STORMWATER MANAGEMENT NARRATIVE

LEE'S FARM STAND 136 Boston Post Road Wayland, MA 01778

NOVEMBER 2021

Owner/Applicant:

NORTHBRIDGE COMPANIES 71 Third Avenue Burlington, MA 01803

BSC Job Number: 6-1136.00

Prepared by:



33 Waldo Street Worcester, MA 01608

Project Description

The proposed project is located at 136 Boston Post Road in Wayland, Massachusetts. The project site is limited to a $2.4\pm$ acre section of the $4.58\pm$ acre property, which was previously developed as a roadside farm stand. In addition, portions of the northern extremities of the site were developed in association with the assisted-living facility on the parcel to the north.

Northbridge (Applicant) is proposing to revive the former farm stand and expand the agricultural use of the property. The proposed project entails the construction of a small barn, access road, parking areas, cultivation areas and stormwater management facilities. The improvements on the eastern half of the site are associated with the farm stand, while the western side of the site consists of the proposed barn, parking, and cultivation areas. The project is an exempt agricultural use and while it has been determined by the Building Commissioner to not require Site Plan Review and Approval, the Planning Board nonetheless has requested the Applicant undergo a Limited Site Plan Review. An initial Low Impact Design (LID) stormwater management design was dismissed, as the sizing of the bio-retention areas would significantly reduce the area available for cultivation. The proposed stormwater management retains a portion of the LID and includes an infiltration system that utilizes ADS Stormtech SC-740 stormwater leaching chambers.

The Project has been designed to comply generally with the Massachusetts Department of Environmental Protection's Stormwater Management Standards and standard industry practice.

Pre-Construction Conditions

The site topography contains moderate to steep slopes, ranging generally from 3 to 25% across the site. Stormwater runoff on the site primarily drains to the south and west, where it discharges either onto Boston Post Road (Reach 2R) or to the buffer zones associated with the adjacent wetland resource area (Reach 3R). Stormwater runoff from the extreme northern sections of the site drain offsite onto the adjacent site, which was previously developed by Northbridge. This stormwater flow was accounted for in the design of stormwater management facilities for the assisted-living facility. Nonetheless, the contributing areas were analyzed as part of this project and included in the summary table below (Reach 1R).

NRCS Web Soil Survey identifies the soils underlying western portions of the site as Map Unit 254C, Merrimac fine sandy loam, 8 to 15 percent slopes, while those underlying eastern portion of the site as Map Unit 624B, Haven-Urban land complex, 0 to 8 percent slopes. Based on Web Soil Survey, these soils are considered somewhat excessively drained and well drained, respectively, and are categorized as belonging to Hydrologic Soil Group A. Because the site has been previously developed, the soils have been modeled as Hydrologic Soil Group B for these analyses.

Post-Construction Conditions

The site has been designed in such a manner that the Post-Construction drainage patterns generally mirror those of the Pre-Construction condition. Site drainage will be collected and managed on site. Stormwater runoff from a significant portion of the proposed site access drive impervious areas will be collected, treated and recharged onsite through a stormwater collection and conveyance system consisting of a catch basin/water quality unit, drain manholes and stormdrains. Stormwater runoff draining offsite to the north will be treated on managed on that property.

Three (3) separate stormwater BMPs have been designed to manage post-development stormwater runoff. A bioretention area (Pond 1P) is proposed on the south side of the existing farm stand. The bioretention area has sufficient capacity to attenuate and recharge stormwater in a 100-year storm. This facility will manage stormwater runoff from the southerly half of the farm stand roof and the areas generally south of the farm stand. The second system is a subsurface leaching system consisting of 20-ADS StormTech SC-740 leaching chambers in a field of crushed stone (Pond 2P). Stormwater runoff that is tributary to this system will be collected by a Stormceptor water quality unit, which will be equipped with a grate inlet and will remove upwards of 80% Total Suspended Solids from the runoff. This system has been designed to manage the 100-year storm. The third and final stormwater system consists of two 1,000-

gallon drywells (Pond 3P), located northwest of the proposed barn. This system has also been designed to manage the 100-year storm. The stormwater conveyed to this facility is considered clean, since the barn roof will be a non-metal surface.

Stormwater Runoff Rates

Watershed modeling was performed using HydroCAD Stormwater Modeling Software version 10.0, a computer aided design program that combines SCS runoff methodology with standard hydraulic calculations. A model of the site's hydrology was developed for both the Pre- and Post- Construction conditions to analyze the runoff for the design storms of 2-, 10- and 100-year, 24-hour storms. The design storm elevations have been established from the Rainfall Frequency Atlas of the United States (TP-40), as required by the Massachusetts Stormwater Management Standards. Please reference the table below to see the peak discharge rates for comparison between the Pre- and Post-Construction conditions.

Peak Flow Discharge Rates

<u>Node IR – Offsite Flow Previously Approve</u>	\mathbf{N}_{1} 1 1 \mathbf{D}_{1} Off \mathbf{H}_{1} \mathbf{F}_{1} \mathbf{D}_{2} \mathbf{D}_{2} \mathbf{H}_{2} \mathbf{I}_{2} \mathbf{A}_{2}
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Storm Event	Pre- Construction Peak Discharge Rate (cfs)	Post- Construction Peak Discharge Rate (cfs)	Change in Peak Discharge Rate (cfs)
2-Year	0.43	0.43	0
10-Year	0.90	0.91	+0.01
100-Year	1.64	1.65	+0.01

	Node 2R –	Offsite	Flow	to	Boston	Post	Road
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Storm Event	Pre- Construction Peak Discharge Rate (cfs)	Post- Construction Peak Discharge Rate (cfs)	Change in Peak Discharge Rate (cfs)
2-Year	0.53	0.48	-0.05
10-Year	1.48	1.08	-0.40
100-Year	3.15	2.10	-1.05

Node 3R - Offsite Flow to Resource Area

Storm Event	Pre- Construction Peak Discharge Rate (cfs)	Post- Construction Peak Discharge Rate (cfs)	Change in Peak Discharge Rate (cfs)	
2-Year	0.18	0.16	-0.02	
10-Year	0.91	0.91	0	
100-Year	2.34	2.42	+0.08	

Conclusions

The proposed stormwater management systems have been designed in accordance with the MassDEP Stormwater Management Standards. The increases in the peak rate of stormwater runoff to the adjacent wetlands is negligible (0.08 cfs in 100-year storm). The increase in the peak rate of stormwater runoff to the adjacent assisted-living facility (0.01 cfs) is also considered negligible, and will be managed by the adjacent stormwater facilities on that property. The proposed measures satisfy and represent a reasonable effort to prevent the pollution of surface groundwater, erosion of soil, excessive runoff of precipitation, excessive raising or lowering of the water table, and flooding of other properties.





61136 00-Pro	LEE'S FARM STAND
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Time span=0.00-36.00 hrs, dt=0.01 hrs,	, 3601 points
Reach routing by Stor-Ind+Trans method - Pond ro	buting by Stor-Ind method
Subcatchment 1S: NORTHERN AND Runoff Area=16.559 sf	f 23.79% Impervious Runoff Depth=1.03"
Flow Length=77' Tc=6.2 min UI A	Adjusted CN=75 Runoff=0.43 cfs 0.033 af
Subcatchmont 2S: SOUTHERN AREAS Runoff Area=43 385 st	f 20.06% Impervious Runoff Depth=0.59"
Flow Length=299' Tc=6.9 min ULA	Adjusted CN=66 Runoff=0.53 cfs 0.049 af
Cubectebreent 20: NORTHERN AND Rupoff Area=12 109	of 0.00% Imponsious Bupoff Dopth=0.24"
Flow Length=311' Tc=6	6.0 min CN=59 Runoff=0.18 cfs 0.027 af
- · · · - · · · · · · · · · · · · · · ·	
Reach 1R: OFFSITE TO NORTH	Inflow=0.43 cfs 0.033 af
Reach 2R: BOSTON POST RD	Inflow=0.53 cfs 0.049 af
	Outflow=0.53 cfs 0.049 af
Reach 3R: RESOURCE AREA	Inflow=0.18 cfs_0.027 af
	Outflow=0.18 cfs 0.027 af
Total Punoff Aroa = 2 343 ac Punoff Volume = (0 109 af Avorago Bunoff Donth - 0 56"

Total Runoff Area = 2.343 ac	Runoff Volume = 0.109 af	Average Runoff Depth = 0.56"
87.	61% Pervious = 2.053 ac	12.39% Impervious = 0.290 ac

Summary for Subcatchment 1S: NORTHERN AND EASTERN AREAS

Runoff = 0.43 cfs @ 12.10 hrs, Volume= 0.033 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-year Rainfall=3.10"

A	rea (sf)	CN A	Adj Desc	ription					
	3,940	98	Unco	Inconnected roofs, HSG B					
	1,160	85	Grav	Gravel roads, HSG B					
	10,582	69	50-7	0-75% Grass cover, Fair, HSG B					
	877	82	Dirt r	Dirt roads, HSG B					
	16,559	78	75 Weig	hted Avera	ge, UI Adjusted				
	12,619		76.2	1% Perviou	s Area				
	3,940		23.79	9% Impervi	ous Area				
	3,940		100.0	00% Uncon	nected				
Tc	Length	Slope	Velocity	Capacity	Description				
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
6.0	50	0.0180	0.14		Sheet Flow, A-B				
					Grass: Short n= 0.150 P2= 3.10"				
0.2	27	0.0200	2.28		Shallow Concentrated Flow, B-C				
					Unpaved Kv= 16.1 fps				
6.2	77	Total							

