

ALLEN ENGINEERING & ASSOCIATES, INC.

DRAINAGE ANALYSIS REPORT For

#1603 - #1605 Main Street In Leicester, Massachusetts

> <u>Date:</u> August 27, 2021

Revised: November 12, 2021



Prepared For:

Leicester Main, LLC One Charlesview Road, Suite 1 Hopedale, MA 01747 Hopedale, Massachusetts

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SUMMARY OF PRE-DEVELOPMENT DRAINAGE CONDITIONS

Site Description:

The project for which this analysis has been prepared lies on the southwesterly side of Route 9 (state highway) and numbered 1603 & 1605 Main Street in Leicester, MA. The site being shown on Leicester assessor's maps 18, block A, parcel 8.1, and map 18A, block A, parcels 14 & 15. The site has been cleared with the exception of the westerly corner of the property which is adjacent to a wetland located off of the site to the west. The site slopes southwesterly from Main Street (Rte. 9) toward the rear of the property. Previous earthwork on the site created a temporary sediment trap roughly parallel to the rear property line. The disturbed portion of the site has little to no vegetation.

Allen Engineering & Associates, Inc. has reviewed the Soil Survey for Worcester County, prepared by the USDA/NRCS and has performed on-site soil test pits. The southerly corner of the project is identified as Paxton fine sandy loam having a hydrologic soil group (HSG) of "C". The remainder of the site soils are designated as Woodbridge fine sandy loam having a published hydrologic soil group (HSG) of "C/D". The published soil texture appears to agree with test pits performed by Allen Engineering & Associates, Inc. on the site. For the purpose of a conservative Pre/Post-Development comparison analysis, the existing site conditions within the calculations are modelled as an undisturbed "Wooded-good" condition.

Hydrology Background:

Allen Engineering & Associates, Inc. has utilized AutoCAD and HydroCAD software to perform this drainage analysis. AutoCAD was used to generate the existing and proposed drainage plan that can be found appended to this report. These plans were used to define such items as subcatchment areas, times of concentration and ground cover. Evaluation points (1EV) (2EV) have been designated within the calculations corresponding to the existing surface runoff collection areas at the rear corners of the site. HydroCAD software program has been utilized to calculate the peak rate of storm water runoff during various storm events at this evaluation points for Pre-Development/Post-Development analysis. These rates are summarized for existing and proposed site conditions in tabular form on page iii.

The total land area reviewed under "Pre-Development" conditions comprises 171,617 square feet. The total land area reviewed under "Post-Development" conditions comprises 171,766 square feet; the small increase (149 sf) is the result of realignment of the curbing within the state highway layout.

SUMMARY OF POST-DEVELOPMENT DRAINAGE CONDITIONS

Site Description:

The project consists of construction of two commercial buildings with appurtenant parking, access drives and utilities. The easterly building (#1603) is proposed as a three-story self-storage building having a footprint area of 10,000 square. The westerly building (#1605), as proposed, has a footprint area of 4,996 square feet and will contain a one-story fast-food restaurant with a drive-through, and a gas station/convenience store.

Stormwater Management:

Stormwater runoff will be collected by deep-sump/hooded catch basins and conveyed by pipe to an infiltration basin at the rear of the property. The use of building #1605 (gas station) as well as the anticipated vehicle trips/day (>1000) defines this portion of the site as a "Land Use with Higher Potential Pollution Loads" (LUHPPL). The proposed self-storage building at #1603 does not meet the same threshold and is not designated as such. Site grading, as well as stormwater collection points, and pipe networks have been developed to hydraulically separate flows from each use so that appropriate treatment measures/Best Management Practices (BMP) may be employed. Pretreatment BMP's utilized in the treatment train for the self-storage building site include deep-sump/hooded catch basins and a sediment forebay prior to discharge into the infiltration basin. Pretreatment BMP's for building #1605 site includes a hydrodynamic separator as well as deep-sump/hooded catch basins and sediment forebay. Stormwater treatment requirements, calculations and compliance documentation are provided in section 3 of this report.

SUMMARY OF HYDROLOGY

#1603-#1605 Main Street Using HydroCAD Software

Job No.:	00047	Calced By:	BSW
Client:	Leicester Main, LLC	Date:	11/10/2021
Location:	Bellingham, MA	Revised:	

TABLE 1: SUMMARY OF PEAK RATES OF STORMWATER RUNOFF

			Existing C	onditions			Proposed Conditions			
Evaluation	HydroCAD		Runoff	C(CFS)		HydroCAD		Runoff	(CFS)	
Point	symbols	2-Yr	10-Yr	25-Yr	100-Yr	symbols	2-Yr	10-Yr	25-Yr	100-Yr
SW'ly Lot Corner	1EV	2.30	5.74	8.83	15.53	1EV	2.29	5.69	8.81	15.53
S'ly Lot Corner	2EV	0.26	0.66	1.01	1.78	2EV	0.25	0.56	0.83	1.40
TOTAL		2.56	6.40	9.84	17.31		2.54	6.25	9.64	16.93

* **<u>NOTE</u>**: All drain piping is designed to handle the 25-year storm event.

Pre-Development Drainage Calculations





Area Listing (all nodes)

Area	CN	Description
(sq-ft)		(subcatchment-numbers)
2,404	74	>75% Grass cover, Good, HSG C (1S)
169,213	70	Woods, Good, HSG C (1S, 2S)
171,617	70	TOTAL AREA

00047 Pre-Dev rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 2

> Inflow=2.30 cfs 10,888 cf Primary=2.30 cfs 10,888 cf

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: (new Subcat)

Subcatchment2S: (new Subcat)

Pond 1EV:

Pond 2EV:

Inflow=0.26 cfs 1,205 cf Primary=0.26 cfs 1,205 cf

Runoff Area=154,518 sf 0.00% Impervious Runoff Depth=0.85" Flow Length=621' Tc=15.8 min CN=70 Runoff=2.30 cfs 10,888 cf

Runoff Area=17,099 sf 0.00% Impervious Runoff Depth=0.85" Flow Length=434' Tc=14.4 min CN=70 Runoff=0.26 cfs 1,205 cf

Total Runoff Area = 171,617 sf Runoff Volume = 12,093 cf Average Runoff Depth = 0.85" 100.00% Pervious = 171,617 sf 0.00% Impervious = 0 sf

										JCalj					
Runoff	=	2.30 0	fs @ 12.2;	5 hrs, Volu	ume=	10,8	88 cf, Dep	oth= 0.85"	'						
Runoff by Type III 2	/ SCS TF 24-hr 2YI	₹-20 me R Rainfa	thod, UH=8 all=3.23"	SCS, Weigh	nted-CN, Ti	me Spa	n= 0.00-48	8.00 hrs, d	t= 0.05 hi	rs					
Ar	rea (sf)	CN	Description			_									
12	2,404 26,371	74 70	>75% Gras Woods, Gc	s cover, Good, HSG C	ood, HSG (5									
	25,743	70	Woods, Go	od, HSG C											
15	54,518 54,518	70	100.00% P	ervious Are	a										
Tc (min)	Length (feet)	Slope (ft/ft	Velocity) (ft/sec)	Capacity (cfs)	Descripti	on									
7.0	50	0.0800	0.12		Sheet Fle Woods: L	ow, Light un	derbrush	n= 0.400	P2= 3.26	6"					
8.8	571	0.0466	i 1.08		Shallow Woodlan	Conce	ntrated Flo	ow,							
15.8	621	Total			WOOdian	<u>u itv-</u>	0.0 103								
				Su	mmary fo	or Sub	catchme	ent 2S: (r	new Sub	ocat)					
Runoff	=	0.26 0	;fs @ 12.2	2 hrs, Volu	ume=	1,2	05 cf, Dep	oth= 0.85"							
Runoff by Type III 2	/ SCS TF 24-hr 2YI	२-20 me R Rainf	thod, UH=S all=3.23"	SCS, Weigh	nted-CN, Ti	me Spa	an= 0.00-48	8.00 hrs, d	t= 0.05 hi	rs					
Ar	rea (sf)	CN	Description	1											
	4,928 12 171	70 70	Woods, Go Woods, Go	od, HSG C											
	· — , · · ·		,									-			
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	17,099 17,099	70	Weighted / 100.00% P	Average ervious Are	ea										
00047 P Preparec HydroCAE	17,099 17,099 're-Dev d by Alle <u>>® 10.10-</u>	70 r rev1 en Engi <u>4b s/n (</u>	Weighted / 100.00% P	Average ervious Are 	s, Inc. Software S	Solutions	s LLC				Type III 2	?4-hr 2	2YR Rai Printed	<i>nfall=3.</i> 11/10/2 Pag	23" 021 3e 4
00047 P Preparec HydroCAE Tc (min)	17,099 17,099 27re-Dev d by Alle ≫ 10.10- Length (feet)	70 7 rev1 9 Engi 4 <u>b s/n (</u> Slope (ft/ft	Weighted / 100.00% P 100.00% P 100.00% P 100.00% P 100.00% P 100.00% P	Average ervious Are Associates <u>O HydroCAI</u> Capacity (cfs)	s, Inc. D Software S Descripti	Solutions	s LLC				Type III 2	24-hr 2	2YR Rai Printed	n fall=3 . 11/10/2 Pag	23" 021 3e 4
DOOD47 P Preparec HydroCAE Tc _(min)	7re-Dev d by Alle <u>)® 10.10-</u> Length <u>(feet)</u> 50	70 27 rev1 20 Engi 4 <u>b</u> s/n (30 Slope (ft/ft 0.0500	Weighted / 100.00% P 100.00% P 1000	Average ervious Are Associates <u>O HydroCAI</u> Capacity (cfs)	s, Inc. D Software S Descripti Sheet Fl	Solutions on ow,	SLLC				Type III 2	?4-hr 2	2YR Rai Printed	nfall=3. 11/10/2 Pac	23" 021 <u>Je 4</u>
DOOO47 P Preparece HydroCAE Tc (min) 8.5 5.9	17,099 17,099 17,099 ✓ Te-Dev d by Alle <u>3810.10-</u> Length (feet) 50 384	70 27 rev1 20 Engi <u>4b s/n (</u> (ft/ft 0.0500 0.0465	Weighted / 100.00% P 100.00% P 100.	Average ervious Are Associates <u>O HydroCAI</u> Capacity (cfs)	s, Inc. <u>D Software S</u> Description Sheet Fla Woods: L Shallow Woodlan	Solutions on Jight un: Conce d Kv=	s LLC derbrush ntrated Fig 5.0 fps	n= 0.400 pw ,	P2= 3.26	5"	Type III 2		2YR Rai Printed	infall=3. 11/10/2 Pac	23" 021 <u>Je 4</u>
200047 P Preparec HydroCAE Tc (min) 8.5 5.9 14.4	Pre-Dev d by Alle <u>∞</u> 10.10- Length (feet) 50 384 434	70 m Engi 4b s/n ((ft/ft 0.050(0.0469 Total	Weighted / 100.00% P 100.00% P 100.0	Average ervious Are Associates <u>10 HydroCAI</u> Capacity (cfs)	s, Inc. D Software S Descripti Woods: L Shallow Woodlan	Solutions on ight un Conce d Kv=	s LLC derbrush htrated Flo 5.0 fps	n= 0.400 5w ,	P2= 3.26	5"	Type III 2		2YR Rai	infall=3. 11/10/2 Pac	23" 021 <u>Je 4</u>
00047 P Preparec tydroCAE Tc (min) 8.5 5.9 14.4	17,099 17,099 17,099 Pre-Dev d by Alle <u>∑® 10.10-</u> Length (feet) 50 384 434	70 70 77 77 77 77 77 77 70 70 70 70 70 7	Weighted / 100.00% P 100.00% P 100.0	Average ervious Are <u>0 HydroCAI</u> Capacity (cfs)	s, Inc. D Software S Descripti Sheet Fl Woods: L Shallow Woodlan	Solutions on ight un Concer d Kv=	erbrush htrated Fig 5.0 fps	n= 0.400 ow, ond 1EV.	P2= 3.26	5"	Type III 2		2YR Ra Printed	nfall=3. 11/10/2 Pag	23" 021 <u>Je 4</u>
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DOOD47 P Prepared HydroCAD Tc (min) 8.5 5.9 14.4 14.4 nflow Area nflow Area nflow Area nflow Area nflow Area nflow Area	Pre-Dev 17,099 17,099 Pre-Dev d by Alle <u>0</u> ® 10.10- Length (feet) 50 384 434 ase = = = >y Stor-In	70 rev1 n Engi <u>4b s/n (</u> Slope (ft/ft 0.050(0.0469 Total 154, 2.30 c 2.30 c ud meth	Weighted / 100.00% P 100.00% P 100.	Associates ervious Are <u>0 HydroCAI</u> Capacity (cfs) 00% Imper 5 hrs, Volu 5 hrs, Volu an= 0.00-4	s, Inc. <u>D Software S</u> Descriptiv Sheet Fil Woods: L Shallow Woodlan S Vious, Inflo ume= ume= 18.00 hrs, c	Solutions on ight un Concer d Kv= summa tumma 10,8 10,8 10,8	derbrush htrated Flo 5.0 fps ary for P(h = 0.85" 188 cf 188 cf, Atte hrs	n= 0.400 bw, bnd 1EV for 2YF en= 0%, L	P2= 3.26		Type III 2		2YR Ra. Printed	infall=3. 11/10/2 Pag	23" 021 <u>Je 4</u>
DOO47 P Preparece HydroCAE Tc (min) 8.5 5.9 14.4 nflow Area nflow Area nflow Primary Routing b	17,099 17,099 17,099 17,099 Yre-Dev d by Alle >@ 10.10- Length (feet) 50 384 434 ea = = = = = = >y Stor-In	70 7 rev1 2 n Engi 4 b s/n (5 lope (ft/ft 0.0550 0.0469 Total 154, 2.30 c 2.30 c 10 methol	Weighted ≠ 100.00% P	Average ervious Are Associates <u>10 HydroCAI</u> Capacity (cfs) 00% Imper 5 hrs, Volt 5 hrs, Volt 5 hrs, Volt 20 hrs, Volt	s, Inc. <u>D Software S</u> Descripti Woods: L Shallow Woodlan Shallow Woodlan S shallow Shallow Shallow Shallow Shallow Shallow Shallow Shallow Shallow Solo S S S S S S S S S S S S S S S S S S S	Solutions on ow, ight un Conce d Kv= summa 10,8 10,8 10,8 it= 0.05	derbrush ntrated Flo 5.0 fps ary for Po 188 cf 188 cf, Atte hrs ary for Po	n= 0.400 pw, pond 1EV for 2YF en= 0%, L	P2= 3.26 : R event :ag= 0.0 n		Type III 2		2YR Ra Printed	infall=3. 11/10/2 Pac	23" 021 <u>3e 4</u>

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

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Runoff Area=154,518 sf 0.00% Impervious Runoff Depth=1.93"

Flow Length=621' Tc=15.8 min CN=70 Runoff=5.74 cfs 24,798 cf Runoff Area=17,099 sf 0.00% Impervious Runoff Depth=1.93"

Flow Length=434' Tc=14.4 min CN=70 Runoff=0.66 cfs 2,744 cf

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: (new Subcat)

Subcatchment 2S: (new Subcat)

Pond 1EV:

Pond 2EV:

Inflow=5.74 cfs 24,798 cf Primary=5.74 cfs 24,798 cf

Inflow=0.66 cfs 2,744 cf Primary=0.66 cfs 2,744 cf

Total Runoff Area = 171,617 sf Runoff Volume = 27,542 cf Average Runoff Depth = 1.93" 100.00% Pervious = 171,617 sf 0.00% Impervious = 0 sf

Type III 24-hr 10YR Rainfall=4.85" 00047 Pre-Dev rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Printed 11/10/2021 Page 6 Summary for Subcatchment 1S: (new Subcat) 5.74 cfs @ 12.23 hrs, Volume= 24,798 cf, Depth= 1.93" Runoff = Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 10YR Rainfall=4.85" Area (sf) CN Description >75% Grass cover, Good, HSG C 2,404 74 70 Woods, Good, HSG C 126,371 25,743 Woods, Good, HSG C 70 Weighted Average 100.00% Pervious Area 154,518 70 154,518 Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 0.0800 Sheet Flow, 7.0 50 0.12 Woods: Light underbrush n= 0.400 P2= 3.26" 571 0.0466 8.8 1.08 Shallow Concentrated Flow, Woodland Kv= 5.0 fps 15.8 621 Total Summary for Subcatchment 2S: (new Subcat) Runoff 0.66 cfs @ 12.21 hrs, Volume= 2,744 cf, Depth= 1.93" = Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 10YR Rainfall=4.85" Area (sf) CN Description 4,928 70 Woods, Good, HSG C 12,171 70 Woods, Good, HSG C 17,099 Weighted Average 70 17,099 100.00% Pervious Area

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8.5 50 0.050 0.10 Sheet Flow, Woodst: Light undertruish in 0.400 P2=3.26" Shallow Concentrated Flow, Woodstand Kx= 5.0 [ss. 14.4 434 Total Summary for Pond 1EV: Inflow Area = 154,518 st, 0.00% Impervious, Inflow Depth = 1.93" for 10/R event Primary = 5.74 cfs @ 12.23 hrs, Volume 24,786 cf. Atten= 0%, Lag= 0.0 min Read- Reading by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond 2EV: Summary for Pond 2EV: Inflow Area = 77,099 st, 0.00% Impervious, Inflow Depth = 1 93" for 10/R event Primary = 0.06 cfs @ 12.21 hrs, Volume 2,744 cf, Atten= 0%, Lag= 0.0 min Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond 2EV: Inflow Area = Primary = 0.06 cfs @ 12.21 hrs, Volume 2,744 cf, Atten= 0%, Lag= 0.0 min Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Work Pre-Dev rov1 Program ob y Allen Engineering & Associates, Inc. Printed 11/10/2021 Printed 11/10/2021 Pr	(min) (feet	h Slope t) (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9 384 0.049 1.08 Shallow Concentrated Flow, Woodand Kv 5.0 fps 14.4 434 Total Summary for Pond EV: Ifflow Area = 154.518 sf, 0.00% impervious, inflow Depth = 1.93° for 10VR event flow = 5.74 cfs @ 12.23 hrs, Volume 24.738 cf, Atten=0%, Lag=0.0 min Souting by Stor-Ind method, Time Span= 0.00-48.00 hrs, d= 0.05 hrs Summary for Pond ZEV: Ifflow Area = 17.099 sf, 0.00% impervious, inflow Depth = 1.93° for 10VR event flow area = 0.06 cfs @ 12.21 hrs, Volume 2.744 df, Atten=0%, Lag=0.0 min Now Area = 17.099 sf, 0.00% impervious, inflow Depth = 1.93° for 10VR event flow Area = 0.06 cfs @ 12.21 hrs, Volume 2.744 df, Atten=0%, Lag=0.0 min Souting by Stor-Ind method, Time Span= 0.00-48.00 hrs, d= 0.05 hrs Type II 24-hr 25YR Rainfall=6.11° Pitrate 111/10/2021 typeArea = 0.06 cfs @ 12.20 hrs, Volume 2.744 df, Atten=0%, Lag=0.0 min Yeige Area = 0.00-48.00 hrs, d= 0.05 hrs Type II 24-hr 25YR Rainfall=6.11° Pitrate 111/10/2021 typeArea = 0.00-48.00 hrs, d= 0.05 hrs D0047 Pre-Dev rev1 Preported by Allen Engineering & Associates, Inc. Time spare 0.00-48.00 hrs, d= 0.05 hrs, de1 0.05 hrs, de1 points Rund By Stor-Ind + Trans method - Pond routing by Stor-Ind method Time spare 0.00-48.00 hrs, d= 0.05 hrs, de1 points Rund By Stor-Ind Frame UH=SCX Wieder-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method Subcatchment1S: (new Subcat) Runof Area=14.218 dt 6.10.09% i	8.5 50	0 0.0500	0.10	. ,	Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.26"
14.4 434 Total Summary for Pond EV: Mode and the state of th	5.9 384	4 0.0469	1.08		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
Summary for Pond 1EV: diver Area is 154.518 st, 0.00% impervious, lindow Depth is 1.93°, for 10/R event. diversity of the State is 24.738 of, Atten = 0%, Lag = 0.0 min outling by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Burnary for Pond 2EV: Manage for 0.00% impervious, inflow Depth = 1.93°, for 10/R event. diversity of the Store is 2.2.21 hrs, Volume = 2.7.44 of, Atten = 0%, Lag = 0.0 min outling by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type // 12.4 hr 25/YR Rainfal=6.11° Type // 12	14.4 434	4 Total			
Idew Xeas 154.518 af, 0.00% Impervious, Inflow Depth = 1.93° for 10YR event imary = 5.74 cfs @ 12.23 hrs, Volume 24,798 df outing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond 2EV: Iffow Area = 17,099 sf, 0.00% Impervious, Inflow Depth = 1.93° for 10YR event intrary = 0.66 cfs @ 12.21 hrs, Volume 2,744 of 2,744 of 2,744 of Iffow Jee De6 cfs @ 12.21 hrs, Volume 2,744 of 2,744 of Summary for Pondy EV Iffow Jee De6 cfs @ 12.21 hrs, Volume 2,744 of 2,744 of Summary for Pondy EV Outing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 25YR Rainfall=6.11° Printed 11/10/2021 Page 8 Outing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 25YR Rainfall=6.11° Printed 11/10/2021 Page 8 Trapper Up Yee Dev rev1 Type III 24-hr 25YR Rainfall=6.11° Printed 11/10/2021 Page 8 Reach routing by Stor-Ind Heathod, Diskware Solutions LLC Page 8 Runoff Value Engineering & Associates, Inc. YeacAbde 10.10-46 sin 03871 @ 2020 HydrocAbd Software Solutions ELC Page 8 Runoff Value Engineering & Associates, Inc. Yeach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind+Trans method - Pond routing by Stor-Ind-Testore N Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind-Testore N Runoff Area=154.518 ef 0.00% Impervious Runoff Depth=2.89° Flow Length=241 Tc=158 min CN=70 Runoff=8.01 cfs 4.322 df Printary=0.01 cfs 4.322 df Printary=0.01 cfs 4.322 df Printary=0.01 cfs 4.322 df Printary=0.					Summary for Pond 1EV:
Outing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Bitow Area = 17.099 sf, 0.00% Impervious, Inflow Depth = 1.93° for 10°R event flow = 0.66 dc @ 12.21 hrs, Volume = 2.744 df timary = 0.66 dc @ 12.21 hrs, Volume = 2.744 df Timary = 0.66 dc @ 12.21 hrs, Volume = 2.744 df Timary = 0.66 dc @ 12.21 hrs, Volume = 2.744 df Timary = 0.66 dc @ 12.21 hrs, Volume = 2.744 df Timary = 0.66 dc @ 12.21 hrs, Volume = 2.744 df Timary = 0.66 dc @ 12.21 hrs, Volume = 2.744 df Timary = 0.064 dc @ 12.21 hrs, Volume = 2.744 df Timary = 0.064 dc @ 12.21 hrs, Volume = 2.744 df Timary = 0.064 dc @ 12.21 hrs, Volume = 2.744 df Timary = 0.074 Browne = 0.00-48.00 hrs, dt= 0.05 hrs Optime = 0.00-48.00 hrs, dt= 0.05 hrs Optime = 0.00-48.00 hrs, dt= 0.05 hrs Optime = 0.01 hrs,	nflow Area = nflow = rimary =	154,5 5.74 cfs 5.74 cfs	18 sf, 0.0 s @ 12.2 s @ 12.2	00% Imperv 3 hrs, Volu 3 hrs, Volu	/ious, Inflow Depth = 1.93" for 10YR event ime= 24,798 cf ime= 24.798 cf. Atten= 0% Lag= 0.0 min
Odd7 Pre-Dev rev1 Type III 24-hr 25YR Reinfall=6.11* Tripped by Alse Engineering & Associates, Inc. Pinter 2006 Odd7 Pre-Dev rev1 Type III 24-hr 25YR Reinfall=6.11* Tripped by Alse Engineering & Associates, Inc. Pinter 2007 Tripped by Alse Engineering & Associates, Inc. Pinter 2007 Tripped by Alse Engineering & Associates, Inc. Pinter 2007 Tripped by Alse Engineering & Associates, Inc. Pinter 2007 Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points Pinter 11/10/2021 Runoff by Scis TR-20 method, UH=SCS, Weighted-CN Runoff by Scis TR-20 method, UH=SCS, Weighted-CN Runoff by Scis TR-20 method, UH=SCS, Weighted-CN Runoff by Scis TR-20 method, UH=SCS, Weighted-CN Runoff by Scis TR-20 method, UH=SCS, Weighted-CN Runoff by Scis TR-20 method, UH=SCS, Weighted-CN Runoff by Scis TR-20 method, UH=SCS, Weighted-CN Runoff by Scis TR-20 method, UH=SCS, Weighted-CN Runoff by Scis TR-20 method, UH=SCS, Weighted-CN Runoff by Scis TR-20 method, UH=SCS, Weighted-CN Runoff by Scis TR-20 method, UH=SCS, Weighted-CN Runoff by Scis TR-20 method, UH=SCS, Weighted-CN Runoff by Scis TR-20 method, UH=SCS, Weighted-CN Runoff-888 dis 37.284 di ubcatchment2S: (new Subcat) Runoff Area=17.09 gi 0.00% Impervious. Runoff Deph=2.89* Flow Length=434	outing by Stor	-Ind methor	d Time Sr	an= 0 00-4	8 00 brs dt= 0.05 brs
the varea = 17,099 sf. 0.00% Impervious, Inflow Deptr = 1.93° for 10YR event the = 0.66 of @ 12.21 hrs, Volume = 2.744 of imary = 0.66 of @ 12.21 hrs, Volume = 2.744 of, Atten=0%, Lag=0.0 min outing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 0047 Pre-Dev rev1 Type III 24-hr 25YR Rainfall=6.11° Printed 11/10221 Printed 11/1021 Printed 1			,		Summary for Pond 2EV:
Would by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Would Pre-Dev rev1 Type III 24-hr 25YR Rainfall=6.11" Prepared by Allen Engineering & Associates, Inc. Printed 11/10/2021 Ivgor CAD® 10.10-4b sin 03671 @ 2020 Hydro CAD Software Solutions LLC Printed 11/10/2021 Runoff by SCS TH-20 method, UH=SCS, Weighted-CN Runoff by SCS TH-20 method, UH=SCS, Weighted-CN Runoff by SCS TH-20 method, UH=SCS, Weighted-CN Runoff by SCS TH-28 method Subcatchment 1S: (new Subcat) Runoff Area=154.518 sf 0.00% Impervious Runoff Depth=2.89" Priow Length=421' Te=15.8 min CN=70 Runoff=0.015 kg and Trest 17.909 sf 0.00% Impervious Runoff Depth=2.89" Priow Length=434' Tc=14.4 min CN=70 Runoff=0.015 kg and 5 ds 37.248 df Printary=8.83 dc 37.248 df <tr< td=""><td>nflow Area = nflow = Primary =</td><td>17,09 0.66 cfs 0.66 cfs</td><td>99 sf, 0.0 s @ 12.2 s @ 12.2</td><td>00% Imperv 1 hrs, Volu 1 hrs, Volu</td><td>/ious, Inflow Depth = 1.93" for 10YR event ime= 2,744 cf ime= 2,744 cf, Atten= 0%, Lag= 0.0 min</td></tr<>	nflow Area = nflow = Primary =	17,09 0.66 cfs 0.66 cfs	99 sf, 0.0 s @ 12.2 s @ 12.2	00% Imperv 1 hrs, Volu 1 hrs, Volu	/ious, Inflow Depth = 1.93" for 10YR event ime= 2,744 cf ime= 2,744 cf, Atten= 0%, Lag= 0.0 min
10047 Pre-Dev rev1 Type III 24-hr 25YR Rainfall=6.11" Prepared by Allen Engineering & Associates, Inc. Printed 11/10/2021 IydroCAD® 10.10-4b sin 03871 © 2020 HydroCAD Software Solutions LLC Printed 11/10/2021 Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points Runoff Area=154.518 sf 0.00% Impervious Runoff Depth=2.89" Runoff by SCG TR-20 method. UH=SCG, Weighted-CN Runoff Area=154.518 sf 0.00% Impervious Runoff Depth=2.89" Flow Length=621' Tc=15.8 min CN=70 Runoff=8.83 cfs 37,248 cf Nunoff Area=170.99 sf 0.00% Impervious Runoff Depth=2.89" 'ond 1EV: Printary=8.83 cfs 37,248 cf Inflow=8.33 cfs 37,248 cf 'ond 2EV: Inflow=8.33 cfs 37,248 cf 'ond 2EV: Inflow=8.41,22 cf 'Inflow=10.16 cf 4.122 cf <td>, Routing by Stor</td> <td>-Ind methor</td> <td>d Time Sr</td> <td>, an= 0 00-4</td> <td>8 00 brs_dt= 0.05 brs</td>	, Routing by Stor	-Ind methor	d Time Sr	, an= 0 00-4	8 00 brs_dt= 0.05 brs
10047 Pre-Dev rev1 Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Printed 11/10/2021 Printed 11/10/2021 Printed 11/10/2021 11/10/2021 Printed 11/10/2021 Printed 11/10/2021 11/10/2021 Printed 11/10/2021					
Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method Subcatchment 1S: (new Subcat) Subcatchment 2S: (new Subcat) Runoff Area=17,099 sf 0.00% Impervious Runoff Depth=2.89" Flow Length=621' Tc=15.8 min CN=70 Runoff=8.83 cfs 37,248 cf Runoff Area=17,099 sf 0.00% Impervious Runoff Depth=2.89" Flow Length=434' Tc=14.4 min CN=70 Runoff=1.01 cfs 4,122 cf Pond 1EV: Pond 2EV: Total Runoff Area = 171,617 sf Runoff Volume = 41,370 cf Average Runoff Depth = 2.89" 100.00% Pervious = 171,617 sf 0.00% Impervious = 0 sf	00047 Pre-De Prepared by A IvdroCAD® 10.1	ev rev1 Ilen Engine	eering & / 1871 © 202	Associates	, Inc. Type III 24-hr 25YR Rainfall=6.11") Software Solutions LLC Page 8
Subcatchment 1S: (new Subcat) Runoff Area=154,518 sf 0.00% Impervious Runoff Depth=2.89" Flow Length=621' Tc=15.8 min CN=70 Runoff=8.83 cfs 37,248 cf Subcatchment 2S: (new Subcat) Runoff Area=17,099 sf 0.00% Impervious Runoff Depth=2.89" Flow Length=434' Tc=14.4 min CN=70 Runoff=1.01 cfs 4,122 cf Pond 1EV: Inflow=8.83 cfs 37,248 cf Pond 2EV: Inflow=1.01 cfs 4,122 cf Pond 2EV: Inflow=1.01 cfs 4,122 cf Total Runoff Area = 171,617 sf Runoff Volume = 41,370 cf Average Runoff Depth = 2.89" 100.00% Pervious = 171,617 sf 0.00% Impervious = 0 sf			Rea	Ti Run ach routing	ime span=0.00-48.00 hrs, dt=0.05 hrs, 961 points ioff by SCS TR-20 method, UH=SCS, Weighted-CN by Stor-Ind+Trans method - Pond routing by Stor-Ind method
Subcatchment 2S: (new Subcat) Runoff Area=17,099 sf 0.00% Impervious Runoff Depth=2.89" Flow Length=434' Tc=14.4 min CN=70 Runoff=1.01 cfs 4,122 cf Pond 1EV: Inflow=8.83 cfs 37,248 cf Primary=8.83 cfs 37,248 cf Primary=8.83 cfs 37,248 cf Pond 2EV: Inflow=1.01 cfs 4,122 cf Total Runoff Area = 171,617 sf Runoff Volume = 41,370 cf Average Runoff Depth = 2.89" 100.00% Pervious = 171,617 sf	Subcatchment	1S: (new S	ubcat)		Runoff Area=154,518 sf 0.00% Impervious Runoff Depth=2.89" Flow Length=621' Tc=15.8 min CN=70 Runoff=8.83 cfs 37,248 cf
Pond 1EV: Inflow=8.83 cfs 37,248 cf Primary=8.83 cfs 37,248 cf Primary=8.83 cfs 37,248 cf Pond 2EV: Inflow=1.01 cfs 4,122 cf Primary=1.01 cfs 4,122 cf Primary=1.01 cfs 4,122 cf Total Runoff Area = 171,617 sf Runoff Volume = 41,370 cf Average Runoff Depth = 2.89" 100.00% Pervious = 171,617 sf 0.00% Impervious = 0 sf 0.00% Impervious = 0 sf	Subcatchment	2S: (new S	ubcat)		Runoff Area=17,099 sf 0.00% Impervious Runoff Depth=2.89" Flow Length=434' Tc=14.4 min CN=70 Runoff=1.01 cfs 4,122 cf
Pond 2EV: Inflow=1.01 cfs 4,122 cf Primary=1.01 cfs 4,122 cf Total Runoff Area = 171,617 sf Runoff Volume = 41,370 cf Average Runoff Depth = 2.89" 100.00% Pervious = 171,617 sf 0.00% Impervious = 0 sf					Inflow=8.83 cfs 37,248 cf Primarv=8 83 cfs 37 248 cf
Total Runoff Area = 171,617 sf Runoff Volume = 41,370 cf Average Runoff Depth = 2.89" 100.00% Pervious = 171,617 sf 0.00% Impervious = 0 sf	ond 1EV:				
	Pond 1EV: Pond 2EV:				Inflow=1.01 cfs 4,122 cf Primary=1.01 cfs 4,122 cf

		Summary for Sub	catchment 1S: (new Subcat)
Runoff	=	8.83 cfs @ 12.22 hrs, Volume= 37,2	48 cf, Depth= 2.89"
Runoff by Type III 24	SCS TF 4-hr 25	20 method, UH=SCS, Weighted-CN, Time Spa Rainfall=6.11"	n= 0.00-48.00 hrs, dt= 0.05 hrs
Are	ea (sf)	CN Description	
12	2,404 26,371	74 >75% Grass cover, Good, HSG C 70 Woods, Good, HSG C	
2	25,743	70 Woods, Good, HSG C	
15	54,518 54,518	100.00% Pervious Area	
Tc	Length	Slope Velocity Capacity Description	
(min) 7.0	(teet) 50	(10/11) (10/sec) (CIS) .0800 0.12 Sheet Flow,	
8.8	571	.0466 1.08 Woods: Light und Woodland Ky=	Jerbrush n= 0.400 P2= 3.26" trated Flow, 5.0 fos
15.8	621	otal	
		Summary for Sub	catchment 2S: (new Subcat)
lunoff	=	1.01.cfs@ 12.21.hrs Volume= 4.1	22 cf Denth= 2 89"
	- 909 TI	20 method LIH=SCS Weighted CN Time See	n = 0.0.48.00 hrs. $dt = 0.05$ hrs.
ype III 24	4-hr 25	Rainfall=6.11"	11- 0.00-70.00 IIIS, UL- 0.03 IIIS
Are	ea (sf)	CN Description	
1	4,928	70 Woods, Good, HSG C 70 Woods, Good, HSG C	
1	7,099	70 Weighted Average	
)0047 P Prepared lydroCAD Tc (min)	re-Dev by Alle ® 10.10- Length (feet)	ev1 Engineering & Associates, Inc. s/n 03871 © 2020 HydroCAD Software Solutions Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs)	<i>Type III 24-hr 25YR Rainfall=6.11"</i> Printed 11/10/2021 LLC Page 10
8.5	50	.0500 0.10 Sheet Flow,	Jorbruch n= 0.400 D2= 2.26"
5.9	384	.0469 1.08 Shallow Concer Woodland Kv=	trated Flow, 50 fos
14.4	434	otal	
		Summa	ry for Pond 1EV:
nflow Are nflow Primary	ea = = =	154,518 sf, 0.00% Impervious, Inflow Dept 3.83 cfs @ 12.22 hrs, Volume= 37,2 3.83 cfs @ 12.22 hrs, Volume= 37,2	n = 2.89" for 25YR event 48 cf 48 cf, Atten= 0%, Lag= 0.0 min
Routing b	y Stor-Ir	method, Time Span= 0.00-48.00 hrs, dt= 0.05	hrs
		Summa	ry for Pond 2EV:
nflow Are nflow Primary	ea = = =	17,099 sf, 0.00% Impervious, Inflow Dept 1.01 cfs @ 12.21 hrs, Volume= 4,1 1.01 cfs @ 12.21 hrs, Volume= 4,1	n = 2.89" for 25YR event 22 cf 22 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

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Runoff Area=154,518 sf 0.00% Impervious Runoff Depth=5.05" Flow Length=621' Tc=15.8 min CN=70 Runoff=15.53 cfs 65,078 cf

Runoff Area=17,099 sf 0.00% Impervious Runoff Depth=5.05" Flow Length=434' Tc=14.4 min CN=70 Runoff=1.78 cfs 7,202 cf

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: (new Subcat)

Subcatchment2S: (new Subcat)

Pond 1EV:

Inflow=15.53 cfs 65,078 cf Primary=15.53 cfs 65,078 cf

Inflow=1.78 cfs 7,202 cf Primary=1.78 cfs 7,202 cf

 Total Runoff Area = 171,617 sf
 Runoff Volume = 72,280 cf
 Average Runoff Depth = 5.05"

 100.00% Pervious = 171,617 sf
 0.00% Impervious = 0 sf

00047 Prepare HydroCA	J0047 Pre-Dev rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC										Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 1		
				Sur	nmary fo	Subcatch	ment 1S:	(new Su	bcat)				
Runoff	=	15.53	cfs @ 12.2	2 hrs, Volu	me=	65,078 cf,	Depth= 5.0	05"					
Runoff b Type III	y SCS TF 24-hr 100	R-20 m 0YR Ra	ethod, UH=S ainfall=8.68"	CS, Weight	ed-CN, Tim	ie Span= 0.0	0-48.00 hrs	, dt= 0.05 h	irs				
A	rea (sf)	CN	Description										
	2,404	74	>75% Gras	s cover, Go	od, HSG C								
1	26,371	70	Woods, Go	od, HSG C									
	25,743	70	Woods, Go	od, HSG C									
1	154,518 154,518	70	Weighted A 100.00% Pe	verage ervious Area	a								
Tc	Length	Slop	e Velocity	Capacity	Description	า							
(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)									
7.0	50	0.080	0 0.12		Sheet Flo	w,			o "				
8.8	571	0.046	6 1.08		Woods: Lig Shallow C Woodland	oncentrated Kv= 5.0 fps	sn n= 0.40 i Flow, ;	10 P2= 3.2	0				
15.8	621	Total											
				Sur	nmary for	Subcatch	ment 2S:	(new Su	bcat)				
Runoff	=	1.78	cfs @ 12.2	0 hrs, Volu	me=	7,202 cf,	Depth= 5.0	05"					
Runoff b Type III :	oy SCS TF 24-hr 100	R-20 m 0YR Ra	ethod, UH=S ainfall=8.68"	CS, Weight	ed-CN, Tim	ie Span= 0.0	0-48.00 hrs	, dt= 0.05 h	irs				
A	rea (sf)	CN	Description										
	4,928	70	Woods, Go	od, HSG C			_						
	12,171	70	Woods, Go	od, HSG C									
	17,099 17 099	70	Weighted A 100 00% Pe	verage ervious Area	3								

Pond 2EV:

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Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
8.5	50	0.0500	0.10		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.26"
5.9	384	0.0469	1.08		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
14.4	434	Total			

Summary for Pond 1EV:

Inflow A	Area =	154,518 sf,	0.00% Imp	ervious,	Inflow Depth =	5.05"	for 10	0YR even	ıt
Inflow	=	15.53 cfs @ 1	2.22 hrs, V	olume=	65,078 c	f			
Primary	/ =	15.53 cfs @ 1	2.22 hrs, V	olume=	65,078 c	f, Atter	n= 0%,	Lag= 0.0	min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 2EV:

Inflow Are	ea =	17,099 sf, 0.00% Impervious,	Inflow Depth = 5.05" for 100YR event	
Inflow	=	1.78 cfs @ 12.20 hrs, Volume=	7,202 cf	
Primary	=	1.78 cfs @ 12.20 hrs, Volume=	7,202 cf, Atten= 0%, Lag= 0.0 min	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Post-Development Drainage Calculations





Area Listing (all nodes)

(sq-ft) (subcatchment-numbers) 59,717 74 >75% Grass cover, Good, HSG C (1S, 2S, 5S, 6S, 7S, 8S, 9S, 12S, 14S, 15S, 16S, 580 580 89 Gravel roads, HSG C (7S) 71,602 98 Paved parking, HSG C (2S, 5S, 8S, 9S, 12S, 14S, 15S, 16S, 17S) 18,342 98 Roofs, HSG C (3S, 4S, 10S, 11S, 13S) 3,998 98 Unconnected pavement, HSG C (2S, 5S, 8S, 9S, 12S, 14S, 15S, 16S) 5,880 98 Water Surface, HSG C (7S) 10,802 70 Woods, Good, HSG C (6S) 845 98 riprap (6S, 7S) 171,766 88 TOTAL AREA
59,717 74 >75% Grass cover, Good, HSG C (1S, 2S, 5S, 6S, 7S, 8S, 9S, 12S, 14S, 15S, 16S, 158) 580 89 Gravel roads, HSG C (7S) 71,602 98 Paved parking, HSG C (2S, 5S, 8S, 9S, 12S, 14S, 15S, 16S, 17S) 18,342 98 Roofs, HSG C (3S, 4S, 10S, 11S, 13S) 3,998 98 Unconnected pavement, HSG C (2S, 5S, 8S, 9S, 12S, 14S, 15S, 16S) 5,880 98 Water Surface, HSG C (7S) 10,802 70 Woods, Good, HSG C (6S) 845 98 riprap (6S, 7S) 171,766 88 TOTAL AREA
580 89 Gravel roads, HSG C (7S) 71,602 98 Paved parking, HSG C (2S, 5S, 8S, 9S, 12S, 14S, 15S, 16S, 17S) 18,342 98 Roofs, HSG C (3S, 4S, 10S, 11S, 13S) 3,998 98 Unconnected pavement, HSG C (2S, 5S, 8S, 9S, 12S, 14S, 15S, 16S) 5,880 98 Water Surface, HSG C (7S) 10,802 70 Woods, Good, HSG C (6S) 845 98 riprap (6S, 7S) 171,766 88 TOTAL AREA
71,602 98 Paved parking, HSG C (2S, 5S, 8S, 9S, 12S, 14S, 15S, 16S, 17S) 18,342 98 Roofs, HSG C (3S, 4S, 10S, 11S, 13S) 3,998 98 Unconnected pavement, HSG C (2S, 5S, 8S, 9S, 12S, 14S, 15S, 16S) 5,880 98 Water Surface, HSG C (7S) 10,802 70 Woods, Good, HSG C (6S) 845 98 riprap (6S, 7S) 171,766 88 TOTAL AREA
18,342 98 Roofs, HSG C (3S, 4S, 10S, 11S, 13S) 3,998 98 Unconnected pavement, HSG C (2S, 5S, 8S, 9S, 12S, 14S, 15S, 16S) 5,880 98 Water Surface, HSG C (7S) 10,802 70 Woods, Good, HSG C (6S) 845 98 riprap (6S, 7S) 171,766 88 TOTAL AREA
3,998 98 Unconnected pavement, HSG C (2S, 5S, 8S, 9S, 12S, 14S, 15S, 16S) 5,880 98 Water Surface, HSG C (7S) 10,802 70 Woods, Good, HSG C (6S) 845 98 riprap (6S, 7S) 171,766 88 TOTAL AREA
5,880 98 Water Surface, HSG C (7S) 10,802 70 Woods, Good, HSG C (6S) 845 98 riprap (6S, 7S) 171,766 88 TOTAL AREA
10,802 70 Woods, Good, HSG C (6S) 845 98 riprap (6S, 7S) 171,766 88 TOTAL AREA
845 98 riprap (6S, 7S) 171,766 88 TOTAL AREA
171,766 88 TOTAL AREA

00047 Post-Dev-rev1
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Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 2

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: (new Subcat)	Runoff Area=12,290 sf 0.00% Impervious Runoff Depth=1.06" Flow Length=431' Tc=14.3 min CN=74 Runoff=0.25 cfs 1,083 cf
Subcatchment2S: (new Subcat)	Runoff Area=5,956 sf 64.05% Impervious Runoff Depth=2.11" Flow Length=186' Tc=1.6 min CN=89 Runoff=0.37 cfs 1,047 cf
Subcatchment 3S: ROOF	Runoff Area=5,000 sf 100.00% Impervious Runoff Depth=3.00" Tc=1.0 min CN=98 Runoff=0.40 cfs 1,249 cf
Subcatchment4S: ROOF	Runoff Area=5,000 sf 100.00% Impervious Runoff Depth=3.00" Tc=1.0 min CN=98 Runoff=0.40 cfs 1,249 cf
Subcatchment5S: (new Subcat)	Runoff Area=10,067 sf 81.72% Impervious Runoff Depth=2.57" Flow Length=157' Tc=1.0 min CN=94 Runoff=0.74 cfs 2,158 cf
Subcatchment6S: (new Subcat)	Runoff Area=26,955 sf 2.64% Impervious Runoff Depth=1.00" Flow Length=208' Tc=3.9 min CN=73 Runoff=0.72 cfs 2,251 cf
Subcatchment7S: (new Subcat)	Runoff Area=13,165 sf 45.68% Impervious Runoff Depth=1.86" Flow Length=42' Slope=0.1857 '/ Tc=2.0 min CN=86 Runoff=0.72 cfs 2,042 cf
Subcatchment8S: (new Subcat)	Runoff Area=8,734 sf $$ 81.55% Impervious Runoff Depth=2.57" Flow Length=125' Tc=0.9 min CN=94 Runoff=0.65 cfs 1,873 cf
Subcatchment9S: (new Subcat)	Runoff Area=8,042 sf 87.19% Impervious Runoff Depth=2.67" Flow Length=112' Tc=0.8 min CN=95 Runoff=0.62 cfs 1,792 cf
Subcatchment10S: ROOF	Runoff Area=2,640 sf 100.00% Impervious Runoff Depth=3.00" Tc=1.0 min CN=98 Runoff=0.21 cfs 659 cf
Subcatchment11S: ROOF	Runoff Area=2,822 sf 100.00% Impervious Runoff Depth=3.00" Tc=1.0 min CN=98 Runoff=0.23 cfs 705 cf

Subcatchment12S: (new Subcat)	Runoff Area=16,498 sf 91.30% Impervious Runoff Depth=2.78" Flow Length=126' Tc=0.8 min CN=96 Runoff=1.29 cfs 3,820 cf
Subcatchment13S: ROOF-CANOPY	Runoff Area=2,880 sf 100.00% Impervious Runoff Depth=3.00" Tc=2.0 min CN=98 Runoff=0.23 cfs 719 cf
Subcatchment14S: (new Subcat)	Runoff Area=15,482 sf 73.05% Impervious Runoff Depth=2.38" Flow Length=208' Tc=5.0 min CN=92 Runoff=0.97 cfs 3,069 cf
Subcatchment15S: (new Subcat)	Runoff Area=7,846 sf 70.75% Impervious Runoff Depth=2.29" Flow Length=142' Tc=1.0 min CN=91 Runoff=0.53 cfs 1,495 cf
Subcatchment16S: (new Subcat)	Runoff Area=14,478 sf 84.51% Impervious Runoff Depth=2.57" Flow Length=224' Tc=4.9 min CN=94 Runoff=0.97 cfs 3,104 cf
Subcatchment17S: (new Subcat)	Runoff Area=13,911 sf 37.85% Impervious Runoff Depth=1.63" Flow Length=111' Tc=3.8 min CN=83 Runoff=0.65 cfs 1,894 cf
Reach R1: (new Reach)	Avg. Flow Depth=0.19' Max Vel=1.82 fps Inflow=1.81 cfs 22,487 cf n=0.069 L=20.0' S=0.0750 '/' Capacity=125.86 cfs Outflow=1.81 cfs 22,487 cf
Pond 1EV:	Inflow=2.29 cfs 24,738 cf Primary=2.29 cfs 24,738 cf
Pond 2EV:	Inflow=0.25 cfs 1,083 cf Primary=0.25 cfs 1,083 cf
Pond CB1: (new Pond)	Peak Elev=1,036.96' Inflow=0.74 cfs 2,158 cf 12.0" Round Culvert n=0.013 L=8.0' S=0.0150 '/' Outflow=0.74 cfs 2,158 cf
Pond CB2: (new Pond)	Peak Elev=1,038.26' Inflow=0.37 cfs 1,047 cf 12.0" Round Culvert n=0.013 L=12.0' S=0.0150 '/' Outflow=0.37 cfs 1,047 cf
Pond CB3: (new Pond)	Peak Elev=1,040.45' Inflow=0.97 cfs 3,104 cf 12.0" Round Culvert n=0.013 L=165.0' S=0.0135 '/' Outflow=0.97 cfs 3,104 cf
Pond CB4: (new Pond)	Peak Elev=1,040.32' Inflow=0.53 cfs 1,495 cf 12.0" Round Culvert n=0.013 L=165.0' S=0.0219 '/' Outflow=0.53 cfs 1,495 cf

00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Sol	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 utions LLC Page 4
Pond CB5: (new Pond)	Peak Elev=1,040.66' Inflow=0.62 cfs 1,792 cf 12.0" Round Culvert n=0.013 L=42.0' S=0.0150 '/ Outflow=0.62 cfs 1,792 cf
Pond CB6: (new Pond)	Peak Elev=1,041.16' Inflow=0.65 cfs 1,873 cf 12.0" Round Culvert n=0.013 L=36.0' S=0.0100 '/ Outflow=0.65 cfs 1,873 cf
Pond CB7: (new Pond)	Peak Elev=1,042.08' Inflow=1.29 cfs 3,820 cf 12.0" Round Culvert n=0.013 L=128.0' S=0.0100 '/' Outflow=1.29 cfs 3,820 cf
Pond CB8: (new Pond)	Peak Elev=1,041.28' Inflow=0.97 cfs 3,069 cf 18.0" Round Culvert n=0.013 L=7.0' S=0.0143 '/ Outflow=0.97 cfs 3,069 cf
Pond DRI: (new Pond)	Peak Elev=1,044.11' Inflow=0.65 cfs 1,894 cf 12.0" Round Culvert n=0.013 L=59.0' S=0.0197 '/ Outflow=0.65 cfs 1,894 cf
Pond FB: (new Pond)	Peak Elev=1,036.70' Storage=2,953 cf Inflow=7.70 cfs 24,835 cf Outflow=6.51 cfs 23,540 cf
Pond IB: (new Pond)	Peak Elev=1,036.71' Storage=9,616 cf Inflow=7.18 cfs 25,582 cf Outflow=1.81 cfs 22,487 cf
Pond MH1: (new Pond)	Peak Elev=1,036.71' Inflow=3.21 cfs 10,302 cf 18.0" Round Culvert n=0.013 L=52.0' S=0.0148 // Outflow=3.21 cfs 10,302 cf
Pond MH2: (new Pond)	Peak Elev=1,038.09' Inflow=1.65 cfs 5,400 cf 15.0" Round Culvert n=0.013 L=120.0' S=0.0125 '/ Outflow=1.65 cfs 5,400 cf
Pond MH3i: (new Pond)	Peak Elev=1,037.12' Inflow=4.49 cfs 14,532 cf Primary=3.22 cfs 4,035 cf Secondary=1.38 cfs 10,497 cf Outflow=4.49 cfs 14,532 cf
Pond MH3o: (new Pond)	Peak Elev=1,036.72' Inflow=4.49 cfs 14,532 cf 24.0" Round Culvert n=0.013 L=50.0' S=0.0172 '/' Outflow=4.49 cfs 14,532 cf
Pond MH4: (new Pond)	Peak Elev=1,038.17' Inflow=4.49 cfs 14,532 cf 24.0" Round Culvert n=0.013 L=57.0' S=0.0172 '/' Outflow=4.49 cfs 14,532 cf

Pond MH5: (new Pond)	Peak Elev=1,040.52' Inflow=2.17 cfs 6,398 cf 18.0" Round Culvert n=0.013 L=132.0' S=0.0110 '/' Outflow=2.17 cfs 6,398 cf
Pond MH6: (new Pond)	Peak Elev=1,041.13' Inflow=1.82 cfs 5,683 cf 18.0" Round Culvert n=0.013 L=116.0' S=0.0150 '/' Outflow=1.82 cfs 5,683 cf
Pond MH7: (new Pond)	Peak Elev=1,042.85' Inflow=0.65 cfs 1,894 cf 12.0" Round Culvert n=0.013 L=23.0' S=0.0196 '/' Outflow=0.65 cfs 1,894 cf
Pond STU1: (new Pond)	Peak Elev=1,036.96' Inflow=1.38 cfs 10,497 cf 12.0" Round Culvert n=0.013 L=5.0' S=0.0200 '/' Outflow=1.38 cfs 10,497 cf

Total Runoff Area = 171,766 sf Runoff Volume = 30,210 cf Average Runoff Depth = 2.11" 41.39% Pervious = 71,099 sf 58.61% Impervious = 100,667 sf

00047 I Prepare HydroCA	Post-De d by Alle D® 10.10-	e v-rev1 en Engi 4b_s/n (1 neering & 7 03871 © 202	Associates 20 HydroCAE	, Inc.) Software Solu	utions LLC	I ype III 24-hr 2YR Rainfall=3.23 Printed 11/10/202 Page
				Su	mmary for	Subcatchment 1S: (new Subcat)	1
Runoff	=	0.25	cfs @ 12.2	1 hrs, Volu	ime=	1,083 cf, Depth= 1.06"	
Runoff b Type III :	y SCS TF 24-hr 2Y	R-20 me R Rainf	ethod, UH=S all=3.23"	SCS, Weigh	ted-CN, Time	Span= 0.00-48.00 hrs, dt= 0.05 hrs	
A	rea (sf)	CN	Description	I			
	4,440	74	>75% Gras	s cover, Go	ood, HSG C		
	7,850	74	>75% Gras	s cover, Go	ood, HSG C		
	12,290	74	Weighted A	verage	-		
	12,290		100.00% P	ervious Are	а		
Тс	Length	Slope	e Velocity	Capacity	Description		
(min)	(feet)	(ft/ft	t) (ft/sec)	(cfs)	•		
8.5	50	0.0500	0 0.10		Sheet Flow	3	
	004	0.047			Woods: Ligh	nt underbrush n= 0.400 P2= 3.26"	
5.8	381	0.0472	2 1.09		Woodland	Kv= 5.0 fps	
14.3	431	Total			riooulunu		
				Su	mmary for	Subcatchment 2S: (new Subcat)	
Runoff	=	0.37	cfs @ 12.0	3 hrs, Volu	ime=	1,047 cf, Depth= 2.11"	
Runoff b Type III :	y SCS TF 24-hr 2Y	R-20 me R Rainf	ethod, UH=S all=3.23"	SCS, Weigh	ted-CN, Time	Span= 0.00-48.00 hrs, dt= 0.05 hrs	
Α	rea (sf)	CN	Description				
	26	98	Unconnect	ed pavemer	nt, HSG C		
	3,789	98	Paved park	ung, HSG C	;		
	2,141	/4	215% Gras	s cover, Go	iou, HSG C		
	5,956 2 1/1	89	vveignted A	verage			
	/ 141		55.95 /0 FE	i vious Alea			
	3,815		64 05% Im	nervinus Ar	22		

