

20240629_Meadowbrook_HCAD

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Project Notes

Rainfall events imported from "NRCS-Rain.txt" for 6600 NJ Atlantic-C Rainfall events imported from "NRCS-Rain.txt" for 7614 PA Chester-C Rainfall events imported from "NRCS-Rain.txt" for 6617 NJ Somerset-C Rainfall events imported from "Site1HillsboroughMunicpComplex_20240628.hcp"

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Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year _Current	NOAA 24-hr	С	Default	24.00	1	3.34	2
2	2-Year _2100	NOAA 24-hr	С	Default	24.00	1	3.97	2
3	10-Year _Current	NOAA 24-hr	С	Default	24.00	1	5.16	2
4	10-Year _2100	NOAA 24-hr	С	Default	24.00	1	6.21	2
5	100-Year _Current	NOAA 24-hr	С	Default	24.00	1	8.95	2
6	100-Year _2100	NOAA 24-hr	С	Default	24.00	1	12.15	2

Rainfall Events Listing

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Area Listing (all nodes)

Area	CN	N Description	
(sq-ft)		(subcatchment-numbers)	
334,272	98	(1Sb, 2Sb, 3Sb, 4Sb)	
5,124,032	74	>75% Grass cover, Good, HSG C (1S, 1Sa, 2S, 2Sa, 3S, 3Sa, 4S, 4Sa)	
1,960,204	80	>75% Grass cover, Good, HSG D (1S, 1Sa, 2S, 2Sa, 3S, 3Sa, 4S, 4Sa)	
11,678	65	Brush, Good, HSG C (2S, 2Sa, 3S, 3Sa)	
565,751	98	Driveways (1S, 2S, 3S, 4S)	
1,003,830	98	Impervious (1S, 1Sa, 2S, 2Sa, 3S, 3Sa, 4S, 4Sa)	
565,751	98	Impervious Drivways (other) (1Sc, 2Sc, 3Sc, 4Sc)	
334,272	98	Roofs (1S, 2S, 3S, 4S)	
50,686	73	Woods, Fair, HSG C (1S, 1Sa)	
1,452	79	Woods, Fair, HSG D (1S, 1Sa)	
83,546	70	Woods, Good, HSG C (1S, 1Sa)	
203,854	77	Woods, Good, HSG D (1S, 1Sa)	
3,040	72	Woods/grass comb., Good, HSG C (2S, 2Sa)	
10,242,368	82	TOTAL AREA	

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Soil Listing (all nodes)

Area	Soil	Subcatchment
(sq-ft)	Group	Numbers
0	HSG A	
0	HSG B	
5,272,982	HSG C	1S, 1Sa, 2S, 2Sa, 3S, 3Sa, 4S, 4Sa
2,165,510	HSG D	1S, 1Sa, 2S, 2Sa, 3S, 3Sa, 4S, 4Sa
2,803,876	Other	1S, 1Sa, 1Sb, 1Sc, 2S, 2Sa, 2Sb, 2Sc, 3S, 3Sa, 3Sb, 3Sc, 4S, 4Sa, 4Sb, 4Sc
10,242,368		TOTAL AREA

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				,		
HSG-A	HSG-B	HSG-C	HSG-D	Other	Total	Ground
(sq-ft)	(sq-ft)	(sq-ft)	(sq-ft)	(sq-ft)	(sq-ft)	Cover
0	0	0	0	334,272	334,272	
0	0	5,124,032	1,960,204	0	7,084,236	>75% Grass
						cover, Good
0	0	11,678	0	0	11,678	Brush, Good
0	0	0	0	565,751	565,751	Driveways
0	0	0	0	1,003,830	1,003,830	Impervious
0	0	0	0	565,751	565,751	Impervious
						Drivways (other)
0	0	0	0	334,272	334,272	Roofs
0	0	50,686	1,452	0	52,138	Woods, Fair
0	0	83,546	203,854	0	287,400	Woods, Good
0	0	3,040	0	0	3,040	Woods/grass
						comb., Good
0	0	5,272,982	2,165,510	2,803,876	10,242,368	TOTAL AREA

Ground Covers (all nodes)

20240629_Meadowbrook_HCAD

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Line#	Node	In-Invert	Out-Invert	Length	Slope	n	Width	Diam/Height	Inside-Fill
	Number	(feet)	(feet)	(feet)	(ft/ft)		(inches)	(inches)	(inches)
 1	1R	75.00	72.00	75.0	0.0400	0.013	0.0	54.0	0.0
2	2R	68.00	66.80	60.0	0.0200	0.013	0.0	48.0	0.0
3	1P	94.17	94.12	10.0	0.0050	0.020	0.0	6.0	0.0
4	1P	94.33	94.17	32.0	0.0050	0.020	0.0	6.0	0.0
5	5P	94.17	94.12	10.0	0.0050	0.020	0.0	6.0	0.0
6	5P	94.33	94.17	32.0	0.0050	0.020	0.0	6.0	0.0
7	8P	94.17	94.12	10.0	0.0050	0.020	0.0	6.0	0.0
8	8P	94.33	94.17	32.0	0.0050	0.020	0.0	6.0	0.0
9	11P	94.17	94.12	10.0	0.0050	0.020	0.0	6.0	0.0
10	11P	94.33	94.17	36.0	0.0044	0.020	0.0	6.0	0.0

Pipe Listing (all nodes)

20240629_Meadowbrook_HCAD	NOAA 24-hr C 2-Year_	Current Rainfall=3.34"
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Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: DA 1: All	Runoff Area=2,045,127 sf 24.45% Impervious Runoff Depth=1.75" Tc=17.3 min CN=77/98 Runoff=69.61 cfs 298,507 cf
Subcatchment1Sa: DA 1: CN w/ IC areas	Runoff Area=1,732,396 sf 10.81% Impervious Runoff Depth=1.51" Tc=17.3 min CN=77/98 Runoff=51.80 cfs 217,536 cf
Subcatchment1Sb: DA1: Roofs	Runoff Area=132,361 sf 100.00% Impervious Runoff Depth=3.11" Tc=6.0 min CN=0/98 Runoff=10.41 cfs 34,270 cf
Subcatchment1Sc: DA1: Driveways	Runoff Area=180,370 sf 100.00% Impervious Runoff Depth=3.11" Tc=6.0 min CN=0/98 Runoff=14.19 cfs 46,701 cf
Subcatchment2S: DA 2: All	Runoff Area=1,436,627 sf 27.42% Impervious Runoff Depth=1.72" Tc=39.8 min CN=75/98 Runoff=31.23 cfs 205,365 cf
Subcatchment2Sa: DA 2: CN w/ IC areas	Runoff Area=1,186,669 sf 12.13% Impervious Runoff Depth=1.42" Tc=39.8 min CN=75/98 Runoff=21.71 cfs 140,647 cf
Subcatchment2Sb: DA2: Roofs combine	ed Runoff Area=85,031 sf 100.00% Impervious Runoff Depth=3.11" Tc=6.0 min CN=0/98 Runoff=6.69 cfs 22,016 cf
Subcatchment2Sc: DA2: Driveways	Runoff Area=164,927 sf 100.00% Impervious Runoff Depth=3.11" Tc=6.0 min CN=0/98 Runoff=12.98 cfs 42,702 cf
Subcatchment3S: DA 3: All	Runoff Area=1,310,873 sf 33.67% Impervious Runoff Depth=1.84" Tc=35.3 min CN=75/98 Runoff=32.38 cfs 200,493 cf
Subcatchment3Sa: DA 3: CNs w/ IC	Runoff Area=1,033,197 sf 15.85% Impervious Runoff Depth=1.49" Tc=35.3 min CN=75/98 Runoff=21.09 cfs 128,598 cf
Subcatchment3Sb: DA3: Roofs combine	ed Runoff Area=92,992 sf 100.00% Impervious Runoff Depth=3.11" Tc=6.0 min CN=0/98 Runoff=7.32 cfs 24,077 cf
Subcatchment3Sc: DA3: Driveways	Runoff Area=184,684 sf 100.00% Impervious Runoff Depth=3.11" Tc=6.0 min CN=0/98 Runoff=14.53 cfs 47,818 cf
Subcatchment4S: DA 4: All	Runoff Area=328,557 sf 20.27% Impervious Runoff Depth=1.58" Tc=16.9 min CN=75/98 Runoff=10.12 cfs 43,218 cf
Subcatchment4Sa: DA 4: CN w/ IC areas	s Runoff Area=268,899 sf 2.59% Impervious Runoff Depth=1.24" Tc=16.9 min CN=75/98 Runoff=6.70 cfs 27,772 cf
Subcatchment4Sb: DA4: Roofs combine	ed Runoff Area=23,888 sf 100.00% Impervious Runoff Depth=3.11" Tc=6.0 min CN=0/98 Runoff=1.88 cfs 6,185 cf
Subcatchment4Sc: DA4: Driveways	Runoff Area=35,770 sf 100.00% Impervious Runoff Depth=3.11" Tc=6.0 min CN=0/98 Runoff=2.81 cfs 9,261 cf

 Reach 1R: INFLOW PIPE
 Avg. Flow Depth=0.88'
 Max Vel=15.06 fps
 Inflow=33.29 cfs
 212,310 cf

 54.0"
 Round Pipe
 n=0.013
 L=75.0'
 S=0.0400 '/'
 Capacity=393.30 cfs
 Outflow=33.26 cfs
 212,318 cf

Reach 2R: OUTFLOW PIPE 48.0" Round Pipe n=0.013 L=60.0' S=0.0200 '/' Capacity=203.14 cfs Outflow=29.07 cfs 203,835 cf

Pond 1P: ROAD RG 175SF W/ UDG Peak Elev=96.32' Storage=31,984 cf Inflow=51.80 cfs 217,536 cf Primary=33.29 cfs 212,310 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=33.29 cfs 212,310 cf

Pond 2P: Basic Rain Garden (infiltration Peak Elev=99.72' Storage=18,340 cf Inflow=10.41 cfs 34,270 cf Discarded=0.38 cfs 34,270 cf Primary=0.00 cfs 0 cf Outflow=0.38 cfs 34,270 cf

Pond 3P: Basic Porous Pavement Peak Elev=99.46' Storage=13,174 cf Inflow=14.19 cfs 46,701 cf Discarded=2.09 cfs 46,701 cf Primary=0.00 cfs 0 cf Outflow=2.09 cfs 46,701 cf

Pond 4P: Basin 1 Municipal property 48k Peak Elev=73.20' Storage=42,326 cf Inflow=33.26 cfs 212,318 cf Primary=29.07 cfs 203,835 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=29.07 cfs 203,835 cf

Pond 5P: ROAD RG 175SF W/ UDG Peak Elev=95.95' Storage=15,442 cf Inflow=21.71 cfs 140,647 cf Primary=17.55 cfs 137,466 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=17.55 cfs 137,466 cf

Pond 6P: Basic Rain Garden (infiltration Peak Elev=99.75' Storage=11,900 cf Inflow=6.69 cfs 22,016 cf Discarded=0.24 cfs 22,016 cf Primary=0.00 cfs 0 cf Outflow=0.24 cfs 22,016 cf

Pond 7P: Basic Porous Pavement Peak Elev=99.46' Storage=12,046 cf Inflow=12.98 cfs 42,702 cf Discarded=1.91 cfs 42,702 cf Primary=0.00 cfs 0 cf Outflow=1.91 cfs 42,702 cf

Pond 8P: ROAD RG 175SF W/ UDG Peak Elev=95.92' Storage=14,611 cf Inflow=21.09 cfs 128,598 cf Primary=16.73 cfs 125,564 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=16.73 cfs 125,564 cf

Pond 9P: Basic Rain Garden (infiltration Peak Elev=99.85' Storage=13,454 cf Inflow=7.32 cfs 24,077 cf Discarded=0.24 cfs 24,077 cf Primary=0.00 cfs 0 cf Outflow=0.24 cfs 24,077 cf

Pond 10P: Basic Porous Pavement Peak Elev=99.46' Storage=13,490 cf Inflow=14.53 cfs 47,818 cf Discarded=2.14 cfs 47,818 cf Primary=0.00 cfs 0 cf Outflow=2.14 cfs 47,818 cf

Pond 11P: ROAD RG 175SF W/ UDG Peak Elev=100.18' Storage=4,329 cf Inflow=6.70 cfs 27,772 cf Primary=3.86 cfs 26,976 cf Secondary=1.50 cfs 421 cf Tertiary=0.00 cfs 0 cf Outflow=5.37 cfs 27,397 cf

Pond 12P: Basic Rain Garden (infiltration Peak Elev=99.70' Storage=3,292 cf Inflow=1.88 cfs 6,185 cf Discarded=0.07 cfs 6,185 cf Primary=0.00 cfs 0 cf Outflow=0.07 cfs 6,185 cf

Pond 13P: Basic Porous Pavement Peak Elev=99.46' Storage=2,612 cf Inflow=2.81 cfs 9,261 cf Discarded=0.41 cfs 9,263 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 9,263 cf

Link 1L: Combined Flows	Inflow=33.29 cfs 212,310 cf
	Primary=33.29 cfs 212,310 cf
Link 2L: Combined Flows	Inflow=17.55 cfs 137,466 cf
	Primary=17.55 cfs 137,466 cf
Link 3L: Combined Flows	Inflow=19.97 cfs 152,961 cf
	Primary=19.97 cfs 152,961 cf

Link 4L: Combined Flows

Inflow=38.26 cfs 243,711 cf Primary=38.26 cfs 243,711 cf

Total Runoff Area = 10,242,368 sf Runoff Volume = 1,495,167 cf Average Runoff Depth = 1.75" 72.62% Pervious = 7,438,492 sf 27.38% Impervious = 2,803,876 sf

Summary for Subcatchment 1S: DA 1: All

Runoff = 69.61 cfs @ 12.26 hrs, Volume= 298,507 cf, Depth= 1.75" Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description		
*	187,351	98	Impervious		
	676,806	74	>75% Grass cov	Good, HSG	C
	698,470	80	>75% Grass cov	Good, HSG	D
	25,343	73	Woods, Fair, HS	С	
	726	79	Woods, Fair, HS	D	
	41,773	70	Woods, Good, H	ЭC	
	101,927	77	Woods, Good, H	G D	
*	132,361	98	Roofs		
*	180,370	98	Driveways		
	2,045,127	82	Weighted Average		
	1,545,045	77	75.55% Pervious	rea	
	500,082	98	24.45% Impervio	Area	
	Tc Length	Slop	e Velocity Cap	ity Descript	ion
	(min) (feet)	(ft/	ft) (ft/sec)	fs)	
	17.3			Direct E	intry, Direct

Subcatchment 1S: DA 1: All



Summary for Subcatchment 1Sa: DA 1: CN w/ IC areas

Runoff = 51.80 cfs @ 12.27 hrs, Volume= 217,536 cf, Depth= 1.51" Routed to Pond 1P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description		
*	187,351	98	Impervious		
	676,806	74	>75% Grass	s cover, Go	bod, HSG C
	698,470	80	>75% Grass	s cover, Go	bod, HSG D
	25,343	73	Woods, Fair	, HSG C	
	726	79	Woods, Fair	, HSG D	
	41,773	70	Woods, Goo	od, HSG C	
	101,927	77	Woods, Goo	od, HSG D	
	1,732,396	79	Weighted A	verage	
	1,545,045	77	89.19% Per	vious Area	l
	187,351	98	10.81% Imp	ervious Are	ea
	Tc Length	Slop	e Velocity	Capacity	Description
(m	nin) (feet)	(ft/	ft) (ft/sec)	(cfs)	
1	7.3				Direct Entry, Direct

Subcatchment 1Sa: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sb: DA1: Roofs combined

Runoff = 10.41 cfs @ 12.13 hrs, Volume= 34,270 cf, Depth= 3.11" Routed to Pond 2P : Basic Rain Garden (infiltration only) 500 sf

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"



Summary for Subcatchment 1Sc: DA1: Driveways (other)

Runoff = 14.19 cfs @ 12.13 hrs, Volume= 46,701 cf, Depth= 3.11" Routed to Pond 3P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description		
*	180,370	98	Impervious	Drivways ((other)
	180,370	98	100.00% In	npervious A	Area
	Tc Length (min) (feet)	Slop (ft/f	e Velocity t) (ft/sec)	Capacity (cfs)	Description
	6.0				Direct Entry,

Subcatchment 1Sc: DA1: Driveways (other)



Summary for Subcatchment 2S: DA 2: All

Runoff = 31.23 cfs @ 12.56 hrs, Volume= 205,365 cf, Depth= 1.72"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	143,894	98	Impervious
	1,270	65	Brush, Good, HSG C
	946,207	74	>75% Grass cover, Good, HSG C
	93,778	80	>75% Grass cover, Good, HSG D
	1,520	72	Woods/grass comb., Good, HSG C
*	85,031	98	Roofs
*	164,927	98	Driveways
	1,436,627	81	Weighted Average
	1,042,775	75	72.58% Pervious Area
	393,852	98	27.42% Impervious Area
	Tc Length	Slop	be Velocity Capacity Description
	(mm) (leet)	(11/	



Direct Entry, Direct

Subcatchment 2S: DA 2: All



Summary for Subcatchment 2Sa: DA 2: CN w/ IC areas

Runoff = 21.71 cfs @ 12.57 hrs, Volume= 140,647 cf, Depth= 1.42" Routed to Pond 5P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description	
*	143,894	98	Impervious	
	1,270	65	Brush, Good, HSG C	
	946,207	74	>75% Grass cover, Good, HSG C	
	93,778	80	>75% Grass cover, Good, HSG D	
	1,520	72	Woods/grass comb., Good, HSG C	_
	1,186,669	77	Weighted Average	
	1,042,775	75	87.87% Pervious Area	
	143,894	98	12.13% Impervious Area	
(n	Tc Length nin) (feet)	Slop (ft/	ce Velocity Capacity Description (ft) (ft/sec) (cfs)	
3	89.8		Direct Entry, Direct	

Subcatchment 2Sa: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sb: DA2: Roofs combined

Runoff = 6.69 cfs @ 12.13 hrs, Volume= 22,016 cf, Depth= 3.11" Routed to Pond 6P : Basic Rain Garden (infiltration only) 500SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"



Summary for Subcatchment 2Sc: DA2: Driveways (other)

Runoff = 12.98 cfs @ 12.13 hrs, Volume= 42,702 cf, Depth= 3.11" Routed to Pond 7P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description		
*	164,927	98	Impervious	Drivways ((other)
	164,927	98	100.00% Im	pervious A	Area
	Tc Length	Slop (ft/f	ve Velocity	Capacity (cfs)	Description
	6.0	(101	<u>(18000)</u>	(010)	Direct Entry,

Subcatchment 2Sc: DA2: Driveways (other)



Summary for Subcatchment 3S: DA 3: All

Runoff = 32.38 cfs @ 12.50 hrs, Volume= 200,493 cf, Depth= 1.84" Routed to Link 4L : Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	163,718	98	Impervious
	4,569	65	Brush, Good, HSG C
	730,392	74	>75% Grass cover, Good, HSG C
	134,518	80	>75% Grass cover, Good, HSG D
*	92,992	98	Roofs
*	184,684	98	Driveways
	1,310,873	83	Weighted Average
	869,479	75	66.33% Pervious Area
	441,394	98	33.67% Impervious Area
	Tc Length (min) (feet)	Slop (ft/	be Velocity Capacity Description ft) (ft/sec) (cfs)



Direct Entry, Direct

Subcatchment 3S: DA 3: All



Summary for Subcatchment 3Sa: DA 3: CNs w/ IC areas

Runoff = 21.09 cfs @ 12.51 hrs, Volume= 128,598 cf, Depth= 1.49" Routed to Pond 8P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	163,718	98	Impervious
	4,569	65	Brush, Good, HSG C
	730,392	74	>75% Grass cover, Good, HSG C
	134,518	80	>75% Grass cover, Good, HSG D
	1,033,197	79	Weighted Average
	869,479	75	84.15% Pervious Area
	163,718	98	15.85% Impervious Area
(Tc Length min) (feet)	Slop (ft/	be Velocity Capacity Description ft) (ft/sec) (cfs)
	35.3		Direct Entry, Direct

Subcatchment 3Sa: DA 3: CNs w/ IC areas



Time (hours)

Summary for Subcatchment 3Sb: DA3: Roofs combined

Runoff = 7.32 cfs @ 12.13 hrs, Volume= 24,077 cf, Depth= 3.11" Routed to Pond 9P : Basic Rain Garden (infiltration only) 500 SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"



Summary for Subcatchment 3Sc: DA3: Driveways (other)

Runoff = 14.53 cfs @ 12.13 hrs, Volume= 47,818 cf, Depth= 3.11" Routed to Pond 10P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	A	rea (sf)	CN D	escription		
*	1	84,684	98 Ir	npervious	Drivways ((other)
	1	84,684	98 1	00.00% In	npervious A	Area
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0					Direct Entry,
			:	Subcatc	hment 3S	Sc: DA3: Driveways (other)
					Hydro	ograph
	16-					
	15		4.53 cts			
	14					2-Year Current Rainfall=3 34"
	13-1 12-1			- + - + - + - + - + -		Runoff Area=184,684 sf
	11-1			- 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4		Runoff Volume=47,818 cf
	10			- + - + - + - + -		Runoff Depth=3.11"
	(cfs)			$ = \frac{1}{1} = \frac$		Tc=6.0 min _
	8 10 N			- + - + - + - + - + - 1 1 1 1 1		
	6					
	5			- + - + - + - + -		
	4			$-\frac{1}{1} - \frac{1}{1} - 1$		
	3-1 2-1			- + - + - + - + - + -		
	1 - 1				· L L I I I I. I I I I I I L I I I I	
	0					
	0	2408	10 12 14 16	10 20 22 24	20 28 30 32 34 Time	+ 30 30 40 42 44 40 48 30 32 34 30 38 00 02 04 00 08 70 72 e (hours)

Summary for Subcatchment 4S: DA 4: All

Runoff = 10.12 cfs @ 12.26 hrs, Volume= 43,218 cf, Depth= 1.58" Routed to Link 4L : Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description					
*	6,952	98	Impervious					
	208,611	74	>75% Grass	s cover, Go	bod, HSG C			
	53,336	80	>75% Grass	s cover, Go	bod, HSG D			
*	23,888	98	Roofs	oofs				
*	35,770	98	Driveways					
	328,557	80	Weighted A	verage				
	261,947	75	79.73% Per	vious Area	l l			
	66,610	66,610 98 20.27% Impervious Are			ea			
	Tc Length	Slop	e Velocity	Capacity	Description			
(I	min) (feet)	(ft/1	ft) (ft/sec)	(cfs)				
	16.9				Direct Entry, Direct			

Subcatchment 4S: DA 4: All



Summary for Subcatchment 4Sa: DA 4: CN w/ IC areas

Runoff = 6.70 cfs @ 12.27 hrs, Volume= 27,772 cf, Depth= 1.24" Routed to Pond 11P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description						
*	6,952	98	Impervious	mpervious					
	208,611	74	>75% Gras	s cover, Go	ood, HSG C				
	53,336	80	>75% Gras	s cover, Go	ood, HSG D				
	268,899 76 Weighted Average					_			
	261,947	75	97.41% Per	vious Area	3				
	6,952	98	2.59% Impe	ervious Area	a				
(Tc Length min) (feet)	Slop (ft/	e Velocity ft) (ft/sec)	Capacity (cfs)	Description				
	16.9				Direct Entry, Direct				

Subcatchment 4Sa: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sb: DA4: Roofs combined

Runoff = 1.88 cfs @ 12.13 hrs, Volume= 6,185 cf, Depth= 3.11" Routed to Pond 12P : Basic Rain Garden (infiltration only) 500SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"



Summary for Subcatchment 4Sc: DA4: Driveways (other)

Runoff = 2.81 cfs @ 12.13 hrs, Volume= 9,261 cf, Depth= 3.11" Routed to Pond 13P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _Current Rainfall=3.34"

A	vrea (sf)	CN D	escription					
*	35,770	98 Ir	npervious	Drivways (other)			
	35,770	98 1	00.00% Im	pervious A	rea			
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
6.0					Direct Entry,			
		:	Subcatc	hment 4S	Sc: DA4: Driv	veways (other)	
				Hydro	graph			
3-		2 81 cfs						Runoff
-						NOA	A 24-hr C	
-					2-Year	_Current Rair	nfall=3.34"	
-						Runoff Area	=35,770 sf	
-		+			- + - + - + - + - + - + - + - + - + - +	Runoff Volum	e=9,261 cf	
2-						Runoff De	epth=3.11"	
(cfs)						· · · · · · · · ·	C=6.0 min	
No							CN=0/98	
ш.								
1-				-''''''''''				
-								
-								
-								
-								
0- 0) 2 4 6 8	10 12 14 16	5 18 20 22 24	26 28 30 32 34	36 38 40 42 44 46 4	8 50 52 54 56 58 60 62	2 64 66 68 70 72	
				Time	e (hours)			

Summary for Reach 1R: INFLOW PIPE

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 2,045,127 sf, 24.45% Impervious, Inflow Depth = 1.25" for 2-Year _Current event Inflow = 33.29 cfs @ 12.46 hrs, Volume= 212,310 cf Outflow = 33.26 cfs @ 12.46 hrs, Volume= 212,318 cf, Atten= 0%, Lag= 0.1 min Routed to Pond 4P : Basin 1 Municipal property 48k sf

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Max. Velocity= 15.06 fps, Min. Travel Time= 0.1 min Avg. Velocity = 5.67 fps, Avg. Travel Time= 0.2 min

Peak Storage= 166 cf @ 12.46 hrs Average Depth at Peak Storage= 0.88', Surface Width= 3.58' Bank-Full Depth= 4.50' Flow Area= 15.9 sf, Capacity= 393.30 cfs

54.0" Round Pipe n= 0.013 Concrete pipe, bends & connections Length= 75.0' Slope= 0.0400 '/' Inlet Invert= 75.00', Outlet Invert= 72.00'



20240629 Meadowbrook HCAD

NOAA 24-hr C 2-Year Current Rainfall=3.34" Prepared by Rutgers Cooperative Extension Water Resources Program Printed 6/29/2024 HydroCAD® 10.10-7c s/n 03601 © 2022 HydroCAD Software Solutions LLC Page 28

Reach 1R: INFLOW PIPE



Summary for Reach 2R: OUTFLOW PIPE

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow A	Area =	2,045,127 sf, 24.45% Impervious,	Inflow Depth = 1.20"	for 2-Year _Current event
Inflow	=	29.07 cfs @ 12.70 hrs, Volume=	203,835 cf	—
Outflov	v =	29.07 cfs @ 12.70 hrs, Volume=	203,835 cf, Atter	ו= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Max. Velocity= 11.47 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.72 fps, Avg. Travel Time= 0.4 min

Peak Storage= 152 cf @ 12.70 hrs Average Depth at Peak Storage= 1.02', Surface Width= 3.49' Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 203.14 cfs

48.0" Round Pipe n= 0.013 Concrete pipe, bends & connections Length= 60.0' Slope= 0.0200 '/' Inlet Invert= 68.00', Outlet Invert= 66.80'





Reach 2R: OUTFLOW PIPE

Summary for Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	1,732,396 sf,	10.81% In	npervious,	Inflow Depth =	1.51"	for 2-Year	Current event
Inflow	=	51.80 cfs @	12.27 hrs,	Volume=	217,536 cf			
Outflow	=	33.29 cfs @	12.46 hrs,	Volume=	212,310 cf	, Atten	= 36%, Lag	= 11.3 min
Primary	=	33.29 cfs @	12.46 hrs,	Volume=	212,310 cf			
Routed	to Link	1L : Combined	d Flows					
Secondary	=	0.00 cfs @	0.00 hrs,	Volume=	0 cf			
Routed	to Link	1L: Combined	d Flows					
Tertiary	=	0.00 cfs @	0.00 hrs,	Volume=	0 cf			
Routed	to Link	1L : Combined	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 96.32' @ 12.46 hrs Surf.Area= 22,749 sf Storage= 31,984 cf

Plug-Flow detention time= 36.5 min calculated for 212,310 cf (98% of inflow) Center-of-Mass det. time= 22.2 min (864.5 - 842.3)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 727 of	x 45.00 = 79.177 of Total Available Storage

 $1,737 \text{ cf} \times 45.00 = 78,177 \text{ cf}$ Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	ls Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%	b) (cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>	
97.7	75	175	0.	0 0	0	175	
98.2	25	175	35.	0 31	31	198	
99.2	25	175	35.	0 61	92	245	
99.5	50	175	25.	0 11	103	257	
100.0	00	175	100.	0 88	190	281	
100.5	51	175	100.	0 89	280	304	
101.7	75	175	100.	0 217	497	363	
Device	Routing	In	vert	Outlet Devices			
#1	Primary	94	1.17'	6.0" Round Culver	rt X 45.00 L= 10.0)' Ke= 0.500	
	-			Inlet / Outlet Invert=	94.17'/94.12' S	= 0.0050 '/' Cc= 0.900	
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area= 0.20 sf	
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	45.00 L= 32.0' Ke= 0.500	
				Inlet / Outlet Invert=	94.33' / 94.17' S	= 0.0050 '/' Cc= 0.900	
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area= 0.20 sf	
#3	Seconda	ry 100).00'	3.0' long x 2.0' bre	adth Broad-Cres	ted Rectangular Weir X 45.	00
				Head (feet) 0.20 0.	.40 0.60 0.80 1.0	00 1.20 1.40 1.60 1.80 2.0)0
				2.50 3.00 3.50			
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77 2.89 2.88	
				2.85 3.07 3.20 3.3	32		

#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 45.00** 2 End Contraction(s)

Primary OutFlow Max=33.26 cfs @ 12.46 hrs HW=96.32' (Free Discharge) 1=Culvert (Passes 33.26 cfs of 50.32 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 33.26 cfs @ 3.76 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) -3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 2P: Basic Rain Garden (infiltration only) 500 sf

Assumes infiltration through media is non-limiting.

Inflow Area =		132,361 sf,	100.00% Impervious,	Inflow Depth = 3.11"	for 2-Year Current event
Inflow	=	10.41 cfs @	12.13 hrs, Volume=	34,270 cf	—
Outflow	=	0.38 cfs @	14.56 hrs, Volume=	34,270 cf, Atter	ו= 96%, Lag= 145.8 min
Discarded	=	0.38 cfs @	14.56 hrs, Volume=	34,270 cf	-
Primary	=	0.00 cfs @	0.00 hrs, Volume=	0 cf	
Routed	to Link	1L : Combine	d Flows		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.72' @ 14.56 hrs Surf.Area= 32,421 sf Storage= 18,340 cf

Plug-Flow detention time= 450.9 min calculated for 34,247 cf (100% of inflow) Center-of-Mass det. time= 451.0 min (1,207.7 - 756.6)

Volume	Invert	: Avai	I.Stora	ge Storage Descri	ption		
#1	98.25'		622	cf Custom Stage	e Data (Conic)List	ed below (Recalc)	
			622	cf x 76.00 = 47,	273 cf Total Avai	lable Storage	
Elevatio	on S	urf.Area	Voids	Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>	
98.2	25	374	0.0	0	0	374	
99.2	25	374	35.0	131	131	443	
99.5	50	374	25.0	23	154	460	
100.0	00	500	100.0	218	372	591	
100.2	25	500	100.0	125	497	611	
100.5	50	500	100.0	125	622	631	
Device	Routing	In	vert C	Outlet Devices			_
#1	Discarded	98	.25' 0).500 in/hr Exfiltrat	ion over Surface	area	
#2	Primary	100	.00' 2	2.0' long x 3.0' brea	adth Broad-Crest	ed Rectangular Weir X 76.00	
	·		H 2 0 2	Head (feet) 0.20 0. 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	40 0.60 0.80 1.0 0 4.50 2.58 2.68 2.67 7 3.07 3.32	0 1.20 1.40 1.60 1.80 2.00 2.65 2.64 2.64 2.68 2.68	

Discarded OutFlow Max=0.38 cfs @ 14.56 hrs HW=99.72' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.38 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=98.25' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)



Pond 2P: Basic Rain Garden (infiltration only) 500 sf

Summary for Pond 3P: Basic Porous Pavement (infiltration only)

180,370 sf,100.00% Impervious, Inflow Depth = 3.11" for 2-Year Current event Inflow Area = Inflow 14.19 cfs @ 12.13 hrs, Volume= 46.701 cf = 2.09 cfs @ 11.65 hrs, Volume= 46,701 cf, Atten= 85%, Lag= 0.0 min Outflow = 2.09 cfs @ 11.65 hrs, Volume= Discarded = 46,701 cf 0.00 cfs @ 0.00 hrs, Volume= Primary = 0 cf Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.46' @ 12.62 hrs Surf.Area= 180,370 sf Storage= 13,174 cf

Plug-Flow detention time= 38.4 min calculated for 46,668 cf (100% of inflow) Center-of-Mass det. time= 38.4 min (795.1 - 756.6)

Volume	Inver	t Ava	il.Storage	 Storage Descr 	iption	
#1	99.25	5'	81,888 c	f Custom Stage	e Data (Prismatic	JListed below (Recalc)
Elevatio (fee 99.2 99.7 99.8 100.0 100.2	on 5 25 75 33 01 25	Surf.Area (sq-ft) 180,370 180,370 180,370 180,370 180,370	Voids (%) 0.0 35.0 15.0 15.0 100.0	Inc.Store (cubic-feet) 0 31,565 2,164 4,870 43,289	Cum.Store (cubic-feet) 0 31,565 33,729 38,599 81,888	
Device	Routing	In	vert Oi	Itlet Devices	01,000	
#1 #2	Discarded Primary	99 100	0.25' 0. 9 0.00' 15 He 2.9 Co 3.3	500 in/hr Exfiltrat 5.0' long x 1.0' br ead (feet) 0.20 0. 50 3.00 bef. (English) 2.69 30 3.31 3.32	ion over Surface eadth Edge of Po 40 0.60 0.80 1.0 9 2.72 2.75 2.85	area brous Asphalt X 76.00 00 1.20 1.40 1.60 1.80 2.00 2.98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=2.09 cfs @ 11.65 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 2.09 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)


Time (hours)

Pond 3P: Basic Porous Pavement (infiltration only)

Summary for Pond 4P: Basin 1 Municipal property 48k sf

[62] Hint: Exceeded Reach 1R OUTLET depth by 0.47' @ 13.20 hrs

Inflow Area	a =	2,045,127 sf,	24.45% In	npervious,	Inflow Depth =	1.25"	for 2-Year	Current event
Inflow	=	33.26 cfs @	12.46 hrs,	Volume=	212,318 cf			
Outflow	=	29.07 cfs @	12.70 hrs,	Volume=	203,835 cf,	, Atten	= 13%, Lag=	= 14.6 min
Primary	=	29.07 cfs @	12.70 hrs,	Volume=	203,835 cf			
Routed	to Read	ch 2R : OUTFI	LOW PIPE					
Secondary	=	0.00 cfs @	0.00 hrs,	Volume=	0 cf			
Routed	to Read	ch 2R : OUTFI	LOW PIPE					
Tertiary	=	0.00 cfs @	0.00 hrs,	Volume=	0 cf			
Routed	to Rea	ch 2R : OUTFI	LOW PIPE					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 73.20' @ 12.70 hrs Surf.Area= 37,248 sf Storage= 42,326 cf

Plug-Flow detention time= 75.0 min calculated for 203,694 cf (96% of inflow) Center-of-Mass det. time= 53.0 min (917.7 - 864.7)

Volume	Inver	t Avail.Sto	orage Storag	ge Description	
#1	72.00	' 206,5	38 cf Custo	om Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee	on S et)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
72.0 77.0	00 00	33,525 49,090	0 206,538	0 206,538	
Device	Routing	Invert	Outlet Devi	ces	
#1	Primary	72.25'	24.0" Vert. Limited to w	Low Flow Orifice	X 6.00 C= 0.600 ads
#2	Secondary	74.50'	24.0" W x 1 Limited to w	18.0" H Vert. SEC veir flow at low hea	ONDARY OUTLET X 4.00 C= 0.600 ads
#3	Tertiary	76.75'	60.0" x 60.0 Limited to w	0" Horiz. Orifice/0 veir flow at low hea	Grate C= 0.600 ads

Primary OutFlow Max=29.07 cfs @ 12.70 hrs HW=73.20' (Free Discharge) **1=Low Flow Orifice** (Orifice Controls 29.07 cfs @ 3.31 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=72.00' (Free Discharge) 2=SECONDARY OUTLET (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=72.00' (Free Discharge) **-3=Orifice/Grate** (Controls 0.00 cfs)



Pond 4P: Basin 1 Municipal property 48k sf

Summary for Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	1,186,669 sf,	12.13% In	npervious,	Inflow Depth = 1	.42" for 2-Yea	r _Current event
Inflow	=	21.71 cfs @	12.57 hrs,	Volume=	140,647 cf		
Outflow	=	17.55 cfs @	12.81 hrs,	Volume=	137,466 cf,	Atten= 19%, La	ng= 14.0 min
Primary	=	17.55 cfs @	12.81 hrs,	Volume=	137,466 cf		
Routed	to Link	2L : Combined	d Flows				
Secondary	=	0.00 cfs @	0.00 hrs,	Volume=	0 cf		
Routed	to Link	2L : Combined	d Flows				
Tertiary	=	0.00 cfs @	0.00 hrs,	Volume=	0 cf		
Routed	to Link	2L : Combine	d Flows				

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 95.95' @ 12.81 hrs Surf.Area= 13,649 sf Storage= 15,442 cf

Plug-Flow detention time= 34.9 min calculated for 137,370 cf (98% of inflow) Center-of-Mass det. time= 21.7 min (885.5 - 863.8)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 727 of	x 27.00 - 46.006 of Total Available Storage

1,737 cf x 27.00 = 46,906 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	ls Inc.Store	Cum.Store	Wet.Area		
(fee	et)	(sq-ft)	(%	(cubic-feet)	(cubic-feet)	(sq-ft)		
97.7	75	175	0.	0 0	0	175		
98.2	25	175	35.	0 31	31	198		
99.2	25	175	35.	0 61	92	245		
99.5	50	175	25.	0 11	103	257		
100.0	00	175	100.	0 88	190	281		
100.5	51	175	100.	0 89	280	304		
101.7	75	175	100.	0 217	497	363		
Device	Routing	In	vert	Outlet Devices				
#1	Primary	94	.17'	6.0" Round Culver	rt X 27.00 L= 10.0)' Ke= 0.500		
	-			Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900				
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf	
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	27.00 L= 32.0' K	e= 0.500	
				Inlet / Outlet Invert=	94.33' / 94.17' S	S= 0.0050 '/' Cc=	0.900	
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf	
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	adth Broad-Cres	ted Rectangular	Weir X 27.00	
				Head (feet) 0.20 0	.40 0.60 0.80 1.0	00 1.20 1.40 1.6	0 1.80 2.00	
				2.50 3.00 3.50				
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88	
				2.85 3.07 3.20 3.3	32			

#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 27.00** 2 End Contraction(s)

Primary OutFlow Max=17.55 cfs @ 12.81 hrs HW=95.94' (Free Discharge) 1=Culvert (Passes 17.55 cfs of 26.66 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 17.55 cfs @ 3.31 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) —3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 6P: Basic Rain Garden (infiltration only) 500SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	85,031 sf,	100.00% Im	pervious,	Inflow Depth =	3.11"	for 2-Year	Current event
Inflow	=	6.69 cfs @	12.13 hrs, \	Volume=	22,016 c	f	_	-
Outflow	=	0.24 cfs @	14.61 hrs, \	Volume=	22,016 c	f, Atten	= 96%, Lag	= 149.0 min
Discarded	=	0.24 cfs @	14.61 hrs, \	Volume=	22,016 c	f	-	
Primary	=	0.00 cfs @	0.00 hrs, \	Volume=	0 c	f		
Routed	to Link 2	2L : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.75' @ 14.61 hrs Surf.Area= 20,375 sf Storage= 11,900 cf

Plug-Flow detention time= 468.9 min calculated for 22,001 cf (100% of inflow) Center-of-Mass det. time= 469.1 min (1,225.7 - 756.6)

Volume	Invert	: Avai	I.Stora	ge Storage Descr	iption	
#1	98.25'		622	cf Custom Stage	e Data (Conic)List	ed below (Recalc)
			622	cf x 47.00 = 29	,235 cf Total Avai	lable Storage
Elevatio	on S	urf.Area	Voids	Inc.Store	Cum.Store	Wet.Area
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
98.2	25	374	0.0	0	0	374
99.2	25	374	35.0	131	131	443
99.5	50	374	25.0	23	154	460
100.0	00	500	100.0	218	372	591
100.2	25	500	100.0	125	497	611
100.5	50	500	100.0	125	622	631
Device	Routing	In	vert (Dutlet Devices		
#1	Discarded	98	.25' 0).500 in/hr Exfiltrat	ion over Surface	area
#2	Primary	100	.00' 2	2.0' long x 3.0' bre	adth Broad-Crest	ed Rectangular Weir X 47.00
	ŗ		H 2 0 2	Head (feet) 0.20 0. 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	40 0.60 0.80 1.0 0 4.50 1 2.58 2.68 2.67 7 3.07 3.32	0 1.20 1.40 1.60 1.80 2.00 2.65 2.64 2.64 2.68 2.68

Discarded OutFlow Max=0.24 cfs @ 14.61 hrs HW=99.75' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.24 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=98.25' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)



Pond 6P: Basic Rain Garden (infiltration only) 500SF

Summary for Pond 7P: Basic Porous Pavement (infiltration only)

164,927 sf,100.00% Impervious, Inflow Depth = 3.11" for 2-Year Current event Inflow Area = Inflow = 12.98 cfs @ 12.13 hrs, Volume= 42.702 cf 1.91 cfs @ 11.65 hrs, Volume= 42,702 cf, Atten= 85%, Lag= 0.0 min Outflow = 1.91 cfs @ 11.65 hrs, Volume= Discarded = 42,702 cf 0.00 cfs @ 0.00 hrs, Volume= Primary = 0 cf Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.46' @ 12.62 hrs Surf.Area= 164,927 sf Storage= 12,046 cf

Plug-Flow detention time= 38.4 min calculated for 42,673 cf (100% of inflow) Center-of-Mass det. time= 38.4 min (795.1 - 756.6)

Volume	Inver	rt Avai	il.Storage	 Storage Descr 	iption	
#1	99.25	5'	74,877 ct	Custom Stage	e Data (Prismatic	Listed below (Recalc)
Elevatic (fee 99.2 99.7 99.8 100.0	on S 25 75 33 01	Surf.Area (sq-ft) 164,927 164,927 164,927 164,927	Voids (%) 0.0 35.0 15.0 15.0	Inc.Store (cubic-feet) 0 28,862 1,979 4,453	Cum.Store (cubic-feet) 0 28,862 30,841 35,294	
100.2	25	164,927	100.0	39,582	74,877	
Device	Routina	In	vert Ou	Itlet Devices		
#1 #2	Discarded Primary	I 99 100	.25' 0.5 .00' 15 He 2.5 Co 3.3	600 in/hr Exfiltrat .0' long x 1.0' br ad (feet) 0.20 0. 50 3.00 ef. (English) 2.69 30 3.31 3.32	ion over Surface eadth Edge of Po 40 0.60 0.80 1.0 9 2.72 2.75 2.85	e area brous Asphalt X 76.00 00 1.20 1.40 1.60 1.80 2.00 2.98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=1.91 cfs @ 11.65 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 1.91 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)



Pond 7P: Basic Porous Pavement (infiltration only)

Summary for Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	1,033,197 sf,	15.85% In	npervious,	Inflow Depth = 1	1.49" fo	or 2-Year	Current event
Inflow	=	21.09 cfs @	12.51 hrs,	Volume=	128,598 cf			
Outflow	=	16.73 cfs @	12.73 hrs,	Volume=	125,564 cf,	Atten=	21%, Lag:	= 13.4 min
Primary	=	16.73 cfs @	12.73 hrs,	Volume=	125,564 cf			
Routed	to Link	3L : Combined	d Flows					
Secondary	=	0.00 cfs @	0.00 hrs,	Volume=	0 cf			
Routed	to Link	3L: Combined	d Flows					
Tertiary	=	0.00 cfs @	0.00 hrs,	Volume=	0 cf			
Routed	to Link	3L : Combined	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 95.92' @ 12.73 hrs Surf.Area= 13,144 sf Storage= 14,611 cf

Plug-Flow detention time= 36.7 min calculated for 125,477 cf (98% of inflow) Center-of-Mass det. time= 22.9 min (875.9 - 853.0)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 727 of	x 26.00 = 45.160 of Total Available Storage