Subcatchment 1S: NORTHERN AND EASTERN AREAS



	LEE'S FARM STAND
61136.00-Pre T	ype III 24-hr 2-year Rainfall=3.10"
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Summary for Subcatchment 2S: SOUTHERN AREAS

Runoff = 0.53 cfs @ 12.12 hrs, Volume= 0.049 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-year Rainfall=3.10"

	A	rea (sf)	CN /	Adj Desc	ription					
		8,701	98	Unco	Unconnected pavement, HSG B					
		27,689	58	Mea	dow, non-g	razed, HSG B				
		6,995	82	Dirt r	oads, HSĞ	В				
		43,385	70	66 Weig	hted Avera	ge, UI Adjusted				
		34,684		79.9	4% Perviou	s Area				
8,701 20.06% Impervious Area						ous Area				
		8,701		100.	00% Uncon	nected				
	Тс	Length	Slope	Velocity	Capacity	Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	5.5	50	0.0220	0.15		Sheet Flow, A-B				
						Grass: Short n= 0.150 P2= 3.10"				
	1.4	249	0.0330	2.92		Shallow Concentrated Flow, B-C				
_						Unpaved Kv= 16.1 fps				

6.9 299 Total

Subcatchment 2S: SOUTHERN AREAS



		LEE'S FARM STAND
61136.00-Pre	Type III 24-hr	2-year Rainfall=3.10"
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Summary for Subcatchment 3S: NORTHERN AND WESTERN AREAS

Runoff = 0.18 cfs @ 12.14 hrs, Volume= 0.027 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-year Rainfall=3.10"

	A	rea (sf)	CN E	Description		
		7,787	61 >	75% Gras	s cover, Go	ood, HSG B
		34,321	58 N	leadow, no	on-grazed,	HSG B
		42,108	59 V	Veighted A	verage	
42,108 100.00% Pervious Area						а
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	2.7	50	0.0200	0.30		Sheet Flow, A-B
						Cultivated: Residue<=20%
	1.0	176	0.0340	2.97		Shallow Concentrated Flow, B-C
						Unpaved Kv= 16.1 fps
	0.2	85	0.1760	6.75		Shallow Concentrated Flow, C-D
						Unpaved Kv= 16.1 fps
	2.1					Direct Entry, ADJUSTED TO MIN.
	6.0	311	Total			

Subcatchment 3S: NORTHERN AND WESTERN AREAS



	LEE'S FARM STAN
61136.00-Pre	Type III 24-hr 2-year Rainfall=3.10
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Summary for Reach 1R: OFFSITE TO NORTH

Inflow Are	a =	0.380 ac, 2	3.79% Impe	ervious,	Inflow Depth =	1.03	8" for 2-ye	ear event
Inflow	=	0.43 cfs @	12.10 hrs,	Volume	= 0.033	8 af	-	
Outflow	=	0.43 cfs @	12.10 hrs,	Volume	= 0.033	8 af, 7	Atten= 0%,	Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 1R: OFFSITE TO NORTH

		LEE'S FARM STAND
61136.00-Pre	Type III 24-hr	2-year Rainfall=3.10"
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Summary for Reach 2R: BOSTON POST RD

Inflow /	Area	=	0.996 ac, 2	20.06% Impe	ervious,	Inflow Depth =	0.5	59" for 2-y	/ear event	
Inflow		=	0.53 cfs @	12.12 hrs,	Volume	= 0.049	9 af			
Outflov	V	=	0.53 cfs @	12.12 hrs,	Volume	= 0.049	9 af,	Atten= 0%,	Lag= 0.0 min	۱

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 2R: BOSTON POST RD

		LEE'S FARM STAND
61136.00-Pre	Type III 24-hr	2-year Rainfall=3.10"
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Summary for Reach 3R: RESOURCE AREA

Inflow /	Area	=	0.967 ac,	0.00% Impe	ervious,	Inflow Depth =	0.3	4" for 2-y	ear event	
Inflow		=	0.18 cfs @	12.14 hrs,	Volume	= 0.027	af			
Outflov	N	=	0.18 cfs @	12.14 hrs,	Volume	= 0.027	af, .	Atten= 0%,	Lag= 0.0 mir	ſ

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 3R: RESOURCE AREA

			LE	EE'S FARM	STAND
61136.00-Pre		Type II.	l 24-hr 10-y	ear Rainfal	<i>l=4.50"</i>
Prepared by BSC Group Inc		51	5	Printed 11/2	22/2021
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		-			<u></u>
Time span=0.00	0-36.00 hrs, dt=0.01	hrs, 3601 p	points		
Runoff by SCS T	R-20 method, UH=	SCS, Weigh	ted-CN		
Reach routing by Stor-Ind+1	rans method - Por	nd routing b	y Stor-Ind me	ethod	
C ,		0	-		
Subcatchment 1S: NORTHERN AND	Runoff Area=16,5	59 sf 23.79	% Impervious	Runoff Dep	th=2.05"
Flow Ler	igth=77' Tc=6.2 min	UI Adjusted	I CN=75 Run	off=0.90 cfs	0.065 af
	D (() () ()		o/ 1		
Subcatchment2S: SOUTHERN AREAS	Runoff Area=43,3	385 st 20.06	% Impervious	Runoff Dep	th=1.40"
Flow Leng	jth=299' 1c=6.9 min	UI Adjusted	ICN=66 Run	off=1.48 cfs	0.116 af
Subastahmant 2St NORTHERN AND	Pupoff Area-12	108 cf 0.00	% Impenvious		h-0.06"
Subcatchinent 35. NORTHERN AND	Flow Length=311'	$T_{c}=6.0 min$	CN=59 Run	off=0.91 cfs	0 077 of
	TIOW Length=011	10-0.0 min	CN-59 Kun	01-0.91 013	0.077 ai
Reach 1R: OFFSITE TO NORTH			Infl	ow=0.90 cfs	0.065 af
			Outfl	ow=0.90 cfs	0.065 af
Reach 2R: BOSTON POST RD			Infl	ow=1.48 cfs	0.116 af
			Outfl	ow=1.48 cfs	0.116 af
Reach 3R: RESOURCE AREA			Infl	ow=0.91 cfs	0.077 af
			Outfl	ow=0.91 cfs	0.077 af
Total Runoff Area = 2.343	ac Runoff Volum	ne = 0.258 a	f Average I	Runoff Dept	:h = 1.32"
	87.61% Pervious	= 2.053 ac	12.39% lm	pervious =	0.290 ac

		LEE'S FARM STAND
61136.00-Pre	Type III 24-hr	10-year Rainfall=4.50"
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Summary for Subcatchment 1S: NORTHERN AND EASTERN AREAS

Runoff = 0.90 cfs @ 12.09 hrs, Volume= 0.065 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-year Rainfall=4.50"

A	rea (sf)	CN A	Adj Desc	ription				
	3,940	98	Unco	onnected ro	ofs, HSG B			
	1,160	85	Grav	el roads, H	SG B			
	10,582	69	50-7	5% Grass o	cover, Fair, HSG B			
	877	82	Dirt r	oads, HSG	В			
	16,559	78	75 Weig	hted Avera	ge, UI Adjusted			
	12,619		76.2	1% Perviou	s Area			
	3,940		23.79	9% Impervi	ous Area			
	3,940		100.0	100.00% Unconnected				
Tc	Length	Slope	Velocity	Capacity	Description			
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
6.0	50	0.0180	0.14		Sheet Flow, A-B			
					Grass: Short n= 0.150 P2= 3.10"			
0.2	27	0.0200	2.28		Shallow Concentrated Flow, B-C			
					Unpaved Kv= 16.1 fps			
6.2	77	Total						

Subcatchment 1S: NORTHERN AND EASTERN AREAS



		LEE'S FARM STAND
61136.00-Pre	Type III 24-hr	10-year Rainfall=4.50"
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Summary for Subcatchment 2S: SOUTHERN AREAS

Runoff = 1.48 cfs @ 12.11 hrs, Volume= 0.116 af, Depth= 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-year Rainfall=4.50"

_						
	1.4	249	0.0330	2.92		Shallow Concentrated Flow, B-C Unpaved Kv= 16.1 fps
	5.5	50	0.0220	0.15		Sneet Flow, А-В Grass: Short n= 0.150 P2= 3.10"
-	<u> </u>		0.0000	0.15	(0.0)	
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•
	Тс	Length	Slope	Velocity	Capacity	Description
		8,701		100.0	JU% Uncon	ineclea
		0,701		20.0		ous Area
		07,007		20.0		
		34 684		79.9	, 4% Perviou	is Area
		43.385	70	66 Weid	hted Avera	age. UI Adjusted
_		6,995	82	Dirt r	<u>oads, HSG</u>	i B
		27,689	58	Mea	dow, non-g	razed, HSG B
		8,701	98	Unco	onnected pa	avement, HSG B
_	Л					
	Δ	rea (sf)	CN	Adi Desc	rintion	

6.9 299 Total

Subcatchment 2S: SOUTHERN AREAS



		LEE'S FARM STAND
61136.00-Pre	Type III 24-hr	10-year Rainfall=4.50"
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Summary for Subcatchment 3S: NORTHERN AND WESTERN AREAS

