145.98' 34,24		5 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee		ırf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
145.9	1	0	0		
146.0	00	5,020	50	50	
147.0	00	6,760	5,890	5,940	
148.0	00	8,260	7,510	13,450	
149.0	00	9,815	9,038	22,488	
150.0	00	13,700	11,758	34,245	
Device	Routing	Invert	Outlet Device:	S	
#1	Primary	145.98'	12.0" Round	Culvert	
#2	Secondary	149.50'	L= 23.0' RCF Inlet / Outlet In n= 0.013 Con 10.0' long x 2 Head (feet) 0	P, end-section c nvert= 145.98' / ncrete pipe, ben 20.0' breadth E .20 0.40 0.60	conforming to fill, Ke= 0.500 137.17' S= 0.3830 '/' Cc= 0.900 ds & connections, Flow Area= 0.79 sf Broad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=4.11 cfs @ 12.43 hrs HW=147.66' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 4.11 cfs @ 5.23 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.98' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 4BP: EXISTING PARKWAY BASIN

Inflow Area = 4.060 ac, 86.95% Impervious, Inflow Depth = 5.27" for 25-year event Inflow 23.45 cfs @ 12.08 hrs, Volume= 1.782 af = 1.49 cfs @ 13.62 hrs, Volume= Outflow = 0.803 af, Atten= 94%, Lag= 92.1 min Primary = 1.49 cfs @ 13.62 hrs, Volume= 0.803 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 137.55' @ 13.62 hrs Surf.Area= 16,545 sf Storage= 52,744 cf

Plug-Flow detention time= 430.2 min calculated for 0.802 af (45% of inflow) Center-of-Mass det. time= 306.4 min (1,082.6 - 776.2)

Volume	Inver	: Avail.Sto	rage Storage	Description	
#1	132.00	' 146,26	63 cf Custom	Stage Data (Pri	smatic)Listed below (Recalc)
Elevation Surf.Area		Inc.Store	Cum.Store		
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
132.0	1	1,775	0		
133.0	00	4,345	3,060	3,060	
134.0	00	7,050	5,698	8,758	
135.0	00	10,730	8,890	17,648	
136.0	00	13,160	11,945	29,593	
137.0	00	15,450	14,305	43,898	
138.0		17,430	16,440	60,338	
139.0		19,460	18,445	78,783	
140.0		21,550	20,505	99,288	
141.0		23,700	22,625	121,913	
142.0	00	25,000	24,350	146,263	
Device	Routing	Invert	Outlet Device	s	
#1	Primary	136.90'	12.0" Round	l Culvert	
#2			Inlet / Outlet I n= 0.013 Cor 10.0' long x Head (feet) 0	nvert= 136.90' / 1 ncrete pipe, bend 20.0' breadth Br 0.20 0.40 0.60 0	nforming to fill, Ke= 0.500 35.23' S= 0.0170 '/' Cc= 0.900 s & connections, Flow Area= 0.79 sf coad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 0 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.49 cfs @ 13.62 hrs HW=137.55' TW=0.00' (Dynamic Tailwater) -1=Culvert (Inlet Controls 1.49 cfs @ 2.75 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=132.00' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 4DP: PROPOSED BASIN

Inflow Area = 6.450 ac, 0.00% Impervious, Inflow Depth = 4.60" for 25-year event Inflow 33.91 cfs @ 12.09 hrs, Volume= 2.472 af = 0.84 cfs @ 16.90 hrs, Volume= Outflow = 0.948 af, Atten= 98%, Lag= 289.2 min Primary = 0.84 cfs @ 16.90 hrs, Volume= 0.948 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 138.11' @ 16.90 hrs Surf.Area= 30,600 sf Storage= 84,238 cf

Plug-Flow detention time= 634.9 min calculated for 0.947 af (38% of inflow) Center-of-Mass det. time= 508.6 min (1,305.2 - 796.5)

Volume	Invert	Avail.Sto	rage Storage	Description
#1	135.00'	146,20	05 cf Custom	n Stage Data (Prismatic)Listed below
	0	5 A		
Elevatio		urf.Area	Inc.Store	Cum.Store
(fee	1	(sq-ft)	(cubic-feet)	(cubic-feet)
135.0)0	23,585	0	0
136.0	00	25,780	24,683	24,683
137.0	00	28,030	26,905	51,588
138.0	00	30,340	29,185	80,773
139.0	00	32,700	31,520	112,293
140.0	00	35,125	33,913	146,205
Device	Routing	Invert	Outlet Device	es estatution esta
#1	Primary	135.00'	15.0" Round	d Culvert
	-		L= 50.0' RCI	P, end-section conforming to fill, Ke= 0.500
			Inlet / Outlet I	Invert= 135.00' / 134.50' S= 0.0100 '/' Cc= 0.900
			n= 0.013, Flo	ow Area= 1.23 sf
#2	Device 1	137.50'	12.0" W x 3.0	0" H Vert. Orifice/Grate C= 0.600
			Limited to wei	ir flow at low heads
#3	Device 1	138.90'	24.0" x 24.0"	'Horiz. Orifice/Grate C= 0.600
			Limited to wei	ir flow at low heads
#4	Secondary	139.00'	10.0' long x	20.0' breadth Broad-Crested Rectangular Weir
	2		Head (feet) 0	0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			· · ·	h) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
			、 O	<i>.</i>

Primary OutFlow Max=0.84 cfs @ 16.90 hrs HW=138.11' TW=0.00' (Dynamic Tailwater) -1=Culvert (Passes 0.84 cfs of 9.27 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.84 cfs @ 3.34 fps)

3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=135.00' TW=0.00' (Dynamic Tailwater) **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5CP: PROPOSED BASIN

Inflow Area = 47.690 ac, 0.00% Impervious, Inflow Depth = 4.49" for 25-year event Inflow = 245.93 cfs @ 12.09 hrs, Volume= 17.850 af 47.28 cfs @ 12.53 hrs, Volume= Outflow 17.727 af, Atten= 81%, Lag= 26.6 min = 47.28 cfs @ 12.53 hrs, Volume= Primary = 17.727 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 175.59' @ 12.53 hrs Surf.Area= 107,211 sf Storage= 357,447 cf

Plug-Flow detention time= 193.0 min calculated for 17.727 af (99% of inflow) Center-of-Mass det. time= 188.6 min (988.0 - 799.4)