 $1,737 \text{ cf} \times 26.00 = 45,169 \text{ cf}$ Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	s Inc.Store	Cum.Store	Wet.Area		
(fee	et)	(sq-ft)	(%) (cubic-feet)	(cubic-feet)	(sq-ft)		
97.7	75	175	0.	0 0	0	175		
98.2	25	175	35.	0 31	31	198		
99.2	25	175	35.	0 61	92	245		
99.5	50	175	25.	0 11	103	257		
100.0	00	175	100.	0 88	190	281		
100.5	51	175	100.	0 89	280	304		
101.7	75	175	100.	0 217	497	363		
Device	Routing	In	vert	Outlet Devices				
#1	Primary	94	.17'	6.0" Round Culver	rt X 26.00 L= 10.0)' Ke= 0.500		
	-			Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900				
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area	a= 0.20 sf	
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	26.00 L= 32.0' K	e= 0.500	
				Inlet / Outlet Invert=	94.33' / 94.17' S	S= 0.0050 '/' Cc=	0.900	
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area	a= 0.20 sf	
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	adth Broad-Cres	ted Rectangular \	Neir X 26.00	
				Head (feet) 0.20 0.	.40 0.60 0.80 1.0	00 1.20 1.40 1.60	0 1.80 2.00	
				2.50 3.00 3.50				
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88	
				2.85 3.07 3.20 3.3	32			

#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 26.00** 2 End Contraction(s)

Primary OutFlow Max=16.71 cfs @ 12.73 hrs HW=95.92' (Free Discharge) 1=Culvert (Passes 16.71 cfs of 25.40 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 16.71 cfs @ 3.27 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) —3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 9P: Basic Rain Garden (infiltration only) 500 SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	92,992 sf,	100.00% Impervious,	Inflow Depth = 3.11"	for 2-Year _Current event
Inflow	=	7.32 cfs @	12.13 hrs, Volume=	24,077 cf	_
Outflow	=	0.24 cfs @	14.78 hrs, Volume=	24,077 cf, Atter	ו= 97%, Lag= 159.3 min
Discarded	=	0.24 cfs @	14.78 hrs, Volume=	24,077 cf	-
Primary	=	0.00 cfs @	0.00 hrs, Volume=	0 cf	
Routed	to Link 3	BL : Combine	d Flows		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.85' @ 14.78 hrs Surf.Area= 20,686 sf Storage= 13,454 cf

Plug-Flow detention time= 534.7 min calculated for 24,060 cf (100% of inflow) Center-of-Mass det. time= 534.9 min (1,291.5 - 756.6)

Volume	Inver	t Avai	il.Stora	ge Storage Descri	iption	
#1	98.25	•	622	cf Custom Stage	e Data (Conic)List	ed below (Recalc)
			622	cf x $45.00 = 27$,	,991 cf Total Avai	lable Storage
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	Wet.Area
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
98.2	25	374	0.0	0	0	374
99.2	25	374	35.0	131	131	443
99.5	50	374	25.0	23	154	460
100.0	00	500	100.0	218	372	591
100.2	25	500	100.0	125	497	611
100.5	50	500	100.0	125	622	631
Device	Routing	In	vert C	Dutlet Devices		
#1	Discarded	98	.25' 0	.500 in/hr Exfiltrat	ion over Surface	area
#2	Primary	100	.00' 2	2.0' long x 3.0' brea	adth Broad-Crest	ed Rectangular Weir X 45.00
	-		H 2 0 2	Head (feet) 0.20 0.2 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	40 0.60 0.80 1.0 0 4.50 4 2.58 2.68 2.67 7 3.07 3.32	0 1.20 1.40 1.60 1.80 2.00 2.65 2.64 2.64 2.68 2.68

Discarded OutFlow Max=0.24 cfs @ 14.78 hrs HW=99.85' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.24 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=98.25' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)



Summary for Pond 10P: Basic Porous Pavement (infiltration only)

184,684 sf,100.00% Impervious, Inflow Depth = 3.11" for 2-Year Current event Inflow Area = Inflow 14.53 cfs @ 12.13 hrs, Volume= 47.818 cf = 2.14 cfs @ 11.65 hrs, Volume= 47,818 cf, Atten= 85%, Lag= 0.0 min Outflow = 2.14 cfs @ 11.65 hrs, Volume= Discarded = 47.818 cf Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf Routed to Link 3L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.46' @ 12.62 hrs Surf.Area= 184,684 sf Storage= 13,490 cf

Plug-Flow detention time= 38.4 min calculated for 47,784 cf (100% of inflow) Center-of-Mass det. time= 38.4 min (795.1 - 756.6)

Volume	Inver	t Ava	il.Storage	 Storage Descri 	ption	
#1	99.25	5'	83,847 c	f Custom Stage	Data (Prismatic)	Listed below (Recalc)
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	
99.2	25	184,684	0.0	0	0	
99.7	75	184,684	35.0	32,320	32,320	
99.8	33	184,684	15.0	2,216	34,536	
100.0)1	184,684	15.0	4,986	39,522	
100.2	25	184,684	100.0	44,324	83,847	
Device	Routing	In	vert Ou	Itlet Devices		
#1	Discarded	99	.25' 0.5	500 in/hr Exfiltrat	ion over Surface	area
#2	Primary	100	0.00' 15 He 2.5 Co 3.3	.0' long x 1.0' bro ad (feet) 0.20 0.4 50 3.00 bef. (English) 2.69 30 3.31 3.32	eadth Edge of Pc 40 0.60 0.80 1.0 2.72 2.75 2.85	Science Asphalt X 76.00 00 1.20 1.40 1.60 1.80 2.00 2.98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=2.14 cfs @ 11.65 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 2.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)



Pond 10P: Basic Porous Pavement (infiltration only)

Summary for Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	268,899 sf,	2.59% In	npervious,	Inflow Depth = 7	1.24"	for 2-Year	Current event
Inflow	=	6.70 cfs @	12.27 hrs,	Volume=	27,772 cf			
Outflow	=	5.37 cfs @	12.41 hrs,	Volume=	27,397 cf,	, Atten	= 20%, Lag [:]	= 8.4 min
Primary	=	3.86 cfs @	12.42 hrs,	Volume=	26,976 cf			
Routed	to Link 3	L : Combined	d Flows					
Secondary	=	1.50 cfs @	12.41 hrs,	Volume=	421 cf			
Routed	to Link 3	L : Combined	d Flows					
Tertiary	=	0.00 cfs @	0.00 hrs,	Volume=	0 cf			
Routed	to Link 3	SL : Combined	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 100.18' @ 12.42 hrs Surf.Area= 1,997 sf Storage= 4,329 cf

Plug-Flow detention time= 25.8 min calculated for 27,397 cf (99% of inflow) Center-of-Mass det. time= 17.2 min (880.4 - 863.2)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	374 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 615 of	x 2.00 - 4.844 of Total Available Storage

 $1,615 \text{ cf} \times 3.00 = 4,844 \text{ cf}$ Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	s Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%) (cubic-feet)	(cubic-feet)	(sq-ft)	
97.7	75	160	0.0	0 0	0	160	
98.2	25	160	35.	28	28	182	
99.2	25	160	35.	D 56	84	227	
99.5	50	160	25.	D 10	94	238	
100.0	00	160	100.	08 08	174	261	
100.5	51	160	100.) 82	256	284	
101.0	00	160	100.) 78	334	306	
101.2	25	160	100.	O 40	374	317	
Device	Routing	In	vert	Outlet Devices			
#1	Primary	94	1.17'	6.0" Round Culve	rt X 3.00 L= 10.0	' Ke= 0.500	
	2			Inlet / Outlet Invert=	= 94.17' / 94.12'	S= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#2	Device 1	94	1.33'	6.0" Round 6" HD	PE Underdrain X	(3.00 L= 36.0' Ke	e= 0.500
				Inlet / Outlet Invert=	= 94.33' / 94.17'	S= 0.0044 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	eadth Broad-Cres	sted Rectangular	Weir X 3.00
		-		Head (feet) 0.20 0	.40 0.60 0.80 1.	00 1.20 1.40 1.6	0 1.80 2.00
				2.50 3.00 3.50			
				Coef. (English) 2.5	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88

 #4
 Tertiary
 100.50'
 2.85
 3.07
 3.20
 3.32

 #4
 Tertiary
 100.50'
 6.0' long Sharp-Crested Rectangular Weir X 3.00
 2 End Contraction(s)

Primary OutFlow Max=3.85 cfs @ 12.42 hrs HW=100.14' (Free Discharge) 1=Culvert (Passes 3.85 cfs of 6.05 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 3.85 cfs @ 6.54 fps)

Secondary OutFlow Max=1.31 cfs @ 12.41 hrs HW=100.15' (Free Discharge) —3=Broad-Crested Rectangular Weir (Weir Controls 1.31 cfs @ 0.98 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 12P: Basic Rain Garden (infiltration only) 500SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	23,888 sf,	100.00% Imper	vious, I	Inflow Depth =	3.11"	for 2-Year	Current event
Inflow	=	1.88 cfs @	12.13 hrs, Volu	ume=	6,185 c	f	_	_
Outflow	=	0.07 cfs @	14.53 hrs, Volu	ume=	6,185 c	f, Atten	= 96%, Lag	= 144.1 min
Discarded	=	0.07 cfs @	14.53 hrs, Volu	ume=	6,185 c	f	-	
Primary	=	0.00 cfs @	0.00 hrs, Volu	ume=	0 c	f		
Routed	to Link 3	3L : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.70' @ 14.53 hrs Surf.Area= 5,922 sf Storage= 3,292 cf

Plug-Flow detention time= 441.3 min calculated for 6,181 cf (100% of inflow) Center-of-Mass det. time= 441.5 min (1,198.1 - 756.6)

Volume	Inver	t Ava	il.Stora	ge Storage Descr	iption		
#1	98.25	5'	622	cf Custom Stage	e Data (Conic)Liste	ed below (Recalc)	
			622	cf x 14.00 = $8,7$	708 cf Total Availa	ble Storage	
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>	
98.2	25	374	0.0	0	0	374	
99.2	25	374	35.0	131	131	443	
99.5	50	374	25.0	23	154	460	
100.0	00	500	100.0	218	372	591	
100.2	25	500	100.0	125	497	611	
100.5	50	500	100.0	125	622	631	
Device	Routing	In	vert (Outlet Devices			
#1	Discarded	98	.25' ().500 in/hr Exfiltrat	tion over Surface	area	
#2	Primary	100	.00' 2	2.0' long x 3.0' bre	adth Broad-Crest	ed Rectangular Weir X	14.00
	ŗ		1 2 0	Head (feet) 0.20 0. 2.50 3.00 3.50 4.0 Coef. (English) 2.44	40 0.60 0.80 1.0 0 4.50 4 2.58 2.68 2.67	0 1.20 1.40 1.60 1.80 2.65 2.64 2.64 2.68 2.	2.00 .68
			2	2.72 2.81 2.92 2.9	7 3.07 3.32		

Discarded OutFlow Max=0.07 cfs @ 14.53 hrs HW=99.70' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=98.25' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)



Pond 12P: Basic Rain Garden (infiltration only) 500SF

Summary for Pond 13P: Basic Porous Pavement (infiltration only)

35,770 sf,100.00% Impervious, Inflow Depth = 3.11" for 2-Year Current event Inflow Area = Inflow 2.81 cfs @ 12.13 hrs, Volume= 9.261 cf = 0.41 cfs @ 11.65 hrs, Volume= 9,263 cf, Atten= 85%, Lag= 0.0 min Outflow = 0.41 cfs @ 11.65 hrs, Volume= Discarded = 9,263 cf Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf Routed to Link 3L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 99.46' @ 12.62 hrs Surf.Area= 35,770 sf Storage= 2,612 cf

Plug-Flow detention time= 38.3 min calculated for 9,257 cf (100% of inflow) Center-of-Mass det. time= 38.4 min (795.1 - 756.6)

Volume	Invert	: Avai	il.Storage	Storage Descri	ption	
#1	99.25	1	16,240 ct	Custom Stage	Data (Prismatic	Listed below (Recalc)
Elevatio (fee	n S t)	urf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
99.2	5	35,770	0.0	0	0	
99.7	5	35,770	35.0	6,260	6,260	
99.8	3	35,770	15.0	429	6,689	
100.0	1	35,770	15.0	966	7,655	
100.2	5	35,770	100.0	8,585	16,240	
Device	Routing	In	vert Ou	tlet Devices		
#1	Discarded	99	.25' 0.5	i00 in/hr Exfiltrati	ion over Surface	area
#2	Primary	100	.00' 15	.0' long x 1.0' bre	eadth Edge of Po	prous Asphalt X 76.00
			He	ad (feet) 0.20 0.4	40 0.60 0.80 1.0	00 1.20 1.40 1.60 1.80 2.00
			2.5	0 3.00		
			Co	ef. (English) 2.69	2.72 2.75 2.85	2.98 3.08 3.20 3.28 3.31
			3.3	30 3.31 3.32		

Discarded OutFlow Max=0.41 cfs @ 11.65 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)



Pond 13P: Basic Porous Pavement (infiltration only)

Summary for Link 1L: Combined Flows

Inflow Area = 2,045,127 sf, 24.45% Impervious, Inflow Depth = 1.25" for 2-Year _Current event Inflow = 33.29 cfs @ 12.46 hrs, Volume= 212,310 cf Primary = 33.29 cfs @ 12.46 hrs, Volume= 212,310 cf, Atten= 0%, Lag= 0.0 min Routed to Reach 1R : INFLOW PIPE

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



Link 1L: Combined Flows

Summary for Link 2L: Combined Flows

Inflow .	Area =	1,436,627 sf,	27.42% Impervious,	Inflow Depth = 1.	15" for 2-Year	Current event
Inflow	=	17.55 cfs @	12.81 hrs, Volume=	137,466 cf		
Primar	y =	17.55 cfs @	12.81 hrs, Volume=	137,466 cf, <i>i</i>	Atten= 0%, Lag= (0.0 min

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

Link 2L: Combined Flows



Summary for Link 3L: Combined Flows

Inflow A	Area =	1,639,430 sf,	30.99% Impervious,	Inflow Depth = 1.1	2" for 2-Year _Current event
Inflow	=	19.97 cfs @	12.65 hrs, Volume=	152,961 cf	
Primar	y =	19.97 cfs @	12.65 hrs, Volume=	152,961 cf, A	tten= 0%, Lag= 0.0 min

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

Link 3L: Combined Flows



Summary for Link 4L: Combined Flows

Inflow A	Area =	1,639,430 sf,	30.99% Impervious,	Inflow Depth =	1.78"	for 2-Year	Current event
Inflow	=	38.26 cfs @	12.45 hrs, Volume=	243,711 cf			
Primar	y =	38.26 cfs @	12.45 hrs, Volume=	243,711 cf	, Atter	i= 0%, Lag=	0.0 min

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

Link 4L: Combined Flows



20240629_Meadowbrook_HCAD Prepared by Rutgers Cooperative Exte HydroCAD® 10.10-7c s/n 03601 © 2022 Hyd	NOAA 24-hr C2-Year_2100 Rainfall=3.97"nsion Water Resources ProgramPrinted 6/29/2024IroCAD Software Solutions LLCPage 68
Time span=0.0 Runoff by SCS TR-20 metho Reach routing by Stor-Ind+7	0-72.00 hrs, dt=0.05 hrs, 1441 points d, UH=SCS, Split Pervious/Imperv. UI as Pervious Frans method - Pond routing by Stor-Ind method
Subcatchment1S: DA 1: All	Runoff Area=2,045,127 sf 24.45% Impervious Runoff Depth=2.26" Tc=17.3 min CN=77/98 Runoff=90.75 cfs 385,939 cf
Subcatchment1Sa: DA 1: CN w/ IC areas	sRunoff Area=1,732,396 sf 10.81% Impervious Runoff Depth=2.00" Tc=17.3 min CN=77/98 Runoff=69.50 cfs 288,597 cf
Subcatchment1Sb: DA1: Roofs	Runoff Area=132,361 sf 100.00% Impervious Runoff Depth=3.74" Tc=6.0 min CN=0/98 Runoff=12.42 cfs 41,199 cf
Subcatchment1Sc: DA1: Driveways	Runoff Area=180,370 sf 100.00% Impervious Runoff Depth=3.74" Tc=6.0 min CN=0/98 Runoff=16.92 cfs 56,143 cf
Subcatchment 2S: DA 2: All	Runoff Area=1,436,627 sf 27.42% Impervious Runoff Depth=2.22" Tc=39.8 min CN=75/98 Runoff=40.87 cfs 265,470 cf
Subcatchment2Sa: DA 2: CN w/ IC areas	s Runoff Area=1,186,669 sf 12.13% Impervious Runoff Depth=1.90" Tc=39.8 min CN=75/98 Runoff=29.47 cfs 187,667 cf
Subcatchment2Sb: DA2: Roofs combine	ed Runoff Area=85,031 sf 100.00% Impervious Runoff Depth=3.74" Tc=6.0 min CN=0/98 Runoff=7.98 cfs 26,467 cf
Subcatchment2Sc: DA2: Driveways	Runoff Area=164,927 sf 100.00% Impervious Runoff Depth=3.74" Tc=6.0 min CN=0/98 Runoff=15.47 cfs 51,336 cf
Subcatchment 3S: DA 3: All	Runoff Area=1,310,873 sf 33.67% Impervious Runoff Depth=2.35" Tc=35.3 min CN=75/98 Runoff=41.83 cfs 256,524 cf
Subcatchment3Sa: DA 3: CNs w/ IC	Runoff Area=1,033,197 sf 15.85% Impervious Runoff Depth=1.98" Tc=35.3 min CN=75/98 Runoff=28.35 cfs 170,093 cf
Subcatchment3Sb: DA3: Roofs combine	ed Runoff Area=92,992 sf 100.00% Impervious Runoff Depth=3.74" Tc=6.0 min CN=0/98 Runoff=8.72 cfs 28,945 cf
Subcatchment3Sc: DA3: Driveways	Runoff Area=184,684 sf 100.00% Impervious Runoff Depth=3.74" Tc=6.0 min CN=0/98 Runoff=17.32 cfs 57,486 cf
Subcatchment 4S: DA 4: All	Runoff Area=328,557 sf 20.27% Impervious Runoff Depth=2.07" Tc=16.9 min CN=75/98 Runoff=13.43 cfs 56,624 cf
Subcatchment4Sa: DA 4: CN w/ IC areas	s Runoff Area=268,899 sf 2.59% Impervious Runoff Depth=1.70" Tc=16.9 min CN=75/98 Runoff=9.35 cfs 38,055 cf
Subcatchment 4Sb: DA4: Roofs combine	ed Runoff Area=23,888 sf 100.00% Impervious Runoff Depth=3.74"

Tc=6.0 minCN=0/98Runoff=2.24 cfs7,435 cfSubcatchment4Sc: DA4: DrivewaysRunoff Area=35,770 sf100.00% ImperviousRunoff Depth=3.74"

Tc=6.0 min CN=0/98 Runoff=3.36 cfs 11,134 cf

Reach 1R: INFLOW PIPE 54.0" Round Pipe n=0.013 L=75.0' S=0.0400 '/' Capacity=393.30 cfs Outflow=41.81 cfs 283,266 cf

Reach 2R: OUTFLOW PIPE 48.0" Round Pipe n=0.013 L=60.0' S=0.0200 '/' Capacity=203.14 cfs Outflow=37.67 cfs 274,789 cf

Pond 1P: ROAD RG 175SF W/ UDG Peak Elev=97.27' Storage=46,120 cf Inflow=69.50 cfs 288,597 cf Primary=41.81 cfs 283,266 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=41.81 cfs 283,266 cf

Pond 2P: Basic Rain Garden (infiltration Peak Elev=99.85' Storage=22,928 cf Inflow=12.42 cfs 41,199 cf Discarded=0.41 cfs 41,199 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 41,199 cf

Pond 3P: Basic Porous Pavement Peak Elev=99.52' Storage=17,246 cf Inflow=16.92 cfs 56,143 cf Discarded=2.09 cfs 56,143 cf Primary=0.00 cfs 0 cf Outflow=2.09 cfs 56,143 cf

Pond 4P: Basin 1 Municipal property 48k Peak Elev=73.35' Storage=47,929 cf Inflow=41.76 cfs 283,271 cf Primary=37.67 cfs 274,789 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=37.67 cfs 274,789 cf

Pond 5P: ROAD RG 175SF W/ UDG Peak Elev=96.76' Storage=23,314 cf Inflow=29.47 cfs 187,667 cf Primary=22.47 cfs 184,511 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=22.47 cfs 184,511 cf

Pond 6P: Basic Rain Garden (infiltration Peak Elev=99.88' Storage=14,864 cf Inflow=7.98 cfs 26,467 cf Discarded=0.26 cfs 26,467 cf Primary=0.00 cfs 0 cf Outflow=0.26 cfs 26,467 cf

Pond 7P: Basic Porous Pavement Peak Elev=99.52' Storage=15,770 cf Inflow=15.47 cfs 51,336 cf Discarded=1.91 cfs 51,336 cf Primary=0.00 cfs 0 cf Outflow=1.91 cfs 51,336 cf

Pond 8P: ROAD RG 175SF W/ UDG Peak Elev=96.67' Storage=21,639 cf Inflow=28.35 cfs 170,093 cf Primary=21.15 cfs 167,049 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=21.15 cfs 167,049 cf

Pond 9P: Basic Rain Garden (infiltration Peak Elev=100.00' Storage=16,758 cf Inflow=8.72 cfs 28,945 cf Discarded=0.26 cfs 28,929 cf Primary=0.01 cfs 16 cf Outflow=0.27 cfs 28,945 cf

Pond 10P: Basic Porous Pavement Peak Elev=99.52' Storage=17,659 cf Inflow=17.32 cfs 57,486 cf Discarded=2.14 cfs 57,486 cf Primary=0.00 cfs 0 cf Outflow=2.14 cfs 57,486 cf

Pond 11P: ROAD RG 175SF W/ UDG Peak Elev=100.35' Storage=4,413 cf Inflow=9.35 cfs 38,055 cf Primary=3.93 cfs 34,012 cf Secondary=4.97 cfs 3,567 cf Tertiary=0.00 cfs 0 cf Outflow=8.90 cfs 37,578 cf

Pond 12P: Basic Rain Garden (infiltration Peak Elev=99.84' Storage=4,117 cf Inflow=2.24 cfs 7,435 cf Discarded=0.07 cfs 7,435 cf Primary=0.00 cfs 0 cf Outflow=0.07 cfs 7,435 cf

Pond 13P: Basic Porous Pavement Peak Elev=99.52' Storage=3,420 cf Inflow=3.36 cfs 11,134 cf Discarded=0.41 cfs 11,133 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 11,133 cf

Link 1L: Combined Flows	Inflow=41.81 cfs 283,266 cf
	Primary=41.81 cfs 283,266 cf
Link 2L: Combined Flows	Inflow=22.47 cfs 184,511 cf
	Primary=22.47 cfs 184,511 cf
Link 3L: Combined Flows	Inflow=24.83 cfs 204,644 cf
	Primarv=24.83 cfs 204.644 cf

Link 4L: Combined Flows

Inflow=49.63 cfs 313,148 cf Primary=49.63 cfs 313,148 cf

Total Runoff Area = 10,242,368 sf Runoff Volume = 1,929,114 cf Average Runoff Depth = 2.26" 72.62% Pervious = 7,438,492 sf 27.38% Impervious = 2,803,876 sf

Summary for Subcatchment 1S: DA 1: All

Runoff = 90.75 cfs @ 12.26 hrs, Volume= 385,939 cf, Depth= 2.26" Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description				
*	187,351	98	Impervious				
	676,806	74	>75% Grass cover	, Good, HSG C			
	698,470	80	>75% Grass cover	, Good, HSG D			
	25,343	73	Woods, Fair, HSG C				
	726	79	Woods, Fair, HSG D				
	41,773	70	Woods, Good, HSG C				
	101,927	77	Woods, Good, HSG D				
*	132,361	98	Roofs				
*	180,370	98	Driveways				
	2,045,127	82	Weighted Average				
	1,545,045	77	75.55% Pervious Area				
	500,082	98	24.45% Impervious Area				
	Tc Length	Slop	be Velocity Capa	city Description			
	(min) (feet)	(ft/	ft) (ft/sec) (ofs)			
	17.3			Direct Entry, Direct			

Subcatchment 1S: DA 1: All



Summary for Subcatchment 1Sa: DA 1: CN w/ IC areas

Runoff = 69.50 cfs @ 12.27 hrs, Volume= 288,597 cf, Depth= 2.00" Routed to Pond 1P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

1	7.3				Direct Entry, Direct		
(n	nin) (feet)	(ft/	ft) (ft/sec)	(cfs)			
	Tc Length	Slop	be Velocity	Capacity	Description		
	107,001						
	187 351	98	10.81% Impervious Area				
	1 545 045	77	89 19% Pervious Area				
	1 732 396	79	Weighted Average				
	101,927	77	Woods, Go	d, HSG D			
	41,773	70	Woods, Good, HSG C				
	726	79	Woods, Fair, HSG D				
	25,343	73	Woods, Fair, HSG C				
	698,470	80	>75% Gras	s cover, Go	bod, HSG D		
	676,806	74	>75% Gras	s cover, Go	bod, HSG C		
*	187,351	98	Impervious				
	Area (sf)	CN	Description				

Subcatchment 1Sa: DA 1: CN w/ IC areas


Summary for Subcatchment 1Sb: DA1: Roofs combined

Runoff = 12.42 cfs @ 12.13 hrs, Volume= 41,199 cf, Depth= 3.74" Routed to Pond 2P : Basic Rain Garden (infiltration only) 500 sf

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

A	rea (sf)	CN I	Description		
1	32,361	98			
1	32,361	98	100.00% In	npervious A	Area
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	/ Description
6.0					Direct Entry,
			Subcato	hment 1	ISb: DA1: Roofs combined
				Hydro	ograph
ſ			 		
13-	<pre>/ </pre>	2.42 cfs	i i i i i i i i i i i i i i i i i i i		
12					2-Year 2100 Rainfall=3 97"
11-1			$1 - \frac{1}{7} - \frac{1}{7}$		Runoff Area=132.361 sf
9-			$\frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1}$	$\begin{matrix} I_{-1} & - & I_{-1} & - & I_{-1} & - & I_{-1} \\ I_{-1} & I_{-1} & I_{-1} & I_{-1} \\ I_{-1} & I_{-1} & I_{-1} & I_{-1} \end{matrix}$	Runoff Volume=41.199 cf
(s 8		-' 			Runoff Depth=3.74"
ן (ct אין אין אין אין אין אין אין אין אין אין					Tc=6.0 min
° <u>I</u> 6					CN=0/98
5					
4-					
3-			$\begin{array}{cccccccccccccccccccccccccccccccccccc$		
2 1 1 -			 - - - - - 		
0					
0	2468	10 12 14 1	6 18 20 22 24 2	26 28 30 32 34 Time	4 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Summary for Subcatchment 1Sc: DA1: Driveways (other)

Runoff = 16.92 cfs @ 12.13 hrs, Volume= 56,143 cf, Depth= 3.74" Routed to Pond 3P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description				
*	180,370	98	Impervious	Drivways (other)		
	180,370	98	100.00% Im	npervious A	rea		
	Tc Length (min) (feet)	Slop (ft/fl	e Velocity t) (ft/sec)	Capacity (cfs)	Description		
	6.0				Direct Entry,		
			Subcatc	hment 1\$ _{Hydro}	Sc: DA1: Drive graph	eways (other)	
		16.92 ct	i - i - i - i - i - i - i - i - i - i -		2-Year	NOAA 24-hr C _2100 Rainfall=3.97''	Runoff



Summary for Subcatchment 2S: DA 2: All

Runoff = 40.87 cfs @ 12.55 hrs, Volume= 265,470 cf, Depth= 2.22"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	143,894	98	Impervious
	1,270	65	Brush, Good, HSG C
	946,207	74	>75% Grass cover, Good, HSG C
	93,778	80	>75% Grass cover, Good, HSG D
	1,520	72	Woods/grass comb., Good, HSG C
*	85,031	98	Roofs
*	164,927	98	Driveways
	1,436,627	81	Weighted Average
	1,042,775	75	72.58% Pervious Area
	393,852	98	27.42% Impervious Area
	Tc Length (min) (feet)	Slop (ft/	be Velocity Capacity Description ft) (ft/sec) (cfs)



Direct Entry, Direct

Subcatchment 2S: DA 2: All



Summary for Subcatchment 2Sa: DA 2: CN w/ IC areas

Runoff = 29.47 cfs @ 12.56 hrs, Volume= 187,667 cf, Depth= 1.90" Routed to Pond 5P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description	
*	143,894	98	Impervious	
	1,270	65	Brush, Good, HSG C	
	946,207	74	>75% Grass cover, G	ood, HSG C
	93,778	80	>75% Grass cover, G	ood, HSG D
	1,520	72	Woods/grass comb., (Good, HSG C
	1,186,669	77	Weighted Average	
	1,042,775	75	87.87% Pervious Area	3
	143,894	98	12.13% Impervious A	rea
(n	Tc Length nin) (feet)	Slop (ft/	oe Velocity Capacity ft) (ft/sec) (cfs)	Description
3	9.8			Direct Entry, Direct

Subcatchment 2Sa: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sb: DA2: Roofs combined

Runoff = 7.98 cfs @ 12.13 hrs, Volume= 26,467 cf, Depth= 3.74" Routed to Pond 6P : Basic Rain Garden (infiltration only) 500SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"



Summary for Subcatchment 2Sc: DA2: Driveways (other)

Runoff = 15.47 cfs @ 12.13 hrs, Volume= 51,336 cf, Depth= 3.74" Routed to Pond 7P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	A	rea (sf)	CN D	escription			
*	1	64,927	98 In	npervious	Drivways ((other)	
	1	64,927	98 10	00.00% Im	npervious A	Area	
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	/ Description)	
	6.0					Direct Entry,	
			9	Subcatc	hment 2S	Sc: DA2: Driveways (other)	
					Hydrog	ograph	
	17			$-\frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1}$		·- · - · - · - · - · - · - · - · - · -	
	16	(¹)	5.47 cfs	-+-+-+-+-			•
	15- 14-			- + - + - + - + - - + - + - + - + - 1 - 1 - 1 - 1		2-Year 2100 Rainfall=3 97"	
	13					Runoff Area=164.927 sf	
	12- 11-			- $+$ $ +$ $-$	$\begin{matrix} 1 & 1 & 1 & 1 & 1 \\ - & - - & - - & - - & - - \\ 1 & 1 & 1 & 1 & 1 \end{matrix}$	Runoff Volume=51,336 cf	
	َ 10 الم			- + - + - + - + - 1 1 1 1 1 - + - + - + - + -		Runoff Depth=3.74"	
	× 01			- 1		Tc=6.0 min -	
	₽ 81 71			- + - + - + - + - I I I I I - + - + - + - + -		CN=0/98	
	6			$-\frac{1}{1} - \frac{1}{1} - 1$	$\begin{matrix} 1 & 1 & 1 & 1 & 1 \\ 1 & -1 & -1 & -1 & $		
	5- 4-	,		$-\frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1}$			
	3			- + - + - + - + - + - + - + - + - + - +			
	2-1 1-						
	0						
	0	2468	10 12 14 16	18 20 22 24 2	26 28 30 32 34 Time	34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 ne (hours)	

Summary for Subcatchment 3S: DA 3: All

Runoff = 41.83 cfs @ 12.49 hrs, Volume= 256,524 cf, Depth= 2.35" Routed to Link 4L : Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description			
*	163,718	98	Impervious			
	4,569	65	Brush, Goo	d, HSG C		
	730,392	74	>75% Grass	s cover, Go	ood, HSG C	
	134,518	80	>75% Grass	s cover, Go	ood, HSG D	
*	92,992	98	Roofs			
*	184,684	98	Driveways			
	1,310,873	83	Weighted A	verage		
	869,479	75	66.33% Per	vious Area		
	441,394	98	33.67% Imp	ervious Are	ea	
		<u>.</u>		•		
,	Ic Length	Slop	be Velocity	Capacity	Description	
(r	nin) (feet)	(ft/	ft) (ft/sec)	(cfs)		
3	35.3				Direct Entry, Direct	

Subcatchment 3S: DA 3: All



Summary for Subcatchment 3Sa: DA 3: CNs w/ IC areas

Runoff = 28.35 cfs @ 12.50 hrs, Volume= 170,093 cf, Depth= 1.98" Routed to Pond 8P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description	
*	163,718	98	Impervious	
	4,569	65	Brush, Good, HSG C	
	730,392	74	>75% Grass cover, Good, HSG C	
	134,518	80	>75% Grass cover, Good, HSG D	
	1,033,197	79	Weighted Average	
	869,479	75	84.15% Pervious Area	
	163,718	98	15.85% Impervious Area	
(r	Tc Length min) (feet)	Slop (ft/	e Velocity Capacity Description it) (ft/sec) (cfs)	
3	35.3		Direct Entry, Direct	

Subcatchment 3Sa: DA 3: CNs w/ IC areas



Summary for Subcatchment 3Sb: DA3: Roofs combined

Runoff = 8.72 cfs @ 12.13 hrs, Volume= 28,945 cf, Depth= 3.74" Routed to Pond 9P : Basic Rain Garden (infiltration only) 500 SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"



Summary for Subcatchment 3Sc: DA3: Driveways (other)

Runoff = 17.32 cfs @ 12.13 hrs, Volume= 57,486 cf, Depth= 3.74" Routed to Pond 10P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description		
*	184,684	98	Impervious	Drivways ((other)
	184,684	98	100.00% In	npervious A	Area
	Tc Length (min) (feet)	Slop (ft/f	e Velocity t) (ft/sec)	Capacity (cfs)	Description
	6.0				Direct Entry,

Subcatchment 3Sc: DA3: Driveways (other)



Summary for Subcatchment 4S: DA 4: All

Runoff = 13.43 cfs @ 12.26 hrs, Volume= 56,624 cf, Depth= 2.07" Routed to Link 4L : Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description			
*	6,952	98	Impervious			
	208,611	74	>75% Grass	s cover, Go	od, HSG C	
	53,336	80	>75% Grass	s cover, Go	od, HSG D	
*	23,888	98	Roofs			
*	35,770	98	Driveways			
	328,557	80	Weighted A	verage		
	261,947	75	79.73% Per	vious Area		
	66,610	98	20.27% Imp	ervious Are	ea	
(n	Tc Length nin) (feet)	Slop (ft/f	e Velocity (ft/sec)	Capacity (cfs)	Description	
1	6.9	((14000)	(0.0)	Direct Entry, Direct	

Subcatchment 4S: DA 4: All



Summary for Subcatchment 4Sa: DA 4: CN w/ IC areas

Runoff = 9.35 cfs @ 12.26 hrs, Volume= 38,055 cf, Depth= 1.70" Routed to Pond 11P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description		
*	6,952	98	Impervious		
	208,611	74	>75% Gras	s cover, Go	bod, HSG C
	53,336	80	>75% Gras	s cover, Go	bod, HSG D
	268,899	76	Weighted A	verage	
	261,947	75	97.41% Per	vious Area	1
	6,952	98	2.59% Impe	ervious Area	a
(Tc Length min) (feet)	Slop (ft/	be Velocity ft) (ft/sec)	Capacity (cfs)	Description
	16.9				Direct Entry, Direct

Subcatchment 4Sa: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sb: DA4: Roofs combined

Runoff = 2.24 cfs @ 12.13 hrs, Volume= 7,435 cf, Depth= 3.74" Routed to Pond 12P : Basic Rain Garden (infiltration only) 500SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"



Summary for Subcatchment 4Sc: DA4: Driveways (other)

Runoff = 3.36 cfs @ 12.13 hrs, Volume= 11,134 cf, Depth= 3.74" Routed to Pond 13P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

A	rea (sf)	<u>CN</u> D	escription			
	35,770	98 Ir	mpervious	Drivways (other)	
	35,770	98 1	00.00% Im	npervious A	rea	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
6.0					Direct Entry,	
		:	Subcatc	hment 4S	Sc: DA4: Driveways (other)	
				Hydro	graph	
ł		3.36 cfs		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NOAA 24-hr C	Runoff
3-				-¦¦¦¦¦- 	2-Year 2100 Rainfall=3.97"	
-					Runoff Area=35.770 sf	
]					Runoff Volume=11.134 cf	
în Î					Runoff-Depth=3-74"	
jj 2-∕					Tc=6.0 min	
Flov				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CN=0/98	
- 1						
1						
0-			a 18 20 22 24			
0	2 7 0 0		5 10 20 22 24	Time	e (hours)	

Summary for Reach 1R: INFLOW PIPE

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 2,045,127 sf, 24.45% Impervious, Inflow Depth = 1.66" for 2-Year _2100 event Inflow = 41.81 cfs @ 12.47 hrs, Volume= 283,266 cf Outflow = 41.76 cfs @ 12.47 hrs, Volume= 283,271 cf, Atten= 0%, Lag= 0.1 min Routed to Pond 4P : Basin 1 Municipal property 48k sf

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Max. Velocity= 16.09 fps, Min. Travel Time= 0.1 min Avg. Velocity = 6.04 fps, Avg. Travel Time= 0.2 min

Peak Storage= 195 cf @ 12.47 hrs Average Depth at Peak Storage= 0.99', Surface Width= 3.73' Bank-Full Depth= 4.50' Flow Area= 15.9 sf, Capacity= 393.30 cfs

54.0" Round Pipe n= 0.013 Concrete pipe, bends & connections Length= 75.0' Slope= 0.0400 '/' Inlet Invert= 75.00', Outlet Invert= 72.00'



Reach 1R: INFLOW PIPE



Summary for Reach 2R: OUTFLOW PIPE

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Ar	rea =	2,045,127 sf	, 24.45% Impervious,	Inflow Depth =	1.61"	for 2-Year	2100 event
Inflow	=	37.67 cfs @	12.69 hrs, Volume=	274,789 c	f	_	_
Outflow	=	37.67 cfs @	12.69 hrs, Volume=	274,789 c	f, Atter	n= 0%, Lag=	0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Max. Velocity= 12.35 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.86 fps, Avg. Travel Time= 0.3 min

Peak Storage= 183 cf @ 12.69 hrs Average Depth at Peak Storage= 1.17', Surface Width= 3.64' Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 203.14 cfs

48.0" Round Pipe n= 0.013 Concrete pipe, bends & connections Length= 60.0' Slope= 0.0200 '/' Inlet Invert= 68.00', Outlet Invert= 66.80'





Reach 2R: OUTFLOW PIPE

Summary for Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	1,732,396 sf,	10.81% In	npervious,	Inflow Depth =	2.00"	for 2-Year	_2100 event
Inflow	=	69.50 cfs @	12.27 hrs,	Volume=	288,597 c	f		_
Outflow	=	41.81 cfs @	12.47 hrs,	Volume=	283,266 c	f, Atten	i= 40%, Lag	g= 12.3 min
Primary	=	41.81 cfs @	12.47 hrs,	Volume=	283,266 c	f		
Routed	to Link	1L : Combined	d Flows					
Secondary	=	0.00 cfs @	0.00 hrs,	Volume=	0 c	f		
Routed	to Link	1L : Combined	d Flows					
Tertiary	=	0.00 cfs @	0.00 hrs,	Volume=	0 c	f		
Routed	to Link	1L : Combined	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 97.27' @ 12.47 hrs Surf.Area= 22,749 sf Storage= 46,120 cf

Plug-Flow detention time= 31.7 min calculated for 283,069 cf (98% of inflow) Center-of-Mass det. time= 20.8 min (857.1 - 836.3)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 727 of	x 45.00 - 78.177 of Total Available Storage

 $1,737 \text{ cf} \times 45.00 = 78,177 \text{ cf}$ Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	s Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%) (cubic-feet)	(cubic-feet)	(sq-ft)	
97.7	75	175	0.	0 0	0	175	
98.2	25	175	35.	D 31	31	198	
99.2	25	175	35.	D 61	92	245	
99.5	50	175	25.	D 11	103	257	
100.0	00	175	100.	88	190	281	
100.5	51	175	100.	0 89	280	304	
101.7	75	175	100.	0 217	497	363	
Device	Routing	In	vert	Outlet Devices			
#1	Primary	94	17'	6.0" Round Culve	rt X 45.00 L= 10.0)' Ke= 0.500	
	-			Inlet / Outlet Invert=	94.17'/94.12' S	S= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	45.00 L= 32.0' K	e= 0.500
				Inlet / Outlet Invert=	94.33'/94.17' S	S= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area	a= 0.20 sf
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	adth Broad-Cres	ted Rectangular	Weir X 45.00
				Head (feet) 0.20 0	.40 0.60 0.80 1.0	00 1.20 1.40 1.60	0 1.80 2.00
				2.50 3.00 3.50			
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88
				2.85 3.07 3.20 3.3	32		

20240629 Meadowbrook HCAD

NOAA 24-hr C 2-Year _2100 Rainfall=3.97" Prepared by Rutgers Cooperative Extension Water Resources Program Printed 6/29/2024 HydroCAD® 10.10-7c s/n 03601 © 2022 HydroCAD Software Solutions LLC Page 91

100.50' #4 Tertiary 6.0' long Sharp-Crested Rectangular Weir X 45.00 2 End Contraction(s)

Primary OutFlow Max=41.71 cfs @ 12.47 hrs HW=97.26' (Free Discharge) -1=Culvert (Passes 41.71 cfs of 62.77 cfs potential flow) **1**–2=6" HDPE Underdrain (Barrel Controls 41.71 cfs @ 4.72 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) —3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) -4=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10'Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 2P: Basic Rain Garden (infiltration only) 500 sf

Assumes infiltration through media is non-limiting.