Runoff = 0.91 cfs @ 12.10 hrs, Volume= 0.077 af, Depth= 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-year Rainfall=4.50"

A	rea (sf)	CN E	Description		
	7,787	61 >	75% Gras	s cover, Go	ood, HSG B
	34,321	58 N	leadow, no	on-grazed,	HSG B
	42,108	59 V	Veighted A	verage	
	42,108	1	00.00% Pe	ervious Are	а
_					
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
2.7	50	0.0200	0.30		Sheet Flow, A-B
					Cultivated: Residue<=20% n= 0.060 P2= 3.10"
1.0	176	0.0340	2.97		Shallow Concentrated Flow, B-C
					Unpaved Kv= 16.1 fps
0.2	85	0.1760	6.75		Shallow Concentrated Flow, C-D
					Unpaved Kv= 16.1 fps
2.1					Direct Entry, ADJUSTED TO MIN.
6.0	311	Total			

Subcatchment 3S: NORTHERN AND WESTERN AREAS



		LEE'S FARM STAND
61136.00-Pre	Type III 24-hr	10-year Rainfall=4.50"
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Summary for Reach 1R: OFFSITE TO NORTH

Inflow Are	a =	0.380 ac, 2	3.79% Impe	ervious,	Inflow Depth =	2.0	5" for 10-year event
Inflow	=	0.90 cfs @	12.09 hrs,	Volume	= 0.065	af	-
Outflow	=	0.90 cfs @	12.09 hrs,	Volume	= 0.065	af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 1R: OFFSITE TO NORTH

		LEE'S FARM STAND
61136.00-Pre	Type III 24-hr	10-year Rainfall=4.50"
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Summary for Reach 2R: BOSTON POST RD

Inflow Are	ea =	0.996 ac, 2	0.06% Impervie	ous, Inflow De	epth = 1.40)" for 10-y	ear event
Inflow	=	1.48 cfs @	12.11 hrs, Vol	lume=	0.116 af		
Outflow	=	1.48 cfs @	12.11 hrs, Vo	lume=	0.116 af, A	Atten= 0%,	Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 2R: BOSTON POST RD

		LEE'S FA	RM STAND
61136.00-Pre	Type III 24-hr	10-year Ra	infall=4.50"
Prepared by BSC Group, Inc.		Printed	11/22/2021
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Summary for Reach 3R: RESOURCE AREA

Inflow A	Area	=	0.967 ac,	0.00% Impervio	ous, Inflow De	epth = 0.9	96" for 10)-year event
Inflow		=	0.91 cfs @	12.10 hrs, Vol	ume=	0.077 af		
Outflov	N	=	0.91 cfs @	12.10 hrs, Vol	ume=	0.077 af,	Atten= 0%	, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 3R: RESOURCE AREA

	LEE'S FARM STAND
61136.00-Pre	Type III 24-hr 100-year Rainfall=6.50"
Prepared by BSC Group, Inc.	Printed 11/22/2021
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	-
Time span=0.00-36.00 hrs, dt=0	.01 hrs, 3601 points
Runoff by SCS TR-20 method, UF	I=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - F	Pond routing by Stor-Ind method
Subatabrant 1S: NORTHERN AND Runoff Area=1	6 559 sf 23 79% Impenvious Runoff Depth=3 71"
Flow Length=77' Tc=6.2 m	nin UI Adjusted CN=75 Runoff=1.64 cfs 0.118 af
Subcatchment 2S: SOUTHERN AREAS Runoff Area=4	3,385 sf 20.06% Impervious Runoff Depth=2.82"
Flow Length=299' Tc=6.9 n	nin UI Adjusted CN=66 Runoff=3.15 cfs 0.234 af
Subcatchment3S: NORTHERN AND Runoff Area=	42,108 sf 0.00% Impervious Runoff Depth=2.1/"
Flow Length=31	1° IC=6.0 min CN=59 Runom=2.34 crs 0.174 at
Reach 1R: OFFSITE TO NORTH	Inflow=1.64 cfs_0.118 af
	Outflow=1.64 cfs 0.118 af
Reach 2R: BOSTON POST RD	Inflow=3.15 cfs 0.234 af
	Outflow=3.15 cfs 0.234 af
	Inflow=2.34 cfs 0.174 af
Reach SR. RESOURCE AREA	Outflow=2.34 cfs_0.174 af
Total Runoff Area = 2.343 ac Runoff Volu	ume = 0.526 af Average Runoff Depth = 2.69

Total Runoff Area = 2.343 ac	Runoff Volume = 0.526 af	Average Runoff Depth = 2.69"
87.	.61% Pervious = 2.053 ac	12.39% Impervious = 0.290 ac

		LEE'S FARM STAND
61136.00-Pre	Type III 24-hr	100-year Rainfall=6.50"
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Summary for Subcatchment 1S: NORTHERN AND EASTERN AREAS

Runoff = 1.64 cfs @ 12.09 hrs, Volume= 0.118 af, Depth= 3.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-year Rainfall=6.50"

A	rea (sf)	CN A	Adj Desc	ription				
	3,940	98	Unco	Unconnected roofs, HSG B				
	1,160	85	Grav	Gravel roads, HSG B				
	10,582	69	50-7	50-75% Grass cover, Fair, HSG B				
	877	82	Dirt r	Dirt roads, HSG B				
	16,559	78	75 Weig	hted Avera	ge, UI Adjusted			
	12,619		76.2	1% Perviou	s Area			
	3,940		23.79	9% Impervi	ous Area			
	3,940		100.0	00% Uncon	nected			
Tc	Length	Slope	Velocity	Capacity	Description			
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
6.0	50	0.0180	0.14		Sheet Flow, A-B			
					Grass: Short n= 0.150 P2= 3.10"			
0.2	27	0.0200	2.28		Shallow Concentrated Flow, B-C			
					Unpaved Kv= 16.1 fps			
6.2	77	Total						

Subcatchment 1S: NORTHERN AND EASTERN AREAS



		LEE'S FARM STAND
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Summary for Subcatchment 2S: SOUTHERN AREAS

Runoff = 3.15 cfs @ 12.10 hrs, Volume= 0.234 af, Depth= 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-year Rainfall=6.50"

 A	rea (sf)	CN /	Adj Desc	ription						
	8,701	98	Unco	Unconnected pavement, HSG B						
	27,689	58	Mea	Meadow, non-grazed, HSG B						
	6,995	82	Dirt r	Dirt roads, HSĞ B						
	43,385	70	66 Weig	Weighted Average, UI Adjusted						
	34,684		79.9	4% Perviou	s Area					
	8,701		20.0	6% Impervi	ous Area					
	8,701		100.	00% Uncon	inected					
Tc	Length	Slope	Velocity	Capacity	Description					
 (min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
5.5	50	0.0220	0.15		Sheet Flow, A-B					
					Grass: Short n= 0.150 P2= 3.10"					
1.4	249	0.0330	2.92		Shallow Concentrated Flow, B-C					
					Unpaved Kv= 16.1 fps					

6.9 299 Total

Subcatchment 2S: SOUTHERN AREAS



		LEE'S FARM STAND
61136.00-Pre	Type III 24-hr	100-year Rainfall=6.50"
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Summary for Subcatchment 3S: NORTHERN AND WESTERN AREAS

Runoff = 2.34 cfs @ 12.10 hrs, Volume= 0.174 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-year Rainfall=6.50"

A	rea (sf)	CN E	Description		
	7,787	61 >	75% Gras	s cover, Go	ood, HSG B
	34,321	58 N	leadow, no	on-grazed,	HSG B
	42,108	59 V	Veighted A	verage	
	42,108	1	00.00% Pe	ervious Are	a
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
2.7	50	0.0200	0.30		Sheet Flow, A-B
					Cultivated: Residue<=20% n= 0.060 P2= 3.10"
1.0	176	0.0340	2.97		Shallow Concentrated Flow, B-C
					Unpaved Kv= 16.1 fps
0.2	85	0.1760	6.75		Shallow Concentrated Flow, C-D
					Unpaved Kv= 16.1 fps
2.1					Direct Entry, ADJUSTED TO MIN.
6.0	311	Total			

Subcatchment 3S: NORTHERN AND WESTERN AREAS



		LEE'S FARM STAND
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Summary for Reach 1R: OFFSITE TO NORTH

Inflow Are	a =	0.380 ac, 2	3.79% Impe	ervious,	Inflow Depth =	3.7	'1" for 1	00-year eve	ent
Inflow	=	1.64 cfs @	12.09 hrs,	Volume	= 0.118	8 af			
Outflow	=	1.64 cfs @	12.09 hrs,	Volume	= 0.118	8 af,	Atten= 0%	%, Lag= 0.0	min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 1R: OFFSITE TO NORTH

		LEE'S FA	RM STAND
61136.00-Pre	Type III 24-hr	100-year Ra	infall=6.50"
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Summary for Reach 2R: BOSTON POST RD

Inflow A	Area	=	0.996 ac, 2	20.06% Imp	ervious,	Inflow Dept	h = 2.8	32" for	100-year ev	/ent
Inflow		=	3.15 cfs @	12.10 hrs,	Volume	= 0.	234 af			
Outflow	V	=	3.15 cfs @	12.10 hrs,	Volume	= 0.	.234 af,	Atten= ()%, Lag= 0.	0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 2R: BOSTON POST RD