Inver	t Avail.Sto	rage Storage	Description	
172.00	' 628,43	38 cf Custom	n Stage Data (Pi	rismatic)Listed below (Recalc)
-n 6	urf Aroo	Ino Storo	Cum Store	
			-	
/		1 1	<u>_</u>	
	,	•	•	
	,	,	,	
	,	,	,	
	,	,	,	
	,	,	,	
00	118,000	115,765	628,438	
Deviting			_	
		-		
Primary	172.00'			
			,	0
				ds & connections, Flow Area= 9.62 sf
Device 1	172.00'	36.0" W x 12	.0" H Vert. Orifi	ce/Grate C= 0.600
		Limited to we	ir flow at low hea	ads
Device 1	173.75'	36.0" W x 12	.0" H Vert. Orifi	ce/Grate C= 0.600
		Limited to we	ir flow at low hea	ads
Device 1	175.25'	24.0" x 24.0"	Horiz. Orifice/	Grate C= 0.600
		Limited to we	ir flow at low hea	ads
Secondary	/ 176.60'	10.0' long x	20.0' breadth B	broad-Crested Rectangular Weir
-				
				70 2.64 2.63 2.64 2.64 2.63
	172.00 on S on S on S on S on S on S on S on S	172.00' 628,4: on Surf.Area at) (sq-ft) 00 91,826 00 96,055 00 100,340 00 104,600 00 109,000 00 113,530 00 118,000 Routing Invert Primary 172.00' Device 1 173.75' Device 1 175.25'	172.00' $628,438 \text{ cf}$ Custom on Surf.Area Inc.Store et) (sq-ft) (cubic-feet) 00 91,826 0 00 96,055 93,941 00 100,340 98,198 00 104,600 102,470 00 109,000 106,800 00 109,000 106,800 00 113,530 111,265 00 118,000 115,765 Routing Invert Outlet Device Primary 172.00' 42.0'' Round L= 100.0' R(Inlet / Outlet Inlet / Outlet Inl	172.00' 628,438 cf Custom Stage Data (Property of the construction of the constructing of the construction of the constructing of the constructing of

Primary OutFlow Max=47.28 cfs @ 12.53 hrs HW=175.59' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Passes 47.28 cfs of 62.90 cfs potential flow)

2=Orifice/Grate (Orifice Controls 25.38 cfs @ 8.46 fps)

3=Orifice/Grate (Orifice Controls 16.64 cfs @ 5.55 fps)

-4=Orifice/Grate (Weir Controls 5.26 cfs @ 1.92 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=172.00' TW=0.00' (Dynamic Tailwater) 5=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 5DP: PROPOSED INFILTRATION BASIN

Inflow Area = 51.800 ac, 0.00% Impervious, Inflow Depth = 4.60" for 25-year event Inflow 272.29 cfs @ 12.09 hrs, Volume= 19.856 af = Outflow 31.44 cfs @ 12.74 hrs, Volume= 19.856 af, Atten= 88%, Lag= 39.4 min = Discarded = 6.10 cfs @ 12.74 hrs, Volume= 10.805 af 25.35 cfs @ 12.74 hrs, Volume= Primary = 9.050 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM) 0.00 cfs @ 0.00 hrs, Volume= Secondarv = 0.000 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 146.07' @ 12.74 hrs Surf.Area= 109,297 sf Storage= 408,561 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 248.3 min (1,044.8 - 796.5)

Volume	Invert	Avail.Sto	rage Storage D	Description					
#1	142.00'	628,43	38 cf Custom S	Stage Data (Pr	ismatic)Listed below (Recalc)				
				a a					
Elevatio		Area	Inc.Store	Cum.Store					
(fee		sq-ft)	(cubic-feet)	(cubic-feet)					
142.0		1,825	0	0					
143.0		6,055	93,940	93,940					
144.0		0,340	98,198	192,138					
145.0		4,600	102,470	294,608					
146.0		9,000	106,800	401,408					
147.0		3,530	111,265	512,673					
148.0	0 118	8,000	115,765	628,438					
Device	Routing	Invert	Outlet Devices						
#1	Primary	142.00'	42.0" Round	Culvert					
	,		L= 100.0' RCF	P, end-section of	conforming to fill, Ke= 0.500				
					140.00' S= 0.0200 '/' Cc= 0.900				
			n= 0.013 Cond	crete pipe, benc	Is & connections, Flow Area= 9.62 sf				
#2	Device 1	143.50'	36.0" W x 12.0	" H Vert. Orifi	ce/Grate C= 0.600				
			Limited to weir	flow at low hea	ds				
#3	Device 1	145.75'	24.0" x 24.0" H	Horiz. Orifice/G	Grate C= 0.600				
			Limited to weir	flow at low hea	ds				
#4	Secondary	147.30'		10.0' long x 20.0' breadth Broad-Crested Rectangular Weir					
				Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60					
					70 2.64 2.63 2.64 2.64 2.63				
#5	Discarded	142.00'	2.410 in/hr Ex	filtration over	Surface area				

Discarded OutFlow Max=6.10 cfs @ 12.74 hrs HW=146.07' (Free Discharge) **5=Exfiltration** (Exfiltration Controls 6.10 cfs)

Primary OutFlow Max=25.35 cfs @ 12.74 hrs HW=146.07' TW=0.00' (Dynamic Tailwater) 1=Culvert (Passes 25.35 cfs of 70.49 cfs potential flow) 2=Orifice/Grate (Orifice Controls 20.71 cfs @ 6.90 fps) 3=Orifice/Grate (Weir Controls 4.64 cfs @ 1.84 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=142.00' TW=0.00' (Dynamic Tailwater) 4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Subcatchment 4A:

Runoff = 18.83 cfs @ 12.09 hrs, Volume= 1.339 af, Depth= 4.04" Routed to Pond 4AP : EXISTING PARKWAY BASIN

	Area ((ac)	CN	Desc	Description					
*	1.	340	98	Pave	ement					
*	0.3	200	100	Wate	er - Basin <i>I</i>	Area				
	2.4	440	48	Brus	h, Good, H	ISG B				
	3.	980	67	Weig	ghted Aver	age				
	2.4	440		61.3	1% Pervio	us Area				
	1.	540		38.6	9% Imper	ious Area/				
	Tc (min)	5 1 5 1 5		Capacity (cfs)	Description					
	6.0	(10)		(1010)	(1000)	(010)	Direct Entry,			
	0.0						,,,			

Summary for Subcatchment 4B:

10" RCP pipe was assumed entering main 24" pipeline and inverts were assumed 0.005.

24"RCP - inverts assumed 0.005 (2) 48" RCP were assumed 0.005 invert and only entered as 1-48" RCP

60"RCP and last 48" RCP had assumed invert at 0.005

Runoff = 30.44 cfs @ 12.08 hrs, Volume= 2.350 af, Depth= 6.94" Routed to Pond 4BP : EXISTING PARKWAY BASIN

	Area	(ac)	CN	Desc	Description					
*	3.	130	98	Pave	ement					
*	0.4	400	100	Wate	er - Basin <i>I</i>	Area				
	0.	530	48	Brus	h, Good, H	ISG B				
	4.	060	92	Weig	phted Aver	age				
	0.	530		13.0	5% Pervio	us Area				
	3.	530		86.9	5% Imper	ious Area/				
	Tc (min)	Leng (fe	,	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	6.0						Direct Entry,			

Summary for Subcatchment 4C:

Runoff = 79.82 cfs @ 13.60 hrs, Volume= 22.749 af, Depth= 4.72" Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