Inflow Area	a =	132,361 sf,	100.00% In	npervious,	Inflow Depth =	3.74"	for 2-Year	2100 event
Inflow	=	12.42 cfs @	12.13 hrs,	Volume=	41,199 c	f		_
Outflow	=	0.41 cfs @	14.78 hrs,	Volume=	41,199 c	f, Atten	n= 97%, Lag	= 159.3 min
Discarded	=	0.41 cfs @	14.78 hrs,	Volume=	41,199 c	f	-	
Primary	=	0.00 cfs @	0.00 hrs,	Volume=	0 c	f		
Routed	to Link	1L : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.85' @ 14.78 hrs Surf.Area= 35,053 sf Storage= 22,928 cf

Plug-Flow detention time= 534.9 min calculated for 41,171 cf (100% of inflow) Center-of-Mass det. time= 535.1 min (1,288.2 - 753.1)

Volume	Inver	t Avai	il.Stora	ge Storage Descr	iption				
#1	98.25	5'	622	cf Custom Stage	e Data (Conic)List	ed below (Recalc)			
			622	cf x 76.00 = 47	,273 cf Total Avai	lable Storage			
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	Wet.Area			
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>			
98.2	25	374	0.0	0	0	374			
99.2	25	374	35.0	131	131	443			
99.5	50	374	25.0	23	154	460			
100.0	00	500	100.0	218	372	591			
100.2	25	500	100.0	125	497	611			
100.5	50	500	100.0	125	622	631			
Device	Routing	In	vert (Outlet Devices					
#1	Discarded	98	.25'	0.500 in/hr Exfiltrat	ion over Surface	area	_		
#2	Primary	100	.00' 2	2.0' long x 3.0' bre	adth Broad-Crest	ted Rectangular Weir X 76.00			
				Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50					
			(Coef. (English) 2.44 2.72 2.81 2.92 2.9	4 2.58 2.68 2.67 7 3.07 3.32	2.65 2.64 2.64 2.68 2.68			

Discarded OutFlow Max=0.41 cfs @ 14.78 hrs HW=99.85' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=98.25' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)



Pond 2P: Basic Rain Garden (infiltration only) 500 sf

Summary for Pond 3P: Basic Porous Pavement (infiltration only)

180,370 sf,100.00% Impervious, Inflow Depth = 3.74" for 2-Year 2100 event Inflow Area = Inflow 16.92 cfs @ 12.13 hrs, Volume= 56.143 cf = 2.09 cfs @ 11.60 hrs, Volume= 56,143 cf, Atten= 88%, Lag= 0.0 min Outflow = 2.09 cfs @ 11.60 hrs, Volume= 56.143 cf Discarded = Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.52' @ 12.71 hrs Surf.Area= 180,370 sf Storage= 17,246 cf

Plug-Flow detention time= 52.0 min calculated for 56,104 cf (100% of inflow) Center-of-Mass det. time= 52.0 min (805.0 - 753.1)

Volume	Inver	t Ava	il.Stora	ge Storage Desci	ription	
#1	99.25	5'	81,888	cf Custom Stag	e Data (Prismatio) Listed below (Recalc)
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	
99.2	25	180,370	0.0	0	0	
99.7	75	180,370	35.0	31,565	31,565	
99.8	83	180,370	15.0	2,164	33,729	
100.0	D1	180,370	15.0	4,870	38,599	
100.2	25	180,370	100.0	43,289	81,888	
Device	Routing	In	vert	Outlet Devices		
#1	Discarded	99	.25'	0.500 in/hr Exfiltra	tion over Surface	area
#2	Primary	100	.00'	15.0' long x 1.0' bi	readth Edge of Po	orous Asphalt X 76.00
				Head (feet) 0.20 0	.40 0.60 0.80 1.0	00 1.20 1.40 1.60 1.80 2.00
				2.50 3.00		
				Coef. (English) 2.6	9 2.72 2.75 2.85	2.98 3.08 3.20 3.28 3.31
				3.30 3.31 3.32		

Discarded OutFlow Max=2.09 cfs @ 11.60 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 2.09 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)



Time (hours)

Pond 3P: Basic Porous Pavement (infiltration only)

Summary for Pond 4P: Basin 1 Municipal property 48k sf

[62] Hint: Exceeded Reach 1R OUTLET depth by 0.47' @ 13.40 hrs

Inflow Area	=	2,045,	,127 sf,	24.45% In	npervious,	Inflow Depth =	1.66"	for 2-Year	_2100 event
Inflow	=	41.76	cfs @	12.47 hrs,	Volume=	283,271 c	f		
Outflow	=	37.67	cfs @	12.69 hrs,	Volume=	274,789 c	f, Atten	i= 10%, Lag	= 13.1 min
Primary	=	37.67	cfs @	12.69 hrs,	Volume=	274,789 c	f		
Routed	to Read	ch 2R :	OUTFL	OW PIPE					
Secondary	=	0.00	cfs @	0.00 hrs,	Volume=	0 c	f		
Routed	to Read	ch 2R :	OUTFL	OW PIPE					
Tertiary	=	0.00	cfs @	0.00 hrs,	Volume=	0 c	f		
Routed	to Read	ch 2R :	OUTFL	OW PIPE					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 73.35' @ 12.69 hrs Surf.Area= 37,714 sf Storage= 47,929 cf

Plug-Flow detention time= 63.8 min calculated for 274,789 cf (97% of inflow) Center-of-Mass det. time= 45.7 min (903.1 - 857.3)

Volume	Inver	t Avail.Sto	rage Storag	e Description	
#1	72.00	206,5	38 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	on S et)	urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
72.0 77.0	00 00	33,525 49,090	0 206,538	0 206,538	
Device	Routing	Invert	Outlet Devic	es	
#1	Primary	72.25'	24.0" Vert. I Limited to w	Low Flow Orifice eir flow at low hea	X 6.00 C= 0.600 ads
#2	Secondary	74.50'	24.0" W x 1 Limited to w	8.0" H Vert. SEC eir flow at low hea	ONDARY OUTLET X 4.00 C= 0.600 ads
#3	Tertiary	76.75'	60.0" x 60.0 Limited to w	" Horiz. Orifice/(eir flow at low hea	Grate C= 0.600 ads

Primary OutFlow Max=37.64 cfs @ 12.69 hrs HW=73.35' (Free Discharge) **1=Low Flow Orifice** (Orifice Controls 37.64 cfs @ 3.56 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=72.00' (Free Discharge) 2=SECONDARY OUTLET (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=72.00' (Free Discharge) **-3=Orifice/Grate** (Controls 0.00 cfs)



Pond 4P: Basin 1 Municipal property 48k sf

Summary for Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	1,186,669 sf,	12.13% Im	pervious,	Inflow Depth =	1.90"	for 2-Year	_2100 event
Inflow	=	29.47 cfs @	12.56 hrs, \	/olume=	187,667 c	f		
Outflow	=	22.47 cfs @	12.83 hrs, \	/olume=	184,511 c	f, Atten	i= 24%, Lag	y= 16.1 min
Primary	=	22.47 cfs @	12.83 hrs, \	/olume=	184,511 c	f		
Routed	to Link	2L : Combine	d Flows					
Secondary	=	0.00 cfs @	0.00 hrs, \	/olume=	0 c	f		
Routed	to Link	2L : Combine	d Flows					
Tertiary	=	0.00 cfs @	0.00 hrs, \	/olume=	0 c	f		
Routed	to Link	2L : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 96.76' @ 12.83 hrs Surf.Area= 13,649 sf Storage= 23,314 cf

Plug-Flow detention time= 30.2 min calculated for 184,383 cf (98% of inflow) Center-of-Mass det. time= 20.3 min (878.5 - 858.2)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 737 cf	x 27.00 - 46.006 cf. Total Available Storage

1,737 cf x 27.00 = 46,906 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	ls Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%	(cubic-feet)	(cubic-feet)	(sq-ft)	
97.7	75	175	0.	0 0	0	175	
98.2	25	175	35.	0 31	31	198	
99.2	25	175	35.	0 61	92	245	
99.5	50	175	25.	0 11	103	257	
100.0	00	175	100.	0 88	190	281	
100.5	51	175	100.	0 89	280	304	
101.7	75	175	100.	0 217	497	363	
Device	Routing	In	vert	Outlet Devices			
#1	Primary	94	.17'	6.0" Round Culver	rt X 27.00 L= 10.0)' Ke= 0.500	
	-			Inlet / Outlet Invert=	94.17'/94.12' S	S= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	27.00 L= 32.0' K	e= 0.500
				Inlet / Outlet Invert=	94.33' / 94.17' S	S= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	adth Broad-Cres	ted Rectangular	Weir X 27.00
				Head (feet) 0.20 0	.40 0.60 0.80 1.0	00 1.20 1.40 1.6	0 1.80 2.00
				2.50 3.00 3.50			
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88
				2.85 3.07 3.20 3.3	32		

20240629 Meadowbrook HCAD

NOAA 24-hr C 2-Year _2100 Rainfall=3.97" Prepared by Rutgers Cooperative Extension Water Resources Program Printed 6/29/2024 HydroCAD® 10.10-7c s/n 03601 © 2022 HydroCAD Software Solutions LLC Page 101

100.50' #4 Tertiary 6.0' long Sharp-Crested Rectangular Weir X 27.00 2 End Contraction(s)

Primary OutFlow Max=22.45 cfs @ 12.83 hrs HW=96.76' (Free Discharge) -1=Culvert (Passes 22.45 cfs of 33.86 cfs potential flow) **1**–2=6" HDPE Underdrain (Barrel Controls 22.45 cfs @ 4.23 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) —3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) -4=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10'Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 6P: Basic Rain Garden (infiltration only) 500SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	85,031 sf,	100.00% In	npervious,	Inflow Depth =	3.74"	for 2-Year	2100 event
Inflow	=	7.98 cfs @	12.13 hrs,	Volume=	26,467 c	f		_
Outflow	=	0.26 cfs @	14.83 hrs,	Volume=	26,467 c	f, Atten	i= 97%, Lag	g= 162.1 min
Discarded	=	0.26 cfs @	14.83 hrs,	Volume=	26,467 c	f	-	-
Primary	=	0.00 cfs @	0.00 hrs,	Volume=	0 0	f		
Routed	to Link 2	2L : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.88' @ 14.83 hrs Surf.Area= 22,061 sf Storage= 14,864 cf

Plug-Flow detention time= 554.5 min calculated for 26,449 cf (100% of inflow) Center-of-Mass det. time= 554.8 min (1,307.9 - 753.1)

Volume	Inver	t Avai	il.Stora	ge Storage Desci	ription		
#1	98.25	5'	622	cf Custom Stag	e Data (Conic)List	ed below (Recalc)	
			622	$2 \text{ cf} \times 47.00 = 29$,235 cf Total Avai	lable Storage	
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>	
98.2	25	374	0.0	0	0	374	
99.2	25	374	35.0	131	131	443	
99.5	50	374	25.0	23	154	460	
100.0	00	500	100.0	218	372	591	
100.2	25	500	100.0	125	497	611	
100.5	50	500	100.0	125	622	631	
Device	Routing	In	vert	Outlet Devices			
#1	Discarded	98	.25'	0.500 in/hr Exfiltra	tion over Surface	area	
#2 Primary 100.00' 2		2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 47.00					
				Head (feet) 0.20 0 2.50 3.00 3.50 4.0	.40 0.60 0.80 1.0)0 4.50	0 1.20 1.40 1.60 1.80 2.0)0
				Coef. (English) 2.44 2.72 2.81 2.92 2.9	4 2.58 2.68 2.67 97 3.07 3.32	2.65 2.64 2.64 2.68 2.68	

Discarded OutFlow Max=0.26 cfs @ 14.83 hrs HW=99.88' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.26 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=98.25' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)



Pond 6P: Basic Rain Garden (infiltration only) 500SF

Summary for Pond 7P: Basic Porous Pavement (infiltration only)

164,927 sf,100.00% Impervious, Inflow Depth = 3.74" for 2-Year 2100 event Inflow Area = Inflow 15.47 cfs @ 12.13 hrs, Volume= 51.336 cf = 1.91 cfs @ 11.60 hrs, Volume= 51,336 cf, Atten= 88%, Lag= 0.0 min Outflow = 1.91 cfs @ 11.60 hrs, Volume= Discarded = 51.336 cf Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.52' @ 12.71 hrs Surf.Area= 164,927 sf Storage= 15,770 cf

Plug-Flow detention time= 52.0 min calculated for 51,300 cf (100% of inflow) Center-of-Mass det. time= 52.0 min (805.0 - 753.1)

Volume	Inver	t Avai	I.Storac	ge Storage Descr	ription			
#1	99.25	5'	74,877	cf Custom Stage	e Data (Prismatio) Listed below (Recalc)		
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store			
(tee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)			
99.2	25	164,927	0.0	0	0			
99.7	75	164,927	35.0	28,862	28,862			
99.8	33	164,927	15.0	1,979	30,841			
100.0	01	164,927	15.0	4,453	35,294			
100.2	25	164,927	100.0	39,582	74,877			
Device	Routing	In	vert C	Outlet Devices				
#1	Discarded	99	.25' 0	.500 in/hr Exfiltrat	tion over Surface	area		
#2	#2 Primary 100.00		.00' 1	15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00				
	-		F	lead (feet) 0.20 0	.40 0.60 0.80 1.0	00 1.20 1.40 1.60 1.80 2.00		
			2	.50 3.00				
			C	coef. (English) 2.69	9 2.72 2.75 2.85	5 2.98 3.08 3.20 3.28 3.31		
			3	.30 3.31 3.32				

Discarded OutFlow Max=1.91 cfs @ 11.60 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 1.91 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)



Pond 7P: Basic Porous Pavement (infiltration only)

Summary for Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	1,033,197 sf,	15.85% Im	npervious,	Inflow Depth =	1.98"	for 2-Yea	r 2100 event
Inflow	=	28.35 cfs @	12.50 hrs,	Volume=	170,093 cf	-		
Outflow	=	21.15 cfs @	12.76 hrs,	Volume=	167,049 cf	f, Atten	= 25%, La	ag= 15.4 min
Primary	=	21.15 cfs @	12.76 hrs,	Volume=	167,049 cf	F		
Routed	to Link	3L : Combined	d Flows					
Secondary	=	0.00 cfs @	0.00 hrs,	Volume=	0 ct	F		
Routed	to Link	3L : Combined	d Flows					
Tertiary	=	0.00 cfs @	0.00 hrs,	Volume=	0 ct	F		
Routed	to Link	3L : Combined	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 96.67' @ 12.76 hrs Surf.Area= 13,144 sf Storage= 21,639 cf

Plug-Flow detention time= 31.8 min calculated for 166,933 cf (98% of inflow) Center-of-Mass det. time= 21.2 min (869.4 - 848.1)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 727 of	x 26.00 - 45.160 of Total Available Storage

 $1,737 \text{ cf} \times 26.00 = 45,169 \text{ cf}$ Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	s Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%) (cubic-feet)	(cubic-feet)	(sq-ft)	
97.7	75	175	0.	0 0	0	175	
98.2	25	175	35.	0 31	31	198	
99.2	25	175	35.	0 61	92	245	
99.5	50	175	25.	0 11	103	257	
100.0	00	175	100.	0 88	190	281	
100.5	51	175	100.	0 89	280	304	
101.7	75	175	100.	0 217	497	363	
Device	Routing	In	vert	Outlet Devices			
#1	Primary	94	.17'	6.0" Round Culve	rt X 26.00 L= 10.0)' Ke= 0.500	
	-			Inlet / Outlet Invert=	94.17'/94.12' S	S= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	26.00 L= 32.0' K	e= 0.500
				Inlet / Outlet Invert=	94.33' / 94.17' S	S= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area	a= 0.20 sf
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	adth Broad-Cres	ted Rectangular	Weir X 26.00
				Head (feet) 0.20 0	.40 0.60 0.80 1.0	00 1.20 1.40 1.60	0 1.80 2.00
				2.50 3.00 3.50			
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88
				2.85 3.07 3.20 3.3	32		
20240629_Meadowbrook_HCADNOAA 24-hr C 2-Year_2100 Rainfall=3.97"Prepared by Rutgers Cooperative Extension Water Resources ProgramPrinted 6/29/2024HydroCAD® 10.10-7c s/n 03601 © 2022 HydroCAD Software Solutions LLCPage 109

#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 26.00** 2 End Contraction(s)

Primary OutFlow Max=21.14 cfs @ 12.76 hrs HW=96.66' (Free Discharge) 1=Culvert (Passes 21.14 cfs of 31.90 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 21.14 cfs @ 4.14 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) —3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10'Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 9P: Basic Rain Garden (infiltration only) 500 SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	92,992 sf,	100.00% In	npervious,	Inflow Depth =	3.74"	for 2-Year	2100 event
Inflow	=	8.72 cfs @	12.13 hrs,	Volume=	28,945 c	f		_
Outflow	=	0.27 cfs @	14.88 hrs,	Volume=	28,945 c	f, Atten	= 97%, Lag	g= 165.2 min
Discarded	=	0.26 cfs @	14.65 hrs,	Volume=	28,929 c	f	-	-
Primary	=	0.01 cfs @	14.88 hrs,	Volume=	16 c	f		
Routed	to Link 3	BL : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.00' @ 14.88 hrs Surf.Area= 22,500 sf Storage= 16,758 cf

Plug-Flow detention time= 626.0 min calculated for 28,925 cf (100% of inflow) Center-of-Mass det. time= 626.4 min (1,379.4 - 753.1)

Volume	Inver	t Avai	il.Stora	ge Storage Descri	iption	
#1	98.25	•	622	cf Custom Stage	e Data (Conic)List	ed below (Recalc)
			622	cf x $45.00 = 27$,	,991 cf Total Avai	lable Storage
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	Wet.Area
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
98.2	25	374	0.0	0	0	374
99.2	25	374	35.0	131	131	443
99.5	50	374	25.0	23	154	460
100.0	00	500	100.0	218	372	591
100.2	25	500	100.0	125	497	611
100.5	50	500	100.0	125	622	631
Device	Routing	In	vert C	Dutlet Devices		
#1	Discarded	98	.25' 0	.500 in/hr Exfiltrat	ion over Surface	area
#2	Primary	100	.00' 2	2.0' long x 3.0' brea	adth Broad-Crest	ed Rectangular Weir X 45.00
	-		H 2 0 2	Head (feet) 0.20 0.2 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	40 0.60 0.80 1.0 0 4.50 1 2.58 2.68 2.67 7 3.07 3.32	0 1.20 1.40 1.60 1.80 2.00 2.65 2.64 2.64 2.68 2.68

Discarded OutFlow Max=0.26 cfs @ 14.65 hrs HW=100.00' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.26 cfs)

Primary OutFlow Max=0.00 cfs @ 14.88 hrs HW=100.00' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 0.00 cfs @ 0.07 fps)



Pond 9P: Basic Rain Garden (infiltration only) 500 SF

Summary for Pond 10P: Basic Porous Pavement (infiltration only)

184,684 sf,100.00% Impervious, Inflow Depth = 3.74" for 2-Year 2100 event Inflow Area = Inflow 17.32 cfs @ 12.13 hrs, Volume= 57.486 cf = 2.14 cfs @ 11.60 hrs, Volume= 57,486 cf, Atten= 88%, Lag= 0.0 min Outflow = 2.14 cfs @ 11.60 hrs, Volume= Discarded = 57,486 cf 0.00 cfs @ 0.00 hrs, Volume= Primary = 0 cf Routed to Link 3L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.52' @ 12.71 hrs Surf.Area= 184,684 sf Storage= 17,659 cf

Plug-Flow detention time= 52.0 min calculated for 57,446 cf (100% of inflow) Center-of-Mass det. time= 52.0 min (805.0 - 753.1)

Volume	Inver	t Ava	il.Stora	ge Storage Descr	ription	
#1	99.25	5'	83,847	cf Custom Stage	e Data (Prismatic) Listed below (Recalc)
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	
(tee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	
99.2	25	184,684	0.0	0	0	
99.7	75	184,684	35.0	32,320	32,320	
99.8	33	184,684	15.0	2,216	34,536	
100.0)1	184,684	15.0	4,986	39,522	
100.2	25	184,684	100.0	44,324	83,847	
Device	Routing	In	vert (Outlet Devices		
#1	Discarded	99	.25' ().500 in/hr Exfiltrat	tion over Surface	area
#2	Primary	100	.00' 1	15.0' long x 1.0' br	eadth Edge of Po	orous Asphalt X 76.00
	-		ŀ	Head (feet) 0.20 0.	.40 0.60 0.80 1.0	00 1.20 1.40 1.60 1.80 2.00
			2	2.50 3.00		
			(Coef. (English) 2.69	9 2.72 2.75 2.85	2.98 3.08 3.20 3.28 3.31
			3	3.30 3.31 3.32		

Discarded OutFlow Max=2.14 cfs @ 11.60 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 2.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)



Pond 10P: Basic Porous Pavement (infiltration only)

20240629_Meadowbrook_HCADNOAA 24-hr C2-Year_2100 Rainfall=3.97"Prepared by Rutgers Cooperative Extension Water Resources ProgramPrinted6/29/2024HydroCAD® 10.10-7cs/n 03601© 2022 HydroCAD Software Solutions LLCPage 116

Summary for Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	268,899 sf,	2.59% In	npervious,	Inflow Depth =	1.70"	for 2-Year	_2100 event
Inflow	=	9.35 cfs @	12.26 hrs,	Volume=	38,055 c	f		_
Outflow	=	8.90 cfs @	12.31 hrs,	Volume=	37,578 c	f, Atten	= 5%, Lag=	= 3.0 min
Primary	=	3.93 cfs @	12.30 hrs,	Volume=	34,012 c	f	-	
Routed	to Link 3	BL : Combined	d Flows					
Secondary	=	4.97 cfs @	12.31 hrs,	Volume=	3,567 c	f		
Routed	to Link 3	BL : Combined	d Flows					
Tertiary	=	0.00 cfs @	0.00 hrs,	Volume=	0 c	f		
Routed	to Link 3	BL : Combined	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 100.35' @ 12.30 hrs Surf.Area= 1,997 sf Storage= 4,413 cf

Plug-Flow detention time= 23.6 min calculated for 37,578 cf (99% of inflow) Center-of-Mass det. time= 15.4 min (870.0 - 854.6)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	374 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 615 of	x 2 00 - 4 944 of Total Available Storage

1,615 cf x 3.00 = 4,844 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	s Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%) (cubic-feet)	(cubic-feet)	(sq-ft)	
97.7	75	160	0.0) 0	0	160	
98.2	25	160	35.0) 28	28	182	
99.2	25	160	35.0) 56	84	227	
99.5	50	160	25.0) 10	94	238	
100.0	00	160	100.0) 80	174	261	
100.5	51	160	100.0) 82	256	284	
101.0	00	160	100.0) 78	334	306	
101.2	25	160	100.0) 40	374	317	
Device	Routing	In	vert	Outlet Devices			
#1	Primary	94	1.17'	6.0" Round Culve	rt X 3.00 L= 10.0	' Ke= 0.500	
	-			Inlet / Outlet Invert=	= 94.17' / 94.12'	S= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#2	Device 1	94	1.33'	6.0" Round 6" HD	PE Underdrain X	(3.00 L= 36.0' Ke	e= 0.500
				Inlet / Outlet Invert=	= 94.33' / 94.17'	S= 0.0044 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#3	Seconda	ry 100).00'	3.0' long x 2.0' bre	eadth Broad-Cres	sted Rectangular	Weir X 3.00
				Head (feet) 0.20 0	.40 0.60 0.80 1.	00 1.20 1.40 1.6	0 1.80 2.00
				2.50 3.00 3.50			
				Coef. (English) 2.5	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88

20240629 Meadowbrook HCAD

NOAA 24-hr C 2-Year _2100 Rainfall=3.97" Prepared by Rutgers Cooperative Extension Water Resources Program Printed 6/29/2024 HydroCAD® 10.10-7c s/n 03601 © 2022 HydroCAD Software Solutions LLC Page 117

2.85 3.07 3.20 3.32 #4 Tertiary 100.50' 6.0' long Sharp-Crested Rectangular Weir X 3.00 2 End Contraction(s)

Primary OutFlow Max=3.93 cfs @ 12.30 hrs HW=100.35' (Free Discharge) -**1=Culvert** (Passes 3.93 cfs of 6.16 cfs potential flow) **1**–2=6" HDPE Underdrain (Barrel Controls 3.93 cfs @ 6.66 fps)

Secondary OutFlow Max=4.68 cfs @ 12.31 hrs HW=100.34' (Free Discharge) —3=Broad-Crested Rectangular Weir (Weir Controls 4.68 cfs @ 1.52 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 12P: Basic Rain Garden (infiltration only) 500SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	23,888 sf,	100.00% In	npervious,	Inflow Depth =	3.74"	for 2-Year	2100 event
Inflow	=	2.24 cfs @	12.13 hrs,	Volume=	7,435 c	f		_
Outflow	=	0.07 cfs @	14.75 hrs,	Volume=	7,435 c	f, Atten	i= 97%, Lag	= 157.7 min
Discarded	=	0.07 cfs @	14.75 hrs,	Volume=	7,435 c	f	-	
Primary	=	0.00 cfs @	0.00 hrs,	Volume=	0 c	f		
Routed	to Link 3	BL : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.84' @ 14.75 hrs Surf.Area= 6,397 sf Storage= 4,117 cf

Plug-Flow detention time= 524.5 min calculated for 7,430 cf (100% of inflow) Center-of-Mass det. time= 524.7 min (1,277.8 - 753.1)

Volume	Invert	t Ava	I.Stora	ge Storage Descr	ription		
#1	98.25	1	622	cf Custom Stage	e Data (Conic)List	ed below (Recalc)	
			622	cf x 14.00 = $8,7$	708 cf Total Availa	ble Storage	
Elevatio	on S	urf.Area	Voids	Inc.Store	Cum.Store	Wet.Area	
(tee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>	
98.2	25	374	0.0	0	0	374	
99.2	25	374	35.0	131	131	443	
99.	50	374	25.0	23	154	460	
100.0	00	500	100.0	218	372	591	
100.2	25	500	100.0	125	497	611	
100.8	50	500	100.0	125	622	631	
Device	Routing	In	vert (Dutlet Devices			
#1	Discarded	98	.25' 0).500 in/hr Exfiltrat	tion over Surface	area	
#2	Primary	100	.00' 2	2.0' long x 3.0' bre	adth Broad-Crest	ed Rectangular Weir X 14.00	
	ŗ		1 2 0 2	Head (feet) 0.20 0. 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	.40 0.60 0.80 1.0 00 4.50 4 2.58 2.68 2.67 07 3.07 3.32	0 1.20 1.40 1.60 1.80 2.00 2.65 2.64 2.64 2.68 2.68	
			2	2.72 2.81 2.92 2.9	97 3.07 3.32		

Discarded OutFlow Max=0.07 cfs @ 14.75 hrs HW=99.84' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=98.25' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)



Pond 12P: Basic Rain Garden (infiltration only) 500SF

Summary for Pond 13P: Basic Porous Pavement (infiltration only)

35,770 sf,100.00% Impervious, Inflow Depth = 3.74" for 2-Year 2100 event Inflow Area = Inflow 3.36 cfs @ 12.13 hrs, Volume= 11.134 cf = 0.41 cfs @ 11.60 hrs, Volume= 11,133 cf, Atten= 88%, Lag= 0.0 min Outflow = 0.41 cfs @ 11.60 hrs, Volume= 11,133 cf Discarded = Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf Routed to Link 3L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 99.52' @ 12.71 hrs Surf.Area= 35,770 sf Storage= 3,420 cf

Plug-Flow detention time= 52.0 min calculated for 11,126 cf (100% of inflow) Center-of-Mass det. time= 51.9 min (805.0 - 753.1)

Volume	Invert	: Avai	I.Storage	Storage Descript	ion	
#1	99.25'		16,240 cf	Custom Stage	Data (Prismatic)Li	sted below (Recalc)
Elevatio	on S t)	urf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
99.2	25	35,770	0.0	0	0	
99.7	'5	35,770	35.0	6,260	6,260	
99.8	33	35,770	15.0	429	6,689	
100.0)1	35,770	15.0	966	7,655	
100.2	25	35,770	100.0	8,585	16,240	
Device	Routing	In	vert Out	let Devices		
#1	Discarded	99	.25' 0.50	0 in/hr Exfiltratio	n over Surface ar	ea
#2	Primary	100	.00' 15.0 Hea 2.50 Coe 3.30)' long x 1.0' brea ad (feet) 0.20 0.40) 3.00 ef. (English) 2.69 1) 3.31 3.32	dth Edge of Pord 0 0.60 0.80 1.00 2.72 2.75 2.85 2	ous Asphalt X 76.00 1.20 1.40 1.60 1.80 2.00 .98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=0.41 cfs @ 11.60 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)



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Summary for Link 1L: Combined Flows

Inflow Area = 2,045,127 sf, 24.45% Impervious, Inflow Depth = 1.66" for 2-Year _2100 event Inflow = 41.81 cfs @ 12.47 hrs, Volume= 283,266 cf Primary = 41.81 cfs @ 12.47 hrs, Volume= 283,266 cf, Atten= 0%, Lag= 0.0 min Routed to Reach 1R : INFLOW PIPE

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



Link 1L: Combined Flows

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Summary for Link 2L: Combined Flows

Inflow /	Area =	1,436,627 sf	, 27.42% Impervious,	Inflow Depth =	1.54"	for 2-Year	2100 event
Inflow	=	22.47 cfs @	12.83 hrs, Volume=	184,511 c	f		
Primar	y =	22.47 cfs @	12.83 hrs, Volume=	184,511 c	f, Atter	n= 0%, Lag=	0.0 min

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

Link 2L: Combined Flows



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Summary for Link 3L: Combined Flows

Inflow A	Area =		1,639,430 sf,	30.99% Ir	npervious,	Inflow Depth =	1.50"	for 2-Year	_2100 event
Inflow	=	2	4.83 cfs @	12.73 hrs,	Volume=	204,644 c	f		
Primar	y =	2	24.83 cfs @	12.73 hrs,	Volume=	204,644 c	f, Atten	= 0%, Lag=	0.0 min

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

Link 3L: Combined Flows



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Summary for Link 4L: Combined Flows

Inflow A	Area =	1,639,430 sf,	30.99% Impervious,	Inflow Depth =	2.29"	for 2-Year	_2100 event
Inflow	=	49.63 cfs @	12.44 hrs, Volume=	313,148 c	f		
Primar	y =	49.63 cfs @	12.44 hrs, Volume=	313,148 c	f, Atter	n= 0%, Lag=	0.0 min

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

Link 4L: Combined Flows



20240629_	Meadowbrook_HCAD	NOAA 24-hr C 1	0-Year_Curre	ent Rainfall=5.16"
Prepared by	Rutgers Cooperative Exte	nsion Water Resources Proc	gram	Printed 6/29/2024
	0.10-7C S/1103001 @ 2022 Hyd	ITOCAD Software Solutions LLC		Page 128
	Time span=0.0	0-72.00 hrs, dt=0.05 hrs, 1441	points	· · · · ·
	Runoff by SCS TR-20 metho Reach routing by Stor-Ind+	d, UH=SCS, Split Pervious/Imp Frans method - Pond routing b	perv. UI as Per bv Stor-Ind met	vious :hod
Subcatchme	ent1S: DA 1: All	Runoff Area=2,045,127 sf 24.4	5% Impervious 7/98 Rupoff=1?	Runoff Depth=3.29"
				JZ.47 CI3 500, 101 CI
Subcatchme	ent1Sa: DA 1: CN w/ IC area	Runoff Area=1,732,396 sf 10.8	1% Impervious	Runoff Depth=2.99"
		1C-17.3 Min CN-7	7/96 Runon-It	14.72 CIS 431,005 CI
Subcatchme	ent1Sb: DA1: Roofs	Runoff Area=132,361 sf 100.00	0% Impervious	Runoff Depth=4.92"
		I C=6.0 min Ch	N=0/98 Runoff=	=16.19 cfs 54,300 cf
Subcatchme	ent1Sc: DA1: Driveways	Runoff Area=180,370 sf 100.00	0% Impervious	Runoff Depth=4.92"
		Tc=6.0 min CN	N=0/98 Runoff=	=22.06 cfs 73,996 cf
Subcatchme	ent2S: DA 2: All	Runoff Area=1,436,627 sf 27.42	2% Impervious	Runoff Depth=3.22"
		Tc=39.8 min CN=	75/98 Runoff=6	60.03 cfs 385,741 cf
Subcatchme	ent2Sa: DA 2: CN w/ IC area	s Runoff Area=1,186,669 sf 12.13	3% Impervious	Runoff Depth=2.86"
		Tc=39.8 min CN=	75/98 Runoff=4	15.14 cfs 283,198 cf
Subcatchme	ent2Sb: DA2: Roofs combin	ed Runoff Area=85.031 sf 100.00	0% Impervious	Runoff Depth=4.92"
• • • • • • • • • • • • • • • • • • • •		Tc=6.0 min Ch	N=0/98 Runoff=	10.40 cfs 34,883 cf
Subcatchme	ant 25c: DA2: Driveways	Runoff Area=164 927 sf 100 00	0% Impervious	Runoff Depth=4 92"
Oubcatchine	Intzoc. DAZ. Driveways	Tc=6.0 min Cl	N=0/98 Runoff=	=20.17 cfs 67,660 cf
Subcatchma	00126. DA 3. All	Runoff Area=1 310 873 ef 33 6	7% Impervious	Runoff Denth=3 37"
Subcatchine	ant 35. DA 5. An	Tc=35.3 min CN=	75/98 Runoff=6	60.54 cfs 367,992 cf
Oubestehme		Dupoff Area = 1 022 107 of 15 0	E0/ Importious	Dupoff Dopth=2.05"
Subcatchme	ent 35a: DA 3: CNS W/ IC	Tc=35.3 min CN=	75/98 Runoff=4	Runon Deptn=2.95 12.92 cfs 254,077 cf
.		1D	00/	
Subcatchme	ent 3Sb: DA3: Roofs combin	ed Runoff Area=92,992 st 100.00 Tc=6.0 min Cl	0% impervious N=0/98 Runoff=	Runoπ Deptn=4.92 ^{**}
		_ "		, ,
Subcatchme	ent3Sc: DA3: Driveways	Runoff Area=184,684 st 100.00 Tc=6 0 min Ct	0% Impervious N=0/98 Runoff=	Runoff Depth=4.92" =22 59 cfs 75 765 cf
Subcatchme	ent4S: DA 4: All	Runoff Area=328,557 sf 20.2	7% Impervious	Runoff Depth=3.05"
			-10/90 1000-	
Subcatchme	ent4Sa: DA 4: CN w/ IC area	s Runoff Area=268,899 sf 2.59	9% Impervious	Runoff Depth=2.64"
		10-10.9 min CN	-10190 KUNOTT	- 14.7 I CIS 59, 103 CI
Subcatchme	ent4Sb: DA4: Roofs combin	edRunoff Area=23,888 sf 100.00	0% Impervious	Runoff Depth=4.92"
		1 c=6.0 min	CN=0/98 Rund	m=2.92 cts 9,800 ct
Subcatchme	ent4Sc: DA4: Driveways	Runoff Area=35,770 sf 100.00	0% Impervious	Runoff Depth=4.92"
		Tc=6.0 min C	CN=0/98 Runof	t=4.38 cfs 14,674 cf

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Reach 1R: INFLOW PIPE 54.0" Round Pipe n=0.013 L=75.0' S=0.0400 '/' Capacity=393.30 cfs Outflow=89.43 cfs 431,808 cf

Reach 2R: OUTFLOW PIPE 48.0" Round Pipe n=0.013 L=60.0' S=0.0200 '/' Capacity=203.14 cfs Outflow=60.42 cfs 423,391 cf

Pond 1P: ROAD RG 175SF W/ UDG Peak Elev=100.18' Storage=65,845 cf Inflow=104.72 cfs 431,885 cf Primary=60.83 cfs 418,093 cf Secondary=28.90 cfs 9,927 cf Tertiary=0.00 cfs 0 cf Outflow=90.10 cfs 428,020 cf

Pond 2P: Basic Rain Garden (infiltration Peak Elev=100.02' Storage=28,940 cf Inflow=16.19 cfs 54,300 cf Discarded=0.44 cfs 50,512 cf Primary=1.00 cfs 3,788 cf Outflow=1.44 cfs 54,300 cf

Pond 3P: Basic Porous Pavement Peak Elev=99.66' Storage=25,705 cf Inflow=22.06 cfs 73,996 cf Discarded=2.09 cfs 73,996 cf Primary=0.00 cfs 0 cf Outflow=2.09 cfs 73,996 cf

Pond 4P: Basin 1 Municipal property 48k Peak Elev=73.71' Storage=61,740 cf Inflow=89.43 cfs 431,870 cf Primary=60.42 cfs 423,391 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=60.42 cfs 423,391 cf

Pond 5P: ROAD RG 175SF W/ UDG Peak Elev=99.91' Storage=38,231 cf Inflow=45.14 cfs 283,198 cf Primary=35.60 cfs 280,088 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=35.60 cfs 280,088 cf

Pond 6P: Basic Rain Garden (infiltration Peak Elev=100.02' Storage=18,030 cf Inflow=10.40 cfs 34,883 cf Discarded=0.27 cfs 31,531 cf Primary=0.86 cfs 3,352 cf Outflow=1.13 cfs 34,883 cf

Pond 7P: Basic Porous Pavement Peak Elev=99.66' Storage=23,505 cf Inflow=20.17 cfs 67,660 cf Discarded=1.91 cfs 67,660 cf Primary=0.00 cfs 0 cf Outflow=1.91 cfs 67,660 cf

Pond 8P: ROAD RG 175SF W/ UDG Peak Elev=99.61' Storage=35,418 cf Inflow=42.92 cfs 254,077 cf Primary=33.26 cfs 250,979 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=33.26 cfs 250,979 cf

Pond 9P: Basic Rain Garden (infiltration Peak Elev=100.05' Storage=17,816 cf Inflow=11.38 cfs 38,149 cf Discarded=0.26 cfs 31,148 cf Primary=2.31 cfs 7,002 cf Outflow=2.57 cfs 38,149 cf

Pond 10P: Basic Porous Pavement Peak Elev=99.66' Storage=26,320 cf Inflow=22.59 cfs 75,765 cf Discarded=2.14 cfs 75,765 cf Primary=0.00 cfs 0 cf Outflow=2.14 cfs 75,765 cf

Pond 11P: ROAD RG 175SF W/ UDG Peak Elev=100.56' Storage=4,511 cf Inflow=14.71 cfs 59,163 cf Primary=4.00 cfs 46,397 cf Secondary=9.77 cfs 12,386 cf Tertiary=0.88 cfs 363 cf Outflow=14.64 cfs 59,147 cf

Pond 12P: Basic Rain Garden (infiltration Peak Elev=100.01' Storage=5,309 cf Inflow=2.92 cfs 9,800 cf Discarded=0.08 cfs 9,257 cf Primary=0.14 cfs 543 cf Outflow=0.22 cfs 9,800 cf

Pond 13P: Basic Porous Pavement Peak Elev=99.66' Storage=5,098 cf Inflow=4.38 cfs 14,674 cf Discarded=0.41 cfs 14,673 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 14,673 cf

 Link 1L: Combined Flows
 Inflow=90.10 cfs
 431,808 cf

 Primary=90.10 cfs
 431,808 cf

 Link 2L: Combined Flows
 Inflow=36.45 cfs
 283,440 cf

 Link 3L: Combined Flows
 Inflow=39.55 cfs
 317,671 cf

Primary=39.55 cfs 317,671 cf

Link 4L: Combined Flows

Inflow=72.17 cfs 451,629 cf Primary=72.17 cfs 451,629 cf

Total Runoff Area = 10,242,368 sf Runoff Volume = 2,795,103 cf Average Runoff Depth = 3.27" 72.62% Pervious = 7,438,492 sf 27.38% Impervious = 2,803,876 sf 20240629_Meadowbrook_HCADNOAA 24-hr C 10-Year_Current Rainfall=5.16"Prepared by Rutgers Cooperative Extension Water Resources ProgramPrinted 6/29/2024HydroCAD® 10.10-7c s/n 03601 © 2022 HydroCAD Software Solutions LLCPage 131

Summary for Subcatchment 1S: DA 1: All

Runoff = 132.47 cfs @ 12.26 hrs, Volume= 560,181 cf, Depth= 3.29" Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description		
*	187,351	98	Impervious		
	676,806	74	>75% Grass cov	Good, HSG	C
	698,470	80	>75% Grass cov	Good, HSG	D
	25,343	73	Woods, Fair, HS	С	
	726	79	Woods, Fair, HS	D	
	41,773	70	Woods, Good, H	ЭC	
	101,927	77	Woods, Good, H	G D	
*	132,361	98	Roofs		
*	180,370	98	Driveways		
	2,045,127	82	Weighted Average		
	1,545,045	77	75.55% Pervious	rea	
	500,082	98	24.45% Impervio	Area	
	Tc Length	Slop	e Velocity Cap	ity Descript	ion
	(min) (feet)	(ft/	ft) (ft/sec)	fs)	
	17.3			Direct E	intry, Direct

Subcatchment 1S: DA 1: All



Summary for Subcatchment 1Sa: DA 1: CN w/ IC areas

Runoff = 104.72 cfs @ 12.26 hrs, Volume= 431,885 cf, Depth= 2.99" Routed to Pond 1P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description					
*	187,351	98	Impervious					
	676,806	74	>75% Gras	s cover, Go	bod, HSG C			
	698,470	80	>75% Gras	>75% Grass cover, Good, HSG D				
	25,343	73	Woods, Fai	Voods, Fair, HSG C				
	726	79	Woods, Fai	r, HSG D				
	41,773	70	Woods, Go	od, HSG C				
	101,927	77	Woods, Go	od, HSG D				
	1,732,396	79	Weighted A	verage				
	1,545,045 77 89.19% Pervious Area							
	187,351	98	10.81% Imp	ervious Are	ea			
-	Tc Length	Slop	e Velocity	Capacity	Description			
(mi	in) (feet)	(ft/	ft) (ft/sec)	(cfs)				
17	.3				Direct Entry, Direct			

Subcatchment 1Sa: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sb: DA1: Roofs combined

Runoff = 16.19 cfs @ 12.13 hrs, Volume= 54,300 cf, Depth= 4.92" Routed to Pond 2P : Basic Rain Garden (infiltration only) 500 sf

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"



Summary for Subcatchment 1Sc: DA1: Driveways (other)

Runoff = 22.06 cfs @ 12.13 hrs, Volume= 73,996 cf, Depth= 4.92" Routed to Pond 3P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description				
*	180,370	98	98 Impervious Drivways (other)				
	180,370	98	100.00% Im	pervious A	Area		
	Tc Length (min) (feet)	Slop (ft/f	e Velocity t) (ft/sec)	Capacity (cfs)	Description		
	6.0	•	· · · · ·		Direct Entry,		

Subcatchment 1Sc: DA1: Driveways (other)



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Summary for Subcatchment 2S: DA 2: All

Runoff = 60.03 cfs @ 12.55 hrs, Volume= 385,741 cf, Depth= 3.22"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	143,894	98	Impervious
	1,270	65	Brush, Good, HSG C
	946,207	74	>75% Grass cover, Good, HSG C
	93,778	80	>75% Grass cover, Good, HSG D
	1,520	72	Woods/grass comb., Good, HSG C
*	85,031	98	Roofs
*	164,927	98	Driveways
	1,436,627	81	Weighted Average
	1,042,775	75	72.58% Pervious Area
	393,852	98	27.42% Impervious Area
	Tc Length	Slop (ft/	be Velocity Capacity Description



Direct Entry, Direct

Subcatchment 2S: DA 2: All



Summary for Subcatchment 2Sa: DA 2: CN w/ IC areas

Runoff = 45.14 cfs @ 12.55 hrs, Volume= 283,198 cf, Depth= 2.86" Routed to Pond 5P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"

3	39.8		Direct Entry, Direct	
(r	nin) (feet)	(ft/	ft) (ft/sec) (cfs)	_
	Tc Length	Slop	be Velocity Capacity Description	
	143,894	98	12.13% Impervious Area	
	1,042,775	75	87.87% Pervious Area	
	1,186,669	77	Weighted Average	
	1,520	72	Woods/grass comb., Good, HSG C	_
	93,778	80	>75% Grass cover, Good, HSG D	
	946,207	74	>75% Grass cover, Good, HSG C	
	1,270	65	Brush, Good, HSG C	
*	143,894	98	Impervious	
	Area (sf)	CN	Description	_

Subcatchment 2Sa: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sb: DA2: Roofs combined

Runoff = 10.40 cfs @ 12.13 hrs, Volume= 34,883 cf, Depth= 4.92" Routed to Pond 6P : Basic Rain Garden (infiltration only) 500SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"

85,0319885,03198100.00% Impervious AreaTcLengthSlopeVelocity(min)(feet)(ft/ft)(ft/sec)(cfs)
85,031 98 100.00% Impervious Area Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
6.0 Direct Entry,
Subcatchment 2Sb: DA2: Roofs combined
Hydrograph
¹⁰ ⁹ ⁹ ⁹ ⁹ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰ ¹⁰
⁸ Runoff Volume=34,883 cf
7 Runoff Depth=4.92"
5 6 CN=0/98
$\tilde{\mathbf{E}}$
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Summary for Subcatchment 2Sc: DA2: Driveways (other)

Runoff = 20.17 cfs @ 12.13 hrs, Volume= 67,660 cf, Depth= 4.92" Routed to Pond 7P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description		
*	164,927	98	Impervious	Drivways ((other)
	164,927	98	100.00% Im	npervious A	Area
	Tc Length (min) (feet)	Slop (ft/f	e Velocity	Capacity (cfs)	Description
	6.0	(14)	<u>-, (: # 000)</u>	(0.0)	Direct Entry,

Subcatchment 2Sc: DA2: Driveways (other)



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Summary for Subcatchment 3S: DA 3: All

Runoff 60.54 cfs @ 12.49 hrs, Volume= 367,992 cf, Depth= 3.37" Routed to Link 4L : Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	163,718	98	Impervious
	4,569	65	Brush, Good, HSG C
	730,392	74	>75% Grass cover, Good, HSG C
	134,518	80	>75% Grass cover, Good, HSG D
*	92,992	98	Roofs
*	184,684	98	Driveways
	1,310,873	83	Weighted Average
	869,479	75	66.33% Pervious Area
	441,394	98	33.67% Impervious Area
	Tc Length (min) (feet)	Slop (ft/	be Velocity Capacity Description ft) (ft/sec) (cfs)

t) (ft/ft) (ft/sec) (cfs	5))
--------------------------	----	---



Direct Entry, Direct

Subcatchment 3S: DA 3: All



Summary for Subcatchment 3Sa: DA 3: CNs w/ IC areas

Runoff = 42.92 cfs @ 12.50 hrs, Volume= 254,077 cf, Depth= 2.95" Routed to Pond 8P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description	_
*	163,718	98	Impervious	
	4,569	65	Brush, Good, HSG C	
	730,392	74	>75% Grass cover, Good, HSG C	
	134,518	80	>75% Grass cover, Good, HSG D	_
	1,033,197	79	Weighted Average	
	869,479	75	84.15% Pervious Area	
	163,718	98	15.85% Impervious Area	
(Tc Length min) (feet)	Slop (ft/	be Velocity Capacity Description ft) (ft/sec) (cfs)	_
	35.3		Direct Entry, Direct	

Subcatchment 3Sa: DA 3: CNs w/ IC areas



Summary for Subcatchment 3Sb: DA3: Roofs combined

Runoff = 11.38 cfs @ 12.13 hrs, Volume= 38,149 cf, Depth= 4.92" Routed to Pond 9P : Basic Rain Garden (infiltration only) 500 SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"