		LEE'S FARM STAND
61136.00-Pre	Type III 24-hr	100-year Rainfall=6.50"
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Summary for Reach 3R: RESOURCE AREA

Inflow A	Area	=	0.967 ac,	0.00% Impervious	, Inflow Depth = 2	2.17" for 100-year event
Inflow		=	2.34 cfs @	12.10 hrs, Volum	e= 0.174 a	f
Outflov	V	=	2.34 cfs @	12.10 hrs, Volum	e= 0.174 a	f, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 3R: RESOURCE AREA





04400 00 D	LEE'S FARM STAND
61136.00-POST Propared by BSC Group, Inc.	I ype III 24-nr 2-year Rainfail=3.10" Printed 11/22/2021
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Time cpan=0.00.2	26.00 bro dt=0.01 bro 2601 points
Runoff by SCS TR-2	20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Tra	ns method - Pond routing by Stor-Ind method
Subcatchment 1S: NORTHERN AREAS	Runoff Area=16,527 sf 38.63% Impervious Runoff Depth=1.03"
	Tc=6.0 min CN=75 Runoff=0.43 cfs 0.032 af
Subcatchment 2S: SOUTHERN PLANTING	Runoff Area=15,734 sf 0.00% Impervious Runoff Depth=0.28"
	Tc=6.0 min CN=57 Runoff=0.05 cfs 0.008 af
Subcatchment 3S: NORTHERN AND	Runoff Area=45,915 sf 0.00% Impervious Runoff Depth=0.31"
	Tc=6.0 min CN=58 Runoff=0.16 cfs 0.027 af
Subcatchment 4S: FARM STAND FRONT	Runoff Area=5,959 sf 28.24% Impervious Runoff Depth=1.46"
	Tc=6.0 min CN=82 Runoff=0.23 cfs 0.017 af
Subcatchment 5S: SITE ENTRANCE	Runoff Area=10,700 sf 61.71% Impervious Runoff Depth=1.60"
	Tc=6.0 min CN=84 Runoff=0.46 cfs 0.033 af
Subcatchment6S: ACCESS DRIVE	Runoff Area=6,173 sf 84.35% Impervious Runoff Depth=2.26"
	Tc=6.0 min CN=92 Runoff=0.37 cfs 0.027 af
Subcatchment7S: BARN	Runoff Area=1,040 sf 100.00% Impervious Runoff Depth=2.87"
	Tc=6.0 min CN=98 Runoff=0.07 cfs 0.006 af
Reach 1R: OFFSITE TO NORTH	Inflow=0.43 cfs 0.032 af
	Outflow=0.43 cfs 0.032 af
Reach 2R: BOSTON POST RD	Inflow=0.48 cfs 0.041 af
	Outflow=0.48 cfs 0.041 af
Reach 3R: RESOURCE AREA	Inflow=0.16 cfs 0.027 af
	Outflow=0.16 cfs 0.027 af
Pond 1P: BIORETENTION AREA	Peak Elev=155.29' Storage=205 cf Inflow=0.23 cfs 0.017 af
	Outflow=0.05 cfs 0.017 af
Pond 2P: INFILTRATION SYSTEM	Peak Elev=145.84' Storage=0.009 af Inflow=0.37 cfs 0.027 af
	Outflow=0.05 cfs 0.027 af
Pond 3P: DRYWELLS	Peak Elev=146.83' Storage=0.002 af Inflow=0.07 cfs 0.006 af
	Outflow=0.01 cfs 0.006 af
Total Runoff Area = 2 343 ac	Runoff Volume = 0 149 af Average Runoff Depth = 0 7

Total Runoff Area = 2.343 acRunoff Volume = 0.149 af
79.50% Pervious = 1.862 acAverage Runoff Depth = 0.77"
20.50% Impervious = 0.480 ac

		LEE'S FARM STAND
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Summary for Subcatchment 1S: NORTHERN AREAS

Runoff = 0.43 cfs @ 12.10 hrs, Volume= 0.032 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-year Rainfall=3.10"

Are	ea (sf)	CN	Description				
	6,385	98	Unconnecte	ed pavemer	ent, HSG B		
1	0,142	61	>75% Gras	s cover, Go	ood, HSG B		
1	6,527	75	Weighted Average				
1	0,142		61.37% Pei	vious Area	а		
	6,385		38.63% Imp	pervious Are	rea		
	6,385		100.00% U	nconnected	d		
To	onath	Slope	Volocity	Conocity	Description		
IC I (maine)	Length	Siope		Capacity	Description		
<u>(mn)</u>	(ieel)	וו/וו) (II/SeC)	(CIS)			
6.0					Direct Entry,		

Subcatchment 1S: NORTHERN AREAS



		LEE'S FARM STAND
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Summary for Subcatchment 2S: SOUTHERN PLANTING AREAS

Runoff = 0.05 cfs @ 12.30 hrs, Volume= 0.008 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-year Rainfall=3.10"

	A	rea (sf)	CN	Description					
*		6,413	51	Gardens w/	Gardens w/Raised Planters				
		9,321	61	>75% Gras	s cover, Go	ood, HSG B			
	Tc (min)	15,734 15,734 Length (feet)	57 Slop (ft/f	Weighted A 100.00% Pe e Velocity t) (ft/sec)	verage ervious Are Capacity (cfs)	ea Description			
	6.0					Direct Entry,			

Subcatchment 2S: SOUTHERN PLANTING AREAS



		LEE'S FARM STAND
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Summary for Subcatchment 3S: NORTHERN AND WESTERN AREAS

Runoff = 0.16 cfs @ 12.16 hrs, Volume= 0.027 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description						
*	10,098	51	Gardens w/	Gardens w/Raised Planters					
	1,347	82	Dirt roads, I	HSG B					
	7,787	61	>75% Gras	s cover, Go	ood, HSG B				
	26,683	58	Meadow, no	on-grazed,	, HSG B				
	45,915 58 Weighted Average								
	45,915		100.00% Pe	ervious Are	ea				
T (min	c Length) (feet)	Slop (ft/f	e Velocity t) (ft/sec)	Capacity (cfs)	Description				
6.))	(-, (:4000)	(0.0)	Direct Entry,				

Subcatchment 3S: NORTHERN AND WESTERN AREAS



		LEE'S FARM STAND
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Summary for Subcatchment 4S: FARM STAND FRONT YARD

Runoff 0.23 cfs @ 12.09 hrs, Volume= 0.017 af, Depth= 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-year Rainfall=3.10"

A	rea (sf)	CN	Description				
	1,683	98	Roofs, HSC	θB			
	2,562	61	>75% Gras	s cover, Go	ood, HSG B		
	1,714	98	Water Surfa	ace, 0% imp	ip, HSG B		
	5,959 82 Weighted Average						
	4,276 71.76% Pervious Area						
	1,683 28.24% Impervious Area						
_				- ··			
Tc	Length	Slop	e Velocity	Capacity	Description		
(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)			
6.0					Direct Entry.		

Subcatchment 4S: FARM STAND FRONT YARD



 61136.00-Post
 Type III 24-hr
 2-year Rainfall=3.10"

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Summary for Subcatchment 5S: SITE ENTRANCE

Runoff = 0.46 cfs @ 12.09 hrs, Volume= 0.033 af, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-year Rainfall=3.10"

A	rea (sf)	CN	Description				
	6,603	98	Paved parking, HSG B				
	4,097	61	>75% Grass cover, Good, HSG B				
	10,700	84	Weighted A	verage			
	4,097	38.29% Pervious Area					
	6,603	3 61.71% Impervious Area					
Tc (min)	Length	Slop	e Velocity	Capacity	Description		
(11111)	(ieet)	(171	.) (1/360)	(015)			
6.0					Direct Entry,		

Subcatchment 5S: SITE ENTRANCE



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Summary for Subcatchment 6S: ACCESS DRIVE

Runoff = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-year Rainfall=3.10"

A	rea (sf)	CN	Description					
	5,207	98	Paved parking, HSG B					
	966	61	>75% Ġras	s cover, Go	ood, HSG B			
	6,173	92	Weighted A	verage				
	966	966 15.65% Pervious Area						
	5,207 84.35% Impervious Area							
Tc (min)	Length (feet)	Slop (ft/f	e Velocity t) (ft/sec)	Capacity (cfs)	Description			
6.0					Direct Entry,			

Subcatchment 6S: ACCESS DRIVE


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Summary for Subcatchment 7S: BARN

Runoff =	0.07 cfs @ 12.08	3 hrs, Volume=	0.006 af, Depth= 2.87"	
----------	------------------	----------------	------------------------	--

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-year Rainfall=3.10"

A	rea (sf)	CN	Description		
	1,040	98	Roofs, HSC	βB	
	1,040		100.00% In	npervious A	Area
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 7S: BARN



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Summary for Reach 1R: OFFSITE TO NORTH

Inflow /	Area	=	0.379 ac, 3	38.63% Impe	ervious,	Inflow Depth =	1.03	3" for 2-ye	ear event
Inflow	:	=	0.43 cfs @	12.10 hrs,	Volume	= 0.032	af		
Outflov	v :	=	0.43 cfs @	12.10 hrs,	Volume	= 0.032	af, A	Atten= 0%,	Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 1R: OFFSITE TO NORTH