	Area	(ac)	CN	N Desc	cription						
*	3.	000	98	B Pave	ement						
	7.	340	55	5 Woo	loods, Good, HSG B						
	2.	630	70) Woo	ds, Good,	HSG C					
	35.	350	77		ds, Good,						
	2.	390	48	3 Brus	h, Good, H	ISG B					
	1.	360	73		h, Good, H						
		750	6			over, Good	·				
	0.	650	74			over, Good	,				
	1.	350	80) >75%	6 Grass co	over, Good	, HSG D				
	57.	820	73	3 Weig	phted Aver	age					
	54.	820		94.8	1% Pervio	us Area					
	3.	000		5.19	% Impervi	ous Area					
	Тс	Leng		Slope	Velocity	Capacity	Description				
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)					
	13.1	10	00	0.0230	0.13		Sheet Flow,				
							Grass: Dense n= 0.240 P2= 3.40"				
	106.9	3,20)8	0.0100	0.50		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	120.0	3,30	8(Total							

Summary for Subcatchment 4D:

Runoff = 45.26 cfs @ 12.08 hrs, Volume= 3.351 af, Depth= 6.23" Routed to Pond 4DP : PROPOSED BASIN

	Area	(ac)	CN	Desc	Description							
*	5.	600	88	Prop	roposed Development Area							
	0.	850	74	>75	75% Grass cover, Good, HSG C							
	6.	6.450 86 Weighted Average										
	6.	450		100.	00% Pervi	ous Area						
	Тс	Tc Length S			Velocity	Capacity	Description					
_	(min)	n) (feet) (ft/ft) (ft/sec) (cfs)										
	6.0						Direct Entry,					

Summary for Subcatchment 5A:

Assume Tc 10% less than existing conditions.

Runoff = 79.64 cfs @ 12.09 hrs, Volume= 5.666 af, Depth= 4.72" Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Area	(ac)	CN	Desc	cription		
2.	.670	55	Woo	ds, Good,	HSG B	
11.	.730	77	Woo	ds, Good,	HSG D	
14.	.400	73	Weig	ghted Aver	age	
14.	.400		100.	00% Pervi	ous Area	
Та	امم	th	Clana	Volocity	Consoitu	Description
Tc	Leng		Slope	Velocity	Capacity	Description
<u>(min)</u>	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
6.0						Direct Entry,

Summary for Subcatchment 5B:

Runoff = 30.70 cfs @ 13.35 hrs, Volume= 7.800 af, Depth= 2.93" Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

_	Area	(ac) C	N Dese	cription		
	23.	560 5		ds, Good,		
_	8.	<u>370 6</u>	<u>61 >759</u>	% Grass c	over, Good	, HSG B
	31.	930 5	57 Weig	ghted Aver	age	
	31.	930	100.	00% Pervi	ous Area	
	Тс	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	47.9	100	0.0100	0.03		Sheet Flow,
						Woods: Dense underbrush n= 0.800 P2= 3.40"
	48.2	1,445	0.0100	0.50		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
_	96.1	1,545	Total			

Summary for Subcatchment 5C:

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330.04 cfs @ 12.09 hrs, Volume= 24.309 af, Depth= 6.12" Runoff = Routed to Pond 5CP : PROPOSED BASIN

	Area	(ac)	CN	Desc	cription					
*	34.	230	88	Proposed Development Area						
_	13.	460	77	Woo	ds, Good,	HŚG D				
	47.	690	85	Weig	ghted Aver	age				
	47.690 100.00% Pervious Area					ous Area				
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
	6.0						Direct Entry,			

Summary for Subcatchment 5D:

Runoff = 363.46 cfs @ 12.08 hrs, Volume= 26.912 af, Depth= 6.23" Routed to Pond 5DP : PROPOSED INFILTRATION BASIN

_	Area	(ac)	CN	Desc	cription		
*	48.880 88 Proposed Development Area						
	2.920 55 Woods, Good, HSG B						
	51.	.800	86	Weig	ghted Aver	age	
	51.	.800		100.	00% Pervi	ous Area	
	То	Long	th (Slong	Volocity	Consoity	Description
	Tc (min)	Leng (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	6.0			<i>/</i> _	· · ·		Direct Entry,
							-

Summary for Reach 4R: DP-4 OLD SWAMP RIVER (UPSTREAM)

Inflow Area =		72.310 ac, 11.16% Impervious, Inflow Depth = 4.53" for 100-year eve	ent
Inflow	=	37.52 cfs @ 13.60 hrs, Volume= 27.284 af	
Outflow	=	37.52 cfs @ 13.60 hrs, Volume= 27.284 af, Atten= 0%, Lag= 0.0) min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 5R: DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Inflow Area =		145.820 ac,	0.00% Impervious, Inflow	Depth > 4.35"	for 100-year event
Inflow	=	154.24 cfs @	12.34 hrs, Volume=	52.844 af	
Outflow	=	154.24 cfs @	12.34 hrs, Volume=	52.844 af, Atte	en= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 4AP: EXISTING PARKWAY BASIN

Inflow Area = 3.980 ac, 38.69% Impervious, Inflow Depth = 4.04" for 100-year event Inflow 18.83 cfs @ 12.09 hrs, Volume= 1.339 af = 5.33 cfs @ 12.46 hrs, Volume= Outflow = 1.339 af, Atten= 72%, Lag= 22.3 min 5.33 cfs @ 12.46 hrs, Volume= Primary = 1.339 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 148.47' @ 12.46 hrs Surf.Area= 8,987 sf Storage= 17,483 cf

Plug-Flow detention time= 52.7 min calculated for 1.339 af (100% of inflow) Center-of-Mass det. time= 52.9 min (884.6 - 831.7)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	145.98'	34,24	15 cf Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee		ırf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
145.9	1	0	0		
146.0	00	5,020	50	50	
147.0	00	6,760	5,890	5,940	
148.0	00	8,260	7,510	13,450	
149.0	00	9,815	9,038	22,488	
150.0	00	13,700	11,758	34,245	
Device	Routing	Invert	Outlet Devices	S	
#1	Primary	145.98'	12.0" Round	Culvert	
#2	Secondary	149.50'	L= 23.0' RCF Inlet / Outlet Ir n= 0.013 Con 10.0' long x 2 Head (feet) 0	P, end-section c nvert= 145.98' / ncrete pipe, ben 20.0' breadth E .20 0.40 0.60	conforming to fill, Ke= 0.500 137.17' S= 0.3830 '/' Cc= 0.900 ds & connections, Flow Area= 0.79 sf Broad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=5.33 cfs @ 12.46 hrs HW=148.47' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 5.33 cfs @ 6.79 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.98' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 4BP: EXISTING PARKWAY BASIN

Inflow Area = 4.060 ac, 86.95% Impervious, Inflow Depth = 6.94" for 100-year event Inflow 30.44 cfs @ 12.08 hrs, Volume= 2.350 af = 3.36 cfs @ 12.74 hrs, Volume= Outflow = 1.370 af, Atten= 89%, Lag= 39.2 min Primary = 3.36 cfs @ 12.74 hrs, Volume= 1.370 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 138.19'@ 12.74 hrs Surf.Area= 17,819 sf Storage= 63,713 cf

Plug-Flow detention time= 341.6 min calculated for 1.370 af (58% of inflow) Center-of-Mass det. time= 234.3 min (1,003.8 - 769.4)