Area	(st) CN	Description	า	
92,	992 98			
92,	992 98	100.00% l	mpervious A	Area
Tc Le min) (ength Slo (feet) (fl	pe Velocity /ft) (ft/sec)	Capacity (cfs)	y Description
6.0			· · · · · ·	Direct Entry,
		Subcat	chment 3	3Sb: DA3: Roofs combined
			Hydro	rograph
	 ⊢ − − <u>− − − − − </u> −	 <u> - -</u> + - + - + - +		
12	11.38	<mark>cfs</mark>		
11				
10 - 10				10-Year _Current Rainfall=5.16
9				
8				Runoff Depth=4.92"
				Tc=6.0 min
8 6				CN=0/98
⊑ 1/- 5-1/-				
4				
2-		$\begin{array}{cccccccccccccccccccccccccccccccccccc$		
0		1/ 16 18 20 22 2/	26 28 30 32 34	

Summary for Subcatchment 3Sc: DA3: Driveways (other)

Runoff = 22.59 cfs @ 12.13 hrs, Volume= 75,765 cf, Depth= 4.92" Routed to Pond 10P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description					
*	184,684	98	- 98 Impervious Drivways (other)					
	184,684	98	38 100.00% Impervious Area					
	Tc Length (min) (feet)	Slop (ft/f	e Velocity t) (ft/sec)	Capacity (cfs)	Description			
	6.0				Direct Entry,			

Subcatchment 3Sc: DA3: Driveways (other)



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Summary for Subcatchment 4S: DA 4: All

Runoff = 20.05 cfs @ 12.26 hrs, Volume= 83,637 cf, Depth= 3.05" Routed to Link 4L : Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description				
*	6,952	98	Impervious				
	208,611	74	>75% Grass	cover, Go	ood, HSG C		
	53,336	80	>75% Grass	cover, Go	ood, HSG D		
*	23,888	98	Roofs				
*	35,770	98	Driveways				
	328,557 80 Weighted Average			erage			
	261,947 75 79.73% Pervious Area 66,610 98 20.27% Impervious Are						
					ea		
(r	Tc Length Slope Velocity Capacity (min) (feet) (ft/ft) (ft/sec) (cfs)			Capacity (cfs)	Description		
	16.9				Direct Entry, Direct		

Subcatchment 4S: DA 4: All



Summary for Subcatchment 4Sa: DA 4: CN w/ IC areas

Runoff = 14.71 cfs @ 12.26 hrs, Volume= 59,163 cf, Depth= 2.64" Routed to Pond 11P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description					
*	6,952	98	98 Impervious					
	208,611	74	>75% Grass cover, Good, HSG C					
53,336 80 >75% Grass cover, Good, HSG D								
	268,899	76	Weighted A	verage				
261,947 75 97.41% Pervious Area					3			
	6,952 98 2.59% Impervious Area				a			
(Tc Length min) (feet)	Slop (ft/	be Velocity ft) (ft/sec)	Capacity (cfs)	Description			
	16.9				Direct Entry, Direct	_		

Subcatchment 4Sa: DA 4: CN w/ IC areas


Summary for Subcatchment 4Sb: DA4: Roofs combined

Runoff = 2.92 cfs @ 12.13 hrs, Volume= 9,800 cf, Depth= 4.92" Routed to Pond 12P : Basic Rain Garden (infiltration only) 500SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"



Summary for Subcatchment 4Sc: DA4: Driveways (other)

Runoff = 4.38 cfs @ 12.13 hrs, Volume= 14,674 cf, Depth= 4.92" Routed to Pond 13P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Ar	ea (sf)	CN E	Description		
*	ć	35,770	98 li	mpervious	Drivways ((other)
		35,770	98 1	00.00% In	npervious A	Area
(mi	Tc n)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	y Description)
6	6.0			, <i>, , , , , , , , , , , , , , , , , , </i>	· · · · · ·	Direct Entry,
				Subcatc	hment 4	Sc: DA4: Driveways (other)
					Hydro	rograph
	ſ		1 29 of o			
	-		4.30 CIS			NOAA 24-hr C
	4-					10-Year _Current Rainfall=5.16"
	-					Runoff Area=35,770 sf Runoff Volume=14,674 cf
	3-					Runoff Depth=4.92"
w (cfs	-					Tc=6.0 min CN=0/98
Ę	2-7					
	-					
	1-1			$-\frac{1}{1}-\frac{1}{1}-\frac{1}{1}-\frac{1}{1}-\frac{1}{1}$	$-\frac{1}{1}$ $-\frac{1}{1}$ $-\frac{1}{1}$ $-\frac{1}{1}$ $-\frac{1}{1}$ $-\frac{1}{1}$ $-\frac{1}{1}$	
	-					
	-					
	0- <mark> </mark> 0	2468	10 12 14 1	6 18 20 22 24	26 28 30 32 34	34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72
					Time	ne (nours)

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Summary for Reach 1R: INFLOW PIPE

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 2,045,127 sf, 24.45% Impervious, Inflow Depth = 2.53" for 10-Year _Current event Inflow = 90.10 cfs @ 12.36 hrs, Volume= 431,808 cf Outflow = 89.43 cfs @ 12.37 hrs, Volume= 431,870 cf, Atten= 1%, Lag= 0.0 min Routed to Pond 4P : Basin 1 Municipal property 48k sf

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Max. Velocity= 19.95 fps, Min. Travel Time= 0.1 min Avg. Velocity = 6.63 fps, Avg. Travel Time= 0.2 min

Peak Storage= 337 cf @ 12.36 hrs Average Depth at Peak Storage= 1.47', Surface Width= 4.22' Bank-Full Depth= 4.50' Flow Area= 15.9 sf, Capacity= 393.30 cfs

54.0" Round Pipe n= 0.013 Concrete pipe, bends & connections Length= 75.0' Slope= 0.0400 '/' Inlet Invert= 75.00', Outlet Invert= 72.00'



20240629 Meadowbrook HCAD

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Reach 1R: INFLOW PIPE



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Summary for Reach 2R: OUTFLOW PIPE

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow A	Area =	2,045,127 sf, 24.45% Impervious	, Inflow Depth = 2.48" for 10-Year _Current event
Inflow	=	60.42 cfs @ 12.52 hrs, Volume=	423,391 cf
Outflow	/ =	60.42 cfs @ 12.52 hrs, Volume=	423,391 cf, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Max. Velocity= 14.09 fps, Min. Travel Time= 0.1 min Avg. Velocity = 3.11 fps, Avg. Travel Time= 0.3 min

Peak Storage= 257 cf @ 12.52 hrs Average Depth at Peak Storage= 1.50', Surface Width= 3.87' Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 203.14 cfs

48.0" Round Pipe n= 0.013 Concrete pipe, bends & connections Length= 60.0' Slope= 0.0200 '/' Inlet Invert= 68.00', Outlet Invert= 66.80'



Inflow 60.42 cfs Outflow 65 60.42 cfs Inflow Area=2,045,127 sf 60 Avg. Flow Depth=1.50' 55 Max Vel=14.09 fps 50 48.0" 45 40 **Round Pipe** (cfs) 35 n=0.013 Flow 30 L=60.0' 25 S=0.0200 '/' 20 Capacity=203.14 cfs 15 10 5 n 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 Time (hours)

Reach 2R: OUTFLOW PIPE

Hydrograph

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Summary for Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	1,732,396 sf,	10.81% In	npervious,	Inflow Depth =	2.99"	for 10-Year	Current event
Inflow	=	104.72 cfs @	12.26 hrs,	Volume=	431,885 c	f		
Outflow	=	90.10 cfs @	12.36 hrs,	Volume=	428,020 c	f, Atten	= 14%, Lag=	6.1 min
Primary	=	60.83 cfs @	12.35 hrs,	Volume=	418,093 c	f		
Routed	to Link	(1L : Combined	d Flows					
Secondary	=	28.90 cfs @	12.36 hrs,	Volume=	9,927 c	f		
Routed	to Link	1L : Combined	d Flows					
Tertiary	=	0.00 cfs @	0.00 hrs,	Volume=	0 c	f		
Routed	to Link	(1L:Combined	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 100.18' @ 12.35 hrs Surf.Area= 30,624 sf Storage= 65,845 cf

Plug-Flow detention time= 24.1 min calculated for 428,020 cf (99% of inflow) Center-of-Mass det. time= 18.3 min (845.5 - 827.2)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1,737 cf	x 45.00 = 78,177 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	Elevation Surf.Area		Void	s Inc.Store	Cum.Store	Wet.Area			
(fee	et)	(sq-ft)	(%) (cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>			
97.7	75	175	0.	0 0	0	175			
98.2	25	175	35.	0 31	31	198			
99.2	25	175	35.	0 61	92	245			
99.5	50	175	25.	0 11	103	257			
100.0	00	175	100.	88 0	190	281			
100.5	51	175	100.	0 89	280	304			
101.7	75	175	100.	0 217	497	363			
Device	Routing	In	vert	Outlet Devices					
#1	Primary	94	.17'	6.0" Round Culve	rt X 45.00 L= 10.0)' Ke= 0.500			
	-			Inlet / Outlet Invert=	94.17'/94.12' S	S= 0.0050 '/' Cc= 0.900			
				n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf					
#2	Device 1	94	.33'	6.0" Round 6" HDPE Underdrain X 45.00 L= 32.0' Ke= 0.500					
				Inlet / Outlet Invert=	: 94.33' / 94.17' S	S= 0.0050 '/' Cc= 0.900			
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area= 0.20 sf			
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	eadth Broad-Cres	ted Rectangular Weir X 45.00			
				Head (feet) 0.20 0	.40 0.60 0.80 1.0	00 1.20 1.40 1.60 1.80 2.00			
				2.50 3.00 3.50					
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77 2.89 2.88			
				2.85 3.07 3.20 3.3	32				

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#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 45.00** 2 End Contraction(s)

Primary OutFlow Max=60.84 cfs @ 12.35 hrs HW=100.18' (Free Discharge) 1=Culvert (Passes 60.84 cfs of 91.08 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 60.84 cfs @ 6.89 fps)

Secondary OutFlow Max=24.87 cfs @ 12.36 hrs HW=100.17' (Free Discharge) —3=Broad-Crested Rectangular Weir (Weir Controls 24.87 cfs @ 1.06 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 2P: Basic Rain Garden (infiltration only) 500 sf

Assumes infiltration through media is non-limiting.

Inflow Area	a =	132,361 sf,	100.00% In	npervious,	Inflow Depth =	4.92"	for 10)-Year	Current event
Inflow	=	16.19 cfs @	12.13 hrs,	Volume=	54,300 c	f		-	_
Outflow	=	1.44 cfs @	13.03 hrs,	Volume=	54,300 c	f, Atten	= 91%	, Lag=	54.4 min
Discarded	=	0.44 cfs @	12.75 hrs,	Volume=	50,512 c	f		•	
Primary	=	1.00 cfs @	13.03 hrs,	Volume=	3,788 c	f			
Routed to Link 1L : Combined Flows									

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.02' @ 13.03 hrs Surf.Area= 38,000 sf Storage= 28,940 cf

Plug-Flow detention time= 586.7 min calculated for 54,300 cf (100% of inflow) Center-of-Mass det. time= 586.6 min (1,334.9 - 748.3)

Volume	Inver	t Avai	il.Stora	ge Storage Descri	ption	
#1	98.25	•	622	cf Custom Stage	e Data (Conic)List	ed below (Recalc)
			622	cf x 76.00 = 47,	273 cf Total Avai	lable Storage
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	Wet.Area
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
98.2	25	374	0.0	0	0	374
99.2	25	374	35.0	131	131	443
99.5	50	374	25.0	23	154	460
100.0	00	500	100.0	218	372	591
100.2	25	500	100.0	125	497	611
100.5	50	500	100.0	125	622	631
Device	Routing	In	vert (Dutlet Devices		
#1	Discarded	98	.25' 0).500 in/hr Exfiltrat	ion over Surface	area
#2	Primary	100	.00' 2	2.0' long x 3.0' brea	adth Broad-Crest	ed Rectangular Weir X 76.00
			H 2 0 2	Head (feet) 0.20 0. 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	40 0.60 0.80 1.0 0 4.50 2.58 2.68 2.67 7 3.07 3.32	0 1.20 1.40 1.60 1.80 2.00 2.65 2.64 2.64 2.68 2.68

Discarded OutFlow Max=0.44 cfs @ 12.75 hrs HW=100.00' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.44 cfs)

Primary OutFlow Max=0.86 cfs @ 13.03 hrs HW=100.02' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 0.86 cfs @ 0.32 fps)



Pond 2P: Basic Rain Garden (infiltration only) 500 sf

Summary for Pond 3P: Basic Porous Pavement (infiltration only)

180,370 sf,100.00% Impervious, Inflow Depth = 4.92" for 10-Year Current event Inflow Area = Inflow 22.06 cfs @ 12.13 hrs, Volume= 73.996 cf = 2.09 cfs @ 11.35 hrs, Volume= 73,996 cf, Atten= 91%, Lag= 0.0 min Outflow = 2.09 cfs @ 11.35 hrs, Volume= Discarded = 73,996 cf Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.66' @ 12.98 hrs Surf.Area= 180,370 sf Storage= 25,705 cf

Plug-Flow detention time= 81.9 min calculated for 73,996 cf (100% of inflow) Center-of-Mass det. time= 81.9 min (830.2 - 748.3)

Volume	Inver	t Avai	I.Storage	Storage Descript	tion	
#1	99.25	5'	81,888 cf	Custom Stage I	Data (Prismatic)Li	sted below (Recalc)
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	
99.2	25	180,370	0.0	0	0	
99.7	75	180,370	35.0	31,565	31,565	
99.8	33	180,370	15.0	2,164	33,729	
100.0)1	180,370	15.0	4,870	38,599	
100.2	25	180,370	100.0	43,289	81,888	
Device	Routing	In	vert Out	let Devices		
#1	Discarded	99	.25' 0.5	00 in/hr Exfiltratio	n over Surface ar	 'ea
#2	Primary	imary 100.00'		D' long x 1.0' brea ad (feet) 0.20 0.40 0 3.00 ef. (English) 2.69 0 3.31 3.32	adth Edge of Poro 0 0.60 0.80 1.00 2.72 2.75 2.85 2.	us Asphalt X 76.00 1.20 1.40 1.60 1.80 2.00 .98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=2.09 cfs @ 11.35 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 2.09 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)



Pond 3P: Basic Porous Pavement (infiltration only)

Summary for Pond 4P: Basin 1 Municipal property 48k sf

[62] Hint: Exceeded Reach 1R OUTLET depth by 0.58' @ 12.70 hrs

Inflow Area	=	2,045,127 sf,	24.45% In	npervious,	Inflow Depth =	2.53"	for 1	0-Year	Current event
Inflow	=	89.43 cfs @	12.37 hrs,	Volume=	431,870 c	f			
Outflow	=	60.42 cfs @	12.52 hrs,	Volume=	423,391 c	f, Atten	= 32%	, Lag=	9.2 min
Primary	=	60.42 cfs @	12.52 hrs,	Volume=	423,391 c	f		-	
Routed	to Read	ch 2R : OUTFI	LOW PIPE						
Secondary	=	0.00 cfs @	0.00 hrs,	Volume=	0 c	f			
Routed	to Read	ch 2R : OUTFI	LOW PIPE						
Tertiary	=	0.00 cfs @	0.00 hrs,	Volume=	0 c	f			
Routed	to Rea	ch 2R : OUTFI	LOW PIPE						

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 73.71' @ 12.52 hrs Surf.Area= 38,837 sf Storage= 61,740 cf

Plug-Flow detention time= 50.0 min calculated for 423,391 cf (98% of inflow) Center-of-Mass det. time= 37.6 min (883.0 - 845.4)

Volume	Inver	t Avail.Sto	rage Storag	e Description			
#1	72.00	206,5	38 cf Custo	m Stage Data (P	rismatic)Listed below (Recalc)		
Elevatio (fee	on S et)	urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)			
72.0 77.0	00 00	33,525 49,090	0 206,538	0 206,538			
Device	Routing	Invert	Outlet Devic	ces			
#1	Primary	72.25'	24.0" Vert. Limited to w	Low Flow Orifice reir flow at low hea	X 6.00 C= 0.600 ads		
#2	Secondary	74.50'	24.0" W x 1 Limited to w	8.0" H Vert. SEC reir flow at low hea	ONDARY OUTLET X 4.00 C= 0.600 ads		
#3	#3 Tertiary 76.75'		60.0" x 60.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads				

Primary OutFlow Max=60.24 cfs @ 12.52 hrs HW=73.70' (Free Discharge) **1=Low Flow Orifice** (Orifice Controls 60.24 cfs @ 4.10 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=72.00' (Free Discharge) 2=SECONDARY OUTLET (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=72.00' (Free Discharge) **-3=Orifice/Grate** (Controls 0.00 cfs)



Time (hours)

Pond 4P: Basin 1 Municipal property 48k sf

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Summary for Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	ı =	1,186,669 sf,	12.13% In	npervious,	Inflow Depth =	2.86"	for 10-	-Year	_Current ever	nt
Inflow	=	45.14 cfs @	12.55 hrs,	Volume=	283,198 c	f				
Outflow	=	35.60 cfs @	12.80 hrs,	Volume=	280,088 c	f, Atten	= 21%,	Lag=	14.8 min	
Primary	=	35.60 cfs @	12.80 hrs,	Volume=	280,088 c	f				
Routed	to Link	2L: Combined	l Flows							
Secondary	=	0.00 cfs @	0.00 hrs,	Volume=	0 c	f				
Routed	to Link	2L: Combined	l Flows							
Tertiary	=	0.00 cfs @	0.00 hrs,	Volume=	0 c	f				
Routed	to Link	2L : Combined	l Flows							

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 99.91' @ 12.80 hrs Surf.Area= 18,374 sf Storage= 38,231 cf

Plug-Flow detention time= 25.5 min calculated for 279,894 cf (99% of inflow) Center-of-Mass det. time= 18.9 min (868.5 - 849.6)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 727 of	x 27.00 - 46.006 of Total Available Storage

 $1,737 \text{ cf} \times 27.00 = 46,906 \text{ cf}$ Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	ls Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%	(cubic-feet)	(cubic-feet)	(sq-ft)	
97.7	75	175	0.	0 0	0	175	
98.2	25	175	35.	0 31	31	198	
99.2	25	175	35.	0 61	92	245	
99.5	50	175	25.	0 11	103	257	
100.0	00	175	100.	0 88	190	281	
100.5	51	175	100.	0 89	280	304	
101.7	75	175	100.	0 217	497	363	
Device	Routing	In	vert	Outlet Devices			
#1	Primary	94	.17'	6.0" Round Culver	rt X 27.00 L= 10.0)' Ke= 0.500	
	-			Inlet / Outlet Invert=	94.17'/94.12' S	S= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	27.00 L= 32.0' K	e= 0.500
				Inlet / Outlet Invert=	94.33' / 94.17' S	S= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	adth Broad-Cres	ted Rectangular	Weir X 27.00
				Head (feet) 0.20 0	.40 0.60 0.80 1.0	00 1.20 1.40 1.6	0 1.80 2.00
				2.50 3.00 3.50			
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88
				2.85 3.07 3.20 3.3	32		

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#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 27.00** 2 End Contraction(s)

Primary OutFlow Max=35.59 cfs @ 12.80 hrs HW=99.91' (Free Discharge) 1=Culvert (Passes 35.59 cfs of 53.30 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 35.59 cfs @ 6.71 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) —3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 6P: Basic Rain Garden (infiltration only) 500SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	85,031 sf,	100.00% Imp	pervious,	Inflow Depth =	4.92"	for 10-Ye	ar Current event
Inflow	=	10.40 cfs @	12.13 hrs, \	/olume=	34,883 c	f		_
Outflow	=	1.13 cfs @	12.84 hrs, \	/olume=	34,883 c	f, Atten	= 89%, La	g= 43.0 min
Discarded	=	0.27 cfs @	12.55 hrs, \	/olume=	31,531 c	f		-
Primary	=	0.86 cfs @	12.84 hrs, \	/olume=	3,352 c	f		
Routed	to Link	2L : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.02' @ 12.84 hrs Surf.Area= 23,500 sf Storage= 18,030 cf

Plug-Flow detention time= 572.1 min calculated for 34,859 cf (100% of inflow) Center-of-Mass det. time= 572.5 min (1,320.8 - 748.3)

Volume	Invert	t Avai	il.Stora	ge Storage Desci	ription		
#1	98.25	1	622	cf Custom Stag	e Data (Conic)List	ed below (Recalc)	
			622	cf x 47.00 = 29	,235 cf Total Ava	lable Storage	
Elevatio	on S	urf.Area	Voids	Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>	
98.2	25	374	0.0	0	0	374	
99.2	25	374	35.0	131	131	443	
99.5	50	374	25.0	23	154	460	
100.0	00	500	100.0	218	372	591	
100.2	25	500	100.0	125	497	611	
100.5	50	500	100.0	125	622	631	
Device	Routing	In	vert (Outlet Devices			
#1	Discarded	98	.25' (0.500 in/hr Exfiltra	tion over Surface	area	
#2	Primary	100	0.00' 2 	2.0' long x 3.0' bre Head (feet) 0.20 0 2.50 3.00 3.50 4.0 Coef. (English) 2.4 2.72 2.81 2.92 2.9	eadth Broad-Cres .40 0.60 0.80 1.0 00 4.50 4 2.58 2.68 2.67 97 3.07 3.32	ted Rectangular Weir X 47 00 1.20 1.40 1.60 1.80 2. 2.65 2.64 2.64 2.68 2.68	.00 00 }

Discarded OutFlow Max=0.27 cfs @ 12.55 hrs HW=100.00' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.27 cfs)

Primary OutFlow Max=0.81 cfs @ 12.84 hrs HW=100.02' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 0.81 cfs @ 0.37 fps)



Pond 6P: Basic Rain Garden (infiltration only) 500SF

Summary for Pond 7P: Basic Porous Pavement (infiltration only)

164,927 sf,100.00% Impervious, Inflow Depth = 4.92" for 10-Year Current event Inflow Area = Inflow 20.17 cfs @ 12.13 hrs, Volume= 67.660 cf = 1.91 cfs @ 11.35 hrs, Volume= 67,660 cf, Atten= 91%, Lag= 0.0 min Outflow = 1.91 cfs @ 11.35 hrs, Volume= Discarded = 67.660 cf Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.66' @ 12.98 hrs Surf.Area= 164,927 sf Storage= 23,505 cf

Plug-Flow detention time= 81.9 min calculated for 67,660 cf (100% of inflow) Center-of-Mass det. time= 81.9 min (830.2 - 748.3)

Volume	Inver	rt Avai	I.Storage	e Storage Descr	iption	
#1	99.25	5'	74,877 c	f Custom Stage	e Data (Prismatic	Listed below (Recalc)
Elevatic (fee 99.2 99.7 99.8 100.0	on 5 25 75 33 01	Surf.Area (sq-ft) 164,927 164,927 164,927 164,927	Voids (%) 0.0 35.0 15.0 15.0	Inc.Store (cubic-feet) 0 28,862 1,979 4,453 20,582	Cum.Store (cubic-feet) 0 28,862 30,841 35,294 74,977	
100.2	25	164,927	100.0	39,582	74,877	
Device	Routing	In	vert Ou	utlet Devices		
#1 #2	Discarded Primary	I 99 100	.25' 0. .00' 15 He 2. Co 3.	500 in/hr Exfiltrat 5.0' long x 1.0' br ead (feet) 0.20 0. 50 3.00 bef. (English) 2.69 30 3.31 3.32	ion over Surface eadth Edge of Po 40 0.60 0.80 1.0 9 2.72 2.75 2.85	area brous Asphalt X 76.00 00 1.20 1.40 1.60 1.80 2.00 2.98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=1.91 cfs @ 11.35 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 1.91 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)



Pond 7P: Basic Porous Pavement (infiltration only)

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Summary for Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

1,033,197 sf, 15.85% Impervious,	Inflow Depth = 2.95" for 10-Year _Current event
42.92 cfs @ 12.50 hrs, Volume=	254,077 cf
33.26 cfs @ 12.73 hrs, Volume=	250,979 cf, Atten= 23%, Lag= 13.9 min
33.26 cfs @ 12.73 hrs, Volume=	250,979 cf
ink 3L : Combined Flows	
0.00 cfs @ 0.00 hrs, Volume=	0 cf
ink 3L : Combined Flows	
0.00 cfs @ 0.00 hrs, Volume=	0 cf
ink 3L : Combined Flows	
	1,033,197 sf, 15.85% Impervious, 42.92 cfs @ 12.50 hrs, Volume= 33.26 cfs @ 12.73 hrs, Volume= 33.26 cfs @ 12.73 hrs, Volume= ink 3L : Combined Flows 0.00 cfs @ 0.00 hrs, Volume= ink 3L : Combined Flows 0.00 cfs @ 0.00 hrs, Volume= ink 3L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 99.61' @ 12.73 hrs Surf.Area= 17,694 sf Storage= 35,418 cf

Plug-Flow detention time= 27.4 min calculated for 250,979 cf (99% of inflow) Center-of-Mass det. time= 19.6 min (860.2 - 840.5)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 727 of	x 26.00 = 45.160 of Total Available Storage

 $1,737 \text{ cf} \times 26.00 = 45,169 \text{ cf}$ Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	s Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%	b) (cubic-feet)	(cubic-feet)	(sq-ft)	
97.7	75	175	0.	0 0	0	175	
98.2	25	175	35.	0 31	31	198	
99.2	25	175	35.	0 61	92	245	
99.5	50	175	25.	0 11	103	257	
100.0	00	175	100.	0 88	190	281	
100.5	51	175	100.	0 89	280	304	
101.7	75	175	100.	0 217	497	363	
Device	Routing	In	vert	Outlet Devices			
#1	Primary	94	.17'	6.0" Round Culver	rt X 26.00 L= 10.0)' Ke= 0.500	
	-			Inlet / Outlet Invert=	94.17'/94.12' S	S= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#2	Device 1	94	.33'	6.0" Round 6" HDI	PE Underdrain X	26.00 L= 32.0' K	e= 0.500
				Inlet / Outlet Invert=	94.33' / 94.17' S	S= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	adth Broad-Cres	ted Rectangular	Weir X 26.00
				Head (feet) 0.20 0.	.40 0.60 0.80 1.0	00 1.20 1.40 1.6	0 1.80 2.00
				2.50 3.00 3.50			
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88
				2.85 3.07 3.20 3.3	32		

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#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 26.00** 2 End Contraction(s)

Primary OutFlow Max=33.20 cfs @ 12.73 hrs HW=99.59' (Free Discharge) 1=Culvert (Passes 33.20 cfs of 49.73 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 33.20 cfs @ 6.50 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) —3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 9P: Basic Rain Garden (infiltration only) 500 SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	92,992 sf,	100.00% Impervi	ious, Inflow D)epth =	4.92"	for 10-	Year	Current event
Inflow	=	11.38 cfs @	12.13 hrs, Volur	ne= 3	38,149 c	f		-	-
Outflow	=	2.57 cfs @	12.43 hrs, Volur	ne= 3	38,149 c	f, Atten	= 77%,	Lag=	18.4 min
Discarded	=	0.26 cfs @	12.30 hrs, Volur	ne= 3	31,148 c	f		•	
Primary	=	2.31 cfs @	12.43 hrs, Volur	ne=	7,002 c	f			
Routed	to Link	3L : Combine	d Flows						

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.05' @ 12.43 hrs Surf.Area= 22,500 sf Storage= 17,816 cf

Plug-Flow detention time= 524.7 min calculated for 38,149 cf (100% of inflow) Center-of-Mass det. time= 524.6 min (1,272.9 - 748.3)

Volume	Inver	t Avai	il.Stora	ge Storage Descri	iption	
#1	98.25	•	622	cf Custom Stage	e Data (Conic)List	ed below (Recalc)
			622	cf x $45.00 = 27$,	,991 cf Total Avai	lable Storage
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	Wet.Area
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
98.2	25	374	0.0	0	0	374
99.2	25	374	35.0	131	131	443
99.5	50	374	25.0	23	154	460
100.0	00	500	100.0	218	372	591
100.2	25	500	100.0	125	497	611
100.5	50	500	100.0	125	622	631
Device	Routing	In	vert C	Dutlet Devices		
#1	Discarded	98	.25' 0	.500 in/hr Exfiltrat	ion over Surface	area
#2	Primary	100	.00' 2	2.0' long x 3.0' brea	adth Broad-Crest	ed Rectangular Weir X 45.00
	-		H 2 0 2	Head (feet) 0.20 0.2 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	40 0.60 0.80 1.0 0 4.50 4 2.58 2.68 2.67 7 3.07 3.32	0 1.20 1.40 1.60 1.80 2.00 2.65 2.64 2.64 2.68 2.68

Discarded OutFlow Max=0.26 cfs @ 12.30 hrs HW=100.03' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.26 cfs)

Primary OutFlow Max=2.28 cfs @ 12.43 hrs HW=100.05' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 2.28 cfs @ 0.53 fps)



Pond 9P: Basic Rain Garden (infiltration only) 500 SF

Summary for Pond 10P: Basic Porous Pavement (infiltration only)

184,684 sf,100.00% Impervious, Inflow Depth = 4.92" for 10-Year Current event Inflow Area = Inflow 22.59 cfs @ 12.13 hrs, Volume= 75.765 cf = 2.14 cfs @ 11.35 hrs, Volume= 75,765 cf, Atten= 91%, Lag= 0.0 min Outflow = 2.14 cfs @ 11.35 hrs, Volume= 75,765 cf Discarded = 0.00 cfs @ 0.00 hrs, Volume= Primary = 0 cf Routed to Link 3L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.66' @ 12.98 hrs Surf.Area= 184,684 sf Storage= 26,320 cf

Plug-Flow detention time= 81.9 min calculated for 75,765 cf (100% of inflow) Center-of-Mass det. time= 81.9 min (830.2 - 748.3)

Volume	Inver	rt Ava	il.Storage	Storage Descrip	otion	
#1	99.25	5'	83,847 cf	Custom Stage	Data (Prismatic)L	isted below (Recalc)
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	
99.2	25	184,684	0.0	0	0	
99.7	75	184,684	35.0	32,320	32,320	
99.8	33	184,684	15.0	2,216	34,536	
100.0)1	184,684	15.0	4,986	39,522	
100.2	25	184,684	100.0	44,324	83,847	
Device	Routing	In	vert Ou	tlet Devices		
#1	Discarded	I 99	.25' 0.5	00 in/hr Exfiltratio	on over Surface a	rea
#2	Primary	100	0.00' 15 . He 2.5 Co 3.3	0' long x 1.0' bre ad (feet) 0.20 0.4 0 3.00 ef. (English) 2.69 0 3.31 3.32	adth Edge of Por 0 0.60 0.80 1.00 2.72 2.75 2.85 2	ous Asphalt X 76.00 1.20 1.40 1.60 1.80 2.00 2.98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=2.14 cfs @ 11.35 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 2.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)



Pond 10P: Basic Porous Pavement (infiltration only)

20240629_Meadowbrook_HCADNOAA 24-hr C10-Year_Current Rainfall=5.16"Prepared by Rutgers Cooperative Extension Water Resources ProgramPrinted6/29/2024HydroCAD® 10.10-7cs/n 03601© 2022 HydroCAD Software Solutions LLCPage 176

Summary for Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

2.59% Impervious, Inflow Depth = 2.64" for 10-Year _Current eve	vent
2.26 hrs, Volume= 59,163 cf	
2.26 hrs, Volume= 59,147 cf, Atten= 0%, Lag= 0.1 min	
2.26 hrs, Volume= 46,397 cf	
lows	
2.26 hrs, Volume= 12,386 cf	
lows	
2.26 hrs, Volume= 363 cf	
lows	
2.26 hrs, Volume= 39,147 cf, Atten= 0 %, Lag= 0.1 min 2.26 hrs, Volume= 46,397 cf Flows 12,386 cf Flows 363 cf Flows 363 cf	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 100.56' @ 12.26 hrs Surf.Area= 1,997 sf Storage= 4,511 cf

Plug-Flow detention time= 12.7 min calculated for 59,147 cf (100% of inflow) Center-of-Mass det. time= 11.7 min (854.3 - 842.5)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	374 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 615 of	x 2 00 - 4 844 of Total Available Storage

 $1,615 \text{ cf} \times 3.00 = 4,844 \text{ cf}$ Total Available Storage

Storage Group A created with Chamber Wizard

Elevation		Surf.Area	Void	s Inc.Store	Cum.Store	Wet.Area		
(fee	et)	(sq-ft)	(%) (cubic-feet)	(cubic-feet)	(sq-ft)		
97.7	75	160	0.0) 0	0	160		
98.25		160	35.0) 28	28	182		
99.2	25	160	35.0) 56	84	227		
99.5	50	160	25.) 10	94	238		
100.0	00	160	100.) 80	174	261		
100.5	51	160	100.) 82	256	284		
101.0	00	160	100.) 78	334	306		
101.2	25	160	100.) 40	374	317		
Device	Routing	In	vert	Outlet Devices				
#1	Primary	94	1.17'	6.0" Round Culve	rt X 3.00 L= 10.0	' Ke= 0.500		
,				Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050		S= 0.0050 '/' Cc=	0.900	
n= 0.020 Corrugated PE, c			ed PE, corrugated	interior, Flow Are	a= 0.20 sf			
#2 Device 1 94.33' 6.0" Ro		6.0" Round 6" HD	" Round 6" HDPE Underdrain X 3.00 L= 36.0' Ke= 0.500					
				Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0044 '/' Cc= 0.900				
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf	
#3	Seconda	ry 100).00'	3.0' long x 2.0' bre	eadth Broad-Cres	sted Rectangular	Weir X 3.00	
				Head (feet) 0.20 0	.40 0.60 0.80 1.	00 1.20 1.40 1.6	0 1.80 2.00	
				2.50 3.00 3.50				
				Coef. (English) 2.5	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88	

20240629_Meadowbrook_HCADNOAA 24-hr C 10-Year_Current Rainfall=5.16"Prepared by Rutgers Cooperative Extension Water Resources ProgramPrinted 6/29/2024HydroCAD® 10.10-7c s/n 03601 © 2022 HydroCAD Software Solutions LLCPage 177

 #4
 Tertiary
 100.50'
 2.85
 3.07
 3.20
 3.32

 #4
 Tertiary
 100.50'
 6.0' long Sharp-Crested Rectangular Weir X 3.00
 2 End Contraction(s)

Primary OutFlow Max=3.99 cfs @ 12.26 hrs HW=100.55' (Free Discharge) 1=Culvert (Passes 3.99 cfs of 6.27 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 3.99 cfs @ 6.78 fps)

Secondary OutFlow Max=9.67 cfs @ 12.26 hrs HW=100.55' (Free Discharge) —3=Broad-Crested Rectangular Weir (Weir Controls 9.67 cfs @ 1.94 fps)

Tertiary OutFlow Max=0.72 cfs @ 12.26 hrs HW=100.55' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Weir Controls 0.72 cfs @ 0.76 fps)

Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 12P: Basic Rain Garden (infiltration only) 500SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	23,888 sf,	100.00% In	npervious,	Inflow Depth =	4.92"	for 10-Yea	ar Current event
Inflow	=	2.92 cfs @	12.13 hrs,	Volume=	9,800 c	f		_
Outflow	=	0.22 cfs @	13.16 hrs,	Volume=	9,800 c	f, Atten	= 92%, Lag	g= 62.3 min
Discarded	=	0.08 cfs @	12.90 hrs,	Volume=	9,257 c	f		-
Primary	=	0.14 cfs @	13.16 hrs,	Volume=	543 c	f		
Routed	to Link 3	3L : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.01' @ 13.16 hrs Surf.Area= 7,000 sf Storage= 5,309 cf

Plug-Flow detention time= 594.3 min calculated for 9,800 cf (100% of inflow) Center-of-Mass det. time= 594.3 min (1,342.6 - 748.3)

Volume	Inve	rt Ava	il.Storag	ge Storage Descri	iption			
#1	98.2	5'	622	cf Custom Stage	e Data (Conic)Liste	ed below (Recalc)		
			622	cf x $14.00 = 8,7$	08 cf Total Availa	ble Storage		
Elevatio	on s	Surf.Area	Voids	Inc.Store	Cum.Store	Wet.Area		
(166	et)	(sq-it)	(%)	(cubic-leet)	(cubic-leet)	<u>(sq-it)</u>		
98.2	25	374	0.0	0	0	374		
99.2	25	374	35.0	131	131	443		
99.	50	374	25.0	23	154	460		
100.0	00	500	100.0	218	372	591		
100.2	25	500	100.0	125	497	611		
100.	50	500	100.0	125	622	631		
Device	Routing	In	vert C	Outlet Devices				
#1	#1 Discarded 98		3.25' 0	0.500 in/hr Exfiltration over Surface area				
#2 Primary		100).00' 2	.0' long x 3.0' bre	adth Broad-Crest	ed Rectangular Weir X 14.00		
He		ead (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00						
			2	50 3.00 3.50 4.0	0 4.50			
			C	Coef. (English) 2.44	2.58 2.68 2.67	2.65 2.64 2.64 2.68 2.68		
			2		7 3.07 3.32			

Discarded OutFlow Max=0.08 cfs @ 12.90 hrs HW=100.01' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.12 cfs @ 13.16 hrs HW=100.01' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 0.12 cfs @ 0.29 fps)


Pond 12P: Basic Rain Garden (infiltration only) 500SF

Summary for Pond 13P: Basic Porous Pavement (infiltration only)

35,770 sf,100.00% Impervious, Inflow Depth = 4.92" for 10-Year Current event Inflow Area = Inflow 4.38 cfs @ 12.13 hrs, Volume= 14.674 cf = 0.41 cfs @ 11.35 hrs, Volume= 14,673 cf, Atten= 91%, Lag= 0.0 min Outflow = 0.41 cfs @ 11.35 hrs, Volume= Discarded = 14.673 cf Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf Routed to Link 3L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 99.66' @ 12.98 hrs Surf.Area= 35,770 sf Storage= 5,098 cf

Plug-Flow detention time= 82.0 min calculated for 14,662 cf (100% of inflow) Center-of-Mass det. time= 81.8 min (830.1 - 748.3)

Volume	Invert	t Avai	il.Storage	Storage Descrip	tion	
#1	99.25	•	16,240 cf	Custom Stage	Data (Prismatic)L	isted below (Recalc)
Elevatio (fee	on S et)	urf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
99.2	25	35,770	0.0	0	0	
99.7	' 5	35,770	35.0	6,260	6,260	
99.8	33	35,770	15.0	429	6,689	
100.0)1	35,770	15.0	966	7,655	
100.2	25	35,770	100.0	8,585	16,240	
Device	Routing	In	vert Out	let Devices		
#1	Discarded	99	.25' 0.5	00 in/hr Exfiltratio	on over Surface a	irea
#2	Primary	100	0.00' 15. Hea 2.5 Coo 3.3	0' long x 1.0' bre ad (feet) 0.20 0.4 0 3.00 ef. (English) 2.69 0 3.31 3.32	adth Edge of Por 0 0.60 0.80 1.00 2.72 2.75 2.85 2	ous Asphalt X 76.00 1.20 1.40 1.60 1.80 2.00 2.98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=0.41 cfs @ 11.35 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)



Pond 13P: Basic Porous Pavement (infiltration only)

Summary for Link 1L: Combined Flows

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



Link 1L: Combined Flows

Summary for Link 2L: Combined Flows

Inflow A	Area =	1,436,627 sf, 27.42% Impervious, Inflow Depth = 2.37"	for 10-Year Current event
Inflow	=	36.45 cfs @ 12.80 hrs, Volume= 283,440 cf	
Primar	y =	36.45 cfs @ 12.80 hrs, Volume= 283,440 cf, Atte	en= 0%, Lag= 0.0 min

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

Link 2L: Combined Flows



Summary for Link 3L: Combined Flows

Inflow <i>i</i>	Area =	1,639,430 sf, 30.99	% Impervious,	Inflow Depth =	2.33"	for 10-Year	Current event
Inflow	=	39.55 cfs @ 12.69 h	rs, Volume=	317,671 cf	f		
Primar	y =	39.55 cfs @ 12.69 h	rs, Volume=	317,671 cf	f, Atten=	= 0%, Lag= 0).0 min

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

Link 3L: Combined Flows



Summary for Link 4L: Combined Flows

Inflow A	Area =	1,639,430 sf, 30.99% Impervious	, Inflow Depth = 3.31" for 10-Year _Current event
Inflow	=	72.17 cfs @ 12.44 hrs, Volume	451,629 cf
Primar	y =	72.17 cfs @ 12.44 hrs, Volume	451,629 cf, Atten= 0%, Lag= 0.0 min

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

Link 4L: Combined Flows



20240629_Meadowbrook_HCAD	NOAA 24-hr C 10-Yea	r_2100 Rainfall=6.21"
Prepared by Rutgers Cooperative Extended HydroCAD® 10.10-7c s/n 03601 © 2022 Hydro	ension Water Resources Program	Printed 6/29/2024 Page 188
Runoff by SCS TR-20 metho Reach routing by Stor-Ind+	00-72.00 hrs, dt=0.05 hrs, 1441 points od, UH=SCS, Split Pervious/Imperv. UI a Trans method . Pond routing by Stor-In	s Pervious d method
Subcatchment1S: DA 1: All	Runoff Area=2,045,127 sf 24.45% Imperv Tc=17.3 min CN=77/98 Run	ious Runoff Depth=4.23" off=170.37 cfs 720,497 cf
Subcatchment1Sa: DA 1: CN w/ IC area	s Runoff Area=1,732,396 sf 10.81% Imperv Tc=17.3 min CN=77/98 Run	ious Runoff Depth=3.91" off=136.89 cfs 564,871 cf
Subcatchment1Sb: DA1: Roofs	Runoff Area=132,361 sf 100.00% Imperv Tc=6.0 min CN=0/98 R	ious Runoff Depth=5.97" unoff=19.52 cfs 65,868 cf
Subcatchment1Sc: DA1: Driveways	Runoff Area=180,370 sf 100.00% Imperv Tc=6.0 min CN=0/98 R	ious Runoff Depth=5.97" unoff=26.59 cfs 89,759 cf
Subcatchment 2S: DA 2: All	Runoff Area=1,436,627 sf 27.42% Imperv Tc=39.8 min CN=75/98 Ru	ious Runoff Depth=4.15" noff=77.59 cfs 496,811 cf
Subcatchment 2Sa: DA 2: CN w/ IC area	s Runoff Area=1,186,669 sf 12.13% Imperv Tc=39.8 min CN=75/98 Ru	ious Runoff Depth=3.77" noff=59.61 cfs 372,423 cf
Subcatchment2Sb: DA2: Roofs combin	ed Runoff Area=85,031 sf 100.00% Imperv Tc=6.0 min CN=0/98 R	ious Runoff Depth=5.97" unoff=12.54 cfs 42,315 cf
Subcatchment2Sc: DA2: Driveways	Runoff Area=164,927 sf 100.00% Imperv Tc=6.0 min CN=0/98 R	ious Runoff Depth=5.97" unoff=24.32 cfs 82,074 cf
Subcatchment 3S: DA 3: All	Runoff Area=1,310,873 sf 33.67% Imperv Tc=35.3 min CN=75/98 Ru	ious Runoff Depth=4.31" noff=77.61 cfs 470,478 cf
Subcatchment3Sa: DA 3: CNs w/ IC	Runoff Area=1,033,197 sf 15.85% Imperv Tc=35.3 min CN=75/98 Ru	ious Runoff Depth=3.86" noff=56.36 cfs 332,297 cf
Subcatchment3Sb: DA3: Roofs combin	edRunoff Area=92,992 sf 100.00% Imperv Tc=6.0 min CN=0/98 R	ious Runoff Depth=5.97" unoff=13.71 cfs 46,276 cf
Subcatchment3Sc: DA3: Driveways	Runoff Area=184,684 sf 100.00% Imperv Tc=6.0 min CN=0/98 R	ious Runoff Depth=5.97" unoff=27.23 cfs 91,905 cf
Subcatchment4S: DA 4: All	Runoff Area=328,557 sf 20.27% Imperv Tc=16.9 min CN=75/98 Ru	ious Runoff Depth=3.97" noff=26.11 cfs 108,713 cf
Subcatchment4Sa: DA 4: CN w/ IC area	s Runoff Area=268,899 sf 2.59% Imperv Tc=16.9 min CN=75/98 R	ious Runoff Depth=3.53" unoff=19.67 cfs 79,025 cf
Subcatchment4Sb: DA4: Roofs combin	ed Runoff Area=23,888 sf 100.00% Imperv Tc=6.0 min CN=0/98 I	ious Runoff Depth=5.97" Runoff=3.52 cfs 11,888 cf
Subcatchment4Sc: DA4: Driveways	Runoff Area=35,770 sf 100.00% Imperv Tc=6.0 min CN=0/98 I	ious Runoff Depth=5.97" Runoff=5.27 cfs 17,800 cf