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<u>(mn)</u>	(fa =+)	Siope		Capacity	Description	
0.6	(ieet) 44	0.0227	/ (ii/sec) / 1.24	(CIS)	Sheet Flow,	
1.0	142	0.0134	2.35		Smooth surfaces n= 0.011 P2= 3.26" Shallow Concentrated Flow,	
1.6	186	Total			Paved Kv= 20.3 tps	
					Summary for Subcatchment 3S: ROOF	
Runoff	=	0.40 c	rfs @ 12.0	1 hrs, Volu	me= 1,249 cf, Depth= 3.00"	
Runoff b	by SCS TF	R-20 me	thod, UH=S	CS, Weigh	ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	
rype m ₂	24-11 21		nescription			
	5,000	98	Roofs, HSC	C .		
-	5,000		100.00% Im	ipervious A		
IC (min)	Length (feet)	(ft/ft)	e Velocity) (ft/sec)	Capacity (cfs)		
1.0					Direct Entry,	
					Summary for Subcatchment 4S: ROOF	
Runoff	=	0.40 c	ofs @ 12.0	1 hrs, Volu	me= 1,249 cf, Depth= 3.00"	
Runoff b	y SCS TF	R-20 me	thod, UH=S	CS, Weigh	ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	
ype III 2	24-11 21	R Rainia	all=3.23			
)0047 F	Post-De	v-rev1				Type III 24-hr 2YR Rainfall=3.23"
Prepare	ed by Alle	en Engir	neering & A	Associates	Inc	
iyaroCA	ມ® 10.10-	4p s/n ()		AIL.I A?-	, mo.	Printed 11/10/2021
Δ	vrea (sf)		3871 © 202	0 HydroCAE	Software Solutions LLC	Printed 11/10/2021 Page 8
A	100101	CN	03871 © 202	0 HydroCAE	Software Solutions LLC	Printed 11/10/2021 Page 8
	3 300	CN	Description	0 HydroCAE	Software Solutions LLC	Printed 11/10/2021 Page 8
	3,300 1,700	<u>CN</u> 98 98	<u>Bescription</u> Roofs, HSC Roofs, HSC	0 HydroCAD	Software Solutions LLC	Printed 11/10/2021 Page 8
	3,300 1,700 5,000	CN 98 98 98	<u>Description</u> Roofs, HSC Roofs, HSC Weighted A	0 HydroCAD C C Verage	Software Solutions LLC	Printed 11/10/2021 Page 8
	3,300 1,700 5,000 5,000	CN 98 98 98	<u>Description</u> Roofs, HSC <u>Roofs, HSC</u> Roofs, HSC Weighted A 100.00% In	0 HydroCAE	rea	Printed 11/10/2021 Page 8
Tc (min)	3,300 1,700 5,000 5,000 Length (feet)	CN 98 98 98 Slope (ft/ft)	<u>Baseription</u> Roofs, HSC <u>Roofs, HSC</u> Weighted A 100.00% Im Velocity (ft/sec)	0 HydroCAL G C S C verage npervious A Capacity (cfs)	rea Description	Printed 11/10/2021 Page 8
Tc (min) 1.0	3,300 1,700 5,000 5,000 Length (feet)	CN 98 98 98 98 Slope (ft/ft)	3871 © 202 Description Roofs, HSG Roofs, HSG Weighted A 100.00% In Velocity (ft/sec)	0 HydroCAL C C Verage pervious A Capacity (cfs)	rea Description Direct Entry,	Printed 11/10/2021 Page 8
Tc (min) 1.0	3,300 1,700 5,000 5,000 Length (feet)	<u>CN</u> 98 98 98 98 Slope (ft/ft)	3871 © 202 Description Roofs, HSG Roofs, HSG Weighted A 100.00% In Velocity (ft/sec)	<u>o HydroCAE</u> <u>c</u> <u>c</u> cerage pervious A Capacity (cfs) Sur	rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat)	Printed 11/10/2021 Page 8
Tc (min) 1.0	3,300 1,700 5,000 5,000 Length (feet)	CN 98 98 98 Slope (ft/ft)	3871 © 202 <u>Description</u> Roofs, HSC <u>Roofs, HSC</u> Weighted A 100.00% In → Velocity) (ft/sec) (ft/sec)	<u>o HydroCAE</u> <u>o C</u> verage pervious A Capacity (cfs) Sur	rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 2 158 cf Deoth= 2 57"	Printed 11/10/2021 Page 8
Tc (min) 1.0 ≀unoff	3,300 1,700 5,000 5,000 Length (feet)	CN 98 98 98 98 Slope (ft/ft) 0.74 c	3871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% Im velocity (ft/sec) fs @ 12.0 thod LH=5	0 HydroCAE C C C Capacity (cfs) Sur 1 hrs, Volu	rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted_CN. Time Span= 0.00.48 00 hrs. dt= 0.05 hrs.	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Type III 2	3,300 1,700 5,000 5,000 Length (feet) = py SCS TF 24-hr 2YI	<u>CN</u> 98 98 98 98 Slope (ft/ft) 0.74 c R-20 me R Rainfa	3871 © 202 Description Roofs, HSG Roofs, HSG Weighted A 100.00% Im > Velocity (ft/sec) efs @ 12.0 thod, UH=S all=3.23"	0 HydroCAE C C Capacity (cfs) Sur 1 hrs, Volu CS, Weigh	rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Type III 2 A	3,300 1,700 5,000 5,000 Length (feet) = py SCS TF 24-hr 2YI vrea (sf)	<u>CN</u> 98 98 98 98 98 0.74 c R-20 me R Rainfa CN	3871 © 202 Description Roofs, HSG Roofs, HSG Weighted A 100.00% Im > Velocity (ff/sec) offs @ 12.0 thod, UH=S all=3.23" Description	0 HydroCAL C C Verage pervious A Capacity (cfs) Sur 1 hrs, Volu CS, Weigh	rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Fype III 2 A	3,300 1,700 5,000 5,000 Length (feet) = by SCS TF 24-hr 2YI <u>sea (sf)</u> 395	<u>CN</u> 98 98 98 Slope (ft/ft) 0.74 c R-20 me R Rainfa R Rainfa 74	3871 © 202 Description Roofs, HSG Roofs, HSG Weighted A 100.00% Im > Velocity (ft/sec) efs @ 12.0 thod, UH=S all=3.23" Description >75% Gras	0 HydroCAE C C verage npervious A Capacity (cfs) Sur 1 hrs, Volu CS, Weigh s cover, Gc	rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Fype III 2 A	3,300 1,700 5,000 5,000 Length (feet) = by SCS TF 24-hr 2YI sign (sf) 395 1,445	<u>CN</u> 98 98 98 Slope (ft/ft) 0.74 c R-20 me R Rainfa R Rainfa 74 74	3871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% Im Velocity (ft/sec) cfs @ 12.0 thod, UH=S all=3.23" Description >75% Gras >75% Gras	0 HydroCAE C C Verage npervious A Capacity (cfs) Sur 1 hrs, Volu CS, Weigh s cover, Gc s cover, Gc	rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Fype III 2 A	3,300 1,700 5,000 5,000 Length (feet) = by SCS TF 24-hr 2YI wrea (sf) 395 1,445 309	CN 98 98 98 Slope (ft/ft) 0.74 c R-20 me R Rainfa CN 74 98	3871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% Im Velocity (ft/sec) fs @ 12.0 thod, UH=S all=3.23" Description >75% Gras >75% Gras	0 HydroCAE 0 C 0 C 0 C 0 C 0 C 0 C 0 C 0 C	rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C it, HSG C	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Fype III 2 A	3,300 1,700 5,000 5,000 Length (feet) = by SCS TF 24-hr 2YI soft (rea (sf) 395 1,445 309 790 5,000	CN 98 98 98 98 98 98 98 0.74 c R. 20 me R. Rainfa 74 74 98 98 98 98	3871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% Im velocity (ft/sec) fs @ 12.0 thod, UH=S all=3.23" Description >75% Gras 975% Gras	0 HydroCAE 0 Capacity (cfs) 1 hrs, Volu CS, Weigh s cover, Gc s cover, Gc a pavemer a pavemer a pavemer	rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C it, HSG C it, HSG C	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Fype III 2 A	3,300 1,700 5,000 5,000 Length (feet) = by SCS TF 24-hr 2Yl 395 1,445 309 790 5,597 1,531	CN 98 98 98 Slope (ft/ft) 0.74 c R Rainfa CN 74 74 98 98 98 98	3871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% Im Velocity (ff/sec) (ff/sec) (ff/sec) cfs @ 12.0 thod, UH=S all=3.23" Description >75% Gras >75% Gras >75% Gras >75% Gras	0 HydroCAE 0 Capacity 0 Capacity 0 (cfs) 1 hrs, Volu 0 CS, Weigh 0 CS, Weigh	rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C t, HSG C t, HSG C	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff b Type III 2 A	3,300 1,700 5,000 5,000 Length (feet) = py SCS TF 24-hr 2YI solution (feet) 395 1,445 309 790 5,597 1,537 1,537 1,00 5,597	CN 98 98 98 Slope (ft/ft) 0.74 c R Rainfa CN 74 74 74 98 98 98 98 98 98	3871 © 202 Description Roofs, HSG Roofs, HSG Weighted A 100.00% Im > Velocity (ff/sec) offs @ 12.0 thod, UH=S all=3.23" Description >75% Gras >75% Gras Unconnecte Paved park Paved park	0 HydroCAE 0 C 0 C 0 C 0 C 0 C 0 C 0 C 0 C	rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C it, HSG C it, HSG C	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Fype III 2 A	3,300 1,700 5,000 5,000 Length (feet) = by SCS TF 24-hr 2YI sea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840	CN 98 98 98 98 Slope (ft/ft) 0.74 c R-20 me R Rainfa CN 74 74 74 98 98 98 98 98	3871 © 202 Description Roofs, HSG Roofs, HSG Weighted A 100.00% Im Velocity (fl/sec) fs @ 12.0 thod, UH=S all=3.23" Description >75% Gras >75% Gras >75% Gras Vinconnecte Paved park Paved park Paved park Weighted A Weighted A 18,28% Pav	0 HydroCAE 0 Capacity (cfs) 1 hrs, Volu CS, Weigh s cover, Gc s cover, Gc ad pavemer ing, HSG C verage verage verage	rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C it, HSG C it, HSG C	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Type III 2 A	3,300 1,700 5,000 5,000 Length (feet) = by SCS TF 24-hr 2YI rrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227	CN 98 98 98 98 98 98 98 98 0.74 cd 0.74 cd	3871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% Im > Velocity (ft/sec) cfs @ 12.0 thod, UH=S all=3.23" Description >75% Gras >75% Gras Velocity park Paved park Paved park Weighted A 18.28% Pei 81.72% Imm	0 HydroCAE 0 HydroCAE 0 C 0 C 0 C 0 C 0 C 0 C 0 C 0 C	rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C it, HSG C it, HSG C	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Type III 2 A	3,300 1,700 5,000 5,000 Length (feet) = by SCS TF 24-hr 2YI vrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099	CN 98 98 98 98 98 0.74 c (ft/ft) 0.74 c R-20 me R Rainfa CN 74 98 98 98 98 98 98	3871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% Im Velocity (ft/sec) fs @ 12.0 thod, UH=S all=3.23" Description >75% Gras >75% Gras Vinconnecte Unconnecte Unconnecte Paved park Paved park	0 HydroCAE 0 HydroCAE 0 C 0 C 0 C 0 C 0 C 0 C 0 C 0 C	rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C tt, HSG C tt, HSG C	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Type III 2 A	3,300 1,700 5,000 5,000 Length (feet) = py SCS TF 24-hr 2YI rrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length	CN 98 98 98 98 Slope (ft/ft) 0.74 c R-20 me R Rainfa CN 74 74 98 98 98 98 98 98 98 98 Slope CN 74 74 74 98 98 98 98 98 98 98 98 98 98	3871 © 202 Description Roofs, HSG Roofs, HSG Weighted A 100.00% Im Velocity (fl/sec) fs @ 12.0 thod, UH=S all=3.23" Description >75% Gras Vnconnecte Paved park Paved park	0 HydroCAE 0 HydroCAE 0 Capacity (cfs) 1 hrs, Volu 1 hrs, Volu CS, Weigh s cover, Gc s cover, Gc ing, HSG C ing, HSG C verage vious Area pervious Area Capacity Capacity	rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C tt, HSG C tt, HSG C paa	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Type III : A Tc (min)	3,300 1,700 5,000 5,000 Length (feet) = py SCS TF 24-hr 2YI rrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet)	CN 98 98 98 98 98 98 98 98 0.74 cd 0.74 cd	3871 © 202 Description Roofs, HSG Roofs, HSG Weighted A 100.00% Im Velocity (fl/sec) fs @ 12.0 thod, UH=S all=3.23" Description >75% Gras Velocity Unconnecte Paved park Paved park P	0 HydroCAE 0 HydroCAE 0 Capacity (cfs) 1 hrs, Volu 1 hrs, Volu 1 hrs, Volu 0 CS, Weigh 0 s cover, Gc 1 s cover, Gc 1 hrs, Volu 0 cs cover, Gc 1 hrs, Volu 0 cs cover, Gc 1 hrs, Volu 1 hr	rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C it, HSG C it, HSG C paa Description	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Type III 2 A C Tc (min) 0.5	3,300 1,700 5,000 5,000 Length (feet) = by SCS TF 24-hr 2YI rea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet) 50 50 50 50 50 50 50 50 50 50	CN 98 98 98 98 Slope (ft/ft) 0.74 c R Rainfa CN 74 98 98 98 98 98 94 Slope (ft/ft) 0.540	3871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% Im Velocity (fl/sec) cfs @ 12.0 thod, UH=S all=3.23" Description >75% Gras Visconnecte Unconnecte Unconnecte Unconnecte Paved park Paved park Paved park Paved park Paved park Paved park Paved park Paved park Meighted A 18.28% Per 13.36% Unc Velocity (fl/sec) 1.80	0 HydroCAE verage pervious A Capacity (cfs) Sur 1 hrs, Volu CS, Weigh s cover, Gc s cover, Gc s cover, Gc s cover, Gc ing, HSG C ing, HSG C verage vious Area pervious Area connected Capacity (cfs)	rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C t, HSG C t, HSG C Baa Description Sheet Flow,	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Type III 2 A C (min) 0.5	3,300 1,700 5,000 5,000 Length (feet) = by SCS TF 24-hr 2YI vrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet) 50 1,006 1,007 1,007 1,006 1,007 1,007 1,006 1,007	CN 98 98 98 98 Slope (ft/ft) 0.74 c R Rainfa CN 74 98 98 98 98 98 98 98 98 98 98	3871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% Im Velocity (fl/sec) fs @ 12.0 thod, UH=S all=3.23" Description >75% Gras >75% Gras Visconnecte Unconnecte Unconnecte Unconnecte Paved park Paved park Paved park Paved park Paved park Paved park Paved park (fl/sec)) (fl/sec)) 1.80	0 HydroCAE 0 HydroCAE 0 Capacity (cfs) 1 hrs, Volu 1 hrs, Volu 0 CS, Weigh 1 s cover, Gc s cover, Gc s cover, Gc s cover, Gc ing, HSG C ing, HSG C verage vious Area pervious Area connected Capacity (cfs)	rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C it, HSG C it, HSG C Description Sheet Flow, Smooth surfaces n= 0.011 P2= 3.26"	Printed 11/10/2021 Page 8
Tc (min) 1.0 Runoff Runoff b Type III 2 A Tc (min) 0.5 0.5	3,300 1,700 5,000 5,000 Length (feet) = py SCS TF 24-hr 2YI rrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet) 50 107	CN 98 98 98 98 Slope (ft/ft) 0.74 c R Rainfa CN 74 74 98 98 98 98 98 94 Slope (ft/ft) 0.540 0.0308	3871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% Im > Velocity (ft/sec) dthod, UH=S all=3.23" Description >75% Gras >75% Gras Unconnecte Paved park Weighted A 18.28% Per 13.36% Um • Velocity (ft/sec) 1.80 3.356	0 HydroCAE verage pervious A Capacity (cfs) Sur 1 hrs, Volu CS, Weigh s cover, Gc s cover, Gc d pavemer ing, HSG C ing, HSG C verage vious Area pervious Area Capacity (cfs)	rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 2,158 cf, Depth= 2.57" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C tt, HSG C tt, HSG C shallow Concentrated Flow, Shallow Concentrated Flow, Paved Kv= 20.3 fps	Printed 11/10/2021 Page 8

Runoff = 0.72 cfs @ 12.07 hrs, Volume= 2,251 cf, Depth= 1.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 2YR Rainfall=3.23"

	711 15,442	98 74	riprap >75% Gras	s cover, G	ood, HSG C			
	10,802	70	Woods, Go	od, HSG				
	26,955 26,244	73	vveighted A 97.36% Pe	verage rvious Are	а			
	711		2.64% Imp	ervious Ar	ea			
Tc (min)	Length (feet)	Slop (ft/f	e Velocity t) (ft/sec)	Capacity (cfs)	Description			
2.5	50	0.146	0 0.33		Sheet Flow	v,	0.00"	
0.1	54	0.181	5 6.86		Shallow Co	oncentrated Flow,	3.26"	
1.3	104	0.076	9 1.39		Unpaved H Shallow Co	Kv= 16.1 fps oncentrated Flow,		
3.9	208	Total			Woodland	KV= 5.0 fps		
				Su	immary for	Subcatchment	7S: (new Subcat	t)
unoff	=	0.72	cfs @ 12.0	04 hrs, Vo	ume=	2,042 cf, Depth=	= 1.86"	
unoff by	V SCS TH	R-20 m	ethod, UH=	SCS, Weig	hted-CN, Time	e Span= 0.00-48.00) hrs, dt= 0.05 hrs	
ype III 2	24-hr 2Y	R Rain	all=3.23"	-, 5	- ,		,	
0047 5								Tuno III 24 hr. 2VP Poinfoll-2 22"
0047 F	Post-De	ev-rev	1	0				Type III 24-hr 2YR Rainfall=3.23"
0047 F	Post-De	ev-rev	1 ineering & 1	Associate	s, Inc.			Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F repare ydroCAI	Post-De d by Alle D® 10.10-	e v-rev en Eng 4b_s/n	1 Ineering & 202	Associate 20 HydroCA	s, Inc. D Software Sol	lutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F repare ydroCAI	Post-De d by Alle D® 10.10-	e v-rev en Eng 4b s/n	I Ineering & a 03871 © 202	Associate	s, Inc. D Software Sol	lutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F repare ydroCAI	Post-De d by Alle <u>D® 10.10-</u> rea (sf)	ev-rev en Eng 4b s/n CN	I neering & 3 03871 © 202 Descriptior Water Surf	Associate	s, Inc. D Software Sol	lutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F repare ydroCAI	Post-De d by Alle <u>D® 10.10-</u> rea (sf) 5,880 134	ev-rev en Eng 4b s/n CN 98 98	I ineering & 3 03871 © 202 Descriptior Water Surf Tiprap	Associate 20 HydroCA 1 ace, HSG	s, Inc. D Software Sol	lutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F repare <u>ydroCAI</u> Ar	Post-De d by Alle <u>0</u> ® 10.10: rea (sf) 5,880 134 6,571	ev-rev en Eng <u>4b s/n</u> <u>CN</u> 98 98 74	I neering & 3 03871 © 202 Descriptior Water Surf riprap >75% Gras	Associate 20 HydroCA ace, HSG as cover, G	s, Inc. <u>D Software Sol</u> C ood, HSG C	lutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F Irepare <u>ydroCAI</u> Ai	Post-De d by Alle <u>D® 10.10</u> rea (sf) 5,880 134 6,571 580	ev-rev en Eng <u>4b s/n</u> 98 98 74 89	I neering & 1 03871 © 202 Descriptior Water Surf riprap >75% Grass Gravel road	Associate 20 HydroCA 1 ace, HSG as cover, G ds, HSG C	s, Inc. <u>D Software Sol</u> C ood, HSG C	lutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F Irepare <u>ydroCAI</u> Ar	Post-De d by Alle D® 10.10: 5,880 134 6,571 580 13,165	ev-rev en Eng 4b s/n 08 98 74 89 86	I ineering & 3 03871 © 202 Descriptior Water Surf riprap >75% Grase Gravel road Weighted A	Associate 20 HydroCA ace, HSG as cover, C ds, HSG C Vverage	s, Inc. D Software Sol C ood, HSG C	lutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F repare <u>ydroCAI</u> Ar	Post-De d by Alle D® 10.10: 5,880 134 6,571 580 13,165 7,151	ev-rev en Eng 4b s/n 08 98 74 89 86	I neering & 3 03871 © 202 Descriptior Water Surf riprap >75% Gras Gravel roaw Weighted A 54.32% Pe	Associate 20 HydroCA ace, HSG ace, HSG as cover, G ds, HSG C Werage rvious Are	s, Inc. <u>D Software Sol</u> C ood, HSG C a	lutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F repare <u>ydroCAI</u> Ar	Post-De d by Alle 0€ 10.10- 5,880 134 6,571 580 13,165 7,151 6,014	ev-rev en Eng 4b s/n 08 98 98 74 89 86	I neering & 03871 © 202 Descriptior Water Surf riprap >75% Gras Gravel roar Weighted <i>A</i> 54.32% Pe 45.68% Im	Associate 20 HydroCA ace, HSG ace, HSG ace, HSG ts, HSG C Average rvious Are pervious A	s, Inc. <u>D Software Sol</u> C ood, HSG C a rea	lutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F repare <u>ydroCAI</u> <u>A</u> r	Post-De d by Alle 0 10.10 5,880 134 6,571 5,880 13,165 7,151 6,014	ev-rev en Eng 4b s/n 08 98 74 89 86	I neering & 03871 © 202 Descriptior Water Surf iprap >75% Gras Gravel roar Weighted A 54.32% Pe 45.68% Im	Associate 20 HydroCA ace, HSG ace, HSG ace, HSG ds, HSG C Verage rvious Are pervious A	s, Inc. <u>D Software Sol</u> C ood, HSG C a rea	lutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F repare ydroCAI Ar	Post-De d by Alle D® 10.10 5,880 134 6,571 580 13,165 7,151 6,014 Length	2 V-reV en Eng <u>4b s/n</u> 98 98 74 89 86 Slop	I neering & 03871 © 202 Water Surf Vater Surf viprap >75% Gras Gravel roar Weighted A 54.32% Pe 45.68% Im e Velocity (ff/coc)	Associate 20 HydroCA ace, HSG ace, HSG ace, HSG ds, HSG C verage rvious Are pervious A Capacity	s, Inc. <u>D Software Sol</u> C ood, HSG C a rea Description	lutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F repare ydroCAI Ar C (min) 2 0	Post-De d by Alle D® 10.10 5,880 134 6,571 580 13,165 7,151 6,014 Length (feet)	2 V-rev en Eng 4b s/n <u>CN</u> 98 74 89 86 Slop (ft/f	I neering & . 03871 © 202 Descriptior Water Surf riprap >75% Grass Gravel roar Weighted A 54.32% Pe 45.68% Im e Velocity () (ft/sec) 0.25	Associate 20 HydroCA ace, HSG as cover, G ds, HSG C verage rvious Are pervious A Capacity (cfs)	s, Inc. <u>D Software Sol</u> C ood, HSG C a rea Description	lutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F repare ydroCAI Ar C Tc (min) 2.0	Post-De d by Alle D® 10.10 5,880 134 6,571 5,80 13,165 7,151 6,014 Length (feet) 42	2 V-rev 20 - rev 20	I neering & . 03871 © 202 Descriptior Water Surf riprap >75% Gras Gravel road Weighted A 54.32% Pe 45.68% Im e Velocity (ft/sec) 7 0.35	Associate 20 HydroCA ace, HSG as cover, C ds, HSG C vvious Are pervious Are pervious Are pervious Are capacity (cfs)	s, Inc. D Software Sol C ood, HSG C a rea Description Sheet Flow Grass: Shoi	lutions LLC , v, rt n= 0.150 P2= :	3.26"	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F repare ydroCAI Ar C (min) 2.0	Post-De d by Alle D® 10.10 5,880 134 6,571 5,80 13,165 7,151 6,014 Length (feet) 42	2 V-reV en Eng 4 <u>b</u> s/n 98 98 74 89 86 Slop (ft/f 0.185	I Description Water Surf riprap >75% Grass Gravel roaw Weighted A 54.32% Pe 45.68% Im e Velocity (ft/sec) 7 0.35	Associate 20 HydroCA ace, HSG as cover, C ds, HSG C vious Are pervious Are pervious Are pervious Are capacity (cfs)	s, Inc. D Software Sol C ood, HSG C a rea Description Sheet Flow Grass: Shol	lutions LLC , v, rt n= 0.150 P2= 3	3.26"	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F repare ydroCAI Ar C (min) 2.0	Post-De d by Alle D® 10.10 5,880 134 6,571 5,80 13,165 7,151 6,014 Length (feet) 42	SV-rev n Eng 4b s/n 08 98 74 98 98 74 89 86 86 86 0.185	I ineering & . 03871 © 202 Descriptior Water Surf riprap >75% Grass Gravel road Gravel road S4.32% Pe 45.68% Im e Velocity (ft/sec) 7 0.35	Associate 20 HydroCA ace, HSG as cover, C ds, HSG C vious Are pervious Are pervious Are pervious Are capacity (cfs)	s, Inc. D Software Sol C ood, HSG C a rea Description Sheet Flow Grass: Shol	lutions LLC v, rt n= 0.150 P2= : Subcatchment	3.26" 8S: (new Subca t	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
0047 F repare ydroCAI Ar Tc (min) 2.0	Post-De d by Alle D® 10.10 5,880 134 6,571 5,80 13,165 7,151 6,014 Length (feet) 42	2 V-reV m Eng 4 <u>b s/n</u> 08 98 74 89 86 Slop (ft/f 0.185	I Description Water Surf riprap >75% Gras Gravel road Weighted A 54.32% Pe 45.68% Im e Velocity (ft/sec) 7 0.35	Associate 20 HydroCA ace, HSG ace, HSG C ds, HSG C vious Are pervious Are pervious Are pervious Are capacity (cfs)	s, Inc. D Software Sol C c c c c c c c c c c c c c	v, rt n= 0.150 P2= Subcatchment	3.26" 8S: (new Subca	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
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0047 F repare ydroCAI An Tc (min) 2.0 unoff unoff by ype III 2	Post-De d by Alle D® 10.10 5,880 134 6,571 5,80 13,165 7,151 6,014 Length (feet) 42 = y SCS TF 24-hr 2Y rea (sf)	NV-reV m Eng 4b s/n 98 98 74 89 86 86 Slop (ft/f 0.185 0.65 R-20 mr R Raint	I Description Water Surf riprap >75% Gras Gravel road Weighted A 54.32% Pe 45.68% Im e Velocity (ff/sec) 7 0.35 cfs @ 12.0 ethod, UH=5 all=3.23"	Associate 20 HydroCA ace, HSG ace, HSG ss cover, C ds, HSG C vious Are pervious Are pervious Are pervious Are capacity (cfs) St N1 hrs, Vo SCS, Weig	s, Inc. <u>D</u> Software Sol C cood, HSG C a rea Description Sheet Flow Grass: Sho Immary for ume= hted-CN, Time	lutions LLC v, rt n= 0.150 P2= : Subcatchment 1,873 cf, Depth= e Span= 0.00-48.00	3.26" 8S: (new Subca = 2.57") hrs, dt= 0.05 hrs	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
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0047 F repare ydroCAI Ar C (min) 2.0 unoff ype III 2 Ar	Post-De d by Alle D® 10.10 5,880 134 6,571 13,165 7,151 6,014 Length (feet) 42 = y SCS TF 24-hr 2Y rea (sf) 1,611 459 6,664	2V-reV en Eng 4b s/n 98 98 74 89 86 86 0.65 8-20 mi R Raini CN 74 98 98	I neering & <u>Descriptior</u> Water Surf riprap >75% Grass Gravel road Weighted A 54.32% Pe 45.68% Im e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 athod, UH=\$ call=3.23" <u>Descriptior</u> >75% Grass Unconnect	Associate 20 HydroCA ace, HSG ace, HSG C twerage rvious Are pervious A Capacity (cfs) St 11 hrs, Vo SCS, Weig	s, Inc. D Software Sol C ood, HSG C a rea Description Sheet Flow Grass: Shou ummary for ume= hted-CN, Time ood, HSG C C	lutions LLC v, rt n= 0.150 P2= : Subcatchment 1,873 cf, Depth= e Span= 0.00-48.00	3.26" 8S: (new Subca t = 2.57") hrs, dt= 0.05 hrs	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 10
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00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC

(min)	(foot)	(ft/ft)			
0.5	<u>(leet)</u> 50	0.0411	1.61	(CIS)	Sheet Flow.
0.4	75	0.0000	0.07		Smooth surfaces n= 0.011 P2= 3.26"
0.4	/5	0.0260	3.27		Shahow Concentrated Flow, Paved Kv= 20.3 fps
0.9	125	Total			· · · · · ·
				S	mmary for Subcatchment 9S: (new Subcat)
				oui	minary for ouscateminent so. (new ouscat)
noff	=	0.62 cf	s@ 12.0	1 hrs, Volu	ume= 1,792 cf, Depth= 2.67"
noff b	y SCS TF	R-20 met	nod, UH=S	SCS, Weigh	nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
pe III 2	24-hr 2Y	R Rainfa	I=3.23"		
А	rea (sf)	CN E	escription		
	1,030	74 >	75% Gras	s cover, Go	ood, HSG C
	6,818	98 U 98 F	aved park	ing, HSG C	
	8,042	95 V	Veighted A	verage	
	1,030 7 012	1	2.81% Per 7 19% Imr	rvious Area pervious Are	a rea
	194	2	.77% Unco	onnected	
Тс	l enath	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	1 **
0.5	50	0.0380	1.56		Sheet Flow, Smooth surfaces _n= 0.011_P2= 3.26"
0.3	62	0.0274	3.36		Shallow Concentrated Flow,
0.0	110	Total			Paved Kv= 20.3 fps
0.0	112	TUTAL			
0047 I	Post-De d by Alle D® 10.10-	e v-rev1 en Engin 4b s/n 03	eering & #	Associates 0 HvdroCAE	Type III 24-hr 2YR Rainfall=3.23" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 12
047 I epare droCAI	Post-De d by Alle D® 10.10-	v-rev1 en Engin 4b s/n 03	eering & A 1871 © 202	Associates <u>0 HydroCAE</u>	Type III 24-hr 2YR Rainfall=3.23" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 12 Summary for Subcatchment 10S: ROOF
IO47 I epare droCAI	Post-De d by Alle D® 10.10-	v-rev1 en Engin 4b s/n 03	eering & A 1871 © 202	Associates <u>0 HydroCAE</u>	Type III 24-hr 2YR Rainfall=3.23" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 12 Summary for Subcatchment 10S: ROOF
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noff bpe III 2 <u>ro</u> <u>ro</u> <u>r</u> <u>r</u> <u>r</u> <u>r</u> <u>r</u> <u>r</u> <u>r</u> <u>r</u>	Post-De d by Alle D® 10.10- = y SCS TF 24-hr 2YI rea (sf) 2,640 2,640 Length (feet)	v-rev1 en Engin 4b s/n 03 0.21 cf R-20 meti R Rainfal R Rainfal CN [98 F 1 Slope (ft/ft)	eering & A 871 © 202 s @ 12.0 nod, UH=S =3.23" Description Roofs, HSC 00.00% In Velocity (ft/sec)	Associates <u>0 HydroCAE</u> 1 hrs, Volu SCS, Weigh SCS, Weigh Dervious A Capacity (cfs)	Type III 24-hr 2YR Rainfall=3.23" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 12 Summary for Subcatchment 10S: ROOF ume= 659 cf, Depth= 3.00" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Area Description Direct Entry,
Inoff II 2 A Tc (min) 1.0	Post-De d by Alle D® 10.10- = y SCS TF 24-hr 2YI rea (sf) 2,640 2,640 Length (feet)	0.21 cf 0.21 cf R-20 met R Rainfal <u>CN [98 F</u> 1 Slope (ft/ft)	eering & A 1871 © 202 s @ 12.0 nod, UH=S I=3.23" Description Roofs, HSC 00.00% In Velocity (ft/sec)	Associates <u>0 HydroCAE</u> 1 hrs, Volu 3CS, Weigh 3CS, Weigh 3CC Capacity (cfs)	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 D Software Solutions LLC Page 12 Summary for Subcatchment 10S: ROOF ume= 659 cf, Depth= 3.00" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Area Description Direct Entry, Summary for Subcatchment 11S: ROOF
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5.0 208 Total	D00047 Post-I Prepared by A HydroCAD® 10.7 Tc Lengt (min) (fee 2.0 Runoff = Runoff by SCS Type III 24-hr 614 211 10,484 4,173 15,482 4,173 11,300 614 Tc Lengt (min) (fee 4.2	Dev-rev ¹ Ilen Engi 10-4b s/n (h Slope t) (ft/ft 0.97 (TR-20 me 2YR Rainf 0.98 98 98 98 98 98 98 98 98 98	neering & Asso 3871 © 2020 Hy Velocity Ca (ft/sec) cfs @ 12.07 hr: thod, UH=SCS, all=3.23" Description Unconnected parking, >75% Grass co Weighted Avera 26.95% Perviou S.43% Unconne velocity Ca) (ft/sec) 0 0.20 2.44	ociates, I ydroCAD S apacity [(cfs) Summ rs, Volum , Weighted bavement, HSG C HSG C ver, Good age us Area rious Area ected apacity [(cfs) S	nc. ioftware Sol Description Direct Entr nary for S e= d-CN, Time HSG C d, HSG C Description Sheet Flow Grass: Sho	lutions LLC ry, Subcatchme 3,069 cf, Dep e Span= 0.00-4: y, rt n= 0.150 P	nt 14S: (new pth= 2.38" 8.00 hrs, dt= 0.	/ Subcat) 05 hrs	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 14	
Summary for Subastabreast (50: (sour Subast)	00047 Post-I Prepared by A HydroCAD® 10. Tc Lengt (min) (fee 2.0 Runoff = Runoff by SCS Type III 24-hr 2 Area (sf) 614 211 10,484 4,173 15,482 4,173 11,309 614 Tc Lengt (min) (fee 4.2 5 0.8 15	Dev-rev1 llen Engi 10-4b s/n (h Slopi t) (ft/ft 0.97 (TR-20 me YR Rainf 2 CN 98 98 98 98 74 92 1 1 92 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	neering & Asso 3871 © 2020 Hy Velocity Ca (ft/sec) cfs @ 12.07 hrs thod, UH=SCS, all=3.23" Description Unconnected p. Paved parking, Paved parking, Paved parking, Paved parking, Paved parking, 26.95% Perviou 73.05% Imperviou 5.43% Unconner Velocity Ca (ft/sec) 0 0.20 2 3.41	ociates, I ydroCAD S apacity [(cfs) [Sumn rs, Volum , Weighter HSG C HSG C yver, Good age us Area ected apacity [(cfs) { S (S (S (S (S (S (S (S (S (S	nc. <u>iortware Sol</u> Description Direct Entr nary for e= d-CN, Time HSG C d, HSG C <u>d, HSG C</u> Description <u>Sheet Flow</u> Brass: Sho <u>Shallow C</u> Paved Ky:	lutions LLC ry, Subcatchme 3,069 cf, Dej e Span= 0.00-4 e Span= 0.00-4 v, rt n= 0.150 P oncentrated File = 20.3 fps	nt 14S: (new pth= 2.38" 8.00 hrs, dt= 0.	/ Subcat) 05 hrs	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 14	
Summary for Subcatchment 155: (new Subcat)	Area Area <th< td=""><td>Dev-rev1 llen Engi 0-4b s/n (h Slope t) (ft/ft 0.97 (7R-20 me 2YR Rainf 2 CN 98 98 98 98 74 98 98 98 98 98 98 98 98 98 98 98 98 98</td><td>neering & Asso 3871 © 2020 Hy Velocity Ca (ft/sec) cfs @ 12.07 hr thod, UH=SCS, all=3.23" Description Unconnected parking, Paved park</td><td>ociates, I ydroCAD S apacity [(cfs) [Summ rs, Volum , Weighter HSG C HSG C HSG C ver, Good age us Area ected apacity [(cfs) [S (S (S (S (S (S (S (S (S (S</td><td>nc. ioftware Sol Description Direct Entr nary for : e= d-CN, Time HSG C d, HSG C d, HSG C Description Sheet Flow Grass: Sho Shallow Ca aved Kv:</td><td>lutions LLC ry, Subcatchme 3,069 cf, Dej e Span= 0.00-4: e Span= 0.00-4: v, n= 0.150 P oncentrated Flu = 20.3 fps</td><td>nt 14S: (new pth= 2.38" 8.00 hrs, dt= 0. 8.00 hrs, dt= 0.</td><td>/ Subcat) 05 hrs</td><td>Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 14</td></th<>	Dev-rev1 llen Engi 0-4b s/n (h Slope t) (ft/ft 0.97 (7R-20 me 2YR Rainf 2 CN 98 98 98 98 74 98 98 98 98 98 98 98 98 98 98 98 98 98	neering & Asso 3871 © 2020 Hy Velocity Ca (ft/sec) cfs @ 12.07 hr thod, UH=SCS, all=3.23" Description Unconnected parking, Paved park	ociates, I ydroCAD S apacity [(cfs) [Summ rs, Volum , Weighter HSG C HSG C HSG C ver, Good age us Area ected apacity [(cfs) [S (S (S (S (S (S (S (S (S (S	nc. ioftware Sol Description Direct Entr nary for : e= d-CN, Time HSG C d, HSG C d, HSG C Description Sheet Flow Grass: Sho Shallow Ca aved Kv:	lutions LLC ry, Subcatchme 3,069 cf, Dej e Span= 0.00-4: e Span= 0.00-4: v, n= 0.150 P oncentrated Flu = 20.3 fps	nt 14S: (new pth= 2.38" 8.00 hrs, dt= 0. 8.00 hrs, dt= 0.	/ Subcat) 05 hrs	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 14	

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 2YR Rainfall=3.23"

HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Area (sf) CN Description 1,155 74 >75% Grass cover, Good, HSG C 1,140 74 >75% Grass cover, Good, HSG C Unconnected pavement, HSG C 98 174 Paved parking, HSG C 2,097 98 3,280 98 Paved parking, HSG C Weighted Average 29.25% Pervious Area 7.846 91 2,295 70.75% Impervious Area 5,551 174 3.13% Unconnected Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 0.5 50 0.0377 1.56 Sheet Flow, Smooth surfaces n= 0.011 P2= 3.26" 05 92 0.0250 3 21 Shallow Concentrated Flow. Paved Kv= 20.3 fps 142 Total 1.0 Summary for Subcatchment 16S: (new Subcat) Runoff = 0.97 cfs @ 12.07 hrs, Volume= 3,104 cf, Depth= 2.57" Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 2YR Rainfall=3.23" Area (sf) CN Description 397 98 Unconnected pavement, HSG C >75% Grass cover, Good, HSG C >75% Grass cover, Good, HSG C 1,089 74 1,154 74 Paved parking, HSG C 7,641 98 4,197 98 Paved parking, HSG C Weighted Average 14,478 94 2,243 15.49% Pervious Area 12,235 84.51% Impervious Area 397 3.24% Unconnected Type III 24-hr 2YR Rainfall=3.23" 00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Printed 11/10/2021 Page 16 Tc Length Slope Velocity Capacity Description (ft/ft) (feet) (ft/sec) (cfs) (min) 0.0400 Sheet Flow, 4.2 50 0.20 Grass: Short n= 0.150 P2= 3.26" 0.7 174 0.0374 3.93 Shallow Concentrated Flow, Paved Kv= 20.3 fps 4.9 224 Total Summary for Subcatchment 17S: (new Subcat) 0.65 cfs @ 12.06 hrs, Volume= Runoff = 1,894 cf, Depth= 1.63" Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 2YR Rainfall=3.23' CN Description Area (sf) >75% Grass cover, Good, HSG C 8,646 74 5,265 Paved parking, HSG C 98 13,911 83 Weighted Average 62.15% Pervious Area 8,646 5,265 37.85% Impervious Area Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) Sheet Flow, 3.5 50 0.0660 0.24 Grass: Short n= 0.150 P2= 3.26" 61 0.0205 2.91 Shallow Concentrated Flow, 0.3 Paved Kv= 20.3 fps 38 111 Total

00047 Post-Dev-rev1

Prepared by Allen Engineering & Associates, Inc.

Summary for Reach R1: (new Reach)

	Summary for Reach R1: (new Reach)	
Inflow Area = Inflow = Outflow =	132,521 sf, 75.43% Impervious, Inflow Depth = 2.04" for 2YR event 1.81 cfs @ 12.44 hrs, Volume= 22,487 cf 1.81 cfs @ 12.44 hrs, Volume= 22,487 cf, Atten= 0%, Lag= 0.1 min	
Routing by Dyn-S Max. Velocity= 1. Avg. Velocity = 0.	Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 82 fps, Min. Travel Time= 0.2 min .62 fps, Avg. Travel Time= 0.5 min	
Peak Storage= 20 Average Depth at Bank-Full Depth=	0 cf @ 12.44 hrs t Peak Storage= 0.19' , Surface Width= 5.74' = 2.00' Flow Area= 18.0 sf, Capacity= 125.86 cfs	
5.00' x 2.00' de Side Slope Z-valu Length= 20.0' S Inlet Invert= 1,03'	ep channel, n= 0.069 Riprap, 6-inch ue= 2.0 '/' Top Width= 13.00' lope= 0.0750 '/' 1.00', Outlet Invert= 1,029.50'	
$\overline{\ }$		
	Summary for Pond 1EV:	
Inflow Area = Inflow = Primary =	159,476 sf, 63.12% Impervious, Inflow Depth = 1.86" for 2YR event 2.29 cfs @ 12.10 hrs, Volume= 24,738 cf 2.29 cfs @ 12.10 hrs, Volume= 24,738 cf, Atten= 0%, Lag= 0.0 min	
Routing by Dyn-S	Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	
00047 Post-De Prepared by Alle	ev-rev1 en Engineering & Associates, Inc.	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021
00047 Post-De Prepared by Alle <u>HydroCAD® 10.10</u>	ev-rev1 en Engineering & Associates, Inc. -4b s/n 03871 © 2020 HydroCAD Software Solutions LLC	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 18
00047 Post-De Prepared by Alle <u>HydroCAD® 10.10</u>	ev-rev1 en Engineering & Associates, Inc. -4b_s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV:	<i>Type III 24-hr 2YR Rainfall=3.23"</i> Printed 11/10/2021 Page 18
00047 Post-De Prepared by Alle <u>HydroCAD® 10.10</u> Inflow Area = Inflow = Primary =	ev-rev1 en Engineering & Associates, Inc. -4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 1.06" for 2YR event 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf, Atten= 0%, Lag= 0.0 min	<i>Type III 24-hr 2YR Rainfall=3.23"</i> Printed 11/10/2021 Page 18
00047 Post-De Prepared by Alle <u>HydroCAD® 10.10</u> Inflow Area = Inflow = Primary = Routing by Dyn-S	ev-rev1 en Engineering & Associates, Inc. -4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 1.06" for 2YR event 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf, Atten= 0%, Lag= 0.0 min Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 18
00047 Post-De Prepared by Alle <u>HydroCAD® 10.10</u> Inflow Area = Inflow = Primary = Routing by Dyn-S	ev-rev1 en Engineering & Associates, Inc. -4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 1.06" for 2YR event 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf, Atten= 0%, Lag= 0.0 min Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond CB1: (new Pond)	<i>Type III 24-hr 2YR Rainfall=3.23"</i> Printed 11/10/2021 Page 18
00047 Post-De Prepared by Alle HydroCAD® 10.10 Inflow = Primary = Routing by Dyn-S Inflow Area = Inflow = Outflow = Primary =	ex-rev1 en Engineering & Associates, Inc. -4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 1.06" for 2YR event 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf 0.4 cfs @ 12.01 hrs, Volume= 2,158 cf 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 18
00047 Post-De Prepared by Alle HydroCAD® 10.10 Inflow Area = Inflow = Primary = Routing by Dyn-S Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,036	ev-rev1 en Engineering & Associates, Inc. -4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 1.06" for 2YR event 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf, Atten= 0%, Lag= 0.0 min Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond CB1: (new Pond) 10,067 sf, 81.72% Impervious, Inflow Depth = 2.57" for 2YR event 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf, Atten= 0%, Lag= 0.0 min 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	<i>Type III 24-hr 2YR Rainfall=</i> 3.23" Printed 11/10/2021 Page 18
00047 Post-De Prepared by Alle HydroCAD® 10.10 Inflow Area = Inflow = Primary = Routing by Dyn-S Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,036 Device Routing	ev-rev1 en Engineering & Associates, Inc. -4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 1.06" for 2YR event 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf, Atten= 0%, Lag= 0.0 min Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond CB1: (new Pond) 10,067 sf, 81.72% Impervious, Inflow Depth = 2.57" for 2YR event 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 3.96' @ 12.01 hrs Invert_Outlet Devices	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 18
00047 Post-De Prepared by Alle HydroCAD® 10.10 Inflow Area = Primary = Routing by Dyn-S Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,036 <u>Device Routing</u> #1 Primary	av-rev1 en Engineering & Associates, Inc. -4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 1.06" for 2YR event 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf, Atten= 0%, Lag= 0.0 min Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond CB1: (new Pond) 10,067 sf, 81.72% Impervious, Inflow Depth = 2.57" for 2YR event 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 0.96' @ 12.01 hrs 1.016 for 1.01 hrs 1.036.50' 1.036.50' 1.036.50' 1.036.50' 1.036.50' 1.036.50' 1.036.50' 1.036.50' 1.036.50'	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 18
00047 Post-De Prepared by Alle HydroCAD® 10.10 Inflow Area = Inflow = Primary = Routing by Dyn-S Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,036 <u>Device Routing</u> #1 Primary Primary OutFlow 1=Culvert (Ba	ex-rev1 en Engineering & Associates, Inc. -4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 1.06" for 2YR event 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf, Atten= 0%, Lag= 0.0 min Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond CB1: (new Pond) 10,067 sf, 81.72% Impervious, Inflow Depth = 2.57" for 2YR event 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf 0.01 hrs, Volume= 2,158 cf Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 3.96" @ 12.01 hrs, Volume= 2,158 cf Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 3.96" @ 12.01 hrs, Volume= 2,158 cf Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 3.96" @ 12.01 hrs, Volume= 2,158 cf Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 3.96" @ 12.01 hrs Invert Outlet Devices 1,036.50" 1,036.50" 1,036.50" 1,036.50" 12.01 hrs HW=1,036.50' / 1,036.38' S= 0.0150 17' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf w Max	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 18
00047 Post-De Prepared by Alle HydroCAD® 10.10 Inflow Area = Primary = Routing by Dyn-S Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,036 <u>Device Routing</u> #1 Primary Primary OutFlow 1=Culvert (Ba	ev-rev1 en Engineering & Associates, Inc. -4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 1.06° for 2YR event 0.25 cfs @ 12.21 hrs, Volume= 1.083 cf 0.25 cfs @ 12.21 hrs, Volume= 2.05 hrs Summary for Pond CB1: (new Pond) 10,067 sf, 81.72% Impervious, Inflow Depth = 2.57° for 2YR event 0.74 cfs @ 12.01 hrs, Volume= 2.158 cf 0.74 cfs @ 12.01 hrs, Volume= 2.158 cf 0.74 cfs @ 12.01 hrs, Volume= 2.158 cf 1.04 cfs @ 12.01 hrs, Volume= 2.158 cf Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 3.96° @ 12.01 hrs Invert Outlet Devices 1.036.50° 12.07 Round Culvert L= 8.0° Ke= 0.200 Inlet / Outlet Invert= 1.036.50° / 1.036.38° S= 0.0150 '/ Cc= 0.900 n = 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf w Max=0.71 cfs @ 12.01 hrs HW=1,036.95' TW=1,036.53° (Dynamic Tailwater) arrel Controls 0.71 cfs @ 3.08 fps) Summary for Pond CB2: (new Pond)	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 18
00047 Post-De Prepared by Alle HydroCAD® 10.10 Inflow Area = Inflow area = Primary = Routing by Dyn-S Inflow Area = Inflow area = Inflow area = Noting by Dyn-S Peak Elev= 1,036 Device Routing #1 Primary Primary OutFlow 1=Culvert (Ba Inflow Area = Inflow Area = Inflow Area = Outflow =	ex-rev1 en Engineering & Associates, Inc. -4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 1.06" for 2YR event 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf 0.25 cfs @ 12.21 hrs, Volume= 1,083 cf, Atten= 0%, Lag= 0.0 min Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Burmary for Pond CB1: (new Pond) 10,067 sf, 81.72% Impervious, Inflow Depth = 2.57" for 2YR event 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf 0.74 cfs @ 12.01 hrs, Volume= 2,158 cf Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 3.96" @ 12.01 hrs, Volume= 2,158 cf Invert Outlet Devices 1.036.50" 12.0" Round Culvert L = 8.0" Ke= 0.200 Inlet / Outlet Invert = 1,036.50' / 1,036.38" S = 0.0150 '/ Cc = 0.900 n = 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf W Max=0.71 cfs @ 12.01 hrs HW=1,036.95' TW=1,036.53' (Dynamic Tailwater) arrel Controls 0.71 cfs @ 3.08 fps) Summary for Pond CB2: (new Pond) Summary for Pond CB2: (new Pond)	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 18

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Peak Elev= 1,038.26' @ 12.04 hrs

evice Routing	Invert	Outlet Devices			
#1 Primary	1,037.95'	12.0" Round Culve	ert L= 12.0' Ke= 0.2	200	
		n= 0.013 Corrugate	d PE, smooth interior	S= 0.0150 7 Cc= 0.900 , Flow Area= 0.79 sf)
rimary OutFlow M -1=Culvert (Outle	lax=0.31 cfs @ t Controls 0.3	12.03 hrs HW=1,03 1 cfs @ 2.34 fps)	38.25' TW=1,038.07'	(Dynamic Tailwater)	
		Sum	mary for Pond CI	B3: (new Pond)	
nflow Area =	14,478 sf, 8	84.51% Impervious, Ir	flow Depth = 2.57 "	for 2YR event	
ntiow = C Dutflow = C	0.97 cfs @ 12 0.97 cfs @ 12	2.07 hrs, Volume= 2.07 hrs, Volume=	3,104 cf 3,104 cf, Atte	n= 0%, Lag= 0.0 min	
rimary = 0	0.97 cfs @ 12	2.07 hrs, Volume=	3,104 cf	, 0	
outing by Dyn-Stor eak Elev= 1,040.45	-Ind method, ⁻ 5' @ 12.07 hrs	Time Span= 0.00-48.0	0 hrs, dt= 0.05 hrs		
evice Routing	Invert	Outlet Devices			
#1 Primary	1,040.00'	12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate	ert L= 165.0' Ke= 0. 1,040.00' / 1,037.77' d PE, smooth interior	.200 S= 0.0135 '/' Cc= 0.900 -, Flow Area= 0.79 sf)
Primary OutFlow M 1=Culvert (Barre	lax=0.93 cfs @ l Controls 0.9	2 12.07 hrs HW=1,04 3 cfs @ 4.11 fps)	0.44' TW=1,038.07'	(Dynamic Tailwater)	
		Sum	mary for Pond CI	B4: (new Pond)	
nflow Area =	7.846 sf 7	0.75% Impervious Ir	nflow Depth = 2 29"	for 2YR event	
1flow = ().53 cfs @ 12	2.01 hrs, Volume=	1,495 cf		
utflow = 0 rimary = 0	0.53 cfs @ 12 0.53 cfs @ 12	2.01 hrs, Volume= 2.01 hrs, Volume=	1,495 cf, Atte 1,495 cf	n= 0%, Lag= 0.0 min	
Pouting by Dyn Star	Ind method	Fimo Span= 0.00.49.0	0 bro dt= 0.05 bro		
0047 Post-Dev-	rev1	& Associates Inc.			Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021
0047 Post-Dev- repared by Allen I ydroCAD® 10.10-4b	rev1 Engineering s/n 03871 © 2	& Associates, Inc. 2020 HydroCAD Softwar	re Solutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
0 0047 Post-Dev- Prepared by Allen HydroCAD® 10.10-4b Peak Elev= 1,040.32	rev1 Engineering <u>s/n 03871 © 2</u> 2' @ 12.02 hrs	& Associates, Inc. 2020 HydroCAD Softwar	re Solutions LLC		<i>Type III 24-hr 2YR Rainfall=3.23"</i> Printed 11/10/2021 Page 20
Prepared by Allen lydroCAD® 10.10-4b Preak Elev= 1,040.32 Device Routing	rev1 Engineering s/n 03871 ©2 2' @ 12.02 hrs Invert	& Associates, Inc. 2020 HydroCAD Softwar Outlet Devices	re Solutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
100047 Post-Dev- Prepared by Allen lydroCAD® 10.10-4b Peak Elev= 1,040.32 Device Routing #1 Primary	rev1 Engineering <u>s/n 03871 @2</u> 2' @ 12.02 hrs <u>Invert</u> 1,040.00'	& Associates, Inc. 2020 HydroCAD Softwar Outlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate	re Solutions LLC ort L= 165.0' Ke= 0. 1,040.00' / 1,036.38' d PE, smooth interior	200 S= 0.0219 '/' Cc= 0.900 ', Flow Area= 0.79 sf	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
10047 Post-Dev- Prepared by Allen I lydroCAD® 10.10-4b Peak Elev= 1,040.32 Device Routing #1 Primary Primary OutFlow M -1=Culvert (Inter 0	rev1 Engineering s/n 03871 @ 2 2' @ 12.02 hrs Invert 1,040.00' Max=0.51 cfs @ Controls 0.51	& Associates, Inc. 2020 HydroCAD Softwar 2001 Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 12.01 hrs HW=1,04 cfs @ 2.39 fps)	re Solutions LLC ort L= 165.0' Ke= 0. 1,040.00' / 1,036.38' d PE, smooth interior 10.31' TW=1,036.53'	200 S= 0.0219 '/' Cc= 0.90(', Flow Area= 0.79 sf (Dynamic Tailwater)	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
10047 Post-Dev- Prepared by Allen lydroCAD® 10.10-4b Peak Elev= 1,040.32 Device Routing #1 Primary #1 Primary Primary OutFlow M -1=Culvert (Inlet (rev1 Engineering <u>s/n 03871 © 2</u> 2' @ 12.02 hrs <u>Invert</u> 1,040.00' 1ax=0.51 cfs @ Controls 0.51	& Associates, Inc. 2020 HydroCAD Softwar 0utlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 12.01 hrs HW=1,04 cfs @ 2.39 fps) Sum	re Solutions LLC ort L= 165.0' Ke= 0. 1,040.00' / 1,036.38' d PE, smooth interior 10.31' TW=1,036.53' mary for Pond CI	200 S= 0.0219 '/' Cc= 0.90(; Flow Area= 0.79 sf (Dynamic Tailwater) B5: (new Pond)	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
00047 Post-Dev- Prepared by Allen I lydroCAD® 10.10-4b Peak Elev= 1,040.32 Device Routing #1 Primary Primary OutFlow M T=Culvert (Inlet of the second sec	rev1 Engineering s/n 03871 @ 2 2' @ 12.02 hrs invert 1,040.00' Max=0.51 cfs @ Controls 0.51	& Associates, Inc. 2020 HydroCAD Softwar 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 12.01 hrs HW=1,04 cfs @ 2.39 fps) Sum	re Solutions LLC rt L= 165.0' Ke= 0. 1,040.00' / 1,036.38' d PE, smooth interior 10.31' TW=1,036.53' mary for Pond CE nflow Depth = 2.67"	200 S= 0.0219 '/' Cc= 0.90(; Flow Area= 0.79 sf (Dynamic Tailwater) 35: (new Pond) for 2YR event	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
0047 Post-Dev- repared by Allen I lydroCAD® 10.10-4b veak Elev= 1,040.32 vexice Routing #1 Primary *rimary OutFlow M -1=Culvert (Inlet 0 inflow Area = inflow =	rev1 Engineering s/n 03871 © 2 2' @ 12.02 hrs invert 1,040.00' 1ax=0.51 cfs (€ Controls 0.51 8,042 sf, 8 0.62 cfs (@ 11)	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 12.01 hrs HW=1,04 cfs @ 2.39 fps) Summ 37.19% Impervious, Ir 2.01 hrs, Volume= 201 hrs, Volume=	re Solutions LLC rt L= 165.0' Ke= 0. 1,040.00' / 1,036.38' d PE, smooth interior 10.31' TW=1,036.53' mary for Pond CE 1,792 of 1,792 of Atto	200 S= 0.0219 '/' Cc= 0.90(, Flow Area= 0.79 sf (Dynamic Tailwater) 35: (new Pond) for 2YR event	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
00047 Post-Dev- Prepared by Allen I lydroCAD® 10.10-4b Peak Elev= 1,040.32 Perimary Outring #1 Primary Primary OutFlow M —1=Culvert (Inlet 0 nflow Area = nflow Area = 0utflow = 0 Primary = 0	rev1 Engineering s/n 03871 © 2 2' @ 12.02 hrs Invert 1,040.00' 1ax=0.51 cfs (Controls 0.51 8,042 sf, 8 0.62 cfs @ 12 0.62 cfs @ 12	& Associates, Inc. 2020 HydroCAD Softwar 12.01 Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 2.12.01 hrs HW=1,04 cfs @ 2.39 fps) Sum 37.19% Impervious, Ir 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume=	re Solutions LLC rt L= 165.0' Ke= 0. 1,040.00' / 1,036.38' d PE, smooth interior 10.31' TW=1,036.53' mary for Pond CI nflow Depth = 2.67" 1,792 cf 1,792 cf, Atte 1,792 cf	200 S= 0.0219 '/' Cc= 0.90(, Flow Area= 0.79 sf (Dynamic Tailwater) B5: (new Pond) for 2YR event en= 0%, Lag= 0.0 min	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
00047 Post-Dev- Prepared by Allen I hydroCAD® 10.10-4b Peak Elev= 1,040.32 Peak Elev= 1,040.32 Perimary OutFlow M -1=Culvert (Inlet 0 Inflow Area = Inflow = 0 Outflow = 0 Over = 0 Routing by Dyn-Stor Peak Elev= 1,040.666	rev1 Engineering s/n 03871 © 2 2' @ 12.02 hrs Invert 1,040.00' Max=0.51 cfs (Controls 0.51 8,042 sf, & 0.62 cfs @ 12 0.62 cfs @ 12	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 12.01 hrs HW=1,04 cfs @ 2.39 fps) Sum 37.19% Impervious, Ir 2.01 hrs, Volume= 2.01 hrs, Volu	re Solutions LLC ert L= 165.0' Ke= 0. 1,040.00' / 1,036.38' d PE, smooth interior 10.31' TW=1,036.53' mary for Pond CE nflow Depth = 2.67'' 1,792 cf 1,792 cf	200 S= 0.0219 '/' Cc= 0.900 , Flow Area= 0.79 sf (Dynamic Tailwater) B5: (new Pond) for 2YR event en= 0%, Lag= 0.0 min	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
00047 Post-Dev- Prepared by Allen I lydroCAD® 10.10-4b Peak Elev= 1,040.32 Device Routing #1 Primary #1 Primary Primary OutFlow M T=Culvert (Inlet 0 Inflow Area = nflow = 0 Outflow = 0 Primary = 0 Routing by Dyn-Stor Peak Elev= 1,040.66 Device Routing	rev1 Engineering <u>s/n 03871 @2</u> 2' @ 12.02 hrs <u>Invert</u> 1,040.00' Max=0.51 cfs @ Controls 0.51 8,042 sf, 8 0.62 cfs @ 12 0.62 cfs @ 12 0.62 cfs @ 12 -Ind method, 5' @ 12.01 hrs 	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culves Inlet / Outlet Invert= n= 0.013 Corrugate 12.01 hrs HW=1,04 cfs @ 2.39 fps) Sum 37.19% Impervious, Ir 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 1.01 hrs, Volume= 2.01 hrs, Volume= 1.01 hrs, Volume= 2.01 hrs, Volume= 1.01 hrs, Vol	re Solutions LLC ort L= 165.0' Ke= 0. 1,040.00' / 1,036.38' d PE, smooth interior 10.31' TW=1,036.53' mary for Pond CI nflow Depth = 2.67" 1,792 cf 1,792 cf 1,792 cf 1,792 cf 1,792 cf 1,792 cf 0 hrs, dt= 0.05 hrs	200 S= 0.0219 '/' Cc= 0.90(r, Flow Area= 0.79 sf (Dynamic Tailwater) B5: (new Pond) for 2YR event en= 0%, Lag= 0.0 min	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
Prepared by Allen I lydroCAD® 10.10-4b Prepared by Allen I lydroCAD® 10.10-4b Peak Elev= 1,040.32 Device Routing #1 Primary Primary OutFlow M —1=Culvert (Inlet O nflow Area = nflow Area = nflow = O primary = O Routing by Dyn-Stor Peak Elev= 1,040.66 Device Routing #1 Primary	rev1 Engineering s/n 03871 © 2 2' @ 12.02 hrs Invert 1,040.00' 1ax=0.51 cfs (Controls 0.51 0.62 cfs @ 11 0.62 cfs @ 12 0.62 cfs @ 11 0.62 cfs @ 11 0.62 cfs @ 11 1,040.30'	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 2.12.01 hrs HW=1,04 Cfs @ 2.39 fps) Summ 37.19% Impervious, Ir 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 1.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate	re Solutions LLC rt L= 165.0' Ke= 0. 1,040.00' / 1,036.38' d PE, smooth interior 10.31' TW=1,036.53' mary for Pond CE 1,792 of 1,792 of 1,040.30' / 1,039.67'' 0 PE, smooth interior	200 S= 0.0219 '/' Cc= 0.900 , Flow Area= 0.79 sf (Dynamic Tailwater) 35: (new Pond) for 2YR event en= 0%, Lag= 0.0 min S= 0.0150 '/' Cc= 0.900 S= 0.0150 '/' Cc= 0.900	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
00047 Post-Dev- Prepared by Allen I hydroCAD® 10.10-4b Peak Elev= 1,040.32 Device Routing #1 Primary #1 Primary Primary OutFlow M -1=Culvert (Inlet 0 Inflow Area = Inflow = 0 Outflow = 0 Outflow = 0 Outflow = 0 Outflow = 0 Primary = 0 Routing by Dyn-Stor 0 Pevice Routing #1 #1 Primary Perimary OutFlow M 0 -1=Culvert (Barree 0	rev1 Engineering s/n 03871 © 2 2' @ 12.02 hrs Invert 1,040.00' Max=0.51 cfs (Controls 0.51 8,042 sf, & 1,040.30' 8,042 sf, & 1,042,051 (1,040.30' Max=0.59 cfs (cl Controls 0.51	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 12.01 hrs HW=1,04 cfs @ 2.39 fps) Sum 12.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 1.01 hrs, Volume= Time Span= 0.00-48.0 Outlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 12.01 hrs HW=1,04 9 fs @ 3.54 fps)	re Solutions LLC rt L= 165.0' Ke= 0. 1,040.00' / 1,036.38' d PE, smooth interior 10.31' TW=1,036.53' mary for Pond CE nflow Depth = 2.67'' 1,792 cf 1,792 cf 1,040.30' / 1,039.67' d PE, smooth interior 10.65' TW=1,038.14'	200 S= 0.0219 '/' Cc= 0.900 ; Flow Area= 0.79 sf (Dynamic Tailwater) 35: (new Pond) for 2YR event en= 0%, Lag= 0.0 min S= 0.0150 '/' Cc= 0.900 S= 0.0150 '/' Cc= 0.900 ; Flow Area= 0.79 sf (Dynamic Tailwater)	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
Prepared by Allen I lydroCAD® 10.10-4b Prepared by Allen I lydroCAD® 10.10-4b Peak Elev= 1,040.32 Peak Elev= 1,040.32 Perimary OutFlow M -1=Culvert (Inlet O nflow Area = nflow Area = nflow Area = nflow = O Primary = O Routing by Dyn-Stor Peak Elev= 1,040.66 Device Routing #1 Primary = Couting by Dyn-Stor Peak Elev= 1,040.66 Device Routing #1 Primary = Couting by Dyn-Stor Peak Elev= 1,040.66 Device Routing #1 Primary OutFlow M -1=Culvert (Barree	rev1 Engineering s/n 03871 © 2 2' @ 12.02 hrs Invert 1,040.00' 1ax=0.51 cfs (Controls 0.51 0.62 cfs @ 12 0.62 cfs @ 12 0.62 cfs @ 12 0.62 cfs @ 12 -Ind method, ⁻ y' @ 12.01 hrs Invert 1,040.30' 1ax=0.59 cfs (€ d Controls 0.55	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 2 12.01 hrs HW=1,04 Cfs @ 2.39 fps) Sum 37.19% Impervious, Ir 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= Time Span= 0.00-48.0 0 Cutlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 2 12.01 hrs HW=1,04 9 cfs @ 3.54 fps)	re Solutions LLC rt L= 165.0' Ke= 0. 1,040.00' / 1,036.38' d PE, smooth interior 10.31' TW=1,036.53' mary for Pond CE 1,792 of 1,792 of 1,040.30' / 1,039.67' d PE, smooth interior 10.65' TW=1,038.14' mary for Pond CE	200 S= 0.0219 '/' Cc= 0.900 ', Flow Area= 0.79 sf (Dynamic Tailwater) 35: (new Pond) for 2YR event en= 0%, Lag= 0.0 min S= 0.0150 '/' Cc= 0.900 S= 0.0150 '/' Cc= 0.900 ', Flow Area= 0.79 sf (Dynamic Tailwater) 36: (new Pond)	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
Prepared by Allen I AlgoroCAD® 10.10-4b Prepared by Allen I AlgoroCAD® 10.10-4b Preak Elev= 1,040.32 Peak Elev= 1,040.32 Perimary OutFlow M -1=Culvert (Inlet 0 Anflow Area =	rev1 Engineering s/n 03871 © 2 2' @ 12.02 hrs Invert 1,040.00' Max=0.51 cfs (Controls 0.51 8,042 sf, & 0.62 cfs @ 12 0.62 cfs @ 12 0.63 cfs @ 12 0.65 cfs @	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 2.12.01 hrs HW=1,04 cfs @ 2.39 fps) Sum 37.19% Impervious, Ir 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 1.01 rs, Volume= Time Span= 0.00-48.0 Outlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 2.12.01 hrs HW=1,04 9 cfs @ 3.54 fps) Sum	re Solutions LLC rt L= 165.0' Ke= 0. 1,040.00' / 1,036.38' d PE, smooth interior 10.31' TW=1,036.53' mary for Pond CE 1,792 cf 1,792 cf 1,792 cf 1,792 cf 1,792 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.2 1,040.30' / 1,039.67' d PE, smooth interior 10.65' TW=1,038.14' mary for Pond CE how Depth = 2.57''	200 S= 0.0219 '/' Cc= 0.900 , Flow Area= 0.79 sf (Dynamic Tailwater) 35: (new Pond) for 2YR event en= 0%, Lag= 0.0 min S= 0.0150 '/' Cc= 0.900 S= 0.0150 '/' Cc= 0.900 r, Flow Area= 0.79 sf (Dynamic Tailwater) 36: (new Pond) for 2YR event	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
N0047 Post-Dev- Prepared by Allen I lydroCAD® 10.10-4b Pack Elev= 1,040.32 Perice Routing #1 Primary *rimary OutFlow M -1=Culvert (Inlet 0 "flow Area = nflow Area = nflow Area = verice Routing #1 Primary 'rimary = Couting by Dyn-Stor 'eak Elev= 1,040.66 Pevice Routing #1 Primary 'rimary OutFlow M -1=Culvert (Barree iflow Area =	rev1 Engineering s/n 03871 @ 2 2' @ 12.02 hrs Invert 1,040.00' Max=0.51 cfs @ Controls 0.51 8,042 sf, & 0.62 cfs @ 12 0.62 cfs @ 12 0.62 cfs @ 12 0.62 cfs @ 12 0.62 cfs @ 12 1,040.30' Invert 1,040.30' Max=0.59 cfs @ 10.65 cfs @ 12 0.65 cfs @ 12	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 12.01 hrs HW=1,04 cfs @ 2.39 fps) Sum 12.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 12.01 hrs HW=1,04 9 cfs @ 3.54 fps) Sum 11.55% Impervious, Ir 2.01 hrs, Volume= 2.01 hrs, Volume= 2.	re Solutions LLC rt L= 165.0' Ke= 0. 1,040.00' / 1,036.38' d PE, smooth interior 10.31' TW=1,036.53' mary for Pond CE nflow Depth = 2.67'' 1,792 cf 1,792 cf	200 S= 0.0219 '/' Cc= 0.900 ; Flow Area= 0.79 sf (Dynamic Tailwater) 35: (new Pond) for 2YR event en= 0%, Lag= 0.0 min 200 S= 0.0150 '/' Cc= 0.900 S= 0.0150 '/' Cc= 0.900 (Dynamic Tailwater) 36: (new Pond) for 2YR event for 2YR event	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20
Prepared by Allen I iydroCAD® 10.10-4b Peak Elev= 1,040.32 Peak Elev= 1,040.32 Perimary OutFlow M -1=Culvert (Inlet 0 Inflow Area = Inflow =	rev1 Engineering s/n 03871 @ 2 2' @ 12.02 hrs Invert 1,040.00' Max=0.51 cfs (Controls 0.51 8,042 sf, & 0.62 cfs @ 12 0.62 cfs @ 12 0.62 cfs @ 12 0.65 cfs @ 12	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 2.12.01 hrs HW=1,04 cfs @ 2.39 fps) Sum 37.19% Impervious, Ir 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 1.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate 2.12.01 hrs HW=1,04 9 cfs @ 3.54 fps) Sum 31.55% Impervious, Ir 2.01 hrs, Volume= 2.01 hrs, Volum	re Solutions LLC rt L= 165.0' Ke= 0. 1,040.00' / 1,036.38' d PE, smooth interior 10.31' TW=1,036.53' mary for Pond CE 1,792 cf 1,792 cf 1,792 cf, Atte 1,792 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.2 1,040.30' / 1,039.67' d PE, smooth interior 10.65' TW=1,038.14' mary for Pond CE 1,873 cf 1,873 cf 1,873 cf 1,873 cf 1,873 cf 1,873 cf	200 S= 0.0219 '/' Cc= 0.900 , Flow Area= 0.79 sf (Dynamic Tailwater) B5: (new Pond) for 2YR event en= 0%, Lag= 0.0 min 200 S= 0.0150 '/' Cc= 0.900 , Flow Area= 0.79 sf (Dynamic Tailwater) B6: (new Pond) for 2YR event en= 0%, Lag= 0.0 min	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 20