Volume	Inver	t Avail.Sto	rage Storage	Description	
#1	132.00	146,26	63 cf Custom	Stage Data (Pris	smatic)Listed below (Recalc)
Elevatio	n S	Surf.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
132.0	0	1,775	0	0	
133.0	00	4,345	3,060	3,060	
134.0	00	7,050	5,698	8,758	
135.0	00	10,730	8,890	17,648	
136.0		13,160	11,945	29,593	
137.0		15,450	14,305	43,898	
138.0		17,430	16,440	60,338	
139.0		19,460	18,445	78,783	
140.0		21,550	20,505	99,288	
141.0		23,700	22,625	121,913	
142.0	00	25,000	24,350	146,263	
Device	Routing	Invert	Outlet Devices	S	
#1	Primary	136.90'	12.0" Round	Culvert	
#2	Secondar		L= 98.0' RCF Inlet / Outlet In n= 0.013 Con 10.0' long x Head (feet) 0	nforming to fill, Ke= 0.500 35.23' S= 0.0170 '/' Cc= 0.900 s & connections, Flow Area= 0.79 sf bad-Crested Rectangular Weir .80 1.00 1.20 1.40 1.60 D 2.64 2.63 2.64 2.64 2.63	

Primary OutFlow Max=3.36 cfs @ 12.74 hrs HW=138.19' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 3.36 cfs @ 4.28 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=132.00' TW=0.00' (Dynamic Tailwater) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 4DP: PROPOSED BASIN

Inflow Area = 6.450 ac, 0.00% Impervious, Inflow Depth = 6.23" for 100-year event Inflow 45.26 cfs @ 12.08 hrs, Volume= 3.351 af = 1.35 cfs @ 15.98 hrs, Volume= Outflow = 1.825 af, Atten= 97%, Lag= 233.8 min Primary = 1.35 cfs @ 15.98 hrs, Volume= 1.825 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 4R : DP-4 OLD SWAMP RIVER (UPSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 138.88' @ 15.98 hrs Surf.Area= 32,414 sf Storage= 108,470 cf

Plug-Flow detention time= 651.0 min calculated for 1.825 af (54% of inflow) Center-of-Mass det. time= 542.1 min (1,330.3 - 788.2)

Volume	Invert	Avail.Sto	rage Storage	e Description			
#1	135.00'	146,20	05 cf Custon	n Stage Data (Prismatic)Listed below			
Elevatio	on Su	rf.Area	Inc.Store	Cum.Store			
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)			
135.0	00	23,585	0	0			
136.0	00	25,780	24,683	24,683			
137.0	00	28,030	26,905	51,588			
138.0		30,340	29,185	80,773			
139.0		32,700	31,520	112,293			
140.0	00	35,125	33,913	146,205			
Device	Routing	Invert	Outlet Device	es			
#1	Primary	135.00'	15.0" Round	d Culvert			
	-		L= 50.0' RC	CP, end-section conforming to fill, Ke= 0.500			
			Inlet / Outlet	Invert= 135.00' / 134.50' S= 0.0100 '/' Cc= 0.900			
			,	ow Area= 1.23 sf			
#2	Device 1	137.50'	12.0" W x 3.0" H Vert. Orifice/Grate C= 0.600				
				eir flow at low heads			
#3	Device 1	138.90'		"Horiz. Orifice/Grate C= 0.600			
	• •	400.001		eir flow at low heads			
#4	Secondary	139.00'	•	20.0' breadth Broad-Crested Rectangular Weir			
				0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60			
			Coel. (Englis	sh) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63			
Drimon	Brimany OutElow May-1 25 of \bigcirc 15.09 hrs. $\square M = 120.00'$. $\square M = 0.00'$. (Dynamic Tailwatar)						

Primary OutFlow Max=1.35 cfs @ 15.98 hrs HW=138.88' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Passes 1.35 cfs of 10.66 cfs potential flow)

2=Orifice/Grate (Orifice Controls 1.35 cfs @ 5.39 fps)

3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=135.00' TW=0.00' (Dynamic Tailwater) 4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 5CP: PROPOSED BASIN

Inflow Area = 47.690 ac, 0.00% Impervious, Inflow Depth = 6.12" for 100-year event Inflow = 330.04 cfs @ 12.09 hrs, Volume= 24.309 af 73.06 cfs @ 12.49 hrs, Volume= Outflow 24.185 af, Atten= 78%, Lag= 24.5 min = 73.06 cfs @ 12.49 hrs, Volume= Primary = 24.185 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM) Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 176.56' @ 12.49 hrs Surf.Area= 111,542 sf Storage= 463,276 cf

Plug-Flow detention time= 170.2 min calculated for 24.181 af (99% of inflow) Center-of-Mass det. time= 167.3 min (958.2 - 790.9)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	172.00'	628,43	38 cf Custom	n Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	n Si	urf.Area	Inc.Store	Cum.Store	
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
172.0		91,826	0	0	
173.0		96,055	93,941	93,941	
174.0		100,340	98,198	192,138	
175.0	00 1	104,600	102,470	294,608	
176.0		109,000	106,800	401,408	
177.0		13,530	111,265	512,673	
178.0	00 1	18,000	115,765	628,438	
Device	Routing	Invert	Outlet Device	es	
#1	Primary	172.00'	42.0" Round	d Culvert	
				,	conforming to fill, Ke= 0.500
					170.00' S= 0.0200 '/' Cc= 0.900
40	Davias 1	470.001			ds & connections, Flow Area= 9.62 sf
#2	Device 1	172.00'			ice/Grate C= 0.600
#3	Device 1	173.75'		ir flow at low hea	ice/Grate C= 0.600
#3	Device I	175.75		ir flow at low hea	
#4	Device 1	175.25'			Grate C= 0.600
				ir flow at low hea	
#5	Secondary	176.60'	10.0' long x	20.0' breadth B	Broad-Crested Rectangular Weir
	-				0.80 1.00 1.20 1.40 1.60
			Coef. (Englis	h) 2.68 2.70 2.	70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=73.06 cfs @ 12.49 hrs HW=176.56' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Passes 73.06 cfs of 77.67 cfs potential flow)

2=Orifice/Grate (Orifice Controls 29.09 cfs @ 9.70 fps)

3=Orifice/Grate (Orifice Controls 21.92 cfs @ 7.31 fps)

-4=Orifice/Grate (Orifice Controls 22.05 cfs @ 5.51 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=172.00' TW=0.00' (Dynamic Tailwater) 5=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 5DP: PROPOSED INFILTRATION BASIN

Inflow Area = 51.800 ac, 0.00% Impervious, Inflow Depth = 6.23" for 100-year event Inflow 363.46 cfs @ 12.08 hrs, Volume= 26.912 af = Outflow 56.47 cfs @ 12.57 hrs, Volume= 26.913 af, Atten= 84%, Lag= 29.0 min = Discarded = 6.41 cfs @ 12.57 hrs, Volume= 11.719 af Primary = 50.06 cfs @ 12.57 hrs, Volume= 15.194 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM) 0.00 cfs @ 0.00 hrs, Volume= Secondary = 0.000 af Routed to Reach 5R : DP-5 OLD SWAMP RIVER (DOWNSTREAM)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 147.29' @ 12.57 hrs Surf.Area= 114,821 sf Storage= 545,658 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 221.7 min (1,009.8 - 788.2)