 Reach 1R: INFLOW PIPE
 Avg. Flow Depth=1.83'
 Max Vel=22.45 fps
 Inflow=136.43 cfs
 575,661 cf

 54.0"
 Round Pipe
 n=0.013
 L=75.0'
 S=0.0400 '/'
 Capacity=393.30 cfs
 Outflow=136.05 cfs
 575,903 cf

Reach 2R: OUTFLOW PIPE 48.0" Round Pipe n=0.013 L=60.0' S=0.0200 '/' Capacity=203.14 cfs Outflow=90.79 cfs 567,420 cf

Pond 1P: ROAD RG 175SF W/ UDG Peak Elev=100.34' Storage=67,108 cf Inflow=136.89 cfs 564,871 cf Primary=61.71 cfs 511,057 cf Secondary=72.38 cfs 51,823 cf Tertiary=0.00 cfs 0 cf Outflow=134.12 cfs 562,880 cf

Pond 2P: Basic Rain Garden (infiltration Peak Elev=100.05' Storage=30,251 cf Inflow=19.52 cfs 65,868 cf Discarded=0.44 cfs 53,087 cf Primary=4.43 cfs 12,781 cf Outflow=4.87 cfs 65,868 cf

Pond 3P: Basic Porous Pavement Peak Elev=99.83' Storage=33,836 cf Inflow=26.59 cfs 89,759 cf Discarded=2.09 cfs 89,759 cf Primary=0.00 cfs 0 cf Outflow=2.09 cfs 89,759 cf

Pond 4P: Basin 1 Municipal property Peak Elev=74.25' Storage=83,362 cf Inflow=136.05 cfs 575,903 cf Primary=90.81 cfs 567,420 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=90.81 cfs 567,420 cf

Pond 5P: ROAD RG 175SF W/ UDG Peak Elev=100.23' Storage=39,716 cf Inflow=59.61 cfs 372,423 cf Primary=36.65 cfs 347,494 cf Secondary=25.32 cfs 21,928 cf Tertiary=0.00 cfs 0 cf Outflow=62.17 cfs 369,422 cf

Pond 6P: Basic Rain Garden (infiltration Peak Elev=100.06' Storage=18,920 cf Inflow=12.54 cfs 42,315 cf Discarded=0.27 cfs 33,114 cf Primary=3.50 cfs 9,200 cf Outflow=3.78 cfs 42,315 cf

Pond 7P: Basic Porous Pavement Peak Elev=99.83' Storage=30,939 cf Inflow=24.32 cfs 82,074 cf Discarded=1.91 cfs 82,074 cf Primary=0.00 cfs 0 cf Outflow=1.91 cfs 82,074 cf

Pond 8P: ROAD RG 175SF W/ UDG Peak Elev=100.22' Storage=38,190 cf Inflow=56.36 cfs 332,297 cf Primary=35.25 cfs 313,710 cf Secondary=20.76 cfs 15,638 cf Tertiary=0.00 cfs 0 cf Outflow=56.03 cfs 329,348 cf

Pond 9P: Basic Rain Garden (infiltration Peak Elev=100.10' Storage=18,969 cf Inflow=13.71 cfs 46,276 cf Discarded=0.26 cfs 32,645 cf Primary=6.86 cfs 13,631 cf Outflow=7.12 cfs 46,276 cf

Pond 10P: Basic Porous Pavement Peak Elev=99.83' Storage=34,646 cf Inflow=27.23 cfs 91,905 cf Discarded=2.14 cfs 91,905 cf Primary=0.00 cfs 0 cf Outflow=2.14 cfs 91,905 cf

Pond 11P: ROAD RG 175SF W/ UDG Peak Elev=100.65' Storage=4,555 cf Inflow=19.67 cfs 79,025 cf Primary=4.03 cfs 56,925 cf Secondary=12.23 cfs 19,374 cf Tertiary=3.33 cfs 2,210 cf Outflow=19.58 cfs 78,509 cf

Pond 12P: Basic Rain Garden (infiltration Peak Elev=100.05' Storage=5,540 cf Inflow=3.52 cfs 11,888 cf Discarded=0.08 cfs 9,733 cf Primary=0.71 cfs 2,154 cf Outflow=0.79 cfs 11,888 cf

Pond 13P: Basic Porous Pavement Peak Elev=99.83' Storage=6,710 cf Inflow=5.27 cfs 17,800 cf Discarded=0.41 cfs 17,800 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 17,800 cf

Inflow=136.43 cfs 575,661 cf Primary=136.43 cfs 575,661 cf

Inflow=64.50 cfs 378,622 cf Primary=64.50 cfs 378,622 cf

Inflow=68.07 cfs 423,641 cf Primary=68.07 cfs 423,641 cf

Link 3L: Combined Flows

Link 1L: Combined Flows

Link 2L: Combined Flows

Link 4L: Combined Flows

Inflow=92.76 cfs 579,191 cf Primary=92.76 cfs 579,191 cf

Total Runoff Area = 10,242,368 sf Runoff Volume = 3,593,000 cf Average Runoff Depth = 4.21" 72.62% Pervious = 7,438,492 sf 27.38% Impervious = 2,803,876 sf

Summary for Subcatchment 1S: DA 1: All

Runoff = 170.37 cfs @ 12.26 hrs, Volume= 720,497 cf, Depth= 4.23" Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description			
*	187,351	98	Impervious			
	676,806	74	>75% Grass o	over, Go	bod, HSG C	
	698,470	80	>75% Grass o	over, Go	ood, HSG D	
	25,343	73	Woods, Fair, I	HSG C		
	726	79	Woods, Fair, I	HSG D		
	41,773	70	Woods, Good	, HSG C		
	101,927	77	Woods, Good	, HSG D		
*	132,361	98	Roofs			
*	180,370	98	Driveways			
	2,045,127	82	Weighted Ave	rage		
	1,545,045	77	75.55% Pervic	ous Area		
	500,082	98	24.45% Imper	vious Are	ea	
	Tc Length	Slop	be Velocity C	Capacity	Description	
	(min) (feet)	(ft/	ft) (ft/sec)	(cfs)		
	17.3				Direct Entry, Direct	
					-	

Subcatchment 1S: DA 1: All



Summary for Subcatchment 1Sa: DA 1: CN w/ IC areas

Runoff = 136.89 cfs @ 12.26 hrs, Volume= 564,871 cf, Depth= 3.91" Routed to Pond 1P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description		
*	187,351	98	Impervious		
	676,806	74	>75% Grass	s cover, Go	ood, HSG C
	698,470	80	>75% Grass	s cover, Go	ood, HSG D
	25,343	73	Woods, Fair	, HSG C	
	726	79	Woods, Fair	, HSG D	
	41,773	70	Woods, Goo	od, HSG C	
	101,927	77	Woods, Goo	od, HSG D	
	1,732,396	79	Weighted Av	verage	
	1,545,045	77	89.19% Per	vious Area	
	187,351	98	10.81% Imp	ervious Are	ea
	-	~		A	
,	Ic Length	Slop	be Velocity	Capacity	Description
(m	in) (feet)	(ft/	ft) (ft/sec)	(cfs)	
17	7.3				Direct Entry, Direct

Subcatchment 1Sa: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sb: DA1: Roofs combined

Runoff = 19.52 cfs @ 12.13 hrs, Volume= 65,868 cf, Depth= 5.97" Routed to Pond 2P : Basic Rain Garden (infiltration only) 500 sf

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

Are	ea (sf)	CN	Description		
13	2,361	98			
13	2,361	98	100.00% Im	npervious A	Area
Tc (min)	Length (feet)	Slope (ft/ft)	e Velocity) (ft/sec)	Capacity (cfs)	Description
6.0		ì			Direct Entry,
			Subcato	hment 1	Sb: DA1: Roofs combined
				Hydro	graph
21					□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
20 19		9.52 CI	S +-+++++++++++++++++++++++++++++++++++		NOAA 24-hr C
18					10-Year _2100 Rainfall=6.21"
16					Runoff Area=132,361 sf -
14			$\neg - \neg -$		Runoff Volume=65,868 cf
(cls)			$\begin{array}{c} - \end{array} + - \hspace{0.5mm} + \hspace{0.5mm} + \hspace{0.5mm} - \hspace{0.5mm} + 0.5mm$		Runoff Depth=5.97"
8 11 ₹ 10 ₹	- -		$\frac{1}{1} - \frac{1}{1} - \frac{1}$		
9 9 1 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1 9 1 9 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1 1 1 1 1 1 1			$\begin{array}{cccccccccccccccccccccccccccccccccccc$		
7 6			$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		
5			$\begin{array}{c} \cdot & \cdot & \cdot & \cdot \\ + & - & + & +$		
3	- ⊨ −!− −!− 				
2 1 1 1 1					
0 1 1 1 1 1	4 6 8	10 12 14	16 18 20 22 24 2	26 28 30 32 34	36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72
				Time	e (hours)

Summary for Subcatchment 1Sc: DA1: Driveways (other)

Runoff = 26.59 cfs @ 12.13 hrs, Volume= 89,759 cf, Depth= 5.97" Routed to Pond 3P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description			
*	180,370	98	Impervious	Drivways (other)	
	180,370	98	100.00% Im	npervious A	vrea	
	Tc Length (min) (feet)	Slop (ft/f	e Velocity ft) (ft/sec)	Capacity (cfs)	Description	
	6.0				Direct Entry,	

Subcatchment 1Sc: DA1: Driveways (other)



Summary for Subcatchment 2S: DA 2: All

Runoff = 77.59 cfs @ 12.54 hrs, Volume= 496,811 cf, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	143,894	98	Impervious
	1,270	65	Brush, Good, HSG C
	946,207	74	>75% Grass cover, Good, HSG C
	93,778	80	>75% Grass cover, Good, HSG D
	1,520	72	Woods/grass comb., Good, HSG C
*	85,031	98	Roofs
*	164,927	98	Driveways
	1,436,627	81	Weighted Average
	1,042,775	75	72.58% Pervious Area
	393,852	98	27.42% Impervious Area
	Tc Length	Slop	e Velocity Capacity Description
	(min) (feet)	(ft/	tt) (ft/sec) (cts)



Direct Entry, Direct

Subcatchment 2S: DA 2: All



Summary for Subcatchment 2Sa: DA 2: CN w/ IC areas

Runoff = 59.61 cfs @ 12.55 hrs, Volume= 372,423 cf, Depth= 3.77" Routed to Pond 5P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description	
*	143,894	98	Impervious	
	1,270	65	Brush, Good, HSG C	
	946,207	74	>75% Grass cover, Good, HSG C	
	93,778	80	>75% Grass cover, Good, HSG D	
	1,520	72	Woods/grass comb., Good, HSG C	
	1,186,669	77	Weighted Average	
	1,042,775	75	87.87% Pervious Area	
	143,894	98	12.13% Impervious Area	
(r	Tc Length min) (feet)	Slop (ft/	be Velocity Capacity Description (t) (ft/sec) (cfs)	
3	39.8		Direct Entry, Direct	

Subcatchment 2Sa: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sb: DA2: Roofs combined

Runoff = 12.54 cfs @ 12.13 hrs, Volume= 42,315 cf, Depth= 5.97" Routed to Pond 6P : Basic Rain Garden (infiltration only) 500SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area	a (sf)	CN	Description				
*	85	,031	98					
	85	,031	98	100.00% Im	pervious A	rea		
- (mi	Гс Lo n)	ength (feet)	Slope (ft/ft)	e Velocity) (ft/sec)	Capacity (cfs)	Description		
6	.0					Direct Entry,		
				Subcato	hment 2	Sb: DA2: Roofs combine	ed	
					Hydro	graph		
1	4			+ - + - + - + - + - + - 				Runoff
1	3	<mark> 1</mark>	2.54 cts	<mark>S</mark>		NO	ΔΔ 24-hr C	
1	2-1 1-1 1-1					10-Year 2100 Rai	nfall=6.21"	
1	0					Runoff Area	i=85,031 sf	
	9	 I I I I		$\dot{1} - \dot{1} - $		Runoff Volume	e=42,315 cf	
cfs)	8					Runoff De	epth=5.97"	
) wol	7-1						Tc=6.0 min	
Ш.	6-1	·					CN=0/98	
	5-1 4-1			$\frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1} - \frac{1}{1}$				
	3-1-1-			$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	J J <td></td> <td></td>		
	2			+-+-+-+-+- +-+-+-+-+-+-+-				
	0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 6 8	10 12 14	16 18 20 22 24 2	26 28 30 32 34	36 38 40 42 44 46 48 50 52 54 56 58 60	0 62 64 66 68 70 72	

Summary for Subcatchment 2Sc: DA2: Driveways (other)

Runoff = 24.32 cfs @ 12.13 hrs, Volume= 82,074 cf, Depth= 5.97" Routed to Pond 7P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN Description							
*	164,927	98 Impervious Drivways (other)							
	164,927	98 100.00% Impervious Area							
	Tc Length (min) (feet)	Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs)							
	6.0	Direct Entry,							
	Subcatchment 2Sc: DA2: Driveways (other)								
		Hydrograph							
	26		off						
	24	NOAA 24-hr C							



Summary for Subcatchment 3S: DA 3: All

Runoff 77.61 cfs @ 12.49 hrs, Volume= 470,478 cf, Depth= 4.31" Routed to Link 4L : Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	163,718	98	Impervious
	4,569	65	Brush, Good, HSG C
	730,392	74	>75% Grass cover, Good, HSG C
	134,518	80	>75% Grass cover, Good, HSG D
*	92,992	98	Roofs
*	184,684	98	Driveways
	1,310,873	83	Weighted Average
	869,479	75	66.33% Pervious Area
	441,394 98		33.67% Impervious Area
	Tc Length (min) (feet)	Slop (ft/	be Velocity Capacity Description ft) (ft/sec) (cfs)

-0				010010	, cape	~~···	
(feet) ((ft/ft)) (ft/sec) ((cfs))



Direct Entry, Direct

Subcatchment 3S: DA 3: All



Summary for Subcatchment 3Sa: DA 3: CNs w/ IC areas

Runoff 56.36 cfs @ 12.49 hrs, Volume= 332,297 cf, Depth= 3.86" = Routed to Pond 8P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description							
*	163,718	98	Impervious							
	4,569	65	Brush, Goo	sh, Good, HSG C						
	730,392	74	>75% Grass	6 Grass cover, Good, HSG C						
	134,518	80	>75% Grass	s cover, Go	ood, HSG D					
	1,033,197	79	Weighted A	verage						
	869,479	75	84.15% Per	vious Area	3					
	163,718	98	15.85% Imp	ervious Ar	rea					
	Tc Length	Slop	be Velocity	Capacity	Description					
(I	min) (feet)	(ft/	ft) (ft/sec)	(cfs)						
	35.3				Direct Entry, Direct					

Subcatchment 3Sa: DA 3: CNs w/ IC areas



Hydrograph

Summary for Subcatchment 3Sb: DA3: Roofs combined

Runoff = 13.71 cfs @ 12.13 hrs, Volume= 46,276 cf, Depth= 5.97" Routed to Pond 9P : Basic Rain Garden (infiltration only) 500 SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"



Summary for Subcatchment 3Sc: DA3: Driveways (other)

Runoff = 27.23 cfs @ 12.13 hrs, Volume= 91,905 cf, Depth= 5.97" Routed to Pond 10P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

A	rea (sf)	CN D	escription					
* 1	84,684	98 Ir	npervious	Drivways (other)			
1	84,684	98 1	00.00% Im	npervious A	rea			
-		0		- 	D			
IC (min)	Length (feet)				Description			
60	(ieel)	(1011)	(11/360)	(015)	Direct Entry			
0.0					Direct Entry,			
			Subcatc	hment 3S	c: DA3: Drive	ways (of	:her)	
				Hydrog	graph			
30-					$\begin{array}{cccccccccccccccccccccccccccccccccccc$			Runoff
28		7.23 cfs						
26							OAA 24-hr C	
24					10-Year	_2100 R	ainfall=6.21"	
22					Rui	noff Are	a=184,684 sf	
20					Runo	off Volun	ne=91,905 cf	
ົດ ¹⁸ ີຼ໌	, 1 					Runoff	Depth=5.97"	
້ ຍ 16							-Tc=6-0 min	
о Н	´↓ i i i ↓-!!!		- <u>+</u>		$\begin{array}{cccccccccccccccccccccccccccccccccccc$			
12			- + - + - + - + -			 		
10	´↓ -				$\begin{array}{cccccccccccccccccccccccccccccccccccc$			
8	 		-+-+-+-+-			·	+ - + - + - + - + - +	
6	/		$-\frac{1}{1}-\frac{1}{1}-\frac{1}{1}-\frac{1}{1}-\frac{1}{1}-\frac{1}{1}$		$\begin{array}{cccccccccccccccccccccccccccccccccccc$		$-\frac{1}{1} - \frac{1}{1} - 1$	
4-1					$\begin{array}{cccccccccccccccccccccccccccccccccccc$			
2								

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 Time (hours)

Summary for Subcatchment 4S: DA 4: All

Runoff = 26.11 cfs @ 12.26 hrs, Volume= 108,713 cf, Depth= 3.97" Routed to Link 4L : Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description					
*	6,952	98	Impervious					
	208,611	74	>75% Grass	cover, Go	od, HSG C			
	53,336	80	>75% Grass	% Grass cover, Good, HSG D				
*	23,888	98	Roofs					
*	35,770	98	Driveways					
	328,557	80	Weighted Ave	erage				
	261,947	75	79.73% Pervi	ious Area				
	66,610	98	20.27% Impe	rvious Are	ea			
(n	Tc Length	Slop	e Velocity (Capacity	Description			
<u>(n</u>	(ieel)	(11/	(IL/Sec)	(CIS)				
1	6.9				Direct Entry, Direct			

Subcatchment 4S: DA 4: All



Summary for Subcatchment 4Sa: DA 4: CN w/ IC areas

Runoff = 19.67 cfs @ 12.26 hrs, Volume= 79,025 cf, Depth= 3.53" Routed to Pond 11P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description					
*	6,952	98	Impervious	ervious				
	208,611	74	>75% Gras	s cover, Go	bod, HSG C			
	53,336	80	>75% Gras	% Grass cover, Good, HSG D				
	268,899	76	Weighted A	verage				
	261,947	75	97.41% Per	vious Area	l			
	6,952	98	2.59% Impe	59% Impervious Area				
,	Tc Length	Slop	e Velocity	Capacity	Description			
(r	nin) (feet)	(ft/1	t) (ft/sec)	(cfs)				
1	6.9				Direct Entry, Direct			

Subcatchment 4Sa: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sb: DA4: Roofs combined

Runoff = 3.52 cfs @ 12.13 hrs, Volume= 11,888 cf, Depth= 5.97" Routed to Pond 12P : Basic Rain Garden (infiltration only) 500SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"



Summary for Subcatchment 4Sc: DA4: Driveways (other)

Runoff = 5.27 cfs @ 12.13 hrs, Volume= 17,800 cf, Depth= 5.97" Routed to Pond 13P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN D	escription			
*	35,770	98 In	npervious	Drivways ((other)	
	35,770	98 1	00.00% Im	pervious A	Area	
To (min	c Length) (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
6.0	0				Direct Entry,	
		;	Subcatc	hment 4S	Sc: DA4: Driveways (other)	
				Hydro	graph	
		5.27 cfs				Runoff
ŧ				-iiiii - 		
				1 1 1 1 1 1 1 1 1 1 1 1	10-Year_2100 Rainfall=6.21 Runoff Area=35 770 sf	
2	/			- ¹ ¹ ¹ ¹ ¹ - 1 1 1 1 1 1 1 1 1	Runoff Volume=17,800 cf	
					Runoff Depth=5.97"	
(cfs)						
No L					CN=0/98	
-			$-\frac{1}{1}-\frac{1}{1}-\frac{1}{1}-\frac{1}{1}-\frac{1}{1}-\frac{1}{1}$			
2	2-*´ 			1 1 1 1 1 1 1 1 1 1 1 1 1 1		
	1-1-1					
(
	0 2 4 6 8	10 12 14 16	5 18 20 22 24	26 28 30 32 34 Time	4 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 e (hours)	

Summary for Reach 1R: INFLOW PIPE

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 2,045,127 sf, 24.45% Impervious, Inflow Depth = 3.38" for 10-Year _2100 event Inflow = 136.43 cfs @ 12.29 hrs, Volume= 575,661 cf Outflow = 136.05 cfs @ 12.29 hrs, Volume= 575,903 cf, Atten= 0%, Lag= 0.2 min Routed to Pond 4P : Basin 1 Municipal property 48k sf

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Max. Velocity= 22.45 fps, Min. Travel Time= 0.1 min Avg. Velocity = 7.06 fps, Avg. Travel Time= 0.2 min

Peak Storage= 455 cf @ 12.29 hrs Average Depth at Peak Storage= 1.83', Surface Width= 4.42' Bank-Full Depth= 4.50' Flow Area= 15.9 sf, Capacity= 393.30 cfs

54.0" Round Pipe n= 0.013 Concrete pipe, bends & connections Length= 75.0' Slope= 0.0400 '/' Inlet Invert= 75.00', Outlet Invert= 72.00'



20240629 Meadowbrook HCAD

NOAA 24-hr C 10-Year _2100 Rainfall=6.21" Prepared by Rutgers Cooperative Extension Water Resources Program Printed 6/29/2024 HydroCAD® 10.10-7c s/n 03601 © 2022 HydroCAD Software Solutions LLC Page 208

Hydrograph Inflow
Outflow 136.43 cfs 136.05 cfs 150 Inflow Area=2,045,127 sf 140 Avg. Flow Depth=1.83' 130 120 Max Vel=22.45 fps 110 54.0" 100 **Round Pipe** 90 Flow (cfs) 80 n=0.013 70 L=75.0' 60 S=0.0400 '/' 50 40-Capacity=393.30 cfs 30 20 10

Reach 1R: INFLOW PIPE

0-0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 Time (hours)

Summary for Reach 2R: OUTFLOW PIPE

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow A	Area =	2,045,127 sf, 24.45% Impervious,	Inflow Depth = 3.33"	for 10-Year _2100 event
Inflow	=	90.81 cfs @ 12.46 hrs, Volume=	567,420 cf	_
Outflow	/ =	90.79 cfs @ 12.46 hrs, Volume=	567,420 cf, Atter	n= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Max. Velocity= 15.71 fps, Min. Travel Time= 0.1 min Avg. Velocity = 3.30 fps, Avg. Travel Time= 0.3 min

Peak Storage= 347 cf @ 12.46 hrs Average Depth at Peak Storage= 1.87', Surface Width= 3.99' Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 203.14 cfs

48.0" Round Pipe n= 0.013 Concrete pipe, bends & connections Length= 60.0' Slope= 0.0200 '/' Inlet Invert= 68.00', Outlet Invert= 66.80'



Hydrograph Inflow 90.81 cfs Outflow 100 90.79 cfs 95 Inflow Area=2,045,127 sf 90 Avg. Flow Depth=1.87' 85 80 Max Vel=15.71 fps 75 70 48.0" 65 60 **Round Pipe** Flow (cfs) 55 n=0.013 50 45 L=60.0' 40 35 S=0.0200 '/' 30 Capacity=203.14 cfs 25 20 15 10 5 0-0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Reach 2R: OUTFLOW PIPE

Time (hours)

Summary for Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	1,732,396 sf,	10.81% lm	pervious,	Inflow Depth =	3.91"	for 10-Year	_2100 event
Inflow	=	136.89 cfs @	12.26 hrs, \	Volume=	564,871 cf			_
Outflow	=	134.12 cfs @	12.28 hrs, \	Volume=	562,880 cf	, Atten	= 2%, Lag=	1.0 min
Primary	=	61.71 cfs @	12.30 hrs, \	Volume=	511,057 cf			
Routed	to Lin	k 1L : Combine	d Flows					
Secondary	=	72.38 cfs @	12.28 hrs, \	Volume=	51,823 cf			
Routed	to Lin	k 1L : Combine	d Flows					
Tertiary	=	0.00 cfs @	0.00 hrs, `	Volume=	0 cf			
Routed	to Lin	k 1L : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 100.34' @ 12.30 hrs Surf.Area= 30,624 sf Storage= 67,108 cf

Plug-Flow detention time= 17.9 min calculated for 562,489 cf (100% of inflow) Center-of-Mass det. time= 15.9 min (836.8 - 820.9)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 727 of	x 45.00 - 79.177 of Total Available Storage

 $1,737 \text{ cf} \times 45.00 = 78,177 \text{ cf}$ Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	ls Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%	b) (cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>	
97.7	75	175	0.	0 0	0	175	
98.2	25	175	35.	0 31	31	198	
99.2	25	175	35.	0 61	92	245	
99.5	50	175	25.	0 11	103	257	
100.0	00	175	100.	0 88	190	281	
100.5	51	175	100.	0 89	280	304	
101.7	75	175	100.	0 217	497	363	
Device	Routing	In	vert	Outlet Devices			
#1	Primary	94	1.17'	6.0" Round Culver	rt X 45.00 L= 10.0)' Ke= 0.500	
	-			Inlet / Outlet Invert=	94.17'/94.12' S	= 0.0050 '/' Cc= 0.900	
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area= 0.20 sf	
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	45.00 L= 32.0' Ke= 0.500	
				Inlet / Outlet Invert=	94.33' / 94.17' S	= 0.0050 '/' Cc= 0.900	
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area= 0.20 sf	
#3	Seconda	ry 100).00'	3.0' long x 2.0' bre	adth Broad-Cres	ted Rectangular Weir X 45.	00
				Head (feet) 0.20 0.	.40 0.60 0.80 1.0	00 1.20 1.40 1.60 1.80 2.0)0
				2.50 3.00 3.50			
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77 2.89 2.88	
				2.85 3.07 3.20 3.3	32		

#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 45.00** 2 End Contraction(s)

Primary OutFlow Max=61.71 cfs @ 12.30 hrs HW=100.34' (Free Discharge) 1=Culvert (Passes 61.71 cfs of 92.38 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 61.71 cfs @ 6.98 fps)

Secondary OutFlow Max=70.30 cfs @ 12.28 hrs HW=100.34' (Free Discharge) —3=Broad-Crested Rectangular Weir (Weir Controls 70.30 cfs @ 1.52 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10'Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 2P: Basic Rain Garden (infiltration only) 500 sf

Assumes infiltration through media is non-limiting.

Inflow Area =		132,361 sf,	100.00% Imperviou	s, Inflow Depth = 5.97"	for 10-Year 2100 event
Inflow	=	19.52 cfs @	12.13 hrs, Volume	= 65,868 cf	_
Outflow	=	4.87 cfs @	12.40 hrs, Volume	= 65,868 cf, Atter	ו= 75%, Lag= 16.7 min
Discarded	=	0.44 cfs @	12.25 hrs, Volume	= 53,087 cf	-
Primary	=	4.43 cfs @	12.40 hrs, Volume	= 12,781 cf	
Routed	to Link	1L : Combine	d Flows		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.05' @ 12.40 hrs Surf.Area= 38,000 sf Storage= 30,251 cf

Plug-Flow detention time= 515.7 min calculated for 65,822 cf (100% of inflow) Center-of-Mass det. time= 516.1 min (1,261.5 - 745.3)

Volume	Invert	: Avai	I.Stora	ge Storage Descr	iption	
#1	98.25'		622	cf Custom Stage	e Data (Conic)List	ed below (Recalc)
			622	cf x 76.00 = 47	,273 cf Total Avai	lable Storage
Elevatio	on S	urf.Area	Voids	Inc.Store	Cum.Store	Wet.Area
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
98.2	25	374	0.0	0	0	374
99.2	25	374	35.0	131	131	443
99.5	50	374	25.0	23	154	460
100.0	00	500	100.0	218	372	591
100.2	25	500	100.0	125	497	611
100.5	50	500	100.0	125	622	631
Device	Routing	In	vert C	Dutlet Devices		
#1	Discarded	98	.25' 0).500 in/hr Exfiltrat	tion over Surface	area
#2	Primary	100	.00 2 F 2 C 2	Head (feet) 0.20 0. 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	40 0.60 0.80 1.0 0 4.50 4 2.58 2.68 2.67 7 3.07 3.32	2.65 2.64 2.64 2.68 2.68

Discarded OutFlow Max=0.44 cfs @ 12.25 hrs HW=100.01' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.44 cfs)

Primary OutFlow Max=4.39 cfs @ 12.40 hrs HW=100.05' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 4.39 cfs @ 0.56 fps)



Pond 2P: Basic Rain Garden (infiltration only) 500 sf

Summary for Pond 3P: Basic Porous Pavement (infiltration only)

180,370 sf,100.00% Impervious, Inflow Depth = 5.97" for 10-Year 2100 event Inflow Area = Inflow 26.59 cfs @ 12.13 hrs, Volume= 89.759 cf = 2.09 cfs @ 11.15 hrs, Volume= 89,759 cf, Atten= 92%, Lag= 0.0 min Outflow = 2.09 cfs @ 11.15 hrs, Volume= Discarded = 89,759 cf 0.00 cfs @ 0.00 hrs, Volume= Primary = 0 cf Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.83' @ 13.14 hrs Surf.Area= 180,370 sf Storage= 33,836 cf

Plug-Flow detention time= 112.7 min calculated for 89,759 cf (100% of inflow) Center-of-Mass det. time= 112.6 min (858.0 - 745.3)

Volume	Inver	t Ava	il.Stora	ge Storage Desci	ription	
#1	99.25	5'	81,888	cf Custom Stag	e Data (Prismatio	:) Listed below (Recalc)
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	
99.2	25	180,370	0.0	0	0	
99.7	75	180,370	35.0	31,565	31,565	
99.8	83	180,370	15.0	2,164	33,729	
100.0	D1	180,370	15.0	4,870	38,599	
100.2	25	180,370	100.0	43,289	81,888	
Device	Routing	In	vert	Outlet Devices		
#1	Discarded	99	.25'	0.500 in/hr Exfiltra	tion over Surface	area
#2 Primary		100).00' 15.	15.0' long x 1.0' bi	readth Edge of Po	orous Asphalt X 76.00
				Head (feet) 0.20 0	.40 0.60 0.80 1.0	00 1.20 1.40 1.60 1.80 2.00
				2.50 3.00		
				Coef. (English) 2.6	9 2.72 2.75 2.85	2.98 3.08 3.20 3.28 3.31
				3.30 3.31 3.32		

Discarded OutFlow Max=2.09 cfs @ 11.15 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 2.09 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)


Pond 3P: Basic Porous Pavement (infiltration only)

Summary for Pond 4P: Basin 1 Municipal property 48k sf

[62] Hint: Exceeded Reach 1R OUTLET depth by 0.89' @ 12.55 hrs

Inflow Area	a =	2,045,127 sf,	24.45% In	npervious,	Inflow Depth =	3.38"	for 10-Ye	ar _2100 event
Inflow	=	136.05 cfs @	12.29 hrs,	Volume=	575,903 cf			
Outflow	=	90.81 cfs @	12.46 hrs,	Volume=	567,420 cf	, Atten	i= 33%, La	ıg= 10.1 min
Primary	=	90.81 cfs @	12.46 hrs,	Volume=	567,420 cf			
Routed	to Rea	ach 2R : OUTFI	LOW PIPE					
Secondary	=	0.00 cfs @	0.00 hrs,	Volume=	0 cf			
Routed	to Rea	ach 2R : OUTFI	LOW PIPE					
Tertiary	=	0.00 cfs @	0.00 hrs,	Volume=	0 cf			
Routed	to Rea	ach 2R : OUTFI	LOW PIPE					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 74.25' @ 12.46 hrs Surf.Area= 40,533 sf Storage= 83,362 cf

Plug-Flow detention time= 41.6 min calculated for 567,026 cf (98% of inflow) Center-of-Mass det. time= 33.2 min (869.0 - 835.7)

Volume	Inver	t Avail.Sto	orage Storag	ge Description	
#1	72.00	' 206,5	38 cf Custo	om Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee	on S et)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
72.0 77.0	00 00	33,525 49,090	0 206,538	0 206,538	
Device	Routing	Invert	Outlet Devi	ces	
#1	Primary	72.25'	24.0" Vert. Limited to w	Low Flow Orifice	X 6.00 C= 0.600 ads
#2	Secondary	74.50'	24.0" W x 1 Limited to w	18.0" H Vert. SEC veir flow at low hea	ONDARY OUTLET X 4.00 C= 0.600 ads
#3	Tertiary	76.75'	60.0" x 60.0 Limited to w	0" Horiz. Orifice/0 veir flow at low hea	Grate C= 0.600 ads

Primary OutFlow Max=90.68 cfs @ 12.46 hrs HW=74.25' (Free Discharge) **1=Low Flow Orifice** (Orifice Controls 90.68 cfs @ 4.81 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=72.00' (Free Discharge) 2=SECONDARY OUTLET (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=72.00' (Free Discharge) **-3=Orifice/Grate** (Controls 0.00 cfs)



Pond 4P: Basin 1 Municipal property 48k sf

Summary for Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

[88] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area	ı =	1,186,669 sf,	12.13% In	npervious,	Inflow Depth = 3.77	for 10-Year 2100 event
Inflow	=	59.61 cfs @	12.55 hrs,	Volume=	372,423 cf	
Outflow	=	62.17 cfs @	12.57 hrs,	Volume=	369,422 cf, Att	en= 0%, Lag= 1.5 min
Primary	=	36.65 cfs @	12.55 hrs,	Volume=	347,494 cf	-
Routed	to Link	2L : Combine	d Flows			
Secondary	=	25.32 cfs @	12.57 hrs,	Volume=	21,928 cf	
Routed	to Link	2L : Combine	d Flows			
Tertiary	=	0.00 cfs @	0.00 hrs,	Volume=	0 cf	
Routed	to Link	2L : Combine	d Flows			

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 100.23' @ 12.55 hrs Surf.Area= 18,374 sf Storage= 39,716 cf

Plug-Flow detention time= 21.7 min calculated for 369,166 cf (99% of inflow) Center-of-Mass det. time= 16.8 min (860.4 - 843.5)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 737 cf	x 27.00 - 46.006 of Total Available Storage

1,737 cf x 27.00 = 46,906 cf I otal Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	ls Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%	b) (cubic-feet)	(cubic-feet)	(sq-ft)	
97.75 175 0.		0 0	0	175			
98.2	25	175	35.	0 31	31	198	
99.2	25	175	35.	0 61	92	245	
99.5	50	175	25.	0 11	103	257	
100.0	00	175	100.	0 88	190	281	
100.5	100.51 175 100		100.	0 89	280	304	
101.75 175 10		100.	0 217	497	363		
Device	Routing	In	vert	Outlet Devices			
#1	Primary	94	l.17'	6.0" Round Culve	rt X 27.00 L= 10.0)' Ke= 0.500	
				Inlet / Outlet Invert=	= 94.17' / 94.12' S	S= 0.0050 '/' Cc= 0).900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area	a= 0.20 sf
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	27.00 L= 32.0' Ke	e= 0.500
				Inlet / Outlet Invert=	= 94.33' / 94.17' S	S= 0.0050 '/' Cc= 0).900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area	a= 0.20 sf
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	eadth Broad-Cres	ted Rectangular V	Veir X 27.00
				Head (feet) 0.20 0	.40 0.60 0.80 1.0	00 1.20 1.40 1.60	1.80 2.00
				2.50 3.00 3.50			

 #4
 Tertiary
 100.50'
 Coef. (English)
 2.54
 2.61
 2.61
 2.60
 2.66
 2.70
 2.77
 2.89
 2.88
 2.85
 3.07
 3.20
 3.32
 3.32
 6.0' long Sharp-Crested Rectangular Weir X 27.00
 2 End Contraction(s)

Primary OutFlow Max=36.65 cfs @ 12.55 hrs HW=100.23' (Free Discharge) 1=Culvert (Passes 36.65 cfs of 54.87 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 36.65 cfs @ 6.91 fps)

Secondary OutFlow Max=22.45 cfs @ 12.57 hrs HW=100.23' (Free Discharge) —3=Broad-Crested Rectangular Weir (Weir Controls 22.45 cfs @ 1.22 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) 4=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 6P: Basic Rain Garden (infiltration only) 500SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	85,031 sf,	100.00% Impervious,	Inflow Depth = 5.97"	for 10-Year 2100 event
Inflow	=	12.54 cfs @	12.13 hrs, Volume=	42,315 cf	_
Outflow	=	3.78 cfs @	12.35 hrs, Volume=	42,315 cf, Atter	n= 70%, Lag= 13.4 min
Discarded	=	0.27 cfs @	12.20 hrs, Volume=	33,114 cf	-
Primary	=	3.50 cfs @	12.35 hrs, Volume=	9,200 cf	
Routed	to Link	2L : Combine	d Flows		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.06' @ 12.35 hrs Surf.Area= 23,500 sf Storage= 18,920 cf

Plug-Flow detention time= 502.7 min calculated for 42,285 cf (100% of inflow) Center-of-Mass det. time= 503.2 min (1,248.5 - 745.3)

Volume	Invert	t Avai	il.Stora	ge Storage Desci	ription		
#1	98.25	1	622	cf Custom Stag	e Data (Conic)List	ed below (Recalc)	
			622	cf x 47.00 = 29	,235 cf Total Ava	lable Storage	
Elevatio	on S	urf.Area	Voids	Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>	
98.2	25	374	0.0	0	0	374	
99.2	25	374	35.0	131	131	443	
99.5	50	374	25.0	23	154	460	
100.0	00	500	100.0	218	372	591	
100.2	25	500	100.0	125	497	611	
100.5	50	500	100.0	125	622	631	
Device	Routing	In	vert (Outlet Devices			
#1	Discarded	98	.25' (0.500 in/hr Exfiltra	tion over Surface	area	
#2	Primary	100	0.00' 2 	2.0' long x 3.0' bre Head (feet) 0.20 0 2.50 3.00 3.50 4.0 Coef. (English) 2.4 2.72 2.81 2.92 2.9	eadth Broad-Cres .40 0.60 0.80 1.0 00 4.50 4 2.58 2.68 2.67 97 3.07 3.32	ted Rectangular Weir X 47 00 1.20 1.40 1.60 1.80 2. 2.65 2.64 2.64 2.68 2.68	.00 00 }

Discarded OutFlow Max=0.27 cfs @ 12.20 hrs HW=100.00' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.27 cfs)

Primary OutFlow Max=3.45 cfs @ 12.35 hrs HW=100.06' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 3.45 cfs @ 0.60 fps)



Pond 6P: Basic Rain Garden (infiltration only) 500SF

Summary for Pond 7P: Basic Porous Pavement (infiltration only)

164,927 sf,100.00% Impervious, Inflow Depth = 5.97" for 10-Year 2100 event Inflow Area = Inflow 24.32 cfs @ 12.13 hrs, Volume= 82.074 cf = 1.91 cfs @ 11.15 hrs, Volume= 82,074 cf, Atten= 92%, Lag= 0.0 min Outflow = 1.91 cfs @ 11.15 hrs, Volume= Discarded = 82,074 cf 0.00 cfs @ 0.00 hrs, Volume= Primary = 0 cf Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.83' @ 13.14 hrs Surf.Area= 164,927 sf Storage= 30,939 cf

Plug-Flow detention time= 112.7 min calculated for 82,074 cf (100% of inflow) Center-of-Mass det. time= 112.6 min (858.0 - 745.3)

Volume	Inver	rt Avai	I.Storage	e Storage Descr	iption	
#1	99.25	5'	74,877 c	f Custom Stage	e Data (Prismatic	Listed below (Recalc)
Elevatic (fee 99.2 99.7 99.8 100.0	on 5 25 75 33 01	Surf.Area (sq-ft) 164,927 164,927 164,927 164,927	Voids (%) 0.0 35.0 15.0 15.0	Inc.Store (cubic-feet) 0 28,862 1,979 4,453 20,582	Cum.Store (cubic-feet) 0 28,862 30,841 35,294 74,977	
100.2	25	164,927	100.0	39,582	74,877	
Device	Routing	In	vert Ou	utlet Devices		
#1 #2	Discarded Primary	I 99 100	.25' 0. .00' 15 He 2. Co 3.	500 in/hr Exfiltrat 5.0' long x 1.0' br ead (feet) 0.20 0. 50 3.00 bef. (English) 2.69 30 3.31 3.32	ion over Surface eadth Edge of Po 40 0.60 0.80 1.0 9 2.72 2.75 2.85	area brous Asphalt X 76.00 00 1.20 1.40 1.60 1.80 2.00 2.98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=1.91 cfs @ 11.15 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 1.91 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)



Pond 7P: Basic Porous Pavement (infiltration only)

Summary for Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	1,033,197 sf,	15.85% Im	pervious,	Inflow Depth =	3.86"	for 10-Year	_2100 event
Inflow	=	56.36 cfs @	12.49 hrs,	Volume=	332,297 c	f		
Outflow	=	56.03 cfs @	12.57 hrs,	Volume=	329,348 c	f, Atten	= 1%, Lag=	4.5 min
Primary	=	35.25 cfs @	12.55 hrs,	Volume=	313,710 c	f	-	
Routed	to Link	3L : Combine	d Flows					
Secondary	=	20.76 cfs @	12.57 hrs,	Volume=	15,638 c	f		
Routed	to Link	3L : Combine	d Flows					
Tertiary	=	0.00 cfs @	0.00 hrs,	Volume=	0 c	f		
Routed	to Link	3L : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 100.22' @ 12.55 hrs Surf.Area= 17,694 sf Storage= 38,190 cf

Plug-Flow detention time= 23.4 min calculated for 329,348 cf (99% of inflow) Center-of-Mass det. time= 17.5 min (852.6 - 835.0)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 737 cf	x 26.00 - 45.169 of Total Available Storage

1,737 cf x 26.00 = 45,169 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	ls Inc.Store	Cum.Store	Wet.Area		
(fee	et)	(sq-ft)	(%	b) (cubic-feet)	(cubic-feet)	(sq-ft)		
97.7	75	175	0.	0 0	0	175		
98.2	25	175	35.	0 31	31	198		
99.2	25	175 35.		0 61	92	245		
99.5	50	175	25.	0 11	103	257		
100.0	00	175	100.	0 88	190	281		
100.5	51	175	100.	0 89	280	304		
101.7	75	175	100.	0 217	497	363		
Device	Routing	In	vert	Outlet Devices				
#1	Primary	94	17'	6.0" Round Culver	rt X 26.00 L= 10.0)' Ke= 0.500		
				Inlet / Outlet Invert=	94.17'/94.12' S	= 0.0050 '/' Cc=	0.900	
				n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf				
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	26.00 L= 32.0' K	(e= 0.500	
				Inlet / Outlet Invert=	94.33'/94.17' S	= 0.0050 '/' Cc=	0.900	
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf	
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	adth Broad-Cres	ted Rectangular	Weir X 26.00	
				Head (feet) 0.20 0.	.40 0.60 0.80 1.0	00 1.20 1.40 1.6	0 1.80 2.00	
				2.50 3.00 3.50				
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88	
				2.85 3.07 3.20 3.3	32			

#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 26.00** 2 End Contraction(s)

Primary OutFlow Max=35.25 cfs @ 12.55 hrs HW=100.22' (Free Discharge) 1=Culvert (Passes 35.25 cfs of 52.78 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 35.25 cfs @ 6.91 fps)

Secondary OutFlow Max=19.21 cfs @ 12.57 hrs HW=100.21' (Free Discharge) —3=Broad-Crested Rectangular Weir (Weir Controls 19.21 cfs @ 1.17 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10'Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 9P: Basic Rain Garden (infiltration only) 500 SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	92,992 sf,	100.00% Imperv	vious,	Inflow Depth =	5.97"	for 10-Yea	r 2100 event
Inflow	=	13.71 cfs @	12.13 hrs, Volu	me=	46,276 c	f		_
Outflow	=	7.12 cfs @	12.25 hrs, Volu	me=	46,276 c	f, Atten	= 48%, Lag	= 7.2 min
Discarded	=	0.26 cfs @	12.15 hrs, Volu	me=	32,645 c	f	-	
Primary	=	6.86 cfs @	12.25 hrs, Volu	me=	13,631 c	f		
Routed	to Link	3L : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.10' @ 12.25 hrs Surf.Area= 22,500 sf Storage= 18,969 cf

Plug-Flow detention time= 459.6 min calculated for 46,244 cf (100% of inflow) Center-of-Mass det. time= 460.1 min (1,205.4 - 745.3)