Peak Elev= 1,041.16' @ 12.01 hrs

Device Routing	Invert	Outlet Devices			
#1 Primary	1,040.75'	12.0" Round Cul Inlet / Outlet Invert	vert L= 36.0' Ke= 0.2 = 1,040.75' / 1,040.39'	200 ' S= 0.0100 '/' Cc= 0.900	
		n= 0.013 Corruga	ted PE, smooth interior	r, Flow Area= 0.79 sf	
Primary OutFlow M —1=Culvert (Barre	Vax=0.62 cfs el Controls 0.6	@ 12.01 hrs HW=1, 62 cfs @ 3.11 fps)	041.15' TW=1,040.50'	' (Dynamic Tailwater)	
		Su	nmary for Pond Cl	B7: (new Pond)	
nflow Area =	16,498 sf,	91.30% Impervious,	Inflow Depth = 2.78"	for 2YR event	
nflow = Dutflow =	1.29 cfs @ 1.29 cfs @	12.01 hrs, Volume= 12.01 hrs, Volume=	3,820 cf 3.820 cf. Atte	en= 0%. Lag= 0.0 min	
Primary =	1.29 cfs @	12.01 hrs, Volume=	3,820 cf		
Routing by Dyn-Stor Peak Elev= 1,042.0	r-Ind method, 8' @ 12.01 hr	Time Span= 0.00-48	8.00 hrs, dt= 0.05 hrs		
Device Routing	Invert	Outlet Devices			
#1 Primary	1,041.50'	12.0" Round Cul Inlet / Outlet Invert	vert L= 128.0' Ke= 0 = 1,041.50' / 1,040.22'	.200 S= 0.0100 '/' Cc= 0.900	
		n= 0.013 Corruga	ted PE, smooth interior	r, Flow Area= 0.79 sf	
<pre>rimary OutFlow N —1=Culvert (Barred)</pre>	vax=1.24 cfs el Controls 1.2	@ 12.01 hrs HW=1, 24 cfs @ 3.94 fps)	042.06' TW=1,040.51'	(Dynamic Tailwater)	
		Su	nmary for Pond Cl	B8: (new Pond)	
nflow Area =	15,482 sf,	73.05% Impervious,	Inflow Depth = 2.38"	for 2YR event	
nflow = Dutflow =	0.97 cfs @ 0.97 cfs @	12.07 hrs, Volume= 12.07 hrs, Volume=	3,069 cf 3,069 cf, Atte	en= 0%, Lag= 0.0 min	
Primary =	0.97 cfs @	12.07 hrs, Volume=	3,069 cf		
Routing by Dyn-Stor	r-Ind method,	Time Span= 0.00-48	8.00 hrs, dt= 0.05 hrs		
00047 Post-Dev	-rev1				Type III 24-hr 2YR Rainfall=3.23"
00047 Post-Dev Prepared by Allen HydroCAD® 10.10-4b	- rev1 Engineering <u>2 s/n 03871 ©</u>	g & Associates, Inc. 2020 HydroCAD Softv	vare Solutions LLC		<i>Type III 24-hr 2YR Rainfall=3.23"</i> Printed 11/10/2021 Page 22
D 0047 Post-Dev Prepared by Allen HydroCAD® 10.10-4b Peak Elev= 1,041.2	- rev1 Engineering <u>> s/n 03871 ©</u> 8' @ 12.09 hr	g & Associates, Inc. 2020 HydroCAD Softw	vare Solutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
0 0047 Post-Dev Prepared by Allen HydroCAD® 10.10-4b Peak Elev= 1,041.2 Device Routing	- rev1 Engineering <u>5 s/n 03871 ©</u> 8' @ 12.09 hr Invert	g & Associates, Inc. 2020 HydroCAD Softw rs : Outlet Devices	vare Solutions LLC		Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
)0047 Post-Dev Prepared by Allen <u>tydroCAD® 10.10-4b</u> Peak Elev= 1,041.20 <u>Device Routing</u> #1 Primary	- rev1 Engineering <u>> s/n 03871 ©</u> :8' @ 12.09 hr Invert 1,040.78'	y & Associates, Inc. 2020 HydroCAD Softw rs Cutlet Devices 18.0" Round Cut Inlet / Outlet Inver n= 0.013 Corruga	vare Solutions LLC vert L= 7.0' Ke= 0.20 = 1,040.78' / 1,040.68' ted PE, smooth interior	00 ' S= 0.0143 '/' Cc= 0.900 r, Flow Area= 1.77 sf	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
200047 Post-Dev Prepared by Allen HydroCAD® 10.10-4b Peak Elev= 1,041.2 Device Routing #1 Primary #1 Primary Primary OutFlow M	-rev1 Engineering <u>> s/n 03871 ©</u> :8' @ 12.09 hr 	g & Associates, Inc. 2020 HydroCAD Softw rs Dutlet Devices 18.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga @ 12.07 hrs HW=1, 86 cfs @ 2.60 fps)	vare Solutions LLC vert L= 7.0' Ke= 0.20 = 1,040.78' / 1,040.68' ted PE, smooth interior 041.26' TW=1,041.11'	00 ' S= 0.0143 '/' Cc= 0.900 r, Flow Area= 1.77 sf ' (Dynamic Tailwater)	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
D0047 Post-Dev Prepared by Allen 1ydroCAD® 10.10-4b Peak Elev= 1,041.20 Device Routing #1 Primary Primary OutFlow N 1=Culvert (Outle	- rev1 Engineering <u>⊃ s/n 03871 ©</u> '8' @ 12.09 hr 	9 & Associates, Inc. 2020 HydroCAD Softw rs COutlet Devices 18.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga @ 12.07 hrs HW=1, 86 cfs @ 2.60 fps) Su	vare Solutions LLC vert L= 7.0' Ke= 0.20 = 1,040.78' / 1,040.68' ted PE, smooth interior 041.26' TW=1,041.11' mmary for Pond D	00 S= 0.0143 '/' Cc= 0.900 r, Flow Area= 1.77 sf ' (Dynamic Tailwater) RI: (new Pond)	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
DOOD47 Post-Deve Prepared by Allen HydroCAD® 10.10-4b Peak Elev= 1,041.2 Device Routing #1 Primary #1 Primary Primary OutFlow M -1=Culvert (Outle nflow Area =	-rev1 Engineering <u>> s/n 03871 ©</u> :8' @ 12.09 hr <u>Invert</u> 1,040.78' Max=0.86 cfs et Controls 0.3 13,911 sf,	g & Associates, Inc. 2020 HydroCAD Softw rs Dutlet Devices 18.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga @ 12.07 hrs HW=1, 86 cfs @ 2.60 fps) Su 37.85% Impervious,	vare Solutions LLC vert L= 7.0' Ke= 0.20 = 1,040.78' / 1,040.68' ted PE, smooth interior 041.26' TW=1,041.11' mmary for Pond D Inflow Depth = 1.63"	00 ' S= 0.0143 '/' Cc= 0.900 r, Flow Area= 1.77 sf ' (Dynamic Tailwater) RI: (new Pond) for 2YR event	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
D00047 Post-Development Prepared by Allen HydroCAD® 10.10-4b Peak Elev= 1,041.20 Device Routing #1 Primary Primary OutFlow N 1=Culvert (Outlen nflow Area = nflow = Dutflow =	-rev1 Engineering <u>□ s/n 03871 ©</u> '8' @ 12.09 hr 	9 & Associates, Inc. 2020 HydroCAD Softwork s Coutlet Devices 18.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga @ 12.07 hrs HW=1, 86 cfs @ 2.60 fps) Sul 37.85% Impervious, 12.06 hrs, Volume= 12.06 hrs, Volume=	vare Solutions LLC vert L= 7.0' Ke= 0.20 = 1,040.78' / 1,040.68' ted PE, smooth interior 041.26' TW=1,041.11' mmary for Pond D Inflow Depth = 1.63" 1,894 cf 1,894 cf 1,894 cf, Atte 1,894 cf, Atte	00 ' S= 0.0143 '/' Cc= 0.900 r, Flow Area= 1.77 sf ' (Dynamic Tailwater) RI: (new Pond) for 2YR event en= 0%, Lag= 0.0 min	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
000047 Post-Devent Prepared by Allen HydroCAD® 10.10-4b Peak Elev= 1,041.2c Device Routing #1 Primary #1 Primary Primary OutFlow M 1=Culvert (Outlet nflow Area = nflow nflow = Dufflow = Primary =	-rev1 Engineering <u>> s/n 03871 ©</u> 18' @ 12.09 hr 1,040.78' Max=0.86 cfs et Controls 0.1 13,911 sf, 0.65 cfs @ 0.65 cfs @	9 & Associates, Inc. 2020 HydroCAD Softw rs 18.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga @ 12.07 hrs HW=1, 86 cfs @ 2.60 fps) Su 37.85% Impervious, 12.06 hrs, Volume= 12.06 hrs, Volume= 12.06 hrs, Volume=	vare Solutions LLC vert L= 7.0' Ke= 0.20 = 1,040.78' / 1,040.68' ted PE, smooth interior 041.26' TW=1,041.11' mmary for Pond D Inflow Depth = 1.63'' 1,894 cf 1,894 cf 1,894 cf	⁰⁰ ' S= 0.0143 '/' Cc= 0.900 r, Flow Area= 1.77 sf ' (Dynamic Tailwater) RI: (new Pond) for 2YR event en= 0%, Lag= 0.0 min	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
000047 Post-Devent Prepared by Allen HydroCAD® 10.10-4b Peak Elev= 1,041.20 Device Routing #1 Primary #1 Primary Primary OutFlow N 1=Culvert (Outlet nflow Area = nflow = Dutflow = Primary = Routing by Dyn-Stor Pack Elev= 1,044.1	-rev1 Engineering <u>5 s/n 03871 ©</u> 8' @ 12.09 hr <u>Invert</u> 1,040.78' Max=0.86 cfs et Controls 0.4 13,911 sf, 0.65 cfs @ 0.65 cfs @ 0.65 cfs @ r-Ind method, 1' @ 12.06 hr	9 & Associates, Inc. 2020 HydroCAD Softw rs 18.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga @ 12.07 hrs HW=1, 86 cfs @ 2.60 fps) Su 37.85% Impervious, 12.06 hrs, Volume= 12.06 hrs, Volume= 12.06 hrs, Volume= Time Span= 0.00-48 rs	vare Solutions LLC vert L= 7.0' Ke= 0.20 = 1,040.78' / 1,040.68' ted PE, smooth interior 041.26' TW=1,041.11' mmary for Pond D Inflow Depth = 1.63'' 1,894 cf 1,894 cf 1,894 cf 1,894 cf 3.00 hrs, dt= 0.05 hrs	00 S= 0.0143 '/' Cc= 0.900 r, Flow Area= 1.77 sf ' (Dynamic Tailwater) RI: (new Pond) for 2YR event en= 0%, Lag= 0.0 min	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
D00047 Post-Dev Prepared by Allen HydroCAD® 10.10-4b Peak Elev= 1,041.2: Device Routing #1 Primary #1 Primary Primary OutFlow M 1=Culvert (Outform nflow Area = nflow Area = nflow = Primary = Routing by Dyn-Stor Peak Elev= 1,044.1 Device Routing	-rev1 Engineering 2 s/n 03871 © 18' @ 12.09 hr 1,040.78' Max=0.86 cfs et Controls 0.1 13,911 sf, 0.65 cfs @ 0.65 cfs @ r-Ind method, 1' @ 12.06 hr Invert	& Associates, Inc. 2020 HydroCAD Softw Ts Outlet Devices 18.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga @ 12.07 hrs HW=1, 86 cfs @ 2.60 fps) Su 37.85% Impervious, 12.06 hrs, Volume= 12.06 hrs, Volume= 12.06 hrs, Volume= Time Span= 0.00-48 rs Outlet Devices Coutlet Devices	vare Solutions LLC vert L= 7.0' Ke= 0.20 = 1,040.78' / 1,040.68' ted PE, smooth interior 041.26' TW=1,041.11' mmary for Pond D Inflow Depth = 1.63" 1,894 cf 1,894 cf 1,894 cf 3.00 hrs, dt= 0.05 hrs	00 ' S= 0.0143 '/' Cc= 0.900 r, Flow Area= 1.77 sf ' (Dynamic Tailwater) RI: (new Pond) for 2YR event en= 0%, Lag= 0.0 min	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
000047 Post-Dev Prepared by Allen HydroCAD® 10.10-4b Peak Elev= 1,041.20 Device Routing #1 Primary OutFlow N 1=Culvert (Outle nflow Area = Dufflow = Outflow = Primary = Routing by Dyn-Stor Peak Elev= 1,044.1 Device Routing #1 Primary = Routing by Dyn-Stor Peak Elev= 1,044.1 Device Routing #1 Primary	-rev1 Engineering <u>> s/n 03871 @</u> :8' @ 12.09 hr 	& Associates, Inc. 2020 HydroCAD Softw Ts Outlet Devices 18.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga @ 12.07 hrs HW=1, &6 cfs @ 2.60 fps) Su 37.85% Impervious, 12.06 hrs, Volume= 12.06 hrs, Volume= 12.07 Round Cul Inlet / Outlet Invert n= 0.013 Cast iron	vare Solutions LLC vert L= 7.0' Ke= 0.20 = 1,040.78' / 1,040.68' ted PE, smooth interior 041.26' TW=1,041.11' mmary for Pond D Inflow Depth = 1.63" 1,894 cf 1,894 cf 1,894 cf 3.00 hrs, dt= 0.05 hrs vert L= 59.0' Ke= 0.2 = 1,043.75' / 1,042.59' n, coated, Flow Area=	00 ' S= 0.0143 '/' Cc= 0.900 r, Flow Area= 1.77 sf ' (Dynamic Tailwater) RI: (new Pond) for 2YR event en= 0%, Lag= 0.0 min 2000 S= 0.0197 '/' Cc= 0.900 0.79 sf	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
00047 Post-Dev- Prepared by Allen lydroCAD® 10.10-4b Peak Elev= 1,041.2: Device Routing #1 Primary Primary OutFlow M Particle Primary	-rev1 Engineering <u>> s/n 03871 @</u> 8' @ 12.09 hr <u>Invert</u> 1,040.78' Max=0.86 cfs et Controls 0.4 13,911 sf, 0.65 cfs @ 0.65 cfs @ 0.65 cfs @ 0.65 cfs @ r-Ind method, 1' @ 12.06 hr <u>Invert</u> 1,043.75' Max=0.63 cfs Controls 0.63	a & Associates, Inc. 2020 HydroCAD Softw s Cutlet Devices 18.0" Round Cut Inlet / Outlet Invert n= 0.013 Corruga (@ 12.07 hrs HW=1, 86 cfs (@ 2.60 fps)) Su 37.85% Impervious, 12.06 hrs, Volume= 12.06 hrs, Volume= 12.07 Round Cut Inlet / Outlet Invert n= 0.013 Cast irou (@ 12.06 hrs HW=1, 3 cfs (@ 2.53 fps)	vare Solutions LLC vert L= 7.0' Ke= 0.20 = 1,040.78' / 1,040.68' ted PE, smooth interior 041.26' TW=1,041.11' mmary for Pond D Inflow Depth = 1.63" 1,894 cf 1,894 cf 3.00 hrs, dt= 0.05 hrs vert L= 59.0' Ke= 0.2 = 1,043.75' / 1,042.59' n, coated, Flow Area= 044.10' TW=1,042.85'	 D0 S= 0.0143 '/' Cc= 0.900 r, Flow Area= 1.77 sf ' (Dynamic Tailwater) RI: (new Pond) for 2YR event en= 0%, Lag= 0.0 min 200 ' S= 0.0197 '/' Cc= 0.900 0.79 sf ' (Dynamic Tailwater) 	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
00047 Post-Dev Prepared by Allen HydroCAD® 10.10-4b Peak Elev= 1,041.2i Device Routing #1 Primary OutFlow M 1=Culvert (Outle nflow Area = nflow Area = nflow = Outlflow = Primary = Routing by Dyn-Stor Peak Elev= 1,044.1 Device Routing #1 Primary = Routing by Dyn-Stor Peak Elev= 1,044.1 Device Routing #1 Primary Unterflow M 1=Culvert (Inlet	-rev1 Engineering <u>> s/n 03871 @</u> :8' @ 12.09 hr 	& Associates, Inc. 20200 HydroCAD Softw rs : Outlet Devices 18.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga @ 12.07 hrs HW=1, 86 cfs @ 2.60 fps) Su 37.85% Impervious, 12.06 hrs, Volume= 12.06 hrs, Volume= 12.06 hrs, Volume= : Outlet Devices : Outlet Neren = 0.013 Cast iroi @ 12.06 hrs HW=1, 3 cfs @ 2.53 fps)	vare Solutions LLC vert L= 7.0' Ke= 0.20 = 1,040.78' / 1,040.68' ted PE, smooth interior 041.26' TW=1,041.11' mmary for Pond D Inflow Depth = 1.63'' 1,894 cf 1,894 cf 1,894 cf 3.00 hrs, dt= 0.05 hrs vert L= 59.0' Ke= 0.2 = 1,043.75' / 1,042.59' n, coated, Flow Area= 044.10' TW=1,042.85' mmary for Pond F	 D0 S= 0.0143 '/' Cc= 0.900 r, Flow Area= 1.77 sf ' (Dynamic Tailwater) RI: (new Pond) for 2YR event en= 0%, Lag= 0.0 min 2000 'S= 0.0197 '/' Cc= 0.900 0.79 sf ' (Dynamic Tailwater) 'B: (new Pond) 	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
200047 Post-Dev Prepared by Allen JydroCAD® 10.10-4b Peak Elev= 1,041.20 Peak Elev= 1,041.20 Device Routing #1 Primary OutFlow M 1=Culvert (Outle nflow Area = nflow Area = nflow = Dutflow = Primary = Routing by Dyn-Stol Peak Elev= 1,044.1 Device Routing #1 Primary OutFlow M -1=Culvert (Inlet Minow Area = nflow Area =	-rev1 Engineering <u>5 s/n 03871 ©</u> 8' @ 12.09 hr <u>Invert</u> 1,040.78' Wax=0.86 cfs et Controls 0.4 13,911 sf, 0.65 cfs @	a & Associates, Inc. 2020 HydroCAD Softw s Cutlet Devices 18.0" Round Cut Inlet / Outlet Invert n= 0.013 Corruga @ 12.07 hrs HW=1, 86 cfs @ 2.60 fps) Su 37.85% Impervious, 12.06 hrs, Volume= 12.06 hrs, Volume= 12.06 hrs, Volume= Time Span= 0.00-48 fs Cutlet Devices 12.0" Round Cut Inlet / Outlet Invert n= 0.013 Cast irou @ 12.06 hrs HW=1, 3 cfs @ 2.53 fps) Su 78.71% Impervious,	vare Solutions LLC vert L= 7.0' Ke= 0.20 (= 1,040.78' / 1,040.68' ted PE, smooth interior 041.26' TW=1,041.11' mmary for Pond D Inflow Depth = 1.63" 1,894 cf 1,894 cf 3.00 hrs, dt= 0.05 hrs vert L= 59.0' Ke= 0.2 (= 1,043.75' / 1,042.59' n, coated, Flow Area= 044.10' TW=1,042.85' mmary for Pond F Inflow Depth = 2.50"	 D0 S= 0.0143 '/ Cc= 0.900 r, Flow Area= 1.77 sf (Dynamic Tailwater) RI: (new Pond) for 2YR event en= 0%, Lag= 0.0 min 200 S= 0.0197 '/ Cc= 0.900 0.79 sf (Dynamic Tailwater) 'B: (new Pond) for 2YR event 	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
200047 Post-Deve Prepared by Allen hydroCAD® 10.10-4b Peak Elev= 1,041.2: Device Routing #1 Primary Primary OutFlow M —1=Culvert (Outle nflow Area = nflow Area = nflow Area = nflow = Primary = Routing by Dyn-Stoi Peak Elev= 1,044.1 Device Routing #1 Primary Primary OutFlow M —1=Culvert (Inlet nflow Area = nflow = Dutflow =	-rev1 Engineering <u>> s/n 03871 @</u> 8' @ 12.09 hr 1,040.78' Wax=0.86 cfs et Controls 0.4 13,911 sf, 0.65 cfs @	& Associates, Inc. 2020 HydroCAD Softw Ts Outlet Devices 18.0" Round Cul Inlet / Outlet Inverf n= 0.013 Corruga @ 12.07 hrs HW=1, 86 cfs @ 2.60 fps) Su 37.85% Impervious, 12.06 hrs, Volume= 12.06 hrs, Volume= Time Span= 0.00-48 rs Outlet Devices Outlet Devices Outlet Devices Outlet Devices Outlet Devices 12.06 hrs HW=1, 3 cfs @ 2.53 fps) Su 78.71% Impervious, 12.03 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume=	vare Solutions LLC vert L= 7.0' Ke= 0.20 = 1,040.78' / 1,040.68' ted PE, smooth interior 041.26' TW=1,041.11' mmary for Pond D Inflow Depth = 1.63" 1,894 cf 1,894 cf 1,894 cf 1,894 cf 3.00 hrs, dt= 0.05 hrs vert L= 59.0' Ke= 0.2 = 1,043.75' / 1,042.59' n, coated, Flow Area= 044.10' TW=1,042.85' mmary for Pond F Inflow Depth = 2.50" 24,835 cf 23,540 cf, Atte 23,540 cf, Atte	200 ' S= 0.0143 '/' Cc= 0.900 r, Flow Area= 1.77 sf ' (Dynamic Tailwater) RI: (new Pond) for 2YR event en= 0%, Lag= 0.0 min 2000 ' S= 0.0197 '/' Cc= 0.900 0.79 sf ' (Dynamic Tailwater) 'B: (new Pond) for 2YR event en= 16%, Lag= 0.0 min	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22
0047 Post-Dev- repared by Allen ydroCAD® 10.10-4b eak Elev= 1,041.2 evice Routing #1 Primary rimary OutFlow M -1=Culvert (Outle flow Area = flow = utflow = imary = outing by Dyn-Stor eak Elev= 1,044.1 evice Routing #1 Primary rimary OutFlow M -1=Culvert (Inlet flow Area = flow = utflow = utflow = utflow =	-rev1 Engineering <u>> s/n 03871 ©</u> 8' @ 12.09 hr 1,040.78' Wax=0.86 cfs et Controls 0.1 13,911 sf, 0.65 cfs @ - 0.65 cfs @ - r-Ind method, 1' @ 12.06 hr 	9 & Associates, Inc. 2020 HydroCAD Softw rs 2020 HydroCAD Softw 18.0" Round Cul Inlet / Outlet Invert n = 0.013 Corruga @ 12.07 hrs HW=1, 86 cfs @ 2.60 fps) Su 37.85% Impervious, 12.06 hrs, Volume= 12.06 hrs, HW=1, 3 cfs @ 2.53 fps) Su 78.71% Impervious, 12.03 hrs, Volume= 12.01 hrs, Volume= 12.01 hrs, Volume=	vare Solutions LLC vert L= 7.0' Ke= 0.20 (= 1,040.78' / 1,040.68' ted PE, smooth interior 041.26' TW=1,041.11' mmary for Pond D Inflow Depth = 1.63" 1,894 cf 1,894 cf 1,894 cf 1,894 cf 3.00 hrs, dt= 0.05 hrs vert L= 59.0' Ke= 0.2 (= 1,043.75' / 1,042.59' (= 1,043.75' / 1,042.59' (= 1,043.75' / 1,042.59' (= 1,042.85' (=	200 ' S= 0.0143 '/' Cc= 0.900 r, Flow Area= 1.77 sf ' (Dynamic Tailwater) RI: (new Pond) for 2YR event en= 0%, Lag= 0.0 min 200 ' S= 0.0197 '/' Cc= 0.900 0.79 sf ' (Dynamic Tailwater) 'B: (new Pond) for 2YR event en= 16%, Lag= 0.0 min	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 22

Peak Elev= 1,036.70' @ 12.48 hrs Surf.Area= 1,163 sf Storage= 2,953 cf

Plug-Flow detention time= 55.0 min calculated for 23,515 cf (95% of inflow) Center-of-Mass det. time= 26.1 min (808.0 - 781.9)

Volume	Invert	Avai	I.Storage	Storage Description		
#1	1,033.30'		7,896 cf	Custom Stage Data	a (Irregular)Liste	d below (Recalc)
Elevation (feet)	Surf	Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,033.30 1,034.00 1,036.00 1,038.00 1,040.00		579 712 1,036 1,422 1,846	98.5 108.0 129.0 151.0 172.0	0 451 1,738 2,448 3,259	0 451 2,189 4,637 7,896	579 751 1,213 1,777 2,406

Device Routing Invert Outlet Devices Primary #1

1,035.00' 153.0 deg x 37.0' long Sharp-Crested Vee/Trap Weir Cv= 2.47 (C= 3.09)

Primary OutFlow Max=0.00 cfs @ 12.01 hrs HW=1,035.64' TW=1,035.91' (Dynamic Tailwater) -1=Sharp-Crested Vee/Trap Weir (Controls 0.00 cfs)

Summary for Pond IB: (new Pond)

Inflow Are	a =	132,521 sf,	75.43% Impervious,	Inflow Depth = 2.32"	for 2YR event
Inflow	=	7.18 cfs @	12.01 hrs, Volume=	25,582 cf	
Outflow	=	1.81 cfs @	12.44 hrs, Volume=	22,487 cf, Atter	n= 75%, Lag= 25.4 min
Primary	=	1.81 cfs @	12.44 hrs, Volume=	22,487 cf	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,036.71' @ 12.44 hrs Surf.Area= 3,556 sf Storage= 9,616 cf

Plug-Flow detention time= 126.6 min calculated for 22,463 cf (88% of inflow) Center-of-Mass det. time= 73.6 min (882.5 - 808.8)

00047 F Prepared	'ost-Dev-i d by Allen F	r ev1 Engineer	ina & Ass	ociates. Inc.			Type III 24-hr	2YR Rainfall=3.23 Printed 11/10/202
HydroCAE	D® 10.10-4b	s/n 03871	© 2020 H	lydroCAD Software Sol	lutions LLC			Page 24
Volume	Invert	Avail	.Storage	Storage Description				
#1	1,033.30'	2	23,761 cf	Custom Stage Dat	a (Irregular) Listed	below (Recalc)		
Elevatio	n Su	ırf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area		
(feet	:)	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)		
1,033.3	D	2,117	216.0	0	0	2,117		
1,034.0	D	2,388	227.0	1,576	1,576	2,535		
1,036.0	D	3,250	253.5	5,616	7,192	3,656		
1,038.0	0	4,145	275.0	7,377	14,569	4,703		
1,040.0	0	5,063	295.0	9,193	23,761	5,775		
Device	Routing	Inv	ert Outle	et Devices				
#1	Primary	1,033.	50' 18.0	" Round Culvert L	= 56.0' Ke= 0.200			
			Inlet	/ Outlet Invert= 1,03	3.50'/1,031.00' S	S= 0.0446 '/' Cc= 0.9	900	
			n= 0	.013 Corrugated PE	, smooth interior, I	Flow Area= 1.77 sf		
#2	Device 1	1,034.	60' 5.0"	Vert. Orifice/Grate	X 2.00 C= 0.600	Limited to weir flow a	at low heads	
#3	Device 1	1,036.	94' 8.0"	Vert. Orifice/Grate	X 3.00 C= 0.600	Limited to weir flow a	at low heads	
#4	Device 1	1,038.	88' 24.0	" x 24.0" Horiz. Orif	ice/Grate C= 0.60	0 Limited to weir flo	ow at low heads	
#5	Primary	1,039.	20' 153 .	0 deg x 6.0' long x 2	2.00' rise Sharp-C	rested Vee/Trap Wei	ir Cv= 2.47 (C= 3.09)	
Primary 1=Cul -2=0 -3=0 -4=0 5=Sha	OutFlow M vert (Passe Drifice/Grat Drifice/Grat Drifice/Grat arp-Crested	ax=1.81 (es 1.81 cf e (Orifice e (Contr e (Contr Vee/Tra	cfs @ 12.4 s of 16.68 e Controls ols 0.00 c ols 0.00 c p Weir (C	I4 hrs HW=1,036.71 cfs potential flow) 1.81 cfs @ 6.64 fps) fs) fs) controls 0.00 cfs)	'TW=1,031.19' (Dynamic Tailwater)		
				Summar	y for Pond MH1	: (new Pond)		
Inflow Are	ea =	48,347	sf, 82.38%	6 Impervious, Inflow	Depth = 2.56" 1	or 2YR event		
Inflow	= 3	.21 cfs @) 12.03 h	rs, Volume=	10,302 cf			
Outflow	= 3	.21 cfs @) 12.03 h	rs, Volume=	10,302 cf, Atten=	0%, Lag= 0.0 min		
rimary	= 3	.21 cts (a	≀ 12.03 h	rs, Volume=	10,302 cf			

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Peak Elev= 1,036.71' @ 12.46 hrs Flood Elev= 1,040.82'

#1 Primary	1,035.77'	18.0" Round Cult Inlet / Outlet Invert n= 0.013 Corruga	ivert L= 52.0' Ke= 0.200 t= 1,035.77' / 1,035.00' S= 0.0148 '/' Cc= 0. ated PE, smooth interior, Flow Area= 1.77 sf	.900
Primary OutFlow	Max=2.83 cfs	@ 12.03 hrs HW=1, 33 cfs @ 4.60 fps)	,036.53' TW=1,035.73' (Dynamic Tailwater)	
		Sur	mmary for Pond MH2: (new Pond)	
Inflow Area = Inflow = Outflow = Primary =	25,434 sf, 1.65 cfs @ _1 1.65 cfs @ _1 1.65 cfs @ _1	82.76% Impervious, 2.05 hrs, Volume= 2.05 hrs, Volume= 2.05 hrs, Volume=	Inflow Depth = 2.55" for 2YR event 5,400 cf 5,400 cf, Atten= 0%, Lag= 0.0 min 5,400 cf	
Routing by Dyn-S Peak Elev= 1,038	tor-Ind method, .09' @ 12.05 hr	Time Span= 0.00-48 s	3.00 hrs, dt= 0.05 hrs	
Device Routing #1 Primary	Invert 1,037.52'	Outlet Devices 15.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga	lvert L= 120.0' Ke= 0.200 t= 1,037.52' / 1,036.02' S= 0.0125 '/' Cc= 0. ated PE, smooth interior, Flow Area= 1.23 sf	.900
Primary OutFlow	Max=1.63 cfs	@ 12.05 hrs HW=1, 33 cfs @ 4.38 fps)	,038.09' TW=1,036.53' (Dynamic Tailwater)	
		Sun	nmary for Pond MH3i: (new Pond)	
Inflow Area = Inflow = Outflow = Primary = Secondary =	71,009 sf, 4.49 cfs @ 1 4.49 cfs @ 1 3.22 cfs @ 1 1.38 cfs @ 1	76.21% Impervious, 2.03 hrs, Volume= 2.03 hrs, Volume= 2.04 hrs, Volume= 2.01 hrs, Volume=	Inflow Depth = 2.46" for 2YR event 14,532 cf 14,532 cf, Atten= 0%, Lag= 0.0 min 4,035 cf 10,497 cf	
)0047 Post-De Prepared by Alle	v-rev1 n Engineering	& Associates, Inc.		<i>Type III 24-hr 2YR Rainfall=3.23"</i> Printed 11/10/2021
00047 Post-De Prepared by Alle HydroCAD® 10.10- Routing by Dyn-S	v-rev1 n Engineering 4b s/n 03871 © tor-Ind method,	& Associates, Inc. 2020 HydroCAD Softw Time Span= 0.00-48	ware Solutions LLC 3.00 hrs, dt= 0.05 hrs	<i>Type III 24-hr 2YR Rainfall=3.23"</i> Printed 11/10/2021 Page 26
00047 Post-De Prepared by Alle HydroCAD® 10.10- Routing by Dyn-S Peak Elev= 1,037 Device Routing	v-rev1 n Engineering 4b s/n 03871 © tor-Ind method, .12' @ 12.04 hr	& Associates, Inc. 2020 HydroCAD Softw Time Span= 0.00-48 s Outlet Devices	ware Solutions LLC 3.00 hrs, dt= 0.05 hrs	<i>Type III 24-hr 2YR Rainfall=3.23"</i> Printed 11/10/2021 Page 26
00047 Post-De Prepared by Alle HydroCAD® 10.10- Routing by Dyn-S Peak Elev= 1,037 Device Routing #1 Primary #2 Seconda	v-rev1 n Engineering 4b s/n 03871 © tor-Ind method, .12' @ 12.04 hr <u>Invert</u> 1,036.75' ary 1,036.37'	& Associates, Inc. 2020 HydroCAD Softw Time Span= 0.00-48 s Outlet Devices 5.0' long x 0.5' br Head (feet) 0.20 Coef. (English) 2. 12.0'' Round Cul Inlet / Outlet Invert n= 0.013 Corruga	ware Solutions LLC 3.00 hrs, dt= 0.05 hrs readth Broad-Crested Rectangular Weir 0.40 0.60 0.80 1.00 80 2.92 3.08 3.30 3.32 Ivert L= 5.0' Ke= 0.200 t= 1,036.37' / 1,036.30' S= 0.0140 '/' Cc= 0. ted PE, smooth interior, Flow Area= 0.79 sf State PE, smooth interior, State PE, smooth interi	<i>Type III 24-hr 2YR Rainfall=3.23"</i> Printed 11/10/2021 Page 26
00047 Post-De Prepared by Alle HydroCAD® 10.10- Routing by Dyn-S Peak Elev= 1,037 Device Routing #1 Primary #2 Seconda Primary OutFlow	v-rev1 n Engineering 4b s/n 03871 © tor-Ind method, .12' @ 12.04 hr 	& Associates, Inc. 2020 HydroCAD Softw Time Span= 0.00-48 s Outlet Devices 5.0' long x 0.5' bi Head (feet) 0.20 Coef. (English) 2. 12.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga @ 12.04 hrs HW=1, ar Weir (Weir Control	ware Solutions LLC 3.00 hrs, dt= 0.05 hrs readth Broad-Crested Rectangular Weir 0.40 0.60 0.80 1.00 80 2.92 3.08 3.30 3.32 ivert L= 5.0' Ke= 0.200 t= 1,036.37' / 1,036.30' S= 0.0140 '/' Cc= 0. ated PE, smooth interior, Flow Area= 0.79 sf .037.11' TW=1,036.66' (Dynamic Tailwater) is 3.10 cfs @ 1.73 fps)	<i>Type III 24-hr 2YR Rainfall=3.23"</i> Printed 11/10/2021 Page 26
00047 Post-De Prepared by Alle HydroCAD® 10.10- Routing by Dyn-S Peak Elev= 1,037 Device Routing #1 Primary #2 Seconda Primary OutFlow 1=Broad-Cres Secondary OutFl -2=Culvert (Out	v-rev1 n Engineering 4b s/n 03871 © tor-Ind method, .12' @ 12.04 hr Invert 1,036.75' ary 1,036.37' Max=3.10 cfs ted Rectangula fow Max=1.13 of ttet Controls 1.2	& Associates, Inc. 2020 HydroCAD Softw Time Span= 0.00-48 S Outlet Devices 5.0' long x 0.5' bi Head (feet) 0.20 Coef. (English) 2 12.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga @ 12.04 hrs HW=1, ar Weir (Weir Control ofs @ 12.01 hrs HW: 13 cfs @ 2.58 fps)	ware Solutions LLC 3.00 hrs, dt= 0.05 hrs readth Broad-Crested Rectangular Weir 0.40 0.60 0.80 1.00 80 2.92 3.08 3.30 3.32 Ivert L= 5.0' Ke= 0.200 t= 1,036.37' / 1,036.30' S= 0.0140 '/' Cc= 0. ated PE, smooth interior, Flow Area= 0.79 sf .037.11' TW=1,036.66' (Dynamic Tailwater) Is 3.10 cfs @ 1.73 fps) I=1,037.10' TW=1,036.96' (Dynamic Tailwater)	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 26 .900
00047 Post-De Prepared by Alle HydroCAD® 10.10- Routing by Dyn-S Peak Elev= 1,037 Device Routing #1 Primary #2 Secondar Frimary OutFlow 1=Broad-Cres Secondary OutFl 2=Culvert (Out	v-rev1 n Engineering 4b s/n 03871 © tor-Ind method, .12' @ 12.04 hr Invert 1,036.75' ary 1,036.37' Max=3.10 cfs ted Rectangula low Max=1.13 c titlet Controls 1.2	& Associates, Inc. 2020 HydroCAD Softw Time Span= 0.00-48 S Outlet Devices 5.0' long x 0.5' bn Head (feet) 0.20 Coef. (English) 2. 12.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga @ 12.04 hrs HW=1, ar Weir (Weir Control Sfs @ 12.01 hrs HW: 13 cfs @ 2.58 fps)	ware Solutions LLC 3.00 hrs, dt= 0.05 hrs readth Broad-Crested Rectangular Weir 0.40 0.60 0.80 1.00 80 2.92 3.08 3.30 3.32 Ivert L= 5.0' Ke= 0.200 t= 1,036.37' / 1,036.30' S= 0.0140 '/' Cc= 0. ated PE, smooth interior, Flow Area= 0.79 sf .037.11' TW=1,036.66' (Dynamic Tailwater) ils 3.10 cfs @ 1.73 fps) '=1,037.10' TW=1,036.96' (Dynamic Tailwater) ils 3.10 cfs @ 1.73 fps)	<i>Type III 24-hr 2YR Rainfall=3.23"</i> Printed 11/10/2021 Page 26 .900
00047 Post-De Prepared by Alle HydroCAD® 10.10- Routing by Dyn-S Peak Elev= 1,037 Device Routing #1 Primary #2 Seconda Primary OutFlow 1=Broad-Cres Secondary OutFl -2=Culvert (Out Inflow Area = Inflow = Outflow = Primary =	V-rev1 n Engineering 4b s/n 03871 © tor-Ind method, .12' @ 12.04 hr 1,036.75' ary 1,036.37' 9 Max=3.10 cfs ted Rectangula 9 Max=1.13 cf 10 Max=1.13 cf 10 Max=1.13 cf 10 Max=0.10 cfs 10 Max=0.10 cfs	& Associates, Inc. 2020 HydroCAD Softw Time Span= 0.00-48 s Outlet Devices 5.0' long x 0.5' bi Head (feet) 0.20 Coef. (English) 2. 12.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga @ 12.04 hrs HW=1, ar Weir (Weir Control ofs @ 12.01 hrs HW=1, ar Weir (Weir Control ofs @ 12.01 hrs HW=1, ar Weir (Weir Control ofs @ 2.58 fps) Sum 76.21% Impervious, 2.03 hrs, Volume= 2.03 hrs, Volume=	ware Solutions LLC 3.00 hrs, dt= 0.05 hrs readth Broad-Crested Rectangular Weir 0.40 0.60 0.80 1.00 80 2.92 3.08 3.30 3.32 Ivert L= 5.0' Ke= 0.200 t= 1,036.37' / 1,036.60' S = 0.0140 '/' Cc= 0. ated PE, smooth interior, Flow Area= 0.79 sf .037.11' TW=1,036.66' (Dynamic Tailwater) ls 3.10 cfs @ 1.73 fps) '=1,037.10' TW=1,036.96' (Dynamic Tailwater) Inflow Depth = 2.46'' for 2YR event 14,532 cf 14,532 cf	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 26
00047 Post-De Prepared by Alle HydroCAD® 10.10- Routing by Dyn-S Peak Elev= 1,037 Device Routing #1 Primary #2 Secondar Primary OutFlow 1=Broad-Cres Secondary OutFl -2=Culvert (Out Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,036	V-rev1 n Engineering 4b s/n 03871 © tor-Ind method, .12' @ 12.04 hr 1,036.75' ary 1,036.37' Max=3.10 cfs ted Rectangula fow Max=1.13 cfs ted Rectangula fow Max=1.13 cfs 1,009 sf, 4.49 cfs @ 1 4.49 cfs @ 1 4.49 cfs @ 1 tor-Ind method, .72' @ 12.45 hr	& Associates, Inc. 2020 HydroCAD Softw Time Span= 0.00-48 s Outlet Devices 5.0' long x 0.5' bi Head (feet) 0.20 Coef. (English) 2.1 12.0" Round Cul Inlet / Outlet Invert n= 0.013 Corruga @ 12.04 hrs HW=1, ar Weir (Weir Control ofs @ 12.01 hrs HW=1, ar Weir (Weir Control ofs @ 12.01 hrs HW=1, ar Weir (Weir Control ofs @ 12.01 hrs HW=1, ar Weir (Weir Control 0.013 Corruga @ 12.04 hrs HW=1, ar Weir (Weir Control 0.013 Corruga @ 12.04 hrs HW=1, ar Weir (Weir Control 0.013 Corruga @ 12.04 hrs HW=1, ar Weir (Weir Control 0.014 HW=1, 0.014 HW=1,	<pre>ware Solutions LLC 3.00 hrs, dt= 0.05 hrs readth Broad-Crested Rectangular Weir 0.40 0.60 0.80 1.00 80 2.92 3.08 3.30 3.32 ivert L= 5.0' Ke= 0.200 t= 1,036.37' / 1,036.60' S= 0.0140 '/' Cc= 0. ated PE, smooth interior, Flow Area= 0.79 sf .037.11' TW=1,036.66' (Dynamic Tailwater) is 3.10 cfs @ 1.73 fps) '=1,037.10' TW=1,036.96' (Dynamic Tailwater) Inflow Depth = 2.46" for 2YR event 14,532 cf 14,532 cf 3.00 hrs, dt= 0.05 hrs</pre>	Type III 24-hr 2YR Rainfall=3.23" Printed 11/10/2021 Page 26

Inflow Area	a =	71,009 sf,	76.21% Impervious,	Inflow Depth = 2	2.46" fo	r 2YR event
Inflow	=	4.49 cfs @	12.03 hrs, Volume=	14,532 cf		
Outflow	=	4.49 cfs @	12.03 hrs, Volume=	14,532 cf,	Atten= (0%, Lag= 0.0 min
Primary	=	4.49 cfs @	12.03 hrs, Volume=	14,532 cf		, C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,038.17' @ 12.03 hrs

 Device
 Routing
 Invert
 Outlet Devices

 #1
 Primary
 1,037.35'
 24.0" Round Culvert L= 57.0' Ke= 0.200 Inlet / Outlet Invert= 1,037.35' / 1,036.37' S= 0.0172 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.24 cfs @ 12.03 hrs HW=1,038.15' TW=1,037.10' (Dynamic Tailwater) 1=Culvert (Outlet Controls 4.24 cfs @ 5.33 fps)

Summary for Pond MH5: (new Pond)

Inflow Area	a =	28,054 sf, 89.14% Impervious, Inflow Depth = 2.74" for 2YR event	t
Inflow	=	2.17 cfs @ 12.01 hrs, Volume= 6,398 cf	
Outflow	=	2.17 cfs @ 12.01 hrs, Volume= 6,398 cf, Atten= 0%, Lag= 0.	0 min
Primary	=	2.17 cfs @ 12.01 hrs, Volume= 6,398 cf	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,040.52' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	1,039.89'	18.0" Round Culvert L= 132.0' Ke= 0.200 Inlet / Outlet Invert= 1,039.89' / 1,038.44' S= 0.0110 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.08 cfs @ 12.01 hrs HW=1,040.51' TW=1,038.14' (Dynamic Tailwater) -1=Culvert (Barrel Controls 2.08 cfs @ 4.50 fps)

00047 Post-Dev-rev1 Prepared by Allen Engineering HydroCAD® 10 10-4b, s/n 03871 @)	& Associates, Inc. 2020 Hydro CAD Software Solutions LLC	Type III 24-hr 2YR Rainfall=3.23 Printed 11/10/202 Page 2
	Summary for Pond MH6: (new Pond)	T ago 21
Inflow Area = 32,273 sf, 6 Inflow = 1.82 cfs @ 1 Outflow = 1.82 cfs @ 1 Primary = 1.82 cfs @ 1 Routing by Dyn-Stor-Ind method, Deat 5 by = 1.041 (12) @ 10.06 by	60.28% Impervious, Inflow Depth = 2.11" for 2YR event 2.06 hrs, Volume= 5,683 cf 2.06 hrs, Volume= 5,683 cf, Atten= 0%, Lag= 0.0 min 2.06 hrs, Volume= 5,683 cf Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	
Peak Elev= 1,041.13 @ 12.06 hrs		
Device Routing Invert	Outlet Devices	
#1 Primary 1,040.58'	18.0" Round Culvert L= 116.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S= 0.0150 '/' Cc= 0 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf	0.900
#1 Primary 1,040.58' Primary OutFlow Max=1.76 cfs (1=Culvert (Inlet Controls 1.76	18.0" Round Culvert L= 116.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S= 0.0150 '/' Cc= 0 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf @ 12.06 hrs HW=1,041.12' TW=1,038.14' (Dynamic Tailwater) cfs @ 3.11 fps)	0.900
#1 Primary 1,040.58' Primary OutFlow Max=1.76 cfs (1=Culvert (Inlet Controls 1.76	18.0" Round Culvert L= 116.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S= 0.0150 '/' Cc= 0 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf @ 12.06 hrs HW=1,041.12' TW=1,038.14' (Dynamic Tailwater) cfs @ 3.11 fps) Summary for Pond MH7: (new Pond)	0.900
#1 Primary 1,040.58' Primary OutFlow Max=1.76 cfs (□=Culvert (Inlet Controls 1.76 Inflow Area = 13,911 sf, 3 Inflow = 0.65 cfs @ 1 Primary = 0.65 cfs @ 1 Primary = 0.65 cfs @ 1	18.0" Round Culvert L= 116.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S= 0.0150 '/ Cc= 0 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf @ 12.06 hrs HW=1,041.12' TW=1,038.14' (Dynamic Tailwater) cfs @ 3.11 fps) Summary for Pond MH7: (new Pond) 37.85% Impervious, Inflow Depth = 1.63" for 2YR event 2.06 hrs, Volume= 1,894 cf 2.06 hrs, Volume= 1,894 cf 2.06 hrs, Volume= 1,894 cf 2.06 hrs, Volume= 1,894 cf	0.900
#1 Primary 1,040.58' Primary OutFlow Max=1.76 cfs (1=Culvert (Inlet Controls 1.76) Inflow Area = 13,911 sf, 3 0 utflow = 0.65 cfs (1 Outflow = 0.65 cfs (1 Primary = 0.65 cfs (1 Routing by Dyn-Stor-Ind method, Peak Elev= 1,042.85' (2 12.06 hrs	18.0" Round Culvert L= 116.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S= 0.0150 '/ Cc= 0 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf @ 12.06 hrs HW=1,041.12' TW=1,038.14' (Dynamic Tailwater) cfs @ 3.11 fps) Summary for Pond MH7: (new Pond) 37.85% Impervious, Inflow Depth = 1.63" for 2YR event 2.06 hrs, Volume= 1,894 cf 2.06 hrs, Volume= 1,894 cf 2.06 hrs, Volume= 1,894 cf Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	9.900
#1 Primary 1,040.58' Primary OutFlow Max=1.76 cfs (-1=Culvert (Inlet Controls 1.76 Inflow = 0.65 cfs (@ 1 Outflow = 0.65 cfs (@ 1 Primary = 0.65 cfs (@ 1 Primary = 0.65 cfs (@ 1 Primary = 0.65 cfs (@ 1 Routing by Dyn-Stor-Ind method, Peak Elev= 1,042.85' (@ 12.06 hrs Device Routing Invert	18.0" Round Culvert L= 116.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S= 0.0150 '/ Cc= 0 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf @ 12.06 hrs HW=1,041.12' TW=1,038.14' (Dynamic Tailwater) cfs @ 3.11 fps) Summary for Pond MH7: (new Pond) 37.85% Impervious, Inflow Depth = 1.63" for 2YR event 2.06 hrs, Volume= 1,894 cf 2.06 hrs, Volume= 1,894 cf Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Outlet Devices	9.900

1=Culvert (Barrel Controls 0.63 cfs @ 3.69 fps)

Summary for Pond	STU1:	(new Pond))
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Inflow	=	1.38 cfs @	12.01 hrs, V	'olume=	10,497 cf		
Outflow	=	1.38 cfs @	12.01 hrs, V	'olume=	10,497 cf,	Atten= 0%,	Lag= 0.0 min
Primary	=	1.38 cfs @	12.01 hrs, V	'olume=	10,497 cf		-

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,036.96' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	1,036.30'	12.0" Round Culvert L=

12.0" Round Culvert L= 5.0' Ke= 0.200 Inlet / Outlet Invert= 1,036.30' / 1,036.20' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.36 cfs @ 12.01 hrs HW=1,036.96' TW=1,036.65' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 1.36 cfs @ 3.54 fps)

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Time span=0.00 Runoff by SCS TR Reach routing by Dyn-Stor-Ind	-48.00 hrs, dt=0.05 hrs, 961 points -20 method, UH=SCS, Weighted-CN method - Pond routing by Dyn-Stor-Ind method
Subcatchment1S: (new Subcat)	Runoff Area=12,290 sf 0.00% Impervious Runoff Depth=2.25" Flow Length=431' Tc=14.3 min CN=74 Runoff=0.56 cfs 2,299 cf
Subcatchment2S: (new Subcat)	Runoff Area=5,956 sf 64.05% Impervious Runoff Depth=3.63" Flow Length=186' Tc=1.6 min CN=89 Runoff=0.61 cfs 1,801 cf
Subcatchment3S: ROOF	Runoff Area=5,000 sf 100.00% Impervious Runoff Depth=4.61" Tc=1.0 min CN=98 Runoff=0.61 cfs 1,922 cf
Subcatchment4S: ROOF	Runoff Area=5,000 sf 100.00% Impervious Runoff Depth=4.61" Tc=1.0 min CN=98 Runoff=0.61 cfs 1,922 cf
Subcatchment5S: (new Subcat)	Runoff Area=10,067 sf 81.72% Impervious Runoff Depth=4.16" Flow Length=157' Tc=1.0 min CN=94 Runoff=1.17 cfs 3,490 cf
Subcatchment6S: (new Subcat)	Runoff Area=26,955 sf 2.64% Impervious Runoff Depth=2.16" Flow Length=208' Tc=3.9 min CN=73 Runoff=1.64 cfs 4,860 cf
Subcatchment7S: (new Subcat)	Runoff Area=13,165 sf 45.68% Impervious Runoff Depth=3.33" Flow Length=42' Slope=0.1857 '/' Tc=2.0 min CN=86 Runoff=1.27 cfs 3,650 cf
Subcatchment8S: (new Subcat)	Runoff Area=8,734 sf 81.55% Impervious Runoff Depth=4.16" Flow Length=125' Tc=0.9 min CN=94 Runoff=1.02 cfs 3,028 cf
Subcatchment9S: (new Subcat)	Runoff Area=8,042 sf 87.19% Impervious Runoff Depth=4.27" Flow Length=112' Tc=0.8 min CN=95 Runoff=0.96 cfs 2,862 cf
Subcatchment 10S: ROOF	Runoff Area=2,640 sf 100.00% Impervious Runoff Depth=4.61" Tc=1.0 min CN=98 Runoff=0.32 cfs 1,015 cf
Subcatchment11S: ROOF	Runoff Area=2,822 sf 100.00% Impervious Runoff Depth=4.61" Tc=1.0 min CN=98 Runoff=0.34 cfs 1,085 cf

Subcatchment 12S: (new Subcat)	Runoff Area=16,498 sf 91.30% Impervious Runoff Depth=4.38" Flow Length=126' Tc=0.8 min CN=96 Runoff=1.99 cfs 6,027 cf
Subcatchment13S: ROOF-CANOPY	Runoff Area=2,880 sf 100.00% Impervious Runoff Depth=4.61" Tc=2.0 min CN=98 Runoff=0.34 cfs 1,107 cf
Subcatchment14S: (new Subcat)	Runoff Area=15,482 sf 73.05% Impervious Runoff Depth=3.94" Flow Length=208' Tc=5.0 min CN=92 Runoff=1.57 cfs 5,087 cf
Subcatchment15S: (new Subcat)	Runoff Area=7,846 sf 70.75% Impervious Runoff Depth=3.84" Flow Length=142' Tc=1.0 min CN=91 Runoff=0.87 cfs 2,508 cf
Subcatchment16S: (new Subcat)	Runoff Area=14,478 sf 84.51% Impervious Runoff Depth=4.16" Flow Length=224' Tc=4.9 min CN=94 Runoff=1.53 cfs 5,019 cf
Subcatchment17S: (new Subcat)	Runoff Area=13,911 sf 37.85% Impervious Runoff Depth=3.04" Flow Length=111' Tc=3.8 min CN=83 Runoff=1.20 cfs 3,523 cf
Reach R1: (new Reach)	Avg. Flow Depth=0.33' Max Vel=2.60 fps Inflow=4.90 cfs 39,557 cf n=0.069 L=20.0' S=0.0750 '/ Capacity=125.86 cfs Outflow=4.92 cfs 39,557 cf
Pond 1EV:	Inflow=5.69 cfs 44,417 cf Primary=5.69 cfs 44,417 cf
Pond 2EV:	Inflow=0.56 cfs 2,299 cf Primary=0.56 cfs 2,299 cf
Pond CB1: (new Pond)	Peak Elev=1,037.59' Inflow=1.17 cfs 3,490 cf 12.0" Round Culvert n=0.013 L=8.0' S=0.0150 '/' Outflow=1.17 cfs 3,490 cf
Pond CB2: (new Pond)	Peak Elev=1,038.40' Inflow=0.61 cfs 1,801 cf 12.0" Round Culvert n=0.013 L=12.0' S=0.0150 '/' Outflow=0.61 cfs 1,801 cf
Pond CB3: (new Pond)	Peak Elev=1,040.58' Inflow=1.53 cfs 5,019 cf 12.0" Round Culvert n=0.013 L=165.0' S=0.0135 '/' Outflow=1.53 cfs 5,019 cf
Pond CB4: (new Pond)	Peak Elev=1,040.42' Inflow=0.87 cfs 2,508 cf 12.0" Round Culvert n=0.013 L=165.0' S=0.0219 '/' Outflow=0.87 cfs 2,508 cf

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Pond CB5: (new Pond)	Peak Elev=1,040.76' Inflow=0.96 cfs 2,862 cf 12.0" Round Culvert n=0.013 L=42.0' S=0.0150 '/ Outflow=0.96 cfs 2,862 cf
Pond CB6: (new Pond)	Peak Elev=1,041.28' Inflow=1.02 cfs 3,028 cf 12.0" Round Culvert n=0.013 L=36.0' S=0.0100 '/ Outflow=1.02 cfs 3,028 cf
Pond CB7: (new Pond)	Peak Elev=1,042.25' Inflow=1.99 cfs 6,027 cf 12.0" Round Culvert n=0.013 L=128.0' S=0.0100 '/' Outflow=1.99 cfs 6,027 cf
Pond CB8: (new Pond)	Peak Elev=1,041.47' Inflow=1.57 cfs 5,087 cf 18.0" Round Culvert n=0.013 L=7.0' S=0.0143 '/ Outflow=1.57 cfs 5,087 cf
Pond DRI: (new Pond)	Peak Elev=1,044.25' Inflow=1.20 cfs 3,523 cf 12.0" Round Culvert n=0.013 L=59.0' S=0.0197 '/ Outflow=1.20 cfs 3,523 cf
Pond FB: (new Pond)	Peak Elev=1,037.56' Storage=4,031 cf Inflow=12.27 cfs 40,396 cf Outflow=9.99 cfs 39,002 cf
Pond IB: (new Pond)	Peak Elev=1,037.56' Storage=12,789 cf Inflow=11.20 cfs 42,652 cf Outflow=4.90 cfs 39,557 cf
Pond MH1: (new Pond)	Peak Elev=1,037.59' Inflow=5.08 cfs 16,663 cf 18.0" Round Culvert n=0.013 L=52.0' S=0.0148 '/' Outflow=5.08 cfs 16,663 cf
Pond MH2: (new Pond)	Peak Elev=1,038.29' Inflow=2.61 cfs 8,742 cf 15.0" Round Culvert n=0.013 L=120.0' S=0.0125 '/' Outflow=2.61 cfs 8,742 cf
Pond MH3i: (new Pond)	Peak Elev=1,037.60' Inflow=7.19 cfs 23,733 cf Primary=5.31 cfs 9,212 cf Secondary=1.86 cfs 14,522 cf Outflow=7.19 cfs 23,733 cf
Pond MH3o: (new Pond)	Peak Elev=1,037.59' Inflow=7.19 cfs 23,733 cf 24.0" Round Culvert n=0.013 L=50.0' S=0.0172 '/' Outflow=7.19 cfs 23,733 cf
Pond MH4: (new Pond)	Peak Elev=1,038.42' Inflow=7.19 cfs 23,733 cf 24.0" Round Culvert n=0.013 L=57.0' S=0.0172 '/' Outflow=7.19 cfs 23,733 cf

 Pond MH5: (new Pond)
 Peak Elev=1,040.69' Inflow=3.35 cfs 10,139 cf 18.0" Round Culvert n=0.013 L=132.0' S=0.0110 '/ Outflow=3.35 cfs 10,139 cf

 Pond MH6: (new Pond)
 Peak Elev=1,041.31' Inflow=3.08 cfs 9,717 cf 18.0" Round Culvert n=0.013 L=116.0' S=0.0150 '/ Outflow=3.08 cfs 9,717 cf

 Pond MH7: (new Pond)
 Peak Elev=1,043.01' Inflow=1.20 cfs 3,523 cf 12.0" Round Culvert n=0.013 L=23.0' S=0.0196 '/ Outflow=1.20 cfs 3,523 cf

 Pond STU1: (new Pond)
 Peak Elev=1,037.67' Inflow=1.86 cfs 14,522 cf 12.0" Round Culvert n=0.013 L=5.0' S=0.0200 '/ Outflow=1.86 cfs 14,522 cf

 Total Runoff Area = 171,766 sf Runoff Volume = 51,206 cf Average Runoff Depth = 3.58" 41.39% Pervious = 71,099 sf 58.61% Impervious = 100,667 sf