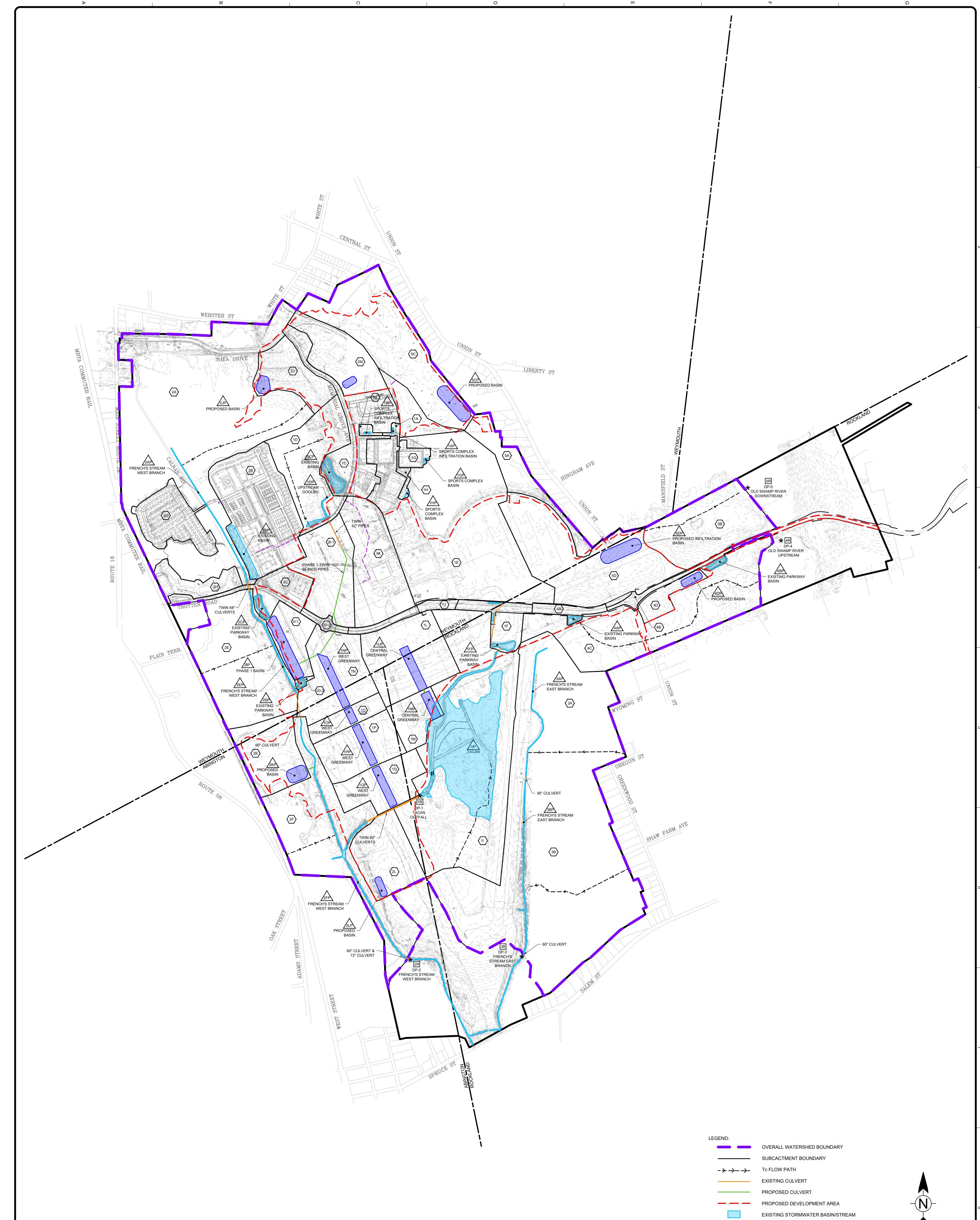
Volume	Invert	Avail.Sto	rage Storage D	escription	
#1	142.00'	628,43	38 cf Custom S	Stage Data (Pr	ismatic)Listed below (Recalc)
				a a	
Elevatio		Area	Inc.Store	Cum.Store	
(fee	· · · · · · · · · · · · · · · · · · ·	sq-ft)	(cubic-feet)	(cubic-feet)	
142.0		1,825	0	0	
143.0		6,055	93,940	93,940	
144.(0,340	98,198	192,138	
145.0		4,600	102,470	294,608	
146.0	00 109	9,000	106,800	401,408	
147.(3,530	111,265	512,673	
148.0	0 118	3,000	115,765	628,438	
Device	Routing	Invert	Outlet Devices		
#1	Primary	142.00'	42.0" Round (Culvert	
			L= 100.0' RCF	P, end-section of	conforming to fill, Ke= 0.500
			Inlet / Outlet Inv	/ert= 142.00' /	140.00' S= 0.0200 '/' Cc= 0.900
			n= 0.013 Conc	rete pipe, benc	Is & connections, Flow Area= 9.62 sf
#2	Device 1	143.50'	36.0" W x 12.0	" H Vert. Orifi	ce/Grate C= 0.600
			Limited to weir	flow at low hea	lds
#3	Device 1	145.75'	24.0" x 24.0" H	loriz. Orifice/G	Grate C= 0.600
			Limited to weir	flow at low hea	lds
#4	Secondary	147.30'	10.0' long x 20	0.0' breadth B	road-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 2.7	70 2.64 2.63 2.64 2.64 2.63
#5	Discarded	142.00'	2.410 in/hr Exf	iltration over	Surface area

Discarded OutFlow Max=6.41 cfs @ 12.57 hrs HW=147.29' (Free Discharge) **5=Exfiltration** (Exfiltration Controls 6.41 cfs)

Primary OutFlow Max=50.06 cfs @ 12.57 hrs HW=147.29' TW=0.00' (Dynamic Tailwater) 1=Culvert (Passes 50.06 cfs of 87.15 cfs potential flow) 2=Orifice/Grate (Orifice Controls 26.17 cfs @ 8.72 fps)

-3=Orifice/Grate (Orifice Controls 23.89 cfs @ 5.97 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=142.00' TW=0.00' (Dynamic Tailwater) 4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)



12/5/2023 3:48:12 PM - P:\33244\143-33244-21001\CAD\SHEETFILES\SWNAS - PROPOSED WATERSHED MAP - REVISED.DWG - WHITE, SARA

				PROPOSED STORMWATER BASIN	
				SUBCATCHMENT ID	
				POND ID	0' 500' 1000' 1" = 500'
				★ IR DESIGN POINT	1 – 300
TETRA TECH		MARK DATE	DESCRIPTION BY	Client: Brookfield Properties / New England Development Proj. Loc.: Weymouth, Rockland, and Abington Massachusetts South Weymouth Naval Air Station Post Development Watershed Map	Project No.: 143-33244-21001 Designed By: TAB Drawn By: TAB Checked By: JSH
www.tetratech.com 100 Nickerson Road Marlborough, MA 01752 PHONE: 1 (508) 786-2200 FAX: 1 (508) 786-2201					FIG. 2

Bar Measures 1 inch

Stormwater Management Attachment 3: Supporting Documentation



NOAA Atlas 14, Volume 10, Version 3 Location name: Town of Rockland, Massachusetts, USA* Latitude: 42.1521°, Longitude: -70.93° Elevation: 150.61 ft** * source: ESRI Maps ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