Volume	Inver	t Avai	il.Stora	ge Storage Descri	iption	
#1	98.25	•	622	cf Custom Stage	e Data (Conic)List	ed below (Recalc)
			622	cf x $45.00 = 27$,	,991 cf Total Avai	lable Storage
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	Wet.Area
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
98.2	25	374	0.0	0	0	374
99.2	25	374	35.0	131	131	443
99.5	50	374	25.0	23	154	460
100.0	00	500	100.0	218	372	591
100.2	25	500	100.0	125	497	611
100.5	50	500	100.0	125	622	631
Device	Routing	In	vert C	Dutlet Devices		
#1	Discarded	98	.25' 0	.500 in/hr Exfiltrat	ion over Surface	area
#2	Primary	100	.00' 2	2.0' long x 3.0' brea	adth Broad-Crest	ed Rectangular Weir X 45.00
	-		H 2 0 2	Head (feet) 0.20 0.2 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	40 0.60 0.80 1.0 0 4.50 4 2.58 2.68 2.67 7 3.07 3.32	0 1.20 1.40 1.60 1.80 2.00 2.65 2.64 2.64 2.68 2.68

Discarded OutFlow Max=0.26 cfs @ 12.15 hrs HW=100.04' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.26 cfs)

Primary OutFlow Max=6.78 cfs @ 12.25 hrs HW=100.10' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 6.78 cfs @ 0.77 fps)



Pond 9P: Basic Rain Garden (infiltration only) 500 SF

Summary for Pond 10P: Basic Porous Pavement (infiltration only)

184,684 sf,100.00% Impervious, Inflow Depth = 5.97" for 10-Year 2100 event Inflow Area = Inflow 27.23 cfs @ 12.13 hrs, Volume= 91.905 cf = 2.14 cfs @ 11.15 hrs, Volume= 91,905 cf, Atten= 92%, Lag= 0.0 min Outflow = 2.14 cfs @ 11.15 hrs, Volume= Discarded = 91,905 cf Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf Routed to Link 3L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 99.83' @ 13.14 hrs Surf.Area= 184,684 sf Storage= 34,646 cf

Plug-Flow detention time= 112.7 min calculated for 91,905 cf (100% of inflow) Center-of-Mass det. time= 112.6 min (858.0 - 745.3)

Volume	Inver	t Ava	il.Storage	 Storage Descri 	ption	
#1	99.25	5'	83,847 c	f Custom Stage	Data (Prismatic)	Listed below (Recalc)
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	
99.2	25	184,684	0.0	0	0	
99.7	75	184,684	35.0	32,320	32,320	
99.8	33	184,684	15.0	2,216	34,536	
100.0)1	184,684	15.0	4,986	39,522	
100.2	25	184,684	100.0	44,324	83,847	
Device	Routing	In	vert Ou	Itlet Devices		
#1	Discarded	99	.25' 0.5	500 in/hr Exfiltrat	ion over Surface	area
#2	Primary	100	0.00' 15 He 2.5 Co 3.3	.0' long x 1.0' bro ad (feet) 0.20 0.4 50 3.00 bef. (English) 2.69 30 3.31 3.32	eadth Edge of Pc 40 0.60 0.80 1.0 2.72 2.75 2.85	Science Asphalt X 76.00 00 1.20 1.40 1.60 1.80 2.00 2.98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=2.14 cfs @ 11.15 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 2.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)



Pond 10P: Basic Porous Pavement (infiltration only)

Summary for Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	268,899 sf,	2.59% In	npervious,	Inflow Depth =	3.53"	for 10-Year	_2100 event
Inflow	=	19.67 cfs @	12.26 hrs,	Volume=	79,025 c	F		
Outflow	=	19.58 cfs @	12.26 hrs,	Volume=	78,509 c	f, Atten	= 0%, Lag=	0.1 min
Primary	=	4.03 cfs @	12.26 hrs,	Volume=	56,925 c	F		
Routed	to Link	3L : Combine	d Flows					
Secondary	=	12.23 cfs @	12.26 hrs,	Volume=	19,374 c	f		
Routed	to Link	3L : Combine	d Flows					
Tertiary	=	3.33 cfs @	12.26 hrs,	Volume=	2,210 c	f		
Routed	to Link	3L : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 100.65' @ 12.26 hrs Surf.Area= 1,997 sf Storage= 4,555 cf

Plug-Flow detention time= 15.2 min calculated for 78,454 cf (99% of inflow) Center-of-Mass det. time= 11.4 min (846.0 - 834.6)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	374 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 615 of	x 2 00 - 4 944 of Total Available Storage

 $1,615 \text{ cf} \times 3.00 = 4,844 \text{ cf}$ Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	s Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%) (cubic-feet)	(cubic-feet)	(sq-ft)	
97.7	75	160	0.0) 0	0	160	
98.2	25	160	35.0) 28	28	182	
99.2	25	160	35.0) 56	84	227	
99.5	50	160	25.0) 10	94	238	
100.0	00	160	100.0) 80	174	261	
100.5	51	160	100.0) 82	256	284	
101.0	00	160	100.0) 78	334	306	
101.2	25	160	100.0) 40	374	317	
Device	Routing	In	vert	Outlet Devices			
#1	Primary	94	1.17'	6.0" Round Culve	rt X 3.00 L= 10.0	' Ke= 0.500	
	-			Inlet / Outlet Invert=	= 94.17' / 94.12'	S= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#2	Device 1	94	1.33'	6.0" Round 6" HD	PE Underdrain X	(3.00 L= 36.0' Ke	e= 0.500
				Inlet / Outlet Invert=	= 94.33' / 94.17'	S= 0.0044 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#3	Seconda	ry 100).00'	3.0' long x 2.0' bre	eadth Broad-Cres	sted Rectangular	Weir X 3.00
				Head (feet) 0.20 0	.40 0.60 0.80 1.	00 1.20 1.40 1.6	0 1.80 2.00
				2.50 3.00 3.50			
				Coef. (English) 2.5	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88

20240629 Meadowbrook HCAD

NOAA 24-hr C 10-Year _2100 Rainfall=6.21" Prepared by Rutgers Cooperative Extension Water Resources Program Printed 6/29/2024 HydroCAD® 10.10-7c s/n 03601 © 2022 HydroCAD Software Solutions LLC Page 237

2.85 3.07 3.20 3.32 #4 Tertiary 100.50' 6.0' long Sharp-Crested Rectangular Weir X 3.00 2 End Contraction(s)

Primary OutFlow Max=4.03 cfs @ 12.26 hrs HW=100.64' (Free Discharge) -1=Culvert (Passes 4.03 cfs of 6.32 cfs potential flow) **1**–2=6" HDPE Underdrain (Barrel Controls 4.03 cfs @ 6.83 fps)

Secondary OutFlow Max=12.14 cfs @ 12.26 hrs HW=100.64' (Free Discharge) —3=Broad-Crested Rectangular Weir (Weir Controls 12.14 cfs @ 2.09 fps)

Tertiary OutFlow Max=3.22 cfs @ 12.26 hrs HW=100.64' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Weir Controls 3.22 cfs @ 1.24 fps)

Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Time (hours)

Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 12P: Basic Rain Garden (infiltration only) 500SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	23,888 sf,	100.00% Ir	npervious,	Inflow Depth =	5.97"	for 10-Year	2100 event
Inflow	=	3.52 cfs @	12.13 hrs,	Volume=	11,888 c	f	_	_
Outflow	=	0.79 cfs @	12.44 hrs,	Volume=	11,888 c	f, Atten	= 78%, Lag=	18.6 min
Discarded	=	0.08 cfs @	12.30 hrs,	Volume=	9,733 c	f	•	
Primary	=	0.71 cfs @	12.44 hrs,	Volume=	2,154 c	f		
Routed	to Link 3	BL : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.05' @ 12.44 hrs Surf.Area= 7,000 sf Storage= 5,540 cf

Plug-Flow detention time= 523.3 min calculated for 11,888 cf (100% of inflow) Center-of-Mass det. time= 523.2 min (1,268.6 - 745.3)

Volume	Invert	: Avai	il.Stora	ge Storage Descr	iption		
#1	98.25'	1	622	cf Custom Stage	e Data (Conic)List	ed below (Recalc)	
			622	cf x $14.00 = 8,7$	708 cf Total Availa	ble Storage	
Elevatio	on S	urf.Area	Voids	Inc.Store	Cum.Store	Wet.Area	
(iee	et)	(sq-it)	(%)	(cubic-leet)	(cubic-leet)	(sq-it)	
98.2	25	374	0.0	0	0	374	
99.2	25	374	35.0	131	131	443	
99.5	50	374	25.0	23	154	460	
100.0	00	500	100.0	218	372	591	
100.2	25	500	100.0	125	497	611	
100.5	50	500	100.0	125	622	631	
Device	Routing	In	vert (Dutlet Devices			
#1	Discarded	98	.25' 0).500 in/hr Exfiltrat	ion over Surface	area	
#2	Primary	100	.00' 2	2.0' long x 3.0' bre	adth Broad-Crest	ed Rectangular Weir X 14.0	0
	,		H 2 0 2	Head (feet) 0.20 0. 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	40 0.60 0.80 1.0 0 4.50 4 2.58 2.68 2.67 7 3.07 3.32	0 1.20 1.40 1.60 1.80 2.00 2.65 2.64 2.64 2.68 2.68)

Discarded OutFlow Max=0.08 cfs @ 12.30 hrs HW=100.03' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.70 cfs @ 12.44 hrs HW=100.05' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 0.70 cfs @ 0.53 fps)



Pond 12P: Basic Rain Garden (infiltration only) 500SF

Summary for Pond 13P: Basic Porous Pavement (infiltration only)

35,770 sf,100.00% Impervious, Inflow Depth = 5.97" for 10-Year 2100 event Inflow Area = Inflow 5.27 cfs @ 12.13 hrs, Volume= 17.800 cf = 0.41 cfs @ 11.15 hrs, Volume= 17,800 cf, Atten= 92%, Lag= 0.0 min Outflow = 0.41 cfs @ 11.15 hrs, Volume= Discarded = 17.800 cf Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf Routed to Link 3L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 99.83' @ 13.14 hrs Surf.Area= 35,770 sf Storage= 6,710 cf

Plug-Flow detention time= 112.7 min calculated for 17,800 cf (100% of inflow) Center-of-Mass det. time= 112.6 min (858.0 - 745.3)

Volume	Invert	: Avai	I.Storage	Storage Descript	ion	
#1	99.25'		16,240 cf	Custom Stage	Data (Prismatic)Li	sted below (Recalc)
Elevatio	on S t)	urf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
99.2	25	35,770	0.0	0	0	
99.7	'5	35,770	35.0	6,260	6,260	
99.8	33	35,770	15.0	429	6,689	
100.0)1	35,770	15.0	966	7,655	
100.2	25	35,770	100.0	8,585	16,240	
Device	Routing	In	vert Out	let Devices		
#1	Discarded	99	.25' 0.50	0 in/hr Exfiltratio	n over Surface ar	ea
#2	Primary	100	.00' 15.0 Hea 2.50 Coe 3.30)' long x 1.0' brea ad (feet) 0.20 0.40) 3.00 ef. (English) 2.69 1) 3.31 3.32	dth Edge of Pord 0 0.60 0.80 1.00 2.72 2.75 2.85 2	ous Asphalt X 76.00 1.20 1.40 1.60 1.80 2.00 .98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=0.41 cfs @ 11.15 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge) ←2=Edge of Porous Asphalt (Controls 0.00 cfs)



Pond 13P: Basic Porous Pavement (infiltration only)

Summary for Link 1L: Combined Flows

Inflow Area = 2,045,127 sf, 24.45% Impervious, Inflow Depth = 3.38" for 10-Year _2100 event Inflow = 136.43 cfs @ 12.29 hrs, Volume= 575,661 cf Primary = 136.43 cfs @ 12.29 hrs, Volume= 575,661 cf, Atten= 0%, Lag= 0.0 min Routed to Reach 1R : INFLOW PIPE

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



Link 1L: Combined Flows

Summary for Link 2L: Combined Flows

Inflow .	Area =	1,436,627 sf, 27.42% Impervious	s, Inflow Depth = 3.16" for 10-Year_2100 even
Inflow	=	64.50 cfs @ 12.57 hrs, Volume	= 378,622 cf
Primar	y =	64.50 cfs @ 12.57 hrs, Volume	= 378,622 cf, Atten= 0%, Lag= 0.0 min

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

Link 2L: Combined Flows



Summary for Link 3L: Combined Flows

Inflow .	Area =	1,639,430 sf, 30.99% Impervious	, Inflow Depth = 3.10"	for 10-Year _2100 event
Inflow	=	68.07 cfs @ 12.56 hrs, Volume=	423,641 cf	
Primar	y =	68.07 cfs @ 12.56 hrs, Volume=	423,641 cf, Atter	n= 0%, Lag= 0.0 min

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

Link 3L: Combined Flows



Summary for Link 4L: Combined Flows

Inflow .	Area =	1,639,430 sf, 30.99% Impervious,	Inflow Depth = 4.24"	for 10-Year _2100 event
Inflow	=	92.76 cfs @ 12.43 hrs, Volume=	579,191 cf	
Primar	y =	92.76 cfs @ 12.43 hrs, Volume=	579,191 cf, Atter	n= 0%, Lag= 0.0 min

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

Link 4L: Combined Flows



20240629_	_Meadowbrook	HCAD	NOAA 24-hr C	100-Year	_Current Rain	fall=8.95"
Prepared b	y Rutgers Cooper	rative Extension	Water Resources F	Program	Printed	6/29/2024
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Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: DA 1: All	Runoff Area=2,045,127 sf 24.45% Impervious Runoff Depth=6.78" Tc=17.3 min CN=77/98 Runoff=271.05 cfs 1,155,108 cf
Subcatchment1Sa: DA 1: CN w/ IC area	s Runoff Area=1,732,396 sf 10.81% Impervious Runoff Depth=6.43" Tc=17.3 min CN=77/98 Runoff=222.67 cfs 928,126 cf
Subcatchment1Sb: DA1: Roofs	Runoff Area=132,361 sf 100.00% Impervious Runoff Depth=8.71" Tc=6.0 min CN=0/98 Runoff=28.18 cfs 96,068 cf
Subcatchment1Sc: DA1: Driveways	Runoff Area=180,370 sf 100.00% Impervious Runoff Depth=8.71" Tc=6.0 min CN=0/98 Runoff=38.40 cfs 130,914 cf
Subcatchment2S: DA 2: All	Runoff Area=1,436,627 sf 27.42% Impervious Runoff Depth=6.67" Tc=39.8 min CN=75/98 Runoff=124.66 cfs 799,121 cf
Subcatchment2Sa: DA 2: CN w/ IC area	s Runoff Area=1,186,669 sf 12.13% Impervious Runoff Depth=6.25" Tc=39.8 min CN=75/98 Runoff=98.65 cfs 617,700 cf
Subcatchment2Sb: DA2: Roofs combin	ed Runoff Area=85,031 sf 100.00% Impervious Runoff Depth=8.71" Tc=6.0 min CN=0/98 Runoff=18.10 cfs 61,716 cf
Subcatchment2Sc: DA2: Driveways	Runoff Area=164,927 sf 100.00% Impervious Runoff Depth=8.71" Tc=6.0 min CN=0/98 Runoff=35.11 cfs 119,705 cf
Subcatchment3S: DA 3: All	Runoff Area=1,310,873 sf 33.67% Impervious Runoff Depth=6.85" Tc=35.3 min CN=75/98 Runoff=123.24 cfs 748,330 cf
Subcatchment3Sa: DA 3: CNs w/ IC	Runoff Area=1,033,197 sf 15.85% Impervious Runoff Depth=6.35" Tc=35.3 min CN=75/98 Runoff=92.51 cfs 546,791 cf
Subcatchment 3Sb: DA3: Roofs combin	ed Runoff Area=92,992 sf 100.00% Impervious Runoff Depth=8.71" Tc=6.0 min CN=0/98 Runoff=19.80 cfs 67,494 cf
Subcatchment3Sc: DA3: Driveways	Runoff Area=184,684 sf 100.00% Impervious Runoff Depth=8.71" Tc=6.0 min CN=0/98 Runoff=39.32 cfs 134,045 cf
Subcatchment4S: DA 4: All	Runoff Area=328,557 sf 20.27% Impervious Runoff Depth=6.47" Tc=16.9 min CN=75/98 Runoff=42.37 cfs 177,278 cf
Subcatchment4Sa: DA 4: CN w/ IC area	s Runoff Area=268,899 sf 2.59% Impervious Runoff Depth=5.98" Tc=16.9 min CN=75/98 Runoff=33.06 cfs 133,978 cf
Subcatchment4Sb: DA4: Roofs combin	ed Runoff Area=23,888 sf 100.00% Impervious Runoff Depth=8.71" Tc=6.0 min CN=0/98 Runoff=5.09 cfs 17,338 cf
Subcatchment4Sc: DA4: Driveways	Runoff Area=35,770 sf 100.00% Impervious Runoff Depth=8.71" Tc=6.0 min CN=0/98 Runoff=7.61 cfs 25,962 cf

 Reach 1R: INFLOW PIPE
 Avg. Flow Depth=2.61'
 Max Vel=26.19 fps
 Inflow=250.45 cfs
 977,366 cf

 54.0" Round Pipe
 n=0.013
 L=75.0'
 S=0.0400 '/'
 Capacity=393.30 cfs
 Outflow=250.00 cfs
 977,632 cf

Reach 2R: OUTFLOW PIPE 48.0" Round Pipe n=0.013 L=60.0' S=0.0200 '/' Capacity=203.14 cfs Outflow=177.47 cfs 969,118 cf

Pond 1P: ROAD RG 175SF W/ UDG Peak Elev=100.56' Storage=68,787 cf Inflow=222.67 cfs 928,126 cf Primary=62.86 cfs 735,538 cf Secondary=146.76 cfs 180,083 cf Tertiary=12.59 cfs 4,987 cf Outflow=222.21 cfs 920,608 cf

Pond 2P: Basic Rain Garden (infiltration Peak Elev=100.15' Storage=34,139 cf Inflow=28.18 cfs 96,068 cf Discarded=0.44 cfs 57,880 cf Primary=22.51 cfs 38,188 cf Outflow=22.95 cfs 96,068 cf

Pond 3P: Basic Porous Pavement Peak Elev=100.02' Storage=41,269 cf Inflow=38.40 cfs 130,914 cf Discarded=2.09 cfs 112,343 cf Primary=12.16 cfs 18,570 cf Outflow=14.25 cfs 130,914 cf

Pond 4P: Basin 1 Municipal property Peak Elev=75.72' Storage=146,414 cf Inflow=250.00 cfs 977,632 cf Primary=142.74 cfs 930,917 cf Secondary=34.76 cfs 38,201 cf Tertiary=0.00 cfs 0 cf Outflow=177.50 cfs 969,118 cf

Pond 5P: ROAD RG 175SF W/ UDG Peak Elev=100.44' Storage=40,702 cf Inflow=98.65 cfs 617,700 cf Primary=37.33 cfs 496,731 cf Secondary=61.20 cfs 117,917 cf Tertiary=0.00 cfs 0 cf Outflow=98.53 cfs 614,649 cf

Pond 6P: Basic Rain Garden (infiltration Peak Elev=100.16' Storage=21,340 cf Inflow=18.10 cfs 61,716 cf Discarded=0.27 cfs 36,031 cf Primary=15.21 cfs 25,685 cf Outflow=15.49 cfs 61,716 cf

Pond 7P: Basic Porous Pavement Peak Elev=100.02' Storage=37,569 cf Inflow=35.11 cfs 119,705 cf Discarded=1.91 cfs 102,724 cf Primary=11.43 cfs 16,981 cf Outflow=13.34 cfs 119,705 cf

Pond 8P: ROAD RG 175SF W/ UDG Peak Elev=100.42' Storage=39,138 cf Inflow=92.51 cfs 546,791 cf Primary=35.91 cfs 448,162 cf Secondary=56.45 cfs 94,582 cf Tertiary=0.00 cfs 0 cf Outflow=92.35 cfs 542,743 cf

Pond 9P: Basic Rain Garden (infiltration Peak Elev=100.19' Storage=20,911 cf Inflow=19.80 cfs 67,494 cf Discarded=0.26 cfs 35,160 cf Primary=17.52 cfs 32,334 cf Outflow=17.78 cfs 67,494 cf

Pond 10P: Basic Porous Pavement Peak Elev=100.03' Storage=42,306 cf Inflow=39.32 cfs 134,045 cf Discarded=2.14 cfs 115,030 cf Primary=12.36 cfs 19,014 cf Outflow=14.49 cfs 134,045 cf

Pond 11P: ROAD RG 175SF W/ UDG Peak Elev=100.83' Storage=4,642 cf Inflow=33.06 cfs 133,978 cf Primary=4.09 cfs 82,622 cf Secondary=17.77 cfs 39,977 cf Tertiary=11.08 cfs 11,129 cf Outflow=32.93 cfs 133,728 cf

Pond 12P: Basic Rain Garden (infiltration Peak Elev=100.15' Storage=6,259 cf Inflow=5.09 cfs 17,338 cf Discarded=0.08 cfs 10,623 cf Primary=3.98 cfs 6,715 cf Outflow=4.06 cfs 17,338 cf

Pond 13P: Basic Porous Pavement Peak Elev=100.01' Storage=7,684 cf Inflow=7.61 cfs 25,962 cf Discarded=0.41 cfs 22,279 cf Primary=3.54 cfs 3,722 cf Outflow=3.96 cfs 26,001 cf

Inflow=250.45 cfs 977,366 cf Primary=250.45 cfs 977,366 cf

Inflow=108.32 cfs 657,315 cf Primary=108.32 cfs 657,315 cf

Inflow=133.23 cfs 738,257 cf Primary=133.23 cfs 738,257 cf

Link 1L: Combined Flows

Link 2L: Combined Flows

Link 3L: Combined Flows

Link 4L: Combined Flows

Inflow=147.89 cfs 925,608 cf Primary=147.89 cfs 925,608 cf

Total Runoff Area = 10,242,368 sf Runoff Volume = 5,759,673 cf Average Runoff Depth = 6.75" 72.62% Pervious = 7,438,492 sf 27.38% Impervious = 2,803,876 sf

Summary for Subcatchment 1S: DA 1: All

Runoff = 271.05 cfs @ 12.26 hrs, Volume= 1,155,108 cf, Depth= 6.78" Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description				
*	187,351	98	Impervious				
	676,806	74	>75% Grass cover, Go	bod, HSG C			
	698,470	80	>75% Grass cover, Go	bod, HSG D			
	25,343	73	Woods, Fair, HSG C				
	726	79	Woods, Fair, HSG D				
	41,773	70) Woods, Good, HSG C				
	101,927	77	Woods, Good, HSG D				
*	132,361	98	Roofs				
*	180,370	98	Driveways				
	2,045,127	82	Weighted Average				
	1,545,045	77	75.55% Pervious Area				
	500,082	98	24.45% Impervious Area				
	Tc Length	Slop	Slope Velocity Capacity Description				
	(min) (feet)	(ft/	ft) (ft/sec) (cfs)				
	17.3			Direct Entry, Direct			
				-			

Subcatchment 1S: DA 1: All



Summary for Subcatchment 1Sa: DA 1: CN w/ IC areas

Runoff = 222.67 cfs @ 12.26 hrs, Volume= 928,126 cf, Depth= 6.43" Routed to Pond 1P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"

1	7.3				Direct Entry, Direct	
(n	nin) (feet)	(ft/	ft) (ft/sec)	(cfs)		
	Tc Length	Slop	be Velocity	Capacity	Description	
	107,001					
	187 351	98	10.81% Impervious Area			
	1 545 045	77	89 19% Pervious Area			
	1 732 396	79	Weighted Average			
	101,927	77	Woods, Go	d, HSG D		
	41,773	70	Woods, Good, HSG C			
	726	79	Woods, Fair, HSG D			
	25,343	73	Woods, Fair, HSG C			
	698,470	80	>75% Gras	s cover, Go	bod, HSG D	
	676,806	74	>75% Gras	s cover, Go	bod, HSG C	
*	187,351	98	Impervious			
	Area (sf)	CN	Description			

Subcatchment 1Sa: DA 1: CN w/ IC areas


Summary for Subcatchment 1Sb: DA1: Roofs combined

Runoff = 28.18 cfs @ 12.13 hrs, Volume= 96,068 cf, Depth= 8.71" Routed to Pond 2P : Basic Rain Garden (infiltration only) 500 sf

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"

* 132,361 98 132,361 98 100.00% Impervious Area Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 6.0 Direct Entry, Subcatchment 1Sb: DA1: Roofs combined Hydrograph 28.18 cfs NOAA 24-hr C 100-Year_Current Rainfall=8.95" Runoff Area=132,361 sf Runoff Volume=96,068 cf Runoff Depth=8.71" Tc=6.0 min CN=0/98 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Ai	rea (sf)	CN	Description	l				
132,361 98 100.00% Impervious Area <u>Tc Length</u> Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 6.0 Direct Entry, Subcatchment 1Sb: DA1: Roofs combined Hydrograph 28.18 cfs 100-Year_Current Rainfall=8.95" Runoff Area=132,361 sf Runoff Volume=96,068 cf Runoff Volume=96,068 cf Runoff Depth=8.71" Tc=6.0 min CN=0/98 4 4 4 4 4 4 4 4 4 4 4 4 4	*	1	32,361	98						
Tc Length Slope Velocity Capacity Description 6.0 Direct Entry, Gubcatchment 1Sb: DA1: Roofs combined Image: Subcatchment 1Sb: Subcat		1	32,361	98	100.00% In	npervious A	vrea			
6.0 Direct Entry, Subcatchment 1Sb: DA1: Roofs combined Hydrograph	(m	Tc nin)	Length (feet)	Slop (ft/f	e Velocity t) (ft/sec)	Capacity (cfs)	Description			
	(6.0					Direct Entry	,		
Purograph					Subcate	chment 1	Sb: DA1: Ro	ofs comb	ined	
Runoff			4			Hydro	graph			-
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 Time (bours)	Flow (cfs)	30 28 26 24 22 20 18 16 14 12 10 8 6 4 2			I I <tdi< td=""> <tdi< td=""> <tdi< td=""></tdi<></tdi<></tdi<>		100-Y	ar_Curren Runoff / Runoff /	NOAA 24-hr C It Rainfall=8.95" Area=132,361 sf olume=96,068 cf off Depth=8.71" Tc=6.0 min CN=0/98	Runoff
		0	2468	10 12 14	16 18 20 22 24	26 28 30 32 34 Time	36 38 40 42 44 46	48 50 52 54 56 5	58 60 62 64 66 68 70 72	

Summary for Subcatchment 1Sc: DA1: Driveways (other)

Runoff = 38.40 cfs @ 12.13 hrs, Volume= 130,914 cf, Depth= 8.71" Routed to Pond 3P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description		
*	180,370	98	Impervious	Drivways ((other)
	180,370	98	100.00% In	npervious A	Area
(Tc Length min) (feet)	Slop (ft/1	e Velocity t) (ft/sec)	Capacity (cfs)	Description
	6.0				Direct Entry,

Subcatchment 1Sc: DA1: Driveways (other)



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Summary for Subcatchment 2S: DA 2: All

Runoff = 124.66 cfs @ 12.54 hrs, Volume= 799,121 cf, Depth= 6.67"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Alea (SI)	CN	Description
*	143,894	98	Impervious
	1,270	65	Brush, Good, HSG C
	946,207	74	>75% Grass cover, Good, HSG C
	93,778	80	>75% Grass cover, Good, HSG D
	1,520	72	Woods/grass comb., Good, HSG C
*	85,031	98	Roofs
*	164,927	98	Driveways
	1,436,627	81	Weighted Average
	1,042,775	75	72.58% Pervious Area
	393,852	98	27.42% Impervious Area
	Tc Length	Slop	be Velocity Capacity Description



Direct Entry, Direct

Subcatchment 2S: DA 2: All



Summary for Subcatchment 2Sa: DA 2: CN w/ IC areas

Runoff = 98.65 cfs @ 12.54 hrs, Volume= 617,700 cf, Depth= 6.25" Routed to Pond 5P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description	
*	143,894	98	Impervious	
	1,270	65	Brush, Good, HSG C	
	946,207	74	>75% Grass cover, Good, HSG C	
	93,778	80	>75% Grass cover, Good, HSG D	
	1,520	72	Woods/grass comb., Good, HSG C	_
	1,186,669	77	Weighted Average	
	1,042,775	75	87.87% Pervious Area	
	143,894	98	12.13% Impervious Area	
(m	Tc Length nin) (feet)	Slop (ft/	be Velocity Capacity Description ft) (ft/sec) (cfs)	
3	9.8		Direct Entry, Direct	

Subcatchment 2Sa: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sb: DA2: Roofs combined

Runoff = 18.10 cfs @ 12.13 hrs, Volume= 61,716 cf, Depth= 8.71" Routed to Pond 6P : Basic Rain Garden (infiltration only) 500SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"



Summary for Subcatchment 2Sc: DA2: Driveways (other)

Runoff = 35.11 cfs @ 12.13 hrs, Volume= 119,705 cf, Depth= 8.71" Routed to Pond 7P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description					
*	164,927	98	98 Impervious Drivways (other)					
	164,927	98	100.00% Im	pervious A	Area			
	Tc Length (min) (feet)	Slop (ft/f	e Velocity t) (ft/sec)	Capacity (cfs)	Description			
	6.0				Direct Entry,			

Subcatchment 2Sc: DA2: Driveways (other)



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Summary for Subcatchment 3S: DA 3: All

Runoff = 123.24 cfs @ 12.48 hrs, Volume= 748,330 cf, Depth= 6.85" Routed to Link 4L : Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	163,718	98	Impervious
	4,569	65	Brush, Good, HSG C
	730,392	74	>75% Grass cover, Good, HSG C
	134,518	80	>75% Grass cover, Good, HSG D
*	92,992	98	Roofs
*	184,684	98	Driveways
_	1,310,873	83	Weighted Average
	869,479	75	66.33% Pervious Area
	441,394	98	33.67% Impervious Area
	Tc Length (min) (feet)	Slop (ft/	be Velocity Capacity Description ft) (ft/sec) (cfs)



Direct Entry, Direct

Subcatchment 3S: DA 3: All



Summary for Subcatchment 3Sa: DA 3: CNs w/ IC areas

Runoff = 92.51 cfs @ 12.49 hrs, Volume= 546,791 cf, Depth= 6.35" Routed to Pond 8P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"

(min) (feet)	(ft/	tt) (tt/sec) (cts)	
	(fact)	(EL)		
	To Length	Slor	pe Velocity Capacity Description	
	163,718	98	15.85% Impervious Area	
	869,479	75	84.15% Pervious Area	
	1,033,197	79		
	1 000 107	70		_
	134,518	80	>75% Grass cover. Good. HSG D	
	730,392	74	>75% Grass cover, Good, HSG C	
	4,569	65	Brush, Good, HSG C	
*	163,718	98	Impervious	
	Area (sf)	CN	Description	

Subcatchment 3Sa: DA 3: CNs w/ IC areas



Summary for Subcatchment 3Sb: DA3: Roofs combined

Runoff = 19.80 cfs @ 12.13 hrs, Volume= 67,494 cf, Depth= 8.71" Routed to Pond 9P : Basic Rain Garden (infiltration only) 500 SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"



Summary for Subcatchment 3Sc: DA3: Driveways (other)

Runoff = 39.32 cfs @ 12.13 hrs, Volume= 134,045 cf, Depth= 8.71" Routed to Pond 10P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf) CN	Description		
*	184,684	98	Impervious	Drivways ((other)
	184,684	98	100.00% In	npervious A	Area
(Tc Lengt	h Slop	e Velocity	Capacity	Description
<u>(n</u>	iin) (iee	l) (IV	t) (It/sec)	(CIS)	
	6.0				Direct Entry,

Subcatchment 3Sc: DA3: Driveways (other)



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Summary for Subcatchment 4S: DA 4: All

Runoff = 42.37 cfs @ 12.25 hrs, Volume= 177,278 cf, Depth= 6.47" Routed to Link 4L : Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description			
*	6,952	98	Impervious			
	208,611	74	>75% Grass	s cover, Go	bod, HSG C	
	53,336	80	>75% Grass	s cover, Go	bod, HSG D	
*	23,888	98	Roofs			
*	35,770	98	Driveways			_
	328,557	80	Weighted A	verage		
	261,947	75	79.73% Per	vious Area		
	66,610	98	20.27% Imp	ervious Are	ea	
	Tc Length	Slop	e Velocity	Capacity	Description	
((min) (feet)	(ft/1	ft) (ft/sec)	(cfs)		_
	16.9				Direct Entry, Direct	

Subcatchment 4S: DA 4: All



Summary for Subcatchment 4Sa: DA 4: CN w/ IC areas

Runoff = 33.06 cfs @ 12.25 hrs, Volume= 133,978 cf, Depth= 5.98" Routed to Pond 11P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description					
*	6,952	98	Impervious	mpervious				
	208,611	74	>75% Gras	s cover, Go	ood, HSG C			
	53,336	80	>75% Gras	s cover, Go	ood, HSG D			
	268,899 76 Weighted Average							
	261,947	75	97.41% Per	vious Area	3			
	6,952	98	2.59% Impe	ervious Area	a			
	Tc Length (min) (feet)	Slop (ft/	e Velocity t) (ft/sec)	Capacity (cfs)	Description			
	16.9				Direct Entry, Direct			

Subcatchment 4Sa: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sb: DA4: Roofs combined

Runoff = 5.09 cfs @ 12.13 hrs, Volume= 17,338 cf, Depth= 8.71" Routed to Pond 12P : Basic Rain Garden (infiltration only) 500SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"



Summary for Subcatchment 4Sc: DA4: Driveways (other)

Runoff = 7.61 cfs @ 12.13 hrs, Volume= 25,962 cf, Depth= 8.71" Routed to Pond 13P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _Current Rainfall=8.95"

A	rea (sf)	CN D	Description		
	35,770	98 Ir	mpervious	Drivways ((other)
	35,770	98 1	00.00% In	npervious A	Area
Tc min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,
			Subcatc	hment 4S	Sc: DA4: Driveways (other)
				Hydro	ograph
ſ					
8		7.61 cfs		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NOAA 24-hr C
7-					100-Year _Current Rainfall=8.95"
					Runoff Area=35,770 sf _
					Runoff Volume=25,962 Cf
5					$T_{T} = T_{T} = T_{T$
					· · · · · · · · · · · · · · · · · · ·
4					
3			-+-+	- -	
-					
2					
1-7					
0					
- - - - - - - - - - - - - - - - - - -	2468	3 10 12 14 10	6 18 20 22 24	26 28 30 32 34	4 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

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Summary for Reach 1R: INFLOW PIPE

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 2,045,127 sf, 24.45% Impervious, Inflow Depth = 5.73" for 100-Year _Current event Inflow = 250.45 cfs @ 12.26 hrs, Volume= 977,366 cf Outflow = 250.00 cfs @ 12.26 hrs, Volume= 977,632 cf, Atten= 0%, Lag= 0.0 min Routed to Pond 4P : Basin 1 Municipal property 48k sf

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Max. Velocity= 26.19 fps, Min. Travel Time= 0.0 min Avg. Velocity = 7.95 fps, Avg. Travel Time= 0.2 min

Peak Storage= 716 cf @ 12.26 hrs Average Depth at Peak Storage= 2.61', Surface Width= 4.44' Bank-Full Depth= 4.50' Flow Area= 15.9 sf, Capacity= 393.30 cfs

54.0" Round Pipe n= 0.013 Concrete pipe, bends & connections Length= 75.0' Slope= 0.0400 '/' Inlet Invert= 75.00', Outlet Invert= 72.00'



20240629 Meadowbrook HCAD

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Reach 1R: INFLOW PIPE



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Summary for Reach 2R: OUTFLOW PIPE

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 2,045,127 sf, 24.45% Impervious, Inflow Depth = 5.69" for 100-Year Current event 177.50 cfs @ 12.41 hrs, Volume= Inflow = 969,118 cf 177.47 cfs @ 12.41 hrs, Volume= Outflow 969,118 cf, Atten= 0%, Lag= 0.1 min =

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Max. Velocity= 18.22 fps, Min. Travel Time= 0.1 min Avg. Velocity = 3.70 fps, Avg. Travel Time= 0.3 min

Peak Storage= 585 cf @ 12.41 hrs Average Depth at Peak Storage= 2.90', Surface Width= 3.58' Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 203.14 cfs

48.0" Round Pipe n= 0.013 Concrete pipe, bends & connections Length= 60.0' Slope= 0.0200 '/' Inlet Invert= 68.00', Outlet Invert= 66.80'



Inflow 177.50 cfs 177.47 cfs Outflow 190 Inflow Area=2,045,127 sf 180 170 Avg. Flow Depth=2.90' 160 Max Vel=18.22 fps 150 140 48.0" 130 120 **Round Pipe** (cfs) 110 n=0.013 100 Flow 90 L=60.0' 80 70 S=0.0200 '/' 60 50 Capacity=203.14 cfs 40 30 20 10 0 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 Time (hours)

Reach 2R: OUTFLOW PIPE

Hydrograph

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Summary for Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	1,732,396 sf,	10.81% Impervious,	Inflow Depth = 6.43'	for 100-Year (Current event
Inflow	=	222.67 cfs @	12.26 hrs, Volume=	928,126 cf		
Outflow	=	222.21 cfs @	12.26 hrs, Volume=	920,608 cf, Atte	en= 0%, Lag= 0.2	min
Primary	=	62.86 cfs @	12.26 hrs, Volume=	735,538 cf		
Routed	to Lin	k 1L : Combine	d Flows			
Secondary	=	146.76 cfs @	12.26 hrs, Volume=	180,083 cf		
Routed	to Lin	k 1L : Combine	d Flows			
Tertiary	=	12.59 cfs @	12.26 hrs, Volume=	4,987 cf		
Routed	to Lin	k 1L : Combine	d Flows			

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 100.56' @ 12.26 hrs Surf.Area= 30,624 sf Storage= 68,787 cf

Plug-Flow detention time= 18.3 min calculated for 919,969 cf (99% of inflow) Center-of-Mass det. time= 13.3 min (822.1 - 808.8)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1,737 cf	x 45.00 = 78,177 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	s Inc.Store	Cum.Store	Wet.Area
(fee	et)	(sq-ft)	(%	b) (cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
97.	75	175	0.	0 0	0	175
98.2	25	175	35.	0 31	31	198
99.2	25	175	35.	0 61	92	245
99.5	50	175	25.	0 11	103	257
100.0	00	175	100.	0 88	190	281
100.5	51	175	100.	0 89	280	304
101.7	75	175	100.	0 217	497	363
Device	Routing	In	vert	Outlet Devices		
#1	Primary	94	17'	6.0" Round Culve	rt X 45.00 L= 10.0)' Ke= 0.500
	-			Inlet / Outlet Invert=	94.17'/94.12' S	S= 0.0050 '/' Cc= 0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area= 0.20 sf
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	45.00 L= 32.0' Ke= 0.500
				Inlet / Outlet Invert=	94.33' / 94.17' S	S= 0.0050 '/' Cc= 0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area= 0.20 sf
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	eadth Broad-Cres	ted Rectangular Weir X 45.00
				Head (feet) 0.20 0	.40 0.60 0.80 1.0	00 1.20 1.40 1.60 1.80 2.00
				2.50 3.00 3.50		
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77 2.89 2.88
				2.85 3.07 3.20 3.3	32	

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#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 45.00** 2 End Contraction(s)

Primary OutFlow Max=62.84 cfs @ 12.26 hrs HW=100.55' (Free Discharge) 1=Culvert (Passes 62.84 cfs of 94.06 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 62.84 cfs @ 7.11 fps)

Secondary OutFlow Max=145.39 cfs @ 12.26 hrs HW=100.55' (Free Discharge) -3=Broad-Crested Rectangular Weir (Weir Controls 145.39 cfs @ 1.94 fps)

Tertiary OutFlow Max=11.27 cfs @ 12.26 hrs HW=100.55' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Weir Controls 11.27 cfs @ 0.76 fps)

Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 2P: Basic Rain Garden (infiltration only) 500 sf

Assumes infiltration through media is non-limiting.