Prepare	ed by Alle	en Eng	· ineering &	Associa	ates,	Inc.	utions LLC	Printed 11/10/202
HydroCA	D® 10.10-	40 S/N	<u>03871 © 20</u>	20 Hyard	Sun	sonware Son	Subcatchment 1S: (new Subcat)	Page 3
D		0.50	-1-0-404		Jun			
Runoff	=	0.56	cts @ 12.	21 nrs,	voiui	ne=	2,299 cr, Deptn= 2.25"	
Runoff b Type III	oy SCS TF 24-hr 10	R-20 m YR Rai	ethod, UH= nfall=4.85"	SCS, W	eight	ed-CN, Time	e Span= 0.00-48.00 hrs, dt= 0.05 hrs	
A	Area (sf)	CN	Description	า				
	4,440	74	>75% Gra	ss cover	, Go	od, HSG C		
	7,850	74	>75% Gra	ss cover	, Go	od, HSG C		
	12,290 12,290	74	Weighted A 100.00% F	Average Pervious	Area	1		
Tc (min)	Length (feet)	Slop (ft/f	e Velocity t) (ft/sec)	Capa (city cfs)	Description		
8.5	50	0.050	0 0.10			Sheet Flow	, ,	
5.8	381	0.047	2 1.09			Woods: Ligr Shallow Co Woodland	ncentrated Flow, Kv= 5.0 fps	
14.3	431	Total					·	
					Sun	nmary for	Subcatchment 2S: (new Subcat)	
Runoff	=	0.61	cfs @ 12.0	03 hrs,	Volu	me=	1,801 cf, Depth= 3.63"	
Runoff b Type III	oy SCS TF 24-hr 10	R-20 m YR Rai	ethod, UH= nfall=4.85"	SCS, W	eight	ed-CN, Time	9 Span= 0.00-48.00 hrs, dt= 0.05 hrs	
A	Area (sf)	CN	Description	1 I				
	26	98	Unconnect	ted pave	emen	t, HSG C		
	3,789	98 74	Paved par	king, HS	GC			
	2,141	/4 80	Veighted		, 60	ы, пос С		
	2.141	09	35.95% Pe	ervious A	Area			
	3,815		64.05% Im	perviou	s Are	a		
	26		0.68% Und	connecte	be			

00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC

	(foot)	510pe		(ofo)	Description	
0.6	44	0.022	7 1.24	(015)	Sheet Flow,	
1.0	142	0.013	4 2.35		Smooth surfaces n= 0.011 P2= 3.26" Shallow Concentrated Flow.	
			2.00		Paved Kv= 20.3 fps	
1.6	186	Total				
					Summary for Subcatchment 3S: ROOF	
Runoff	=	0.61	cfs@ 12.0	1 hrs Volu	me= 1922 cf Depth= 4.61"	
	-	0.01				
Runoff b ⊺ype III :	by SCS TE 24-hr 10	R-20 me YR Rair	ethod, UH=S	SCS, Weigh	ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	
Δ	rea (sf)	CN	Description			
	5,000	98	Roofs, HSC	G C		
	5,000		100.00% In	npervious A	rea	
Тс	Length	Slop	e Velocity	Capacity	Description	
(min) 1 0	(feet)	(ft/ft	t) (ft/sec)	(cfs)	Direct Entry	
1.0					Diroct Lindy,	
					Summary for Subcatchment 4S: ROOF	
Runoff	=	0.61	cfs @ 12.0	1 hrs, Volu	me= 1,922 cf, Depth= 4.61"	
Runoff h	W SCS TE	₹-20 me	thod UH=S	SCS Weigh	ted-CN_Time_Span= 0.00-48.00 hrs_dt= 0.05 hrs	
vpe III :	24-hr 10	YR Rair	nfall=4.85"	JOO, Weigh		
0047	Post-De	ev-rev1	1			Type III 24-hr 10YR Rainfall=4.85"
0047 Prepare	Post-De	ev-rev1 en Engi	I ineering & /	Associates	, Inc.	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/1/2021
0047 Prepare	Post-De ed by Alle	ev-rev1 en Engi 4b s/n (1 neering & 7 03871 © 202	Associates	, Inc. 9 Software Solutions LLC	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 <u>Page 36</u>
)0047 Prepare lydroCA	Post-De ed by Alle	e v-rev 1 en Engi 4b s/n (1 ineering & / 03871 © 202	Associates 20 HydroCAE	, Inc. Software Solutions LLC	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 36
00047 Prepare lydroCA A	Post-De ed by Alle D® 10.10- Area (sf)	ev-rev1 en Engi 4b_s/n (CN	I neering & / 03871 © 202 Description	Associates 20 HydroCAL	, Inc. Software Solutions LLC	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page <u>36</u>
10047 I Prepare lydroCA A	Post-De ed by Alle D® 10.10- Area (sf) 3,300	ev-rev1 en Engi 4b s/n (CN 98	I neering & / 03871 © 202 Description Roofs, HSC	Associates 20 HydroCAE 1 3 C	, Inc. Software Solutions LLC	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
)0047 Prepare lydroCA A	Post-De ed by Alle D® 10.10- Area (sf) 3,300 1,700	ev-rev 1 en Engi <u>4b s/n (</u> <u>CN</u> 98 98	I neering & / 03871 © 202 Description Roofs, HSC Roofs, HSC	Associates 10 HydroCAL 3 C 3 C	, Inc. Software Solutions LLC	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page <u>36</u>
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00047 Prepare lydroCA A	Post-De ed by Alle D® 10.10- 3,300 1,700 5,000	ev-rev ⁴ en Engi 4 <u>b s/n (</u> 08 98 98 98	I neering & 7 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In	Associates 20 HydroCAL G C G C C Average npervious A	, Inc. Software Solutions LLC	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 36
00047 Prepare lydroCA A Tc (min)	Post-De ed by Alle D® 10.10- 3,300 1,700 5,000 5,000 Length (feet)	ev-rev1 en Engi 4b s/n (<u>CN</u> 98 98 98 Slope (ft/ff	I neering & 7 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity (ff/sec)	Associates <u>0 HydroCAL</u> 3 C 3 C Average npervious A Capacity (cfs)	, Inc. Software Solutions LLC rea Description	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 36
POO47 A Prepare lydroCA A Tc (min) 1.0	Post-De ed by Alle D® 10.10- vrea (sf) 3,300 1,700 5,000 5,000 Length (feet)	ev-rev1 en Engi 4b s/n (CN 98 98 98 98 Slope (ft/ft	I neering & A 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity t) (ft/sec)	Associates 10 HydroCAL 3 C 3 C 3 C 4 Verage npervious A Capacity (cfs)	, Inc. Software Solutions LLC rea Description Direct Entry,	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
00047 Prepare <u>lydroCA</u> A Tc (min) 1.0	Post-De ed by Alle D® 10.10- <u>trea (sf)</u> 3,300 1,700 5,000 5,000 Length (feet)	ev-rev ¹ en Engi <u>4b s/n (</u> <u>CN</u> 98 98 98 98 Slopp (ft/ft	I neering & A 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity c) (ft/sec)	Associates 10 HydroCAL 3 C 3 C 3 C 4 4 4 4 4 4 5 4 5 6 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7	, Inc. Software Solutions LLC rea Description Direct Entry,	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
00047 Prepare <u>tydroCA</u> A Tc (min) 1.0	Post-De ed by Alle D® 10.10- <u>trea (sf)</u> 3,300 1,700 5,000 5,000 Length (feet)	ev-rev1 en Engi 4b s/n (<u>CN</u> 98 98 98 98 Slope (ft/ft	I neering & A 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity t) (ft/sec)	Associates 10 HydroCAL 3 C 3 C 3 C 3 C 4 Verage npervious A Capacity (cfs) Su	, Inc. Software Solutions LLC rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat)	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
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)0047 Prepare <u>lydroCA</u> A Tc (min) 1.0	Post-De ed by Alle D® 10.10- xrea (sf) 3,300 1,700 5,000 5,000 Length (feet)	2 V-rev en Engi <u>4b s/n (</u> <u>CN</u> 98 98 98 98 Slope (ft/ft	I neering & 7 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity c) (ft/sec)	Associates 10 HydroCAL 3 C 3 C 3 C 4 Verage npervious A Capacity (cfs) Sul 11 hrs, Volu	Inc. Software Solutions LLC rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16"	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
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POO47 Prepare lydroCA A Tc (min) 1.0 Runoff b Spe III :	Post-De ed by Alle D® 10.10- xrea (sf) 3,300 1,700 5,000 5,000 Length (feet) = = by SCS TF 24-hr 10'	2 V-rev en Engi <u>4b s/n (</u> <u>CN</u> 98 98 98 98 Slope (ft/ft 1.17 ft R-20 me YR Rair	I neering & 7 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity c) (ft/sec) cfs @ 12.0 ethod, UH=S nfall=4.85"	Associates 0 HydroCAL 3 C 3 C 3 C 4 Capacity (cfs) Sul 1 hrs, Volu 5CS, Weigh	Inc. Software Solutions LLC rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
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Prepare lydroCA A Tc (min) 1.0 Runoff Runoff b ype III : A	Post-De ed by Alle D® 10.10- 3,300 1,700 5,000 5,000 Length (feet) = py SCS TF 24-hr 10' 395	2V-rev ¹ en Engi <u>4b s/n (</u> 98 98 98 98 98 Slope (ft/ft 1.17 (R-20 me YR Rair YR Rair 74	I neering & / 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity (ff/sec) cfs @ 12.0 ethod, UH=S nfall=4.85" Description >75% Grass	Associates 0 HydroCAE 3 C 3 C 3 C 4 C 4 Capacity (cfs) 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C	Inc. Software Solutions LLC rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od. HSG C	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
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Prepare lydroCA A Tc (min) 1.0 Runoff b Type III 2 A	Post-De ed by Alle D® 10.10- <u>trea (sf)</u> 3,300 1,700 5,000 Length (feet) = py SCS TF 24-hr 10' trea (sf) 395 1,445 305	2V-rev1 en Engi 4b s/n (CN 98 98 98 98 98 98 98 98 98 98 98 1.17 (ft/ft 1.17 (R-20 me YR Rair YR Rair YR Rair YR Rair YA 74 74 74 74	Ineering & / D3871 @ 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e velocity (ft/sec) cfs @ 12.0 ethod, UH=S nfall=4.85" Description >75% Gras >75% Gras	Associates <u>10 HydroCAE</u> <u>3 C</u> <u>3 C</u> <u>3 C</u> <u>3 C</u> <u>4 Verage</u> npervious A Capacity (cfs) Sun 11 hrs, Volu SCS, Weigh ss cover, Gc ss cover, Gc ad pavement	Inc. Software Solutions LLC rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
Prepare lydroCA A Tc (min) 1.0 Runoff Sunoff b ype III : A	Post-De ed by Alle D® 10.10- 3,300 1,700 5,000 5,000 Length (feet) = py SCS TF 24-hr 10' vrea (sf) 395 1,445 309 700	2V-rev ¹ en Engi <u>4b s/n (</u> 08 98 98 98 98 98 98 98 98 98 98 98 98 98	I neering & / 03871 © 202 Description Roofs, HSC Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity (ft/sec) cfs @ 12.0 ethod, UH=S nfall=4.85" Description >75% Gras >75% Gras	Associates 1 HydroCAE 3 C 3 C 3 C Werage npervious A Capacity (cfs) Sun 1 hrs, Volu SCS, Weight ss cover, Go ss cover, Go ad pavement	Inc. Software Solutions LLC rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
Prepare lydroCA A Tc (min) 1.0 Runoff b Sunoff b Sunoff b Sunoff b	Post-De ed by Alle D® 10.10- <u>Area (sf)</u> 3,300 1,700 5,000 5,000 Length (feet) = py SCS TF 24-hr 10' <u>Area (sf)</u> 395 1,445 309 790 5 502	2V-rev ⁷ en Engi <u>4b s/n (</u> 98 98 98 98 98 98 98 Slope (ft/ff 1.17 of R-20 me YR Rair CN 74 98 98 98	I neering & 7 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity i) (ft/sec) cfs @ 12.0 ethod, UH=S nfall=4.85" Description >75% Gras Unconnecte Unconnecte	Associates 1 HydroCAE 3 C 3 C 3 C 4 Verage npervious A Capacity (cfs) 11 hrs, Volu SCS, Weigh 13 s cover, Go ed pavemel ed pavemel ed pavemel	Inc. Software Solutions LLC rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
Prepare lydroCA A Tc (min) 1.0 Runoff b Type III 2 A	Post-De ed by Alle D® 10.10- trea (sf) 3,300 1,700 5,000 5,000 Length (feet) = = by SCS TF 24-hr 10' trea (sf) 395 1,445 309 790 5,597	2V-rev ⁷ en Engi <u>4b s/n (</u> 98 98 98 98 98 98 98 Slope (ft/ft 1.17 0 R-20 me YR Rair 2R Rair 2R Rair 2R 98 98 98 98 98	I neering & 7 03871 @ 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity t) (ft/sec) cfs @ 12.0 ethod, UH=S nfall=4.85" Description >75% Gras >75% Gras >75% Gras	Associates <u>1</u> <u>3</u> C <u>3</u> C <u>3</u> C <u>3</u> C <u>4</u> Verage npervious A Capacity (cfs) Su 11 hrs, Volu 5CS, Weighthere is cover, Go is	Inc. Software Solutions LLC rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C it, HSG C	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
DOO47 Prepare <u>lydroCA</u> A Tc (min) 1.0 Runoff Runoff b Type III : A	Post-De ed by Alle D® 10.10- 3,300 1,700 5,000 5,000 Length (feet) = py SCS TF 24-hr 10' vrea (sf) 395 1,445 309 790 5,597 1,531	2V-rev ¹ en Engi <u>4b s/n (</u> 98 98 98 98 98 98 98 (ft/ft 1.17 (R-20 me YR Rair YR Rair YR Rair 74 98 98 98 98	I neering & / 03871 @ 202 Description Roofs, HSC Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity (ft/sec) (ft/sec) cfs @ 12.0 ethod, UH=S nfall=4.85" Description >75% Gras >75% Gras Unconnect Unconnect Paved park	Associates <u>0 HydroCAE</u> <u>3 C</u> <u>3 C</u> Werage npervious A Capacity (cfs) Su 1 hrs, Volu SCS, Weight ss cover, Go ed pavement sig, HSG C sing, HSG C	Inc. Software Solutions LLC rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C it, HSG C it, HSG C	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
Prepare HydroCA A Tc (min) 1.0 Runoff b Type III 2 A	Post-De ed by Alle D® 10.10- <u>Area (sf)</u> 3,300 1,700 5,000 Length (feet) = by SCS TF 24-hr 10' <u>Area (sf)</u> 395 1,445 309 790 5,597 1,531 10,067	2V-rev ⁷ en Engi <u>4b s/n (</u> 98 98 98 98 98 Slopy (ft/ff 1.17 of R-20 me YR Rair CN 74 98 98 98 98 98 98	I neering & 7 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity i) (ft/sec) (ft/sec) cfs @ 12.0 ethod, UH=S nfall=4.85" Description >75% Gras Unconnecte Paved park Weighted A	Associates 1 HydroCAE 3 C 3 C 3 C 3 C 4 Verage mpervious A Capacity (cfs) 1 hrs, Volu 5 CS, Weight 5 S cover, Go ed pavement ed paveme	Inc. Software Solutions LLC rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C it, HSG C it, HSG C	Type III 24-hr 10YR Rainfall=4.85" Printed 11//10/2021 Page 36
Prepare lydroCA A Tc (min) 1.0 Runoff b Type III : A	Post-De ed by Alle D® 10.10- vrea (sf) 3,300 1,700 5,000 5,000 Length (feet) = = by SCS TF 24-hr 10' vrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840	2V-rev ⁷ en Engi <u>4b s/n (</u> 98 98 98 98 98 98 Slope (ft/ft 1.17 0 R-20 me YR Rair CN 74 74 74 98 98 98 98 98 98	I neering & 7 03871 @ 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity t) (ft/sec) cfs @ 12.0 ethod, UH=S nfall=4.85" Description >75% Gras >75% Gras >75% Gras >75% Gras >75% Gras >75% Gras >75% Gras >75% Gras	Associates <u>O HydroCAL</u> <u>G</u> C <u>G</u>	Inc. Software Solutions LLC rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C it, HSG C it, HSG C	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
DOO47 Prepare lydroCA A Tc (min) 1.0 Runoff Runoff b Type III : A	Post-De ed by Alle D® 10.10- 3,300 1,700 5,000 5,000 Length (feet) = py SCS TF 24-hr 10' vrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840	2V-rev ⁷ en Engi <u>4b s/n (</u> 98 98 98 98 98 98 Slope (ft/ft 1.17 (R-20 me YR Rair YR Rair 74 98 98 98 98 98 98	I neering & / 03871 © 202 Description Roofs, HSC Roofs, HSC Roofs, HSC Neighted A 100.00% In e Velocity (ft/sec) (ft/sec) cfs @ 12.0 ethod, UH=S nfall=4.85" Description >75% Gras >75% Gras Vinconnector Paved park Paved park Paved park Neighted A 18.28% Pe 18.22% Im	Associates <u>1</u> <u>3</u> C <u>3</u> C Werage npervious A Capacity (cfs) Su 11 hrs, Volu SCS, Weight ss cover, Go ed pavement ting, HSG C Werage rvious Areage rvious Areage pervious Areage	Inc. Software Solutions LLC rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C it, HSG C it, HSG C it, HSG C	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
Prepare HydroCA A Tc (min) 1.0 Runoff b Type III 2 A	Post-De d by Alle D® 10.10- 3,300 1,700 5,000 5,000 Length (feet) = y SCS TF 24-hr 10' Nrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099	2V-rev ⁷ en Engi <u>4b s/n (</u> 98 98 98 98 Slopy (ft/ff 74 98 98 98 98 98 98 98 98	I neering & 7 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity i) (ft/sec) (ft/sec) cfs @ 12.0 ethod, UH=S nfall=4.85" Description >75% Gras Unconnecte Paved park Weighted A 18.28% Pe 81.72% Im 13.36% Un	Associates O HydroCAE G C G C G C Average mpervious A Capacity (cfs) Sun 11 hrs, Volu SCS, Weight SS cover, Go ed pavement ed pavement	Inc. Software Solutions LLC rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C it, HSG C it, HSG C	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
Tc (min) 1.0 Runoff b Fype III : A	Post-De ed by Alle D® 10.10- xrea (sf) 3,300 1,700 5,000 5,000 Length (feet) = py SCS TF 24-hr 10' xrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099	2V-rev ⁷ en Engi <u>4b s/n (</u> 98 98 98 98 98 Slopy (ft/ft 1.17 of R-20 me YR Rain YR Rain CN 74 74 74 98 98 98 98 98 98	I neering & 7 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity cfs @ 12.0 cfs @ 12.0 cfs @ 12.0 cfs @ 12.0 cfs Gras >75% Gras	Associates 20 HydroCAL 3 C 3 C 3 C 4 Capacity (cfs) 10 hrs, Volu 11 hrs, Volu 10 hrs, Volu 5CS, Weight 15 scover, Go 15 scover,	Inc. Software Solutions LLC rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C it, HSG C	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
Tc	Post-De ed by Alle 1.700 5,000 5,000 Length (feet) = py SCS TF 24-hr 10' trea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,999 Length	2V-rev1 en Engi 4b s/n (98 98 98 98 98 98 98 Slope (ft/ft 74 74 74 74 74 74 98 98 98 98 98 98	I neering & A D3871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity (fl/sec) cfs @ 12.0 ethod, UH=S fall=4.85" Description >75% Grass >75% Grass >75% Grass >75% Grass >75% Grass Nnconnecte Paved park Paved park Paved park Paved park Weighted A 18.28% Pe 81.72% Imp 13.36% Un e Velocity	Associates 20 HydroCAE 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C	Inc. Software Solutions LLC rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C it, HSG C it, HSG C it, HSG C Description	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
Tc (min) 1.0 Runoff Runoff b Type III 2 A	Post-De d by Alle D® 10.10- 3,300 1,700 5,000 5,000 Length (feet) = y SCS TF 24-hr 10' vrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet)	2V-rev ⁷ en Engi <u>4b s/n (</u> 98 98 98 98 98 98 98 1.17 f (ft/ff 74 74 98 98 98 98 98 98 98	I neering & / 03871 © 202 Description Roofs, HSC Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity (fl/sec) cfs @ 12.0 ethod, UH=S nfall=4.85" Description >75% Gras >75% Gras VInconnectc Paved park Paved park Paved park Paved park Paved park Paved park B1.72% Im 13.36% Un e Velocity (fl/sec)	Associates <u>10 HydroCAE</u> <u>3 C</u> <u>3 C</u> Werage npervious A Capacity (cfs) Su 11 hrs, Volu SCS, Weight <u>5</u> s cover, Go ed pavement s cover, Go ed pavement s cover, Go ed pavement ing, HSG C Werage rvious Areage rvious Areage r	Inc. Software Solutions LLC rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C it,	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36 Page 36
DOO47 Prepare HydroCA A Tc (min) 1.0 Runoff b Type IIII A A Tc (min) 0.5	Post-De d by Alle D® 10.10- <u>vrea (sf)</u> 3,300 1,700 5,000 Length (feet) = py SCS TF 24-hr 10' <u>vrea (sf)</u> 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,097 1,097 1,840 8,227 1,097 1,097 1,840 8,227 1,097 1,097 1,840 8,227 1,097 1,097 1,097 1,097 1,007 1,840 8,227 1,097 1,097 1,097 1,097 1,097 1,007	2V-rev ⁷ en Engi <u>4b s/n (</u> 98 98 98 98 98 Slopy (ft/ff 74 98 98 98 98 98 98 98 98 98 98	I neering & 7 03871 © 202 Description Roofs, HSC Roofs, HSC Veighted A 100.00% In e Velocity (ft/sec) cfs @ 12.0 ethod, UH=S offall=4.85" Description >75% Gras Unconnector Paved park Weighted A 18.28% Pe 81.72% Im 13.36% Un e Velocity (ft/sec) 0 1.80	Associates 20 HydroCAL 3 C 3 C Capacity (cfs) 1 hrs, Volu 5 CS, Weight 1 hrs, Volu 5 CS, Weight 1 scover, Go 6 d pavement 6 d pavement 6 d pavement 6 d pavement 6 d pavement 6 d pavement 6 d pavement 7 d pavement 6 d pavement 8 s cover, Go 1 hrs, HSG C Average rvious Area pervious Area	Inc. Software Solutions LLC rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C t, HSG C t, HSG C Software Solution Sheet Flow,	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36 Page 36
Tc (min) 1.0 Runoff b Fype III : A Cc (min) 0.5	Post-De ed by Alle D® 10.10- xrea (sf) 3,300 1,700 5,000 5,000 Length (feet) = y SCS TF 24-hr 10' xrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet) 50	2V-FEV ⁷ en Engi <u>4b s/n (</u> 98 98 98 98 98 98 Slopy (ft/ff 74 74 74 74 74 74 98 98 98 98 98 98 98 98	I neering & 7 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity (fl/sec) cfs @ 12.0 ethod, UH=S fall=4.85" Description >75% Gras >75% Gras	Associates 20 HydroCAL 3 C 3 C 3 C 4 Verage npervious A Capacity (cfs) 11 hrs, Volu 11 hrs, Volu 5 CS, Weight 15 scover, Go 15 s	Inc. Software Solutions LLC rea Description Direct Entry, nmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C tt, HSG C sa Description Sheet Flow, Smooth surfaces n= 0.011 P2= 3.26"	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
D00047 Prepare <u>lydroCA</u> 	Post-De ed by Alle ⊥0® 10.10- xrea (sf) 3,300 5,000 Length (feet) = = by SCS TF 24-hr 10' xrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet) 50 1,700 5,000 1,700 5,000 5,000 5,000 5,000 5,000 5,000 5,000 5,000 5,000 1,700 5,0000 5,000 5,000	2V-rev ⁴ en Engi <u>4b s/n (</u> <u>CN</u> 98 98 98 98 98 98 74 74 98 98 98 98 98 98 98 98 98 98 98 98 98	I neering & 7 Description Roofs, HSC Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity (fl/sec) Cfs @ 12.0 ethod, UH=S fall=4.85" Description >75% Gras >75% Gras >75% Gras >75% Gras Nuconnecte Paved park Paved park Paved park Paved park Weighted A 18.28% Pe 81.72% Imp 13.36% Un e Velocity (fl/sec) 0 1.80 8 3.56	Associates 20 HydroCAE 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C	Inc. Software Solutions LLC rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C t, HSG C t, HSG C Description Sheet Flow, Smooth surfaces n= 0.011 P2= 3.26" Shallow Concentrated Flow,	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36
000047 Prepare <u>HydroCA</u> A Tc (min) 1.0 Runoff Runoff b Type III 2 A C (min) 0.5 0.5	Post-De d by Alle D® 10.10- 3,300 1,700 5,000 5,000 Length (feet) = y SCS TF 24-hr 10' wrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet) 50 107	2V-rev ⁷ en Engi <u>4b s/n (</u> 98 98 98 98 98 98 98 98 (ft/ft 74 98 98 98 98 98 98 98 98 98 94 510pr (ft/ft 74 98 98 98 98 94	I neering & / 03871 © 202 Description Roofs, HSC Roofs, HSC Roofs, HSC Neighted A 100.00% In e Velocity (fl/sec) cfs @ 12.0 ethod, UH=S fall=4.85" Description >75% Gras >75% Gras Unconnectk Paved park Paved park Paved park Paved park Paved park Paved park Paved park Ba.28% Pe 81.72% Im 13.36% Un e Velocity (fl/sec) 0 1.80 8 3.56	Associates <u>10 HydroCAE</u> <u>3 C</u> <u>3 C</u> Werage npervious A Capacity (cfs) Sun 11 hrs, Volu SCS, Weight <u>15 cover, Go</u> ed pavement ting, HSG C ting, HSG C ting, HSG C ting, HSG C Werage rvious Areage rvious Areage rvious Areage rvious Areage (cfs)	Inc. Software Solutions LLC rea Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) me= 3,490 cf, Depth= 4.16" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs od, HSG C od, HSG C od, HSG C t, HSG C t, HSG C soft Flow, Smooth surfaces n= 0.011 P2= 3.26" Shallow Concentrated Flow, Paved Kv= 20.3 fps	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 36 Page 36
Summar	y for Subcatchment 6S: (new Subcat)					
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Runoff = 1.64 cfs @ 12.06 hrs, Volume= 4,860 cf, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 10YR Rainfall=4.85"

	10,802	70	Woods, Go	od, HSG C					
	26,955	73	Weighted A	verage					
	26,244 711		97.36% Pe 2.64% Impe	rvious Area ervious Are	a a				
Tc (min)	Length (feet)	Slop (ft/ft	e Velocity	Capacity (cfs)	Description				
2.5	50	0.146	0.33	(010)	Sheet Flow	Ι,			
0.1	54	0.181	5 6.86		Grass: Sho Shallow Co	rt n= 0.150 P2= 3.26"			
4.0	404	0.070	4 00		Unpaved I	Kv= 16.1 fps			
1.3	104	0.076	9 1.39		Woodland	Kv= 5.0 fps			
3.9	208	Total							
				Su	mmary for	Subcatchment 7S: (ne	ew Subcat)		
Inoff	=	1.27	cfs @ 12.0	4 hrs, Vol	ume=	3,650 cf, Depth= 3.33"			
noff b	y SCS TH	R-20 me	ethod, UH=S	SCS, Weigl	nted-CN, Time	e Span= 0.00-48.00 hrs, dt=	= 0.05 hrs		
be III :	24-hr 10	YR Rair	nfall=4.85"						
047	Post-De	ev-rev						Type III 24-hr	· 10YR Rainfall=4.85"
047	Post-De	e v-rev ′ en Engi	I neering & /	Associates	s, Inc.			Type III 24-hr	 10YR Rainfall=4.85" Printed 11/10/2021
047 epare	Post-De ed by Alle	e v-rev en Engi 4b s/n	I neering & / 03871 © 202	Associates	s, Inc. D Software Sol	utions LLC		Type III 24-hr	• 10YR Rainfall=4.85″ Printed 11/10/2021 Page 38
047 epare droCA	Post-De d by Alle D® 10.10-	e v-rev en Engi 4b s/n	l neering & <i>1</i> 03871 © 202	Associate: 0 HydroCA	s, Inc. D Software Sol	utions LLC		Type III 24-hr	• 10YR Rainfall=4.85″ Printed 11/10/2021 Page 38
047 epare droCA	Post-De ed by Alle D® 10.10- srea (sf)	e v-rev en Engi 4b s/n CN	I neering & / 33871 © 202 Description	Associate: 0 HydroCA	s, Inc. O Software Sol	utions LLC		Type III 24-hr	• 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 I epare droCA	Post-De ed by Alle D® 10.10- urea (sf) 5,880	e v-rev en Engi 4 <u>b s/n (</u> <u>CN</u> 98	I neering & /)3871 © 202 Description Water Surfa	Associate: 0 HydroCA ace, HSG (s, Inc. D Software Sol	utions LLC		Type III 24-hr	⁻ 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
1 047 I epare droCA	Post-De ed by Alle D® 10.10- <u>vrea (sf)</u> 5,880 134	ev-rev′ en Engi 4 <u>b s/n (</u> 08 98	I neering & / J3871 © 202 Description Water Surfa riprap	Associate: 0 HydroCA ace, HSG (s, Inc. D Software Sol	utions LLC		Type III 24-hr	⁻ <i>10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 38
1 047 I epare droCA A	Post-De ed by Alle D® 10.10- <u>trea (sf)</u> 5,880 134 6,571	ev-rev en Engi 4b s/n 50 08 98 98 74	l neering & / J3871 © 202 Description Water Surfa riprap >75% Gras	Associate: 0 HydroCA ace, HSG (s cover, G	s, Inc. <u>D Software Sol</u> C Dood, HSG C	utions LLC		Type III 24-hr	[•] <i>10YR Rainfall=4.85"</i> Printed 11/10/2021 Page <u>38</u>
047 I epare droCA A	Post-De ed by Alle D® 10.10: 5,880 134 6,571 580	ev-rev en Engi 4b s/n 4b s/n 5 0 8 98 98 74 89	I neering & / 03871 © 202 Description Water Surfa riprap >75% Grass Gravel road	Associate: 0 HydroCA ace, HSG (s cover, G is, HSG C	s, Inc. <u>D Software Sol</u> C Dood, HSG C	utions LLC		Type III 24-hr	⁻ 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 I epare droCA	Post-De ed by Alle D® 10.100 5,880 134 6,571 580 13,165	ev-rev' en Engi 4b s/n 0 0 8 98 74 89 86	I neering & / 03871 © 202 Description Water Surfa riprap >75% Grass Gravel roac Weighted A	Associate: 0 HydroCA ace, HSG (s cover, G ts, HSG C werace	s, Inc. <u>D Software Sol</u> C Dood, HSG C	utions LLC		Type III 24-hr	⁻ 10YR Rainfall=4.85″ Printed 11/10/2021 Page 38
047 I epare droCA A	Post-De d by Alle D® 10.10 5,880 134 6,571 580 13,165 7,151	2V-rev en Engi 4b s/n <u>CN</u> 98 98 74 89 86	I neering & / 03871 © 202 Description Water Surfa Vater Surfa Vater Surfa Vater Surfa Vater Surfa Vater Surfa Vater Surfa Vater Surfa Vater Surfa Surfa Vater Surfa Surfa Vater Surfa Surfa Vater Surfa Sus	Associates 0 HydroCA ace, HSG (s cover, G is, HSG C verage rvious Area	s, Inc. <u>D Software Sol</u> C ood, HSG C	utions LLC		Type III 24-hr	[•] 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 I epare droCA A	Post-De ed by Alle D® 10.10- inter (100) 134 6,571 5800 13,165 7,151 6,014	ev-rev en Engi <u>4b s/n (</u> 08 98 98 74 89 86	neering & / J3871 © 202 Description Water Surfa riprap >75% Grass Gravel road Weighted A 54.32% Pe	Associate: 0 HydroCA ace, HSG (s cover, G Is, HSG C iverage rvious Area pervious A	s, Inc. D Software Sol	utions LLC		Type III 24-hr	• 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 epare droCA A	Post-De ed by Alle D® 10.10: 5,880 134 6,571 580 13,165 7,151 6,014	ev-rev en Engi 4b s/n 1 08 98 74 89 86	I neering & <i>J</i> 03871 © 202 Description Water Surfa riprap >75% Grasg Gravel road Weighted A 54.32% Pe 45.68% Imj	Associate: 0 HydroCA ace, HSG (s cover, G is, HSG C iverage rvious Area pervious Area	s, Inc. <u>D Software Sol</u> C Dood, HSG C Area	utions LLC		Type III 24-hr	• 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
epare droCA A	Post-De d by Alle D® 10.10- <u>trea (sf)</u> 5,880 134 6,571 <u>5,880</u> 13,165 7,151 6,014 Length	ev-rev' en Engi 4b s/n 98 98 74 89 86 Slop	Description Water Surfa riprap >75% Gras Gravel road Weighted A 54.32% Pe 45.68% Imp	Associates 0 HydroCA ace, HSG (s cover, G is, HSG C verage verage pervious Are pervious Are canacity	s, Inc. <u>D Software Sol</u> c bood, HSG C a rea Description	utions LLC		Type III 24-hr	[•] 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 I epare droCA A	Post-De ed by Alle D® 10.10 5,880 134 6,571 5,880 13,165 7,151 6,014 Length (feet)	ev-rev en Engi 4b s/n 0 0 98 98 74 89 86 86 Slop (ft/ft	Description 03871 © 202 Description Water Surfa >75% Gras Gravel roac Weighted A 54.32% Pe 45.68% Im 6 Velocity) (ff/sec)	Associates 0 HydroCA ace, HSG (s cover, G Is, HSG C vverage rvious Area bervious A capacity (cfs)	s, Inc. <u>D Software Sol</u> C Dood, HSG C a rea Description	utions LLC		Type III 24-hr	• 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 I epare droCA A Tc (min) 2 0	Post-De ed by Alle D® 10.10- intered (sf) 5,880 134 6,571 580 13,165 7,151 6,014 Length (feet) 42	2 V-reV en Engi 4b s/n 98 98 98 74 89 86 Slopp (ft/ft	neering & / <u>Description</u> Water Surfa riprap >75% Grass <u>Gravel road</u> Weighted A 54.32% Pe 45.68% Imp e Velocity) (ft/sec) 7 0.035	Associate: 0 HydroCA ace, HSG (s cover, G is, HSG C verage rvious Area pervious Area pervious Area cervious A capacity (cfs)	s, Inc. D Software Sol	utions LLC		Type III 24-hr	• 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 I epare droCA A Tc (min) 2.0	Post-De d by Alle D® 10.10: 5,880 134 6,571 5,80 13,165 7,151 6,014 Length (feet) 42	EV-rev en Engi <u>4b s/n 1</u> 98 98 74 89 86 Slopp (ft/ft 0.185	I neering & <i>J</i> 03871 © 202 Description Water Surfa riprap >75% Grass Gravel road Weighted A 54.32% Pe 45.68% Imp e Velocity) (ft/sec) 7 0.35	Associate: 0 HydroCA ace, HSG (s cover, G ds, HSG C verage rvious Are pervious Are pervious Are pervious Are coervious A Capacity (cfs)	s, Inc. <u>D</u> Software Sol Dood, HSG C a Description Sheet Flow Grass: Sho	utions LLC		Type III 24-hr	[•] 10YR Rainfall=4.85″ Printed 11/10/2021 Page 38
047 I epare droCA A A 	Post-De d by Alle D® 10.10- (10) 5,880 134 6,571 5,880 13,165 7,151 6,014 Length (feet) 42	2 V-rev 2n Engi 4b s/n 98 98 74 89 86 Slop (ft/ft 0.185	Description Water Surfa riprap >75% Gras <u>Gravel roac</u> Weighted A 54.32% Pe 45.68% Imp e Velocity) (ft/sec) 7 0.35	Associates 0 HydroCA ace, HSG (s cover, G <u>Is, HSG C</u> werage verage pervious Are capacity (cfs)	s, Inc. <u>D Software Sol</u> bood, HSG C a ea Description Sheet Flow Grass: Sho	utions LLC /, /, rt n= 0.150 P2= 3.26"		Type III 24-hr	[•] 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 I epare droCA A <u>Tc</u> 2.0	Post-De d by Alle D® 10.10- 5,880 134 6,571 5,87 13,165 7,151 6,014 Length (feet) 42	2 V-rev 2n Engi 4b s/n 98 98 74 89 86 Slop (ft/ff 0.185	Description Water Surfa riprap >75% Gras <u>Gravel road</u> Weighted A 54.32% Pe 45.68% Imp e Velocity) (ft/sec) 7 0.35	Associates 0 HydroCA ace, HSG (s cover, G <u>Is, HSG C</u> werage verage pervious Ara Capacity (cfs)	s, Inc. D Software Sol Dood, HSG C a a Description Sheet Flow Grass: Sho mmary for	utions LLC , , t n= 0.150 P2= 3.26" Subcatchment 8S: (no	ew Subcat)	Type III 24-hr	[•] 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 I epare droCA A Tc <u>(min)</u> 2.0	Post-De d by Alle D® 10.10- 5,880 134 6,571 5,871 5,880 13,165 7,151 6,014 Length (feet) 42	2 V-rev 2n Engi 4b s/n 98 98 74 89 86 Slop (ft/ft 0.185	Description Water Surfa riprap >75% Gras <u>Gravel roac</u> Weighted A 54.32% Pe 45.68% Imp • Velocity) (ft/sec) 7 0.35	Associates 0 HydroCA ace, HSG (s cover, G <u>s cover, G s cover, S c</u>	s, Inc. D Software Sol Dood, HSG C dea Description Sheet Flow Grass: Sho mmary for	utions LLC , , t n= 0.150 P2= 3.26" Subcatchment 8S: (ne	ew Subcat)	Type III 24-hr	[•] 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 I epare droCA A Tc (min) 2.0	Post-De d by Alle D® 10.10- 5,880 134 6,571 5,871 5,880 13,165 7,151 6,014 Length (feet) 42	2V-rev en Engi 4b s/n 98 98 74 89 86 Slop (ft/ft 0.185	I neering & / J3871 © 202 Description Water Surfa Provention Start Weighted A Velocity (ft/sec) 7 0.35	Associates 0 HydroCA ace, HSG (s cover, G ts, HSG c verage verage vrious Are capacity (cfs) Su 1 hrs, Vol	s, Inc. <u>D Software Sol</u> cood, HSG C a dea <u>Description</u> Sheet Flow Grass: Sho mmary for Jme=	utions LLC , rt n= 0.150 P2= 3.26" Subcatchment 8S: (no 3,028 cf, Depth= 4.16"	ew Subcat)	Type III 24-hr	[•] 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 I epare droCA A Tc (min) 2.0	Post-De ed by Alle D® 10.10- ^{trea} (sf) 5,880 134 6,571 <u>580</u> 13,165 7,151 6,014 Length (feet) 42 =	PV-FCV/ en Engi 4b s/n 98 98 98 74 89 86 74 89 86 Slop: (ft/ff 0.185	I neering & / J3871 © 202 Description Water Surfa riprap >75% Grass Gravel road Weighted A 54.32% Pe 45.68% Imp e Velocity) (ft/sec) 7 0.35	Associates <u>0 HydroCA</u> ace, HSG (s cover, G ts, HSG C verage rvious Area pervious Area pervious Area cervious A Capacity (cfs) Su 1 hrs, Vol	s, Inc. D Software Sol C bood, HSG C a a Description Sheet Flow Grass: Sho mmary for ume=	utions LLC , rt n= 0.150 P2= 3.26" Subcatchment 8S: (no 3,028 cf, Depth= 4.16"	ew Subcat)	Type III 24-hr	* 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 epare droCA A Tc (min) 2.0 noff noff b	Post-De d by Alle D® 10.10- 5,880 134 6,571 5,7,151 6,014 Length (feet) 42 = wy SCS TF	EV-rev n Engi <u>4b s/n 1</u> 98 98 74 99 86 Slopp (ft/ff 0.185 1.02	I neering & <i>J</i> 03871 © 202 Description Water Surfa riprap >75% Gras Gravel road Weighted A 54.32% Pe 45.68% Imp e Velocity) (ft/sec) 7 0.35	Associates 0 HydroCA ace, HSG (s cover, G <u>is, HSG C</u> werage rvious Area pervious Area pervious Area (cfs) Capacity (cfs) Su 1 hrs, Vol SCS, Weigl	s, Inc. D Software Sol Dood, HSG C a Description Sheet Flow Grass: Sho mmary for ume= hted-CN, Time	utions LLC 7, rt n= 0.150 P2= 3.26" Subcatchment 8S: (no 3,028 cf, Depth= 4.16" e Span= 0.00-48.00 hrs, dt=	ew Subcat)	Type III 24-hr	[•] 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 epare droCA A Tc (min) 2.0	Post-De d by Alle D® 10.10: 5,880 134 6,571 5,87 13,165 7,151 6,014 Length (feet) 42 = y SCS Tf 24-hr 10'	2V-reV en Engi 4b s/n 98 98 74 89 86 Slop: (ft/ff 0.185 1.02 R-20 me YR Rain	Description Water Surfar riprap >75% Gras <u>Gravel roac</u> Weighted A 54.32% Pe 45.68% Imp (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S fall=4.85"	Associates 0 HydroCA ace, HSG (s cover, G is, HSG C verage verage crivious Are capacity (cfs) Su 1 hrs, Vol SCS, Weigl	s, Inc. D Software Sol Dood, HSG C a Description Sheet Flow Grass: Sho mmary for ume= nted-CN, Time	utions LLC /, rt n= 0.150 P2= 3.26" Subcatchment 8S: (no 3,028 cf, Depth= 4.16" a Span= 0.00-48.00 hrs, dt=	ew Subcat)	Type III 24-hr	[•] 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
1047 I epare droCA A Tc (min) 2.0	Post-De ed by Alle D® 10.10- 5,880 13,165 7,151 6,014 Length (feet) 42 = py SCS TF 24-hr 10 ⁻	2V-rev en Engi <u>4b s/n 1</u> <u>CN</u> 98 98 74 89 86 86 0.185 1.02 R-20 me YR Rair	I neering & / <u>J3871 © 202</u> <u>Description</u> Water Surfa >75% Gras <u>Gravel roac</u> Weighted A 54.32% Pe 45.68% Imp e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S ifall=4.85"	Associates 0 HydroCA ace, HSG (s cover, G ts, HSG C vverage rvious Area bervious A Capacity (cfs) Su 1 hrs, Vol 3CS, Weigl	s, Inc. <u>D Software Sol</u> C bood, HSG C a rea Description Sheet Flow Grass: Sho mmary for ume= nted-CN, Time	utions LLC , rt n= 0.150 P2= 3.26" Subcatchment 8S: (no 3,028 cf, Depth= 4.16" a Span= 0.00-48.00 hrs, dt=	ew Subcat) = 0.05 hrs	Type III 24-hr	• 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
A PO47 I epare droCA A Tc (min) 2.0 unoff b pe III : A	Post-De d by Alle D® 10.10: rea (sf) 5,880 134 6,571 580 13,165 7,151 6,014 Length (feet) 42 = ry SCS TF 24-hr 10' rrea (sf)	2V-reV en Engi 4b s/n 98 98 74 89 86 74 89 86 74 89 86 74 89 86 0.185 1.02 8-20 me YR Rain CN	I neering & / J3871 © 202 Description Water Surfa riprap >75% Grass Gravel road Weighted A 54.32% Pe 45.68% Imp e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 cfs @ 12.0 cthod, UH=S ifall=4.85" Description	Associate: 0 HydroCA ace, HSG (s cover, G is, HSG C vverage rvious Area bervious Area bervious Area bervious A Capacity (cfs) Su 1 hrs, Vol SCS, Weigl	s, Inc. D Software Sol C bood, HSG C a a Description Sheet Flow Grass: Sho mmary for ume= ted-CN, Time	utions LLC 7, rt n= 0.150 P2= 3.26" Subcatchment 8S: (no 3,028 cf, Depth= 4.16" e Span= 0.00-48.00 hrs, dt=	ew Subcat)	Type III 24-hr	* 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
1047 epare droCA A Tc (min) 2.0	Post-De d by Alle D® 10.10: 5,880 134 6,571 5,715 6,014 Length (feet) 42 = y SCS TF 24-hr 10' <u>rea (sf)</u> 1,611	2V-reV 2 n Engi 4b s/n 98 98 74 89 86 Slopp (ft/ff 0.185 1.02 R-20 me YR Rair CN 74	Description Water Surfa riprap >75% Gras Gravel road Weighted A 54.32% Pe 45.68% Imp e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S fall=4.85" Description >75% Gras	Associates 0 HydroCA ace, HSG (s cover, G ls, HSG (werage pervious Ara Capacity (cfs) Su 1 hrs, Vol SCS, Weigl s cover, G	s, Inc. D Software Sol Dood, HSG C a Description Sheet Flow Grass: Sho mmary for ume= nted-CN, Time	utions LLC 7, rt n= 0.150 P2= 3.26" Subcatchment 8S: (no 3,028 cf, Depth= 4.16" e Span= 0.00-48.00 hrs, dt=	ew Subcat) = 0.05 hrs	Type III 24-hr	[•] 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
1047 epare droCA A Tc (min) 2.0 noff pe III : A	Post-De d by Alle D® 10.10- 5,880 134 6,571 5,810 13,165 7,151 6,014 Length (feet) 42 = y SCS TF 24-hr 10' 1,611 459	2V-reV en Engi 4b s/n 98 74 89 86 74 89 86 74 89 86 0.185 1.02 R-20 me YR Rain YR Rain YR Rain YR Rain YR Rain	I neering & / 33871 © 202 Description Water Surfa riprap >75% Gras <u>Gravel roac</u> Weighted A 45.68% Imp e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S ifall=4.85" <u>Description</u> >75% Gras Unconnector	Associates 0 HydroCA ace, HSG (s cover, G is, HSG C verage verage vious Are capacity (cfs) Su 1 hrs, Vol SCS, Weigl s cover, G ad paveme	s, Inc. <u>D Software Sol</u> C bood, HSG C a a Sheet Flow Grass: Sho mmary for Jme= Ited-CN, Time bood, HSG C nt, HSG C	utions LLC , rt n= 0.150 P2= 3.26" Subcatchment 8S: (no 3,028 cf, Depth= 4.16" e Span= 0.00-48.00 hrs, dt=	ew Subcat) = 0.05 hrs	Type III 24-hr	• 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
Tc (min) 2.0	Post-De ed by Alle D® 10.10 frea (sf) 5,880 134 6,571 5,880 13,165 7,151 6,014 Length (feet) 42 = y SCS TF 24-hr 10 rea (sf) 1,611 459 6,664	2V-rev en Engi <u>4b s/n</u> 98 98 74 89 86 86 86 0.185 1.02 R-20 me YR Rair CN 74 98 98	I neering & / <u>J3871 © 202</u> <u>Description</u> Water Surfar riprap >75% Gras <u>Gravel roac</u> Weighted A 54.32% Peq 45.68% Imq a Velocity) (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S ifall=4.85" <u>Description</u> >75% Gras Unconnecta Paved park	Associates <u>0 HydroCA</u> ace, HSG (s cover, G <u>1 hrs, Vol</u> <u>1 hrs, Vol</u> SCS, Weigl s cover, G <u>ac</u> paveme ing, HSG (s, Inc. D Software Sol Sod, HSG C a Description Sheet Flow Grass: Sho mmary for ume= nted-CN, Time Dod, HSG C nt, HSG C C	utions LLC , t n= 0.150 P2= 3.26" Subcatchment 8S: (no 3,028 cf, Depth= 4.16" a Span= 0.00-48.00 hrs, dt=	ew Subcat) = 0.05 hrs	Type III 24-hr	• 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 epare droCA A Tc (min) 2.0 2.0 noff pe III : A	Post-De d by Alle D® 10.10: rea (sf) 5,880 134 6,571 5,80 13,165 7,151 6,014 Length (feet) 42 = ny SCS TF 24-hr 10' rea (sf) 1,611 459 6,664 8,734	EV-rev an Engi <u>4b s/n 1</u> 98 98 74 89 86 Slopp (ft/ff 0.185 1.02 R-20 me YR Rair CN 74 98 99 94	I neering & A 03871 © 202 Description Water Surfa riprap >75% Gras Gravel road Weighted A 54.32% Pe 45.68% Im e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S ifall=4.85" Description >75% Gras Unconnecte Paved park Weighted A	Associates 0 HydroCA ace, HSG (s cover, G is, HSG C werage rvious Area pervious Area corvious Area (cfs) Su 1 hrs, Vol SCS, Weigl s cover, G ad paveme ing, HSG (werace	s, Inc. D Software Sol Sood, HSG C a a Description Sheet Flow Grass: Sho mmary for Jme= ited-CN, Time pood, HSG C nt, HSG C C	/, rt n= 0.150 P2= 3.26" Subcatchment 8S: (no 3,028 cf, Depth= 4.16" e Span= 0.00-48.00 hrs, dt=	ew Subcat) = 0.05 hrs	Type III 24-hr	[•] 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 epare droCA A Tc (min) 2.0 noff pe III : A	Post-De d by Alle D® 10.10: 5,880 134 6,571 5,87 13,165 7,151 6,014 Length (feet) 42 = y SCS Tf 24-hr 10' rea (sf) 1,611 459 6,664 8,734 1,611	2V-reV an Engi 4b s/n 98 98 74 89 86 Slop: (ft/ff 0.185 1.02 R-20 me YR Rain 74 98 98 98 94	I neering & / J3871 © 202 Description Water Surfar riprap >75% Gras Gravel road Weighted A 54.32% Pe 45.68% Imp e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S fall=4.85" Description >75% Gras Unconnecto Paved park Weighted A 54.50% Pe	Associates 0 HydroCA ace, HSG (s cover, G is, HSG C verage verage vrious Are capacity (cfs) Su 1 hrs, Vol SCS, Weigl s cover, G ed paveme ing, HSG (verage ryious Are (cfs)	s, Inc. D Software Sol Dood, HSG C a Description Sheet Flow Grass: Sho mmary for Jme= Ited-CN, Time Dood, HSG C nt, HSG C D	utions LLC 7, rt n= 0.150 P2= 3.26" Subcatchment 8S: (no 3,028 cf, Depth= 4.16" a Span= 0.00-48.00 hrs, dt=	ew Subcat) = 0.05 hrs	Type III 24-hr	• 10YR Rainfall=4.85" Printed 11/10/2021 Page 38
047 I epare droCA A Tc (min) 2.0 noff b pe III : A	Post-De d by Alle D® 10.10 5,880 13,165 7,151 6,014 Length (feet) 42 = y SCS TF 24-hr 10 rea (sf) 1,611 459 6,664 8,734 1,613 1,613	2V-rev/ en Engi <u>4b s/n 1</u> CN 98 98 74 89 86 74 89 86 0.185 1.02 R-20 me YR Rair CN 74 8-20 me YR Rair 0.185 98 98 98	I neering & / <u>Description</u> Water Surfa iprap >75% Gras <u>Gravel roac</u> Weighted A 45.68% Imp e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S fall=4.85" <u>Description</u> >75% Gras Unconnecter <u>Paved park</u> Weighted A 18.45% Imp	Associates <u>0 HydroCA</u> ace, HSG (s cover, G <u>1 hrs, Vol</u> <u>1 hrs, Vol</u> <u>3 ccs, Weigl</u> <u>5 cover, G</u> <u>2 capacity</u> <u>2 capacity</u> <u>2 capacity</u> <u>2 capacity</u> <u>2 capacity</u> <u>3 cover, G</u> <u>2 capacity</u> <u>2 capa</u>	s, Inc. <u>D Software Sol</u> Software Sol C bood, HSG C a tea Sheet Flow Grass: Sho mmary for ume= nted-CN, Time bood, HSG C nt, HSG C C a tea	utions LLC , t n= 0.150 P2= 3.26" Subcatchment 8S: (no 3,028 cf, Depth= 4.16" e Span= 0.00-48.00 hrs, dt=	ew Subcat) = 0.05 hrs	Type III 24-hr	• 10YR Rainfall=4.85" Printed 11/10/2021 Page 38

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0.5	(Teet)	(ft/ft)	(ft/sec)	(cfe)	•
	50	0.0411	1.61	(015)	Sheet Flow,
0.4	75	0.0260	3.27		Smooth surfaces n= 0.011 P2= 3.26" Shallow Concentrated Flow,
0.0	405	T-4-1			Paved Kv= 20.3 fps
0.9	125	Total			
				Sur	mmary for Subcatchment 9S: (new Subcat)
Runoff	=	0.96 cfs	s@ 12.0	1 hrs, Volu	Ime= 2,862 cf, Depth= 4.27"
रunoff by S	SCS TR	-20 meth	nod, UH=S	CS, Weigh	ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
ype III 24-	-hr 10Y	'R Rainfa	all=4.85"		
Area	a (sf)	CN D	escription		
1	,030 194	74 > 98 U	75% Gras	s cover, Go ed pavemer	nd, HSG C
6	5,818 2 042	98 P	Paved park	ing, HSG C	
1	,030	1	2.81% Per	rvious Area	
/	,012 194	8	7.19% Imp .77% Unco	pervious Are	ea
Tc L	enath	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Sheet Eleve
0.5	50	0.0380	1.00		Smooth surfaces n= 0.011 P2= 3.26"
0.3	62	0.0274	3.36		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.8	112	Total			
00047 Po Prepared I	ost-De	v-rev1 n Engine	eering & A	Associates	<i>Type III 24-hr 10YR Rainfall=4.85"</i> , Inc. Printed 11/10/2021
00047 Po Prepared I lydroCAD®	ost-De by Alle 0 10.10-4	v-rev1 n Engine ^{4b} s/n 03	eering & A 871 © 202	Associates 0 HydroCAE	<i>Type III 24-hr 10YR Rainfall=4.85"</i> , Inc. Printed 11/10/2021 0 Software Solutions LLC Page 40
)0047 Po Prepared I HydroCAD®	ost-De by Alle 0 10.10-4	v-rev1 n Engine łb s/n 03	eering & A 871 © 202	Associates <u>0 HydroCAE</u>	, Inc. Software Solutions LLC Summary for Subcatchment 10S: ROOF
)0047 Po Prepared I IydroCAD®	5st-De by Alle 10.10	v-rev1 n Engine 4 <u>b s/n 03</u> 0.32 cfs	eering & A 871 © 202 s @ 12.0	Associates <u>0 HydroCAE</u> 1 hrs, Volu	<i>Type III 24-hr 10YR Rainfall=4.85"</i> , Inc. Printed 11/10/2021 <u>Page 40</u> Summary for Subcatchment 10S: ROOF Ime= 1,015 cf, Depth= 4.61"
DOO47 Po Prepared I IydroCAD® Runoff	est-De by Alle 10.10	v-rev1 n Engine tb s/n 03 0.32 cfs -20 meth	eering & A 871 © 202 s @ 12.0 nod, UH=S	Associates <u>0 HydroCAE</u> 1 hrs, Volu SCS, Weigh	Type III 24-hr 10YR Rainfall=4.85" 1, Inc. Printed 11/10/2021 2 Software Solutions LLC Page 40 Summary for Subcatchment 10S: ROOF Ime= 1,015 cf, Depth= 4.61" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
00047 Po Prepared HydroCAD® Runoff Sunoff by S Type III 24-	ost-De by Alle ≥ 10.10 = SCS TR -hr 10Y	v-rev1 n Engind <u>4b s/n 03</u> 0.32 cfs -20 met/ 7 Rainfa	eering & A 871 © 202 s @ 12.0 nod, UH=S all=4.85"	Associates <u>0 HydroCAE</u> 1 hrs, Volu 3CS, Weigh	Type III 24-hr 10YR Rainfall=4.85" , Inc. Printed 11/10/2021 2 Software Solutions LLC Page 40 Summary for Subcatchment 10S: ROOF Ime= 1,015 cf, Depth= 4.61" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
DOD47 Pc Prepared I HydroCAD® Runoff Runoff by S Type III 24- Arec Arec	= SCS TR -hr 10Y	v-rev1 n Engine 4b s/n 03 0.32 cft 2-20 mett R Rainfa R Rainfa	eering & A 871 © 202 s @ 12.0 nod, UH=S all=4.85" Description	Associates <u>0 HydroCAE</u> 1 hrs, Volu SCS, Weigh	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 2 Software Solutions LLC Summary for Subcatchment 10S: ROOF Ime= 1,015 cf, Depth= 4.61" Ited-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
DOO47 Po Prepared I AydroCAD® Runoff Runoff by S rype III 24- <u>Area</u> 2 2	= SCS TR -hr 10Y a (sf) 2,640 2,640	v-rev1 n Engine 4 <u>b s/n 03</u> 0.32 cfs 2-20 metr 7R Rainfa 7R Rainfa 7R Rainfa 7R Rainfa 78 R R 98 R 98 R	eering & A 871 © 202 s @ 12.0 nod, UH=S all=4.85" <u>bescription</u> coofs, HSC 00.00% In	Associates <u>0 HydroCAE</u> 1 hrs, Volu SCS, Weigh <u>3 C</u> npervious A	Type III 24-hr 10YR Rainfall=4.85" y, Inc. Printed 11/10/2021 2 Software Solutions LLC Page 40 Summary for Subcatchment 10S: ROOF Page 40 sume= 1,015 cf, Depth= 4.61" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
DOO47 Po Prepared I HydroCAD® Runoff by S Fype III 24- Area 2 2 Tc I	= SCS TR -hr 10Y 2,640 2,640 enath	v-rev1 n Engind <u>4b s/n 03</u> 0.32 cft 2-20 metr (R Rainfa CN D 98 R 1 Slope	eering & <i>A</i> 871 © 202 s @ 12.0 nod, UH=S all=4.85" Description toofs, HSC 00.00% In Velocity	Associates <u>0 HydroCAE</u> 1 hrs, Volu GCS, Weigh GC apervious A Capacity	Type III 24-hr 10YR Rainfall=4.85" , Inc. Printed 11/10/2021) Software Solutions LLC Page 40 Summary for Subcatchment 10S: ROOF Ime= 1,015 cf, Depth= 4.61" Ited-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
200047 Po Prepared I HydroCAD® Runoff Runoff by S 'ype III 24- Area 2 2 2 Tc L (min) 1 0	= SCS TR -hr 10Y a (sf) 2,640 ength (feet)	v-rev1 n Engine 4 <u>b s/n 03</u> 0.32 cft -20 mett R Rainfa -20 mett R Rainfa 	eering & A 871 © 202 s @ 12.0 nod, UH=S all=4.85" Description coofs, HSC 00.00% In Velocity (ft/sec)	Associates <u>0 HydroCAE</u> 1 hrs, Volu GCS, Weigh GC apervious A Capacity (cfs)	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 40 Summary for Subcatchment 10S: ROOF ime= 1,015 cf, Depth= 4.61" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
DOD47 Po Prepared I HydroCAD® Runoff Runoff by S Type III 24- Area 2 2 7 2 7 1.0	= SCS TR -hr 10Y a (sf) 2,640 ength (feet)	v-rev1 n Engine 4 <u>b s/n 03</u> 0.32 cfs -20 metr (R Rainfa (R Rainf	eering & A 871 © 202 s @ 12.0 nod, UH=S all=4.85" Description 2005, HSC 00.00% In Velocity (ft/sec)	Associates <u>0 HydroCAE</u> 1 hrs, Volu SCS, Weigh SCS, Weigh SC Capacity (cfs)	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Software Solutions LLC Page 40 Summary for Subcatchment 10S: ROOF ime= 1,015 cf, Depth= 4.61" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs rrea Description Direct Entry,
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Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 10YR Rainfall=4.85"