		LEE'S FARM STAND
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Summary for Reach 2R: BOSTON POST RD

Inflow Are	a =	0.607 ac, 2	4.98% Impe	ervious,	Inflow Depth =	0.81	" for 2-ye	ear event
Inflow	=	0.48 cfs @	12.10 hrs,	Volume	= 0.041	af	-	
Outflow	=	0.48 cfs @	12.10 hrs,	Volume	= 0.041	af, A	Atten= 0%,	Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 2R: BOSTON POST RD

		LEE'S FA	RM STAND
61136.00-Post	Type III 24-hr	2-year Ra	infall=3.10"
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Summary for Reach 3R: RESOURCE AREA

Inflow /	Area	=	1.054 ac,	0.00% Impe	ervious,	Inflow Depth =	0.3	1" for 2-y	ear event
Inflow		=	0.16 cfs @	12.16 hrs,	Volume	= 0.027	af		
Outflov	V	=	0.16 cfs @	12.16 hrs,	Volume	= 0.027	af,	Atten= 0%,	Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 3R: RESOURCE AREA

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Summary for Pond 1P: BIORETENTION AREA

Inflow Area	=	0.137 ac, 2	8.24% Impe	ervious,	Inflow E	Depth =	1.46"	for 2-ye	ar event	
Inflow	=	0.23 cfs @	12.09 hrs,	Volume	=	0.017	af			
Outflow	=	0.05 cfs @	12.54 hrs,	Volume	=	0.017	af, Atte	n= 80%,	Lag= 27.2	min
Discarded	=	0.05 cfs @	12.54 hrs,	Volume	=	0.017	af			

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 155.29' @ 12.54 hrs Surf.Area= 841 sf Storage= 205 cf

Plug-Flow detention time= 32.5 min calculated for 0.017 af (100% of inflow) Center-of-Mass det. time= 32.5 min (870.3 - 837.8)

Volume	Invert	Avail.	Storage	Storage Description			
#1	155.00'		2,093 cf	Custom Stage Data	a (Irregular) Listed	below (Recalc)	
Elevatio (fee	on Su :t)	rf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
155.0 156.0 156.5	00 00 50	569 1,714 2,313	162.3 231.8 247.5	0 1,090 1,003	0 1,090 2,093	569 2,758 3,368	
Device	Routing	Inv	ert Outle	et Devices			
#1 Discarded 155.00' 2.410 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 135.00'							
Discarded OutFlow Max=0.05 cfs @ 12.54 hrs HW=155.29' (Free Discharge)							

1=Exfiltration (Controls 0.05 cfs)

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LEE'S FARM STAND Type III 24-hr 2-year Rainfall=3.10" Printed 11/22/2021 LLC Page 14



Pond 1P: BIORETENTION AREA

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Summary for Pond 2P: INFILTRATION SYSTEM

Inflow Area	=	0.142 ac, 8	4.35% Impe	ervious,	Inflow I	Depth =	2.26"	for 2-ye	ear event	
Inflow	=	0.37 cfs @	12.09 hrs,	Volume	=	0.027	af			
Outflow	=	0.05 cfs @	12.63 hrs,	Volume	=	0.027	af, Atte	en= 87%,	Lag= 32.7 m	in
Discarded	=	0.05 cfs @	12.63 hrs,	Volume	=	0.027	af			

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 145.84' @ 12.63 hrs Surf.Area= 0.018 ac Storage= 0.009 af

Plug-Flow detention time= 55.5 min calculated for 0.027 af (100% of inflow) Center-of-Mass det. time= 55.5 min (854.4 - 798.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	145.00'	0.017 af	20.50'W x 39.22'L x 3.50'H Field A
			0.065 af Overall - 0.021 af Embedded = 0.044 af x 40.0% Voids
#2A	145.50'	0.021 af	ADS_StormTech SC-740 +Cap x 20 Inside #1
			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
			4 Rows of 5 Chambers
		0.038 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	145.00'	2.410 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 135.00'

Discarded OutFlow Max=0.05 cfs @ 12.63 hrs HW=145.84' (Free Discharge) **1=Exfiltration** (Controls 0.05 cfs) 61136.00-Post Type Prepared by BSC Group, Inc. HydroCAD® 10.00-22 s/n 00904 © 2018 HydroCAD Software Solutions LLC

LEE'S FARM STAND *Type III 24-hr 2-year Rainfall=3.10"* Printed 11/22/2021 LLC Page 16

Hydrograph 0.4 Inflow Discarded 0.37 cfs 0.38 0.36 Inflow Area=0.142 ac 0.34 0.32 Peak Elev=145.84' 0.3 0.28 Storage=0.009 af 0.26 0.24 (c) 0.24 0.22 0.22 0.24 0.22 0.16 0.14 0.12 0.1 0.08 0.05 cfs 0.06 0.04 0.02 0 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 <u>0</u>1 Time (hours)

Pond 2P: INFILTRATION SYSTEM

		LEE'S FARM STAND
61136.00-Post	Type III 24-hr	2-year Rainfall=3.10"
Prepared by BSC Group, Inc.		Printed 11/22/2021
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Summary for Pond 3P: DRYWELLS

Inflow Area	=	0.024 ac,10	0.00% Impe	rvious, I	nflow Depth =	2.87"	for 2-yea	ir event
Inflow	=	0.07 cfs @	12.08 hrs, \	Volume=	0.006	af		
Outflow	=	0.01 cfs @	12.84 hrs, \	Volume=	0.006	af, Atte	en= 90%,	Lag= 45.3 min
Discarded	=	0.01 cfs @	12.84 hrs, \	Volume=	0.006	af		

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 146.83' @ 12.84 hrs Surf.Area= 0.003 ac Storage= 0.002 af

Plug-Flow detention time= 86.7 min calculated for 0.006 af (100% of inflow) Center-of-Mass det. time= 86.7 min (843.8 - 757.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	146.00'	0.000 af	5.67'W x 21.00'L x 2.83'H Field A
			0.008 af Overall - 0.008 af Embedded = 0.000 af x 40.0% Voids
#2A	146.00'	0.006 af	Concrete Dry Well 1000gal x 2 Inside #1
			Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf
			Outside= 68.0"W x 34.0"H => 15.81 sf x 10.50'L = 166.0 cf
		0.006 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices				
#1	Discarded	146.00'	2.410 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 135.00'				
Discarded OutFlow Max=0.01 cfs @ 12.84 hrs HW=146.83' (Free Discharge) 1=Exfiltration (Controls 0.01 cfs)							

61136.00-Post *Typ* Prepared by BSC Group, Inc. <u>HydroCAD® 10.00-22 s/n 00904 © 2018 HydroCAD Software Solutions LLC</u>

LEE'S FARM STAND *Type III 24-hr 2-year Rainfall=3.10"* Printed 11/22/2021 LLC Page 18



Pond 3P: DRYWELLS

	LEE'S FARM STAND
61136.00-Post	Type III 24-hr 10-year Rainfall=4.50"
Prepared by BSC Group, Inc.	Printed 11/22/2021
	AD Software Solutions LLC Fage 19
Time span=0.00-3 Runoff by SCS TR-2	6.00 hrs, dt=0.01 hrs, 3601 points 20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trai	ns method - Pond routing by Stor-Ind method
Subcatchment 1S: NORTHERN AREAS	Runoff Area=16,527 sf 38.63% Impervious Runoff Depth=2.05"
	Tc=6.0 min CN=75 Runotf=0.91 cts 0.065 at
Subcatchment 2S: SOUTHERN PLANTING	Runoff Area=15,734 sf 0.00% Impervious Runoff Depth=0.85" Tc=6.0 min CN=57 Runoff=0.28 cfs 0.026 af
Subcatchment3S: NORTHERN AND	Runoff Area=45,915 sf 0.00% Impervious Runoff Depth=0.90"
	Tc=6.0 min CN=58 Runoff=0.91 cfs 0.079 af
Subcatchment4S: FARM STAND FRONT	Runoff Area=5,959 sf 28.24% Impervious Runoff Depth=2.64"
	Tc=6.0 min CN=82 Runoff=0.42 cfs 0.030 af
Subcatchment5S: SITE ENTRANCE	Runoff Area=10,700 sf 61.71% Impervious Runoff Depth=2.82"
	IC=6.0 min CN=84 Runoff=0.81 cfs 0.058 af
Subcatchment6S: ACCESS DRIVE	Runoff Area=6,173 sf 84.35% Impervious Runoff Depth=3.60"
Subcatchment7S: BARN	Runoff Area=1,040 sf 100.00% Impervious Runoff Depth=4.26" Tc=6.0 min CN=98 Runoff=0.10 cfs 0.008 af
Reach 1R: OFFSILE TO NORTH	Outflow=0.91 cfs 0.065 af
Peach 2P: BOSTON DOST PD	Inflow=1.08 cfs. 0.083 af
	Outflow=1.08 cfs 0.083 af
Reach 3R: RESOURCE AREA	Inflow=0.91 cfs 0.079 af
	Outflow=0.91 cfs 0.079 af
Pond 1P: BIORETENTION AREA	Peak Elev=155.55' Storage=451 cf Inflow=0.42 cfs 0.030 af
	Outflow=0.06 cfs 0.030 af
Pond 2P: INFILTRATION SYSTEM	Peak Elev=146.38' Storage=0.016 af Inflow=0.57 cfs 0.043 af Outflow=0.05 cfs 0.043 af
Pond 3P: DRYWELLS	Peak Flev=147 40' Storage=0 003 af Inflow=0 10 cfs_0 008 af
	Outflow=0.01 cfs 0.008 af
Total Runoff Area = 2.343 ac 79	Runoff Volume = 0.309 af Average Runoff Depth = 1.58" 0.50% Pervious = 1.862 ac 20.50% Impervious = 0.480 ac