Inflow Area	a =	132,361 sf	100.00% Impervious,	Inflow Depth = 8.71"	for 100-Year Current event
Inflow	=	28.18 cfs @	12.13 hrs, Volume=	96,068 cf	_
Outflow	=	22.95 cfs @	12.18 hrs, Volume=	96,068 cf, Atter	n= 19%, Lag= 3.2 min
Discarded	=	0.44 cfs @	12.05 hrs, Volume=	57,880 cf	-
Primary	=	22.51 cfs @	12.18 hrs, Volume=	38,188 cf	
Routed	to Link	1L : Combine	d Flows		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.15' @ 12.18 hrs Surf.Area= 38,000 sf Storage= 34,139 cf

Plug-Flow detention time= 400.2 min calculated for 96,002 cf (100% of inflow) Center-of-Mass det. time= 400.8 min (1,141.2 - 740.4)

Volume	Inver	t Ava	il.Stora	ge Storage Descri	ption	
#1	98.25	;'	622	cf Custom Stage	e Data (Conic)Liste	ed below (Recalc)
			622	cf x 76.00 = 47,	273 cf Total Avail	able Storage
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	Wet.Area
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
98.2	25	374	0.0	0	0	374
99.2	25	374	35.0	131	131	443
99.5	50	374	25.0	23	154	460
100.0	00	500	100.0	218	372	591
100.2	25	500	100.0	125	497	611
100.5	50	500	100.0	125	622	631
Device	Routing	In	vert (Outlet Devices		
#1	Discarded	98	.25' ().500 in/hr Exfiltrat	ion over Surface	area
#2	Primary	100	.00' 2	2.0' long x 3.0' brea	adth Broad-Crest	ed Rectangular Weir X 76.00
	-		ŀ	Head (feet) 0.20 0.4	40 0.60 0.80 1.0	0 1.20 1.40 1.60 1.80 2.00
			2	2.50 3.00 3.50 4.0	0 4.50	
			(Coef. (English) 2.44	2.58 2.68 2.67	2.65 2.64 2.64 2.68 2.68
			2	2.72 2.81 2.92 2.9	7 3.07 3.32	

Discarded OutFlow Max=0.44 cfs @ 12.05 hrs HW=100.03' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.44 cfs)

Primary OutFlow Max=21.86 cfs @ 12.18 hrs HW=100.15' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 21.86 cfs @ 0.95 fps)



Pond 2P: Basic Rain Garden (infiltration only) 500 sf

Summary for Pond 3P: Basic Porous Pavement (infiltration only)

180,370 sf,100.00% Impervious, Inflow Depth = 8.71" for 100-Year Current event Inflow Area = Inflow 38.40 cfs @ 12.13 hrs, Volume= 130.914 cf = 14.25 cfs @ 12.30 hrs, Volume= Outflow = 130,914 cf, Atten= 63%, Lag= 10.5 min 2.09 cfs @ 10.75 hrs, Volume= Discarded = 112,343 cf Primary = 12.16 cfs @ 12.30 hrs, Volume= 18,570 cf Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.02' @ 12.30 hrs Surf.Area= 180,370 sf Storage= 41,269 cf

Plug-Flow detention time= 115.8 min calculated for 130,823 cf (100% of inflow) Center-of-Mass det. time= 115.7 min (856.1 - 740.4)

Volume	Inver	t Ava	il.Storage	Storage Descrip	otion	
#1	99.25	5'	81,888 cf	Custom Stage	Data (Prismatic)Li	sted below (Recalc)
Elevatio (feet 99.2 99.7 99.8	n S t) 5 5 3	Surf.Area (sq-ft) 180,370 180,370 180,370	Voids (%) 0.0 35.0 15.0	Inc.Store (cubic-feet) 0 31,565 2,164	Cum.Store (cubic-feet) 0 31,565 33,729	
100.0	1 5	180,370	15.0 100.0	4,870 43 289	38,599	
<u>Device</u> #1 #2	Routing Discarded Primary	<u>In</u> 99 100	vert Out 0.25' 0.50 0.00' 15.0 Hea 2.50 Coe 3.30	<u>elet Devices</u> 00 in/hr Exfiltratio 0' long x 1.0' bre ad (feet) 0.20 0.4 0 3.00 ef. (English) 2.69 0 3.31 3.32	on over Surface an adth Edge of Porc 0 0.60 0.80 1.00 2.72 2.75 2.85 2	rea ous Asphalt X 76.00 1.20 1.40 1.60 1.80 2.00 .98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=2.09 cfs @ 10.75 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 2.09 cfs)

Primary OutFlow Max=11.94 cfs @ 12.30 hrs HW=100.02' (Free Discharge) ←2=Edge of Porous Asphalt (Weir Controls 11.94 cfs @ 0.42 fps)



Time (hours)

Pond 3P: Basic Porous Pavement (infiltration only)

Summary for Pond 4P: Basin 1 Municipal property 48k sf

[62] Hint: Exceeded Reach 1R OUTLET depth by 1.78' @ 12.50 hrs

Inflow Area	ı =	2,045,127 :	sf, 24.45% In	npervious,	Inflow Depth =	5.74"	for 100-Year	_Current event
Inflow	=	250.00 cfs @) 12.26 hrs,	Volume=	977,632 c	f		
Outflow	=	177.50 cfs @) 12.41 hrs,	Volume=	969,118 c	f, Atten	= 29%, Lag=	9.2 min
Primary	=	142.74 cfs @) 12.41 hrs,	Volume=	930,917 c	f	-	
Routed	to Rea	ach 2R : OUT	FLOW PIPE					
Secondary	=	34.76 cfs @) 12.41 hrs,	Volume=	38,201 c	f		
Routed	to Rea	ach 2R : OUT	FLOW PIPE					
Tertiary	=	0.00 cfs @) 0.00 hrs,	Volume=	0 c	f		
Routed	to Rea	ach 2R : OUT	FLOW PIPE					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 75.72' @ 12.41 hrs Surf.Area= 45,117 sf Storage= 146,414 cf

Plug-Flow detention time= 32.2 min calculated for 968,445 cf (99% of inflow) Center-of-Mass det. time= 27.3 min (846.1 - 818.9)

Volume	Inver	t Avail.Sto	rage Stora	ge Description	
#1	72.00	206,5	38 cf Custo	om Stage Data (Pi	rismatic)Listed below (Recalc)
Elevatio	on S et)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
72.0 77.0	00 00	33,525 49,090	0 206,538	0 206,538	
Device	Routing	Invert	Outlet Devi	ces	
#1	Primary	72.25'	24.0" Vert. Limited to v	Low Flow Orifice	X 6.00 C= 0.600 ads
#2	Secondary	/ 74.50'	24.0" W x ² Limited to v	18.0" H Vert. SEC veir flow at low hea	ONDARY OUTLET X 4.00 C= 0.600 ads
#3	Tertiary	76.75'	60.0" x 60. Limited to v	0" Horiz. Orifice/0 veir flow at low hea	Grate C= 0.600 ads

Primary OutFlow Max=142.41 cfs @ 12.41 hrs HW=75.71' (Free Discharge) ←1=Low Flow Orifice (Orifice Controls 142.41 cfs @ 7.55 fps)

Secondary OutFlow Max=34.27 cfs @ 12.41 hrs HW=75.71' (Free Discharge) =2=SECONDARY OUTLET (Orifice Controls 34.27 cfs @ 3.53 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=72.00' (Free Discharge) **-3=Orifice/Grate** (Controls 0.00 cfs)



Pond 4P: Basin 1 Municipal property 48k sf

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Summary for Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

=	1,186,669 sf,	12.13% Impervious,	Inflow Depth = 6.25"	for 100-Year Current event
=	98.65 cfs @	12.54 hrs, Volume=	617,700 cf	
=	98.53 cfs @	12.55 hrs, Volume=	614,649 cf, Atte	en= 0%, Lag= 0.4 min
=	37.33 cfs @	12.55 hrs, Volume=	496,731 cf	
to Link	2L : Combine	d Flows		
=	61.20 cfs @	12.55 hrs, Volume=	117,917 cf	
to Link	2L : Combine	d Flows		
=	0.00 cfs @	0.00 hrs, Volume=	0 cf	
to Link	2L : Combine	d Flows		
	= = = to Link = to Link = to Link	= 1,186,669 sf, = 98.65 cfs @ = 98.53 cfs @ = 37.33 cfs @ to Link 2L : Combine = 61.20 cfs @ to Link 2L : Combine = 0.00 cfs @ to Link 2L : Combine	 1,186,669 sf, 12.13% Impervious, 98.65 cfs @ 12.54 hrs, Volume= 98.53 cfs @ 12.55 hrs, Volume= 37.33 cfs @ 12.55 hrs, Volume= to Link 2L : Combined Flows 61.20 cfs @ 12.55 hrs, Volume= to Link 2L : Combined Flows 0.00 cfs @ 0.00 hrs, Volume= to Link 2L : Combined Flows 	= 1,186,669 sf, 12.13% Impervious, Inflow Depth = 6.25" = 98.65 cfs @ 12.54 hrs, Volume= 617,700 cf = 98.53 cfs @ 12.55 hrs, Volume= 614,649 cf, Atte = 37.33 cfs @ 12.55 hrs, Volume= 496,731 cf to Link 2L : Combined Flows = 117,917 cf to Link 2L : Combined Flows = 0.00 cfs @ 0.00 hrs, Volume= 0 cf to Link 2L : Combined Flows = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 100.44' @ 12.55 hrs Surf.Area= 18,374 sf Storage= 40,702 cf

Plug-Flow detention time= 16.2 min calculated for 614,222 cf (99% of inflow) Center-of-Mass det. time= 13.2 min (844.9 - 831.7)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 737 cf	x 27.00 - 46.006 cf. Total Available Storage

1,737 cf x 27.00 = 46,906 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	s Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%) (cubic-feet)	(cubic-feet)	(sq-ft)	
97.7	75	175	0.	0 0	0	175	
98.2	25	175	35.	0 31	31	198	
99.2	25	175	35.	0 61	92	245	
99.5	50	175	25.	0 11	103	257	
100.0	00	175	100.	0 88	190	281	
100.5	51	175	100.	0 89	280	304	
101.7	75	175	100.	0 217	497	363	
Device	Routing	In	vert	Outlet Devices			
#1	Primary	94	.17'	6.0" Round Culver	rt X 27.00 L= 10.0)' Ke= 0.500	
	-			Inlet / Outlet Invert=	94.17'/94.12' S	= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	27.00 L= 32.0' K	(e= 0.500
				Inlet / Outlet Invert=	94.33' / 94.17' S	= 0.0050 '/' Cc=	0.900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	adth Broad-Cres	ted Rectangular	Weir X 27.00
				Head (feet) 0.20 0.	.40 0.60 0.80 1.0	00 1.20 1.40 1.6	0 1.80 2.00
				2.50 3.00 3.50			
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88
				2.85 3.07 3.20 3.3	32		

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#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 27.00** 2 End Contraction(s)

Primary OutFlow Max=37.33 cfs @ 12.55 hrs HW=100.44' (Free Discharge) 1=Culvert (Passes 37.33 cfs of 55.87 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 37.33 cfs @ 7.04 fps)

Secondary OutFlow Max=60.99 cfs @ 12.55 hrs HW=100.44' (Free Discharge) —3=Broad-Crested Rectangular Weir (Weir Controls 60.99 cfs @ 1.72 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 6P: Basic Rain Garden (infiltration only) 500SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	85,031 sf,	,100.00% Impervious,	Inflow Depth = 8.71"	for 100-Year Current event
Inflow	=	18.10 cfs @	12.13 hrs, Volume=	61,716 cf	_
Outflow	=	15.49 cfs @	12.17 hrs, Volume=	61,716 cf, Atter	ו= 14%, Lag= 2.8 min
Discarded	=	0.27 cfs @	12.05 hrs, Volume=	36,031 cf	-
Primary	=	15.21 cfs @	12.17 hrs, Volume=	25,685 cf	
Routed	to Link	2L : Combine	d Flows		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.16' @ 12.17 hrs Surf.Area= 23,500 sf Storage= 21,340 cf

Plug-Flow detention time= 390.2 min calculated for 61,673 cf (100% of inflow) Center-of-Mass det. time= 390.8 min (1,131.2 - 740.4)

Volume	Invert	t Avai	il.Stora	ge Storage Desci	ription		
#1	98.25	1	622	cf Custom Stag	e Data (Conic)List	ed below (Recalc)	
			622	cf x 47.00 = 29	,235 cf Total Ava	lable Storage	
Elevatio	on S	urf.Area	Voids	Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>	
98.2	25	374	0.0	0	0	374	
99.2	25	374	35.0	131	131	443	
99.5	50	374	25.0	23	154	460	
100.0	00	500	100.0	218	372	591	
100.2	25	500	100.0	125	497	611	
100.5	50	500	100.0	125	622	631	
Device	Routing	In	vert (Outlet Devices			
#1	Discarded	98	.25' (0.500 in/hr Exfiltra	tion over Surface	area	
#2	Primary	100	0.00' 2 	2.0' long x 3.0' bre Head (feet) 0.20 0 2.50 3.00 3.50 4.0 Coef. (English) 2.4 2.72 2.81 2.92 2.9	eadth Broad-Cres .40 0.60 0.80 1.0 00 4.50 4 2.58 2.68 2.67 97 3.07 3.32	ted Rectangular Weir X 47 00 1.20 1.40 1.60 1.80 2. 2.65 2.64 2.64 2.68 2.68	.00 00 }

Discarded OutFlow Max=0.27 cfs @ 12.05 hrs HW=100.06' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.27 cfs)

Primary OutFlow Max=14.59 cfs @ 12.17 hrs HW=100.16' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 14.59 cfs @ 0.97 fps)



Pond 6P: Basic Rain Garden (infiltration only) 500SF

Summary for Pond 7P: Basic Porous Pavement (infiltration only)

164,927 sf,100.00% Impervious, Inflow Depth = 8.71" for 100-Year Current event Inflow Area = Inflow 35.11 cfs @ 12.13 hrs, Volume= 119.705 cf = 13.34 cfs @ 12.30 hrs, Volume= Outflow = 119,705 cf, Atten= 62%, Lag= 10.2 min 1.91 cfs @ 10.75 hrs, Volume= Discarded = 102,724 cf 11.43 cfs @ 12.30 hrs, Volume= Primary = 16,981 cf Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.02' @ 12.30 hrs Surf.Area= 164,927 sf Storage= 37,569 cf

Plug-Flow detention time= 115.7 min calculated for 119,622 cf (100% of inflow) Center-of-Mass det. time= 115.6 min (856.1 - 740.4)

Volume	Invei	rt Ava	il.Storage	Storage Descrip	otion	
#1	99.25	5'	74,877 cf	Custom Stage	Data (Prismatic)L	isted below (Recalc)
Elevatio (fee 99.2	on S et) 25	Surf.Area (sq-ft) 164,927	Voids (%) 0.0	Inc.Store (cubic-feet) 0	Cum.Store (cubic-feet) 0	
99.7	75	164,927	35.0	28,862	28,862	
99.8 100.0 100.2	33)1 25	164,927 164,927 164,927	15.0 15.0 100.0	1,979 4,453 39,582	30,841 35,294 74,877	
Device	Routing	In	vert Out	let Devices		
#1 #2	Discarded Primary	I 99 100	0.25' 0.50 0.00' 15.0 Hea 2.50 Coe 3.30	D0 in/hr Exfiltratio D' long x 1.0' bre ad (feet) 0.20 0.4 D 3.00 ef. (English) 2.69 D 3.31 3.32	on over Surface a adth Edge of Por 0 0.60 0.80 1.00 2.72 2.75 2.85	area ous Asphalt X 76.00 0 1.20 1.40 1.60 1.80 2.00 2.98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=1.91 cfs @ 10.75 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 1.91 cfs)

Primary OutFlow Max=11.18 cfs @ 12.30 hrs HW=100.02' (Free Discharge) ←2=Edge of Porous Asphalt (Weir Controls 11.18 cfs @ 0.41 fps)



Pond 7P: Basic Porous Pavement (infiltration only)

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Summary for Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	=	1,033,197 sf.	, 15.85% Impervious,	Inflow Depth = 6.35	for 100-Year _Current event
Inflow =	=	92.51 cfs @	12.49 hrs, Volume=	546,791 cf	
Outflow =	=	92.35 cfs @	12.49 hrs, Volume=	542,743 cf, Att	en= 0%, Lag= 0.4 min
Primary =	=	35.91 cfs @	12.49 hrs, Volume=	448,162 cf	
Routed to	o Link	3L : Combine	d Flows		
Secondary =	=	56.45 cfs @	12.49 hrs, Volume=	94,582 cf	
Routed to	o Link	3L : Combine	d Flows		
Tertiary =	=	0.00 cfs @	0.00 hrs, Volume=	0 cf	
Routed to	o Link	3L : Combine	d Flows		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 100.42' @ 12.49 hrs Surf.Area= 17,694 sf Storage= 39,138 cf

Plug-Flow detention time= 18.5 min calculated for 542,367 cf (99% of inflow) Center-of-Mass det. time= 13.9 min (838.0 - 824.1)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1,737 cf	x 26.00 = 45,169 cf Total Available Storage

Storage Group	A created	with	Chamber	Wizard
---------------	-----------	------	---------	--------

Elevation		Surf.Area Voic		s Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%) (cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>	
97.75		175 0) 0	0	175	
98.2	25	175	35.) 31	31	198	
99.2	25	175	35.) 61	92	245	
99.5	50	175	25.) 11	103	257	
100.0	00	175	100.	88	190	281	
100.5	51	175	100.) 89	280	304	
101.7	75	175	100.) 217	497	363	
Device	Routing	In	vert	Outlet Devices			
#1	Primary	94	17'	6.0" Round Culve	rt X 26.00 L= 10.0)' Ke= 0.500	
	-			Inlet / Outlet Invert=	94.17'/94.12' S	= 0.0050 '/' Cc= 0.900	
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area= 0.20 sf	
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	26.00 L= 32.0' Ke= 0.500	
Inlet / Outlet Invert= 94.33' / 94				= 94.33' / 94.17' S	= 0.0050 '/' Cc= 0.900		
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area= 0.20 sf	
#3 Seconda		ary 100.00'		3.0' long x 2.0' bre	eadth Broad-Cres	ted Rectangular Weir X 26.	.00
				Head (feet) 0.20 0	.40 0.60 0.80 1.	00 1.20 1.40 1.60 1.80 2.0	00
				2.50 3.00 3.50			
				Coef. (English) 2.5	4 2.61 2.61 2.60	2.66 2.70 2.77 2.89 2.88	5
				2.85 3.07 3.20 3.3	32		
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#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 26.00** 2 End Contraction(s)

Primary OutFlow Max=35.90 cfs @ 12.49 hrs HW=100.42' (Free Discharge) 1=Culvert (Passes 35.90 cfs of 53.74 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 35.90 cfs @ 7.03 fps)

Secondary OutFlow Max=56.11 cfs @ 12.49 hrs HW=100.42' (Free Discharge) —3=Broad-Crested Rectangular Weir (Weir Controls 56.11 cfs @ 1.70 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 9P: Basic Rain Garden (infiltration only) 500 SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	92,992 sf,	100.00% Impervious,	Inflow Depth = 8.71"	for 100-Year Current event
Inflow	=	19.80 cfs @	12.13 hrs, Volume=	67,494 cf	_
Outflow	=	17.78 cfs @	12.16 hrs, Volume=	67,494 cf, Atter	ו= 10%, Lag= 2.1 min
Discarded	=	0.26 cfs @	11.95 hrs, Volume=	35,160 cf	-
Primary	=	17.52 cfs @	12.16 hrs, Volume=	32,334 cf	
Routed	to Link	3L : Combine	d Flows		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.19' @ 12.16 hrs Surf.Area= 22,500 sf Storage= 20,911 cf

Plug-Flow detention time= 355.7 min calculated for 67,447 cf (100% of inflow) Center-of-Mass det. time= 356.3 min (1,096.7 - 740.4)

Volume	Inver	t Avai	il.Stora	ge Storage Descri	iption	
#1	98.25	•	622	cf Custom Stage	e Data (Conic)List	ed below (Recalc)
			622	cf x $45.00 = 27$,	,991 cf Total Avai	lable Storage
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	Wet.Area
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
98.2	25	374	0.0	0	0	374
99.2	25	374	35.0	131	131	443
99.5	50	374	25.0	23	154	460
100.0	00	500	100.0	218	372	591
100.2	25	500	100.0	125	497	611
100.5	50	500	100.0	125	622	631
Device	Routing	In	vert C	Dutlet Devices		
#1	Discarded	98	.25' 0	.500 in/hr Exfiltrat	ion over Surface	area
#2	Primary	100	.00' 2	2.0' long x 3.0' brea	adth Broad-Crest	ed Rectangular Weir X 45.00
	-		H 2 0 2	Head (feet) 0.20 0.2 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	40 0.60 0.80 1.0 0 4.50 4 2.58 2.68 2.67 7 3.07 3.32	0 1.20 1.40 1.60 1.80 2.00 2.65 2.64 2.64 2.68 2.68

Discarded OutFlow Max=0.26 cfs @ 11.95 hrs HW=100.04' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.26 cfs)

Primary OutFlow Max=17.11 cfs @ 12.16 hrs HW=100.18' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 17.11 cfs @ 1.04 fps)



Pond 9P: Basic Rain Garden (infiltration only) 500 SF

Summary for Pond 10P: Basic Porous Pavement (infiltration only)

184,684 sf,100.00% Impervious, Inflow Depth = 8.71" for 100-Year Current event Inflow Area = Inflow 39.32 cfs @ 12.13 hrs, Volume= 134.045 cf = 14.49 cfs @ 12.30 hrs, Volume= 134,045 cf, Atten= 63%, Lag= 10.6 min Outflow = 2.14 cfs @ 10.75 hrs, Volume= Discarded = 115,030 cf 12.36 cfs @ 12.30 hrs, Volume= Primary = 19,014 cf Routed to Link 3L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.03' @ 12.30 hrs Surf.Area= 184,684 sf Storage= 42,306 cf

Plug-Flow detention time= 115.8 min calculated for 133,952 cf (100% of inflow) Center-of-Mass det. time= 115.7 min (856.1 - 740.4)

Volume	Inver	rt Ava	il.Storage	Storage Descrip	otion	
#1	99.25	5'	83,847 cf	Custom Stage	Data (Prismatic)Lis	sted below (Recalc)
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	
99.2	25	184,684	0.0	0	0	
99.7	75	184,684	35.0	32,320	32,320	
99.0 100.0)1	184,684	15.0	4,986	39,522	
100.2	25	184,684	100.0	44,324	83,847	
Device	Routing	In	vert Ou	tlet Devices		
#1 #2	Discarded Primary	I 99 100	0.25' 0.5 0.00' 15 He 2.5 Co 3.3	00 in/hr Exfiltratio 0' long x 1.0' bre ad (feet) 0.20 0.4 0 3.00 ef. (English) 2.69 0 3.31 3.32	on over Surface are adth Edge of Poro 0 0.60 0.80 1.00 2.72 2.75 2.85 2.	ea us Asphalt X 76.00 1.20 1.40 1.60 1.80 2.00 98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=2.14 cfs @ 10.75 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 2.14 cfs)

Primary OutFlow Max=12.11 cfs @ 12.30 hrs HW=100.02' (Free Discharge) ←2=Edge of Porous Asphalt (Weir Controls 12.11 cfs @ 0.43 fps)



Pond 10P: Basic Porous Pavement (infiltration only)

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Summary for Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	ı =	268,899 sf,	2.59% Impervious,	Inflow Depth = 5.98" for 100-Year _C	Current event
Inflow	=	33.06 cfs @	12.25 hrs, Volume=	133,978 cf	
Outflow	=	32.93 cfs @	12.26 hrs, Volume=	133,728 cf, Atten= 0%, Lag= 0.1 r	min
Primary	=	4.09 cfs @	12.26 hrs, Volume=	82,622 cf	
Routed	to Link	3L : Combine	d Flows		
Secondary	=	17.77 cfs @	12.26 hrs, Volume=	39,977 cf	
Routed	to Link	3L : Combine	d Flows		
Tertiary	=	11.08 cfs @	12.26 hrs, Volume=	11,129 cf	
Routed	to Link	3L : Combine	d Flows		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 100.83' @ 12.26 hrs Surf.Area= 1,997 sf Storage= 4,642 cf

Plug-Flow detention time= 10.2 min calculated for 133,635 cf (100% of inflow) Center-of-Mass det. time= 9.2 min (829.2 - 820.0)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	374 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 615 of	x 2 00 - 4 944 of Total Available Storage

 $1,615 \text{ cf} \times 3.00 = 4,844 \text{ cf}$ Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	s Inc.Store	Cum.Store	Wet.Area		
(fee	et)	(sq-ft)	(%) (cubic-feet)	(cubic-feet)	(sq-ft)		
97.7	75	160	0.0) 0	0	160		
98.2	25	160	35.) 28	28	182		
99.2	25	160	35.) 56	84	227		
99.5	50	160	25.) 10	94	238		
100.0	00	160	100.	0 80	174	261		
100.5	51	160	100.) 82	256	284		
101.0	00	160	100.) 78	334	306		
101.2	25	160	100.) 40	374	317		
Device	Routing	In	vert	Outlet Devices				
#1	Primary	94	4.17'	6.0" Round Culve	rt X 3.00 L= 10.0	' Ke= 0.500		
	-			Inlet / Outlet Invert=	= 94.17' / 94.12'	S= 0.0050 '/' Cc= 0.	900	
				n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf				
#2	Device 1	94	4.33'	6.0" Round 6" HD	PE Underdrain X	3.00 L= 36.0' Ke=	0.500	
				Inlet / Outlet Invert=	= 94.33' / 94.17'	S= 0.0044 '/' Cc= 0.	900	
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area=	= 0.20 sf	
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bro	eadth Broad-Cres	sted Rectangular W	eir X 3.00	
				Head (feet) 0.20 0	0.40 0.60 0.80 1.	00 1.20 1.40 1.60	1.80 2.00	
				2.50 3.00 3.50				
				Coef. (English) 2.5	4 2.61 2.61 2.60	0 2.66 2.70 2.77 2.	.89 2.88	

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 #4
 Tertiary
 100.50'
 2.85
 3.07
 3.20
 3.32

 #4
 Tertiary
 100.50'
 6.0' long Sharp-Crested Rectangular Weir X 3.00
 2 End Contraction(s)

Primary OutFlow Max=4.09 cfs @ 12.26 hrs HW=100.83' (Free Discharge) **1=Culvert** (Passes 4.09 cfs of 6.41 cfs potential flow)

1–2=6" HDPE Underdrain (Barrel Controls 4.09 cfs @ 6.94 fps)

Secondary OutFlow Max=17.68 cfs @ 12.26 hrs HW=100.83' (Free Discharge) —3=Broad-Crested Rectangular Weir (Weir Controls 17.68 cfs @ 2.37 fps)

Tertiary OutFlow Max=10.93 cfs @ 12.26 hrs HW=100.83' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Weir Controls 10.93 cfs @ 1.87 fps)

Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 12P: Basic Rain Garden (infiltration only) 500SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	23,888 sf,	100.00% Impervious,	Inflow Depth = 8.71"	for 100-Year Current event
Inflow	=	5.09 cfs @	12.13 hrs, Volume=	17,338 cf	_
Outflow	=	4.06 cfs @	12.18 hrs, Volume=	17,338 cf, Atte	en= 20%, Lag= 3.5 min
Discarded	=	0.08 cfs @	12.05 hrs, Volume=	10,623 cf	-
Primary	=	3.98 cfs @	12.18 hrs, Volume=	6,715 cf	
Routed	to Link 3	3L : Combine	d Flows		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.15' @ 12.18 hrs Surf.Area= 7,000 sf Storage= 6,259 cf

Plug-Flow detention time= 405.6 min calculated for 17,326 cf (100% of inflow) Center-of-Mass det. time= 406.2 min (1,146.6 - 740.4)

Volume	Invert	: Avai	I.Stora	ge Storage Descri	iption		
#1	98.25'	I	622	cf Custom Stage	e Data (Conic)Liste	ed below (Recalc)	
			622	cf x 14.00 = 8,7	08 cf Total Availa	ble Storage	
Elevatio	on S	urf.Area	Voids	Inc.Store	Cum.Store	Wet.Area	
98.2 99.2 99.5 100.0 100.2 100.5	25 25 50 00 25 50	(50-11) 374 374 374 500 500 500	(76) 0.0 35.0 25.0 100.0 100.0 100.0	0 131 23 218 125 125	0 131 154 372 497 622	(<u>sq-it)</u> 374 443 460 591 611 631	
Device	Routing	In	vert C	Dutlet Devices			
#1 #2	Discarded Primary	98 100	.25' 0 .00' 2 H 2 C 2	0.500 in/hr Exfiltrat 2.0' long x 3.0' bre Head (feet) 0.20 0. 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	ion over Surface adth Broad-Crest 40 0.60 0.80 1.0 0 4.50 4 2.58 2.68 2.67 7 3.07 3.32	area ed Rectangular Weir X 0 1.20 1.40 1.60 1.80 2.65 2.64 2.64 2.68 2	14.00 2.00 .68

Discarded OutFlow Max=0.08 cfs @ 12.05 hrs HW=100.01' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=3.87 cfs @ 12.18 hrs HW=100.15' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 3.87 cfs @ 0.94 fps)



Pond 12P: Basic Rain Garden (infiltration only) 500SF

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Summary for Pond 13P: Basic Porous Pavement (infiltration only)

35,770 sf,100.00% Impervious, Inflow Depth = 8.71" for 100-Year Current event Inflow Area = Inflow 7.61 cfs @ 12.13 hrs, Volume= 25.962 cf = 3.96 cfs @ 12.24 hrs, Volume= Outflow = 26,001 cf, Atten= 48%, Lag= 7.1 min 0.41 cfs @ 10.75 hrs, Volume= Discarded = 22,279 cf 3.54 cfs @ 12.24 hrs, Volume= Primary = 3,722 cf Routed to Link 3L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 100.01' @ 12.25 hrs Surf.Area= 35,770 sf Storage= 7,684 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 115.1 min (855.5 - 740.4)

Volume	Invert	t Avai	I.Storage	Storage Descrip	tion	
#1	99.25	l i i i i i i i i i i i i i i i i i i i	16,240 cf	Custom Stage	Data (Prismatic)Lis	ted below (Recalc)
Elevatio	n S	urf.Area	Voids	Inc.Store	Cum.Store	
(lee	()	(sq-it)	(%)	(cubic-leet)	(cubic-leet)	
99.2	25	35,770	0.0	0	0	
99.7	'5	35,770	35.0	6,260	6,260	
99.8	3	35,770	15.0	429	6,689	
100.0)1	35,770	15.0	966	7,655	
100.2	5	35,770	100.0	8,585	16,240	
Device	Routing	In	vert Ou	tlet Devices		
#1	Discarded	99	.25' 0.5	00 in/hr Exfiltratio	on over Surface are	a
#2	Primary	100	.00' 15. He 2.5 Co 3.3	0' long x 1.0' bre ad (feet) 0.20 0.40 0 3.00 ef. (English) 2.69 0 3.31 3.32	adth Edge of Porol 0 0.60 0.80 1.00 2.72 2.75 2.85 2.9	us Asphalt X 76.00 1.20 1.40 1.60 1.80 2.00 98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=0.41 cfs @ 10.75 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.41 cfs)

Primary OutFlow Max=3.34 cfs @ 12.24 hrs HW=100.01' (Free Discharge) ←2=Edge of Porous Asphalt (Weir Controls 3.34 cfs @ 0.28 fps)



Pond 13P: Basic Porous Pavement (infiltration only)

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Summary for Link 1L: Combined Flows

Inflow Area = 2,045,127 sf, 24.45% Impervious, Inflow Depth = 5.73" for 100-Year _Current event Inflow = 250.45 cfs @ 12.26 hrs, Volume= 977,366 cf Primary = 250.45 cfs @ 12.26 hrs, Volume= 977,366 cf, Atten= 0%, Lag= 0.0 min Routed to Reach 1R : INFLOW PIPE

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



Link 1L: Combined Flows

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Summary for Link 2L: Combined Flows

Inflow	Area =	1,436,627 sf	, 27.42% Impervious,	Inflow Depth =	5.49"	for 1	100-Year _	Current event
Inflow	=	108.32 cfs @	12.52 hrs, Volume=	657,315 ct	f			
Primar	y =	108.32 cfs @	12.52 hrs, Volume=	657,315 ct	f, Atter	0% =ו	, Lag= 0.	0 min

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

Link 2L: Combined Flows



20240629_Meadowbrook_HCADNOAA 24-hr C 100-Year_Current Rainfall=8.95"Prepared by Rutgers Cooperative Extension Water Resources ProgramPrinted 6/29/2024HydroCAD® 10.10-7c s/n 03601 © 2022 HydroCAD Software Solutions LLCPage 306

Summary for Link 3L: Combined Flows

Inflow .	Area =	1,639,430 sf,	30.99% Impervious,	Inflow Depth = 5.40 "	for 100-Year _Current event
Inflow	=	133.23 cfs @	12.37 hrs, Volume=	738,257 cf	
Primar	y =	133.23 cfs @	12.37 hrs, Volume=	738,257 cf, Atte	n= 0%, Lag= 0.0 min

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



Link 3L: Combined Flows

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Summary for Link 4L: Combined Flows

Inflow /	Area =	=	1,639,430 sf,	30.99% Impervious,	Inflow Depth = 6.7	8" for 100-Year _Current event
Inflow	=		147.89 cfs @	12.42 hrs, Volume=	925,608 cf	
Primar	y =		147.89 cfs @	12.42 hrs, Volume=	925,608 cf, A	.tten= 0%, Lag= 0.0 min

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

Link 4L: Combined Flows



20240629_Meadowbrook_HCAD	NOAA 24-hr C 100-Year	_2100 Rainfall=12.15"
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Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA 1: All	Runoff Area=2,045,127 sf 24.45% Impervious Runoff Depth=9.85" Tc=17.3 min CN=77/98 Runoff=389.20 cfs 1,678,129 cf
Subcatchment1Sa: DA 1: CN w/ IC area	sRunoff Area=1,732,396 sf 10.81% Impervious Runoff Depth=9.47" Tc=17.3 min CN=77/98 Runoff=323.45 cfs 1,367,783 cf
Subcatchment1Sb: DA1: Roofs	Runoff Area=132,361 sf 100.00% Impervious Runoff Depth=11.91" Tc=6.0 min CN=0/98 Runoff=38.28 cfs 131,352 cf
Subcatchment1Sc: DA1: Driveways	Runoff Area=180,370 sf 100.00% Impervious Runoff Depth=11.91" Tc=6.0 min CN=0/98 Runoff=52.17 cfs 178,994 cf
Subcatchment2S: DA 2: All	Runoff Area=1,436,627 sf 27.42% Impervious Runoff Depth=9.72" Tc=39.8 min CN=75/98 Runoff=180.34 cfs 1,164,232 cf
Subcatchment2Sa: DA 2: CN w/ IC area	s Runoff Area=1,186,669 sf 12.13% Impervious Runoff Depth=9.26" Tc=39.8 min CN=75/98 Runoff=144.97 cfs 916,180 cf
Subcatchment2Sb: DA2: Roofs	Runoff Area=85,031 sf 100.00% Impervious Runoff Depth=11.91" Tc=6.0 min CN=0/98 Runoff=24.59 cfs 84,383 cf
Subcatchment2Sc: DA2: Driveways	Runoff Area=164,927 sf 100.00% Impervious Runoff Depth=11.91" Tc=6.0 min CN=0/98 Runoff=47.70 cfs 163,669 cf
Subcatchment 3S: DA 3: All	Runoff Area=1,310,873 sf 33.67% Impervious Runoff Depth=9.91" Tc=35.3 min CN=75/98 Runoff=177.13 cfs 1,082,885 cf
Subcatchment3Sa: DA 3: CNs w/ IC	Runoff Area=1,033,197 sf 15.85% Impervious Runoff Depth=9.38" Tc=35.3 min CN=75/98 Runoff=135.34 cfs 807,326 cf
Subcatchment3Sb: DA3: Roofs	Runoff Area=92,992 sf 100.00% Impervious Runoff Depth=11.91" Tc=6.0 min CN=0/98 Runoff=26.90 cfs 92,283 cf
Subcatchment3Sc: DA3: Driveways	Runoff Area=184,684 sf 100.00% Impervious Runoff Depth=11.91" Tc=6.0 min CN=0/98 Runoff=53.42 cfs 183,276 cf
Subcatchment4S: DA 4: All	Runoff Area=328,557 sf 20.27% Impervious Runoff Depth=9.51" Tc=16.9 min CN=75/98 Runoff=61.57 cfs 260,377 cf
Subcatchment4Sa: DA 4: CN w/ IC area	s Runoff Area=268,899 sf 2.59% Impervious Runoff Depth=8.98" Tc=16.9 min CN=75/98 Runoff=48.91 cfs 201,174 cf
Subcatchment4Sb: DA4: Roofs	Runoff Area=23,888 sf 100.00% Impervious Runoff Depth=11.91" Tc=6.0 min CN=0/98 Runoff=6.91 cfs 23,706 cf
Subcatchment4Sc: DA4: Driveways	Runoff Area=35,770 sf 100.00% Impervious Runoff Depth=11.91" Tc=6.0 min CN=0/98 Runoff=10.35 cfs 35,497 cf

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Reach 1R: INFLOW PIPE 54.0" Round Pipe n=0.013 L=75.0' S=0.0400 '/' Capacity=393.30 cfs Outflow=376.81 cfs 1,480,074 cf

Reach 2R: OUTFLOW PIPE Avg. Flow Depth=4.00' Max Vel=18.38 fps Inflow=258.43 cfs 1,454,167 cf 48.0" Round Pipe n=0.013 L=60.0' S=0.0200 '/' Capacity=203.14 cfs Outflow=224.68 cfs 1,454,167 cf

Pond 1P: ROAD RG 175SF W/ UDG Peak Elev=100.67' Storage=69,699 cf Inflow=323.45 cfs 1,367,783 cf nary=63.48 cfs 979,442 cf Secondary=194.71 cfs 334,990 cf Tertiary=64.66 cfs 46,668 cf Outflow=322.84 cfs 1,361,100 cf

Pond 2P: Basic Rain Garden (infiltration Peak Elev=100.20' Storage=36,047 cf Inflow=38.28 cfs 131,352 cf Discarded=0.44 cfs 60,499 cf Primary=34.40 cfs 70,852 cf Outflow=34.84 cfs 131,352 cf

Pond 3P: Basic Porous Pavement Peak Elev=100.05' Storage=46,469 cf Inflow=52.17 cfs 178,994 cf Discarded=2.09 cfs 130,873 cf Primary=38.18 cfs 48,122 cf Outflow=40.27 cfs 178,994 cf

Pond 4P: Basin 1 Municipal property Peak Elev=76.99' Storage=205,833 cf Inflow=376.81 cfs 1,480,130 cf nary=175.42 cfs 1,314,644 cf Secondary=75.50 cfs 134,761 cf Tertiary=7.51 cfs 4,762 cf Outflow=258.43 cfs 1,454,167 cf

Pond 5P: ROAD RG 175SF W/ UDG Peak Elev=100.58' Storage=41,384 cf Inflow=144.97 cfs 916,180 cf Primary=37.79 cfs 652,655 cf Secondary=93.84 cfs 246,789 cf Tertiary=13.28 cfs 13,138 cf Outflow=144.91 cfs 912,583 cf

Pond 6P: Basic Rain Garden (infiltration Peak Elev=100.21' Storage=22,424 cf Inflow=24.59 cfs 84,383 cf Discarded=0.27 cfs 37,515 cf Primary=22.17 cfs 46,867 cf Outflow=22.44 cfs 84,383 cf

Pond 7P: Basic Porous Pavement Peak Elev=100.05' Storage=42,089 cf Inflow=47.70 cfs 163,669 cf Discarded=1.91 cfs 119,667 cf Primary=35.55 cfs 44,002 cf Outflow=37.45 cfs 163,669 cf

Pond 8P: ROAD RG 175SF W/ UDG Peak Elev=100.57' Storage=39,810 cf Inflow=135.34 cfs 807,326 cf Primary=36.36 cfs 589,494 cf Secondary=88.20 cfs 204,704 cf Tertiary=10.69 cfs 8,921 cf Outflow=135.26 cfs 803,119 cf

Pond 9P: Basic Rain Garden (infiltration Peak Elev=100.23' Storage=21,924 cf Inflow=26.90 cfs 92,283 cf Discarded=0.26 cfs 36,165 cf Primary=24.49 cfs 56,118 cf Outflow=24.75 cfs 92,283 cf

Pond 10P: Basic Porous Pavement Peak Elev=100.05' Storage=47,703 cf Inflow=53.42 cfs 183,276 cf Discarded=2.14 cfs 134,003 cf Primary=38.90 cfs 49,273 cf Outflow=41.04 cfs 183,276 cf

Pond 11P: ROAD RG 175SF W/ UDG Peak Elev=101.00' Storage=4,725 cf Inflow=48.91 cfs 201,174 cf Primary=4.14 cfs 110,041 cf Secondary=24.02 cfs 65,049 cf Tertiary=20.60 cfs 25,780 cf Outflow=48.77 cfs 200,870 cf

Pond 12P: Basic Rain Garden (infiltration Peak Elev=100.20' Storage=6,619 cf Inflow=6.91 cfs 23,706 cf Discarded=0.08 cfs 11,127 cf Primary=6.20 cfs 12,579 cf Outflow=6.28 cfs 23,706 cf

Pond 13P: Basic Porous Pavement Peak Elev=100.02' Storage=8,055 cf Inflow=10.35 cfs 35,497 cf Discarded=0.41 cfs 25,953 cf Primary=9.56 cfs 9,865 cf Outflow=9.97 cfs 35,818 cf

Link 1L: Combined Flows	Inflow=377.53 cfs 1,480,074 cf
	Primary=377.53 cfs 1,480,074 cf
Link 2L: Combined Flows	Inflow=158.81 cfs 1,003,452 cf
	Primary=158.81 cfs 1,003,452 cf
Link 3L: Combined Flows	Inflow=195.34 cfs 1,131,823 cf
	Primarv=195.34 cfs 1.131.823 cf

Link 4L: Combined Flows

Inflow=213.01 cfs 1,343,262 cf Primary=213.01 cfs 1,343,262 cf

Total Runoff Area = 10,242,368 sf Runoff Volume = 8,371,246 cf Average Runoff Depth = 9.81" 72.62% Pervious = 7,438,492 sf 27.38% Impervious = 2,803,876 sf 20240629_Meadowbrook_HCADNOAA 24-hr C 100-Year_2100 Rainfall=12.15"Prepared by Rutgers Cooperative Extension Water Resources ProgramPrinted 6/29/2024HydroCAD® 10.10-7c s/n 03601 © 2022 HydroCAD Software Solutions LLCPage 311

Summary for Subcatchment 1S: DA 1: All

Runoff = 389.20 cfs @ 12.26 hrs, Volume= 1,678,129 cf, Depth= 9.85" Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description			
*	187,351	98	Impervious			
	676,806	74	>75% Grass c	over, Go	od, HSG C	
	698,470	80	>75% Grass c	over, Go	od, HSG D	
	25,343	73	Woods, Fair, H	ISG C		
	726	79	Woods, Fair, H	ISG D		
	41,773	70	Woods, Good	, HSG C		
	101,927	77	Woods, Good	, HSG D		
*	132,361	98	Roofs			
*	180,370	98	Driveways			
	2,045,127	82	Weighted Ave	rage		
	1,545,045	77	75.55% Pervic	ous Area		
	500,082	98	24.45% Imper	vious Are	ea	
	Tc Length	Slop	e Velocity C	Capacity	Description	
	(min) (feet)	(ft/	it) (ft/sec)	(cfs)		
	17.3				Direct Entry, Direct	

Subcatchment 1S: DA 1: All



Summary for Subcatchment 1Sa: DA 1: CN w/ IC areas

Runoff = 323.45 cfs @ 12.26 hrs, Volume= 1,367,783 cf, Depth= 9.47" Routed to Pond 1P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description			
*	187,351	98	Impervious			
	676,806	74	>75% Grass	s cover, Go	bod, HSG C	
	698,470	80	>75% Grass	s cover, Go	bod, HSG D	
	25,343	73	Woods, Fair	, HSG C		
	726	79	Woods, Fair	, HSG D		
	41,773	70	Woods, Goo	od, HSG C		
	101,927	77	Woods, Goo	od, HSG D		
	1,732,396	32,396 79 Weighted Average				
	1,545,045 77 89.19% Pervious Area			vious Area		
	187,351	98	10.81% Imp	ervious Are	ea	
	Tc Length	Slop	e Velocity	Capacity	Description	
(m	in) (feet)	(ft/	t) (ft/sec)	(cfs)		
17	7.3				Direct Entry, Direct	

Subcatchment 1Sa: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sb: DA1: Roofs combined

Runoff = 38.28 cfs @ 12.13 hrs, Volume= 131,352 cf, Depth=11.91" Routed to Pond 2P : Basic Rain Garden (infiltration only) 500 sf

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

Area (sf) CN Description	
132,361 98 100,00% Impervious Area	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
6.0 Direct Entry,	
Subcatchment 1Sb: DA1: Roofs comb	ined
Hydrograph	
42 38.28 cfs 100-Year_2100 F 36 36 Runoff A 30 Runoff Volu 26 Runoff A 10 Runoff A 10	■ Runoff NOAA-24-hr C Rainfall=12.15" rea=132,361 sf me=131,352 cf f Depth=11.91" Tc=6.0 min CN=0/98 CN=0/98

Summary for Subcatchment 1Sc: DA1: Driveways (other)

Runoff = 52.17 cfs @ 12.13 hrs, Volume= 178,994 cf, Depth=11.91" Routed to Pond 3P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description			
*	180,370	98	Impervious	Drivways ((other)	
	180,370	98	100.00% Im	npervious A	Area	
	Tc Length (min) (feet)	Slop (ft/f	e Velocity t) (ft/sec)	Capacity (cfs)	Description	
	6.0				Direct Entry,	

Subcatchment 1Sc: DA1: Driveways (other)



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Summary for Subcatchment 2S: DA 2: All

Runoff = 180.34 cfs @ 12.53 hrs, Volume= 1,164,232 cf, Depth= 9.72"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	143,894	98	Impervious
	1,270	65	Brush, Good, HSG C
	946,207	74	>75% Grass cover, Good, HSG C
	93,778	80	>75% Grass cover, Good, HSG D
	1,520	72	Woods/grass comb., Good, HSG C
*	85,031	98	Roofs
*	164,927	98	Driveways
	1,436,627	81	Weighted Average
	1,042,775	75	72.58% Pervious Area
	393,852	98	27.42% Impervious Area
	Tc Length (min) (feet)	Slop (ft/	be Velocity Capacity Description ft) (ft/sec) (cfs)



Direct Entry, Direct

Subcatchment 2S: DA 2: All



Summary for Subcatchment 2Sa: DA 2: CN w/ IC areas

Runoff = 144.97 cfs @ 12.53 hrs, Volume= 916,180 cf, Depth= 9.26" Routed to Pond 5P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description			
*	143,894	98	Impervious			
	1,270	65	Brush, Good, H	ISG C		
	946,207 74 >75% Grass cover, Go 93,778 80 >75% Grass cover, Go			ver, Go	ood, HSG C	
				ver, Go	ood, HSG D	
	1,520	72	Woods/grass c	omb., G	Good, HSG C	
	1,186,669	77	Weighted Avera	age		
1,042,775 75 87.87% Pervious Area			us Area			
	143,894	98	12.13% Imperv	ious Ar	ea	
	Tc Length	Slop	e Velocity Ca	apacity	Description	
<u>(n</u>	nin) (feet)	(ft/	ft) (ft/sec)	(cfs)		
3	9.8				Direct Entry, Direct	

Subcatchment 2Sa: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sb: DA2: Roofs combined

Runoff = 24.59 cfs @ 12.13 hrs, Volume= 84,383 cf, Depth=11.91" Routed to Pond 6P : Basic Rain Garden (infiltration only) 500SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"



Summary for Subcatchment 2Sc: DA2: Driveways (other)

Runoff = 47.70 cfs @ 12.13 hrs, Volume= 163,669 cf, Depth=11.91" Routed to Pond 7P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description			
*	164,927	98	Impervious	Drivways ((other)	
	164,927	98	100.00% Im	npervious A	Area	
	Tc Length (min) (feet)	Slop (ft/f	e Velocity t) (ft/sec)	Capacity (cfs)	Description	
	6.0				Direct Entry,	
			Subcatc	hment 2S	Sc: DA2: Driveways (other)	
				Hydrog	ograph	



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Summary for Subcatchment 3S: DA 3: All

Runoff = 177.13 cfs @ 12.48 hrs, Volume= 1,082,885 cf, Depth= 9.91" Routed to Link 4L : Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	163,718	98	Impervious
	4,569	65	Brush, Good, HSG C
	730,392	74	>75% Grass cover, Good, HSG C
	134,518	80	>75% Grass cover, Good, HSG D
*	92,992	98	Roofs
*	184,684	98	Driveways
	1,310,873	83	Weighted Average
	869,479	75	66.33% Pervious Area
	441,394	98	33.67% Impervious Area
	Tc Length (min) (feet)	Slop (ft/	be Velocity Capacity Description ft) (ft/sec) (cfs)



Direct Entry, Direct

Subcatchment 3S: DA 3: All



Summary for Subcatchment 3Sa: DA 3: CNs w/ IC areas

Runoff = 135.34 cfs @ 12.48 hrs, Volume= 807,326 cf, Depth= 9.38" Routed to Pond 8P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