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<u>, a, o o A</u>	roa (af)		Description	yaioonL	Contrare Control			Paye 43
A	1 155	<u>74</u>	>75% Grass	cover Go	od HSG C			
	1,140	74	>75% Grass	cover, Go	od, HSG C			
	174	98	Unconnected	pavemer	it, HSG C			
	2,097	98 98	Paved parkin	g, HSG C a HSG C				
	7.846	91	Weighted Ave	erade				
	2,295	•	29.25% Perv	ious Area				
	5,551		70.75% Impe	rvious Are	ea			
	174		3.13% Uncor	ineclea				
Тс	Length	Slop	e Velocity	Capacity	Description			
(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)				
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0.5	92	0.025	0 3.21		Shallow Conce	entrated Flow,	5.20	
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1.0	142	Total						
				Sun	many for Sub	ocatchmont 16S	· (now Subcat	A
				Sun			. (new Subca	.)
Runoff	=	1.53	cfs @ 12.07	hrs, Volu	me= 5,	019 cf, Depth= 4.1	16"	
- "	000 T		-			0.00.40.00.1		
Kunott b Type III '	9 SCS TI 24-hr 10	≺-20 m YR R≏i	etnod, UH=SC nfall=4 85"	ວ, weigh	iea-CN, Time Sp	an= 0.00-48.00 hrs	, at= 0.05 hrs	
. 190 111	10		7.00					
A	rea (sf)	CN	Description					
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	1,089	74 74	>75% Grass	cover, GC cover Gr	od, HSG C			
	7,641	98	Paved parkin	g, HSG C				
	4,197	98	Paved parkin	g, HSG C				
	14,478	94	Weighted Ave	erage				
	2,243		84 51% Impe	rvious Area	a			
	397		3.24% Uncor	inected				
00047	Post Dr		1					Type III 24-br. 10VP Painfall=4 85
00047 Prepare	Post-De	ev-rev	1 incering & As	sociates	Inc			Type III 24-hr 10YR Rainfall=4.85 Printed 11/10/2021
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D00047 I Prepare <u>-lydroCA</u> Tc (min) 4.2 0.7 4.9 Runoff Runoff b Type III A A	Post-De d by Alle D® 10.10 Length (feet) 50 174 224 = yy SCS TI 24-hr 10 sca (sf) 8,646 5,265 13,911 8,646 5,265 Length (feet)	2V-rev en Eng -4b s/n Slop (ft/f 0.040 0.037 Total 1.20 R-20 m YR Rain YR Rain 20 R-20 m YR Rain 20 R-20 m YR Rain 20 Slop (ft/f	1 ineering & As 03871 © 2020 e Velocity of (ft/sec) 0 0.20 4 3.93 cfs @ 12.06 ethod, UH=SC nfall=4.85" Paved parkin >75% Grass Paved parkin Weighted Av 62.15% Perv 37.85% Impe e velocity (ft/sec)	sociates HydroCAE Capacity (cfs) Sun hrs, Volu S, Weigh cover, Gc g, HSG C grage ious Area rvious Area capacity (cfs)	, Inc. Software Solution Description Sheet Flow, Grass: Short in Shallow Conce Paved Kv= 20 mmary for Sub me= 3,: ted-CN, Time Sp od, HSG C a Description	ns LLC n= 0.150 P2= 3.26 entrated Flow, I.3 fps ocatchment 17S 523 cf, Depth= 3.0 pan= 0.00-48.00 hrs	" : (new Subcat)4" , dt= 0.05 hrs	Type III 24-hr 10YR Rainfall=4.85 Printed 11/10/2021 Page 44
DOD047 I Prepare <u>HydroCA</u> Tc (min) 4.2 0.7 4.9 Runoff Runoff b Type III A Tc (min) 3.5	Post-De d by Alle D® 10.10 Length (feet) 50 174 224 = y SCS TI 24-hr 10 wea (sf) 8,646 5,265 13,911 13,911 8,646 5,265 Length (feet) 50	EV-rev en Eng <u>4b s/n</u> Slop (ft/f 0.040 0.037 Total 1.20 R-20 m YR Rain YR Rain CN 74 98 83 Slop (ft/f 0.066	1 ineering & As 03871 © 2020 e Velocity (fr/sec) 0 0.20 4 3.93 cfs @ 12.06 ethod, UH=SC nfall=4.85" Pescription >75% Grass Paved parkin Weighted Aw 62.15% Perv 37.85% Impe e velocity (fr/sec) 0 0.24	Sociates HydroCAE Capacity (cfs) Sun hrs, Volu S, Weigh cover, Gc g, HSG C erage ious Area rvious Area capacity (cfs)	Inc. Software Solution Description Sheet Flow, Grass: Short in Shallow Conce Paved Kv= 20 mmary for Sub me= 3, ted-CN, Time Sp od, HSG C Sheet Flow, Conce Other	ns LLC n= 0.150 P2= 3.26 entrated Flow, 1.3 fps ocatchment 17S 523 cf, Depth= 3.0 pan= 0.00-48.00 hrs	" : (new Subcat)4" , dt= 0.05 hrs	Type III 24-hr 10YR Rainfall=4.85 Printed 11/10/2021 Page 44
000047 I Prepare <u>HydroCA</u> Tc (min) 4.2 0.7 4.9 Runoff Type III 3 A Tc (min) 3.5	Post-De d by Alle D® 10.10: Length (feet) 50 174 224 = y SCS TI 24-hr 10 xrea (sf) 8,646 5,265 13,911 8,646 5,265 Length (feet) 50 24 24 24 24 24 24 24 24 24 24	EV-rev en Eng <u>4b s/n</u> Slop (ft/f 0.040 0.037 Total 1.20 R-20 m YR Raii CN 74 98 83 Slop (ft/f 0.066	1 ineering & As 03871 © 2020 e Velocity of (ft/sec) 0 0.20 4 3.93 cfs @ 12.06 ethod, UH=SC offall=4.85" Description >75% Grass Paved parkin Weighted Aw 37.85% Impe e Velocity of (ft/sec) 0 0 0.24	Sociates HydroCAE Capacity (cfs) Sun hrs, Volu S, Weigh cover, Gc g, HSG C erage ious Area rvious Ard Capacity (cfs)	Inc. Software Solution Description Sheet Flow, Grass: Short in Shallow Conce Paved Kv= 20 mmary for Sub me= 3, ted-CN, Time Sp od, HSG C do, HSG C Description Sheet Flow, Grass: Short in Shallow Conce	ns LLC n= 0.150 P2= 3.26 entrated Flow, 1.3 fps bocatchment 17S 523 cf, Depth= 3.0 boan= 0.00-48.00 hrs 	" : (new Subca t)4" , dt= 0.05 hrs	Type III 24-hr 10YR Rainfall=4.85 Printed 11/10/2021 Page 44
D00047 I Prepare <u>HydroCA</u> Tc (min) 4.2 0.7 4.9 Runoff Type III : A Tc (min) 3.5 0.3	Post-De d by Alle D® 10.100 Length (feet) 50 174 224 = y SCS TI 24-hr 10 rea (sf) 8,646 5,265 13,911 8,646 5,265 Length (feet) 50 6,265 13,911 8,646 5,265 Length (feet) 50 6,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 8,646 5,265 13,911 1,857 1,657 1,657 1,757 1,917 1,857 1,917 1,857 1,917 1,857 1,917 1,857 1,917	2V-rev en Eng 4b s/n 0.040 0.037 Total 1.20 R-20 m YR Rait 20 YR R	1 ineering & As 03871 © 2020 e Velocity of (ft/sec) 0 0 0.20 4 3.93 cfs @ 12.06 ethod, UH=SC offall=4.85" Description >75% Grass Paved parkin Weighted Aw 37.85% Impe e Velocity of (ft/sec) 0 0 0.24 5 2.91	sociates HydroCAE Capacity (cfs) Sun hrs, Volu S, Weigh cover, Gc g, HSG C erage ious Area cover, Gc g, HSG C erage ious Area Capacity (cfs)	Inc. Software Solution Description Sheet Flow, Grass: Short n Shallow Conce Paved Kv= 20 mmary for Sub me= 3,: ted-CN, Time Sp od, HSG C Basen Flow, Grass: Short n Sheet Flow, Grass: Short n Shallow Conce	ns LLC n= 0.150 P2= 3.26 entrated Flow, .3 fps 523 cf, Depth= 3.0 pan= 0.00-48.00 hrs 	; (new Subcat)4" , dt= 0.05 hrs	Type III 24-hr 10YR Rainfall=4.85 Printed 11/10/2021 Page 44

Summary for Reach R1: (new Reach)

Inflow Area = Inflow = Outflow =	132,521 sf, 75.43% Impervious, Inflow Depth = 3.58" for 10YR event 4.90 cfs @ 12.23 hrs, Volume= 39,557 cf 4.92 cfs @ 12.25 hrs, Volume= 39,557 cf, Atten= 0%, Lag= 0.8 min	
Routing by Dyn-S Max. Velocity= 2.0 Avg. Velocity = 0.	tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 60 fps, Min. Travel Time= 0.1 min 70 fps, Avg. Travel Time= 0.5 min	
Peak Storage= 38 Average Depth at Bank-Full Depth=	3 cf @ 12.25 hrs Peak Storage= 0.33' , Surface Width= 6.34' 2.00' Flow Area= 18.0 sf, Capacity= 125.86 cfs	
5.00' x 2.00' dee Side Slope Z-valu Length= 20.0' SI Inlet Invert= 1,031	ep channel, n= 0.069 Riprap, 6-inch e= 2.0 '/' Top Width= 13.00' ope= 0.0750 '/' I.00', Outlet Invert= 1,029.50'	
	Summary for Pond 1EV:	
Inflow Area = Inflow = Primary =	159,476 sf, 63.12% Impervious, Inflow Depth = 3.34" for 10YR event 5.69 cfs @ 12.18 hrs, Volume= 44,417 cf 5.69 cfs @ 12.18 hrs, Volume= 44,417 cf, Atten= 0%, Lag= 0.0 min	
Routing by Dyn-S	tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	
00047 Post-De Prepared by Alle HydroCAD® 10.10-	e ν-rev1 en Engineering & Associates, Inc. 4b s/n 03871 © 2020 HydroCAD Software Solutions LLC	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 46
00047 Post-De Prepared by Alle <u>HydroCAD® 10.10-</u>	ev-rev1 en Engineering & Associates, Inc. 4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV:	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 46
00047 Post-De Prepared by Alle <u>HydroCAD® 10.10-</u> Inflow Area = Inflow = Primary =	w-rev1 n Engineering & Associates, Inc. 4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 2.25" for 10YR event 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf, Atten= 0%, Lag= 0.0 min	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 46
00047 Post-De Prepared by Alle <u>HydroCAD® 10.10-</u> Inflow Area = Inflow = Primary = Routing by Dyn-S	ev-rev1 en Engineering & Associates, Inc. 4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 2.25" for 10YR event 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf, Atten= 0%, Lag= 0.0 min tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 46
00047 Post-De Prepared by Alle <u>HydroCAD® 10.10-</u> Inflow Area = Inflow = Primary = Routing by Dyn-S	Av-rev1 en Engineering & Associates, Inc. <u>4b s/n 03871 © 2020 HydroCAD Software Solutions LLC</u> Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 2.25" for 10YR event 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf, Atten= 0%, Lag= 0.0 min tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond CB1: (new Pond)	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 46
00047 Post-De Prepared by Alle <u>HydroCAD® 10.10-</u> Inflow = Primary = Routing by Dyn-S Inflow Area = Inflow = Outflow = Primary =	Av-rev1 an Engineering & Associates, Inc. 4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 2.25" for 10YR event 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf Atten= 0%, Lag= 0.0 min tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond CB1: (new Pond) 10,067 sf, 81.72% Impervious, Inflow Depth = 4.16" for 10YR event 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 46
00047 Post-De Prepared by Alle HydroCAD® 10.10- Inflow = Primary = Routing by Dyn-S Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,037	Av-rev1 an Engineering & Associates, Inc. $4b \ s/n \ 03871 \ @ \ 2020 \ HydroCAD \ Software \ Solutions \ LLC$ Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 2.25" for 10YR event 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf, Atten= 0%, Lag= 0.0 min tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond CB1: (new Pond) 10,067 sf, 81.72% Impervious, Inflow Depth = 4.16" for 10YR event 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf 1.17 cfs @ 12.01 hrs, Volume= 1,000 hrs, df = 0.05 hrs 1.59 @ 12.37 hrs	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 46
00047 Post-De Prepared by Alle <u>HydroCAD® 10.10-</u> Inflow Area = Primary = Routing by Dyn-S Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,037 <u>Device Routing</u>	Av-rev1 an Engineering & Associates, Inc. 4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 2.25" for 10YR event 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf, Atten= 0%, Lag= 0.0 min tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond CB1: (new Pond) 10,067 sf, 81.72% Impervious, Inflow Depth = 4.16" for 10YR event 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 59' @ 12.37 hrs Invert_Outlet Devices	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 46
00047 Post-De Prepared by Alle HydroCAD® 10.10- Inflow = Primary = Routing by Dyn-S Inflow Area = Inflow = Primary = Routing by Dyn-S Peak Elev= 1,037 Device Routing #1 Primary	Nv-rev1 n Engineering & Associates, Inc. 4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 2.25" for 10YR event 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf, Atten= 0%, Lag= 0.0 min tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond CB1: (new Pond) 10,067 sf, 81.72% Impervious, Inflow Depth = 4.16" for 10YR event 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond CB1: (new Pond) 10,067 sf, 81.72% Impervious, Inflow Depth = 4.16" for 10YR event 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Sign @ 12.37 hrs Invert Outlet Devices 1,036.50" 12.0" Round Culvert L = 8.0" Ke= 0.200 Inlet / Outlet Invert= 1,036.50' / 1,036.38" S= 0.0150 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 46
00047 Post-De Prepared by Alle HydroCAD® 10.10- Inflow = Primary = Routing by Dyn-S Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,037 Device Routing #1 Primary	Av-rev1 en Engineering & Associates, Inc. 4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 2.25" for 10YR event 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf, Atten= 0%, Lag= 0.0 min tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond CB1: (new Pond) 10,067 sf, 81.72% Impervious, Inflow Depth = 4.16" for 10YR event 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs .59' @ 12.37 hrs Invert Outlet Devices 1,036.50' 12.0" Round Culvert L= 8.0' Ke= 0.200 Inlet / Outlet Invert= 1,036.50' / 1,036.38' S= 0.0150 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf v Max=0.99 cfs @ 12.01 hrs HW=1,037.09' TW=1,036.89' (Dynamic Tailwater) thet Controls 0.99 cfs @ 2.93 fps)	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 46
00047 Post-De Prepared by Alle HydroCAD® 10.10- Inflow a = Primary = Routing by Dyn-S Inflow Area = Inflow = Primary = Routing by Dyn-S Peak Elev= 1,037 Device Routing #1 Primary Primary OutFlow 1=Culvert (Out	Av-rev1 In Engineering & Associates, Inc. 4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Summary for Pond 2EV: 12,290 sf, 0.00% Impervious, Inflow Depth = 2.25" for 10YR event 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf 0.56 cfs @ 12.21 hrs, Volume= 2,299 cf, Atten= 0%, Lag= 0.0 min tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Summary for Pond CB1: (new Pond) 10,067 sf, 81.72% Impervious, Inflow Depth = 4.16" for 10YR event 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf 1.17 cfs @ 12.01 hrs, Volume= 3,490 cf tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 59'@ 12.37 hrs Invert Outlet Devices 1,036.50' 12.0" Round Culvert L= 8.0' Ke= 0.200 Inlet / Outlet Invert= 1,036.50' / 1,036.38' S = 0.0150 /' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf / Max=0.99 cfs @ 12.01 hrs HW=1,037.09' TW=1,036.89' (Dynamic Tailwater) thet Controls 0.99 cfs @ 2.93 fps) Summary for Pond CB2: (new Pond)	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 46

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Peak Elev= 1,038.40' @ 12.07 hrs

#1	Primary	1,037.95'	12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate	ert L= 12.0' Ke= 0.200 - 1,037.95' / 1,037.77' S= 0.0150 '/' Cc= 0.1 - 20 PE smooth interior Flow Area= 0.79 sf	900
rimary	/ OutFlow	Max=0.42 cfs (@ 12.03 hrs HW=1,0	38.37' TW=1,038.25' (Dynamic Tailwater)	
—1=Cι	ulvert (Ou	tlet Controls 0.4	2 cfs @ 2.01 fps)		
			Sum	imary for Pond CB3: (new Pond)	
nflow A nflow Outflow Primary	rea = = = =	14,478 sf, 8 1.53 cfs @ 1 1.53 cfs @ 1 1.53 cfs @ 1	84.51% Impervious, I 2.07 hrs, Volume= 2.07 hrs, Volume= 2.07 hrs, Volume=	Inflow Depth = 4.16" for 10YR event 5,019 cf 5,019 cf, Atten= 0%, Lag= 0.0 min 5,019 cf	
Routing Peak El	by Dyn-St ev= 1,040.	tor-Ind method, .58' @ 12.07 hrs	Time Span= 0.00-48.0 s	00 hrs, dt= 0.05 hrs	
Device	Routing	Invert	Outlet Devices		
#1	Primary	1,040.00'	12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate	ert L= 165.0' Ke= 0.200 : 1,040.00' / 1,037.77' S= 0.0135 '/' Cc= 0. ed PE, smooth interior, Flow Area= 0.79 sf	900
Primary	/ OutFlow ulvert (Ou	Max=1.46 cfs (tlet Controls 1.4	@ 12.07 hrs HW=1,0 6 cfs @ 4.55 fps)	40.57' TW=1,038.27' (Dynamic Tailwater)	
			Sum	mary for Pond CB4: (new Pond)	
Inflow A Inflow Outflow Primary	lrea = = = =	7,846 sf, 7 0.87 cfs @ 1 0.87 cfs @ 1 0.87 cfs @ 1	70.75% Impervious, I 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume=	Inflow Depth = 3.84" for 10YR event 2,508 cf 2,508 cf, Atten= 0%, Lag= 0.0 min 2,508 cf	
Routing	by Dyn_St	or-Ind method	Time Span= 0 00-48 (00 hrs_dt= 0.05 hrs	
)0047 Prepare HydroCA	Post-De ed by Alle	v-rev1 n Engineering ₄b s/n 03871 ©∶	& Associates, Inc. 2020 HydroCAD Softwa	are Solutions LLC	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 48
D 0047 Prepare HydroCA Peak El	Post-De ed by Alle <u>AD® 10.10-</u> ev= 1,040.	v-rev1 n Engineering 4b_s/n 03871 ⊚. .42' @ 12.01 hrs	& Associates, Inc. 2020 HydroCAD Softwa s	are Solutions LLC	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 48
00047 Prepare HydroCA Peak El Device	Post-De ed by Alle AD® 10.10- ev= 1,040. Routing	v-rev1 n Engineering 4 <u>b s/n 03871 ©.</u> .42' @ 12.01 hrs Invert	& Associates, Inc. 2020 HydroCAD Softwa s Outlet Devices	are Solutions LLC	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 48
00047 Prepare HydroCA Peak El <u>Device</u> #1	Post-De ed by Alle AD® 10.10 ev= 1,040. Routing Primary	v-rev1 n Engineering 4b s/n 03871 © .42' @ 12.01 hrs 	& Associates, Inc. 2020 HydroCAD Softwa s Outlet Devices 12.0" Round Culv. Inlet / Outlet Invert= n= 0.013 Corrugate	ert L= 165.0' Ke= 0.200 • 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.1 • 20 PE, smooth interior, Flow Area= 0.79 sf	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 48
00047 Prepare HydroCA Peak El Device #1 #1	Post-De ed by Alle <u>AD® 10.10-</u> ev= 1,040. <u>Routing</u> Primary / OutFlow Jvert (Inle	v-rev1 n Engineering 4b s/n 03871 ©. .42' @ 12.01 hrs 	& Associates, Inc. 2020 HydroCAD Softwa s Outlet Devices 12.0" Round Culv Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.01 hrs HW=1,0- cfs @ 2.73 fps)	ert L= 165.0' Ke= 0.200 • 1,040.00' / 1,036.38' S= 0.0219 '/ Cc= 0. • 2 PE, smooth interior, Flow Area= 0.79 sf 40.41' TW=1,036.90' (Dynamic Tailwater)	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 48 900
00047 Prepare HydroCA Peak El Device #1 #1 Primary 1=Ct	Post-De ed by Alle D® 10.10 ev= 1,040. Primary Primary / OutFlow alvert (Inte	v-rev1 n Engineering 4b s/n 03871 ⊚. 42' @ 12.01 hrs Invert 1,040.00' Max=0.83 cfs (et Controls 0.83	& Associates, Inc. 2020 HydroCAD Softwa S Outlet Devices 12.0" Round Culv. Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.01 hrs HW=1,0 cfs @ 2.73 fps) Sum	ert L= 165.0' Ke= 0.200 = 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.1 = d PE, smooth interior, Flow Area= 0.79 sf 40.41' TW=1,036.90' (Dynamic Tailwater) mmary for Pond CB5: (new Pond)	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 48
Prepare HydroCA Peak El #1 Primary 1=Cu Inflow A Inflow A Outflow Primary	Post-De ed by Alle bD® 10.10 ev= 1,040. 	v-rev1 n Engineering 4b s/n 03871 @. .42' @ 12.01 hrs Invert 1,040.00' Max=0.83 cfs (et Controls 0.83 8,042 sf, 8 0.96 cfs @ 1 0.96 cfs @ 1 0.96 cfs @ 1	& Associates, Inc. 2020 HydroCAD Softwa s Outlet Devices 12.0" Round Culvi Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.01 hrs HW=1,0 cfs @ 2.73 fps) Sum 87.19% Impervious, I 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume=	are Solutions LLC ert L= 165.0' Ke= 0.200 : 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.3 ad PE, smooth interior, Flow Area= 0.79 sf 40.41' TW=1,036.90' (Dynamic Tailwater) amary for Pond CB5: (new Pond) Inflow Depth = 4.27" for 10YR event 2,862 cf 2,862 cf, Atten= 0%, Lag= 0.0 min 2,862 cf	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 48
000047 Prepare HydroCA Peak El Device #1 Primary T 1=Cu Inflow A Outflow Primary Routing Peak El	Post-De ed by Alle D⊗ 10.10 ev= 1,040. Primary y OutFlow ulvert (Inle area = = = = = = by Dyn-Si ev= 1,040.	v-rev1 n Engineering 4b s/n 03871 @. .42' @ 12.01 hrs Invert 1,040.00' Max=0.83 cfs (et Controls 0.83 8,042 sf, 8 0.96 cfs @ 1 0.96 cfs @ 1 0.96 cfs @ 1 0.96 cfs @ 1 0.96 cfs @ 1	& Associates, Inc. 2020 HydroCAD Softwares S Outlet Devices 12.0" Round Culv. Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.01 hrs HW=1,0 cfs @ 2.73 fps) Sum 87.19% Impervious, I 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= Time Span= 0.00-48.0	ert L= 165.0' Ke= 0.200 : 1,040.00' / 1,036.38' S= 0.0219 '/ Cc= 0. ed PE, smooth interior, Flow Area= 0.79 sf 40.41' TW=1,036.90' (Dynamic Tailwater) mary for Pond CB5: (new Pond) Inflow Depth = 4.27" for 10YR event 2,862 cf 2,862 cf, Atten= 0%, Lag= 0.0 min 2,862 cf 00 hrs, dt= 0.05 hrs	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 48
Dood47 Prepare HydroCA Peak El #1 Primary 1=Ct Inflow A Inflow Outflow Primary Routing Peak El Device	Post-De ed by Alle D® 10.10 ev= 1,040. Primary / OutFlow alvert (Inte rea = = = = = = = = = = = = = = = = = = =	v-rev1 n Engineering 42' @ 12.01 hrs 1,040.00' Max=0.83 cfs (et Controls 0.83 8,042 sf, 8 0.96 cfs @ 1 0.96 cfs @ 1 0.96 cfs @ 1 0.96 cfs @ 1 tor-Ind method, 7,76' @ 12.01 hrs Invert	& Associates, Inc. 2020 HydroCAD Softwas S Outlet Devices 12.0" Round Culv Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.01 hrs HW=1,0 cfs @ 2.73 fps) Sum 87.19% Impervious, I 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= Time Span= 0.00-48.0 S Outlet Devices	are Solutions LLC ert L= 165.0' Ke= 0.200 : 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.3 ed PE, smooth interior, Flow Area= 0.79 sf 40.41' TW=1,036.90' (Dynamic Tailwater) mary for Pond CB5: (new Pond) Inflow Depth = 4.27" for 10YR event 2,862 cf 2,862 cf 2,862 cf 2,862 cf 00 hrs, dt= 0.05 hrs	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 48 900
000047 Prepare HydroCA Peak El Device #1 Primary Terimary Primary Routing Peak El Device #1	Post-De ed by Alle <u>D® 10.10</u> ev= 1,040. Primary y OutFlow ulvert (Inle area = = = = by Dyn-Si ev= 1,040. <u>Routing</u> Primary	v-rev1 n Engineering 4b s/n 03871 @. .42' @ 12.01 hrs Invert 1,040.00' Max=0.83 cfs (et Controls 0.83 8,042 sf, 8 0.96 cfs @ 1 0.96 cf	& Associates, Inc. 2020 HydroCAD Software S Outlet Devices 12.0" Round Culv. Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.01 hrs HW=1,0- cfs @ 2.73 fps) Sum 87.19% Impervious, I 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= Time Span= 0.00-48.0s Outlet Devices 12.0" Round Culv. Inlet / Outlet Invert= n= 0.013 Corrugate	ert L= 165.0' Ke= 0.200 : 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.3 ed PE, smooth interior, Flow Area= 0.79 sf 40.41' TW=1,036.90' (Dynamic Tailwater) mary for Pond CB5: (new Pond) Inflow Depth = 4.27" for 10YR event 2,862 cf 2,862 cf 2,862 cf 2,862 cf 00 hrs, dt= 0.05 hrs ert L= 42.0' Ke= 0.200 : 1,040.30' / 1,039.67' S= 0.0150 '/' Cc= 0.3 ed PE, smooth interior, Flow Area= 0.79 sf	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 48 900
Prepare Prepare Prepare Prepare Prepare #1 Primary Primary Routing Primary Routing Primary #1 Primary	Post-De ed by Alle D® 10.10 ev= 1,040. Primary / OutFlow alvert (Inle area = = = by Dyn-St ev= 1,040. Routing Primary / OutFlow alvert (Ba	v-rev1 n Engineering 4b s/n 03871 @. (42' @ 12.01 hrs Invert 1,040.00' Max=0.83 cfs (et Controls 0.83 8,042 sf, 8 0.96 cfs @ 1 0.96 cf	& Associates, Inc. 2020 HydroCAD Softward S Outlet Devices 12.0" Round Culv. Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.01 hrs HW=1,0 cfs @ 2.73 fps) Sum 87.19% Impervious, I 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= Time Span= 0.00-48.0 S Outlet Devices 12.0" Round Culv. Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.01 hrs HW=1,0 22 cfs @ 3.92 fps)	are Solutions LLC ert L= 165.0' Ke= 0.200 : 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.3 ad PE, smooth interior, Flow Area= 0.79 sf 40.41' TW=1,036.90' (Dynamic Tailwater) amary for Pond CB5: (new Pond) Inflow Depth = 4.27" for 10YR event 2,862 cf 2,862 cf, Atten= 0%, Lag= 0.0 min 2,862 cf 00 hrs, dt= 0.05 hrs ert L= 42.0' Ke= 0.200 : 1,040.30' / 1,039.67' S= 0.0150 '/' Cc= 0.3 ed PE, smooth interior, Flow Area= 0.79 sf 40.75' TW=1,038.38' (Dynamic Tailwater)	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 48 900
000047 Prepare HydroCA Peak El Device #1 Primary Primary Routing Peak El Device #1 Primary T=Cu	Post-De ed by Alle by 10.10 ev= 1,040. Routing Primary / OutFlow ulvert (Inle =	v-rev1 n Engineering 4b s/n 03871 @. .42' @ 12.01 hrs 	& Associates, Inc. 2020 HydroCAD Softwares S Outlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.01 hrs HW=1,0- cfs @ 2.73 fps) Sum 87.19% Impervious, I 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.01 hrs HW=1,0- 12 cfs @ 3.92 fps) Sum	are Solutions LLC ert L= 165.0' Ke= 0.200 : 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.1200'' Cc= 0.1200''' Cc= 0.1200''' Cc= 0.1200''''' Cc= 0.1200''''''''''''''''''''''''''''''''''	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 48 900
00047 Prepare HydroCA Peak El Peak El Primary 1=Cu Inflow A Dutflow Primary Routing Peak El Device #1 Primary The for the formation Primary The formation Primary Primary The formation Primary Primar	Post-De ed by Alle by 10.10 ev= 1,040. Routing Primary / OutFlow alvert (Inte area = = = by Dyn-St ev= 1,040. 	v-rev1 n Engineering 4b s/n 03871 @. .42' @ 12.01 hrs Invert 1,040.00' Max=0.83 cfs (et Controls 0.83 8,042 sf, 8 0.96 cfs @ 1 0.96 cfs (0 1.02 cfs (0	& Associates, Inc. 2020 HydroCAD Softwards S Outlet Devices 12.0" Round Culvi Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.01 hrs HW=1,0 cfs @ 2.73 fps) Sum 87.19% Impervious, I 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= Time Span= 0.00-48.0 Outlet Devices 12.0" Round Culvi Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.01 hrs HW=1,0 12.01 hrs HW=1,0 12.01 hrs HW=1,0 12.01 hrs HW=1,0 12.01 hrs HW=1,0 12.01 hrs, Volume= 81.55% Impervious, I 2.01 hrs, Volume=	are Solutions LLC ert L= 165.0' Ke= 0.200 : 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.3 ad PE, smooth interior, Flow Area= 0.79 sf 40.41' TW=1,036.90' (Dynamic Tailwater) amary for Pond CB5: (new Pond) Inflow Depth = 4.27" for 10YR event 2,862 cf 2,862 cf 2,862 cf 2,862 cf 2,862 cf 00 hrs, dt= 0.05 hrs ert L= 42.0' Ke= 0.200 : 1,040.30' / 1,039.67' S= 0.0150 '/' Cc= 0.3 ed PE, smooth interior, Flow Area= 0.79 sf 40.75' TW=1,038.38' (Dynamic Tailwater) amary for Pond CB6: (new Pond) Inflow Depth = 4.16" for 10YR event 3,028 cf, Atten= 0%, Lag= 0.0 min	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 48 900

Peak Elev= 1,041.28' @ 12.01 hrs

Device Routing Invert Outlet Devices	
#1 Primary 1,040.75' 12.0" Round Culvert L= 36.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.75' / 1,040.39' S= 0.0100 '/ C n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.7	c= 0.900 9 sf
Primary OutFlow Max=0.98 cfs @ 12.01 hrs HW=1,041.27' TW=1,040.67' (Dynamic Tailw └─ 1=Culvert (Barrel Controls 0.98 cfs @ 3.47 fps)	ater)
Summary for Pond CB7: (new Ponc)
Inflow Area = 16,498 sf, 91.30% Impervious, Inflow Depth = 4.38" for 10YR even nflow = 1.99 cfs @ 12.01 hrs, Volume= 6,027 cf 6,027 cf vutflow = 1.99 cfs @ 12.01 hrs, Volume= 6,027 cf, Atten= 0%, Lag= 0.0 1.99 cfs @ trimary = 1.99 cfs @ 12.01 hrs, Volume= 6,027 cf 6,027 cf	t min
outing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs eak Elev= 1,042.25' @ 12.01 hrs	
Device Routing Invert Outlet Devices	
#1 Primary 1,041.50' 12.0" Round Culvert L= 128.0' Ke= 0.200 Inlet / Outlet Invert= 1,041.50' / 1,040.22' S= 0.0100 '/' C n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.7	c= 0.900 9 sf
Primary OutFlow Max=1.92 cfs @ 12.01 hrs HW=1,042.23' TW=1,040.68' (Dynamic Tailw —1=Culvert (Barrel Controls 1.92 cfs @ 4.37 fps)	ater)
Summary for Pond CB8: (new Pond)
nflow Area = 15,482 sf, 73.05% Impervious, Inflow Depth = 3.94" for 10YR even nflow = 1.57 cfs @ 12.07 hrs, Volume= 5,087 cf Outflow = 1.57 cfs @ 12.07 hrs, Volume= 5,087 cf, Atten= 0%, Lag= 0.0 Primary = 1.57 cfs @ 12.07 hrs, Volume= 5,087 cf	t min
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs. dt= 0.05 hrs	
20047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc.	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 50
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.47' @ 12.10 hrs	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 50
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.47' @ 12.10 hrs Device Routing Invert Outlet Devices	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 50
D00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.47' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 7' Constant 0.013 Corrugated PE, smooth interior, Flow Area= 1.7	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 50 :c= 0.900 7 sf
D00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. +ydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.47' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 7' C n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.7 Primary OutFlow Max=1.34 cfs @ 12.07 hrs HW=1,041.44' TW=1,041.29' (Dynamic Tailw 1=Culvert (Outlet Controls 1.34 cfs @ 2.65 fps)	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 50 :c= 0.900 7 sf ater)
000047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.47' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' Sector Routing Invert 0.013 Corrugated PE, smooth interior, Flow Area= 1.7 Primary OutFlow Max=1.34 cfs @ 12.07 hrs HW=1,041.44' TW=1,041.29' (Dynamic Tailw 1=Culvert (Outlet Controls 1.34 cfs @ 2.65 fps) Summary for Pond DRI: (new Pond	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 50 cc= 0.900 7 sf ater)
D0047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.47' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/ Con= 0.013 Corrugated PE, smooth interior, Flow Area= 1.7 Primary OutFlow Max=1.34 cfs @ 12.07 hrs HW=1,041.44' TW=1,041.29' (Dynamic Tailw - 1=Culvert (Outlet Controls 1.34 cfs @ 2.65 fps) Summary for Pond DRI: (new Pond nflow Area = 13,911 sf, 37.85% Impervious, Inflow Depth = 3.04" for 10YR even nflow = 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf Dutflow = 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf Primary = 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 50 cc= 0.900 7 sf ater)
Doto47 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.47' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/ C n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.7 Primary OutFlow Max=1.34 cfs @ 12.07 hrs HW=1,041.44' TW=1,041.29' (Dynamic Tailw L=Culvert (Outlet Controls 1.34 cfs @ 2.65 fps) Summary for Pond DRI: (new Pond nflow Area = 13,911 sf, 37.85% Impervious, Inflow Depth = 3.04" for 10YR even nflow = 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf Outflow = 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf Outflow = 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,044.25' @ 12.06 hrs	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 50 cc= 0.900 7 sf ater)
D00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. hydroCAD® 10.10-4b sin 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.47' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/ C n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.7 Primary OutFlow Max=1.34 cfs @ 12.07 hrs HW=1,041.44' TW=1,041.29' (Dynamic Tailw 1=Culvert (Outlet Controls 1.34 cfs @ 2.65 fps) Summary for Pond DRI: (new Pond nflow Area = 13,911 sf, 37.85% Impervious, Inflow Depth = 3.04" for 10YR even nflow = 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf Outflow = 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf Outflow = 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,044.25' @ 12.06 hrs Device Routing Invert Outlet Devices #1 Primary 1,043.75' 12.0" Round Culvert L= 59.0' Ke= 0.200 Inlet / Outlet Invert= 1,043.75' / 1,042.59' S= 0.0197 '/ C Inlet / Outlet Invert= 1,043.75' / 1,042.59' S= 0.0197 '/ C	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 50 ic= 0.900 7 sf ater)) t min
D0047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. tydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.47' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/ Constant of the control of the con	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 50 ic= 0.900 7 sf ater) ic= 0.900 ater)
Output Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.47' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/ C n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.7 Primary OutFlow Max=1.34 cfs @ 12.07 hrs HW=1,041.44' TW=1,041.29' (Dynamic Tailw -1=Culvert (Outlet Controls 1.34 cfs @ 2.65 fps) Summary for Pond DRI: (new Pond Inflow Area = 13,911 sf, 37.85% Impervious, Inflow Depth = 3.04" for 10YR even Inflow = 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf Outflow = 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf Primary = 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,044.25' @ 12.06 hrs Device Routing Invert Outlet Devices #1 Primary 1,043.75' 12.0" Round Culvert L= 59.0' Ke= 0.200 Inlet / Outlet Invert= 1,043.75' / 1,042.59' S= 0.0197 '/ C n= 0.013 Cast iron, coated, Flow Area= 0.79 sf Primary OutFlow Max=1.17 cfs @ 12.06 hrs HW=1,044.25' TW=1,043.00' (Dynamic Tailw -1=Culvert (Inlet Controls 1.17 cfs @ 3.00 fps)	<i>Type III 24-hr 10YR Rainfall=4.85"</i> Printed 11/10/2021 Page 50 ic= 0.900 7 sf ater)) t min
D0047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. 1ydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.47' @ 12.10 hrs Perice Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/ C n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.7 Primary OutFlow Max=1.34 cfs @ 12.07 hrs HW=1,041.44' TW=1,041.29' (Dynamic Tailw —1=Culvert (Outlet Controls 1.34 cfs @ 2.65 fps) Summary for Pond DRI: (new Pond nflow Area = 13,911 sf, 37.85% Impervious, Inflow Depth = 3.04" for 10YR even nflow = 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf Nutflow = 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf Noting by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 'eak Elev= 1,044.25' @ 12.06 hrs Pevice Routing Invert Outlet Devices #1 Primary 1,043.75' 12.0" Round Culvert L= 59.0' Ke= 0.200 Inlet / Outlet Invert= 1,043.75' / 1,042.59' S= 0.0197 '/ n= 0.013 Cast iron, coated, Flow Area= 0.79 sf Primary OutFlow Max=1.17 cfs @ 12.06 hrs HW=1,044.25' TW=1,043.00' (Dynamic Tailw —1=Culvert (Inlet Controls 1.17 cfs @ 3.00 fps) Summary for Pond FB: (new Pond) nflow Area = 119,356 sf, 78.71% Impervious, Inflow Depth = 4.06" for 10YR even nflow = 12.27 cfs @ 12.01 hrs, Volume= 39,002 cf nflow Area = 119,356 sf, 78.71% Impervious, Inflow Depth = 4.06" for 10YR even nflow = 9.99 cfs @ 12.01 hrs, Volume= 39,002 cf	Type III 24-hr 10YR Rainfall=4.85" Printed 11/10/2021 Page 50 ic= 0.900 7 sf ater) ic= 0.900 ic= 0.900 ater) ic= 0.900 ic= 0.900 ic= 0.900 ater) ic= 0.900 ater) ic= 0.900

Peak Elev= 1,037.56' @ 12.28 hrs Surf.Area= 1,332 sf Storage= 4,031 cf

Plug-Flow detention time= 43.3 min calculated for 38,961 cf (96% of inflow) Center-of-Mass det. time= 22.9 min (793.7 - 770.8)

Volume	Invert	Avai	I.Storage	Storage Description	I	
#1	1,033.30'		7,896 cf	Custom Stage Dat	a (Irregular) Liste	ed below (Recalc)
Elevation (feet)	Surf (.Area sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,033.30		579 712	98.5 108.0	0 451	0 451	579 751
1,036.00 1,038.00 1,040.00		1,036 1,422 1,846	129.0 151.0 172.0	1,738 2,448 3,259	2,189 4,637 7,896	1,213 1,777 2,406

Device	Routing	Invert	Outlet Devices
#1	Primary	1,035.00'	153.0 deg x 3

1,035.00' 153.0 deg x 37.0' long Sharp-Crested Vee/Trap Weir Cv= 2.47 (C= 3.09)

Primary OutFlow Max=0.00 cfs @ 12.01 hrs HW=1,036.46' TW=1,036.85' (Dynamic Tailwater)
-1=Sharp-Crested Vee/Trap Weir (Controls 0.00 cfs)

Summary for Pond IB: (new Pond)

Inflow Ar	ea =	132,521 sf, 75.43% Impervious	s, Inflow Depth = 3.86" for 10YR event
Inflow	=	11.20 cfs @ 12.02 hrs, Volume	= 42,652 cf
Outflow	=	4.90 cfs @ 12.23 hrs, Volume	= 39,557 cf, Atten= 56%, Lag= 13.0 min
Primary	=	4.90 cfs @ 12.23 hrs, Volume	= 39,557 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,037.56' @ 12.23 hrs Surf.Area= 3,939 sf Storage= 12,789 cf

Plug-Flow detention time= 103.3 min calculated for 39,557 cf (93% of inflow) Center-of-Mass det. time= 65.6 min (860.0 - 794.4)

Prepared HydroCAD	ost-Dev-r by Allen E ® 10.10-4b	ev1 Engineer s/n 03871	ing & Ass © 2020 H	ociates, Inc. lydroCAD Software Sol	lutions LLC		i ype III 24-nr	Printed 11/10/202 Prage 5
Volume	Invert	Avail	.Storage	Storage Description				
#1	1,033.30'	2	3,761 cf	Custom Stage Dat	a (Irregular) Listed	below (Recalc)		
Elevation	n Su	rf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area		
(feet))	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)		
1,033.30)	2,117	216.0	0	0	2,117		
1,034.00)	2,388	227.0	1,576	1,576	2,535		
1,036.00)	3,250	253.5	5,616	7,192	3,656		
1,038.00)	4,145	275.0	7,377	14,569	4,703		
1,040.00)	5,063	295.0	9,193	23,761	5,775		
Device	Routing	Inv	ert Outle	et Devices				
#2 #3 #4 #5 Primary (Device 1 Device 1 Device 1 Primary DutFlow Ma vert (Passe	1,034. 1,036. 1,038. 1,039. ax=4.89 cfs s 4.89 cfs	Inlet n= 0 60' 5.0" 94' 8.0" 88' 24.0 20' 153. cfs @ 12.2 s of 19.35	Voluet Invert= 1,03 .013 Corrugated PE Vert. Orifice/Grate 2 Vert. Orifice/Grate 2 * x 24.0" Horiz. Orif 0 deg x 6.0' long x 2 23 hrs HW=1,037.56 cfs potential flow)	3.50' 1,031.00' S , smooth interior, I X 2.00 C= 0.600 X 3.00 C= 0.600 ice/Grate C= 0.60 .00' rise Sharp-Ci ' TW=1,031.33' (= 0.0446 7° CC= 0 Flow Area= 1.77 sf Limited to weir flow Limited to weir flow 0 Limited to weir flow 00 Limited to weir f rested Vee/Trap W	at low heads at low heads low at low heads eir Cv= 2.47 (C= 3.09)	
-2=C -3=C -4=C -5=Sha	Drifice/Grat Drifice/Grat Drifice/Grat Irp-Crested	e (Orifice e (Orifice e (Contr Vee/Tra	Controls Controls ols 0.00 c p Weir (C	2.18 cfs @ 7.99 fps) 2.72 cfs @ 2.68 fps) fs) controls 0.00 cfs)				
				Summar	y for Pond MH1	: (new Pond)		
Inflow Are Inflow Outflow	ea = = 5 = 5	48,347 s .08 cfs @ .08 cfs @	sf, 82.38% 12.03 h 12.03 h	6 Impervious, Inflow rs, Volume= rs, Volume=	Depth = 4.14" 1 16,663 cf 16,663 cf, Atten=	or 10YR event 0%, Lag= 0.0 min		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Peak Elev= 1,037.59' @ 12.32 hrs Flood Elev= 1,040.82'

#1 Primary	1,035.77	Inlet / Outlet Inverter	vert L= 52.0' Ke= 0.200 = 1,035.77' / 1,035.00' S= 0.0148 '/' Cc= 0.90 ted PE, smooth interior, Flow Area= 1.77 sf	00	
Primary OutFlow M	Max=3.57 cfs @) 12.03 hrs HW=1,0	036.93' TW=1,036.56' (Dynamic Tailwater)		
-1=Cuivert (Oulle	Controls 3.5	7 cis @ 3.37 ips) Sun	nmary for Pond MH2: (new Pond)		
Inflow Area =	25.434 sf. 8	32.76% Impervious.	Inflow Depth = 4.12 " for 10YR event		
Inflow = Outflow = Primary =	2.61 cfs @ 12 2.61 cfs @ 12 2.61 cfs @ 12 2.61 cfs @ 12	2.05 hrs, Volume= 2.05 hrs, Volume= 2.05 hrs, Volume=	8,742 cf 8,742 cf, Atten= 0%, Lag= 0.0 min 8,742 cf		
Routing by Dyn-Stor Peak Elev= 1,038.29	r-Ind method, 1 9' @ 12.06 hrs	Time Span= 0.00-48	8.00 hrs, dt= 0.05 hrs		
Device Routing #1 Primary	Invert 1,037.52'	Outlet Devices 15.0" Round Culv Inlet / Outlet Inverter n= 0.013 Corrugat	vert L= 120.0' Ke= 0.200 ≔ 1,037.52' / 1,036.02' S= 0.0125 '/' Cc= 0.90 ted PE, smooth interior, Flow Area= 1.23 sf	00	
Primary OutFlow M	/lax=2.49 cfs @ et Controls 2.49	⊉ 12.05 hrs HW=1,0 9 cfs @ 4.50 fps)	038.29' TW=1,036.97' (Dynamic Tailwater)		
		Sum	nmary for Pond MH3i: (new Pond)		
Inflow Area =	71,009 sf, 7	6.21% Impervious,	Inflow Depth = 4.01 " for 10YR event		
Outflow = Primary = Secondary =	7.19 cts @ 12 7.19 cfs @ 12 5.31 cfs @ 12 1.86 cfs @ 12	2.03 nrs, Volume= 2.03 hrs, Volume= 2.03 hrs, Volume= 2.02 hrs, Volume=	23,733 cf 23,733 cf, Atten= 0%, Lag= 0.0 min 9,212 cf 14,522 cf		
00047 Post-Dev - Prepared by Allen HydroCAD® 10.10-4b	• rev1 Engineering ∂ s/n 03871 © 2	& Associates, Inc. 2020 HydroCAD Softw	vare Solutions LLC	Type III 24-hr	10YR Rainfall=4.85" Printed 11/10/2021 Page 54
00047 Post-Dev- Prepared by Allen HydroCAD® 10.10-4b Routing by Dyn-Stor Peak Elev= 1,037.6(-rev1 Engineering & 	& Associates, Inc. 2020 HydroCAD Softw Fime Span= 0.00-48	vare Solutions LLC 3.00 hrs, dt= 0.05 hrs	Type III 24-hr	10YR Rainfall=4.85" Printed 11/10/2021 Page 54
00047 Post-Dev- Prepared by Allen HydroCAD® 10.10-4b Routing by Dyn-Stor Peak Elev= 1,037.60 Device Routing	rev1 Engineering a s/n 03871 © 2 -Ind method, 1 D' @ 12.37 hrs Invert	& Associates, Inc. 2020 HydroCAD Softw Time Span= 0.00-48 Outlet Devices	vare Solutions LLC 8.00 hrs, dt= 0.05 hrs	Type III 24-hr	10YR Rainfall=4.85" Printed 11/10/2021 Page 54
00047 Post-Dev- Prepared by Allen HydroCAD® 10.10-4b Routing by Dyn-Stor Peak Elev= 1,037.60 Device Routing #1 Primary #2 Secondary	-rev1 Engineering & s/n 03871 © 2 -Ind method, T 0' @ 12.37 hrs Invert 1,036.75' 1,036.37'	& Associates, Inc. 2020 HydroCAD Softw Fime Span= 0.00-48 50' long x 0.5' br Head (feet) 0.20 (Coef. (English) 2.5 12.0" Round Culv Inlet / Outlet Invert: n= 0.013 Corrugat	vare Solutions LLC 3.00 hrs, dt= 0.05 hrs readth Broad-Crested Rectangular Weir 0.40 0.60 0.80 1.00 80 2.92 3.08 3.30 3.32 vert L= 5.0' K= 0.200 i= 1,036.37' /1,036.30' S= 0.0140 '/' Cc= 0.90 ted PE, smooth interior, Flow Area= 0.79 sf	Type III 24-hr	10YR Rainfall=4.85" Printed 11/10/2021 Page 54
00047 Post-Dev- Prepared by Allen HydroCAD® 10.10-4b Routing by Dyn-Stor Peak Elev= 1,037.60 <u>Device Routing</u> #1 Primary #2 Secondary #2 Secondary Primary OutFlow M -1=Broad-Crester	-rev1 Engineering & Ind method, 1 0' @ 12.37 hrs Invert 1,036.75' 1,036.37' Aax=4.54 cfs @ d Rectangular	& Associates, Inc. 2020 HydroCAD Softw Time Span= 0.00-48 Outlet Devices 5.0' Iong x 0.5' br Head (feet) 0.20 (Coef. (English) 2.6 T2.0'' Round Cull Inlet / Outlet Invert n= 0.013 Corrugat 212.03 hrs HW=1, r Weir (Weir Controls	vare Solutions LLC 2.00 hrs, dt= 0.05 hrs readth Broad-Crested Rectangular Weir 0.40 0.60 0.80 1.00 80 2.92 3.08 3.30 3.32 vert L= 5.0' Ke= 0.200 i= 1,036.37' / 1,036.30' S= 0.0140 '/' Cc= 0.90 ted PE, smooth interior, Flow Area= 0.79 sf 037.27' TW=1,037.05' (Dynamic Tailwater) Is 4.54 cfs @ 1.75 fps)	Type III 24-hr	10YR Rainfall=4.85" Printed 11/10/2021 Page 54
00047 Post-Dev- Prepared by Allen HydroCAD® 10.10-4b Routing by Dyn-Stor Peak Elev= 1,037.60 Device Routing #1 Primary #2 Secondary #2 Secondary Primary OutFlow M —1=Broad-Crester Secondary OutFlow —2=Culvert (Outle	-rev1 Engineering & -Ind method, T D' @ 12.37 hrs Invert 1,036.75' 1,036.37' Max=4.54 cfs @ d Rectangular w Max=1.36 cf et Controls 1.36	& Associates, Inc. 2020 HydroCAD Softw Fime Span= 0.00-48 5.0' long x 0.5' br Head (feet) 0.20 (Coef. (English) 2.8 12.0" Round Culv Inlet / Outlet Invert: n= 0.013 Corrugat 2 12.03 hrs HW=1, r Weir (Weir Controls 5 @ 12.02 hrs HW= 6 cfs @ 2.46 fps)	vare Solutions LLC 8.00 hrs, dt= 0.05 hrs readth Broad-Crested Rectangular Weir 0.40 0.60 0.80 1.00 80 2.92 3.08 3.30 3.32 vert L= 5.0' Ke= 0.200 = 1,036.37' / 1,036.30' S= 0.0140 '/' Cc= 0.90 ted PE, smooth interior, Flow Area= 0.79 sf 037.27' TW=1,037.05' (Dynamic Tailwater) Is 4.54 cfs @ 1.75 fps) =1,037.25' TW=1,037.13' (Dynamic Tailwater)	Type III 24-hr	10YR Rainfall=4.85" Printed 11/10/2021 Page 54
00047 Post-Dev- Prepared by Allen HydroCAD® 10.10-4b Routing by Dyn-Stor Peak Elev= 1,037.60 Device Routing #1 Primary #2 Secondary #2 Secondary Primary OutFlow M 1=Broad-Crester Secondary OutFlow 2=Culvert (Outle	-rev1 Engineering a s/n 03871 © 2 -Ind method, 1 0' @ 12.37 hrs Invert 1,036.75' 1,036.37' 4ax=4.54 cfs @ d Rectangular w Max=1.36 cfe the Controls 1.36	& Associates, Inc. 2020 HydroCAD Softw Time Span= 0.00-48 50' long x 0.5' br Head (feet) 0.20 (Coef. (English) 2.6 12.0'' Round Cul/ Inlet / Outlet Invert- n= 0.013 Corrugat 12.03 hrs HW=1,0 r Weir (Weir Controls 5 @ 12.02 hrs HW= 6 cfs @ 2.46 fps)	vare Solutions LLC 3.00 hrs, dt= 0.05 hrs readth Broad-Crested Rectangular Weir 0.40 0.60 0.80 1.00 80 2.92 3.08 3.30 3.32 vert L = 5.0' Ke= 0.200 i= 1,036.37' / 1,036.30' S= 0.0140 '/' Cc= 0.90 ted PE, smooth interior, Flow Area= 0.79 sf 037.27' TW=1,037.05' (Dynamic Tailwater) Is 4.54 cfs @ 1.75 fps) =1,037.25' TW=1,037.13' (Dynamic Tailwater) htmary for Pond MH30: (new Pond)	Type III 24-hr	10YR Rainfall=4.85" Printed 11/10/2021 Page 54
00047 Post-Dev- Prepared by Allen HydroCAD® 10.10-4b Routing by Dyn-Stor Peak Elev= 1,037.6t Device Routing #1 Primary #2 Secondary #2 Secondary Primary OutFlow M 1=Broad-Crester Secondary OutFlow 2=Culvert (Outles) Inflow Area = Inflow = Outflow = Primary =	Prev1 Engineering & s/n 03871 © 2 -Ind method, 1 0' @ 12.37 hrs Invert 1,036.75' 1,036.37' Max=4.54 cfs @ d Rectangular w Max=1.36 cf et Controls 1.36 71,009 sf, 7 7.19 cfs @ 12 7.19 cfs @ 12	& Associates, Inc. 2020 HydroCAD Softw Fime Span= 0.00-48 Outlet Devices 5.0' Iong x 0.5' br Head (feet) 0.20 (Coef. (English) 2.8 12.0" Round Culv Inlet / Outlet Invert: n= 0.013 Corrugat 2 12.03 hrs HW=1,0 r Weir (Weir Controls 5 @ 12.02 hrs HW= 6 cfs @ 2.46 fps) Sum 76.21% Impervious, 2.03 hrs, Volume= 2.03 hrs, Volume= 2.03 hrs, Volume=	vare Solutions LLC 3.00 hrs, dt= 0.05 hrs readth Broad-Crested Rectangular Weir 0.40 0.60 0.80 1.00 80 2.92 3.08 3.30 3.32 vert L= 5.0' Ke= 0.200 (= 1,036.37' / 1,036.30' S= 0.0140 '/ Cc= 0.90 ted PE, smooth interior, Flow Area= 0.79 sf 037.27' TW=1,037.05' (Dynamic Tailwater) Is 4.54 cfs @ 1.75 fps) =1,037.25' TW=1,037.13' (Dynamic Tailwater) Imary for Pond MH30: (new Pond) Inflow Depth = 4.01" for 10YR event 23,733 cf 23,733 cf, Atten= 0%, Lag= 0.0 min 23,733 cf	Type III 24-hr	10YR Rainfall=4.85" Printed 11/10/2021 Page 54
00047 Post-Dev- Prepared by Allen HydroCAD® 10.10-4b Routing by Dyn-Stor Peak Elev= 1,037.60 <u>Device Routing</u> #1 Primary #2 Secondary #2 Secondary #2 Secondary #1=Broad-Crester Secondary OutFlow -2=Culvert (Outled Inflow Area = Inflow = Primary = Routing by Dyn-Stor Peak Elev= 1,037.55	•rev1 Engineering & -ind method, 1 0'@ 12.37 hrs Invert 1,036.75' 1,036.37' Max=4.54 cfs @ d Rectangular w Max=1.36 cf tat Controls 1.30 71,009 sf, 7 7.19 cfs @ 12 7.19 cfs @ 12 7.19 cfs @ 12 7.19 cfs @ 12 Ind method, 1 9'@ 12.32 hrs	& Associates, Inc. 2020 HydroCAD Softw Fime Span= 0.00-48 Outlet Devices 5.0' long x 0.5' br Head (feet) 0.20 (Coef, (English) 2.6 12.0'' Round Culv Inlet / Outlet Invert: n= 0.013 Corrugat 2 12.03 hrs HW=1,(r Weir (Weir Controls 5 @ 12.02 hrs HW= 6 cfs @ 2.46 fps) Sum 76.21% Impervious, 2.03 hrs, Volume= 2.03 hrs, Volume= 2.03 hrs, Volume= Fime Span= 0.00-48	vare Solutions LLC 2.00 hrs, dt= 0.05 hrs readth Broad-Crested Rectangular Weir 0.40 0.60 0.80 1.00 80 2.92 3.08 3.00 3.32 vert L = 5.0' Ke= 0.200 i= 1,036.37' / 1,036.30' S= 0.0140 '/' Cc= 0.90 ted PE, smooth interior, Flow Area= 0.79 sf 037.27' TW=1,037.05' (Dynamic Tailwater) is 4.54 cfs @ 1.75 fps) =1,037.25' TW=1,037.13' (Dynamic Tailwater) is 4.54 cfs @ 1.75 fps) =1,037.25' TW=1,037.13' (Dynamic Tailwater) Inflow Depth = 4.01" for 10YR event 23,733 cf 23,733 cf, Atten= 0%, Lag= 0.0 min 23,733 cf 2.00 hrs, dt= 0.05 hrs	Type III 24-hr	10YR Rainfall=4.85" Printed 11/10/2021 Page 54
00047 Post-Dev- Prepared by Allen HydroCAD® 10.10-4b Routing by Dyn-Stor Peak Elev= 1,037.60 Device Routing #1 Primary #2 Secondary #2 Secondary Primary OutFlow M 1=Broad-Crester Secondary OutFlow 2=Culvert (Outled Inflow Area = Inflow = Primary = Routing by Dyn-Stor Peak Elev= 1,037.55 Device Routing #1 Primary	•rev1 Engineering 8 •s/n 03871 © 2 •s/n 03870 © 12 •s/n 04870 © 12.32 hrs •s/n 04870 © 12.32 hrs	& Associates, Inc. 2020 HydroCAD Softw Time Span= 0.00-48 Outlet Devices 5.0' long x 0.5' br Head (feet) 0.20 (Coef. (English) 2.8 12.0" Round Culv Inlet / Outlet Invert: n= 0.013 Corrugat 212.03 hrs HW=1,(r Weir (Weir Controls 5 @ 12.02 hrs HW=1,(r Weir (Weir Controls 5 @ 12.02 hrs HW=5 6 cfs @ 2.46 fps) Sum 76.21% Impervious, 2.03 hrs, Volume= 2.03 hrs, Volume= 2.03 hrs, Volume= Time Span= 0.00-48 Outlet Devices 24.0" Round Culv Inlet / Outlet Invert: n= 0.013 Corrugat	vare Solutions LLC 3.00 hrs, dt= 0.05 hrs readth Broad-Crested Rectangular Weir 0.40 0.60 0.80 1.00 80 2.92 3.08 3.30 3.32 vert L = 5.0' Ke= 0.200 I= 1,036.37' / 1,036.30' S= 0.0140 '/' Cc= 0.90 ted PE, smooth interior, Flow Area= 0.79 sf 037.27' TW=1,037.05' (Dynamic Tailwater) Is 4.54 cfs @ 1.75 fps) =1,037.25' TW=1,037.13' (Dynamic Tailwater) Inflow Depth = 4.01" for 10YR event 23,733 cf 23,733 cf, Atten= 0%, Lag= 0.0 min 23,733 cf 3.00 hrs, dt= 0.05 hrs vert L= 50.0' Ke= 0.200 I= 1,035.86' / 1,035.00' S= 0.0172 '/' Cc= 0.90 ted PE, smooth interior, Flow Area= 3.14 sf	Type III 24-hr	10YR Rainfall=4.85" Printed 11/10/2021 Page 54

Inflow Area	a =	71,009 sf,	76.21% Impervious,	Inflow Depth = 4.0	1" for 10YR event
Inflow	=	7.19 cfs @	12.03 hrs, Volume=	23,733 cf	
Outflow	=	7.19 cfs @	12.03 hrs, Volume=	23,733 cf, A	tten= 0%, Lag= 0.0 min
Primary	=	7.19 cfs @	12.03 hrs, Volume=	23,733 cf	-

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,038.42' @ 12.03 hrs

 Device
 Routing
 Invert
 Outlet Devices

 #1
 Primary
 1,037.35'
 24.0" Round Culvert L= 57.0' Ke= 0.200 Inlet / Outlet Invert= 1,037.35' / 1,036.37' S= 0.0172 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=6.75 cfs @ 12.03 hrs HW=1,038.40' TW=1,037.27' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 6.75 cfs @ 5.90 fps)

Summary for Pond MH5: (new Pond)

Inflow Area	a =	28,054 sf, 89.14	% Impervious,	Inflow Depth = 4	.34" for 10YR event
Inflow	=	3.35 cfs @ 12.01 h	nrs, Volume=	10,139 cf	
Outflow	=	3.35 cfs @ 12.01 h	nrs, Volume=	10,139 cf,	Atten= 0%, Lag= 0.0 min
Primary	=	3.35 cfs @ 12.01 h	nrs, Volume=	10,139 cf	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,040.69' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	1,039.89'	18.0" Round Culvert L= 132.0' Ke= 0.200 Inlet / Outlet Invert= 1,039.89' / 1,038.44' S= 0.0110 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.22 cfs @ 12.01 hrs HW=1,040.67' TW=1,038.38' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 3.22 cfs @ 5.01 fps)

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	Summary for Pond MH6: (new Pond)	
Inflow Area = Inflow = Outflow = Primary =	32,273 sf, 60.28% Impervious, Inflow Depth = 3.61" for 10YR event 3.08 cfs @ 12.06 hrs, Volume= 9,717 cf 3.08 cfs @ 12.06 hrs, Volume= 9,717 cf, Atten= 0%, Lag= 0.0 min 3.08 cfs @ 12.06 hrs, Volume= 9,717 cf	
Routing by Dyn-S Peak Elev= 1,041	tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs .31' @ 12.06 hrs	
Device Routing #1 Primary	Invert Outlet Devices 1,040.58' 18.0" Round Culvert L= 116.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf	
Primary OutFlow	(Max-2.00 of @ 12.06 hrs. HW-1.041.20' TW-1.028.28' (Dynamia Tailuyatar)	
1=Culvert (Inl	et Controls 2.99 cfs @ 3.60 fps)	
▲1=Culvert (Inl	et Controls 2.99 cfs @ 3.60 fps) Summary for Pond MH7: (new Pond)	
Inflow Area = Inflow = Outflow = Primary =	Max-2.99 cfs @ 12.06 fris HW-1,041.29 HW-1,030.36 (Dynamic rainwater) et Controls 2.99 cfs @ 3.60 fps) Summary for Pond MH7: (new Pond) 13,911 sf, 37.85% Impervious, Inflow Depth = 3.04" for 10YR event 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf	
Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,043	Midx = 2.99 cfs @ 12.06 firs HW=1,041.29 HW=1,030.36 (Dynamic Failwater) et Controls 2.99 cfs @ 3.60 fps) Summary for Pond MH7: (new Pond) 13,911 sf, 37.85% Impervious, Inflow Depth = 3.04" for 10YR event 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf, Atten= 0%, Lag= 0.0 min 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs .01' @ 12.06 hrs	
Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,043 Device Routing	Invert,041.29 Twe 1,030.36 (Dynamic Failwater) Summary for Pond MH7: (new Pond) 13,911 sf, 37.85% Impervious, Inflow Depth = 3.04" for 10YR event 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs .01' @ 12.06 hrs Invert Outlet Devices	
Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,043 <u>Device Routing</u> #1 Primary	Invert,041.29 Twe-1,030.36 (Dynamic Failwater) et Controls 2.99 cfs @ 3.60 fps) Summary for Pond MH7: (new Pond) 13,911 sf, 37.85% Impervious, Inflow Depth = 3.04" for 10YR event 1.20 cfs @ 12.06 hrs, Volume= 3,523 cf tor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs .01' @ 12.06 hrs Invert Outlet Devices 1,042.49' 12.0" Round Culvert L= 23.0' Ke= 0.200 Inlet / Outlet Invert= 1,042.49' / 1,042.04' S= 0.0196 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf	

Summary for Pond STU1: (new Pond)

Inflow	=	1.86 cfs @	12.02 hrs, Volume=	14,522 cf
Outflow	=	1.86 cfs @	12.02 hrs, Volume=	14,522 cf, Atten= 0%, Lag= 0.0 min
Primary	=	1.86 cfs @	12.02 hrs, Volume=	14,522 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,037.67' @ 12.45 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	1,036.30'	12.0" Round Culvert L= 5.0' Ke=
			Inlet / Outlet Invert= 1 036 30' / 1 03

12.0" Round Culvert L= 5.0' Ke= 0.200 Inlet / Outlet Invert= 1,036.30' / 1,036.20' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.18 cfs @ 12.02 hrs HW=1,037.13' TW=1,037.02' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 1.18 cfs @ 2.30 fps)