		LEE'S FARM STAND
61136.00-Post	Type III 24-hr	10-year Rainfall=4.50"
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Summary for Subcatchment 1S: NORTHERN AREAS

Runoff = 0.91 cfs @ 12.09 hrs, Volume= 0.065 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-year Rainfall=4.50"

Ar	ea (sf)	CN	Description					
	6,385	98	Unconnecte	ed pavemer	ent, HSG B			
	10,142	61	>75% Gras	s cover, Go	ood, HSG B			
	16,527	75	Weighted A	verage				
	10,142		61.37% Pe	rvious Area	a			
	6,385		38.63% Impervious Area					
	6,385		100.00% Unconnected					
_								
Tc	Length	Slope	e Velocity	Capacity	Description			
<u>(min)</u>	(feet)	(ft/ft) (ft/sec)	(cfs)				
6.0					Direct Entry,			
					-			

Subcatchment 1S: NORTHERN AREAS



		LEE'S FARM STAND
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Summary for Subcatchment 2S: SOUTHERN PLANTING AREAS

Runoff = 0.28 cfs @ 12.11 hrs, Volume= 0.026 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-year Rainfall=4.50"

A	rea (sf)	CN	Description		
	6,413	51	Gardens w/	Raised Pla	anters
	9,321	61	>75% Gras	s cover, Go	ood, HSG B
Tc (min)	15,734 15,734 Length (feet)	57 Slop (ft/f	Weighted A 100.00% Pe e Velocity t) (ft/sec)	verage ervious Are Capacity (cfs)	ea Description
6.0					Direct Entry,
	А Тс (<u>(min)</u> 6.0	Area (sf) 6,413 9,321 15,734 15,734 Tc Length (min) (feet) 6.0	Area (sf) CN 6,413 51 9,321 61 15,734 57 15,734 57 15,734 57 15,734 57 6,0 6.0	Area (sf) CN Description 6,413 51 Gardens w/ 9,321 61 >75% Grass 15,734 57 Weighted A 15,734 100.00% Pe Tc Length Slope Velocity (min) (feet) (ft/ft) (ft/sec) 6.0	Area (sf)CNDescription6,41351Gardens w/Raised Plate9,32161>75% Grass cover, G15,73457Weighted Average15,734100.00% Pervious AreTcLengthSlopeVelocityCapacity(min)(feet)(ft/ft)6.0

Subcatchment 2S: SOUTHERN PLANTING AREAS



		LEE'S FARM STAND
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Summary for Subcatchment 3S: NORTHERN AND WESTERN AREAS

Runoff = 0.91 cfs @ 12.11 hrs, Volume= 0.079 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-year Rainfall=4.50"

	6.0				Direct Entry,		
(r	nin) (feet)	(ft/	ft) (ft/sec)	(cfs)			
	IC Lengui	Sioh	e velocity	Capacity	Description		
	To Longth	Slor	ve Velocity	Capacity	Description		
	45,915		100.00% Pe	100.00% Pervious Area			
	45,915	58	Weighted A	verage			
	26,683	58	Meadow, no	on-grazed,	, HSG B		
	7,787	61	>75% Gras	s cover, Go	ood, HSG B		
	1,347	02					
	1 3/17	82	Dirt roade	HSC B			
*	10.098	51	Gardens w/	Raised Pla	anters		
	Area (sf)	CN	Description				

Subcatchment 3S: NORTHERN AND WESTERN AREAS



		LEE'S FARM STAND
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Summary for Subcatchment 4S: FARM STAND FRONT YARD

Runoff = 0.42 cfs @ 12.09 hrs, Volume= 0.030 af, Depth= 2.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-year Rainfall=4.50"

A	rea (sf)	CN	Description		
	1,683	98	Roofs, HSC	βB	
	2,562	61	>75% Gras	s cover, Go	ood, HSG B
	1,714	98	Water Surfa	ace, 0% imp	np, HSG B
	5,959	82	Weighted A	verage	
	4,276		71.76% Pe	rvious Area	а
	1,683		28.24% Imp	pervious Ar	rea
_				-	
Тс	Length	Slope	e Velocity	Capacity	Description
(min)	(feet)	(ft/ft) (ft/sec)	(cfs)	
6.0					Direct Entry,

Subcatchment 4S: FARM STAND FRONT YARD



		LEE'S FARM STAND
61136.00-Post	Type III 24-hr	10-year Rainfall=4.50"
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Summary for Subcatchment 5S: SITE ENTRANCE

Runoff = 0.81 cfs @ 12.09 hrs, Volume= 0.058 af, Depth= 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-year Rainfall=4.50"

A	rea (sf)	CN	Description		
	6,603	98	Paved park	ing, HSG B	В
	4,097	61	>75% Ġras	s cover, Go	iood, HSG B
	10,700	84	Weighted A	verage	
	4,097		38.29% Pe	rvious Area	а
	6,603		61.71% lm	pervious Are	rea
Тс	Length	Slop	e Velocity	Capacity	Description
(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)	
6.0					Direct Entry,

Subcatchment 5S: SITE ENTRANCE



		LEE'S FARM STAND
61136.00-Post	Type III 24-hr	10-year Rainfall=4.50"
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Summary for Subcatchment 6S: ACCESS DRIVE

Runoff = 0.57 cfs @ 12.08 hrs, Volume= 0.043 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-year Rainfall=4.50"

A	rea (sf)	CN	Description			
	5,207	98	Paved park	ing, HSG B	}	
	966	61	>75% Ġras	s cover, Go	ood, HSG B	
	6,173 966 5,207	92	Weighted A 15.65% Pe 84.35% Imp	verage rvious Area pervious Are	ea	
Tc (min)	Length (feet)	Slop (ft/f	e Velocity t) (ft/sec)	Capacity (cfs)	Description	
6.0					Direct Entry.	

Subcatchment 6S: ACCESS DRIVE



		LEE'S FARM STAND
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Summary for Subcatchment 7S: BARN

Runoff =	0.10 cfs @ 12.08 hrs, Volu	ume= 0.008 af, Depth= 4.26"
----------	----------------------------	-----------------------------

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-year Rainfall=4.50"

A	rea (sf)	CN	Description		
	1,040	98	Roofs, HSC	βB	
	1,040		100.00% In	npervious A	Area
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 7S: BARN

Hydrograph



		LEE'S FA	RM STAND
61136.00-Post	Type III 24-hr	10-year Ra	infall=4.50"
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Summary for Reach 1R: OFFSITE TO NORTH

Inflow /	Area	=	0.379 ac, 3	38.63% Impe	ervious,	Inflow Depth =	2.0	5" for 10-year event
Inflow		=	0.91 cfs @	12.09 hrs,	Volume	= 0.065	af	
Outflov	N	=	0.91 cfs @	12.09 hrs,	Volume	= 0.065	af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 1R: OFFSITE TO NORTH

		LEE'S FARM STAND
61136.00-Post	Type III 24-hr	10-year Rainfall=4.50"
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Summary for Reach 2R: BOSTON POST RD

Inflow Are	a =	0.607 ac, 2	4.98% Impe	ervious, li	nflow Depth =	1.65	" for 10-y	/ear event
Inflow	=	1.08 cfs @	12.09 hrs,	Volume=	0.083	af		
Outflow	=	1.08 cfs @	12.09 hrs,	Volume=	0.083	af, A	tten= 0%,	Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 2R: BOSTON POST RD

		LEE'S FA	RM STAND
61136.00-Post	Type III 24-hr	10-year Ra	infall=4.50"
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Summary for Reach 3R: RESOURCE AREA

Inflow A	Area	=	1.054 ac,	0.00% Imperviou	us, Inflow Depth	n = 0.90"	' for 10-y	/ear event
Inflow		=	0.91 cfs @	12.11 hrs, Volu	me= 0.0	079 af		
Outflov	N	=	0.91 cfs @	12.11 hrs, Volu	me= 0.0	079 af, A	tten= 0%,	Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 3R: RESOURCE AREA

		LEE'S FARM STAND
61136.00-Post	Type III 24-hr	10-year Rainfall=4.50"
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Summary for Pond 1P: BIORETENTION AREA

Inflow Area	=	0.137 ac, 2	8.24% Impe	rvious, Ir	nflow Depth =	2.64"	for 10-ye	ear event
Inflow	=	0.42 cfs @	12.09 hrs, \	Volume=	0.030	af		
Outflow	=	0.06 cfs @	12.60 hrs, \	Volume=	0.030	af, Atte	n= 85%,	Lag= 31.0 min
Discarded	=	0.06 cfs @	12.60 hrs, \	Volume=	0.030	af		-

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 155.55' @ 12.60 hrs Surf.Area= 1,117 sf Storage= 451 cf

Plug-Flow detention time= 62.6 min calculated for 0.030 af (100% of inflow) Center-of-Mass det. time= 62.6 min (883.3 - 820.7)