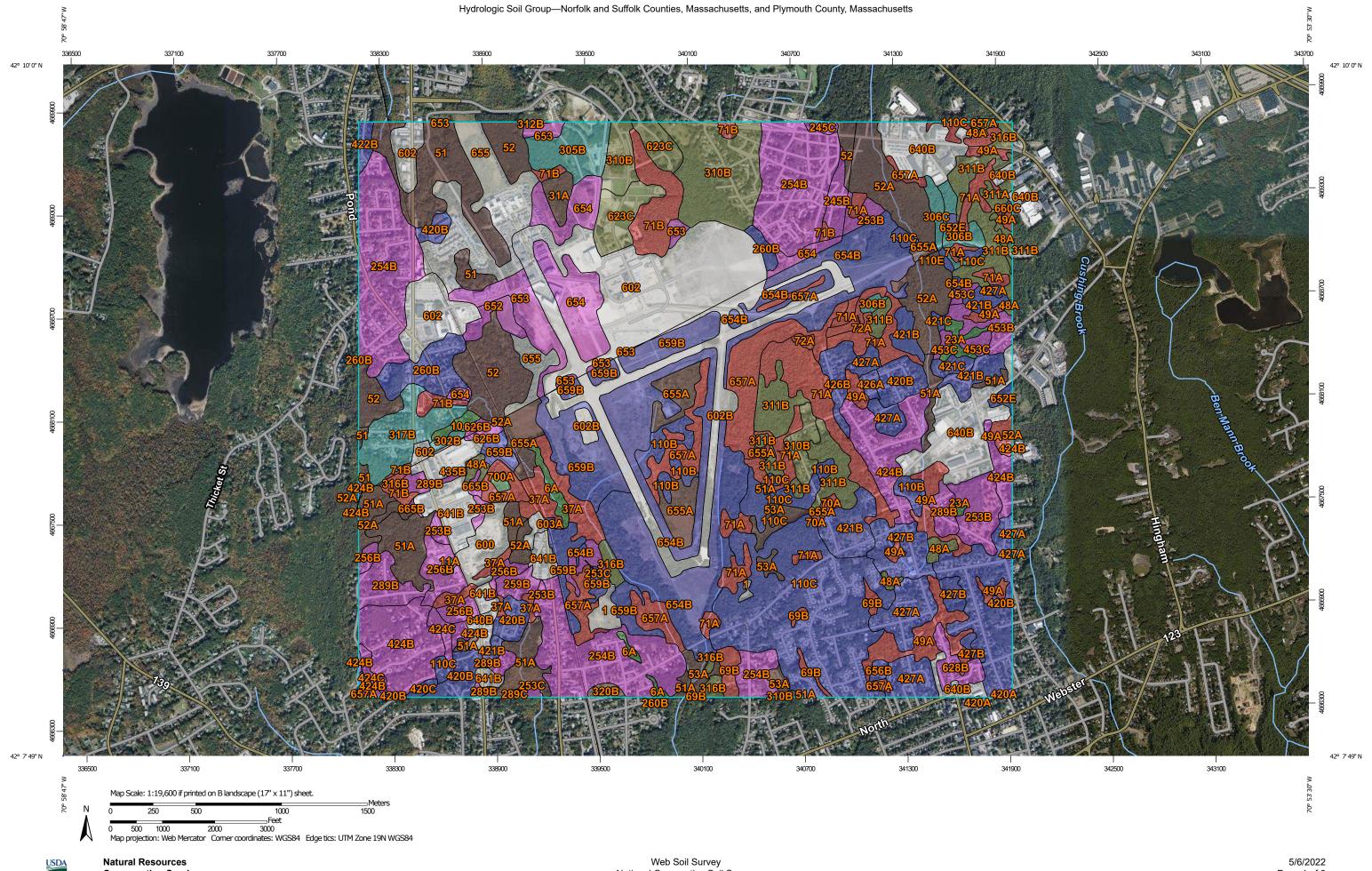
PDS-	PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹									
Duration				Average I	recurrence	interval (y	ears)			
Duration	1	2	5	10	25	50	100	200	500	1000
5-min	0.302 (0.231-0.392)	0.376 (0.287-0.488)	0.497 (0.378-0.646)	0.597 (0.452-0.780)	0.735 (0.543-1.00)	0.837 (0.608-1.16)	0.948 (0.674-1.36)	1.08 (0.723-1.56)	1.28 (0.828-1.90)	1.46 (0.921-2.19)
10-min	0.428 (0.327-0.555)	0.533 (0.407-0.691)	0.704 (0.536-0.916)	0.847 (0.641-1.11)	1.04 (0.769-1.42)	1.19 (0.862-1.65)	1.34 (0.955-1.93)	1.53 (1.02-2.21)	1.82 (1.17-2.70)	2.06 (1.31-3.11)
15-min	0.504 (0.385-0.653)	0.627 (0.479-0.813)	0.829 (0.630-1.08)	0.996 (0.754-1.30)	1.23 (0.904-1.67)	1.40 (1.01-1.94)	1.58 (1.12-2.27)	1.80 (1.21-2.60)	2.14 (1.38-3.17)	2.43 (1.54-3.65)
30-min	0.700 (0.535-0.907)	0.872 (0.665-1.13)	1.15 (0.877-1.50)	1.39 (1.05-1.81)	1.71 (1.26-2.32)	1.94 (1.41-2.69)	2.20 (1.56-3.16)	2.51 (1.68-3.62)	2.98 (1.92-4.42)	3.38 (2.14-5.09)
60-min	0.896 (0.685-1.16)	1.12 (0.852-1.45)	1.48 (1.12-1.92)	1.77 (1.34-2.32)	2.19 (1.61-2.97)	2.49 (1.81-3.45)	2.82 (2.00-4.05)	3.22 (2.15-4.64)	3.82 (2.47-5.66)	4.33 (2.74-6.53)
2-hr	1.14 (0.872-1.46)	1.44 (1.10-1.85)	1.92 (1.47-2.48)	2.33 (1.77-3.02)	2.88 (2.14-3.90)	3.29 (2.40-4.54)	3.74 (2.68-5.34)	4.29 (2.88-6.13)	5.13 (3.33-7.54)	5.86 (3.72-8.74)
3-hr	1.32 (1.01-1.69)	1.66 (1.28-2.13)	2.23 (1.71-2.86)	2.69 (2.05-3.48)	3.34 (2.48-4.50)	3.81 (2.79-5.24)	4.33 (3.11-6.17)	4.97 (3.34-7.07)	5.96 (3.87-8.70)	6.81 (4.33-10.1)
6-hr	1.73 (1.33-2.20)	2.15 (1.66-2.73)	2.83 (2.18-3.62)	3.40 (2.61-4.36)	4.19 (3.13-5.59)	4.77 (3.50-6.49)	5.40 (3.88-7.60)	6.17 (4.16-8.69)	7.36 (4.79-10.6)	8.38 (5.35-12.3)
12-hr	2.26 (1.76-2.86)	2.75 (2.13-3.48)	3.55 (2.74-4.50)	4.21 (3.24-5.36)	5.12 (3.83-6.77)	5.79 (4.26-7.79)	6.52 (4.70-9.07)	7.40 (5.01-10.3)	8.73 (5.71-12.5)	9.86 (6.31-14.3)
24-hr	2.77 (2.16-3.48)	3.35 (2.61-4.21)	4.31 (3.35-5.43)	5.10 (3.94-6.45)	6.19 (4.65-8.12)	7.00 (5.17-9.34)	7.87 (5.69-10.8)	8.92 (6.06-12.3)	10.5 (6.88-14.8)	11.8 (7.59-17.0)
2-day	3.16 (2.47-3.94)	3.88 (3.04-4.84)	5.06 (3.94-6.33)	6.04 (4.68-7.58)	7.38 (5.58-9.61)	8.38 (6.22-11.1)	9.46 (6.87-12.9)	10.8 (7.34-14.7)	12.7 (8.38-17.9)	14.4 (9.30-20.5)
3-day	3.46 (2.71-4.29)	4.23 (3.32-5.26)	5.50 (4.30-6.85)	6.55 (5.09-8.19)	7.99 (6.05-10.4)	9.06 (6.74-11.9)	10.2 (7.44-13.9)	11.6 (7.94-15.8)	13.7 (9.06-19.1)	15.6 (10.0-22.0)
4-day	3.73 (2.94-4.63)	4.53 (3.56-5.62)	5.83 (4.57-7.25)	6.92 (5.39-8.62)	8.40 (6.37-10.9)	9.51 (7.08-12.5)	10.7 (7.79-14.5)	12.1 (8.31-16.4)	14.3 (9.46-19.9)	16.2 (10.5-22.7)
7-day	4.50 (3.55-5.54)	5.32 (4.20-6.56)	6.67 (5.25-8.24)	7.79 (6.09-9.66)	9.34 (7.10-12.0)	10.5 (7.83-13.6)	11.7 (8.54-15.7)	13.2 (9.05-17.7)	15.4 (10.2-21.1)	17.3 (11.2-24.0)
10-day	5.21 (4.12-6.39)	6.05 (4.79-7.44)	7.44 (5.86-9.16)	8.59 (6.73-10.6)	10.2 (7.75-13.0)	11.4 (8.49-14.7)	12.6 (9.19-16.7)	14.1 (9.70-18.8)	16.2 (10.8-22.2)	18.1 (11.7-25.0)
20-day	7.27 (5.78-8.86)	8.20 (6.51-10.0)	9.73 (7.70-11.9)	11.0 (8.65-13.5)	12.7 (9.71-16.0)	14.1 (10.5-17.9)	15.4 (11.2-20.0)	16.9 (11.7-22.3)	18.8 (12.6-25.4)	20.4 (13.3-27.9)
30-day	8.99 (7.16-10.9)	9.99 (7.95-12.1)	11.6 (9.22-14.1)	13.0 (10.2-15.8)	14.8 (11.3-18.5)	16.3 (12.2-20.5)	17.7 (12.8-22.7)	19.1 (13.3-25.1)	21.0 (14.0-28.1)	22.3 (14.6-30.4)
45-day	11.1 (8.91-13.5)	12.2 (9.76-14.8)	14.0 (11.1-17.0)	15.4 (12.2-18.8)	17.5 (13.3-21.6)	19.0 (14.2-23.8)	20.6 (14.8-26.1)	22.0 (15.3-28.6)	23.7 (15.9-31.5)	24.8 (16.2-33.6)
60-day	13.0 (10.4-15.6)	14.1 (11.3-17.0)	16.0 (12.7-19.3)	17.5 (13.9-21.2)	19.6 (15.0-24.2)	21.3 (15.9-26.5)	22.9 (16.5-28.9)	24.3 (17.0-31.5)	25.9 (17.4-34.4)	27.0 (17.7-36.3)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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PF graphical