00047 Post-Dev-rev1	Type III 24-hr 25YR Rainfall=6.11"
Prepared by Allen Engineering & Associates, Inc.	Printed 11/10/2021
HydroCAD® 10.10-4b s/n 038/1 © 2020 HydroCAD Software Solutions LLC	Page 58
Time span=0.00-48.00 hrs, dt Runoff by SCS TR-20 method, U Reach routing by Dyn-Stor-Ind method - Po	=0.05 hrs, 961 points UH=SCS, Weighted-CN ond routing by Dyn-Stor-Ind method
Subcatchment1S: (new Subcat)	Runoff Area=12,290 sf 0.00% Impervious Runoff Depth=3.28" Flow Length=431' Tc=14.3 min CN=74 Runoff=0.83 cfs 3,357 cf
Subcatchment2S: (new Subcat)	Runoff Area=5,956 sf 64.05% Impervious Runoff Depth=4.84" Flow Length=186' Tc=1.6 min CN=89 Runoff=0.81 cfs 2,403 cf
Subcatchment 3S: ROOF	Runoff Area=5,000 sf 100.00% Impervious Runoff Depth=5.87" Tc=1.0 min CN=98 Runoff=0.77 cfs 2,447 cf
Subcatchment4S: ROOF	Runoff Area=5,000 sf 100.00% Impervious Runoff Depth=5.87" Tc=1.0 min CN=98 Runoff=0.77 cfs 2,447 cf
Subcatchment 5S: (new Subcat)	Runoff Area=10,067 sf 81.72% Impervious Runoff Depth=5.41" Flow Length=157' Tc=1.0 min CN=94 Runoff=1.50 cfs 4,535 cf
Subcatchment6S: (new Subcat)	Runoff Area=26,955 sf 2.64% Impervious Runoff Depth=3.18" Flow Length=208' Tc=3.9 min CN=73 Runoff=2.43 cfs 7,143 cf
Subcatchment 7S: (new Subcat) Flow Leng	Runoff Area=13,165 sf 45.68% Impervious Runoff Depth=4.51" gth=42' Slope=0.1857 '/ Tc=2.0 min CN=86 Runoff=1.70 cfs 4,952 cf
Subcatchment8S: (new Subcat)	Runoff Area=8,734 sf 81.55% Impervious Runoff Depth=5.41" Flow Length=125' Tc=0.9 min CN=94 Runoff=1.31 cfs 3,934 cf
Subcatchment9S: (new Subcat)	Runoff Area=8,042 sf 87.19% Impervious Runoff Depth=5.52" Flow Length=112' Tc=0.8 min CN=95 Runoff=1.22 cfs 3,700 cf
Subcatchment10S: ROOF	Runoff Area=2,640 sf 100.00% Impervious Runoff Depth=5.87" Tc=1.0 min CN=98 Runoff=0.40 cfs 1,292 cf
Subcatchment11S: ROOF	Runoff Area=2,822 sf 100.00% Impervious Runoff Depth=5.87" Tc=1.0 min CN=98 Runoff=0.43 cfs 1,381 cf

Subcatchment12S: (new Subcat)	Runoff Area=16,498 sf 91.30% Impervious Runoff Depth=5.64" Flow Length=126' Tc=0.8 min CN=96 Runoff=2.52 cfs 7,750 cf
Subcatchment13S: ROOF-CANOPY	Runoff Area=2,880 sf 100.00% Impervious Runoff Depth=5.87" Tc=2.0 min CN=98 Runoff=0.43 cfs 1,409 cf
Subcatchment14S: (new Subcat)	Runoff Area=15,482 sf 73.05% Impervious Runoff Depth=5.18" Flow Length=208' Tc=5.0 min CN=92 Runoff=2.03 cfs 6,680 cf
Subcatchment15S: (new Subcat)	Runoff Area=7,846 sf 70.75% Impervious Runoff Depth=5.06" Flow Length=142' Tc=1.0 min CN=91 Runoff=1.13 cfs 3,312 cf
Subcatchment16S: (new Subcat)	Runoff Area=14,478 sf 84.51% Impervious Runoff Depth=5.41" Flow Length=224' Tc=4.9 min CN=94 Runoff=1.95 cfs 6,522 cf
Subcatchment17S: (new Subcat)	Runoff Area=13,911 sf 37.85% Impervious Runoff Depth=4.19" Flow Length=111' Tc=3.8 min CN=83 Runoff=1.64 cfs 4,861 cf
Reach R1: (new Reach)	Avg. Flow Depth=0.41' Max Vel=2.93 fps Inflow=7.03 cfs 53,146 cf n=0.069 L=20.0' S=0.0750 '/ Capacity=125.86 cfs Outflow=7.04 cfs 53,146 cf
Pond 1EV:	Inflow=8.81 cfs 60,289 cf Primary=8.81 cfs 60,289 cf
Pond 2EV:	Inflow=0.83 cfs 3,357 cf Primary=0.83 cfs 3,357 cf
Pond CB1: (new Pond)	Peak Elev=1,038.17' Inflow=1.50 cfs 4,535 cf 12.0" Round Culvert n=0.013 L=8.0' S=0.0150 '/' Outflow=1.50 cfs 4,535 cf
Pond CB2: (new Pond)	Peak Elev=1,038.53' Inflow=0.81 cfs 2,403 cf 12.0" Round Culvert n=0.013 L=12.0' S=0.0150 '/' Outflow=0.81 cfs 2,403 cf
Pond CB3: (new Pond)	Peak Elev=1,040.68' Inflow=1.95 cfs 6,522 cf 12.0" Round Culvert n=0.013 L=165.0' S=0.0135 '/' Outflow=1.95 cfs 6,522 cf
Pond CB4: (new Pond)	Peak Elev=1,040.49' Inflow=1.13 cfs 3,312 cf 12.0" Round Culvert n=0.013 L=165.0' S=0.0219 '/' Outflow=1.13 cfs 3,312 cf

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Pond CB5: (new Pond)	Peak Elev=1,040.83' Inflow=1.22 cfs 3,700 cf 12.0" Round Culvert n=0.013 L=42.0' S=0.0150 '/ Outflow=1.22 cfs 3,700 cf
Pond CB6: (new Pond)	Peak Elev=1,041.36' Inflow=1.31 cfs 3,934 cf 12.0" Round Culvert n=0.013 L=36.0' S=0.0100 '/' Outflow=1.31 cfs 3,934 cf
Pond CB7: (new Pond)	Peak Elev=1,042.37' Inflow=2.52 cfs 7,750 cf 12.0" Round Culvert n=0.013 L=128.0' S=0.0100 '/' Outflow=2.52 cfs 7,750 cf
Pond CB8: (new Pond)	Peak Elev=1,041.60' Inflow=2.03 cfs 6,680 cf 18.0" Round Culvert n=0.013 L=7.0' S=0.0143 '/' Outflow=2.03 cfs 6,680 cf
Pond DRI: (new Pond)	Peak Elev=1,044.35' Inflow=1.64 cfs 4,861 cf 12.0" Round Culvert n=0.013 L=59.0' S=0.0197 '/' Outflow=1.64 cfs 4,861 cf
Pond FB: (new Pond)	Peak Elev=1,038.12' Storage=4,807 cf Inflow=15.81 cfs 52,672 cf Outflow=12.83 cfs 51,288 cf
Pond IB: (new Pond)	Peak Elev=1,038.12' Storage=15,077 cf Inflow=14.48 cfs 56,241 cf Outflow=7.03 cfs 53,146 cf
Pond MH1: (new Pond)	Peak Elev=1,038.17' Inflow=6.52 cfs 21,665 cf 18.0" Round Culvert n=0.013 L=52.0' S=0.0148 '/' Outflow=6.52 cfs 21,665 cf
Pond MH2: (new Pond)	Peak Elev=1,038.47' Inflow=3.36 cfs 11,372 cf 15.0" Round Culvert n=0.013 L=120.0' S=0.0125 '/' Outflow=3.36 cfs 11,372 cf
Pond MH3i: (new Pond)	Peak Elev=1,038.15' Inflow=9.29 cfs 31,007 cf Primary=6.99 cfs 13,411 cf Secondary=2.37 cfs 17,596 cf Outflow=9.29 cfs 31,007 cf
Pond MH3o: (new Pond)	Peak Elev=1,038.15' Inflow=9.29 cfs 31,007 cf 24.0" Round Culvert n=0.013 L=50.0' S=0.0172 '/ Outflow=9.29 cfs 31,007 cf
Pond MH4: (new Pond)	Peak Elev=1,038.59' Inflow=9.29 cfs 31,007 cf 24.0" Round Culvert n=0.013 L=57.0' S=0.0172 '/ Outflow=9.29 cfs 31,007 cf

 Pond MH5: (new Pond)
 Peak Elev=1,040.81'
 Inflow=4.26 cfs
 13,065 cf

 Pond MH6: (new Pond)
 Peak Elev=1,0213
 L=132.0'
 S=0.0110 '/'
 Outflow=4.26 cfs
 13,065 cf

 Pond MH6: (new Pond)
 Peak Elev=1,041.43'
 Inflow=4.26 cfs
 12,951 cf

 Pond MH7: (new Pond)
 Peak Elev=1,0013
 L=116.0'
 S=0.0150 '/'
 Outflow=4.06 cfs
 12,951 cf

 Pond MH7: (new Pond)
 Peak Elev=1,0013
 L=10.0''
 S=0.0150 '/'
 Outflow=1.64 cfs
 4,861 cf

 Pond STU1: (new Pond)
 Peak Elev=1,003
 L=23.0'
 S=0.0196 '/'
 Outflow=1.64 cfs
 4,861 cf

 Pond STU1: (new Pond)
 Peak Elev=1,003
 L=23.0'
 S=0.0196 '/'
 Outflow=2.37 cfs
 17,596 cf

 12.0'' Round Culvert n=0.013
 L=50''
 S=0.0200'''
 Outflow=2.37 cfs
 17,596 cf

 Total Runoff Area = 171,766 sf
 Runoff Volume = 68,124 cf
 Average Runoff Depth = 4.76"

 41.39%
 Pervious = 71,099 sf
 58.61%
 Impervious = 100,667 sf

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				Sur	nmary for	Subcatchment	1S: (new	Subcat)		
Runoff = 0.83 cfs @ 12.20 hrs, Volume= 3,357 cf, Depth= 3.28"										
Runoff b Type III :	y SCS TF 24-hr 25`	R-20 m YR Rai	ethod, UH=SCS infall=6.11"	, Weigh	ed-CN, Time	e Span= 0.00-48.00	hrs, dt= 0.0)5 hrs		
A	rea (sf)	CN	Description							
	4,440	74	>75% Grass co	over, Go	od, HSG C					
	7,850	74	>/5% Grass co	over, Go	od, HSG C					
	12,290	74	100.00% Pervi	age ous Area	a					
Tc (min)	Length (feet)	Slop (ft/	be Velocity Ca ft) (ft/sec)	apacity (cfs)	Description					
8.5	50	0.050	0.10		Sheet Flow	',				
5.8	381	0.047	72 1.09		Woods: Ligh Shallow Co Woodland	ht underbrush n= 0 ncentrated Flow, Kv= 5.0 fps	0.400 P2=	3.26"		
14.3	431	Total								
				Sur	nmary for	Subcatchment	2S: (new	Subcat)		
Runoff	=	0.81	cfs @ 12.03 h	rs, Volu	me=	2,403 cf, Depth=	4.84"			
Runoff b Type III :	y SCS TF 24-hr 25`	R-20 m YR Rai	ethod, UH=SCS ínfall=6.11"	, Weigh	ed-CN, Time	e Span= 0.00-48.00	hrs, dt= 0.0)5 hrs		
A	rea (sf)	CN	Description							
	26	98	Unconnected p	avemer	t, HSG C					
	2.141	98 74	>75% Grass co	ver. Go	od. HSG C					
	5,956	89	Weighted Aver	age	,					
	0 1 / 1		35 95% Pervio	us Area						
	2,141		64.0E0/ Image							

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Tc (min)	Length (feet)	(ft/fl) (ft/sec)	(cts)		
0.6	44	0.022	7 1.24		Sheet Flow,	
1.0	142	0.013	4 2.35		Smooth surfaces n = 0.011 P2= 3.26" Shallow Concentrated Flow, Payed Ky= 20.3 fps	
1.6	186	Total			1 4/64 11/ 20.0 105	
					Summary for Subcatchment 3S: ROOF	
Pupoff	_	0.77	-fc @ 12.0	1 bra Volu	umo- 2,447 of Donth- 5,87"	
		0.77	athod UH-9	CS Weigh	$t_{1110} = 2,447$ Cl, Deput = 3.07	
ype III 2	24-hr 25	YR Rair	nfall=6.11"	CO, Weigi	neu-on, nine Span- 0.00-40.00 nis, ut- 0.03 nis	
A	Area (sf)	CN	Description			
	<u>5,000</u> 5,000	98	Roofs, HSC 100 00% In	<u>C</u>	Area	
Тс	L ength	Slop		Canacity	Description	
(min)	(feet)	(ft/ft) (ft/sec)	(cfs)		
1.0					Direct Entry,	
					Summary for Subcatchment 4S: ROOF	
Runoff	=	0.77	cfs @ 12.0	1 hrs, Volu	ume= 2,447 cf, Depth= 5.87"	
Runoff b	y SCS TI	R-20 me	thod, UH=S	SCS, Weigh	nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	
he III 7	27-111 20	i i v rvall	nan-0.11			
00047 I	Post-De	ev-rev				Type III 24-hr 25YR Rainfall=6.11"
)0047 Prepare	Post-De	ev-rev en Engi -4b s/n	neering & /	Associates	s, Inc. D Software Solutions LLC	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
)0047 I ^D repare HydroCA	Post-De ed by Alle	ev-rev en Engi 4b s/n i	l neering & <i>I</i> 03871 © 202	Associates 0 HydroCAI	s, Inc. D Software Solutions LLC	<i>Type III 24-hr 25YR Rainfall=6.11"</i> Printed 11/10/2021 Page 64
00047 I Prepare HydroCA	Post-De ed by Alle D® 10.10	ev-rev/ en Engi 4 <u>b s/n</u>	I neering & / 03871 © 202 Description	Associates 0 HydroCAL	s, Inc. D Software Solutions LLC	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
00047 I Prepare HydroCA	Post-De ed by Alle D® 10.10 <u>Area (sf)</u> 3,300	ev-rev en Engi 4b s/n CN 98	I neering & /)3871 © 202 Description Roofs, HSC	Associates 0 HydroCAL	s, Inc. D Software Solutions LLC	<i>Type III 24-hr 25YR Rainfall=6.11"</i> Printed 11/10/2021 Page 64
D0047 I Prepare HydroCA	Post-De ed by Alle D® 10.10 Area (sf) 3,300 1,700	ev-rev en Engi 4b s/n 20 20 20 20 20 20 20 20 20 20 20 20 20	I neering & / 03871 © 202 Description Roofs, HSC Roofs, HSC	Associates 0 HydroCAI	s, Inc. D Software Solutions LLC	<i>Type III 24-hr 25YR Rainfall=6.11"</i> Printed 11/10/2021 Page 64
)00047 I Prepare HydroCA	Post-De ad by Alle D® 10.10 Area (sf) 3,300 1,700 5,000	ev-rev en Engi 4b s/n <u>CN</u> 98 98 98	I neering & / 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A Veighted A	Associates 0 HydroCAI	s, Inc. D Software Solutions LLC	<i>Type III 24-hr 25YR Rainfall=6.11"</i> Printed 11/10/2021 Page 64
D 0047 I Prepare HydroCA	Post-De ed by Alle D® 10.10: xrea (sf) 3,300 1,700 5,000 5,000	ev-rev en Engi <u>4b s/n (</u> <u>2N</u> 98 98 98	I neering & / J3871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In	Associates 0 HydroCAI 3 C 5 C verage 1pervious A	s, Inc. D Software Solutions LLC	<i>Type III 24-hr 25YR Rainfall=6.11"</i> Printed 11/10/2021 Page 64
DOO047 I Prepare HydroCA A Tc (min)	Post-De ed by Alle D® 10.10: 4rea (sf) 3,300 1,700 5,000 5,000 5,000 Length (feet)	ev-rev/ en Engi 4b s/n CN 98 98 98 98 98 Slop (ft/ft	neering & / 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ff/sec)	Associates 0 HydroCAI 3 C 3 C verage pervious A Capacity (cfs)	s, Inc. D Software Solutions LLC	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
00047 I Prepare HydroCA A Tc (min) 1.0	Post-De ed by Alle D® 10.100 Xrea (sf) 3,300 1,700 5,000 5,000 Length (feet)	ev-rev/ en Engi 4b s/n <u>CN</u> 98 98 98 Slop (ft/ft	I neering & / 33871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In 9 Velocity) (ft/sec)	Associates 0 HydroCAI 3 C .verage npervious A Capacity (cfs)	s, Inc. D Software Solutions LLC	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
D 00047 I Prepare HydroCA A Tc (min) 1.0	Post-De ed by Alle D® 10.10 3,300 1,700 5,000 5,000 Length (feet)	ev-rev en Engi 4b s/n i CN 98 98 98 Slop (ft/ft	I neering & / 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec)	Associates 0 HydroCAI 3 C 3 C 3 C 9	s, Inc. D Software Solutions LLC Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat)	<i>Type III 24-hr 25YR Rainfall=6.11"</i> Printed 11/10/2021 Page 64
DOO47 I Prepare HydroCA A Tc (min) 1.0	Post-De ed by Alle D® 10.100 3,300 1,700 5,000 5,000 Length (feet)	ev-rev en Engi 4b s/n l 20 20 20 20 20 20 20 20 20 20 20 20 20	neering & / 33871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In Velocity) (ft/sec)	Associates 0 HydroCAI 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C	s, Inc. D Software Solutions LLC Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat)	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOO47 I Prepare HydroCA A Tc (min) 1.0 Runoff	Post-De ed by Alle D® 10.10: 4rea (sf) 3,300 1,700 5,000 5,000 Length (feet)	2 V-reV en Engi <u>4b s/n (</u> <u>08</u> 98 98 98 Slop (ft/ff	I neering & / J3871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec)	Associates 0 HydroCAI 3 C 3 C 3 C 3 C 3 C 3 C 3 C 4 Norage 1 hrs, Volu	s, Inc. D Software Solutions LLC Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41"	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOO47 I Prepare HydroCA A Tc (min) 1.0 Runoff Runoff b	Post-De ed by Alle D® 10.10 3,300 5,000 5,000 Length (feet) =	2 V-reV en Engi <u>4b s/n (</u> <u>08</u> 98 98 98 Slop (ft/ft 1.50	I neering & / J3871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec) cfs @ 12.0 ethod, UH=S	Associates <u>0 HydroCAI</u> <u>3 C</u> <u>3 C</u> <u>2 C</u> <u>3 C</u> <u>3 C</u> <u>3 C</u> <u>2 C</u> <u>3 C</u> <u>2 C</u>	Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOO47 I Prepare HydroCA A Tc (min) 1.0 Runoff Runoff b Fype III 2	Post-De ed by Alle D® 10.10 3,300 5,000 5,000 Length (feet) = py SCS TI 24-hr 25	2 V-rev en Engi <u>4b s/n i</u> <u>98</u> 98 98 Slop (ft/ft 1.50 R-20 me YR Rain	I neering & / 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec) cfs @ 12.0 ethod, UH=S ifall=6.11"	Associates 0 HydroCAI 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C	s, Inc. D Software Solutions LLC Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOO47 I Prepare HydroCA A Tc (min) 1.0 Runoff Runoff b Type III 2	Post-De ed by Alle D® 10.10 3,300 1,700 5,000 5,000 Length (feet) = 24-hr 25	ev-rev en Engi 4b s/n i CN 98 98 98 98 Slop (ft/ft 1.50 R-20 me YR Rain	I neering & / 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec) cfs @ 12.0 ethod, UH=S nfall=6.11"	Associates <u>0 HydroCAI</u> <u>3 C</u> <u>3 C</u> <u>2 C</u> <u>3 C</u> <u>2 C</u> <u></u>	s, Inc. D Software Solutions LLC Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	<i>Type III 24-hr 25YR Rainfall=6.11"</i> Printed 11/10/2021 Page 64
DOO47 I Prepare HydroCA A Crc (min) 1.0 Runoff b Fype III 2 A	Post-De ed by Alle D® 10.10 3,300 1,700 5,000 5,000 Length (feet) = py SCS TI 24-hr 25 vrea (sf)	2V-rev en Engi 4b s/n t 98 98 98 Slop (ft/ff 1.50 R-20 me YR Rair CN	Description Roofs, HSC Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec) cfs @ 12.0 ethod, UH=S ifall=6.11" Description	Associates 0 HydroCAI 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C	s, Inc. D Software Solutions LLC Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOD47 I Prepare HydroCAI A (min) 1.0 Runoff b Fype III 2 A	Post-De ed by Alle D® 10.10 3,300 1,700 5,000 Length (feet) = py SCS TI 24-hr 25 stea (sf) 3995	2 V-rev en Engi <u>4b s/n (</u> 0 98 98 98 98 98 98 98 98 98 98 98 0 8 98 98 98 98 98 98 98 98 98 98 98 98 9	Description Roofs, HSC Weighted A 100.00% In Velocity (ft/sec) cfs @ 12.0 ethod, UH=S Ifall=6.11" Description >75% Gras	Associates 0 HydroCAI Capacity (cfs) 1 hrs, Volu SCS, Weight s cover, Go	Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	<i>Type III 24-hr 25YR Rainfall=6.11"</i> Printed 11/10/2021 Page 64
DOD47 I Prepare HydroCA A C (min) 1.0 Runoff Runoff b Fype III 2 A	Post-De ed by Alle D® 10.10 1,700 5,000 Length (feet) = py SCS TI 24-hr 25 vrea (sf) 395 1,445 305	2V-reV en Engi 4b s/n 98 98 98 98 Slop (ft/ft 1.50 R-20 mc YR Rair YR Rair YR Rair YR Rair YR Rair YR Rair	Ineering & / neering & / 03871 © 202 Description Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec) cfs @ 12.0 cfs @ 12.0 cfs @ 12.0 cfs @ 12.0 cfs G as >75% Gras >75% Gras	Associates 0 HydroCAI 3 C 3 C 3 C 4 Capacity (cfs) 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C	s, Inc. D Software Solutions LLC Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs ood, HSG C ood, HSG C	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOO47 I Prepare HydroCA A Tc (min) 1.0 Runoff Runoff b Fype III 2 A	Post-De ed by Alle D® 10.100 3,300 5,000 5,000 Length (feet) = = by SCS TI 24-hr 25 xrea (sf) 395 1,445 309 790	2V-reV en Engi -4b s/n i 98 98 98 98 Slop (ft/ft 1.50 R-20 me YR Rair YR Rair CN 74 74 98	Ineering & / neering & / 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec) cfs @ 12.0 ethod, UH=S ifall=6.11" Description >75% Gras >75% Gras Unconnector	Associates <u>0 HydroCAI</u> <u>3 C</u> <u>3 C</u> werage pervious A Capacity (cfs) Su 1 hrs, Volu <u>3 C</u> <u>5 C</u>	Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Dood, HSG C ood, HSG C ood, HSG C nt, HSG C nt, HSG C	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOO47 I Prepare HydroCA A Tc (min) 1.0 Runoff Runoff b Type III 2 A	Post-De ed by Alle D® 10.10 3,300 1,700 5,000 5,000 Length (feet) = y SCS TI 24-hr 25 vrea (sf) 395 1,445 309 790 5,597	2 V-rev en Engi 4 <u>b</u> s/n 1 98 98 98 98 Slop (ft/ft 1.50 R-20 me YR Rait YR Rait YR Rait YR Rait YR Rait 98 98	Ineering & / 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec) cfs @ 12.0 ethod, UH=S ifall=6.11" Description >75% Gras >75% Gras Unconnect Unconnect	Associates 0 HydroCAI 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C 3 C	Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOO47 I Prepare HydroCA A Tc (min) 1.0 Runoff Runoff b Fype III 2 A	Post-De ed by Alle D® 10.10 3,300 1,700 5,000 5,000 Length (feet) = y SCS TI 24-hr 25 Nrea (sf) 395 1,445 309 790 5,597	2V-rev en Engi 4b s/n 1 98 98 98 98 Slop (ft/ft 1.50 R-20 me YR Rain CN 74 74 98 98 98 98	Description Roofs, HSC Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec) cfs @ 12.0 ethod, UH=S ifall=6.11" Description >75% Gras >75% Gras Unconnector Unconnector Paved park	Associates 0 HydroCAI Capacity (cfs) 1 hrs, Volu CS, Weight s cover, Go ad pavement ad pavement ing, HSG C	s, Inc. D Software Solutions LLC Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs cod, HSG C ood, HSG C ood, HSG C ood, HSG C ood, HSG C ood, HSG C	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOD47 I Prepare HydroCAI A (min) 1.0 Runoff b Fype III 2 A	Post-De ed by Alle D® 10.100 <u>Area (sf)</u> 3,300 1,700 5,000 Length (feet) = by SCS TI 24-hr 25 <u>Area (sf)</u> 395 1,445 309 790 5,597 1,531 10,067	2V-rev en Engi 4b s/n t 98 98 98 98 98 98 98 1.50 (ft/ff 1.50 R-20 me YR Rair CN 74 74 74 74 98 98 98 98 98	Description Roofs, HSC Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec) cfs @ 12.0 ethod, UH=S fall=6.11" Description >75% Gras Unconnect Paved park Weighted A	Associates 0 HydroCAI Capacity (cfs) Su 1 hrs, Volu SCS, Weight s cover, Go ad pavement ing, HSG O verage	Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs cod, HSG C od, HSG C nt, HSG C nt, HSG C C C C C C C C C C C C C C C C C C C	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOD47 I Prepare HydroCA A Tc (min) 1.0 Runoff b Fype III 2 A	Post-De ed by Alle D® 10.10 xrea (sf) 3,300 1,700 5,000 Length (feet) = oy SCS TI 24-hr 25 xrea (sf) 395 1,445 309 790 5,597 1,507 1,840	2V-reV en Engi 4b s/n 98 98 98 98 98 98 Slop (ft/ft 1.50 R-20 me YR Rair CN 74 74 98 98 98 98 98 98	Ineering & / Description Roofs, HSC Roofs, HSC Weighted A 100.00% In Velocity (fl/sec) cfs @ 12.0 ethod, UH=S Ifall=6.11" Description >75% Grass >75% Grass >75% Grass >75% Grass >75% Grass >75% Grass >75% Grass Nnconnector Paved park Paved Park	Associates 0 HydroCAI CAPACIAN Capacity (cfs) Sun 1 hrs, Volu CS, Weigh s cover, Go ad pavement ing, HSG C werage vious Area	s, Inc. D Software Solutions LLC Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs ood, HSG C ood, HSG C ood, HSG C nt, HSG C nt, HSG C nt, HSG C	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOD47 I Prepare HydroCA A C (min) 1.0 Runoff Runoff b Type III 2 A	Post-De ed by Alle D® 10.100 1,700 5,000 5,000 Length (feet) = = by SCS TI 24-hr 25 xrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227	EV-rev en Engi -4b s/n 1 -20 -20 -20 -20 -20 -20 -20 -20 -20 -20	Ineering & / neering & / 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In Period Content (ff/sec) Cfs @ 12.0 ethod, UH=S Ifall=6.11" Description >75% Gras >75% Gras Unconnector Paved park Paved par	Associates <u>0 HydroCAI</u> <u>3 C</u> <u>3 C</u> <u>2 C</u> <u>3 C</u> <u>2 C</u> <u>3 C</u> <u>2 C</u>	Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Dood, HSG C D	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOO47 I Prepare HydroCA A Tc (min) 1.0 Runoff Runoff b Type III 2 A	Post-De ed by Alle D® 10.10 3,300 5,000 5,000 Length (feet) = py SCS TI 24-hr 25 Nrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099	EV-rev en Engi -4b s/n 98 98 98 98 98 1.50 R-20 me YR Rain YR Rain CN 74 74 98 98 98 98 98 98	Ineering & / 03871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec) cfs @ 12.0 ethod, UH=S ifall=6.11" Description >75% Gras VInconnecte Unconnecte Unconnecte Velocity A 18.28% Pe 18.28% Pe 18.22% Im 13.36% Un	Associates 0 HydroCAI 3 C 3 C 3 C 4 C 4 Capacity (cfs) 5 Cover, Go 5 cover, Go 5 cover, Go 5 cover, Go 6 d pavemel 1 hrs, Volu 5 cover, Go 5 cover, Go 6 d pavemel 1 hrs, Volu 5 cover, Go 1 hrs, Volu 5 cover	Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Dood, HSG C nt, HSG C nt, HSG C C C area	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOO47 I Prepare HydroCA A Tc (min) 1.0 Runoff Runoff b Type III 2 A	Post-De ed by Alle D® 10.10 3,300 1,700 5,000 5,000 Length (feet) = y SCS TI 24-hr 25 vrea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227	2 V-rev en Engi 4 <u>b</u> s/n 1 <u>CN</u> 98 98 98 98 Slop (ft/ft 1.50 R-20 me YR Rain YR Rain YR Rain YR Rain YR Rain 98 98 98 98 98	Ineering & 7 Dascription Roofs, HSC Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec) Cfs @ 12.0 ethod, UH=S Infall=6.11" Description >75% Gras Viceonecte Unconnecte Unconnecte Unconnecte Naconnecte	Associates 0 HydroCAI Capacity (cfs) 1 hrs, Volu CSS, Weight s cover, Go ad pavemel ad pavemel	s, Inc. D Software Solutions LLC Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs ood, HSG C ood, HSG	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOO47 I Prepare HydroCA A Tc (min) 1.0 Runoff b Fype III 2 A Composition	Post-De d by Alle D® 10.10 3,300 1,700 5,000 5,000 Length (feet) = y SCS TI 24-hr 25 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet)	2V-rev en Engi 4b s/n 1 98 98 98 98 98 Slopp (ft/ft 1.50 R-20 me YR Rain 74 74 98 98 98 98 98 98 98	Description Roofs, HSC Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec) cfs @ 12.0 ethod, UH=S fall=6.11" Description >75% Gras >75% Gras	Associates 0 HydroCAI Capacity (cfs) Capacity (cfs) Sul 1 hrs, Volu CSS, Weight s cover, Go ad pavement ad pave	s, Inc. D Software Solutions LLC Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs cod, HSG C ood, HSG	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOD47 I Prepare HydroCAI A Tc (min) 1.0 Runoff b Fype III 2 A Tc (min) 0.5	Post-De ed by Alle D® 10.10- <u>Area (sf)</u> 3,300 1,700 5,000 Length (feet) = py SCS TI 24-hr 25 <u>Area (sf)</u> 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet) 5,000	2V-reV en Engi 4b s/n 98 98 98 98 98 Slopp (ft/ff 1.50 R-20 me YR Rain YR Rain YR Rain YR Rain 98 98 98 98 98 98 98 98 94 Slopp (ft/ff 0.054)	Ineering & / 13871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In e Velocity) (ft/sec) Cfs @ 12.0 cfs @ 12.0 cf	Associates 0 HydroCAI Capacity (cfs) 1 hrs, Volu Capacity (cfs) Sul 1 hrs, Volu Capacity (cfs) Scover, Go ad pavemel ad pavemel ing, HSG C verage rvious Area pervious Ar	s, Inc. D Software Solutions LLC Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs cod, HSG C ood, HSG C ood, HSG C nt, HSG C nt, HSG C Sheet Flow	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOD47 I Prepare HydroCA A Tc (min) 1.0 Runoff b Fype III 2 A Cunoff Cype III 2 Cunoff Cype III 2 Cunoff	Post-De ed by Alle D® 10.10 <u>trea (sf)</u> 3,300 1,700 5,000 Length (feet) = by SCS TI 24-hr 25 <u>trea (sf)</u> 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet) 50	2V-reV en Engi 4b s/n 98 98 98 98 98 98 1.50 4 74 74 74 98 98 98 98 98 98 94 94 Slopp (ft/ff 0.054	Ineering & 7 33871 © 202 Description Roofs, HSC Weighted A 100.00% In Velocity (fl/sec) cfs @ 12.0 ethod, UH=S ifall=6.11" Description >75% Grass >75% Grass >75% Grass 100.00necte Paved park Paved park Pa	Associates 0 HydroCAI Capacity (cfs) Capacity (cfs) Sul 1 hrs, Volu CS, Weight s cover, Go ad pavemel ing, HSG C werage vious Area pervious Ar	Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs cod, HSG C od, HSG C nt, HSG C nt, HSG C nt, HSG C Sheet Flow, Smooth surfaces n= 0.011 P2= 3.26"	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOD47 I Prepare HydroCA A Tc (min) 1.0 Runoff b Fype III 2 A Control (min) 0.5 0.5	Post-De ed by Alle D® 10.100 3,300 5,000 5,000 Length (feet) = = oy SCS TI 24-hr 25 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet) 50 1,405	2V-reV en Engi 4b s/n 98 98 98 98 98 98 98 1.50 4 74 74 74 74 98 98 98 98 98 98 94 94 Slopp (ft/ft 0.054 0.030	Ineering & / Description Roofs, HSC Roofs, HSC Weighted A 100.00% In Velocity (fl/sec) Cfs @ 12.0 ethod, UH=S Ifall=6.11" Description >75% Grass Unconnectc Paved park Paved park Weighted A 18.28% Pe 81.72% Imp 13.36% Un e Velocity) (fl/sec) 0 1.80 3 3.56	Associates <u>0 HydroCAI</u> <u>3 C</u> <u>3 C</u> werage pervious A Capacity (cfs) Su 1 hrs, Volu 3 CS, Weigh s cover, Go ad pavemel ing, HSG C werage vious Area pervious Area pervious Area pervious Area pervious Area pervious Area pervious Area pervious Area	Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs ood, HSG C Shallow Concentrated Flow, Smooth surfaces n= 0.011 P2= 3.26" Shallow Concentrated Flow,	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64
DOD47 I Prepare HydroCAI A Tc (min) 1.0 Runoff b Fype III 2 A Tc (min) 0.5 0.5	Post-De ed by Alle D® 10.10 <u>Area (sf)</u> 3,300 1,700 5,000 Length (feet) = by SCS TI 24-hr 25 <u>Area (sf)</u> 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet) 500 107 107 157	2V-reV en Engi 4b s/n 98 98 98 98 98 98 98 1.50 74 74 74 74 74 74 98 98 98 98 98 94 94 Slopp (ft/ff 0.0544 0.030	Ineering & / neering & / 13871 © 202 Description Roofs, HSC Weighted A 100.00% In e Velocity) (fl/sec) cfs @ 12.0 ethod, UH=S fall=6.11" Description >75% Gras >75% Gras >75% Gras >75% Gras 1.2% Im 13.36% Un e Velocity) (fl/sec) 0 1.80 3 3.56	Associates 0 HydroCAI Capacity (cfs) Sul 1 hrs, Volu CSS, Weight s cover, Go s cover, Go s cover, Go s cover, Go ad pavemel ing, HSG C ing, HSG C ing, HSG C ing, HSG C connected Capacity (cfs)	s, Inc. D Software Solutions LLC Area Description Direct Entry, mmary for Subcatchment 5S: (new Subcat) ume= 4,535 cf, Depth= 5.41" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs cod, HSG C od, HSG C od, HSG C nt, HSG C nt, HSG C nt, HSG C Sheet Flow, Smooth surfaces n= 0.011 P2= 3.26" Shallow Concentrated Flow, Paved Kv= 20.3 fps	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 64

Summai	ry for Subcatchment 6S: (new Subcat)	
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Runoff = 2.43 cfs @ 12.06 hrs, Volume= 7,143 cf, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 25YR Rainfall=6.11"

	/11 15 442	98 74	riprap	s cover C	od HSC C			
	10,802	70	Woods, Go	od, <u>HSG</u> C				
2	26,955	73	Weighted A	verage				
2	26,244 711		97.36% Per	vious Area	a			
	,		2.0470 impo		u			
Tc (min)	Length (feet)	Slop (ft/ft	e Velocity	Capacity (cfs)	Description			
2.5	50	0.146	0.33	(00)	Sheet Flow	,		
0.1	54	0 101			Grass: Shor	t n= 0.150 P2= 3.2	6"	
0.1	54	0.181	0.80		Unpaved k	v= 16.1 fps		
1.3	104	0.076	9 1.39		Shallow Co	ncentrated Flow,		
3.9	208	Total			woodiand	KV= 5.0 lps		
				•		0	. (
				Su	mmary for	Subcatchment /	S: (new Subcat)	
≀unoff	=	1.70	cfs @ 12.0	3 hrs, Volu	ıme=	4,952 cf, Depth= 4	.51"	
≀unoff bv	/ SCS TH	R-20 me	thod UH=S	CS Weigh	ited-CN Time	Span= 0 00-48 00 h	rs_dt= 0.05 hrs	
ype III 2	4-hr 25	YR Rair	nfall=6.11"	ioo, weigi		opan- 0.00-40.00 h	13, dt= 0.00 m3	
0047 5								
0047 P	Post-De	ev-rev	1					Type III 24-hr 25YR Rainfall=6.11"
0047 P Trepared	Post-De d by Alle	e v-rev ′ en Engi	I neering & <i>I</i>	Associates	, Inc.			Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021
0047 P Preparect	Post-De d by Alle <u>D® 10.10-</u>	e v-rev ′ en Engi 4b_s/n	I neering & <i>I</i> 03871 © 202	Associates 0 HydroCAI	s, Inc. D Software Solu	utions LLC		<i>Type III 24-hr 25YR Rainfall=6.11"</i> Printed 11/10/2021 Page 66
0047 P Preparec lydroCAD	Post-De d by Alle D® 10.10-	e v-rev ′ en Engi 4b_s/n (I neering & A 03871 © 202	Associates 0 HydroCAI	s, Inc. D Software Solt	utions LLC		Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
0 0047 P Preparec lydroCAE	Post-De d by Alle D® 10.10-	e v-rev en Engi 4b s/n (<u>CN</u>	I neering & A 03871 © 202 Description	Associates 0 HydroCAI	s, Inc. D Software Solu	utions LLC		Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
1 0047 P [•] reparec <u>lydroCAE</u> Ar	Post-De d by Alle <u>D® 10.10-</u> <u>rea (sf)</u> 5,880 134	ev -rev en Engi <u>4b s/n (</u> <u>CN</u> 98 98	I neering & A 03871 © 202 Description Water Surfa	Associates 0 HydroCAI ace, HSG (s, Inc. 2 Software Soli	utions LLC		Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
10047 P Preparect IydroCAD	Post-De d by Alle <u>D® 10.10-</u> <u>rea (sf)</u> 5,880 134 6,571	ev-rev′ en Engi <u>4b s/n (</u> <u>4b s/n (</u> <u>4b s/n (</u> <u>4b s/n (</u> <u>98</u> <u>98</u> <u>74</u>	I neering & A 03871 © 202 Description Water Surfa riprap >75% Gras	Associates 0 HydroCAI ace, HSG (s cover, G	s, Inc. D Software Soli	utions LLC		Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
1 0047 P Preparec lydroCAE	Post-De d by Alle <u>0</u> ® 10.10 <u>7</u> ea (sf) 5,880 134 6,571 580	ev-rev′ en Engi 4 <u>b s/n (</u> 08 98 98 74 89	I neering & A J3871 © 202 Description Water Surfa riprap >75% Gras Gravel road	Associates <u>0 HydroCAI</u> ace, HSG (s cover, G Is, HSG C	i, Inc.) Software Soli)))))))))))))))))))	utions LLC		Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
10047 P Preparec lydroCAE Ar	Post-De d by Alle <u>08 10.10</u> 5,880 134 6,571 580 13,165	ev-rev′ en Engi 4b s/n (CN 98 98 74 89 86	I neering & A J3871 © 202 Description Water Surfa riprap >75% Grass Gravel road Weighted A	Associates 0 HydroCAI ace, HSG (s cover, G ls, HSG C verage	s, Inc. <u>) Software Sol</u> r C Dod, HSG C	utions LLC		Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
10047 P Preparec lydroCAE Ar	Post-De d by Alle <u>08 10.10</u> 5,880 134 6,571 580 13,165 7,151 6,014	2V-rev en Engi <u>4b s/n (</u> <u>CN</u> 98 98 74 89 86	Ineering & A 03871 © 202 Description Water Surfa riprap >75% Grass Gravel road Weighted A 54.32% Per 45.68% Inv	Associates 0 HydroCAI ace, HSG (s cover, G Is, HSG C verage vious Area provins A	, Inc.) Software Soli)))))))))))))))))))	utions LLC		Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
10047 P Preparec lydroCAE	Post-De d by Alle <u>08 10.10</u> 5,880 134 6,571 580 13,165 7,151 6,014	2V-rev en Engi <u>4b s/n</u> <u>74</u> 89 86	I neering & A 03871 © 202 Description Water Surfa riprap >75% Grass Gravel road Weighted A 54.32% Per 45.68% Imp	Associates 0 HydroCAI ace, HSG (s cover, G Is, HSG C verage vious Area pervious Area	i, Inc. <u>) Software Soli</u> Dood, HSG C	utions LLC		Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
10047 P Preparec IydroCAE Ar	Post-De d by Alle D® 10.10 ea (sf) 5,880 13,165 7,151 6,014 Length (fg-1)	2 V-rev 2n Engi <u>4b s/n</u> 98 98 74 89 86 Slopp	I neering & A J3871 © 202 Description Water Surfa riprap >75% Grass Gravel road Weighted A 54.32% Pei 45.68% Imp e Velocity	Associates 0 HydroCAI ace, HSG 0 s cover, G s, HSG C verage vious Area pervious Area pervious Area capacity	, Inc. <u>) Software Sol</u> bod, HSG C ea Description	utions LLC		Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
10047 P Preparece <u>iydroCAE</u> Ar Ar Cr (min) 2 0	Post-De d by Alle D® 10.10 5.880 134 6,571 580 13,165 7,151 6,014 Length (feet) 42	2 V-rev en Engi 4 <u>b</u> s/n 98 98 74 89 86 Slopp (ft/ft	Ineering & A Description Water Surfar riprap >75% Grass Gravel road Weighted A 54.32% Per 45.68% Imp e Velocity c) (ft/sec) 7 0 0 35	Associates 0 HydroCAI ace, HSG (s cover, G ls, HSG C verage vious Area pervious Are capacity (cfs)	, Inc.) Software Solution) Sod, HSG C ea Description Sheet Flow	utions LLC		Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
10047 F Preparec IydroCAE Ar Ar C (min) 2.0	Post-De d by Alle 0® 10.10 5,880 134 6,571 580 13,165 7,151 6,014 Length (feet) 42	2 V-rev en Engi <u>4b s/n (</u> <u>CN</u> 98 98 98 74 89 86 86 Slopp (ft/ff 0.185	I neering & A J3871 © 202 Description Water Surfa riprap >75% Grass Gravel road Weighted A 54.32% Pei 45.68% Imp e Velocity (ft/sec) 7 0.35	Associates 0 HydroCAI ace, HSG (s cover, G ls, HSG C verage vious Area pervious Are capacity (cfs)	, Inc. <u>)</u> Software Solu bod, HSG C ea Description Sheet Flow Grass: Shor	utions LLC , , t n= 0.150 P2= 3.2	6"	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
POO47 F Preparec lydroCAE Ar Cr (min) 2.0	Post-De d by Alle 0® 10.10 5,880 13,165 7,151 6,014 Length (feet) 42	EV-rev en Engi <u>4b s/n</u> <u>CN</u> 98 98 74 89 86 86 Slopp (ft/ft 0.185	neering & A <u>03871 © 202</u> <u>Description</u> Water Surfar riprap >75% Grass <u>Gravel roac</u> Weighted A 54.32% Per 45.68% Imp e Velocity (ft/sec) 7 0.35	Associates 0 HydroCAI ace, HSG C s cover, G ls, HSG C verage vious Area ervious Area capacity (cfs)	, Inc. D Software Solu Dood, HSG C ea Description Sheet Flow Grass: Shor	utions LLC , , t n= 0.150 P2= 3.2	6"	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
100047 F Preparec lydroCAE Ar Ar C (min) 2.0	Post-De d by Alle 08 10.10 5,880 13,165 7,151 6,014 Length (feet) 42	V-rev en Engi <u>4b s/n</u> <u>74</u> 98 74 89 86 86 Slopp (ft/ft 0.185	I neering & A J3871 © 202 Description Water Surfa >75% Gras Gravel roac Weighted A 54.32% Pei 45.68% Imp e Velocity) (ft/sec) 7 0.35	Associates o HydroCAI ace, HSG (s cover, G ls, HSG C verage vious Area vious Area vious Area vious Area vious Area vious Area vious Area capacity (cfs)	s, Inc. D Software Solu Dood, HSG C ea Description Sheet Flow Grass: Shor	utions LLC , t n= 0.150 P2= 3.2 Subcatchment 85	^{6″} 5: (new Subcat)	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
POOD47 F Prepared lydroCAE Ar Ar C (min) 2.0	Post-De d by Alle 08 10.10 5,880 13,46 5,571 5,80 13,165 7,151 6,014 Length (feet) 42	2V-reV en Engi 4b s/n CN 98 74 89 86 86 Slopp (ft/ft 0.185	I neering & A 33871 © 202 Description Water Surfa >75% Gras Gravel roac Weighted A 54.32% Pei 45.68% Imp e Velocity) (ft/sec) 7 0.35	Associates o HydroCAI ace, HSG (s cover, G ls, HSG C verage vious Arez vious Arez vious Arez vious Arez vious Arez vious Arez vious Arez vious Arez vious Arez (cfs) Su 1 hrs, Voli	s, Inc. D Software Solu Sod, HSG C Description Sheet Flow Grass: Shor mmary for	, t n= 0.150 P2= 3.2 Subcatchment 8 3,934 cf, Depth= {	6" 5: (new Subcat)	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
Pood 7 F Prepared JydroCAE Ar C (min) 2.0	Post-De d by Alle 0® 10.10 5,880 13,165 7,151 6,014 Length (feet) 42	EX-FEV en Engi <u>4b s/n</u> <u>74</u> 98 98 74 89 86 Slopp (ft/ft 0.185	neering & A <u>03871 © 202</u> <u>Description</u> Water Surfar riprap >75% Grass <u>Gravel roac</u> Weighted A 54.32% Per 45.68% Imp e Velocity) (ft/sec) 7 0.35 cfs @ 12.0	Associates 0 HydroCAI ace, HSG C s cover, G ls, HSG C verage vious Area pervious Area capacity (cfs) Su 1 hrs, Volu	, Inc. D Software Solu Dood, HSG C dea Description Sheet Flow Grass: Shor mmary for ume=	t n= 0.150 P2= 3.2 Subcatchment 85 3,934 cf, Depth= {	6" 5: (new Subcat) 5:41"	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
10047 F Preparece JydroCAE Ar Tc (min) 2.0 Runoff Sunoff by	Post-De d by Alle 0® 10.10 5,880 13,165 7,151 6,014 Length (feet) 42 =	PV-FEV en Engi <u>4b s/n (</u> 98 98 98 74 89 86 74 89 86 510p (ft/ff 0.185	I neering & A <u>03871 © 202</u> <u>Description</u> Water Surfariprap >75% Grass <u>Gravel roac</u> Weighted A 54.32% Per 45.68% Imp e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S	Associates 0 HydroCAI ace, HSG C s cover, G ls, HSG C verage vious Area pervious Area pervious Area vervious Area vious Area vious Area vious Area vervious Area vious Area vervious Area vious Area v	, Inc.) Software Solu) Software Solu)))))))))))))	t n= 0.150 P2= 3.2 Subcatchment 85 3,934 cf, Depth= 5	16" 5: (new Subcat) 5.41" rs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
10047 F Prepared lydroCAE Ar C (min) 2.0 Runoff Runoff by ype III 2	Post-De d by Alle 06 10.10- 5,880 134 6,571 580 13,165 7,151 6,014 Length (feet) 42 = y SCS TF 4-hr 25	EV-rev an Engi <u>4b s/n (</u> 98 98 74 89 86 Slopp (ft/ff 0.185 1.31 R-20 ma YR Rain	I neering & A <u>J3871 © 202</u> <u>Description</u> Water Surfariprap >75% Grass <u>Gravel road</u> Weighted A 54.32% Per 45.68% Imp e Velocity) (ff/sec) 7 0.35 cfs @ 12.0 ethod, UH=S ifall=6.11"	Associates <u>0 HydroCAI</u> ace, HSG C s cover, G ls, HSG C verage vious Area pervious Area pervious Area verage vious Area verage vious Area vious Area verage vious Area vious Area verage vious Area verage vera	, Inc. <u>)</u> Software Solution Deod, HSG C dea Description Sheet Flow Grass: Shor mmary for Ime= Ited-CN, Time	t n= 0.150 P2= 3.2 Subcatchment 85 3,934 cf, Depth= { Span= 0.00-48.00 h	6" 5: (new Subcat) 5.41" rs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
100047 P Prepared lydroCAL Ar Tc (min) 2.0 Runoff Sunoff Sunoff Sunoff Sunoff Sunoff Sunoff Sunoff	Post-De d by Alle 0 10.10 5,880 134 6,571 5,880 13,165 7,151 6,014 Length (feet) 42 = y SCS TF 24-hr 25 rea (sf)	V-rev CN 98 98 74 89 86 Slopp (ft/ff 0.185 1.31 R-20 me YR Rain CN	Description Water Surfar riprap >75% Gras Gravel road Weighted A 54.32% Per 45.68% Imp e Velocity (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S fall=6.11"	Associates <u>0 HydroCAl</u> ace, HSG C s cover, G s cover, G verage vious Area vious Area vi	; Inc. <u>) Software Sol</u> bod, HSG C ea Description Sheet Flow Grass: Shor mmary for ume= ted-CN, Time	t n= 0.150 P2= 3.2 Subcatchment 8 3,934 cf, Depth= { Span= 0.00-48.00 h	^{6"} 5: (new Subcat) 5.41" rs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
Tc (min) 2.0	Post-De d by Alle 2€ 10.10- 5,880 134 6,571 5,880 13,165 7,151 6,014 Length (feet) 42 = y SCS Tf 24-hr 25 rea (sf) 1,611	2V-reV en Engi 4b s/n 98 74 89 86 Slop: (ft/ff 0.185 1.31 R-20 me YR Rain YR Rain 74	I neering & A 33871 © 202 Description Water Surfa >75% Gras Gravel roac Weighted A 54.32% Per 45.68% Imp e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S fall=6.11" Description >75% Gras	Associates 0 HydroCAI ace, HSG C s cover, G s, HSG C verage vious Are capacity (cfs) Su 1 hrs, Volu cCS, Weigh	s, Inc. D Software Soli Dood, HSG C Description Sheet Flow Grass: Shor mmary for ime= ited-CN, Time	, t n= 0.150 P2= 3.2 Subcatchment 85 3,934 cf, Depth= { span= 0.00-48.00 h	16" 5: (new Subcat) 5:41" rs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
Tc (min) 2.0 2.0 2.0	Post-De d by Alle 08 10.10 5,880 13,46,571 5,80 13,165 7,151 6,014 Length (feet) 42 = y SCS TF 24-hr 25 rea (sf) 1,611 459	2V-reV en Engi 4b s/n 98 74 89 86 86 Slopp (ft/ft 0.185 1.31 R-20 me YR Rair CN 74 98	I neering & A <u>33871 © 202</u> <u>Description</u> Water Surfa riprap >75% Gras <u>Gravel roac</u> Weighted A 54.32% Per 45.68% Imp e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S fall=6.11" <u>Description</u> >75% Gras Unconnecte	Associates <u>0 HydroCAI</u> ace, HSG (s cover, G ls, HSG C verage vious Arez vious Arez vious Arez vious Arez vious Arez vious Arez vious Arez capacity (cfs) Su 1 hrs, Volu :CS, Weigf s cover, G d paveme	s, Inc. D Software Solu Sod, HSG C Description Sheet Flow Grass: Shor mmary for ume= tted-CN, Time Dod, HSG C nt, HSG C	t n= 0.150 P2= 3.2 Subcatchment 8 3,934 cf, Depth= 4 9 Span= 0.00-48.00 h	16" 5: (new Subcat) 5.41" rs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
Tc (min) 2.0	Post-De d by Alle)® 10.10 5,880 13,165 7,151 6,014 Length (feet) 42 = y SCS TF 24-hr 25 rea (sf) 1,611 459 6,664	2V-reV en Engi 4b s/n 98 98 74 89 86 86 Slopp (ft/ft 0.185 1.31 8-20 me YR Rain CN 74 98 98	I neering & A J3871 © 202 Description Water Surfa >75% Gras Gravel roac Weighted A 54.32% Pei 45.68% Imp e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S nfall=6.11" Description >75% Gras Unconnecte Paved park	Associates <u>0 HydroCAI</u> ace, HSG C s cover, G ls, HSG C verage vious Area ervious Area capacity (cfs) Su 1 hrs, Volu 1 hrs, Volu S cover, G ed paveme	a, Inc. D Software Solu Sod, HSG C dea Description Sheet Flow Grass: Shor mmary for ure= uted-CN, Time Dod, HSG C n, HSG C	t n= 0.150 P2= 3.2 Subcatchment 85 3,934 cf, Depth= { Span= 0.00-48.00 h	6" 5: (new Subcat) 541" rs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
OOO47 F Prepared ydroCAE Ar	Post-De d by Alle 0 10.10- 5,880 134 6,571 5,80 13,165 7,151 6,014 Length (feet) 42 = y SCS TF 4-hr 25 rea (sf) 1,611 459 6,664 8,734	EV-rev an Engi <u>4b s/n 1</u> 98 98 74 89 86 Slopp (ft/ff 0.185 1.31 R-20 me YR Rair CN 74 98 98 94	I neering & A J3871 © 202 Description Water Surfa riprap >75% Gras Gravel road Weighted A 54.32% Pel 45.68% Imp e Velocity (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S ofall=6.11" Description >75% Gras Unconnecte Paved park Weighted A	Associates 0 HydroCAI ace, HSG (s cover, G ls, HSG C verage vious Area bervious Area bervious Area capacity (cfs) Su 1 hrs, Volu CS, Weigh s cover, G d paveme ing, HSG (, Inc.) Software Solu) Software Solu)) Sod, HSG C)))))))))))))	t n= 0.150 P2= 3.2 Subcatchment 85 3,934 cf, Depth= 5 9 Span= 0.00-48.00 h	16" 5: (new Subcat) 5.41" rs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
OOO47 F Prepared ydroCAL Ar Tc (min) 2.0 Runoff Sunoff Sunoff Ar	Post-De d by Alle 2010 10.100 5,880 134 6,571 5,880 13,165 7,151 6,014 Length (feet) 42 = y SCS Tf 24-hr 257 rea (sf) 1,611 459 6,664 8,734 1,611	EV-rev an Engi <u>4b s/n 1</u> CN 98 74 89 86 Slopp (ft/ff 0.185 1.31 R-20 me YR Rain CN 74 98 98 98 94	I neering & A 33871 © 202 Description Water Surfa >75% Gras Gravel roac Weighted A \$4.32% Per 45.68% Imp e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 athod, UH=S fall=6.11" Description >75% Gras Unconnecte Paved park Weighted A Weighted A Weighted A	Associates 0 HydroCAI ace, HSG C s cover, G s, HSG C verage verage vervious Are capacity (cfs) Su 1 hrs, Volu 3 CS, Weigh s cover, G a paveme ing, HSG (verage vious Are	s, Inc. D Software Soli Dood, HSG C Description Sheet Flow Grass: Shor mmary for ime= ited-CN, Time Dood, HSG C nt, HSG C	t n= 0.150 P2= 3.2 Subcatchment 8 3,934 cf, Depth= { Span= 0.00-48.00 h	⁶ " 5: (new Subcat) 5.41" rs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66
Coold a constraint of the second seco	Post-De d by Alle (10)	2V-reV en Engi 4b s/n 98 74 89 86 74 89 86 86 86 86 0.185 1.31 8-20 ma YR Rain 74 98 98 98 94	I neering & A <u>33871 © 202</u> <u>Description</u> Water Surfa riprap >75% Gras <u>Gravel roac</u> Weighted A 54.32% Per 45.68% Imp e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 ethod, UH=S fall=6.11" <u>Description</u> >75% Gras Unconnecte <u>Paved park</u> Weighted A 18.45% Per 18.45% Imp	Associates <u>0 HydroCAI</u> ace, HSG (s cover, G ls, HSG <u>C</u> verage vious Area pervious Ar Capacity (cfs) Su 1 hrs, Volu :CS, Weigt s cover, G d paveme ing, HSG <u>C</u> verage vious Area pervious Area	s, Inc. D Software Solu Sod, HSG C Description Sheet Flow Grass: Shor mmary for ume= tted-CN, Time bod, HSG C t, HSG C	t n= 0.150 P2= 3.2 Subcatchment 8 3,934 cf, Depth= 4 9 Span= 0.00-48.00 h	16" 5: (new Subcat) 5.41" rs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 66