Volume	Invert	Avail.	Storage	Storage Descriptio	n		
#1	155.00'		2,093 cf	Custom Stage Da	ta (Irregular) Liste	d below (Recalc)	
Elevation (feet)	ı Su	ırf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft <u>)</u>	
155.00 156.00 156.50)	569 1,714 2,313	162.3 231.8 247.5	0 1,090 1,003	0 1,090 2,093	569 2,758 3,368	
Device I	Routing	Inv	ert Outle	et Devices			
#1 Discarded 155.00' 2.410 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 135.00'							
Discarde	d OutFlow	Max=0.0	6 cfs @ 12	2.60 hrs HW=155.5	5' (Free Discharg	ge)	

1=Exfiltration (Controls 0.06 cfs)

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LEE'S FARM STAND Type III 24-hr 10-year Rainfall=4.50" Printed 11/22/2021 s LLC Page 31

Hydrograph 0.46 - Inflow 0.44 0.42 cfs Discarded 0.42 Inflow Area=0.137 ac 0.4 0.38 0.36 Peak Elev=155.55' 0.34 0.32 Storage=451 cf 0.3 0.28 Flow (cfs) 0.26 0.24 0.22 0.2 0.18 0.16 0.14 0.12 0.1 0.06 cfs 0.08 0.06 0.04 0.02 0 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 <u>0</u>1 2 3 4 5 6 Time (hours)

Pond 1P: BIORETENTION AREA

 LEE'S FARM STAND

 61136.00-Post
 Type III 24-hr
 10-year Rainfall=4.50"

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Summary for Pond 2P: INFILTRATION SYSTEM

Inflow Area	=	0.142 ac, 8	84.35% Impe	ervious,	Inflow [Depth =	3.60"	for 10-y	ear event
Inflow	=	0.57 cfs @	12.08 hrs,	Volume	=	0.043	af		
Outflow	=	0.05 cfs @	12.98 hrs,	Volume	=	0.043	af, Atte	en= 91%,	Lag= 53.8 min
Discarded	=	0.05 cfs @	12.98 hrs,	Volume	=	0.043	af		

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 146.38' @ 12.98 hrs Surf.Area= 0.018 ac Storage= 0.016 af

Plug-Flow detention time= 110.4 min calculated for 0.043 af (100% of inflow) Center-of-Mass det. time= 110.4 min (896.4 - 786.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	145.00'	0.017 af	20.50'W x 39.22'L x 3.50'H Field A
			0.065 af Overall - 0.021 af Embedded = 0.044 af x 40.0% Voids
#2A	145.50'	0.021 af	ADS_StormTech SC-740 +Cap x 20 Inside #1
			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
			4 Rows of 5 Chambers
		0.038 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	145.00'	2.410 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 135.00'

Discarded OutFlow Max=0.05 cfs @ 12.98 hrs HW=146.38' (Free Discharge) **1=Exfiltration** (Controls 0.05 cfs) 61136.00-PostType III 24-hrLEE'S FARM STAND61136.00-PostType III 24-hr10-year Rainfall=4.50"Prepared by BSC Group, Inc.Printed 11/22/2021HydroCAD® 10.00-22 s/n 00904 © 2018 HydroCAD Software Solutions LLCPage 33



Pond 2P: INFILTRATION SYSTEM

		LEE'S FARM STAND
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Summary for Pond 3P: DRYWELLS

Inflow Area	=	0.024 ac,10	0.00% Imper	rvious, Inflow I	Depth =	4.26" 1	for 10-ye	ear event
Inflow	=	0.10 cfs @	12.08 hrs, V	/olume=	0.008 a	af		
Outflow	=	0.01 cfs @	13.24 hrs, V	/olume=	0.008 a	af, Atter	n= 93%,	Lag= 69.7 min
Discarded	=	0.01 cfs @	13.24 hrs, ∖	/olume=	0.008 a	af		

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 147.40' @ 13.24 hrs Surf.Area= 0.003 ac Storage= 0.003 af

Plug-Flow detention time= 153.7 min calculated for 0.008 af (100% of inflow) Center-of-Mass det. time= 153.7 min (903.5 - 749.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	146.00'	0.000 af	5.67'W x 21.00'L x 2.83'H Field A
			0.008 af Overall - 0.008 af Embedded = 0.000 af x 40.0% Voids
#2A	146.00'	0.006 af	Concrete Dry Well 1000gal x 2 Inside #1
			Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf
			Outside= 68.0"W x 34.0"H => 15.81 sf x 10.50'L = 166.0 cf
		0.006 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	2.410 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 135.00'
Discard	ed OutFlow M filtration (Co	/ax=0.01 cfs ntrols 0.01 c	@ 13.24 hrs HW=147.40' (Free Discharge) fs)

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Pond 3P: DRYWELLS

01400 00 D 4	LEE'S FARM STAND
61136.00-POST Prenared by BSC Group Inc	Type III 24-nr 100-year Rainfall=6.50" Printed 11/22/2021
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Time span=0.00-3 Runoff by SCS TR-2 Reach routing by Stor-Ind+Trai	6.00 hrs, dt=0.01 hrs, 3601 points 20 method, UH=SCS, Weighted-CN ns method - Pond routing by Stor-Ind method
Subcatchment 1S: NORTHERN AREAS	Runoff Area=16,527 sf 38.63% Impervious Runoff Depth=3.71" Tc=6.0 min CN=75 Runoff=1.65 cfs 0.117 af
Subcatchment 2S: SOUTHERN PLANTING	Runoff Area=15,734 sf 0.00% Impervious Runoff Depth=1.99" Tc=6.0 min CN=57 Runoff=0.79 cfs 0.060 af
Subcatchment 3S: NORTHERN AND	Runoff Area=45,915 sf 0.00% Impervious Runoff Depth=2.08" Tc=6.0 min CN=58 Runoff=2.42 cfs 0.182 af
Subcatchment 4S: FARM STAND FRONT	Runoff Area=5,959 sf 28.24% Impervious Runoff Depth=4.45" Tc=6.0 min CN=82 Runoff=0.71 cfs 0.051 af
Subcatchment 5S: SITE ENTRANCE	Runoff Area=10,700 sf 61.71% Impervious Runoff Depth=4.67" Tc=6.0 min CN=84 Runoff=1.32 cfs 0.096 af
Subcatchment 6S: ACCESS DRIVE	Runoff Area=6,173 sf 84.35% Impervious Runoff Depth=5.56" Tc=6.0 min CN=92 Runoff=0.86 cfs 0.066 af
Subcatchment7S: BARN	Runoff Area=1,040 sf 100.00% Impervious Runoff Depth=6.26" Tc=6.0 min CN=98 Runoff=0.15 cfs 0.012 af
Reach 1R: OFFSITE TO NORTH	Inflow=1.65 cfs 0.117 af Outflow=1.65 cfs 0.117 af
Reach 2R: BOSTON POST RD	Inflow=2.10 cfs 0.155 af Outflow=2.10 cfs 0.155 af
Reach 3R: RESOURCE AREA	Inflow=2.42 cfs 0.182 af Outflow=2.42 cfs 0.182 af
Pond 1P: BIORETENTION AREA	Peak Elev=155.86' Storage=857 cf Inflow=0.71 cfs 0.051 af Outflow=0.09 cfs 0.051 af
Pond 2P: INFILTRATION SYSTEM	Peak Elev=147.34' Storage=0.029 af Inflow=0.86 cfs 0.066 af Outflow=0.06 cfs 0.066 af
Pond 3P: DRYWELLS	Peak Elev=148.37' Storage=0.006 af Inflow=0.15 cfs 0.012 af Outflow=0.01 cfs 0.012 af
Total Runoff Area = 2.343 ac 79	Runoff Volume = 0.584 af Average Runoff Depth = 2.99" 9.50% Pervious = 1.862 ac 20.50% Impervious = 0.480 ac

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Summary for Subcatchment 1S: NORTHERN AREAS

Runoff = 1.65 cfs @ 12.09 hrs, Volume= 0.117 af, Depth= 3.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-year Rainfall=6.50"

A	rea (sf)	CN	Description				
	6,385	98	Unconnecte	ed pavemer	nt, HSG B		
	10,142	61	>75% Gras	s cover, Go	ood, HSG B		
	16,527	75	Weighted A	verage			
	10,142		61.37% Pervious Area				
	6,385		38.63% Impervious Area				
	6,385		100.00% Unconnected				
Тс	l enath	Slon	 Velocity 	Canacity	Description		
(min)	(feet)	(ft/ft) (ft/sec)	(cfs)	Description		
6.0	(1904)	(14/1	, (14000)	(0.0)	Direct Entry.		
					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		

Subcatchment 1S: NORTHERN AREAS



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Summary for Subcatchment 2S: SOUTHERN PLANTING AREAS

Runoff = 0.79 cfs @ 12.10 hrs, Volume= 0.060 af, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-year Rainfall=6.50"

	A	vrea (sf)	CN	Description		
*		6,413	51	Gardens w/	Raised Pla	anters
		9,321	61	>75% Gras	s cover, Go	ood, HSG B
	Tc (min)	15,734 15,734 Length (feet)	57 Slop (ft/f	Weighted A 100.00% Pe e Velocity t) (ft/sec)	verage ervious Are Capacity (cfs)	ea Description
	6.0					Direct Entry,





		LEE'S FARM STAND
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Summary for Subcatchment 3S: NORTHERN AND WESTERN AREAS