Natural Resources **Conservation Service** Web Soil Survey National Cooperative Soil Survey

MAP LEGEND MAP INFORMATION The soil surveys that comprise your AOI were mapped at scales Area of Interest (AOI) С ranging from 1:12,000 to 1:25,000. Area of Interest (AOI) C/D Please rely on the bar scale on each map sheet for map Soils D measurements. Soil Rating Polygons Not rated or not available А Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Water Features A/D Coordinate System: Web Mercator (EPSG:3857) Streams and Canals В Maps from the Web Soil Survey are based on the Web Mercator Transportation projection, which preserves direction and shape but distorts B/D Rails +++ distance and area. A projection that preserves area, such as the С Albers equal-area conic projection, should be used if more Interstate Highways accurate calculations of distance or area are required. C/D US Routes ~ This product is generated from the USDA-NRCS certified data as D Major Roads of the version date(s) listed below. Not rated or not available Local Roads ~ Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts Soil Rating Lines Survey Area Data: Version 17, Sep 3, 2021 Background А -Aerial Photography Soil Survey Area: Plymouth County, Massachusetts Survey Area Data: Version 14, Sep 2, 2021 A/D Your area of interest (AOI) includes more than one soil survey в area. These survey areas may have been mapped at different B/D scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil С properties, and interpretations that do not completely agree C/D across soil survey area boundaries. D Soil map units are labeled (as space allows) for map scales 1:50,000 or larger. Not rated or not available an ai Date(s) aerial images were photographed: Aug 26, 2014-Oct Soil Rating Points 15.2020 А The orthophoto or other base map on which the soil lines were A/D compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor В shifting of map unit boundaries may be evident. B/D

Hydrologic Soil Group-Norfolk and Suffolk Counties, Massachusetts, and Plymouth County, Massachusetts



Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
10	Scarboro and Birdsall soils, 0 to 3 percent slopes	A/D	4.5	0.1%
31A	Walpole sandy loam, 0 to 3 percent slopes	B/D	8.8	0.3%
51	Swansea muck, 0 to 1 percent slopes	B/D	67.1	2.1%
52	Freetown muck, 0 to 1 percent slopes	B/D	76.2	2.4%
71B	Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony	D	41.3	1.3%
245B	Hinckley loamy sand, 3 to 8 percent slopes	A	10.6	0.3%
245C	Hinckley loamy sand, 8 to 15 percent slopes	A	2.8	0.1%
254B	Merrimac fine sandy loam, 3 to 8 percent slopes	A	158.0	5.0%
260B	Sudbury fine sandy loam, 2 to 8 percent slopes	В	31.6	1.0%
302B	Montauk fine sandy loam, 0 to 8 percent slopes, extremely stony	С	2.7	0.1%
305B	Paxton fine sandy loam, 3 to 8 percent slopes	С	29.8	0.9%
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	84.5	2.7%
312B	Woodbridge fine sandy loam, 0 to 8 percent slopes, extremely stony	C/D	0.4	0.0%
317B	Scituate fine sandy loam, 3 to 8 percent slopes, extremely stony	С	37.7	1.2%
420B	Canton fine sandy loam, 3 to 8 percent slopes	В	5.7	0.2%
422B	Canton fine sandy loam, 0 to 8 percent slopes, extremely stony	В	5.0	0.2%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
424B	Canton fine sandy loam, 3 to 8 percent slopes, extremely bouldery	A	0.4	0.0%
602	Urban land, 0 to 15 percent slopes		202.6	6.4%
623C	Woodbridge-Urban land complex, 3 to 15 percent slopes	C/D	35.3	1.1%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	A	2.0	0.1%
652	Udorthents, refuse substratum	A	10.7	0.3%
653	Udorthents, sandy	A	38.6	1.2%
654	Udorthents, loamy	A	65.7	2.1%
655	Udorthents, wet substratum		82.0	2.6%
Subtotals for Soil Surv	vey Area	1,004.1	31.7%	
Totals for Area of Inter	rest	3,172.0	100.0%	