00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC

Tc (min)	(feet)	(ff/ff)	(ft/sec)	(cfs)	Description
0.5	50	0.0411	1.61	(013)	Sheet Flow,
0.4	75	0.0260	3.27		Smooth surfaces n= 0.011 P2= 3.26" Shallow Concentrated Flow,
0.9	125	Total			Paved Kv= 20.3 tps
				Su	mmary for Subcatchment 9S: (new Subcat)
upoff	_	1 00 -4	a 100	1 bre Mele	
unon	=		s@ 12.0		
ype III 2	24-hr 25	R-20 met rR Rainfa	nod, UH=S all=6.11"	CS, Weigh	tted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Ar	rea (sf)	CN E	escription		
	1,030 194	74 > 98 I	75% Gras	s cover, Go	pod, HSG C
	6,818	98 F	aved park	ing, HSG C) }
	8,042 1.030	95 V 1	Veighted A 2.81% Pei	verage vious Area	
	7,012	8	7.19% Imp	pervious Are	ea
_	134			Jinected	
l'c (min)	∟ength (feet)	Slope (ft/ft)	velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0380	1.56		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.26"
0.3	62	0.0274	3.36		Shallow Concentrated Flow,
0.8	112	Total			raveu rv= 20.3 Ips
00047 P	Post-De	v-rev1			Type III 24-hr 25YR Rainfall=6.11"
1 0047 P Prepared	Post-De d by Alle 0® 10.10-	e v-rev1 en Engin 4b s/n 03	eering & A 871 © 202	Associates 0 HydroCAE	<i>Type III 24-hr 25YR Rainfall=6.11"</i> s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 68
00047 P Preparec lydroCAE	Post-De d by Alle ⊃® 10.10-	• ∨-rev1 n Engin 4b s/n 03	eering & / 871 © 202	Associates <u>0 HydroCAE</u>	Type III 24-hr 25YR Rainfall=6.11" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 68 Summary for Subcatchment 10S: ROOF
10047 P Preparec <u>lydroCAE</u> Nunoff	Post-De d by Alle D® 10.10- =	v -rev1 n Engin 4 <u>b</u> s/n 03	eering & A 871 © 202 s @ 12.0	Associates <u>0 HydroCAE</u> 1 hrs, Volu	<i>Type III 24-hr 25YR Rainfall=6.11"</i> s, Inc. Printed 11/10/2021 <u>D Software Solutions LLC Page 68</u> Summary for Subcatchment 10S: ROOF ume= 1,292 cf, Depth= 5.87"
1 0047 F ¹ repared ¹ ydroCAE Runoff Runoff	Post-De d by Alle D® 10.10- = y SCS TF	w -rev1 n Engin 4 <u>b</u> s/n 03 0.40 cf R-20 met	eering & A 871 © 202 s @ 12.0 nod, UH=S	Associates <u>0 HydroCAE</u> 1 hrs, Volu SCS, Weigh	Type III 24-hr 25YR Rainfall=6.11" s, Inc. Printed 11/10/2021 2 Software Solutions LLC Page 68 Summary for Subcatchment 10S: ROOF ume= 1,292 cf, Depth= 5.87" htted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
10047 F Prepared lydroCAE lunoff lunoff by ype III 2	Post-De d by Alle ⊃® 10.10- = y SCS TF 4-hr 25`	v-rev1 en Engin 4b s/n 03 0.40 cf R-20 meti /R Rainfa	eering & A 871 © 202 s @ 12.0 nod, UH=S all=6.11"	Associates <u>0 HydroCAE</u> 1 hrs, Volu SCS, Weigh	<i>Type III 24-hr 25YR Rainfall=6.11"</i> s, Inc. Printed 11/10/2021 <u>D Software Solutions LLC Page 68</u> Summary for Subcatchment 10S: ROOF ume= 1,292 cf, Depth= 5.87" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
10047 F Prepared lydroCAE Runoff Runoff by ype III 2 Ar	Post-De d by Alle ⊃® 10.10- = y SCS TF 24-hr 25 ³ 2640	v-rev1 en Engin 4b s/n 03 0.40 cf R-20 meti /R Rainfi CN E	eering & A 871 © 202 s @ 12.0 nod, UH=S all=6.11" Description Description	Associates <u>0 HydroCAE</u> 1 hrs, Volu SCS, Weigh	Type III 24-hr 25YR Rainfall=6.11" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 68 Summary for Subcatchment 10S: ROOF June= 1,292 cf, Depth= 5.87" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
00047 F Prepared tydroCAE Runoff Runoff ype III 2 Ar	Post-De d by Alle 2 10.10- y SCS TF 24-hr 25° ea (sf) 2,640 2,640	v-rev1 n Engin 0.40 cf R-20 mett /R Rainfa <u>CN E</u> 98 F 1	eering & <i>A</i> 871 © 202 nod, UH=S all=6.11" Vescription toofs, HSG 00.00% In	Associates <u>0 HydroCAE</u> 1 hrs, Volu SCS, Weigh <u>6 C</u> apervious A	<i>Type III 24-hr 25YR Rainfall=6.11"</i> s, Inc. Printed 11/10/2021 <u>D Software Solutions LLC Page 68</u> Summary for Subcatchment 10S: ROOF ume= 1,292 cf, Depth= 5.87" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
)0047 F Prepared lydroCAE Runoff Runoff by ype III 2 Ar	Post-De d by Alle 08 10.10- = y SCS TF 24-hr 25 2,640 2,640 2,640 Length	v-rev1 en Engin 4b s/n 03 0.40 cf R-20 meti 7R Rainfi CN E 98 F 1 Slope	eering & A 871 © 202 s @ 12.0 nod, UH=S all=6.11" Description coofs, HSG 00.00% In Velocity	Associates <u>0 HydroCAE</u> 1 hrs, Volu SCS, Weigh Depervious A Capacity	Type III 24-hr 25YR Rainfall=6.11" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 68 Summary for Subcatchment 10S: ROOF ume= 1,292 cf, Depth= 5.87" hted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Area Description
00047 F Prepared tydroCAL Runoff Runoff Sunoff ype III 2 Ar Tc (min) 1.0	Post-De d by Alle 2 10.10- = y SCS TF 24-hr 25° rea (sf) 2,640 2,640 Length (feet)	v-rev1 n Engin 4 <u>b s/n 03</u> 0.40 cf R-20 mett /R Rainfa /R Rainfa /R Rainfa /R Rainfa /R Siope (ft/ft)	eering & A 871 © 202 nod, UH=S all=6.11" Vescription toofs, HSC 00.00% In Velocity (ft/sec)	Associates <u>0 HydroCAE</u> 1 hrs, Volu GCS, Weigh GC apervious A Capacity (cfs)	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 68 Summary for Subcatchment 10S: ROOF ume= 1,292 cf, Depth= 5.87" hted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NOO47 F Prepared lydroCAE Runoff Runoff by ype III 2 Ar Cr (min) 1.0	Post-De d by Alle ⊃® 10.10- = y SCS TF 24-hr 25 2,640 2,640 2,640 Length (feet)	v-rev1 en Engin 4b s/n 03 0.40 cf R-20 meti /R Rainfi GN E 98 F 1 Slope (ft/ft)	eering & A 871 © 202 s @ 12.0 nod, UH=S all=6.11" <u>Description coofs, HSC</u> 00.00% In Velocity (ft/sec)	Associates <u>0 HydroCAE</u> 1 hrs, Volu CS, Weigh CS, Weigh apervious A Capacity (cfs)	Type III 24-hr 25YR Rainfall=6.11" printed 11/10/2021 Page 68 Summary for Subcatchment 10S: ROOF ume= 1,292 cf, Depth= 5.87" hted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Area Description Direct Entry, Summary for Subcatchment 11S: ROOF
10047 F Prepared lydroCAL Runoff Runoff ype III 2 Ar Tc (min) 1.0	Post-De d by Alle)® 10.10- = y SCS TF 24-hr 25 ⁵ rea (sf) 2,640 Length (feet)	v-rev1 n Engin 4 <u>b s/n 03</u> 0.40 cf R-20 meti (R Rainfi (R Rainfi) (R Rainf	eering & <i>A</i> 871 © 202 s @ 12.0 nod, UH=S all=6.11" <u>Description</u> 200.00% In Velocity (ft/sec) s @ 12.0	Associates <u>0 HydroCAE</u> 1 hrs, Volu GCS, Weigh Dervious A Capacity (cfs)	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 D Software Solutions LLC Page 68 Summary for Subcatchment 10S: ROOF ume= 1,292 cf, Depth= 5.87" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Area Description Direct Entry, Summary for Subcatchment 11S: ROOF ume= 1.381 cf. Denth= 5.87"
20047 F Prepared lydroCAE Runoff Runoff by ype III 2 Ar Tc (min) 1.0	Post-De d by Alle ∑® 10.10- = y SCS TF 2,640 2,640 Length (feet) =	v-rev1 n Engin 4b s/n 03 0.40 cf R-20 meti /R Rainfr 2 N E 98 F 1 Slope (ft/ft) 0.43 cf	eering & A 871 © 202 s @ 12.0 nod, UH=S all=6.11" <u>bescription</u> coofs, HSC 00.00% In Velocity (ft/sec) s @ 12.0	Associates <u>0 HydroCAE</u> 1 hrs, Volu SCS, Weigh apervious A Capacity (cfs)	Type III 24-hr 25YR Rainfall=6.11" Printed 11//0/2021 Page 68 Summary for Subcatchment 10S: ROOF ume= 1,292 cf, Depth= 5.87" hted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Area Description Direct Entry, Summary for Subcatchment 11S: ROOF ume= 1,381 cf, Depth= 5.87" ted-CN, Time Span= 0.00.48.00 hrs dt= 0.05 hrs
)0047 F Prepared lydroCAE Runoff Runoff by Tc (min) 1.0 Runoff Runoff Runoff by Type III 2	Post-De d by Alle ∑® 10.10- = y SCS TF 24-hr 25 ⁵ 7ea (sf) 2,640 2,640 Length (feet) = y SCS TF 4-hr 25 ⁵	v-rev1 en Engin 4b s/n 03 0.40 cf 	eering & A 871 © 202 s @ 12.0 nod, UH=S all=6.11" <u>Description</u> 2005, HSC 00.00% In Velocity (ft/sec) s @ 12.0 nod, UH=S all=6.11"	Associates <u>0 HydroCAE</u> 1 hrs, Volu CS, Weigh <u>3 C</u> Capacity (cfs) 1 hrs, Volu CS, Weigh	Type III 24-hr 25YR Rainfall=6.11" S. Inc. Printed 11/10/2021 D Software Solutions LLC Page 68 Summary for Subcatchment 10S: ROOF ume= 1,292 cf, Depth= 5.87" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Description Direct Entry, Summary for Subcatchment 11S: ROOF ume= 1,381 cf, Depth= 5.87" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
)0047 F Prepared tydroCAL Runoff Runoff by Type III 2 (min) 1.0 Runoff Runoff by Tc (min) 1.0	Post-De d by Alle 2 10.10- = y SCS TF 24-hr 25° 2,640 2,640 2,640 Length (feet) = y SCS TF 24-hr 25° ea (sf) 2,040	v-rev1 n Engin 4b s/n 03 0.40 cf R-20 mett (R Rainfi 0.43 cf R-20 mett (R Rainfi CR E	eering & <i>A</i> 871 © 202 s @ 12.0 hod, UH=S all=6.11" Velocity (ft/sec) s @ 12.0 hod, UH=S all=6.11" Vescription	Associates 0 HydroCAE 1 hrs, Volu 3CS, Weigh 3 C Capacity (cfs) 1 hrs, Volu 3CS, Weigh	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Disoftware Solutions LLC Page 68 Summary for Subcatchment 10S: ROOF ume= 1,292 cf, Depth= 5.87" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Description Direct Entry, Summary for Subcatchment 11S: ROOF ame= 1,381 cf, Depth= 5.87" ted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
20047 F Prepared Aunoff Runoff by Type III 2 Ar Tc (min) 1.0 Runoff Runoff Runoff Runoff Runoff Runoff by Te Runoff	Post-De d by Alle 08 10.10- = y SCS TF 2,640 2,640 Length (feet) = y SCS TF 2,640 Length (feet) = y SCS TF 2,640 2,822 2,822 2,822	v-rev1 n Engin 4b s/n 03 0.40 cf R-20 meti /R Rainfi 98 F 1 Slope (ft/ft) 0.43 cf R-20 meti /R Rainfi R-20 meti /R Rainfi /R R	eering & A 871 © 202 s @ 12.0 nod, UH=S all=6.11" Velocity (ft/sec) s @ 12.0 nod, UH=S all=6.11" velocity (ft/sec) s @ 12.0 nod, UH=S all=6.11"	Associates <u>0 HydroCAE</u> 1 hrs, Volu CS, Weigh <u>6 C</u> Capacity (cfs) 1 hrs, Volu CS, Weigh <u>6 C</u> <u>1 hrs, Volu</u> <u>6 C</u> <u>1 hrs, Volu</u> <u>6 C</u> <u>1 hrs, Volu</u>	Type III 24-hr 25YR Rainfall=6.11" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 68 Summary for Subcatchment 10S: ROOF ume= 1,292 cf, Depth= 5.87" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Area Description Direct Entry, Summary for Subcatchment 11S: ROOF ume= 1,381 cf, Depth= 5.87" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
)0047 F Prepared tydroCAL Runoff Runoff by Type III 2 Ar C. (min) 1.0 Runoff by Tc Ar C. Tc	Post-De d by Alle ≥ 10.10- = y SCS TF 24-hr 25' ea (sf) 2,640 2,640 2,640 Length (feet) = y SCS TF 24-hr 25' ea (sf) 2,822 2,822 2,822 Length	v-rev1 n Engin 4b s/n 03 0.40 cf R-20 mett (R Rainfi 0.43 cf R-20 mett (R Rainfi CN E 98 F 98 F 1 Slope (ft/ft)	eering & / 871 © 202 s @ 12.0 nod, UH=S all=6.11" Velocity (ft/sec) s @ 12.0 nod, UH=S all=6.11" Vescription toofs, HSC 00.00% In Velocity (ft/sec)	Associates <u>0 HydroCAE</u> 1 hrs, Volu 3CS, Weigh 3 C Capacity (cfs) 1 hrs, Volu 3 CS, Weigh 3 C 1 hrs, Volu 3 C 3 C 1 hrs, Volu 3 C 4 capacity 2 C 4 capacity 3 C 4 capacity 4 capacity	Type III 24-hr 25YR Rainfall=6.11" S, Inc. Printed 11/10/2021 D Software Solutions LLC Page 68 Summary for Subcatchment 10S: ROOF ume= 1,292 cf, Depth= 5.87" tted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Area Description Direct Entry, Summary for Subcatchment 11S: ROOF ume= 1,381 cf, Depth= 5.87" tted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Runoff	=	2.52 c	fs @ 12.0	1 hrs, Volu	ıme=	7,750 cf,	Depth= 5.64'	•		
Runoff b	y SCS TR	R-20 me	thod, UH=S	SCS, Weigh	ited-CN, Tin	ne Span= 0.0	0-48.00 hrs, d	lt= 0.05 hrs		
Type III 2	24-hr 25`	YR Rain	fall=6.11"							
A	rea (sf)	CN 74	Description	6 00V07 0						
	1,435	98	Unconnecte	ed paveme	nt, HSG C					
	14,028	98	Paved park	ing, HSG C)					
	1,435	96	8.70% Perv	verage ious Area						
	15,063		91.30% Im	pervious Ar	ea					
	1,035		0.07 % 0110	onnecteu						
Tc (min)	Length (feet)	Slope	Velocity	Capacity (cfs)	Descriptio	n				
0.5	50	0.0500	1.74	(0.07	Sheet Flo	w,				
0.3	76	0.0329	3.68		Smooth si	urfaces n= 0).011 P2= 3.2	26"		
0.0		0.0020	0.00		Paved K	v= 20.3 fps				
0.8	126	Total								
				Sum	mary for \$	Subcatchm	ent 13S: R	OOF-CANOF	γ	
Runoff	=	0.43 c	fs @ 12.0	3 hrs. Voli	ıme=	1.409 cf	Depth= 5.87'	,		
Due - 11			•had 1711			.,				
Runott by	y SCS 17 24-hr 25	≺-∠∪ me YR Rain	ທoa, UH=S fall=6.11"	പെട, weigh	nea-CN, Tin	ne span= 0.0	∪-4ŏ.UU hrs, d	ii≓ 0.05 hrs		
	rea (ef)	CN	Description							
A	2,880	98	Roofs, HSC	GC						
	2,880		100.00% In	npervious A	rea					
00047 F Prepare HydroCAI	Post-De d by Alle D® 10.10-	e v-rev1 en Engir 4b s/n 0	neering & / 3871 © 202	Associates 0 HydroCAI	s, Inc. D Software S	olutions LLC			Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI	Post-De d by Alle D® 10.10- Length	e v-rev1 en Engir 4b s/n 0 Slope	neering & 7 3871 © 202	Associates 0 HydroCAI Capacity	;, Inc. <u>) Software S</u> Descriptio	olutions LLC			Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI Tc (min)	Post-De d by Alle D® 10.10- Length (feet)	e v-rev1 en Engir 4 <u>b s/n 0</u> Slope (ft/ft)	neering & / 3871 © 202 • Velocity • (ft/sec)	Associates 0 HydroCAI Capacity (cfs)	i, Inc. D Software S Descriptio	olutions LLC n			Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI Tc (min) 2.0	Post-De d by Alle D® 10.10- Length (feet)	e v-rev1 en Engir 4 <u>b s/n 0</u> Slope (ft/ft)	neering & / 3871 © 202 Velocity (ft/sec)	Associates 0 HydroCAI Capacity (cfs)	i, Inc. <u>) Software S</u> Descriptio Direct En	olutions LLC n try ,			Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI Tc (min) 2.0	Post-De d by Alle D® 10.10- Length (feet)	e v-rev1 en Engir 4 <u>b s/n 0</u> Slope (ft/ft)	neering & / 3871 © 202 Velocity (ft/sec)	Associates <u>0 HydroCAI</u> Capacity (cfs) Sur	;, Inc. <u>) Software S</u> Descriptio Direct En nmary for	olutions LLC n try, • Subcatch	ment 14S: (new Subcat	Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare <u>HydroCAI</u> Tc (min) 2.0 Runoff	Post-De d by Alle D® 10.10- Length (feet)	ev -rev1 en Engir <u>4b s/n 0</u> Slope (ft/ft) 2.03 c	neering & / 3871 © 202 : Velocity (ft/sec) :fs @ 12.0	Associates <u>0 HydroCAI</u> Capacity (cfs) Sur 7 hrs, Volu	s, Inc. D Software S Descriptio Direct En nmary for Ime=	olutions LLC n try, 6,680 cf,	ment 14S: (Depth= 5.18'	new Subcat	Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI (min) 2.0 Runoff Type III 2	Post-De d by Alle D® 10.10- Length (feet) = y SCS TF 24-hr 25	ev-rev1 en Engir 4b s/n 0 Slope (ft/ft) 2.03 c R-20 me YR Rain	neering & / 3871 © 202 Velocity (ft/sec) ffs @ 12.0 thod, UH=S fall=6.11"	Associates <u>0 HydroCAI</u> Capacity (cfs) Sur 7 hrs, Volu SCS, Weigh	5, Inc. <u>Descriptio</u> Direct En nmary for ume= uted-CN, Tin	olutions LLC n try, [•] Subcatch 6,680 cf, ne Span= 0.0	ment 14S: (Depth= 5.18' 10-48.00 hrs, d	new Subcat	Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI Tc (min) 2.0 Runoff Runoff b Type III 2	Post-De d by Alle D® 10.10- Length (feet) = y SCS TF 24-hr 25' rea (sf)	ev-rev1 en Engir 4b s/n 0 Slope (ft/ft) 2.03 c R-20 me YR Rain CN	neering & / 3871 © 202 Velocity (ft/sec) (fs @ 12.0 thod, UH=S fall=6.11" Description	Associates 0 HydroCAI Capacity (cfs) Sur 7 hrs, Volu SCS, Weigh	5, Inc. D Software S Descriptio Direct En nmary for ume= uted-CN, Tir	olutions LLC n try, 6,680 cf, ne Span= 0.0	ment 14S: (Depth= 5.18' 0-48.00 hrs, d	new Subcat	Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI Tc (min) 2.0 Runoff Runoff by Type III 2	Post-De d by Alle D® 10.10- Length (feet) = y SCS TF 24-hr 25' rea (sf) 614 211	ev-rev1 en Engir 4b s/n 0 Slope (ft/ft) 2.03 c R-20 me YR Rain <u>CN</u> 98	neering & / 3871 © 202 Velocity (ft/sec) (fs @ 12.0 thod, UH=S fall=6.11" Description Unconnecte Unconnecte	Associates 0 HydroCAI Capacity (cfs) 7 hrs, Volu 3 CS, Weigh ed paveme ing, HSG (s, Inc. <u>Software S</u> Descriptio Direct En nmary for une= ited-CN, Tin	olutions LLC n try, 6,680 cf, ne Span= 0.0	ment 14S: (Depth= 5.18' 0-48.00 hrs, d	new Subcat	Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI Tc (min) 2.0 Runoff Type III 2 A	Post-De d by Alle D® 10.10- Length (feet) = y SCS TF 24-hr 25' rea (sf) 614 211 10,484	ev-rev1 en Engir 4b s/n 0 Slope (ft/ft) 2.03 c R-20 me YR Rain 98 98 98 98	reering & / 3871 © 202 Velocity (fl/sec) fs @ 12.0 thod, UH=S fall=6.11" Description Unconnecte Paved park Paved park 2750'	Associates <u>0 HydroCAI</u> Capacity (cfs) Sur 7 hrs, Volu SCS, Weigh ed paveme ing, HSG (ing, HSG (a, Inc. D Software S Descriptio Direct En nmary for ume= ted-CN, Tin nt, HSG C	olutions LLC n try, 6,680 cf, ne Span= 0.0	ment 14S: (Depth= 5.18' 0-48.00 hrs, d	new Subcat, , it= 0.05 hrs	Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI Tc (min) 2.0 Runoff Type III 2 Ai	Post-De d by Alle D® 10.10- Length (feet) = y SCS TF 24-hr 25 [°] rea (sf) 614 211 10,484 4,173	ev-rev1 en Engir 4b s/n 0 Slope (ft/ft) 2.03 c R-20 me YR Rain YR Rain ON 98 98 98 98 98 98 98 98	heering & / 3871 © 202 Velocity (ft/sec) (fs @ 12.0 thod, UH=S fall=6.11" Description Unconnecte Paved park Paved park Paved park Paved park Paved park Paved park Paved park	Associates <u>0 HydroCAI</u> Capacity (cfs) Sur 7 hrs, Volu 3CS, Weigh ed paveme ing, HSG (ing, HSG (s cover, Gd	a, Inc. D Software S Descriptio Direct En nmary for ume= uted-CN, Tim nt, HSG C bood, HSG C	olutions LLC n try, 6,680 cf, ne Span= 0.0	ment 14S: (Depth= 5.18' 0-48.00 hrs, d	new Subcat, , lt= 0.05 hrs	Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI (min) 2.0 Runoff Type III 2 A	Post-De d by Alle D® 10.10- Length (feet) = y SCS TF 24-hr 25' rea (sf) 614 24-hr 25' rea (sf) 614 10,484 4,173 15,482 4,173 11,309	2.03 c 2.03 c	neering & / 3871 © 202 Velocity (ft/sec) thod, UH=S fall=6.11" Description Unconnecte Paved park >75% Gras Weighted A 26.95% Pe	Associates 0 HydroCAI Capacity (cfs) Sur 7 hrs, Volu 3 CS, Weigh ed paveme ing, HSG (ing, HSG (s cover, Go werage rvious Areage	i, Inc. Descriptio Direct En nmary for Ime= Ited-CN, Tin nt, HSG C Direct En Ime=	olutions LLC n try, • Subcatch 6,680 cf, ne Span= 0.0	ment 14S: (Depth= 5.18' 10-48.00 hrs, d	new Subcat	Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI (min) 2.0 Runoff Type III 2 Ai	Post-De d by Alle D® 10.10- Length (feet) = y SCS TF 24-hr 25' fea (sf) 614 211 10,484 4,173 15,482 4,173 11,309 614	2.03 c 2.03 c 2.03 c 2.03 c R-20 me YR Rain <u>CN</u> 98 98 98 74 92	reering & / 3871 © 202 Velocity (ft/sec) (ft/sec	Associates 0 HydroCAI Capacity (cfs) Sur 7 hrs, Volu 3 CS, Weigh ed paveme ing, HSG (ing, HSG (ing, HSG (s cover, Go werage rvious Areage pervious Areage pervious Areage pervious Areage	5, Inc. Descriptio Direct En nmary for ume= uted-CN, Tirr nt, HSG C bod, HSG C	olutions LLC n try, 6,680 cf, ne Span= 0.0	ment 14S: (Depth= 5.18' 0-48.00 hrs, d	new Subcat	Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI Tc (min) 2.0 Runoff Type III 2 A	Post-De d by Alle D® 10.10- Length (feet) = y SCS TF 24-hr 25 [°] rea (sf) 614 211 10,484 4,173 11,309 614 Length (feet)	2.03 c 3.03 c	reering & / 3871 © 202 Velocity (ff/sec) thod, UH=S fall=6.11" Description Unconnecto Paved park Paved park S-75% Gras Weighted A 26,95% Pe 73.05% Imp 5.43% Unc	Associates <u>10 HydroCAI</u> Capacity (cfs) Sur 7 hrs, Volu 3CS, Weigh ed paveme ing, HSG 0 ing, HSG 0 ing, HSG 0 verage rvious Area pervious Area pervious Area pervious Area pervious Area pervious Area	s, Inc. Description Direct En nmary for ume= tted-CN, Time nt, HSG C bood, HSG C lea Description	olutions LLC n try, • Subcatch 6,680 cf, ne Span= 0.0	ment 14S: (Depth= 5.18' 0-48.00 hrs, d	new Subcat	Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI Tc (min) 2.0 Runoff Type III 2 A Tc (min) 4.2	Post-De d by Alle D® 10.10- Length (feet) = y SCS TF 24-hr 257 614 211 10,484 4,173 15,482 4,173 11,309 614 15,482 4,173 11,309 614 1,0484 4,173 15,482 4,173 11,009 614 5,000 10,0000 10,0000 10,0000 10,0000 10,0000 10,0000 10,0000 10,0000 10,0000 10,0000 10,00000 10,0000000 10,00000000	2.03 c R-20 me (ft/ft) 2.03 c R-20 me YR Rain <u>CN</u> 98 98 98 98 74 92 Slope (ft/ft) 0.0400	theering & / 3871 © 202 Velocity (ff/sec) thod, UH=S fall=6.11" Description Unconnecto Paved park >75% Gras Weighted A 26.95% Pe 73.05% Im 5.43% Unc Velocity (ff/sec) 0.20	Associates 0 HydroCAI Capacity (cfs) 7 hrs, Volu 3 CS, Weigh ed paveme ing, HSG C ing, HSG C ing, HSG C s cover, Ge verage rvious Area bervious Area bervious Area bervious Area connected Capacity (cfs)	s, Inc. Description Direct En nmary for ume= ted-CN, Tim nt, HSG C bood, HSG C bood, HSG C bood, HSG C bood, HSG C bood, HSG C	olutions LLC n try, 6,680 cf, ne Span= 0.0	ment 14S: (Depth= 5.18' 0-48.00 hrs, d	new Subcat	Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI Tc (min) 2.0 Runoff Type III 2 A Tc (min) 4.2	Post-De d by Alle D® 10.10- Length (feet) = y SCS TF 24-hr 25' rea (sf) 614 211 10,484 4,173 15,482 4,173 11,309 614 Length (feet) 50	2.03 c 3.20 me (ft/ft) 2.03 c 2.03 c 2.03 c 2.03 c 2.03 c 2.03 c 3.20 me YR Rain <u>CN</u> 98 98 98 98 98 98 74 92 Slopee (ft/ft) 0.040000 0.040000 0.040000 0.040000000000	theering & / 3871 © 202 Velocity (ft/sec) thod, UH=S fall=6.11" Description Unconnecte Paved park >75% Gras Weighted A 26.95% Per 73.05% Im 5.43% Unc Velocity ((ft/sec)) 0.20	Associates 0 HydroCAI Capacity (cfs) 7 hrs, Volu 3 CS, Weigh ad paveme ing, HSG C s cover, Go werage rvious Area bervious Area bervious Area bervious Area connected Capacity (cfs)	i, Inc. Descriptio Direct En nmary for Ime= Ited-CN, Tin Int, HSG C Dod, HSG C dea Descriptio Sheet Flo Grass: Sh	olutions LLC n try, • Subcatch 6,680 cf, ne Span= 0.0	ment 14S: (Depth= 5.18' 0-48.00 hrs, d	new Subcat	Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI (min) 2.0 Runoff Type III 2 AI Tc (min) 4.2 0.8	Post-De d by Alle D® 10.10- Length (feet) = y SCS TF 24-hr 25' rea (sf) 614 211 10,484 4,173 15,482 4,173 11,309 614 Length (feet) 50 158	2.03 c 2.03 c	the ering & A 3871 © 202 Velocity (ft/sec) thod, UH=S fall=6.11" Description Unconnecte Paved park >75% Gras Weighted A 26.95% Pe 26.95% Pe 5.43% Unc Velocity (ft/sec) 0.20 2.3.41	Associates 0 HydroCAI Capacity (cfs) Sur 7 hrs, Volu 3 CS, Weigh ad paveme ing, HSG (ing, HSG (s cover, Go werage rvious Area bervious Area bervious Area connected Capacity (cfs)	i, Inc. Descriptio Direct En mmary for Ime= Ited-CN, Tin Int, HSG C Dod, HSG C Descriptio Sheet Flo Grass: Sh Shallow C Paved K	olutions LLC n try, • Subcatch 6,680 cf, ne Span= 0.0	ment 14S: (Depth= 5.18' 0-48.00 hrs, d 0-48.00 hrs, d	new Subcat	Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70
00047 F Prepare HydroCAI C (min) 2.0 Runoff Type III 2 AI Tc (min) 4.2 0.8 5.0	Post-De d by Alle D® 10.10- Length (feet) = y SCS TF 24-hr 25' rea (sf) 614 211 10,484 4,173 11,309 614 Length (feet) 50 158 208	2.03 c 2.03 c	the ering & A 3871 © 202 Velocity (ft/sec) thod, UH=S fall=6.11" Description Unconnect Paved park Paved park (ft/sec) 0.20 3.41	Associates 0 HydroCAI Capacity (cfs) Sur 7 hrs, Volu 3 CS, Weigh ad paveme ing, HSG (ing, HSG (ing, HSG (ing, HSG (s cover, Go verage rvious Area bervious Ar onnected Capacity (cfs)	5, Inc. Descriptio Direct En mmary for ume= ted-CN, Tim nt, HSG C bod,	n r Subcatch 6,680 cf, ne Span= 0.0 n w, ort n= 0.150 Concentrated v= 20.3 fps	ment 14S: (Depth= 5.18' 0-48.00 hrs, d 0-48.00 hrs, d 0 P2= 3.26" d Flow,	new Subcat	Type III 24-hr	25YR Rainfall=6.11" Printed 11/10/2021 Page 70

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 25YR Rainfall=6.11"

HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Page 71 Area (sf) CN Description 1,155 74 >75% Grass cover, Good, HSG C 1,140 74 >75% Grass cover, Good, HSG C Unconnected pavement, HSG C 98 174 Paved parking, HSG C 2,097 98 3,280 98 Paved parking, HSG C Weighted Average 29.25% Pervious Area 7.846 91 2,295 70.75% Impervious Area 5,551 174 3.13% Unconnected Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 0.5 50 0.0377 1.56 Sheet Flow, Smooth surfaces n= 0.011 P2= 3.26" 05 92 0.0250 3 21 Shallow Concentrated Flow. Paved Kv= 20.3 fps 142 Total 1.0 Summary for Subcatchment 16S: (new Subcat) Runoff = 1.95 cfs @ 12.07 hrs, Volume= 6,522 cf, Depth= 5.41" Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 25YR Rainfall=6.11" Area (sf) CN Description 397 98 Unconnected pavement, HSG C >75% Grass cover, Good, HSG C >75% Grass cover, Good, HSG C 1,089 74 1,154 74 Paved parking, HSG C 7,641 98 4,197 98 Paved parking, HSG C Weighted Average 14,478 94 2,243 15.49% Pervious Area 12,235 84.51% Impervious Area 397 3.24% Unconnected Type III 24-hr 25YR Rainfall=6.11" 00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Printed 11/10/2021 Page 72 Tc Length Slope Velocity Capacity Description (ft/ft) (feet) (ft/sec) (cfs) (min) 0.0400 Sheet Flow, 4.2 50 0.20 Grass: Short n= 0.150 P2= 3.26" 0.7 174 0.0374 3.93 Shallow Concentrated Flow, Paved Kv= 20.3 fps 4.9 224 Total Summary for Subcatchment 17S: (new Subcat) Runoff = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf, Depth= 4.19" Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 25YR Rainfall=6.11' CN Description Area (sf) >75% Grass cover, Good, HSG C 8,646 74 5,265 Paved parking, HSG C 98 13,911 83 Weighted Average 62.15% Pervious Area 8,646 5,265 37.85% Impervious Area Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) Sheet Flow, 3.5 50 0.0660 0.24 Grass: Short n= 0.150 P2= 3.26" 61 0.0205 2.91 Shallow Concentrated Flow, 0.3 Paved Kv= 20.3 fps 38 111 Total

00047 Post-Dev-rev1

Prepared by Allen Engineering & Associates, Inc.

Summary for Reach R1: (new Reach)



Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Peak Elev= 1,038.53' @ 12.09 hrs

#1 Primary	1,037.95'	12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated	rt L= 12.0' Ke= 0.200 1,037.95' / 1,037.77' S= 0.0150 '/' Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf	
rimary OutFlov	Max=0.41 cfs @) 12.03 hrs HW=1,03	8.46' TW=1,038.41' (Dynamic Tailwater)	
	ulet Controls 0.4	r cis @ 1.46 ips)	mary for Pond CB3: (new Pond)	
a .	44.470 6.0	Guini		
Inflow Area =	14,478 st, 8 1.95 cfs @ 12	2.07 hrs, Volume=	6,522 cf for 25YR event	
⊃utflow = ⊃rimary =	1.95 cfs @ 12 1.95 cfs @ 12	2.07 hrs, Volume= 2.07 hrs, Volume=	6,522 cf,Atten= 0%,Lag= 0.0 min 6,522 cf	
Routing by Dyn-S	itor-Ind method, 1	Time Span= 0.00-48.0	0 hrs, dt= 0.05 hrs	
Peak Elev= 1,040	1.08 @ 12.07 mrs	Outlet Devices		
#1 Primary	1,040.00'	12.0" Round Culve	rt L= 165.0' Ke= 0.200	
		Inlet / Outlet Invert= n= 0.013 Corrugated	1,040.00' / 1,037.77' S= 0.0135 '/' Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf	
Primary OutFlov 1=Culvert (O	✔ Max=1.86 cfs @ utlet Controls 1.8	0 12.07 hrs HW=1,04 6 cfs @ 4.73 fps)	0.67' TW=1,038.45' (Dynamic Tailwater)	
		Sumr	nary for Pond CB4: (new Pond)	
nflow Area =	7,846 sf. 7	0.75% Impervious. In	flow Depth = 5.06" for 25YR event	
nflow =	1.13 cfs @ 12	2.01 hrs, Volume=	3,312 cf	
Primary =	1.13 cfs @ 12	2.01 hrs, Volume=	3,312 cf	
Routing by Dvn-S	tor-Ind method.	Fime Span= 0.00-48.0	0 hrs, dt= 0.05 hrs	
00047 Post-De Prepared by Alle	ev-rev1 en Engineering a	& Associates, Inc.	e Solutions II C	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
00047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040	e v-rev1 en Engineering (-4b s/n 03871 © 2 0.49' @ 12.01 hrs	& Associates, Inc. 2020 HydroCAD Softwar	e Solutions LLC	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
00047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 Device Routing	e v-rev1 en Engineering a <u>4b s/n 03871 © 2</u> 0.49' @ 12.01 hrs Invert	& Associates, Inc. 2020 HydroCAD Softwar Outlet Devices	e Solutions LLC	Type III 24-hr 25YR Rainfall=6.11 Printed 11/10/2021 Page 76
00047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 Device Routing #1 Primary	ev-rev1 en Engineering (4b s/n 03871 © 2 0.49' @ 12.01 hrs Invert 1,040.00'	& Associates, Inc. 2020 HydroCAD Softwar Outlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated	e Solutions LLC rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/ Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
00047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 Device Routing #1 Primary #1 Primary Primary OutFlov	ev-rev1 en Engineering , .4b s/n 03871 © 2 0.49' @ 12.01 hrs 	& Associates, Inc. 2020 HydroCAD Softwar 2001 Augustation Outlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 12.01 hrs HW=1,04 cfs @ 2.93 fps)	e Solutions LLC rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.48' TW=1,037.26' (Dynamic Tailwater)	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
00047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 Device Routing #1 Primary #1 Primary Primary OutFlow 1=Culvert (Ini	ev-rev1 en Engineering (4b s/n 03871 © 2 0.49' @ 12.01 hrs Invert 1,040.00' v Max=1.08 cfs (€ et Controls 1.08 (& Associates, Inc. 2020 HydroCAD Softwar Outlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 12.01 hrs HW=1,04 cfs @ 2.93 fps) Sumr	e Solutions LLC rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/ Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.48' TW=1,037.26' (Dynamic Tailwater) mary for Pond CB5: (new Pond)	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
00047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 Device Routing #1 Primary Primary OutFlow -1=Culvert (Ini Inflow Area =	ev-rev1 en Engineering (.4b s/n 03871 © 2 0.49' @ 12.01 hrs Invert 1,040.00' v Max=1.08 cfs (et Controls 1.08 f 8,042 sf, 8	& Associates, Inc. 2020 HydroCAD Softwar Coutlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 12.01 hrs HW=1,04 cfs @ 2.93 fps) Sumr 87.19% Impervious, In	e Solutions LLC rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.48' TW=1,037.26' (Dynamic Tailwater) nary for Pond CB5: (new Pond) iflow Depth = 5.52" for 25YR event	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
000047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 Device Routing #1 Primary Quertice Inflow nflow Area = Dutflow	ev-rev1 en Engineering (<u>4b s/n 03871 © 2</u> 0.49' @ 12.01 hrs <u>Invert</u> 1,040.00' v Max=1.08 cfs (et Controls 1.08 8,042 sf, 8 1.22 cfs @ 11 12 2 cfs @ 11	& Associates, Inc. 2020 HydroCAD Softwar Outlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 12.01 hrs HW=1,04 cfs @ 2.93 fps) Sumr 37.19% Impervious, In 2.01 hrs, Volume= 201 hrs, Volume=	e Solutions LLC rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.48' TW=1,037.26' (Dynamic Tailwater) mary for Pond CB5: (new Pond) iflow Depth = 5.52" for 25YR event 3,700 cf 3,700 cf 4ten= 0% Lan= 0.0 min	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
00047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 Device Routing #1 Primary Primary OutFlov 1=Culvert (Ini Inflow Area = inflow = Outflow = Primary =	ev-rev1 en Engineering (<u>4b s/n 03871 © 2</u> 0.49' @ 12.01 hrs <u>Invert</u> 1,040.00' v Max=1.08 cfs (¢ et Controls 1.08 f 8,042 sf, 8 1.22 cfs @ 12 1.22 cfs @ 12	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 12.01 hrs HW=1,04 cfs @ 2.93 fps) Sumr 17.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume=	<u>e Solutions LLC</u> rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.48' TW=1,037.26' (Dynamic Tailwater) mary for Pond CB5: (new Pond) flow Depth = 5.52" for 25YR event 3,700 cf 3,700 cf, Atten= 0%, Lag= 0.0 min 3,700 cf	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
00047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 Device Routing #1 Primary Primary OutFlov -1=Culvert (Ini Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,040	ev-rev1 en Engineering (<u>4b s/n 03871 © 2</u> 0.49' @ 12.01 hrs <u>Invert</u> 1,040.00' v Max=1.08 cfs (et Controls 1.08 f 8,042 sf, 8 1.22 cfs @ 12 1.22 cfs @ 12	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 12.01 hrs HW=1,04 cfs @ 2.93 fps) Sumr 37.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 1.01 hrs, Volume= 2.01 hrs, Volume= 1.01 hrs, Volume= 2.01 hrs, Volume= 1.01 hrs, Vo	<u>e Solutions LLC</u> rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.48' TW=1,037.26' (Dynamic Tailwater) mary for Pond CB5: (new Pond) flow Depth = 5.52" for 25YR event 3,700 cf 3,700 cf, Atten= 0%, Lag= 0.0 min 3,700 cf 0 hrs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
00047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 <u>Device Routing</u> #1 Primary Primary OutFlow -1=Culvert (Ini Inflow Area = inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,040 Device Routing	ev-rev1 en Engineering (<u>4b s/n 03871 © 2</u> 0.49' @ 12.01 hrs <u>Invert</u> 1,040.00' v Max=1.08 cfs (et Controls 1.08 f 1.22 cfs @ 12 1.22 cfs @ 12 1.23 cfs @ 12 1.23 cfs @ 12 cfs @ 12 1.23 cfs @ 12 cfs @ 12 1.23 cfs @ 12 cf	& Associates, Inc. 2020 HydroCAD Softwar Outlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 2.12.01 hrs HW=1,04 cfs @ 2.93 fps) Sumr 37.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= Time Span= 0.00-48.00 Outlet Devices	e Solutions LLC rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/ Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.48' TW=1,037.26' (Dynamic Tailwater) mary for Pond CB5: (new Pond) iflow Depth = 5.52" for 25YR event 3,700 cf 3,700 cf 3,700 cf 0 hrs, dt= 0.05 hrs	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
00047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 Device Routing #1 Primary Primary OutFlow 1=Culvert (Ind Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,040 Device Routing #1 Primary	Av-rev1 an Engineering (<u>4b s/n 03871 © 2</u> 0.49' @ 12.01 hrs <u>Invert</u> 1,040.00' Max=1.08 cfs (et Controls 1.08 8,042 sf, 8 1.22 cfs @ 12 1.22 cfs @ 12 1.23 cfs @ 12 1.24 cfs @ 12 1.25 cf	& Associates, Inc. 2020 HydroCAD Softwar Coutlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 2.01 hrs HW=1,04 cfs @ 2.93 fps) Sumr 37.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= Time Span= 0.00-48.00 Coutlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated	e Solutions LLC rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/ Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.48' TW=1,037.26' (Dynamic Tailwater) nary for Pond CB5: (new Pond) iflow Depth = 5.52" for 25YR event 3,700 cf 3,700 cf, Atten= 0%, Lag= 0.0 min 3,700 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.200 1,040.30' / 1,039.67' S= 0.0150 '/ Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
00047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 Device Routing #1 Primary #1 Primary Primary OutFlow -1=Culvert (Ini nflow Area = nflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,040 Device Routing #1 Primary #1 Primary	ev-rev1 en Engineering ; <u>4b s/n 03871 © 2</u> 0.49' @ 12.01 hrs <u>Invert</u> 1,040.00' v Max=1.08 cfs @ et Controls 1.08 1.22 cfs @ 12 1.22 cfs @ 12 1.23' @ 12.01 hrs <u>Invert</u> 1,040.30' v Max=1.18 cfs @ arrel Controls 1.13	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 2 12.01 hrs HW=1,04 cfs @ 2.93 fps) Sumr 37.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 1.01 hrs, Volume= Time Span= 0.00-48.00 Outlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 0 12.01 hrs HW=1,04 8 cfs @ 4.14 fps)	e Solutions LLC rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/ Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.48' TW=1,037.26' (Dynamic Tailwater) mary for Pond CB5: (new Pond) flow Depth = 5.52" for 25YR event 3,700 cf 3,700 cf, Atten= 0%, Lag= 0.0 min 3,700 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.200 1,040.30' / 1,039.67' S= 0.0150 '/ Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.82' TW=1,038.56' (Dynamic Tailwater)	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
00047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 Device Routing #1 Primary Primary OutFlow 1=Culvert (Inle Inflow Area = Inflow = Primary = Routing by Dyn-S Peak Elev= 1,040 Device Routing #1 Primary Primary OutFlow 1=Culvert (Ba	Av-rev1 an Engineering (4b s/n 03871 © 2 1.49' @ 12.01 hrs Invert 1,040.00' Max=1.08 cfs (et Controls 1.08 8,042 sf, 8 1.22 cfs @ 12 1.22 cfs @ 12 1.24 cfs (controls 1.14) 1.24 cfs (controls 1.14) 1.25 cfs (control	& Associates, Inc. 2020 HydroCAD Softwar Coutlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 2.01 hrs HW=1,04 cfs @ 2.93 fps) Sumr 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= Coutlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 2.12.01 hrs HW=1,04 8 cfs @ 4.14 fps) Sumr	e Solutions LLC rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.48' TW=1,037.26' (Dynamic Tailwater) mary for Pond CB5: (new Pond) flow Depth = 5.52" for 25YR event 3,700 cf 3,700 cf, Atten= 0%, Lag= 0.0 min 3,700 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.200 1,040.30' / 1,039.67' S= 0.0150 '/' Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.82' TW=1,038.56' (Dynamic Tailwater) mary for Pond CB6: (new Pond)	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
00047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 Device Routing #1 Primary Primary OutFlov 1=Culvert (Inl Inflow Area = Inflow = Primary = Routing by Dyn-S Peak Elev= 1,040 Device Routing #1 Primary Primary OutFlov 1=Culvert (Ba Inflow Area =	Av-rev1 an Engineering 4 h s/n 03871 © 2 1.49' @ 12.01 hrs Invert 1,040.00' Max=1.08 cfs (et Controls 1.08 8,042 sf, 8 1.22 cfs @ 12 1.22 cfs @ 12 1.24 cfs @ 12 1.25 cfs @ 1	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 2.01 hrs HW=1,04 cfs @ 2.93 fps) Sumr 37.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 12.01 krs, Volume= 12.01 hrs, Volume=	e Solutions LLC rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/ Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.48' TW=1,037.26' (Dynamic Tailwater) mary for Pond CB5: (new Pond) flow Depth = 5.52" for 25YR event 3,700 cf 3,700 cf, Atten= 0%, Lag= 0.0 min 3,700 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.200 1,040.30' / 1,039.67' S= 0.0150 '/ Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.82' TW=1,038.56' (Dynamic Tailwater) mary for Pond CB6: (new Pond) flow Depth = 5.41" for 25YR event	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
D0047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 Device Routing #1 Primary #1 Primary Primary OutFlow -1=Culvert (Ini nflow Area = nflow Area = nflow Area = Primary = Routing by Dyn-S Peak Elev= 1,040 Device Routing #1 Primary Primary OutFlow -1=Culvert (Ba nflow Area = nflow Area = <td>ev-rev1 en Engineering (<u>4b s/n 03871 © 2</u> 0.49' @ 12.01 hrs <u>Invert</u> 1,040.00' Max=1.08 cfs (et Controls 1.08 f 1.22 cfs @ 12 1.22 cfs @ 12 1.21 cfs @ 11 8,734 sf, 8 1.31 cfs @ 11 1.31 cfs @ 11 1.31</td> <td>& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 12.01 hrs HW=1,04 cfs @ 2.93 fps) Sumr 37.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= Time Span= 0.00-48.00 Outlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 12.01 hrs HW=1,04 8 cfs @ 4.14 fps) Sumr 31.55% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume=</td> <td>e Solutions LLC rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/ Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.48' TW=1,037.26' (Dynamic Tailwater) mary for Pond CB5: (new Pond) flow Depth = 5.52" for 25YR event 3,700 cf 3,700 cf, Atten= 0%, Lag= 0.0 min 3,700 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.200 1,040.30' / 1,039.67' S= 0.0150 '/ Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.82' TW=1,038.56' (Dynamic Tailwater) mary for Pond CB6: (new Pond) flow Depth = 5.41" for 25YR event 3,934 cf 3,934 cf 3,934 cf 4,120 Cm = 0.0 min</td> <td>Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76</td>	ev-rev1 en Engineering (<u>4b s/n 03871 © 2</u> 0.49' @ 12.01 hrs <u>Invert</u> 1,040.00' Max=1.08 cfs (et Controls 1.08 f 1.22 cfs @ 12 1.22 cfs @ 12 1.21 cfs @ 11 8,734 sf, 8 1.31 cfs @ 11 1.31	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 12.01 hrs HW=1,04 cfs @ 2.93 fps) Sumr 37.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= Time Span= 0.00-48.00 Outlet Devices 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 12.01 hrs HW=1,04 8 cfs @ 4.14 fps) Sumr 31.55% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume=	e Solutions LLC rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/ Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.48' TW=1,037.26' (Dynamic Tailwater) mary for Pond CB5: (new Pond) flow Depth = 5.52" for 25YR event 3,700 cf 3,700 cf, Atten= 0%, Lag= 0.0 min 3,700 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.200 1,040.30' / 1,039.67' S= 0.0150 '/ Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.82' TW=1,038.56' (Dynamic Tailwater) mary for Pond CB6: (new Pond) flow Depth = 5.41" for 25YR event 3,934 cf 3,934 cf 3,934 cf 4,120 Cm = 0.0 min	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76
00047 Post-De Prepared by Alle HydroCAD® 10.10 Peak Elev= 1,040 Device Routing #1 Primary Primary OutFlow Primary = Routing by Dyn-S Peak Elev= 1,040 Device Routing #1 Primary Primary = Routing by Dyn-S Peak Elev= 1,040 Device Routing #1 Primary Primary OutFlow #1 Primary Primary OutFlow #1 Primary Primary OutFlow Primary OutFlow Primary OutFlow Primary = nflow Area = nflow Area = nflow = Dutflow = Primary =	Av-rev1 an Engineering (<u>4b s/n 03871 @ 2</u> 0.49' @ 12.01 hrs <u>Invert</u> 1,040.00' Max=1.08 cfs (et Controls 1.08 f 8,042 sf, 8 1.22 cfs @ 12 1.22 cfs @ 12 1.21 cfs @ 12 1.31	& Associates, Inc. 2020 HydroCAD Softwar 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 2.01 hrs HW=1,04 cfs @ 2.93 fps) Sumr 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated Dutlet Devices 12.01 hrs HW=1,04 8 cfs @ 4.14 fps) Sumr 31.55% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.0	e Solutions LLC rt L= 165.0' Ke= 0.200 1,040.00' / 1,036.38' S= 0.0219 '/' Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.48' TW=1,037.26' (Dynamic Tailwater) mary for Pond CB5: (new Pond) flow Depth = 5.52" for 25YR event 3,700 cf, Atten= 0%, Lag= 0.0 min 3,700 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.200 1,040.30' / 1,039.67' S= 0.0150 '/' Cc= 0.900 d PE, smooth interior, Flow Area= 0.79 sf 0.82' TW=1,038.56' (Dynamic Tailwater) mary for Pond CB6: (new Pond) flow Depth = 5.41" for 25YR event 3,934 cf 3,934 cf 3,934 cf	Type III 24-hr 25YR Rainfall=6.11' Printed 11/10/2021 Page 76

Peak Elev= 1.041.36' @ 12.01 hrs

Device Routing Invert Outlet Devices	
#1 Primary 1,040.75' 12.0" Round Culvert L= 36.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.75' / 1,040.39' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf	
Primary OutFlow Max=1.26 cfs @ 12.01 hrs HW=1,041.35' TW=1,040.79' (Dynamic Tailwater)	
Summary for Pond CB7: (new Pond)	
Inflow Area = 16 498 sf 91 30% Impervious Inflow Depth = 5 64" for 25YR event	
Inflow = 2.52 cfs @ 12.01 hrs, Volume= 7,750 cf Outflow = 2.52 cfs @ 12.01 hrs, Volume= 7,750 cf, Atten= 0%, Lag= 0.0 min Primary = 2.52 cfs @ 12.01 hrs, Volume= 7,750 cf	
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,042.37' @ 12.01 hrs	
Device Routing Invert Outlet Devices	
#1 Primary 1,041.50' 12.0'' Round Culvert L= 128.0'' Ke= 0.200 Inlet / Outlet Invert= 1,041.50' / 1,040.22' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf	
Primary OutFlow Max=2.44 cfs @ 12.01 hrs HW=1,042.35' TW=1,040.79' (Dynamic Tailwater) —1=Culvert (Barrel Controls 2.44 cfs @ 4.59 fps)	
Summary for Pond CB8: (new Pond)	
Inflow Area = 15,482 sf, 73.05% Impervious, Inflow Depth = 5.18" for 25YR event Inflow = 2.03 cfs @ 12.07 hrs, Volume= 6,680 cf Outflow = 2.03 cfs @ 12.07 hrs, Volume= 6,680 cf, Atten= 0%, Lag= 0.0 min Primary = 2.03 cfs @ 12.07 hrs, Volume= 6,680 cf	
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs. dt= 0.05 hrs	
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc.	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.60' @ 12.10 hrs	<i>Type III 24-hr 25YR Rainfall=6.11"</i> Printed 11/10/2021 Page 78
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.60' @ 12.10 hrs Device Routing Invert Outlet Devices	<i>Type III 24-hr 25YR Rainfall=6.11"</i> Printed 11/10/2021 Page 78
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.60' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/ Cc= 0.900 n = 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf	<i>Type III 24-hr 25YR Rainfall=6.11"</i> Printed 11/10/2021 Page 78
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.60' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf Primary OutFlow Max=1.70 cfs @ 12.07 hrs HW=1,041.56' TW=1,041.41' (Dynamic Tailwater) -1=Culvert (Outlet Controls 1.70 cfs @ 2.67 fps)	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 78
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.60' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf Primary OutFlow Max=1.70 cfs @ 12.07 hrs HW=1,041.56' TW=1,041.41' (Dynamic Tailwater)	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 78
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.60' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf Primary OutFlow Max=1.70 cfs @ 12.07 hrs HW=1,041.56' TW=1,041.41' (Dynamic Tailwater) 1=Culvert (Outlet Controls 1.70 cfs @ 2.67 fps) Summary for Pond DRI: (new Pond) Inflow Area = 13,911 sf, 37.85% Impervious, Inflow Depth = 4.19" for 25YR event Inflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Outflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Primary = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Outflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Outflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 78
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.60' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf Primary OutFlow Max=1.70 cfs @ 12.07 hrs HW=1,041.56' TW=1,041.41' (Dynamic Tailwater) 1 =Culvert (Outlet Controls 1.70 cfs @ 2.67 fps) Summary for Pond DRI: (new Pond) Inflow Area = 13,911 sf, 37.85% Impervious, Inflow Depth = 4.19" for 25YR event Inflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Outflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Nufflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,044.35' @ 12.06 hrs	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 78
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.60' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/ Cc= 0.900 n = 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf Primary OutFlow Max=1.70 cfs @ 12.07 hrs HW=1,041.56' TW=1,041.41' (Dynamic Tailwater) L=Culvert (Outlet Controls 1.70 cfs @ 2.67 fps) Summary for Pond DRI: (new Pond) Inflow Area = 13,911 sf, 37.85% Impervious, Inflow Depth = 4.19" for 25YR event Inflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Outflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Outflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,044.35' @ 12.06 hrs Device Routing Invert Outlet Devices	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 78
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.60' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf Primary OutFlow Max=1.70 cfs @ 12.07 hrs HW=1,041.56' TW=1,041.41' (Dynamic Tailwater) 1-1culvert (Outlet Controls 1.70 cfs @ 2.67 fps) Summary for Pond DRI: (new Pond) Inflow Area = 13,911 sf, 37.85% Impervious, Inflow Depth = 4.19" for 25YR event Inflow = 4,861 cf Outflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf 4,861 cf Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,044.35' @ 12.06 hrs 2.00 min #1 Primary 1,043.75' 12.0" Round Culvert L= 59.0' Ke= 0.200 Inlet / Outlet Invert= 1,043.75' / 1,042.59' S= 0.0197 '/' Cc= 0.900 n = 0.013 Cast iron, coated, Flow Area= 0.79 sf	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 78
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.60' @ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0' Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' 1,040.68' S= 0.0143 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf Primary OutFlow Max=1.70 cfs @ 12.07 hrs HW=1,041.56' TW=1,041.41' (Dynamic Tailwater) 1=Culvert (Outlet Controls 1.70 cfs @ 2.67 fps) Summary for Pond DRI: (new Pond) Inflow Area = 13,911 sf, 37.85% Impervious, Inflow Depth = 4.19'' for 25YR event Inflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Outflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,044.35' @ 12.06 hrs Device Routing Invert Outlet Devices #1 Primary 1,043.75' 12.0'' Round Culvert L= 59.0'' Ke= 0.200 In linet / Outlet Devices #1 Primary 1,043.75' 12.0'' Round Culvert L= 59.0'' Ke= 0.200 In linet / Outlet Invert= 1,043.75' / 1,042.59'' S= 0.0197 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 0.79 sf Primary OutFlow Max=1.60 cfs @ 12.06 hrs HW=1,044.34' TW=1,043.11' (Dynamic Tailwater) -1=Culvert (Inlet Controls 1.60 cfs @ 3.28 fps)	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 78
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.60'@ 12.10 hrs Device Routing Invert Outlet Devices #1 Primary 1,040.78' 18.0" Round Culvert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf Primary OutFlow Max=1.70 cfs @ 12.07 hrs HW=1,041.56' TW=1,041.41' (Dynamic Tailwater) L=Culvert (Outlet Controls 1.70 cfs @ 2.67 fps) Summary for Pond DRI: (new Pond) Inflow Area = 13,911 sf, 37.85% Impervious, Inflow Depth = 4.19" for 25YR event Inflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Outflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,044.35' @ 12.06 hrs Peivce Routing Invert Outlet Devices #1 Primary 1,043.5' 12.0" Round Culvert L= 59.0" Ke= 0.200 Inlet / Outlet Invert= 1,043.75' / 1,042.59' S= 0.0197 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 0.79 sf Primary OutFlow Max=1.60 cfs @ 12.06 hrs HW=1,044.34' TW=1,043.11' (Dynamic Tailwater) L=Culvert (Inlet Controls 1.60 cfs @ 3.28 fps)	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 78
00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCADB 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC Peak Elev= 1,041.60' @ 12.10 hrs Device Routing #1 Primary 1,040.78' 18.0" Round Cuivert L= 7.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.78' / 1,040.68' S= 0.0143 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf Primary 0.40.76's @ 12.07 hrs HW=1,041.56' TW=1,041.41' (Dynamic Tailwater) 1-1=Cuivert (Outlet Controls 1.70 cfs @ 2.67 fps) Summary for Pond DRI: (new Pond) Inflow Area = 13,911 sf, 37.85% Impervious, Inflow Depth = 4.19" for 25YR event Inflow = 1.64 cfs @ 12.06 hrs, Volume= 0utflow = 1.64 cfs @ 12.06 hrs, Volume= 4.861 cf 0utflow = 1.64 cfs @ 12.06 hrs, Volume= 4.861 cf 0utflow = 1.64 cfs @ 12.06 hrs, Volume= 4.861 cf Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,044.35' @ 12.06 hrs #1 Primary 1,043.75' 12.0° Round Cuivert L= 59.0' Ke= 0.200 Inlet / Outlet Invert= 1,043.75' / 1,042.59' S= 0.0197 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 0.79 sf Primary OutFlow Max=1.60 cfs @ 12.06 hrs HW=1,044.34' TW=1,043.11' (Dynamic Tailwater) 1=1Cuivert (Inlet Controls 1.60 cf	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 78

Peak Elev= 1,038.12' @ 12.27 hrs Surf.Area= 1,446 sf Storage= 4,807 cf

Plug-Flow detention time= 36.9 min calculated for 51,288 cf (97% of inflow) Center-of-Mass det. time= 20.7 min (785.7 - 765.0)

Volume	Invert	Avai	I.Storage	Storage Description	1	
#1	1,033.30'		7,896 cf	Custom Stage Dat	a (Irregular)Liste	d below (Recalc)
Elevation (feet)	Sur	f.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,033.30		579 712	98.5 108.0	0	0 451	579 751
1,036.00 1,038.00 1,040.00		1,036 1,422 1,846	129.0 151.0 172.0	1,738 2,448 3,259	2,189 4,637 7,896	1,213 1,777 2,406

Device	Routing	Invert	Outlet Devices
#1	Primary	1,035.00'	153.0 deg x 3

1,035.00' 153.0 deg x 37.0' long Sharp-Crested Vee/Trap Weir Cv= 2.47 (C= 3.09)

Primary OutFlow Max=0.00 cfs @ 12.02 hrs HW=1,037.05' TW=1,037.48' (Dynamic Tailwater) 1=Sharp-Crested Vee/Trap Weir (Controls 0.00 cfs)

Summary for Pond IB: (new Pond)

Inflow Are	ea =	132,521 sf,	75.43% Impervious,	Inflow Depth = 5.09" for	25YR event
Inflow	=	14.48 cfs @	12.02 hrs, Volume=	56,241 cf	
Outflow	=	7.03 cfs @	12.22 hrs, Volume=	53,146 cf, Atten= 57	1%, Lag= 12.0 min
Primary	=	7.03 cfs @	12.22 hrs, Volume=	53,146 cf	-

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,038.12' @ 12.22 hrs Surf.Area= 4,198 sf Storage= 15,077 cf

Plug-Flow detention time= 89.1 min calculated for 53,090 cf (94% of inflow) Center-of-Mass det. time= 59.8 min (846.1 - 786.4)

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Volume	Invert	Avail.	Storage	Storage Description				
#1	1,033.30'	23	3,761 cf	Custom Stage Data	(Irregular)Listed	below (Recalc)		
Elevation	Su	ırf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area		
(feet)		(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)		
1,033.30		2,117	216.0	0	0	2,117		
1,034.00		2,388	227.0	1,576	1,576	2,535		
1,036.00		3,250	253.5	5,616	7,192	3,656		
1,038.00		4,145	275.0	7,377	14,569	4,703		
1,040.00		5,063	295.0	9,193	23,761	5,775		
Device I	Routing	Inve	ert Outle	et Devices				
#1 I	Primary	1,033.5	0' 18.0	" Round Culvert L=	56.0' Ke= 0.200			
	-		Inlet	/ Outlet Invert= 1,033	.50' / 1,031.00' 8	S= 0.0446 '/' Cc=	0.900	
			n= 0	.013 Corrugated PE,	smooth interior,	Flow Area= 1.77 sf		
#2 I	Device 1	1,034.6	60' 5.0''	Vert. Orifice/Grate X	2.00 C= 0.600	Limited to weir flow	w at low heads	
#3 I	Device 1	1,036.9	94' 8.0''	Vert. Orifice/Grate X	3.00 C= 0.600	Limited to weir flow	w at low heads	
#4 I	Device 1	1,038.8	8' 24.0	" x 24.0" Horiz. Orific	ce/Grate C= 0.60	00 Limited to weir	flow at low heads	
#5 I	Primary	1,039.2	20' 153.	0 deg x 6.0' long x 2.	00' rise Sharp-C	rested Vee/Trap V	Veir Cv= 2.47 (C= 3.09)	
Primary C 1=Culv -2=C -3=C -4=C -5=Sha	DutFlow M vert (Passe Drifice/Grat Drifice/Grat Drifice/Grat rp-Crested	ax=7.02 c es 7.02 cfs e (Orifice e (Orifice e (Contro Vee/Trap	fs @ 12.2 of 20.92 Controls Controls ols 0.00 ct o Weir (C	22 hrs HW=1,038.12' cfs potential flow) 2.39 cfs @ 8.76 fps) 4.63 cfs @ 4.43 fps) fs) controls 0.00 cfs)	TW=1,031.41' (Dynamic Tailwater)	
	•			,				

Inflow	=	6.52 cfs @	12.03 hrs,	Volume=	21,665 cf		
Outflow	=	6.52 cfs @	12.03 hrs,	Volume=	21,665 cf,	Atten= 0%,	Lag= 0.0 min
Primary	=	6.52 cfs @	12.03 hrs,	Volume=	21,665 cf		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Peak Elev= 1,038.17' @ 12.29 hrs Flood Elev= 1,040.82'