Runoff = 2.42 cfs @ 12.10 hrs, Volume= 0.182 af, Depth= 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-year Rainfall=6.50"

	Area (sf)	CN	Description		
*	10,098	51	Gardens w/	Raised Pla	anters
	1,347	82	Dirt roads, I	HSG B	
	7,787	61	>75% Gras	s cover, Go	bod, HSG B
	26,683	58	Meadow, no	on-grazed,	HSG B
	45,915	58	Weighted A	verage	
	45,915		100.00% Pe	ervious Are	a
То	c Length	Slop	e Velocity	Capacity	Description
(min) (feet)	(ft/f	t) (ft/sec)	(cfs)	
6.0)				Direct Entry,

Subcatchment 3S: NORTHERN AND WESTERN AREAS



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Summary for Subcatchment 4S: FARM STAND FRONT YARD

Runoff = 0.71 cfs @ 12.09 hrs, Volume= 0.051 af, Depth= 4.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-year Rainfall=6.50"

Α	rea (sf)	CN	Description				
	1,683	98	Roofs, HSC	βB			
	2,562	61	>75% Gras	s cover, Go	ood, HSG B		
	1,714	98	Water Surfa	ace, 0% imp	np, HSG B		
	5,959	82	Weighted Average				
	4,276		71.76% Pervious Area				
	1,683		28.24% Impervious Area				
Та	Longth	Clan	a Valacity	Canaaitu	Description		
IC	Lengin	Siop	e velocity	Capacity	Description		
(min)	(feet)	(ft/f	i) (ft/sec)	(cfs)			
6.0					Direct Entry,		

Subcatchment 4S: FARM STAND FRONT YARD



Hydrograph

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Summary for Subcatchment 5S: SITE ENTRANCE

Runoff = 1.32 cfs @ 12.09 hrs, Volume= 0.096 af, Depth= 4.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-year Rainfall=6.50"

A	rea (sf)	CN	Description		
	6,603	98	Paved park	ing, HSG B	3
	4,097	61	>75% Gras	s cover, Go	ood, HSG B
	10,700	84	Weighted A	verage	
	4,097		38.29% Pe	rvious Area	a
	6,603		61.71% lmp	pervious Ar	rea
-		~		o "	
IC	Length	Slop	e Velocity	Capacity	Description
(min)	(feet)	(ft/f	:) (ft/sec)	(cfs)	
6.0					Direct Entry,

Subcatchment 5S: SITE ENTRANCE



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Summary for Subcatchment 6S: ACCESS DRIVE

Runoff = 0.86 cfs @ 12.08 hrs, Volume= 0.066 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-year Rainfall=6.50"

A	rea (sf)	CN	Description						
	5,207	98	Paved parking, HSG B						
	966	61	>75% Gras	>75% Grass cover, Good, HSG B					
	6,173	92	Weighted A	verage					
	966	966 15.65% Pervious Area							
	5,207 84.35% Impervious Area								
Tc	Length	Slop	e Velocity	Capacity	Description				
(min)	(feet)	(ft/f	i) (ft/sec)	(cfs)					
6.0					Direct Entry,				

Subcatchment 6S: ACCESS DRIVE



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Summary for Subcatchment 7S: BARN

Runoff =	0.15 cfs @ 12.0)8 hrs, Volume=	0.012 af, Depth= 6.26"
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Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-year Rainfall=6.50"



		LEE'S FARM STAND
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Summary for Reach 1R: OFFSITE TO NORTH

Inflow A	Area =	:	0.379 ac,	38.63% Imp	ervious,	Inflow	Depth =	3.7	'1" for	100-	-year e	vent
Inflow	=		1.65 cfs @	12.09 hrs,	Volume	=	0.117	af				
Outflow	' =		1.65 cfs @	12.09 hrs,	Volume	;=	0.117	af,	Atten= ()%,	Lag= C).0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 1R: OFFSITE TO NORTH
		LEE'S FA	RM STAND
61136.00-Post	Type III 24-hr	100-year Ra	infall=6.50"
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Summary for Reach 2R: BOSTON POST RD

Inflow A	Area =	0.607 ac, 2	4.98% Impervious,	Inflow Depth = 3	.07" for 100-year event
Inflow	=	2.10 cfs @	12.09 hrs, Volume	e= 0.155 af	-
Outflow	/ =	2.10 cfs @	12.09 hrs, Volume	e= 0.155 af	, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 2R: BOSTON POST RD

		LEE'S FA	RM STAND
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Summary for Reach 3R: RESOURCE AREA

Inflow A	Area	=	1.054 ac,	0.00% Imperviou	s, Inflow Depth =	2.08" for	r 100-year event
Inflow		=	2.42 cfs @	12.10 hrs, Volur	ne= 0.182	2 af	
Outflov	V	=	2.42 cfs @	12.10 hrs, Volur	ne= 0.182	2 af, Atten=	0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs



Reach 3R: RESOURCE AREA

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Summary for Pond 1P: BIORETENTION AREA

Inflow Area	=	0.137 ac, 2	8.24% Imper	rvious, Inflow	/ Depth =	4.45"	for 100-	year event
Inflow	=	0.71 cfs @	12.09 hrs, \	/olume=	0.051	af		
Outflow	=	0.09 cfs @	12.70 hrs, \	/olume=	0.051	af, Atte	en= 88%,	Lag= 37.1 min
Discarded	=	0.09 cfs @	12.70 hrs, \	/olume=	0.051	af		

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 155.86' @ 12.70 hrs Surf.Area= 1,510 sf Storage= 857 cf

Plug-Flow detention time= 96.9 min calculated for 0.051 af (100% of inflow) Center-of-Mass det. time= 96.9 min (902.8 - 805.8)

Volume	Invert	Avail	.Storage	Storage Description	า			
#1	155.00'		2,093 cf	Custom Stage Dat	ta (Irregular) Liste	d below (Recalc)		
Elevatior (feet	n Su :)	rf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)		
155.00 156.00 156.50	0 0 0	569 1,714 2,313	162.3 231.8 247.5	0 1,090 1,003	0 1,090 2,093	569 2,758 3,368		
Device	Routing	Inv	ert Outle	et Devices				
#1 Discarded 155.00' 2.410 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 135.00'								
Discarded OutFlow Max=0.09 cfs @ 12.70 hrs HW=155.86' (Free Discharge)								

1=Exfiltration (Controls 0.09 cfs)

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Pond 1P: BIORETENTION AREA

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 LEE'S FARM STAND

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Summary for Pond 2P: INFILTRATION SYSTEM

Inflow Area	=	0.142 ac, 8	34.35% Impe	ervious, l	Inflow Depth =	5.56"	for 100-y	/ear event
Inflow	=	0.86 cfs @	12.08 hrs,	Volume=	0.066	af		
Outflow	=	0.06 cfs @	13.59 hrs, `	Volume=	• 0.066	af, Att	en= 94%,	Lag= 90.5 min
Discarded	=	0.06 cfs @	13.59 hrs, `	Volume=	• 0.066	af		

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 147.34' @ 13.59 hrs Surf.Area= 0.018 ac Storage= 0.029 af

Plug-Flow detention time= 197.8 min calculated for 0.066 af (100% of inflow) Center-of-Mass det. time= 197.8 min (972.6 - 774.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	145.00'	0.017 af	20.50'W x 39.22'L x 3.50'H Field A
			0.065 af Overall - 0.021 af Embedded = 0.044 af x 40.0% Voids
#2A	145.50'	0.021 af	ADS_StormTech SC-740 +Cap x 20 Inside #1
			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
			4 Rows of 5 Chambers
		0.038 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	145.00'	2.410 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 135.00'

Discarded OutFlow Max=0.06 cfs @ 13.59 hrs HW=147.34' (Free Discharge) **1=Exfiltration** (Controls 0.06 cfs)
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Pond 2P: INFILTRATION SYSTEM

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Summary for Pond 3P: DRYWELLS

Inflow Area	=	0.024 ac,10	0.00% Imper	vious, Inflow De	pth = 6.26"	for 100-year event
Inflow	=	0.15 cfs @	12.08 hrs, V	/olume=	0.012 af	
Outflow	=	0.01 cfs @	13.98 hrs, V	/olume=	0.012 af, Atte	en= 95%, Lag= 113.9 min
Discarded	=	0.01 cfs @	13.98 hrs, V	/olume=	0.012 af	-

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 148.37' @ 13.98 hrs Surf.Area= 0.003 ac Storage= 0.006 af

Plug-Flow detention time= 262.0 min calculated for 0.012 af (100% of inflow) Center-of-Mass det. time= 262.0 min (1,006.0 - 744.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	146.00'	0.000 af	5.67'W x 21.00'L x 2.83'H Field A
			0.008 af Overall - 0.008 af Embedded = 0.000 af x 40.0% Voids
#2A	146.00'	0.006 af	Concrete Dry Well 1000gal x 2 Inside #1
			Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf
			Outside= 68.0"W x 34.0"H => 15.81 sf x 10.50'L = 166.0 cf
		0.006 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices		
#1	Discarded	146.00'	2.410 in/hr Exfiltration over Horizontal area Conductivity to Groundwater Elevation = 135.00'		
Discarded OutFlow Max=0.01 cfs @ 13.98 hrs HW=148.37' (Free Discharge) 1=Exfiltration (Controls 0.01 cfs)					

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Pond 3P: DRYWELLS