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		9.6	0.3%
6A	Scarboro muck, coastal lowland, 0 to 3 percent slopes	A/D	9.8	0.3%
11A	Rainberry coarse sand, 0 to 3 percent slopes	A/D	1.2	0.0%
23A	Tihonet coarse sand, 0 to 3 percent slopes	A/D	7.5	0.2%
37A	Massasoit - Mashpee complex, 0 to 3 percent slopes	D	35.4	1.1%
48A	Brockton sandy loam, 0 to 3 percent slopes, extremely stony	C/D	15.8	0.5%
49A	Norwell mucky fine sandy loam, 0 to 3 percent slopes, extremely stony	D	61.3	1.9%
49B	Norwell mucky fine sandy loam, 3 to 8 percent slopes, extremely stony	D	6.4	0.2%
51A	Swansea muck, 0 to 1 percent slopes	B/D	68.0	2.1%
52A	Freetown muck, 0 to 1 percent slopes	B/D	80.3	2.5%

П

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
53A	Freetown muck, ponded, 0 to 1 percent slopes	B/D	22.0	0.7%
69B	Mattapoisett loamy sand, 3 to 8 percent slopes, extremely stony	D	12.8	0.4%
70A	Ridgebury fine sandy loam, 0 to 3 percent slopes	D	2.7	0.1%
71A	Ridgebury fine sandy loam, 0 to 3 percent slopes, extremely stony	D	103.9	3.3%
71B	Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony	D	4.9	0.2%
72A	Whitman fine sandy loam, 0 to 3 percent slopes	D	7.7	0.2%
110B	Canton-Chatfield-Rock outcrop complex, 0 to 8 percent slopes, very stony	В	24.6	0.8%
110C	Canton-Chatfield-Rock outcrop complex, 8 to 15 percent slopes, very stony	В	189.0	6.0%
110E	Canton-Chatfield-Rock outcrop complex, 15 to 35 percent slopes, very stony	В	1.4	0.0%
253B	Hinckley loamy sand, 3 to 8 percent slopes	A	35.6	1.1%
253C	Hinckley loamy sand, 8 to 15 percent slopes	A	9.0	0.3%
254B	Merrimac fine sandy loam, 3 to 8 percent slopes	A	91.6	2.9%
256B	Deerfield loamy fine sand, 3 to 8 percent slopes	A	28.9	0.9%
259B	Carver loamy coarse sand, 3 to 8 percent slopes	A	8.4	0.3%
260B	Sudbury fine sandy loam, 3 to 8 percent slopes	A/D	0.0	0.0%
289B	Hinckley gravelly sandy loam, 3 to 8 percent slopes, bouldery	A	37.7	1.2%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
289C	Hinckley gravelly sandy loam, 8 to 15 percent slopes, bouldery	A	1.0	0.0%
306B	Paxton fine sandy loam, 0 to 8 percent slopes, very stony	С	14.8	0.5%
306C	Paxton fine sandy loam, 8 to 15 percent slopes, very stony	С	6.4	0.2%
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	13.1	0.4%
311A	Woodbridge fine sandy loam, 0 to 3 percent slopes, very stony	C/D	5.1	0.2%
311B	Woodbridge fine sandy loam, 3 to 8 percent slopes, very stony	C/D	75.2	2.4%
316B	Scituate gravelly sandy loam, 3 to 8 percent slopes, very stony	C/D	13.3	0.4%
320B	Birchwood sand, 3 to 8 percent slopes	B/D	3.5	0.1%
420A	Canton very fine sandy loam, 0 to 3 percent slopes	A	0.9	0.0%
420B	Canton fine sandy loam, 3 to 8 percent slopes	В	98.7	3.1%
420C	Canton fine sandy loam, 8 to 15 percent slopes	В	2.6	0.1%
421B	Canton fine sandy loam, 0 to 8 percent slopes, very stony	В	51.0	1.6%
421C	Canton fine sandy loam, 8 to 15 percent slopes, very stony	В	7.1	0.2%
424B	Canton very fine sandy loam, 3 to 8 percent slopes, extremely bouldery	A	104.5	3.3%
424C	Canton very fine sandy loam, 8 to 15 percent slopes, extremely bouldery	A	9.5	0.3%
426A	Newfields fine sandy loam, 0 to 3 percent slopes	В	3.6	0.1%
426B	Newfields fine sandy loam, 3 to 8 percent slopes	В	13.5	0.4%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
427A	Newfields fine sandy loam, 0 to 3 percent slopes, extremely stony	В	53.3	1.7%
427B	Newfields fine sandy loam, 3 to 8 percent slopes, extremely stony	В	30.5	1.0%
435B	Plymouth loamy coarse sand, 3 to 8 percent slopes	A	1.8	0.1%
453B	Gloucester - Canton complex, 3 to 8 percent slopes, extremely bouldery	A	12.2	0.4%
453C	Gloucester - Canton complex, 8 to 15 percent slopes, extremely bouldery	A	9.4	0.3%
600	Pits, gravel		20.3	0.6%
602B	Urban land, 0 to 8 percent slopes		87.2	2.7%
603A	Urban land, wet substratum. 0 to 3 percent slopes		3.9	0.1%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	A	2.9	0.1%
628B	Canton - Urban land complex, 0 to 8 percent slopes	A	11.9	0.4%
640B	Urban land, till substratum, 0 to 8 percent slopes		101.1	3.2%
641B	Urban land, outwash substratum, 0 to 8 percent slopes		51.9	1.6%
652E	Udorthents, refuse substratum, 8 to 35 percent slopes	В	4.4	0.1%
654B	Udorthents, loamy, 0 to 8 percent slopes	В	220.1	6.9%
655A	Udorthents, wet substratum, 0 to 3 percent slopes	B/D	49.9	1.6%
656B	Udorthents - Urban land complex, 0 to 8 percent slopes	В	2.7	0.1%
657A	Aquepts, 0 to 3 percent slopes	D	99.6	3.1%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI			
659B	Udorthents, 0 to 8 percent slopes, gravelly	В	99.4	3.1%			
660C	Udorthents, 8 to 15 percent slopes, gravelly	В	0.8	0.0%			
665B	Udipsamments, 0 to 8 percent slopes	A	3.3	0.1%			
700A	Udipsamments, wet substratum, 0 to 3 percent slopes	A/D	2.3	0.1%			
Subtotals for Soil Surv	ey Area	2,167.8	68.3%				
Totals for Area of Inter	est		3,172.0	100.0%			

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition Component Percent Cutoff: None Specified Tie-break Rule: Higher