(min) (feet)	(ft/	tt) (tt/sec) (cts)	
	(fact)	(EL)		
	To Length	Slor	pe Velocity Capacity Description	
	163,718	98	15.85% Impervious Area	
	869,479	75	84.15% Pervious Area	
	1,033,197	79		
	1 000 107	70		_
	134,518	80	>75% Grass cover. Good. HSG D	
	730,392	74	>75% Grass cover, Good, HSG C	
	4,569	65	Brush, Good, HSG C	
*	163,718	98	Impervious	
	Area (sf)	CN	Description	

Subcatchment 3Sa: DA 3: CNs w/ IC areas



Summary for Subcatchment 3Sb: DA3: Roofs combined

Runoff = 26.90 cfs @ 12.13 hrs, Volume= 92,283 cf, Depth=11.91" Routed to Pond 9P : Basic Rain Garden (infiltration only) 500 SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	A	rea (sf)	CN	Description						
*		92,992	98							
		92,992	98	100.00% In	npervious A	Area				
(Tc min)	Length (feet)	Slope (ft/ft	e Velocity) (ft/sec)	Capacity (cfs)	Description				
	6.0		•			Direct Entry	',			
				Subcato	hment 3	Sb: DA3: Ro	oofs com	bined		
					Hydro	graph				
	30-								-+-+-++	Runoff
	28- 26-			> +-+++++++++ + + + + + + + + + + + + + +				NOAA	24-hr C	
	20	, 				100-Y	ear _2100	Rainfall	=12.15"	
	22-			$\begin{array}{cccccccccccccccccccccccccccccccccccc$			Runof	f Area=9	2,992 sf	
	20-		-i	$\dot{+} - \dot{+} - $			Runoff Vo	olume=9	2,283 cf	
	18						Runc	off Depth	=11.91"	
(ofo)	16 16		-1	+-+-+-+-+-		+ - + - + - + - + - + - + - + - + -		Tc=	6.0 min	
i	5 14 -	,1							CN=0/98	
Ľ	12 <u>-</u>									
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	0	2 7 0 0	10 12 14	10 10 20 22 24	Time	e (hours)	10 00 02 04 00	0 00 00 02 04	00 00 10 12	

Summary for Subcatchment 3Sc: DA3: Driveways (other)

Runoff = 53.42 cfs @ 12.13 hrs, Volume= 183,276 cf, Depth=11.91" Routed to Pond 10P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description					
*	184,684	98	98 Impervious Drivways (other)					
184,684		98	100.00% Im	npervious A	Area			
	Tc Length (min) (feet)	Slop (ft/f	e Velocity t) (ft/sec)	Capacity (cfs)	Description			
	6.0				Direct Entry,			

Subcatchment 3Sc: DA3: Driveways (other)



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Summary for Subcatchment 4S: DA 4: All

Runoff = 61.57 cfs @ 12.25 hrs, Volume= 260,377 cf, Depth= 9.51" Routed to Link 4L : Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description						
*	6,952	98	Impervious						
	208,611	74	>75% Gras	75% Grass cover, Good, HSG C					
	53,336	80	>75% Gras	s cover, Go	ood, HSG D				
*	23,888	98	Roofs						
*	35,770	98	Driveways						
328,557 80 Weighted Average									
	261,947	75							
	66,610	98	20.27% Imp	pervious Are					
Tc Length Slope Velocity Capacity				Capacity	Description				
(m	nin) (feet)	(ft/1	ft) (ft/sec)	(cfs)					
1	6.9				Direct Entry, Direct				

Subcatchment 4S: DA 4: All



Summary for Subcatchment 4Sa: DA 4: CN w/ IC areas

Runoff = 48.91 cfs @ 12.25 hrs, Volume= 201,174 cf, Depth= 8.98" Routed to Pond 11P : ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description					
*	6,952	98	Impervious					
	208,611	74	>75% Gras	>75% Grass cover, Good, HSG C				
	53,336	80	>75% Gras	s cover, Go	ood, HSG D			
	268,899	76	Weighted A	verage				
	261,947	75	97.41% Per	vious Area	3			
	6,952	98	2.59% Impe	ervious Area	a			
(Tc Length min) (feet)	Slop (ft/	be Velocity ft) (ft/sec)	Capacity (cfs)	Description			
	16.9				Direct Entry, Direct	_		

Subcatchment 4Sa: DA 4: CN w/ IC areas


Summary for Subcatchment 4Sb: DA4: Roofs combined

Runoff = 6.91 cfs @ 12.13 hrs, Volume= 23,706 cf, Depth=11.91" Routed to Pond 12P : Basic Rain Garden (infiltration only) 500SF

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"



Summary for Subcatchment 4Sc: DA4: Driveways (other)

Runoff = 10.35 cfs @ 12.13 hrs, Volume= 35,497 cf, Depth=11.91" Routed to Pond 13P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05 NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description					
*	35,770	98	98 Impervious Drivways (other)					
	35,770	98	100.00% In	npervious A	Area			
Т	c Length	Slope	e Velocity	Capacity	Description			
(mii	n) (feet)	(ft/ft) (ft/sec)	(cfs)				
6	0				Direct Entry,			

Subcatchment 4Sc: DA4: Driveways (other)



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Summary for Reach 1R: INFLOW PIPE

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 2,045,127 sf, 24.45% Impervious, Inflow Depth = 8.68" for 100-Year _2100 event Inflow = 377.53 cfs @ 12.24 hrs, Volume= 1,480,074 cf Outflow = 376.81 cfs @ 12.24 hrs, Volume= 1,480,130 cf, Atten= 0%, Lag= 0.1 min Routed to Pond 4P : Basin 1 Municipal property 48k sf

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Max. Velocity= 28.15 fps, Min. Travel Time= 0.0 min Avg. Velocity = 8.80 fps, Avg. Travel Time= 0.1 min

Peak Storage= 1,004 cf @ 12.24 hrs Average Depth at Peak Storage= 3.53' , Surface Width= 3.70' Bank-Full Depth= 4.50' Flow Area= 15.9 sf, Capacity= 393.30 cfs

54.0" Round Pipe n= 0.013 Concrete pipe, bends & connections Length= 75.0' Slope= 0.0400 '/' Inlet Invert= 75.00', Outlet Invert= 72.00'



20240629 Meadowbrook HCAD

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Reach 1R: INFLOW PIPE



Page 328

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Summary for Reach 2R: OUTFLOW PIPE

[52] Hint: Inlet/Outlet conditions not evaluated[55] Hint: Peak inflow is 127% of Manning's capacity[76] Warning: Detained 56,419 cf (Pond w/culvert advised)

 Inflow Area =
 2,045,127 sf, 24.45% Impervious, Inflow Depth =
 8.53" for 100-Year _2100 event

 Inflow =
 258.43 cfs @
 12.30 hrs, Volume=
 1,454,167 cf

 Outflow =
 224.68 cfs @
 12.88 hrs, Volume=
 1,454,167 cf, Atten=
 13%, Lag=

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Max. Velocity= 18.38 fps, Min. Travel Time= 0.1 min Avg. Velocity = 4.02 fps, Avg. Travel Time= 0.2 min

Peak Storage= 754 cf @ 12.25 hrs Average Depth at Peak Storage= 4.00' Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 203.14 cfs

48.0" Round Pipe n= 0.013 Concrete pipe, bends & connections Length= 60.0' Slope= 0.0200 '/' Inlet Invert= 68.00', Outlet Invert= 66.80'



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Reach 2R: OUTFLOW PIPE



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Summary for Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	1,732,396 sf,	10.81% In	npervious,	Inflow Depth = 9	9.47" for	100-Year	2100 event
Inflow	=	323.45 cfs @	12.26 hrs,	Volume=	1,367,783 cf			
Outflow	=	322.84 cfs @	12.26 hrs,	Volume=	1,361,100 cf,	Atten= 0%	%, Lag= 0.′	1 min
Primary	=	63.48 cfs @	12.26 hrs,	Volume=	979,442 cf			
Routed	to Lin	k 1L : Combine	d Flows					
Secondary	=	194.71 cfs @	12.26 hrs,	Volume=	334,990 cf			
Routed	to Lin	k 1L : Combine	d Flows					
Tertiary Routed	= to Lin	64.66 cfs @ k 1L : Combine	12.26 hrs, d Flows	Volume=	46,668 cf			

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 100.67' @ 12.26 hrs Surf.Area= 30,624 sf Storage= 69,699 cf

Plug-Flow detention time= 14.6 min calculated for 1,361,100 cf (100% of inflow) Center-of-Mass det. time= 11.1 min (810.3 - 799.1)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 727 of	x 45.00 - 78.177 of Total Available Storage

 $1,737 \text{ cf} \times 45.00 = 78,177 \text{ cf}$ Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	ls Inc.Store	Cum.Store	Wet.Area			
(fee	et)	(sq-ft)	(%	6) (cubic-feet)	(cubic-feet)	(sq-ft)			
97.7	75	175	0.	0 0	0	175			
98.2	25	175	35.	.0 31	31	198			
99.2	25	175	35.	.0 61	92	245			
99.5	50	175	25.	.0 11	103	257			
100.0	00	175	100.	.0 88	190	281			
100.5	51	175	100.	.0 89	280	304			
101.7	75	175	100.	.0 217	497	363			
Device	Routing	In	vert	Outlet Devices					
#1	Primary	94	17'	6.0" Round Culve	rt X 45.00 L= 10.0)' Ke= 0.500			
	-			Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900					
				n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf					
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	45.00 L= 32.0' k	(e= 0.500		
				Inlet / Outlet Invert=	94.33' / 94.17' S	S= 0.0050 '/' Cc=	0.900		
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Are	a= 0.20 sf		
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	adth Broad-Cres	ted Rectangular	Weir X 45.00		
				Head (feet) 0.20 0	.40 0.60 0.80 1.0	00 1.20 1.40 1.6	0 1.80 2.00		
				2.50 3.00 3.50					
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88		
				2.85 3.07 3.20 3.3	32				

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#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 45.00** 2 End Contraction(s)

Primary OutFlow Max=63.46 cfs @ 12.26 hrs HW=100.67' (Free Discharge) 1=Culvert (Passes 63.46 cfs of 94.98 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 63.46 cfs @ 7.18 fps)

Secondary OutFlow Max=193.36 cfs @ 12.26 hrs HW=100.67' (Free Discharge) -3=Broad-Crested Rectangular Weir (Weir Controls 193.36 cfs @ 2.13 fps)

Tertiary OutFlow Max=62.01 cfs @ 12.26 hrs HW=100.67' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Weir Controls 62.01 cfs @ 1.35 fps)

Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 1P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 2P: Basic Rain Garden (infiltration only) 500 sf

Assumes infiltration through media is non-limiting.

Inflow Area	a =	132,361 sf,	,100.00% Impervious,	Inflow Depth = 11.91"	for 100-Year 2100 event					
Inflow	=	38.28 cfs @	12.13 hrs, Volume=	131,352 cf	_					
Outflow	=	34.84 cfs @	12.16 hrs, Volume=	131,352 cf, Atter	i= 9%, Lag= 2.0 min					
Discarded	=	0.44 cfs @	11.75 hrs, Volume=	60,499 cf	-					
Primary	=	34.40 cfs @	12.16 hrs, Volume=	70,852 cf						
Routed	Routed to Link 1L : Combined Flows									

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.20' @ 12.16 hrs Surf.Area= 38,000 sf Storage= 36,047 cf

Plug-Flow detention time= 321.0 min calculated for 131,260 cf (100% of inflow) Center-of-Mass det. time= 321.7 min (1,058.8 - 737.1)

Volume	Invert	: Avai	I.Stora	ge Storage Descr	iption	
#1	98.25	1	622	cf Custom Stage	e Data (Conic)List	ed below (Recalc)
			622	cf x 76.00 = 47	,273 cf Total Avai	lable Storage
Elevatio	on S	urf.Area	Voids	Inc.Store	Cum.Store	Wet.Area
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
98.2	25	374	0.0	0	0	374
99.2	25	374	35.0	131	131	443
99.5	50	374	25.0	23	154	460
100.0	00	500	100.0	218	372	591
100.2	25	500	100.0	125	497	611
100.5	50	500	100.0	125	622	631
Device	Routing	In	vert (Outlet Devices		
#1 #2	Discarded Primary	98 100	.25' (.00' 2 .00' 2	0.500 in/hr Exfiltrat 2.0' long x 3.0' bre Head (feet) 0.20 0. 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	tion over Surface adth Broad-Crest 40 0.60 0.80 1.0 0 4.50 4 2.58 2.68 2.67 97 3.07 3.32	area ed Rectangular Weir X 76.00 0 1.20 1.40 1.60 1.80 2.00 2.65 2.64 2.64 2.68 2.68

Discarded OutFlow Max=0.44 cfs @ 11.75 hrs HW=100.01' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.44 cfs)

Primary OutFlow Max=33.73 cfs @ 12.16 hrs HW=100.20' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 33.73 cfs @ 1.10 fps)



Pond 2P: Basic Rain Garden (infiltration only) 500 sf

Summary for Pond 3P: Basic Porous Pavement (infiltration only)

180,370 sf,100.00% Impervious, Inflow Depth = 11.91" for 100-Year 2100 event Inflow Area = Inflow 52.17 cfs @ 12.13 hrs, Volume= 178.994 cf = 40.27 cfs @ 12.19 hrs, Volume= 178,994 cf, Atten= 23%, Lag= 4.0 min Outflow = 2.09 cfs @ 10.05 hrs, Volume= Discarded = 130,873 cf Primary = 38.18 cfs @ 12.19 hrs, Volume= 48,122 cf Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.05' @ 12.19 hrs Surf.Area= 180,370 sf Storage= 46,469 cf

Plug-Flow detention time= 103.4 min calculated for 178,870 cf (100% of inflow) Center-of-Mass det. time= 103.3 min (840.4 - 737.1)

Volume	Inver	t Ava	il.Storage	Storage Descri	ption	
#1	99.25	5'	81,888 cf	Custom Stage	Data (Prismatic	Listed below (Recalc)
Elevatio (fee	on S	Surf.Area (sg-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
99.2 99.7 99.8 100.0 100.2	25 75 33 01 25	180,370 180,370 180,370 180,370 180,370 180,370	0.0 35.0 15.0 15.0 100.0	0 31,565 2,164 4,870 43,289	0 31,565 33,729 38,599 81,888	
Device	Routing	In	vert Ou	tlet Devices		
#1 #2	Discarded Primary	1 99 100	0.25' 0.5 0.00' 15. He: 2.5 Co: 3.3	00 in/hr Exfiltrati 0' long x 1.0' bre ad (feet) 0.20 0.4 0 3.00 ef. (English) 2.69 0 3.31 3.32	ion over Surface eadth Edge of Po 40 0.60 0.80 1.0 2.72 2.75 2.85	area brous Asphalt X 76.00 00 1.20 1.40 1.60 1.80 2.00 2.98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=2.09 cfs @ 10.05 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 2.09 cfs)

Primary OutFlow Max=37.37 cfs @ 12.19 hrs HW=100.05' (Free Discharge) -2=Edge of Porous Asphalt (Weir Controls 37.37 cfs @ 0.62 fps)



Pond 3P: Basic Porous Pavement (infiltration only)

Summary for Pond 4P: Basin 1 Municipal property 48k sf

[62] Hint: Exceeded Reach 1R OUTLET depth by 2.57' @ 12.50 hrs

Inflow Area	I =	2,045,12	7 sf,	24.45% In	npervious,	Inflow Depth =	8.68"	for 10	0-Year	2100 event
Inflow	=	376.81 cfs	@	12.24 hrs,	Volume=	1,480,130 cl	F			
Outflow	=	258.43 cfs	@	12.30 hrs,	Volume=	1,454,167 ct	f, Atten	= 31%	, Lag= 3	3.7 min
Primary	=	175.42 cfs	Ō.	12.30 hrs,	Volume=	1,314,644 ct	f			
Routed	to Rea	ach 2R : Ol	JTFL	_OW PIPE						
Secondary	=	75.50 cfs	@	12.30 hrs,	Volume=	134,761 ct	F			
Routed	to Rea	ach 2R : Ol	JŤFL	_OW PIPE						
Tertiary	=	7.51 cfs	@	12.30 hrs,	Volume=	4,762 ct	f			
Routed	to Rea	ach 2R : Ol	JŤFL	OW PIPE						

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 76.99' @ 12.30 hrs Surf.Area= 49,045 sf Storage= 205,833 cf

Plug-Flow detention time= 35.0 min calculated for 1,453,158 cf (98% of inflow) Center-of-Mass det. time= 24.5 min (831.1 - 806.6)

Volume	Invert	: Avail.Sto	rage Stora	age Description	
#1	72.00	206,53	38 cf Cust	om Stage Data (P	rismatic)Listed below (Recalc)
Elevatio (fee	on S et)	urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
72.0 77.0)0)0	33,525 49,090	0 206,538	0 206,538	
Device	Routing	Invert	Outlet Dev	ices	
#1	Primary	72.25'	24.0" Vert Limited to	. Low Flow Orifice weir flow at low he	e X 6.00 C= 0.600 ads
#2	Secondary	74.50'	24.0" W x Limited to	18.0" H Vert. SEC weir flow at low he	CONDARY OUTLET X 4.00 C= 0.600 ads
#3	Tertiary	76.75'	60.0" x 60 Limited to	.0" Horiz. Orifice/ weir flow at low he	Grate C= 0.600 ads

Primary OutFlow Max=175.42 cfs @ 12.30 hrs HW=76.99' (Free Discharge) **1=Low Flow Orifice** (Orifice Controls 175.42 cfs @ 9.31 fps)

Secondary OutFlow Max=75.51 cfs @ 12.30 hrs HW=76.99' (Free Discharge) =2=SECONDARY OUTLET (Orifice Controls 75.51 cfs @ 6.29 fps)

Tertiary OutFlow Max=7.48 cfs @ 12.30 hrs HW=76.99' (Free Discharge) **3=Orifice/Grate** (Weir Controls 7.48 cfs @ 1.59 fps)



Pond 4P: Basin 1 Municipal property 48k sf

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Summary for Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	1,186,669 sf,	12.13% In	npervious,	Inflow Depth = 9	9.26" for	100-Year	_2100 event
Inflow	=	144.97 cfs @	12.53 hrs,	Volume=	916,180 cf			
Outflow	=	144.91 cfs @	12.54 hrs,	Volume=	912,583 cf,	Atten= 09	%, Lag= 0.	2 min
Primary	=	37.79 cfs @	12.54 hrs,	Volume=	652,655 cf		-	
Routed	to Lin	k 2L : Combine	d Flows					
Secondary	' =	93.84 cfs @	12.54 hrs,	Volume=	246,789 cf			
Routed	to Lin	k 2L : Combine	d Flows					
Tertiary	=	13.28 cfs @	12.54 hrs,	Volume=	13,138 cf			
Routed	to Lin	k 2L : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 100.58' @ 12.54 hrs Surf.Area= 18,374 sf Storage= 41,384 cf

Plug-Flow detention time= 13.9 min calculated for 912,583 cf (100% of inflow) Center-of-Mass det. time= 11.0 min (833.2 - 822.2)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 727 of	x 27.00 - 46.006 of Total Available Storage

1,737 cf x 27.00 = 46,906 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation Surf.Area		Void	s Inc.Store	Cum.Store	Wet.Area				
(fee	et)	(sq-ft)	(%) (cubic-feet)	(cubic-feet)	(sq-ft)			
97.7	75	175	0.	0 0	0	175			
98.2	25	175	35.	0 31	31	198			
99.2	25	175	35.	0 61	92	245			
99.5	50	175	25.	0 11	103	257			
100.0	00	175	100.	0 88	190	281			
100.5	51	175	100.	0 89	280	304			
101.7	75	175	100.	0 217	497	363			
Device	Routing	In	vert	Outlet Devices					
#1	Primary	94	.17'	6.0" Round Culver	rt X 27.00 L= 10.0)' Ke= 0.500			
	-			Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900					
				n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf					
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	27.00 L= 32.0' K	e= 0.500		
				Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900					
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area	a= 0.20 sf		
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	adth Broad-Cres	ted Rectangular \	Neir X 27.00		
				Head (feet) 0.20 0.	.40 0.60 0.80 1.0	00 1.20 1.40 1.60	0 1.80 2.00		
				2.50 3.00 3.50					
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88		
				2.85 3.07 3.20 3.3	32				

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#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 27.00** 2 End Contraction(s)

Primary OutFlow Max=37.79 cfs @ 12.54 hrs HW=100.58' (Free Discharge) 1=Culvert (Passes 37.79 cfs of 56.56 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 37.79 cfs @ 7.13 fps)

Secondary OutFlow Max=93.55 cfs @ 12.54 hrs HW=100.58' (Free Discharge) —3=Broad-Crested Rectangular Weir (Weir Controls 93.55 cfs @ 1.99 fps)

Tertiary OutFlow Max=12.11 cfs @ 12.54 hrs HW=100.58' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Weir Controls 12.11 cfs @ 0.93 fps)

Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 5P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 6P: Basic Rain Garden (infiltration only) 500SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	85,031 sf,	,100.00% Impervious,	Inflow Depth = 11.91"	for 100-Year 2100 event
Inflow	=	24.59 cfs @	12.13 hrs, Volume=	84,383 cf	_
Outflow	=	22.44 cfs @	12.16 hrs, Volume=	84,383 cf, Atter	⊨ 9%, Lag= 1.9 min
Discarded	=	0.27 cfs @	11.70 hrs, Volume=	37,515 cf	-
Primary	=	22.17 cfs @	12.16 hrs, Volume=	46,867 cf	
Routed	to Link	2L : Combine	d Flows		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.21' @ 12.16 hrs Surf.Area= 23,500 sf Storage= 22,424 cf

Plug-Flow detention time= 312.5 min calculated for 84,383 cf (100% of inflow) Center-of-Mass det. time= 312.4 min (1,049.6 - 737.1)

Volume	Inver	t Avai	il.Stora	ge Storage Descri	ption	
#1	98.25	,	622	cf Custom Stage	e Data (Conic)Liste	ed below (Recalc)
			622	cf x $47.00 = 29$	235 cf Total Avail	able Storage
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	Wet.Area
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
98.2	25	374	0.0	0	0	374
99.2	25	374	35.0	131	131	443
99.5	50	374	25.0	23	154	460
100.0	00	500	100.0	218	372	591
100.2	25	500	100.0	125	497	611
100.5	50	500	100.0	125	622	631
Device	Routing	In	vert C	Dutlet Devices		
#1	Discarded	98	.25' 0	.500 in/hr Exfiltrat	ion over Surface	area
#2	Primary	100	.00' 2 H 2 0 2	2.0' long x 3.0' bre Head (feet) 0.20 0. 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	adth Broad-Crest 40 0.60 0.80 1.0 0 4.50 2.58 2.68 2.67 7 3.07 3.32	ed Rectangular Weir X 47.00 0 1.20 1.40 1.60 1.80 2.00 2.65 2.64 2.64 2.68 2.68

Discarded OutFlow Max=0.27 cfs @ 11.70 hrs HW=100.01' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.27 cfs)

Primary OutFlow Max=21.77 cfs @ 12.16 hrs HW=100.21' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 21.77 cfs @ 1.11 fps)



Pond 6P: Basic Rain Garden (infiltration only) 500SF

Summary for Pond 7P: Basic Porous Pavement (infiltration only)

164,927 sf,100.00% Impervious, Inflow Depth = 11.91" for 100-Year 2100 event Inflow Area = Inflow 47.70 cfs @ 12.13 hrs, Volume= 163.669 cf = 37.45 cfs @ 12.19 hrs, Volume= Outflow = 163,669 cf, Atten= 21%, Lag= 3.8 min 1.91 cfs @ 10.05 hrs, Volume= Discarded = 119,667 cf 35.55 cfs @ 12.19 hrs, Volume= 44,002 cf Primary = Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.05' @ 12.19 hrs Surf.Area= 164,927 sf Storage= 42,089 cf

Plug-Flow detention time= 103.3 min calculated for 163,556 cf (100% of inflow) Center-of-Mass det. time= 103.2 min (840.3 - 737.1)

Volume	Inve	rt Ava	il.Storage	 Storage Descr 	iption	
#1	99.25	5'	74,877 c	Custom Stage	e Data (Prismatic	JListed below (Recalc)
Elevatio (fee	on S et)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
99.2	25	164,927	0.0	0	0	
99.7	75	164,927	35.0	28,862	28,862	
99.8	33	164,927	15.0	1,979	30,841	
100.0)1	164,927	15.0	4,453	35,294	
100.2	25	164,927	100.0	39,582	74,877	
Device	Routing	In	vert Ou	Itlet Devices		
#1	Discarded	99).25' 0.5	500 in/hr Exfiltrat	ion over Surface	area
#2	Primary	100).00' 15 He 2.5 Co 3.3	.0' long x 1.0' br ad (feet) 0.20 0. 50 3.00 ef. (English) 2.69 30 3.31 3.32	eadth Edge of Po 40 0.60 0.80 1.0 9 2.72 2.75 2.85	Drous Asphalt X 76.00 00 1.20 1.40 1.60 1.80 2.00 2.98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=1.91 cfs @ 10.05 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 1.91 cfs)

Primary OutFlow Max=34.60 cfs @ 12.19 hrs HW=100.05' (Free Discharge) -2=Edge of Porous Asphalt (Weir Controls 34.60 cfs @ 0.60 fps)



Pond 7P: Basic Porous Pavement (infiltration only)

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Summary for Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Are	a =	1,033,197 sf,	15.85% In	npervious,	Inflow Depth = 9	9.38" for	100-Year	_2100 event
Inflow	=	135.34 cfs @	12.48 hrs,	Volume=	807,326 cf			
Outflow	=	135.26 cfs @	12.48 hrs,	Volume=	803,119 cf,	Atten= 09	%, Lag= 0.:	2 min
Primary	=	36.36 cfs @	12.48 hrs,	Volume=	589,494 cf			
Routed	to Lin	k 3L : Combine	d Flows					
Secondary	/ =	88.20 cfs @	12.48 hrs,	Volume=	204,704 cf			
Routed	to Lin	k 3L : Combine	d Flows					
Tertiary	=	10.69 cfs @	12.48 hrs,	Volume=	8,921 cf			
Routed	to Lin	k 3L : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3 Peak Elev= 100.57' @ 12.48 hrs Surf.Area= 17,694 sf Storage= 39,810 cf

Plug-Flow detention time= 15.2 min calculated for 803,119 cf (99% of inflow) Center-of-Mass det. time= 11.5 min (826.7 - 815.2)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 737 cf	x 26.00 - 45.160 cf. Total Available Storage

 $1,737 \text{ cf} \times 26.00 = 45,169 \text{ cf}$ Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	s Inc.Store	Cum.Store	Wet.Area		
(fee	et)	(sq-ft)	(%) (cubic-feet)	(cubic-feet)	(sq-ft)		
97.7	75	175	0.	0 0	0	175		
98.2	25	175	35.	0 31	31	198		
99.2	25	175	35.	0 61	92	245		
99.5	50	175	25.	0 11	103	257		
100.0	00	175	100.	0 88	190	281		
100.5	51	175	100.	0 89	280	304		
101.7	75	175	100.	0 217	497	363		
Device	Routing	In	vert	Outlet Devices				
#1	Primary	94	.17'	6.0" Round Culver	rt X 26.00 L= 10.0)' Ke= 0.500		
	-			Inlet / Outlet Invert=	94.17'/94.12' S	S= 0.0050 '/' Cc=	0.900	
				n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf				
#2	Device 1	94	.33'	6.0" Round 6" HD	PE Underdrain X	26.00 L= 32.0' K	e= 0.500	
				Inlet / Outlet Invert=	94.33' / 94.17' S	S= 0.0050 '/' Cc=	0.900	
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area	a= 0.20 sf	
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bre	adth Broad-Cres	ted Rectangular \	Neir X 26.00	
				Head (feet) 0.20 0.	.40 0.60 0.80 1.0	00 1.20 1.40 1.60	0 1.80 2.00	
				2.50 3.00 3.50				
				Coef. (English) 2.54	4 2.61 2.61 2.60	2.66 2.70 2.77	2.89 2.88	
				2.85 3.07 3.20 3.3	32			

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#4 Tertiary 100.50' **6.0' long Sharp-Crested Rectangular Weir X 26.00** 2 End Contraction(s)

Primary OutFlow Max=36.36 cfs @ 12.48 hrs HW=100.57' (Free Discharge) 1=Culvert (Passes 36.36 cfs of 54.42 cfs potential flow) 2=6" HDPE Underdrain (Barrel Controls 36.36 cfs @ 7.12 fps)

Secondary OutFlow Max=87.86 cfs @ 12.48 hrs HW=100.57' (Free Discharge) —3=Broad-Crested Rectangular Weir (Weir Controls 87.86 cfs @ 1.97 fps)

Tertiary OutFlow Max=9.65 cfs @ 12.48 hrs HW=100.57' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Weir Controls 9.65 cfs @ 0.87 fps)

Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 8P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Summary for Pond 9P: Basic Rain Garden (infiltration only) 500 SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	92,992 sf,	100.00% Impervious,	Inflow Depth = 11.91"	for 100-Year 2100 event
Inflow	=	26.90 cfs @	12.13 hrs, Volume=	92,283 cf	_
Outflow	=	24.75 cfs @	12.16 hrs, Volume=	92,283 cf, Atter	= 8%, Lag= 1.8 min
Discarded	=	0.26 cfs @	11.45 hrs, Volume=	36,165 cf	-
Primary	=	24.49 cfs @	12.16 hrs, Volume=	56,118 cf	
Routed	to Link	3L : Combine	d Flows		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.23' @ 12.16 hrs Surf.Area= 22,500 sf Storage= 21,924 cf

Plug-Flow detention time= 280.6 min calculated for 92,219 cf (100% of inflow) Center-of-Mass det. time= 281.3 min (1,018.4 - 737.1)

Volume	Inver	t Avai	il.Stora	ge Storage Descri	iption	
#1	98.25	•	622	cf Custom Stage	e Data (Conic)List	ed below (Recalc)
			622	cf x $45.00 = 27$,	,991 cf Total Avai	lable Storage
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	Wet.Area
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
98.2	25	374	0.0	0	0	374
99.2	25	374	35.0	131	131	443
99.5	50	374	25.0	23	154	460
100.0	00	500	100.0	218	372	591
100.2	25	500	100.0	125	497	611
100.5	50	500	100.0	125	622	631
Device	Routing	In	vert C	Dutlet Devices		
#1	Discarded	98	.25' 0	.500 in/hr Exfiltrat	ion over Surface	area
#2	Primary	100	.00' 2	2.0' long x 3.0' brea	adth Broad-Crest	ed Rectangular Weir X 45.00
	-		H 2 0 2	Head (feet) 0.20 0.2 2.50 3.00 3.50 4.0 Coef. (English) 2.44 2.72 2.81 2.92 2.9	40 0.60 0.80 1.0 0 4.50 4 2.58 2.68 2.67 7 3.07 3.32	0 1.20 1.40 1.60 1.80 2.00 2.65 2.64 2.64 2.68 2.68

Discarded OutFlow Max=0.26 cfs @ 11.45 hrs HW=100.00' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.26 cfs)

Primary OutFlow Max=24.11 cfs @ 12.16 hrs HW=100.23' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 24.11 cfs @ 1.17 fps)



Pond 9P: Basic Rain Garden (infiltration only) 500 SF

Summary for Pond 10P: Basic Porous Pavement (infiltration only)

184,684 sf,100.00% Impervious, Inflow Depth = 11.91" for 100-Year 2100 event Inflow Area = Inflow 53.42 cfs @ 12.13 hrs, Volume= 183.276 cf = 41.04 cfs @ 12.19 hrs, Volume= Outflow = 183,276 cf, Atten= 23%, Lag= 4.1 min 2.14 cfs @ 10.05 hrs, Volume= Discarded = 134,003 cf 38.90 cfs @ 12.19 hrs, Volume= Primary = 49,273 cf Routed to Link 3L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.05' @ 12.19 hrs Surf.Area= 184,684 sf Storage= 47,703 cf

Plug-Flow detention time= 103.4 min calculated for 183,148 cf (100% of inflow) Center-of-Mass det. time= 103.3 min (840.5 - 737.1)

Volume	Inver	rt Ava	il.Storage	 Storage Description 	ption	
#1	99.25	5'	83,847 c	Custom Stage	Data (Prismatic)	Listed below (Recalc)
Elevatio	on S	Surf.Area	Voids	Inc.Store	Cum.Store	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	
99.2	25	184,684	0.0	0	0	
99.7	75	184,684	35.0	32,320	32,320	
99.8	33	184,684	15.0	2,216	34,536	
100.0)1	184,684	15.0	4,986	39,522	
100.2	25	184,684	100.0	44,324	83,847	
Device	Routing	In	vert Ou	Itlet Devices		
#1	Discarded	I 99	.25' 0.5	500 in/hr Exfiltrati	on over Surface	area
#2	Primary	100	0.00' 15 He 2.5 Co 3.3	.0' long x 1.0' bre ad (feet) 0.20 0.4 50 3.00 ef. (English) 2.69 30 3.31 3.32	adth Edge of Po 40 0.60 0.80 1.0 2.72 2.75 2.85	rous Asphalt X 76.00 10 1.20 1.40 1.60 1.80 2.00 2.98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=2.14 cfs @ 10.05 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 2.14 cfs)

Primary OutFlow Max=38.14 cfs @ 12.19 hrs HW=100.05' (Free Discharge) ←2=Edge of Porous Asphalt (Weir Controls 38.14 cfs @ 0.62 fps)



Pond 10P: Basic Porous Pavement (infiltration only)

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Summary for Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES

Inflow Area	a =	268,899 sf,	2.59% In	npervious,	Inflow Depth =	8.98" for	100-Year	2100 event
Inflow	=	48.91 cfs @	12.25 hrs,	Volume=	201,174 cf			
Outflow	=	48.77 cfs @	12.25 hrs,	Volume=	200,870 cf	, Atten= 0%	%, Lag= 0.0	0 min
Primary	=	4.14 cfs @	12.25 hrs,	Volume=	110,041 cf			
Routed	to Link	3L : Combine	d Flows					
Secondary	=	24.02 cfs @	12.25 hrs,	Volume=	65,049 cf			
Routed	to Link	3L : Combine	d Flows					
Tertiary	=	20.60 cfs @	12.25 hrs,	Volume=	25,780 cf			
Routed	to Link	3L : Combine	d Flows					

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 101.00' @ 12.25 hrs Surf.Area= 1,997 sf Storage= 4,725 cf

Plug-Flow detention time= 10.2 min calculated for 200,870 cf (100% of inflow) Center-of-Mass det. time= 8.3 min (817.0 - 808.7)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	374 cf	Custom Stage Data (Conic)Listed below (Recalc)
#2A	93.75'	689 cf	15.75'W x 32.10'L x 4.50'H Field A
			2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	ADS_StormTech SC-740 +Cap x 12 Inside #2
			Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			12 Chambers in 3 Rows
		1 615 of	x 200 - 4844 of Total Available Storage

 $1,615 \text{ cf} \times 3.00 = 4,844 \text{ cf}$ Total Available Storage

Storage Group A created with Chamber Wizard

Elevatio	on	Surf.Area	Void	s Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%) (cubic-feet)	(cubic-feet)	(sq-ft)	
97.7	75	160	0.0) 0	0	160	
98.2	25	160	35.) 28	28	182	
99.2	25	160	35.) 56	84	227	
99.5	50	160	25.) 10	94	238	
100.0	00	160	100.	0 80	174	261	
100.5	51	160	100.) 82	256	284	
101.0	00	160	100.) 78	334	306	
101.2	25	160	100.) 40	374	317	
Device	Routing	In	vert	Outlet Devices			
#1	Primary	94	4.17'	6.0" Round Culve	rt X 3.00 L= 10.0	' Ke= 0.500	
	-			Inlet / Outlet Invert=	= 94.17' / 94.12'	S= 0.0050 '/' Cc= 0.	900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area=	= 0.20 sf
#2	Device 1	94	4.33'	6.0" Round 6" HD	PE Underdrain X	3.00 L= 36.0' Ke=	0.500
				Inlet / Outlet Invert=	= 94.33' / 94.17'	S= 0.0044 '/' Cc= 0.	900
				n= 0.020 Corrugate	ed PE, corrugated	interior, Flow Area=	= 0.20 sf
#3	Seconda	ry 100	0.00'	3.0' long x 2.0' bro	eadth Broad-Cres	sted Rectangular W	eir X 3.00
				Head (feet) 0.20 0	0.40 0.60 0.80 1.	00 1.20 1.40 1.60	1.80 2.00
				2.50 3.00 3.50			
				Coef. (English) 2.5	4 2.61 2.61 2.60	0 2.66 2.70 2.77 2.	.89 2.88

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 #4
 Tertiary
 100.50'
 2.85
 3.07
 3.20
 3.32

 #4
 Tertiary
 100.50'
 6.0' long Sharp-Crested Rectangular Weir X 3.00
 2 End Contraction(s)

Primary OutFlow Max=4.14 cfs @ 12.25 hrs HW=101.00' (Free Discharge) **1=Culvert** (Passes 4.14 cfs of 6.50 cfs potential flow)

1–2=6" HDPE Underdrain (Barrel Controls 4.14 cfs @ 7.03 fps)

Secondary OutFlow Max=23.97 cfs @ 12.25 hrs HW=101.00' (Free Discharge) —3=Broad-Crested Rectangular Weir (Weir Controls 23.97 cfs @ 2.66 fps)

Tertiary OutFlow Max=20.51 cfs @ 12.25 hrs HW=101.00' (Free Discharge) **4=Sharp-Crested Rectangular Weir** (Weir Controls 20.51 cfs @ 2.31 fps)

Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech® SC-740 with cap length) Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length 3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width

18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af Overall Storage Efficiency = 54.5%Overall System Size = $32.10' \times 15.75' \times 4.50'$

12 Chambers 84.3 cy Field 63.8 cy Stone







Pond 11P: ROAD RG 175SF W/ UDG STORAGE CHAMBERES
Summary for Pond 12P: Basic Rain Garden (infiltration only) 500SF

Assumes infiltration through media is non-limiting.

Inflow Area	a =	23,888 sf,	100.00% Impervious,	Inflow Depth = 11.91"	for 100-Year 2100 event
Inflow	=	6.91 cfs @	12.13 hrs, Volume=	23,706 cf	_
Outflow	=	6.28 cfs @	12.16 hrs, Volume=	23,706 cf, Atten	= 9%, Lag= 2.0 min
Discarded	=	0.08 cfs @	11.80 hrs, Volume=	11,127 cf	-
Primary	=	6.20 cfs @	12.16 hrs, Volume=	12,579 cf	
Routed	to Link 3	3L : Combine	d Flows		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs Peak Elev= 100.20' @ 12.16 hrs Surf.Area= 7,000 sf Storage= 6,619 cf

Plug-Flow detention time= 326.0 min calculated for 23,689 cf (100% of inflow) Center-of-Mass det. time= 326.7 min (1,063.8 - 737.1)

Volume	Invert	Avail	l.Storage	e Storage Descri	ption		
#1	98.25'		622 c	f Custom Stage	Data (Conic)Liste	d below (Recalc)	
			622 c	$f \times 14.00 = 8,70$	08 cf Total Availat	ble Storage	
Elevatio	on Si	urf.Area	Voids	Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>	
98.2	25	374	0.0	0	0	374	
99.2	25	374	35.0	131	131	443	
99.5	50	374	25.0	23	154	460	
100.0	00	500	100.0	218	372	591	
100.2	25	500	100.0	125	497	611	
100.8	50	500	100.0	125	622	631	
Device	Routing	١n	vert Ou	utlet Devices			
#1	Discarded	98.	.25' 0.	500 in/hr Exfiltrati	on over Surface a	area	
#2	Primary	100.	.00' 2 .0	0' long x 3.0' brea	dth Broad-Creste	ed Rectangular Weir X 14.00)
	,		He 2.9 Co 2	ead (feet) 0.20 0.4 50 3.00 3.50 4.00 bef. (English) 2.44 72 2.81 2.92 2.97	40 0.60 0.80 1.00) 4.50 2.58 2.68 2.67 : 7 3.07 3.32) 1.20 1.40 1.60 1.80 2.00 2.65 2.64 2.64 2.68 2.68	
			Ζ.	12 2.01 2.92 2.91	3.07 3.3Z		

Discarded OutFlow Max=0.08 cfs @ 11.80 hrs HW=100.02' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=6.07 cfs @ 12.16 hrs HW=100.20' (Free Discharge) ←2=Broad-Crested Rectangular Weir (Weir Controls 6.07 cfs @ 1.09 fps)



Pond 12P: Basic Rain Garden (infiltration only) 500SF

Summary for Pond 13P: Basic Porous Pavement (infiltration only)

35,770 sf,100.00% Impervious, Inflow Depth = 11.91" for 100-Year 2100 event Inflow Area = Inflow = 10.35 cfs @ 12.13 hrs, Volume= 35.497 cf 9.97 cfs @ 12.14 hrs, Volume= Outflow = 35,818 cf, Atten= 4%, Lag= 1.0 min 0.41 cfs @ 10.05 hrs, Volume= Discarded = 25.953 cf 9.56 cfs @ 12.14 hrs, Volume= Primary = 9,865 cf Routed to Link 3L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 100.02' @ 12.15 hrs Surf.Area= 35,770 sf Storage= 8,055 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 101.5 min (838.6 - 737.1)

Volume	Invert	t Avai	I.Storage	Storage Descrip	tion	
#1	99.25	1	16,240 cf	Custom Stage	Data (Prismatic)L	isted below (Recalc)
Elevatio (fee 99.2 99.7	on S et) 25 75	urf.Area (sq-ft) 35,770 35,770	Voids (%) 0.0 35.0	Inc.Store (cubic-feet) 0 6,260	Cum.Store (cubic-feet) 0 6,260	
100.0	33	35,770	15.0	429	6,689 7,655	
100.0	25	35,770 35,770	100.0	8,585	16,240	
Device	Routing	In	vert Out	let Devices		
#1 #2	Discarded Primary	99 100	.25' 0.50 .00' 15.0 Hea 2.50 Coe 3.30	00 in/hr Exfiltration 1 long x 1.0' bread 1 d (feet) 0.20 0.44 1 3.00 1 d. (English) 2.69 1 3.31 3.32	on over Surface a adth Edge of Por 0 0.60 0.80 1.00 2.72 2.75 2.85 2	urea ous Asphalt X 76.00) 1.20 1.40 1.60 1.80 2.00 2.98 3.08 3.20 3.28 3.31

Discarded OutFlow Max=0.41 cfs @ 10.05 hrs HW=99.26' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.41 cfs)

Primary OutFlow Max=9.29 cfs @ 12.14 hrs HW=100.02' (Free Discharge) ←2=Edge of Porous Asphalt (Weir Controls 9.29 cfs @ 0.39 fps)





Summary for Link 1L: Combined Flows

Inflow Area = 2,045,127 sf, 24.45% Impervious, Inflow Depth = 8.68" for 100-Year _2100 event Inflow = 377.53 cfs @ 12.24 hrs, Volume= 1,480,074 cf Primary = 377.53 cfs @ 12.24 hrs, Volume= 1,480,074 cf, Atten= 0%, Lag= 0.0 min Routed to Reach 1R : INFLOW PIPE

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



Link 1L: Combined Flows

Summary for Link 2L: Combined Flows

Inflow .	Area =	1,436,627 sf,	27.42% Impervious,	Inflow Depth =	8.38" for	100-Year	2100 event
Inflow	=	158.81 cfs @	12.52 hrs, Volume=	1,003,452 cf			
Primar	y =	158.81 cfs @	12.52 hrs, Volume=	1,003,452 cf	, Atten= 0°	%, Lag= 0.	0 min

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

Hydrograph Inflow Primary 158 81 cfs 170 158.81 cfs Inflow Area=1,436,627 sf 160 150 140 130 120 110 100 Flow (cfs) 90 80 70 60-50 40 30 20 10 0 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 Time (hours)

Link 2L: Combined Flows

Summary for Link 3L: Combined Flows

Inflow /	Area =	1,639,430 sf,	30.99% Impervious,	Inflow Depth = 8.2	8" for 100-Year _2100 event
Inflow	=	195.34 cfs @	12.23 hrs, Volume=	1,131,823 cf	
Primar	y =	195.34 cfs @	12.23 hrs, Volume=	1,131,823 cf, A	Atten= 0%, Lag= 0.0 min

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

Link 3L: Combined Flows



Summary for Link 4L: Combined Flows

Inflow A	Area =	1,639,430 sf,	30.99% Impervious,	Inflow Depth = 9.83"	for 100-Year _2100 event
Inflow	=	213.01 cfs @	12.42 hrs, Volume=	1,343,262 cf	
Primary	/ =	213.01 cfs @	12.42 hrs, Volume=	1,343,262 cf, Atte	en= 0%, Lag= 0.0 min

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

Link 4L: Combined Flows