#1 Primary	1,035.77'	18.0" Round Culve Inlet / Outlet Invert=	rt L= 52.0' Ke= 0.20 1,035.77' / 1,035.00'	00 S= 0.0148 '/' Cc= 0.900)
Primary OutFlow	Max=3.58 cfs @	n= 0.013 Corrugated	7.32' TW=1.037.14'	Flow Area= 1.77 st (Dvnamic Tailwater)	
-1=Culvert (Out	let Controls 3.58	8 cfs @ 2.43 fps)		()	
		Sumr	nary for Pond MH	l2: (new Pond)	
nflow Area = nflow = Outflow = Primary =	25,434 sf, 8 3.36 cfs @ 12 3.36 cfs @ 12 3.36 cfs @ 12	2.76% Impervious, In 2.05 hrs, Volume= 2.05 hrs, Volume= 2.05 hrs, Volume=	flow Depth = 5.37" 11,372 cf 11,372 cf, Atten 11,372 cf	for 25YR event n= 0%, Lag= 0.0 min	
Routing by Dyn-Sto Peak Elev= 1,038.4	or-Ind method, 1 47' @ 12.06 hrs	Fime Span= 0.00-48.0	0 hrs, dt= 0.05 hrs		
Device Routing #1 Primary	Invert 1,037.52'	Outlet Devices 15.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated	rt L= 120.0' Ke= 0.2 1,037.52' / 1,036.02' d PE, smooth interior,	200 S= 0.0125 '/' Cc= 0.900 Flow Area= 1.23 sf)
Primary OutFlow	Max=3.06 cfs @ let Controls 3.06	0 12.05 hrs HW=1,03 6 cfs @ 4.29 fps)	8.46' TW=1,037.39'	(Dynamic Tailwater)	
		Sumn	nary for Pond MH	3i: (new Pond)	
Inflow Area = Inflow = Outflow = Primary = Secondary =	71,009 sf, 7 9.29 cfs @ 12 9.29 cfs @ 12 6.99 cfs @ 12 2.37 cfs @ 12	76.21% Impervious, In 2.03 hrs, Volume= 2.03 hrs, Volume= 2.04 hrs, Volume= 2.01 hrs, Volume=	nflow Depth = 5.24" 31,007 cf 31,007 cf, Atten 13,411 cf 17,596 cf	for 25YR event n= 0%, Lag= 0.0 min	
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00047 Post-Dev Prepared by Aller HydroCAD® 10.10-4 Routing by Dyn-Sto Peak Elev= 1,038. ⁻	/-rev1 h Engineering ∂ b s/n 03871 © 2 br-Ind method, 1 15' @ 12.35 hrs	& Associates, Inc. 2020 HydroCAD Softwar Fime Span= 0.00-48.0	e Solutions LLC 0 hrs, dt= 0.05 hrs		<i>Type III 24-hr 25YR Rainfall=6.11</i> Printed 11/10/202 Page 8;
00047 Post-Dev Prepared by Aller HydroCAD® 10.10-4 Routing by Dyn-Sto Peak Elev= 1,038.' Device Routing	r-rev1 h Engineering a b s/n 03871 © 2 br-Ind method, 1 15' @ 12.35 hrs Invert	& Associates, Inc. 2020 HydroCAD Softwar Fime Span= 0.00-48.00 Outlet Devices	<u>e Solutions LLC</u> 0 hrs, dt= 0.05 hrs		<i>Type III 24-hr 25YR Rainfall=6.11</i> Printed 11/10/202 Page 8:
00047 Post-Dev Prepared by Aller HydroCAD® 10.10-4 Routing by Dyn-Sto Peak Elev= 1,038. ⁻ Device Routing #1 Primary #2 Secondar	7-rev1 n Engineering & b s/n 03871 © 2 pr-Ind method, T 15' @ 12.35 hrs Invert 1,036.75' y 1,036.37'	& Associates, Inc. 2020 HydroCAD Softwar Fime Span= 0.00-48.00 Outlet Devices 5.0' Iong x 0.5' brea Head (feet) 0.20 0.4 Coef. (English) 2.80 12.0'' Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated	e Solutions LLC 0 hrs, dt= 0.05 hrs adth Broad-Crested F 40 0.60 0.80 1.00 2.92 3.08 3.30 3.3: rt L= 5.0' Ke= 0.200 rt L= 5.0' Ke= 0.200 d PE, smooth interior,	Rectangular Weir 2) S= 0.0140 '/' Cc= 0.900 Flow Area= 0.79 sf	<i>Type III 24-hr 25YR Rainfall=6.11</i> Printed 11/10/202 Page 8:
00047 Post-Dev Prepared by Aller HydroCAD® 10.10-4 Routing by Dyn-Sto Peak Elev= 1,038. ⁻ <u>Device Routing</u> #1 Primary #2 Secondar #2 Secondar Primary OutFlow	7-rev1 h Engineering 8 b s/n 03871 © 2 b s/n 03871 © 2 b s/n 03871 © 2 b s/n 03871 © 2 b s/n 03871 © 2 h c s/n 03871 1,036.37' y 1,036.37' Max=3.42 cfs @ ed Rectangular	& Associates, Inc. 2020 HydroCAD Softwar Fime Span= 0.00-48.00 Outlet Devices 5.0' long x 0.5' brea Head (feet) 0.20 0.4 Coef. (English) 2.80 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 12.04 hrs HW=1,03 r Weir (Weir Controls 3	e Solutions LLC 0 hrs, dt= 0.05 hrs adth Broad-Crested F 40 0.60 0.80 1.00 2.92 3.08 3.30 3.3; rt L= 5.0' Ke= 0.200 1,036.37' / 1,036.30' d PE, smooth interior, 7.46' TW=1,037.43' 3.42 cfs @ 0.96 fps)	Rectangular Weir 2) S= 0.0140 '/' Cc= 0.900 Flow Area= 0.79 sf (Dynamic Tailwater)	Type III 24-hr 25YR Rainfall=6.11 Printed 11//0/202 Page 8:
00047 Post-Dev Prepared by Aller HydroCAD® 10.10-4 Routing by Dyn-Sto Peak Elev= 1,038.7 Device Routing #1 Primary #2 Secondar #2 Secondar Primary OutFlow 1=Broad-Cresto Secondary OutFlow 2=Culvert (Out	r-rev1 h Engineering a b s/n 03871 © 2 br-Ind method, 1 15' @ 12.35 hrs Invert 1,036.75' y 1,036.37' Max=3.42 cfs @ ed Rectangular bw Max=1.00 cf let Controls 1.00	& Associates, Inc. 2020 HydroCAD Softwar Fime Span= 0.00-48.00 Outlet Devices Head (feet) 0.20 0.4 Coef. (English) 2.80 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 2.1.04 hrs HW=1,03 r Weir (Weir Controls 3 s @ 12.01 hrs HW=1 0.cfs @ 1.55 fps)	e Solutions LLC 0 hrs, dt= 0.05 hrs adth Broad-Crested F 40 0.60 0.80 1.00 2.92 3.08 3.30 3.3; rt L=5.0' Ke= 0.200 1,036.37' / 1,036.30' d PE, smooth interior, 7.46' TW=1,037.43' 3.42 cfs @ 0.96 fps) ,037.39' TW=1,037.3	Rectangular Weir 2) S= 0.0140 '/' Cc= 0.900 Flow Area= 0.79 sf (Dynamic Tailwater) 4' (Dynamic Tailwater)	Type III 24-hr 25YR Rainfall=6.11 Printed 11/10/202 Page 8:
00047 Post-Dev Prepared by Aller HydroCAD® 10.10-4 Routing by Dyn-Sto Peak Elev= 1,038. ⁻ <u>Device Routing</u> #1 Primary #2 Secondar Primary OutFlow 1=Broad-Cresto Secondary OutFlow -2=Culvert (Out	7-rev1 h Engineering 8 b s/n 03871 © 2 br-Ind method, 1 15' @ 12.35 hrs Invert 1,036.75' y 1,036.37' Max=3.42 cfs @ ed Rectangular bw Max=1.00 cf let Controls 1.00	& Associates, Inc. 2020 HydroCAD Softwar Fime Span= 0.00-48.00 Outlet Devices 5.0' long x 0.5' brea Head (feet) 0.20 0.4 Coef. (English) 2.80 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 12.04 hrs HW=1,03 r Weir (Weir Controls 3 r Weir (Weir Controls 3 s @ 12.01 hrs HW=1 0 cfs @ 1.55 fps)	e Solutions LLC 0 hrs, dt= 0.05 hrs adth Broad-Crested F 40 0.60 0.80 1.00 2.92 3.08 3.30 3.3 rt L= 5.0' Ke= 0.200 1,036.37' / 1,036.30' d PE, smooth interior, 7.46' TW=1,037.43' 3.42 cfs @ 0.96 fps) ,037.39' TW=1,037.3 hary for Pond MH3	Rectangular Weir 2) S= 0.0140 '/' Cc= 0.900 Flow Area= 0.79 sf (Dynamic Tailwater) 4' (Dynamic Tailwater) 30: (new Pond)	Type III 24-hr 25YR Rainfall=6.11 Printed 11//0/202 Page 8:
00047 Post-Dev Prepared by Aller HydroCAD® 10.10-4 Routing by Dyn-Sto Peak Elev= 1,038. ⁻ Device Routing #1 Primary #2 Secondar #2 Secondar #1=Broad-Cresto Secondary OutFlow 1=Broad-Cresto Secondary OutFlow 1=Broad-Cresto 1=	 7-rev1 a Engineering & b s/n 03871 © 2 b s/n 03871 © 2 b or-Ind method, 1 15' @ 12.35 hrs Invert 1,036.75' y 1,036.37' Max=3.42 cfs (e cetangular model Rectangular model Rectangular model Rectangular model Rectangular model Rectangular model Rectangular model Rectangular model Rectangular model Rectangular model Rectangular model Rectangular model Rectangular mode	& Associates, Inc. 2020 HydroCAD Softwar Fime Span= 0.00-48.00 Outlet Devices 5.0' long x 0.5' bree Head (feet) 0.20 0.4 Coef. (English) 2.80 12.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 2 12.04 hrs HW=1,03 r Weir (Weir Controls 3 is @ 12.01 hrs HW=1 0 cfs @ 1.55 fps) Summ 6.21% Impervious, In 2.03 hrs, Volume= 2.03 hrs, Volume=	e Solutions LLC 0 hrs, dt= 0.05 hrs adth Broad-Crested F 40 0.60 0.80 1.00 2.92 3.08 3.30 3.3; rt L= 5.0' Ke= 0.200 d PE, smooth interior, 7.46' TW=1,037.43' 3.42 cfs @ 0.96 fps) ,037.39' TW=1,037.3 hary for Pond MH3 the state of the state o	Rectangular Weir 2 S= 0.0140 '/' Cc= 0.900 Flow Area= 0.79 sf (Dynamic Tailwater) 34' (Dynamic Tailwater) 30: (new Pond) for 25YR event n= 0%, Lag= 0.0 min	Type III 24-hr 25YR Rainfall=6.11 Printed 11/10/202 Page 8:
00047 Post-Dev Prepared by Aller HydroCAD® 10.10-4 Routing by Dyn-Sto Peak Elev= 1,038. ⁻ #1 Primary #2 Secondar #2 Secondar #2 Secondar Primary OutFlow 1=Broad-Cresto Secondary OutFlow 2=Culvert (Out Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-Sto Peak Elev= 1,038. ⁻	 /-rev1 a Engineering ∂ b s/n 03871 © 2 b s/n 03871 © 2 b s/n 03871 © 2	& Associates, Inc. 2020 HydroCAD Softwar Fime Span= 0.00-48.00 Outlet Devices 5.0' long x 0.5' brea Head (feet) 0.20 0.4 Coef. (English) 2.80 12.0'' Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 12.04 hrs HW=1,03 r Weir (Weir Controls 3 s @ 12.01 hrs HW=1 0 cfs @ 1.55 fps) Summ 6.21% Impervious, In 2.03 hrs, Volume= 2.03 hrs, Volume= 2.03 hrs, Volume= 1.00-48.00	e Solutions LLC 0 hrs, dt= 0.05 hrs adth Broad-Crested F 40 0.60 0.80 1.00 2.92 3.08 3.30 3.31 rt L= 5.0' Ke= 0.200 1.036.37' / 1.036.30' d PE, smooth interior, 7.46' TW=1,037.43' 3.42 cfs @ 0.96 fps) ,037.39' TW=1,037.3 hary for Pond MH3 flow Depth = 5.24" 31,007 cf 31,007 cf 31,007 cf 0 hrs, dt= 0.05 hrs	Rectangular Weir 2 5= 0.0140 '/' Cc= 0.900 Flow Area= 0.79 sf (Dynamic Tailwater) 4' (Dynamic Tailwater) 30: (new Pond) for 25YR event n= 0%, Lag= 0.0 min	Type III 24-hr 25YR Rainfall=6.11 Printed 11/10/202 Page 8
00047 Post-Dev Prepared by Aller HydroCAD® 10.10-4 Routing by Dyn-Sto Peak Elev= 1,038. ² <u>#1</u> Primary #2 Secondar Primary OutFlow 1=Broad-Cresto Secondary OutFlow 1=Broad-Cresto 1=Broad-Crest	 <i>r</i>-rev1 h Engineering 8 b s/n 03871 © 2 pr-Ind method, 1 15' @ 12.35 hrs Invert 1,036.37' Max=3.42 cfs @ ed Rectangular ow Max=1.00 cf let Controls 1.00 71,009 sf, 7 9.29 cfs @ 12 9.29 cfs @	& Associates, Inc. 2020 HydroCAD Softwar Fime Span= 0.00-48.00 Outlet Devices 5.0' Iong x 0.5' brea Head (feet) 0.20 0.4 Coef. (English) 2.80 12.0' Round Cuive Inlet / Outlet Invert= n= 0.013 Corrugated 2.12.04 hrs HW=1,03 r Weir (Weir Controls 3 is @ 12.01 hrs HW=1,03 r Weir (Weir Controls 3 r Weir (Weir Contr	e Solutions LLC 0 hrs, dt= 0.05 hrs adth Broad-Crested F 40 0.60 0.80 1.00 1.292 3.08 3.30 3.3; rt L= 5.0' Ke= 0.200 1.036.37' / 1.036.30' d PE, smooth interior, 7.46' TW=1,037.43' 3.42 cfs @ 0.96 fps) ,037.39' TW=1,037.3 hary for Pond MH3 iflow Depth = 5.24'' 31,007 cf 31,007 cf 31,007 cf 0 hrs, dt= 0.05 hrs the 50.01 fr = 5.24''	Rectangular Weir 2 S = 0.0140 '/' Cc= 0.900 Flow Area= 0.79 sf (Dynamic Tailwater) 4' (Dynamic Tailwater) 30: (new Pond) for 25YR event h= 0%, Lag= 0.0 min	Type III 24-hr 25YR Rainfall=6.11 Printed 11/10/202 Page 8:
00047 Post-Dev Prepared by Aller HydroCAD® 10.10-4 Routing by Dyn-Sto Peak Elev= 1,038.' <u>Device Routing</u> #1 Primary #2 Secondar Primary OutFlow 1=Broad-Cresto Secondary OutFlow 1=Broad-Cresto	r-rev1 h Engineering 8 b s/n 03871 © 2 br-Ind method, 1 15' @ 12.35 hrs Invert 1,036.75' y 1,036.37' Max=3.42 cfs @ ed Rectangular bw Max=1.00 cf let Controls 1.00 71,009 sf, 7 9.29 cfs @ 12 9.29 cfs @ 12 9.29 cfs @ 12 br-Ind method, 1 15' @ 12.30 hrs Invert 1,035.86'	& Associates, Inc. 2020 HydroCAD Softwar Fime Span= 0.00-48.00 Outlet Devices 5.0' Iong x 0.5' brea Head (feet) 0.20 0.4 Coef (English) 2.80 12.0' Round Culve Inlet / Outlet Invert= n= 0.013 Corrugated 2.12.04 hrs HW=1,03 r Weir (Weir Controls 3 is @ 12.01 hrs HW=1,03 r Weir (Weir Controls 3 r Weir (Weir Contr	e Solutions LLC 0 hrs, dt= 0.05 hrs adth Broad-Crested F 40 0.60 0.80 1.00 1.292 3.08 3.30 3.3; rt L= 5.0' Ke= 0.200 1.036.37' / 1.036.30' d PE, smooth interior, 7.46' TW=1,037.43' 3.42 cfs @ 0.96 fps) .037.39' TW=1,037.3 hary for Pond MH3 iflow Depth = 5.24'' 31,007 cf 31,007 cf 31,007 cf 0 hrs, dt= 0.05 hrs rt L= 50.0' Ke= 0.200 1.035.86' / 1.035.00' d PE, smooth interior,	Rectangular Weir 2 2 5 = 0.0140 '/' Cc= 0.900 Flow Area= 0.79 sf (Dynamic Tailwater) 44' (Dynamic Tailwater) 44' (Dynamic Tailwater) 30: (new Pond) for 25YR event n= 0%, Lag= 0.0 min 00 S= 0.0172 '/' Cc= 0.900 Flow Area= 3.14 sf	Type III 24-hr 25YR Rainfall=6.11 Printed 11/10/202 Page 8:

Inflow Are	a =	71,009 sf,	76.21% Impervious,	Inflow Depth = 5.24"	for 25YR event
Inflow	=	9.29 cfs @	12.03 hrs, Volume=	31,007 cf	
Outflow	=	9.29 cfs @	12.03 hrs, Volume=	31,007 cf, Atter	n= 0%, Lag= 0.0 min
Primary	=	9.29 cfs @	12.03 hrs, Volume=	31,007 cf	-

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,038.59' @ 12.04 hrs

 Device
 Routing
 Invert
 Outlet Devices

 #1
 Primary
 1,037.35'
 24.0" Round Culvert L= 57.0' Ke= 0.200 Inlet / Outlet Invert= 1,037.35' / 1,036.37' S= 0.0172 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=8.56 cfs @ 12.03 hrs HW=1,038.57' TW=1,037.44' (Dynamic Tailwater) 1=Culvert (Outlet Controls 8.56 cfs @ 6.10 fps)

Summary for Pond MH5: (new Pond)

Inflow Area	=	28,054 sf, 89.14% Impervious, Inflow Depth = 5.59" for 25YR event	
Inflow	=	.26 cfs @ 12.01 hrs, Volume= 13,065 cf	
Outflow	=	.26 cfs @ 12.01 hrs, Volume= 13,065 cf, Atten= 0%, Lag= 0.0 min	
Primary	=	.26 cfs @ 12.01 hrs, Volume= 13,065 cf	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,040.81' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	1,039.89'	18.0" Round Culvert L= 132.0' Ke= 0.200 Inlet / Outlet Invert= 1,039.89' / 1,038.44' S= 0.0110 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.10 cfs @ 12.01 hrs HW=1,040.79' TW=1,038.56' (Dynamic Tailwater) -1=Culvert (Barrel Controls 4.10 cfs @ 5.30 fps)

00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC	Type III 24-hr 25YR Rainfall=6.11" Printed 11/10/2021 Page 84
Summary for Pond MH6: (new Pond)	
Inflow Area = 32,273 sf, 60.28% Impervious, Inflow Depth = 4.82" for 25YR event Inflow = 4.06 cfs @ 12.06 hrs, Volume= 12,951 cf Outflow = 4.06 cfs @ 12.06 hrs, Volume= 12,951 cf Primary = 4.06 cfs @ 12.06 hrs, Volume= 12,951 cf, Atten= 0%, Lag= 0.0 min	
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,041.43' @ 12.06 hrs	
Device Routing Invert Outlet Devices	
#1 Primary 1,040.58' 18.0" Round Culvert L = 116.0' Ke = 0.200 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S = 0.0150 '/' Cc = 0.900 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S = 0.0150 '/' Cc = 0.900 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S = 0.0150 '/' Cc = 0.900 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S = 0.0150 '/' Cc = 0.900 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S = 0.0150 '/' Cc = 0.900 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S = 0.0150 '/' Cc = 0.900 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S = 0.0150 '/' Cc = 0.900 Inlet / Outlet Invert= 1,040.58' / 1,038.56' Inlet / Outlet Invert= 1,040.42' TW = 1,038.56' Inlet / Outlet Invert= 1,040.42' TW = 1,038.56' Inlet / Outlet Invert= 1,040.42' Inlet / Out	
Summary for Pond MH7: (new Pond)	
Inflow Area = 13,911 sf, 37.85% Impervious, Inflow Depth = 4.19" for 25YR event Inflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf Outflow = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf, Atten= 0%, Lag= 0.0 min Primary = 1.64 cfs @ 12.06 hrs, Volume= 4,861 cf	
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,043.12' @ 12.06 hrs	
Device Routing Invert Outlet Devices	
#1 Primary 1,042.49' 12.0" Round Culvert L= 23.0' Ke= 0.200 Inlet / Outlet Invert= 1,042.49' / 1,042.04' S= 0.0196 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf	

Primary OutFlow Max=1.60 cfs @ 12.06 hrs HW=1,043.11' TW=1,041.42' (Dynamic Tailwater) 1=Culvert (Barrel Controls 1.60 cfs @ 4.45 fps)

Summary for Pond STU1: (new Pond)

Inflow	=	2.37 cfs @	12.01 hrs, Volume=	17,596 cf	
Outflow	=	2.37 cfs @	12.01 hrs, Volume=	17,596 cf, Atten= 0%,	Lag= 0.0 min
Primary	=	2.37 cfs @	12.01 hrs, Volume=	17,596 cf	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,038.43' @ 12.47 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	1,036.30'	12.0" Round Culvert L= 5.0'

12.0" Round Culvert L= 5.0' Ke= 0.200 Inlet / Outlet Invert= 1,036.30' / 1,036.20' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.01 hrs HW=1,037.34' TW=1,037.34' (Dynamic Tailwater) **1=Culvert** (Controls 0.00 cfs)

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Time sp Runoff by Reach routing by Dyn	an=0.00-48.00 hrs, dt=0.05 hrs, 961 points SCS TR-20 method, UH=SCS, Weighted-CN ·Stor-Ind method - Pond routing by Dyn-Stor-Ind method	
Subcatchment1S: (new Subcat)	Runoff Area=12,290 sf 0.00% Impervious Runoff Depth= Flow Length=431' Tc=14.3 min CN=74 Runoff=1.40 cfs 5,6	5.54" 72 cf
Subcatchment2S: (new Subcat)	Runoff Area=5,956 sf 64.05% Impervious Runoff Depth= Flow Length=186' Tc=1.6 min CN=89 Runoff=1.20 cfs 3,6	7.35" 50 cf
Subcatchment 3S: ROOF	Runoff Area=5,000 sf 100.00% Impervious Runoff Depth= Tc=1.0 min CN=98 Runoff=1.09 cfs 3,5	8.44" 17 cf
Subcatchment4S: ROOF	Runoff Area=5,000 sf 100.00% Impervious Runoff Depth= Tc=1.0 min CN=98 Runoff=1.09 cfs 3,5	8.44" 17 cf
Subcatchment5S: (new Subcat)	Runoff Area=10,067 sf 81.72% Impervious Runoff Depth= Flow Length=157' Tc=1.0 min CN=94 Runoff=2.16 cfs 6,6	7.96" 76 cf
Subcatchment6S: (new Subcat)	Runoff Area=26,955 sf 2.64% Impervious Runoff Depth= Flow Length=208' Tc=3.9 min CN=73 Runoff=4.13 cfs 12,10	5.42" 68 cf
Subcatchment7S: (new Subcat)	Runoff Area=13,165 sf 45.68% Impervious Runoff Depth=6 Flow Length=42' Slope=0.1857 '/' Tc=2.0 min CN=86 Runoff=2.57 cfs 7,6	6.99" 71 cf
Subcatchment8S: (new Subcat)	Runoff Area=8,734 sf 81.55% Impervious Runoff Depth= Flow Length=125' Tc=0.9 min CN=94 Runoff=1.88 cfs 5,7	7.96" '92 cf
Subcatchment9S: (new Subcat)	Runoff Area=8,042 sf 87.19% Impervious Runoff Depth=8 Flow Length=112' Tc=0.8 min CN=95 Runoff=1.75 cfs 5,4	8.08" 14 cf
Subcatchment 10S: ROOF	Runoff Area=2,640 sf 100.00% Impervious Runoff Depth=8 Tc=1.0 min CN=98 Runoff=0.58 cfs 1,8	8.44" 57 cf
Subcatchment 11S: ROOF	Runoff Area=2,822 sf 100.00% Impervious Runoff Depth=8 Tc=1.0 min CN=98 Runoff=0.62 cfs 1.9	8.44" 85 cf

Subcatchment 12S: (new Subcat)	Runoff Area=16,498 sf 91.30% Impervious Runoff Depth=8.20" Flow Length=126' Tc=0.8 min CN=96 Runoff=3.61 cfs 11,273 cf
Subcatchment 13S: ROOF-CANOPY	Runoff Area=2,880 sf 100.00% Impervious Runoff Depth=8.44" Tc=2.0 min CN=98 Runoff=0.61 cfs 2,026 cf
Subcatchment 14S: (new Subcat)	Runoff Area=15,482 sf 73.05% Impervious Runoff Depth=7.72" Flow Length=208' Tc=5.0 min CN=92 Runoff=2.96 cfs 9,956 cf
Subcatchment 15S: (new Subcat)	Runoff Area=7,846 sf 70.75% Impervious Runoff Depth=7.60" Flow Length=142' Tc=1.0 min CN=91 Runoff=1.65 cfs 4,967 cf
Subcatchment16S: (new Subcat)	Runoff Area=14,478 sf 84.51% Impervious Runoff Depth=7.96" Flow Length=224' Tc=4.9 min CN=94 Runoff=2.82 cfs 9,602 cf
Subcatchment17S: (new Subcat)	Runoff Area=13,911 sf 37.85% Impervious Runoff Depth=6.63" Flow Length=111' Tc=3.8 min CN=83 Runoff=2.54 cfs 7,684 cf
Reach R1: (new Reach)	Avg. Flow Depth=0.58' Max Vel=3.56 fps Inflow=12.65 cfs 80,956 cf n=0.069 L=20.0' S=0.0750 '/' Capacity=125.86 cfs Outflow=12.70 cfs 80,956 cf
Pond 1EV:	Inflow=15.53 cfs 93,124 cf Primary=15.53 cfs 93,124 cf
Pond 2EV:	Inflow=1.40 cfs 5,672 cf Primary=1.40 cfs 5,672 cf
Pond CB1: (new Pond)	Peak Elev=1,039.30' Inflow=2.16 cfs 6,676 cf 12.0" Round Culvert n=0.013 L=8.0' S=0.0150 '/' Outflow=2.16 cfs 6,676 cf
Pond CB2: (new Pond)	Peak Elev=1,039.43' Inflow=1.20 cfs 3,650 cf 12.0" Round Culvert n=0.013 L=12.0' S=0.0150 '/' Outflow=1.20 cfs 3,650 cf
Pond CB3: (new Pond)	Peak Elev=1,040.96' Inflow=2.82 cfs 9,602 cf 12.0" Round Culvert n=0.013 L=165.0' S=0.0135 '/' Outflow=2.82 cfs 9,602 cf
Pond CB4: (new Pond)	Peak Elev=1,040.61' Inflow=1.65 cfs 4,967 cf 12.0" Round Culvert n=0.013 L=165.0' S=0.0219 '/' Outflow=1.65 cfs 4,967 cf

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Pond CB5: (new Pond)	Peak Elev=1,040.96' Inflow=1.75 cfs 5,414 cf 12.0" Round Culvert n=0.013 L=42.0' S=0.0150 '/' Outflow=1.75 cfs 5,414 cf
Pond CB6: (new Pond)	Peak Elev=1,041.53' Inflow=1.88 cfs 5,792 cf 12.0" Round Culvert n=0.013 L=36.0' S=0.0100 '/ Outflow=1.88 cfs 5,792 cf
Pond CB7: (new Pond)	Peak Elev=1,042.70' Inflow=3.61 cfs 11,273 cf 12.0" Round Culvert n=0.013 L=128.0' S=0.0100 '/' Outflow=3.61 cfs 11,273 cf
Pond CB8: (new Pond)	Peak Elev=1,041.84' Inflow=2.96 cfs 9,956 cf 18.0" Round Culvert n=0.013 L=7.0' S=0.0143 '/' Outflow=2.96 cfs 9,956 cf
Pond DRI: (new Pond)	Peak Elev=1,044.55' Inflow=2.54 cfs 7,684 cf 12.0" Round Culvert n=0.013 L=59.0' S=0.0197 '/ Outflow=2.54 cfs 7,684 cf
Pond FB: (new Pond)	Peak Elev=1,039.12' Storage=6,356 cf Inflow=22.98 cfs 77,916 cf Outflow=19.33 cfs 76,380 cf
Pond IB: (new Pond)	Peak Elev=1,039.12' Storage=19,488 cf Inflow=21.81 cfs 84,051 cf Outflow=12.65 cfs 80,956 cf
Pond MH1: (new Pond)	Peak Elev=1,039.26' Inflow=9.43 cfs 31,929 cf 18.0" Round Culvert n=0.013 L=52.0' S=0.0148 '/' Outflow=9.43 cfs 31,929 cf
Pond MH2: (new Pond)	Peak Elev=1,039.42' Inflow=4.86 cfs 16,769 cf 15.0" Round Culvert n=0.013 L=120.0' S=0.0125 '/' Outflow=4.86 cfs 16,769 cf
Pond MH3i: (new Pond)	Peak Elev=1,039.36' Inflow=13.55 cfs 45,987 cf Primary=11.19 cfs 23,173 cf Secondary=3.95 cfs 22,814 cf Outflow=13.55 cfs 45,987 cf
Pond MH3o: (new Pond)	Peak Elev=1,039.20' Inflow=13.55 cfs 45,987 cf 24.0" Round Culvert n=0.013 L=50.0' S=0.0172 '/' Outflow=13.55 cfs 45,987 cf
Pond MH4: (new Pond)	Peak Elev=1,039.29' Inflow=13.55 cfs 45,987 cf 24.0" Round Culvert n=0.013 L=57.0' S=0.0172 '/' Outflow=13.55 cfs 45,987 cf

 Pond MH5: (new Pond)
 Peak Elev=1,041.05' Inflow=6.11 cfs 19,050 cf 18.0" Round Culvert n=0.013 L=132.0' S=0.0110 '/' Outflow=6.11 cfs 19,050 cf

 Pond MH6: (new Pond)
 Peak Elev=1,041.66' Inflow=6.06 cfs 19,666 cf 18.0" Round Culvert n=0.013 L=116.0' S=0.0150 '/' Outflow=6.06 cfs 19,666 cf

 Pond MH7: (new Pond)
 Peak Elev=1,043.33' Inflow=2.54 cfs 7,684 cf 12.0" Round Culvert n=0.013 L=23.0' S=0.0196 '/' Outflow=2.54 cfs 7,684 cf

 Pond STU1: (new Pond)
 Peak Elev=1,040.07' Inflow=3.95 cfs 22,814 cf 12.0" Round Culvert n=0.013 L=5.0' S=0.0200 '/' Outflow=3.95 cfs 22,814 cf

> Total Runoff Area = 171,766 sf Runoff Volume = 103,426 cf Average Runoff Depth = 7.23" 41.39% Pervious = 71,099 sf 58.61% Impervious = 100,667 sf

00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC						Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 9	
				Su	mmary for	Subcatchment 1S: (new S	Subcat)
Runoff	=	1.40	cfs @ 12.2	0 hrs, Volu	ume=	5,672 cf, Depth= 5.54"	
Runoff b	y SCS TH	R-20 m	ethod, UH=S	SCS, Weigh	ted-CN, Time	Span= 0.00-48.00 hrs, dt= 0.05	5 hrs
Type III.	24-111 10						
A	rea (st)		Description	<u> </u>			
	4,440	74	>75% Gras	s cover, G			
	12 200	74	Visighted /	S COVEL, G	Jou, 1130 C		
	12,290	74	100.00% P	ervious Are	a		
Тс	l enath	Slor	e Velocity	Capacity	Description		
(min)	(feet)	(ft/	ft) (ft/sec)	(cfs)	Decemption		
8.5	50	0.050	0.10		Sheet Flow	3	
					Woods: Lig	nt underbrush n= 0.400 P2= 3	3.26"
5.8	381	0.04	2 1.09		Shallow Co Woodland	Ncentrated Flow, Ky= 5.0 fps	
14.3	431	Total			Troodiana		
				Su	mmary for	Subcatchment 2S: (new S	Subcat)
Dumoff	_	1.00	efe @ 10.0			2 CEO of Doubber 7 25"	,
Runoff	=	1.20	cts @ 12.0	iz nrs, voi	ume=	3,650 cr, Deptn= 7.35"	
Runoff b	y SCS TH	R-20 m	ethod, UH=S	SCS, Weigh	ted-CN, Time	Span= 0.00-48.00 hrs, dt= 0.05	5 hrs
Type III :	24-hr 10	0YR R	ainfall=8.68"	-			
А	rea (sf)	CN	Description	1			
	26	98	Unconnect	ed paveme	nt, HSG C		
	3,789	98	Paved park	king, HSG (
	2,141	74	>75% Gras	s cover, G	ood, HSG C		
	5,956	89	Weighted A	Average			
	2,141		35.95% Pe	rvious Area	I		
	3 815		64.05% lm	nervious Ar	ea		
	0,010		0.000/ 11	,	ou		

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Tc (min)	Length	Slope	· Velocity	Capacity	Description
0.6	44	0.0227	/ (1/Sec) / 1.24	(015)	, Sheet Flow,
1.0	142	0.0134	2.35		Smooth surfaces n= 0.011 P2= 3.26" Shallow Concentrated Flow,
1.6	186	Total			Paved Kv= 20.3 fps
		, o tai			
					Summary for Subcatchment 3S: ROOF
Runoff	=	1.09 (rfs @ 12.0	1 hrs, Volu	lume= 3,517 cf, Depth= 8.44"
Runoff b ype III 2	y SCS TF 24-hr 100	R-20 me DYR Ra	thod, UH=S infall=8.68"	SCS, Weigh	hted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
A	rea (sf)	CN	Description		
	<u>5,000</u> 5,000	98	Roofs, HSC 100 00% In	<u> C</u> nervious A	Area
То	Longth	Slop		Conceity	
(min)	(feet)	(ft/ft) (ft/sec)	(cfs))
1.0					Direct Entry,
					Summary for Subcatchment 4S: ROOF
Runoff	=	1.09 (ofs @ 12.0	1 hrs, Volu	lume= 3,517 cf, Depth= 8.44"
Runoff h		7- 20 me	- thod UH=9	SCS Weigh	hted-CN_Time Span= 0.00-48.00 brs_dt= 0.05 brs
00047	Post-De	ev-rev1			Type III 24-hr 100YR Rainfall=8.68"
00047 Prepare	Post-De	e v-rev 1 en Engi	neering & A	Associates	<i>Type III 24-hr 100YR Rainfall=8.68</i> " s, Inc. Printed 11/10/2021
00047 I Prepare HydroCAI	Post-De ed by Alle D® 10.10-	e v-rev1 en Engi 4b s/n (neering & A 3871 © 202	Associates 0 HydroCAI	Type III 24-hr 100YR Rainfall=8.68" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92
00047 I Prepare HydroCAI	Post-De ed by Alle D® 10.10- urea (sf)	e v-rev1 en Engi 4 <u>b s/n (</u> CN	neering & A 13871 © 202 Description	Associates 0 HydroCAI	<i>Type III 24-hr 100YR Rainfall=8.68</i> " s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92
)0047 I Prepare HydroCAI A	Post-De ed by Alle D® 10.10- rrea (sf) 3,300 1.700	e v-rev1 en Engi 4b s/n (<u>CN</u> 98 98	neering & A 13871 © 202 Description Roofs, HSG	Associates 0 HydroCAL	Type III 24-hr 100YR Rainfall=8.68" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92
00047 I Prepare HydroCAI A	Post-De d by Alle D® 10.10- rea (sf) 3,300 1,700 5,000	ev-rev1 en Engi 4b s/n (<u>CN</u> 98 98 98	neering & A 13871 © 202 Description Roofs, HSG Roofs, HSG Weighted A	Associates 0 HydroCAI	Type III 24-hr 100YR Rainfall=8.68" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92
D 0047 I Prepare łydroCAł A	Post-De d by Alle D® 10.10- <u>trea (sf)</u> 3,300 1,700 5,000 5,000	e v-rev1 en Engi 4b s/n (<u>CN</u> 98 98 98 98	neering & A 13871 © 202 Description Roofs, HSG Roofs, HSG Weighted A 100.00% Im	Associates 0 HydroCAI 3 C 3 C Werage npervious A	Type III 24-hr 100YR Rainfall=8.68" s, Inc. D Software Solutions LLC Page 92 Area
DOO47 I Prepare HydroCAI A Tc (min)	Post-De d by Alle D® 10.10- <u>a</u> (sf) 3,300 1,700 5,000 5,000 Length (foot)	ev-rev1 en Engi 4b s/n (CN 98 98 98 98 98 Slope (##	neering & A 13871 © 202 Description Roofs, HSG Roofs, HSG Weighted A 100.00% In : Velocity	Associates 0 HydroCAI 3 C 3 C werage npervious A Capacity	Type III 24-hr 100YR Rainfall=8.68" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92 Area
00047 I Prepare tydroCAI A Tc (min) 1.0	Post-De ed by Alle D® 10.10- vrea (sf) 3,300 1,700 5,000 5,000 Length (feet)	ev-rev1 en Engi <u>4b s/n (</u> <u>CN</u> 98 98 98 Slope (ft/ft	neering & / i3871 © 202 Description Roofs, HSG Roofs, HSG Weighted A 100.00% In : Velocity i (ft/sec)	Associates 0 HydroCAI 3 C 3 C werage npervious A Capacity (cfs)	Type III 24-hr 100YR Rainfall=8.68" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92 Area
DOO47 I Prepare HydroCAI A Tc (min) 1.0	Post-De ed by Alle D® 10.10- vrea (sf) 3,300 1,700 5,000 5,000 Length (feet)	ev-rev1 en Engi 4b s/n (CN 98 98 98 98 Slope (ft/ft	neering & / 13871 © 202 Roofs, HSC Weighted A 100.00% In Velocity (ft/sec)	Associates 0 HydroCAI 3 C 3 C werage npervious A Capacity (cfs)	Type III 24-hr 100YR Rainfall=8.68" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92 Area Description Direct Entry,
DOO47 I Prepare HydroCAI A Tc (min) 1.0	Post-De d by Alle D® 10.10- 3,300 1,700 5,000 5,000 Length (feet)	ev-rev1 en Engi <u>4b s/n (</u> <u>CN</u> 98 98 98 98 Slope (ft/ft	neering & / <u>13871 © 202</u> <u>Description</u> Roofs, HSC <u>Roofs, HSC</u> <u>Roofs, HSC</u> <u>Neighted A</u> 100.00% Irr <u>Velocity</u> <u>(ft/sec)</u>	Associates 0 HydroCAI 3 C 3 C werage npervious A Capacity (cfs) Su	Type III 24-hr 100YR Rainfall=8.68" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92 Area (Description Direct Entry, ummary for Subcatchment 5S: (new Subcat)
DOO47 I Prepare tydroCAI A Tc (min) 1.0 Runoff	Post-De ed by Alle D≋ 10.10- irea (sf) 3,300 1,700 5,000 5,000 Length (feet) =	2 v-rev1 en Engi <u>4b s/n (</u> <u>CN</u> <u>98</u> <u>98</u> <u>98</u> <u>98</u> Slope (ft/ft	neering & / <u>13871 © 202</u> <u>Description</u> Roofs, HSC <u>Roofs, HSC</u> Weighted A 100.00% Im Velocity) (ft/sec) :fs @ 12.0	Associates 0 HydroCAI C C Capacity (cfs) Su 1 hrs, Volu	Type III 24-hr 100YR Rainfall=8.68" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92 Area Description Direct Entry, ummary for Subcatchment 5S: (new Subcat) lume= 6,676 cf, Depth= 7.96"
DOO47 I Prepare HydroCAI A C(min) 1.0 Runoff Runoff b Runoff b	Post-De ed by Alle D® 10.10- <u>trea (sf)</u> 3,300 1,700 5,000 Length (feet) = y SCS TF 24-hr 100	2 v-rev1 4b s/n (<u>CN</u> 98 98 98 Sloppe (ft/ft 2.16 c R-20 me	neering & A <u>13871 © 202</u> <u>Description</u> Roofs, HSC Weighted A 100.00% Im Velocity (ft/sec) fs @ 12.0 thod, UH=S fall=8 68"	Associates 0 HydroCAI 3 C verage npervious A Capacity (cfs) Su 1 hrs, Volu 3 CS, Weigh	Type III 24-hr 100YR Rainfall=8.68" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92 Area O Description Direct Entry, Immary for Subcatchment 5S: (new Subcat) Iume= lume= 6,676 cf, Depth= 7.96" hted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
DOO47 I Prepare HydroCAI A Tc (min) 1.0 Runoff Runoff b Type III 2	Post-De ed by Alle D® 10.10- <u>trea (sf)</u> 3,300 1,700 5,000 5,000 Length (feet) = y SCS TF 24-hr 100	2 . 16 of R-20 me OYR Ra	neering & / 13871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In Velocity (ft/sec) fs @ 12.0 thod, UH=S nfall=8.68"	Associates 0 HydroCAI 3 C 3 C 3 C 3 C 3 C 3 C 3 C 4 HydroCAI 3 C 4 HydroCAI 3 C 4 HydroCAI 4 HydroC	Type III 24-hr 100YR Rainfall=8.68" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92 Area / Description Direct Entry, Immary for Subcatchment 5S: (new Subcat) lume= 6,676 cf, Depth= 7.96" hted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
DOO47 I Prepare HydroCAI A Tc (min) 1.0 Runoff Runoff b Fype III 2 A	Post-De ed by Alle D® 10.10- in 10.10-	2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 74	neering & A 13871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In Velocity (ft/sec) :fs @ 12.0 thod, UH=S nfall=8.68" Description >75% Gras	Associates 0 HydroCAI 3 C 3 C 3 C 3 C 3 C 4 Capacity (cfs) 3 C 4 hrs, Volu 3 CS, Weigh 5 cover C	Type III 24-hr 100YR Rainfall=8.68" S, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92 Area Page 92 Discription Direct Entry, ummary for Subcatchment 5S: (new Subcat) Iume= 6,676 cf, Depth= 7.96" hted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Iume Span= 0.00-48.00 hrs, dt= 0.05 hrs
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DOO47 I Prepare <u>HydroCAI</u> A Tc (min) 1.0 Runoff Runoff b Fype III 2 A	Post-De d by Alle D® 10.10- <u>area (sf)</u> 3,300 1,700 5,000 5,000 Length (feet) = y SCS TF 24-hr 100 <u>ags</u> 1,445 309 7an	2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 1.74 c 98 c 98 c 1.74 c 98 c 1.74 c 98 c 1.74 c 98 c 1.74 c 1.74 c 98 c 1.74 c 1.	neering & A 13871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% Im : Velocity) (ft/sec) :fs @ 12.0 thod, UH=S nfall=8.68" Description >75% Gras >75% Gras	Associates 0 HydroCAI 3 C 3 C 3 C 4 Capacity (cfs) 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C	Type III 24-hr 100YR Rainfall=8.68" S, Inc. Printed 11/10/2021 DSoftware Solutions LLC Page 92 Area Pinted 11/10/2011 Direct Entry, Immary for Subcatchment 5S: (new Subcat) lume= 6,676 cf, Depth= 7.96" hted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs sood, HSG C
DOO47 I Prepare HydroCAI A Tc (min) 1.0 Runoff Runoff b Fype III 2 A	Post-De d by Alle D® 10.10- <u>area (sf)</u> 3,300 1,700 5,000 5,000 Length (feet) = y SCS TF 24-hr 100 <u>ags5</u> 1,445 309 790 5,597	2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 1.74 98 98	neering & A 13871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In 2 Velocity (ft/sec) 12.0 thod, UH=S nfall=8.68" Description >75% Gras >75% Gras Unconnecte Paved park	Associates 0 HydroCAI Capacity (cfs) 1 hrs, Volu Capacity (cfs) Su Su 1 hrs, Volu ScS, Weight s cover, Go s cover, Go s cover, Go s cover, Go s cover, Go	Type III 24-hr 100YR Rainfall=8.68" S, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92 Area Pinted 11/10/2011 Discription Direct Entry, Immary for Subcatchment 5S: (new Subcat) Iume= 6,676 cf, Depth= 7.96" hted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs State 10.05 hrs stood, HSG C State 20.05 hrs stood, HSG C State 20.05 hrs
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DOO47 I Prepare HydroCAI A Tc (min) 1.0 Runoff Runoff b Fype III 2 A	Post-De d by Alle D® 10.10- <u>trea (sf)</u> 3,300 1,700 5,000 5,000 Length (feet) = y SCS TF 24-hr 100 <u>trea (sf)</u> 395 1,445 309 790 5,597 1,531 10,067 1,840	2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 2.16 c 2.16 c CN 74 74 98 98 98 98 98 98 98 98 98 98	neering & A 13871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In Velocity (ft/sec) fs @ 12.0 thod, UH=S nfall=8.68" Description >75% Gras >75% Gras Vnconnecte Paved park Paved park Weighted A Unconnecte Paved park Paved park Weighted A	Associates 0 HydroCAI Capacity (cfs) Capacity (cfs) Su 1 hrs, Volu SCS, Weight s cover, Go s cover, Go s cover, Go ad pavement ing, HSG C ing, HSG C iverage vious Areage	Type III 24-hr 100YR Rainfall=8.68" Printed 11/10/2021 DSoftware Solutions LLC Page 92 Area / Description Direct Entry, Immary for Subcatchment 5S: (new Subcat) lume= 6,676 cf, Depth= 7.96" hted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs kood, HSG C iood, HSG C
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DOD47 I Prepare <u>lydroCA</u> A Tc (min) 1.0 Runoff b Fype III 2 A	Post-De ed by Alle D® 10.10- rea (sf) 3,300 1,700 5,000 Length (feet) = y SCS TF 24-hr 100 rea (sf) 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099	2.16 of CN 98 98 98 98 Slope (ft/ft 2.16 of CN 74 74 74 98 98 98 98 98 98 98 98 98 98	neering & / <u>13871 © 202</u> <u>Description</u> Roofs, HSC Weighted A 100.00% In Velocity (ft/sec) (ft/sec) (ft/sec) fs @ 12.0 thod, UH=S nfall=8.68" <u>Description</u> >75% Gras >75% Gras >75% Gras >75% Gras >75% Gras >75% Gras 275% G	Associates 0 HydroCAI Capacity (cfs) Su 1 hrs, Volu SCS, Weight s cover, Go ad pavement ing, HSG C verage rvious Area pervious Area pervious Area pervious Area pervious Area	Type III 24-hr 100YR Rainfall=8.68 s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92 Area Pescription Direct Entry, Immary for Subcatchment 5S: (new Subcat) lume= 6,676 cf, Depth= 7.96" hted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Bood, HSG C cood, HSG C a rea
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DOD47 I Prepare tydroCAI A Tc (min) 1.0 Runoff b Fype III 2 A Tc (min) 0.5	Post-De ed by Alle D® 10.10- <u>trea (sf)</u> 3,300 1,700 5,000 Length (feet) = y SCS TF 24-hr 100 <u>trea (sf)</u> 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,097 1,691 10,067 1,840 8,227 1,097 1,840 8,227 1,097 1,840 8,227 1,097 1,840 8,227 1,097 1,840 8,227 1,097 1,840 8,227 1,097 1,097 1,840 8,227 1,097 1,097 1,097 1,097 1,007 1,840 8,227 1,097 1,097 1,007 1,840 8,227 1,097 1,097 1,007 1,007 1,840 8,227 1,007	2.16 of CN 98 98 98 98 98 Slope (ft/ft 2.16 of CN 2.16 of CN 2.16 of CN 74 98 98 98 98 98 98 98 98 98 98	neering & / 13871 © 202 Description Roofs, HSC Weighted A 100.00% In Velocity (ft/sec) // (ft/sec) // (ft/sec)	Associates 0 HydroCAI Capacity (cfs) 1 hrs, Volu Capacity (cfs) Sul 1 hrs, Volu SCS, Weight s cover, Go ad pavemel ad pavemel ing, HSG C verage rvious Area bervious Area bervious Area bervious Area bervious Area connected Capacity (cfs)	Type III 24-hr 100YR Rainfall=8.68" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92 Area Pescription Direct Entry, Immary for Subcatchment 5S: (new Subcat) httd=CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs iood, HSG C iood, HSG C a rea in Description Sheet Flow.
DOD47 I Prepare tydroCAI A Tc (min) 1.0 Runoff b Type III 2 A C (min) 0.5	Post-De ed by Alle D® 10.10- <u>trea (sf)</u> 3,300 1,700 5,000 Length (feet) = y SCS TF 24-hr 100 <u>trea (sf)</u> 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet) 50 1,0067 1,840 8,257 1,099 Length (feet) 50 1,0067 1,840 8,257 1,099 Length (feet) 500 1,0067 1,840 8,257 1,099 1,0067 1,0067 1,0067 1,0067 1,0067 1,0067 1,0067 1,007 1,0067 1,0067 1,007 1,0	2.16 of CN 98 98 98 98 98 98 2.16 of CN 2.16 of CN 74 74 98 98 98 98 98 98 98 98 0000000000	neering & A 13871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In Velocity (ff/sec) fs @ 12.0 thod, UH=S nfall=8.68" Description >75% Gras >75% Gras >75% Gras >75% Gras >75% Gras Nononecte Unconnecte	Associates 0 HydroCAI Capacity (cfs) 1 hrs, Volu Capacity (cfs) Su 1 hrs, Volu Capacity (cfs) Su 1 hrs, Volu Capacity (cfs) Su 1 hrs, Volu Capacity (cfs)	Type III 24-hr 100YR Rainfall=8.68" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92 Area Page 92 O Description Pirect Entry, ummary for Subcatchment 5S: (new Subcat) Iume= hted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Iume= iood, HSG C State C c C a rea i Description
DOD47 I Prepare tydroCAI A Tc (min) 1.0 Runoff b Fype III 2 A Tc (min) 0.5	Post-De ed by Alle D® 10.10- <u>trea (sf)</u> 3,300 1,700 5,000 Length (feet) = y SCS TF 24-hr 100 <u>trea (sf)</u> 395 1,445 309 790 5,597 1,531 10,067 1,840 8,227 1,099 Length (feet) 500 10,750 10,950 10,750 10,950 10,957 10,950	2.16 of CN 98 98 98 98 98 2.16 of CN 2.16 of CN 2.16 of CN 74 74 98 98 98 98 98 94 Slope (ft/ft 0.0540 0.0308	neering & A 13871 © 202 Description Roofs, HSC Roofs, HSC Weighted A 100.00% In Velocity (ft/sec) fs @ 12.0 thod, UH=S nfall=8.68" Description >75% Gras >75% Gras >75% Gras >75% Gras >75% Gras >75% Gras Neighted A 18.28% Per 81.72% Inconnected Unconnected Unconnected Unconnected Neighted A 18.28% Per 13.36% Unconnected (ft/sec) 1.80 3.56	Associates 0 HydroCAI Capacity (cfs) 1 hrs, Volu Capacity (cfs) Su 1 hrs, Volu Capacity (cfs) Scover, Go ad pavement ad pa	Type III 24-hr 100YR Rainfall=8.68" s, Inc. Printed 11/10/2021 D Software Solutions LLC Page 92 Area Page 92 Direct Entry, Direct Entry, ummary for Subcatchment 5S: (new Subcat) Iume= hted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Iumes iood, HSG C C c C a rea / Description Sheet Flow, Smooth surfaces n= 0.011 P2= 3.26" Shallow Concentrated Flow, Page 92

Summary fo	r Subcatchment 6S: ((new Subcat)
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Runoff = 4.13 cfs @ 12.06 hrs, Volume= 12,168 cf, Depth= 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 100YR Rainfall=8.68"

	15,442 10,802	98 74 70	>75% Gras Woods, Go	s cover, Go od, HSG C	ood, HSG C				
	26,955 26,244 711	73	Weighted A 97.36% Pe 2.64% Impe	verage rvious Area ervious Are	a				
Tc (min)	Length (feet)	Slope (ft/ft	velocity (ft/sec)	Capacity (cfs)	Description				
2.5	50	0.1460	0.33		Sheet Flow	h_{r}	26"		
0.1	54	0.1815	6.86		Shallow Co	oncentrated Flow,	.20		
1.3	104	0.0769	9 1.39		Shallow Co Woodland	ncentrated Flow, Kv= 5.0 fps			
3.9	208	Total							
				Su	mmary for	Subcatchment 7	'S: (new Subca	t)	
lunoff	=	2.57 0	cfs @ 12.0	3 hrs, Volu	ime=	7,671 cf, Depth=	6.99"		
0047 repare	Post-De d by Alle	e v-rev1 en Engi 4b. s/n (neering & /	Associates	, Inc.	utions I I C		Type III 24-hi	• 100YR Rainfall=8.68" Printed 11/10/2021 Page 94
0047 I repare ydroCA	Post-De ed by Alle D® 10.10-	e v-rev1 en Engi 4b s/n (neering & / 3871 © 202	Associates 0 HydroCAL	, Inc.) Software Sol	utions LLC		Type III 24-hi	⁻ 100YR Rainfall=8.68" Printed 11/10/2021 Page 94
0047 I repare ydroCA	Post-De ed by Alle D® 10.10- vrea (sf) 5,880	ev-rev1 en Engi 4b s/n (<u>CN</u> 98	neering & / 13871 © 202 Description Water Surfa	Associates 0 HydroCAE ace, HSG C	, Inc.) Software Sol	utions LLC		Type III 24-hi	[.] 100YR Rainfall=8.68" Printed 11/10/2021 Page 94
0047 I repare ydroCA A	Post-De ed by Alle D® 10.10- 5,880 134 6,571	v-rev1 en Engi 4b s/n (CN 98 98 74	neering & / 13871 © 202 Description Water Surfa riprap >75% Gras	Associates 0 HydroCAL ace, HSG C s cover, Go	, Inc.) <u>Software Sol</u> ; ; ; ;	utions LLC		Type III 24-hi	⁻ 100YR Rainfall=8.68" Printed 11/10/2021 Page 94
0047 repare ydroCA A	Post-De d by Alle D® 10.10- 5,880 134 6,571 5,580 13 165	v-rev1 n Engi 4b s/n (<u>CN</u> 98 98 74 89 89 89	neering & A 13871 © 202 Description Water Surfa riprap >75% Gras Gravel roac Weighted A	Associates 0 HydroCAI ace, HSG C s cover, Gc is, HSG C	, Inc.) Software Sol)))))))))))))))))))	utions LLC		Type III 24-hi	[.] 100YR Rainfall=8.68" Printed 11/10/2021 Page 94
0047 repare ydroCA A	Post-De ed by Alle D® 10.10- vrea (sf) 5,880 134 6,571 580 13,165 7,151 6,014	v-rev1 n Engi 4b s/n (CN 98 98 74 89 89 89 89 89 89 89	neering & A 13871 © 202 Description Water Surfa riprap >75% Gras <u>Gravel roac</u> Weighted A 54.32% Pe 45.68% Imj	Associates <u>0 HydroCAI</u> ace, HSG C s cover, Go ls, HSG C .verage rvious Area pervious Area	, Inc. <u>) Software Sol</u> bod, HSG C ea	utions LLC		Type III 24-hi	[•] 100YR Rainfall=8.68" Printed 11/10/2021 Page 94
0047 I repare <u>ydroCA</u> A	Post-De d by Alle D® 10.10- form (100) form (100)	v-rev1 n Engi 4b s/n (<u>CN</u> 98 74 89 86 Slope (ft/ft	neering & A 13871 © 202 Description Water Surfa riprap >75% Gras Gravel roac Weighted A Weighted A 54.32% Pe 45.68% Imp • Velocity) (ft/sec)	Associates 0 HydroCAE ace, HSG C s cover, Go is, <u>HSG C</u> verage verage vrious Area bervious Area bervious Area bervious Area bervious Area	, Inc. <u>) Software Sol</u>)))))))))))))))))))	utions LLC		Type III 24-hi	⁻ 100YR Rainfall=8.68" Printed 11/10/2021 Page 94
0047 repare ydroCA A A 	Post-De ed by Alle D® 10.10- trea (sf) 5,880 13,165 7,151 6,014 Length (feet) 42	V-rev1 en Engi 4b s/n (<u>CN</u> 98 98 74 89 86 Slope (ft/ft 0.1857	neering & A 03871 © 202 Description Water Surfa >75% Gras Gravel roac Weighted A 45.68% Imp 45.68% Imp 45.68% Imp (ft/sec) 7 0.35	Associates <u>0 HydroCAI</u> ace, HSG C s cover, Go ls, HSG C verage rvious Area pervious Ar Capacity (cfs)	, Inc. <u>) Software Sol</u> bod, HSG C ea Description Sheet Flow Grass: Shoi	utions LLC /, rt n= 0.150 P2= 3.	26"	Type III 24-hi	[•] 100YR Rainfall=8.68" Printed 11/10/2021 Page 94
0047 I repare ydroCA A Tc (min) 2.0	Post-De d by Alle D® 10.10- 5,880 134 6,571 580 13,165 7,151 6,014 Length (feet) 42	v-rev1 n Engi 4b s/n (0 98 98 74 89 86 Slope (ft/ft 0.1857	neering & / 13871 © 202 Description Water Surfa riprap >75% Grass Gravel road Weighted A 54.32% Pe 45.68% Imp e Velocity) (ft/sec) 7 0.35	Associates <u>0 HydroCAI</u> ace, HSG C s cover, GG ls, HSG C verage rvious Area pervious Area pervious Area (cfs)	, Inc.) Software Sol)))))))))))))	utions LLC /, rt n= 0.150 P2= 3. Subcatchment 8	26" S: (new Subca	Type III 24-hi	[•] 100YR Rainfall=8.68" Printed 11/10/2021 Page 94
0047 I repare ydroCA A Tc (min) 2.0	Post-De ed by Alle D® 10.10- <u>trea (sf)</u> 5,880 134 6,571 580 13,165 7,151 6,014 Length (feet) 42	V-rev1 en Engi <u>4b s/n (</u> <u>CN</u> 98 74 89 86 <u>Slope</u> (ft/ft 0.1857	neering & / 03871 © 202 Description Water Surfa >75% Gras Gravel road Weighted A 54.32% Pe 45.68% Imp e Velocity) (ft/sec) 7 0.35	Associates <u>0 HydroCAE</u> ace, HSG C s cover, Go ls, HSG C vious Area pervious Area pervious Ar Capacity (cfs) Su 1 hrs, Volu	, Inc.) Software Sol) pod, HSG C ea Description Sheet Flow Grass: Shol mmary for Ime=	utions LLC , t n= 0.150 P2= 3. Subcatchment 8 5.792 cf, Depth=	26" IS: (new Subca 7.96"	Type III 24-hi	⁻ 100YR Rainfall=8.68" Printed 11/10/2021 Page 94
0047 I repare ydroCA A Tc (<u>(min)</u> 2.0 unoff	Post-De ed by Alle D® 10.10- rea (sf) 5,880 134 6,571 5,800 13,165 7,151 6,014 Length (feet) 42 = y SCS TF	V-rev1 n Engi 4b s/n (<u>CN</u> 98 98 74 89 86 Slope (ft/ft 0.1857 1.88 c	neering & / 3871 © 202 Description Water Surfa riprap >75% Grass Gravel road Weighted A 54.32% Pe 45.68% Imp e Velocity) (ft/sec) 7 0.35 ofs @ 12.0 thod, UH=S content of the second	Associates <u>0 HydroCAE</u> ace, HSG C s cover, Go s cover	, Inc.) Software Sol) pod, HSG C ea Description Sheet Flow Grass: Shol mmary for ime= ited-CN, Time	utions LLC /, n= 0.150 P2= 3. Subcatchment 8 5,792 cf, Depth= ≥ Span= 0.00-48.00	26" 26" 3 S: (new Subca 7.96" hrs, dt= 0.05 hrs	Type III 24-hi	[•] 100YR Rainfall=8.68" Printed 11/10/2021 Page 94
0047 I repare ydroCA A Tc (min) 2.0 unoff unoff b ype III :	Post-De ed by Alle D® 10.10- for the second second reca (sf) 5,880 13,165 7,151 6,014 Length (feet) 42 = sy SCS TF 24-hr 100	V-rev1 en Engi 4b s/n (CN 98 98 74 89 86 Slope (ft/ft 0.1857 1.88 (R-20 me	neering & A 13871 © 202 Description Water Surfa riprap >75% Gras Gravel road Weighted A 54.32% Pe 45.68% Imp • Velocity) (ff/sec) 7 0.35 cfs @ 12.0 thod, UH=S infall=8.68"	Associates <u>0 HydroCAI</u> ace, HSG C s cover, Go ss, <u>HSG C</u> verage verage vervious Area bervious Area	, Inc.) Software Sol)))))))))))))	/, rt n= 0.150 P2= 3. Subcatchment 8 5,792 cf, Depth= ≥ Span= 0.00-48.00 l	26" 26" 29 S: (new Subca 7.96" hrs, dt= 0.05 hrs	Type III 24-hi	[•] 100YR Rainfall=8.68" Printed 11/10/2021 Page 94
0047 repare ydroCA A Tc ((min) 2.0 unoff unoff unoff bype III ; A	Post-De d by Alle D® 10.10- fs.880 134 6,571 5,880 134 6,571 5,880 134 6,571 5,880 134 6,571 4,014 Length (feet) 42 = y SCS TF 24-hr 100 rea (sf) 1,611	V-rev1 en Engi 4b s/n (98 98 74 89 86 Slope (ft/ft 0.1857 1.88 c 2-20 me 0/R Ra 2-20 me 0/R Ra 2-20 me 0/R Ra	neering & / 13871 © 202 Description Water Surfa riprap >75% Grass Gravel road Weighted A 54.32% Pe 45.68% Imp • Velocity) (ft/sec) 7 0.35 cfs @ 12.0 thod, UH=S infall=8.68" Description >75% Grass	Associates <u>0 HydroCAI</u> ace, HSG C s cover, Go is, HSG C s cover, Go s cover, Go Sun 1 hrs, Volu SCS, Weight s cover, Go	, Inc.) Software Sol)))))))))))))	utions LLC 7, 1, n= 0.150 P2= 3. Subcatchment 8 5,792 cf, Depth= 2 Span= 0.00-48.00 D	26" IS: (new Subca 7.96" hrs, dt= 0.05 hrs	Type III 24-hi	[•] 100YR Rainfall=8.68" Printed 11/10/2021 Page 94
0047 I repare ydroCA A A 	Post-De ed by Alle D® 10.10- rea (sf) 5,880 134 6,571 5,800 13,165 7,151 6,014 Length (feet) 42 = py SCS TF 24-hr 100 rea (sf) 1,611 459 6,664	V-rev1 en Engi 4b s/n (98 98 74 89 86 Slope (ft/ft 0.1857 1.88 c 3-20 me DYR Ra 2-20 me DYR Ra 2-20 me 2-20 me 2-20 me	neering & / 3871 © 202 Description Water Surfa riprap >75% Grass Gravel road Weighted A 54.32% Pe 45.68% Imp e Velocity) (ft/sec) 7 0.35 cfs @ 12.0 cfs @ 12.0	Associates <u>0 HydroCAE</u> ace, HSG C s cover, Go ls, HSG C verage rvious Area pervious Area pervious Area pervious Area (cfs) Su 1 hrs, Volu SCS, Weigh s cover, Go ed pavemel	, Inc.) Software Sol)))))))))))))	utions LLC , t n= 0.150 P2= 3. Subcatchment 8 5,792 cf, Depth= a Span= 0.00-48.00 b	26" 26" 25: (new Subca 7.96" hrs, dt= 0.05 hrs	Type III 24-hi	* 100YR Rainfall=8.68" Printed 11/10/2021 Page 94
0047 I repare ydroCA A <u>((min)</u> 2.0 unoff unoff bl /pe lll : A	Post-De ed by Alle D® 10.10- trea (sf) 5,880 13,165 7,151 6,014 Length (feet) 42 = y SCS TF 24-hr 100 trea (sf) 1,611 459 6,664 8,734	V-rev1 in Engi 4b s/n (<u>CN</u> 98 74 89 86 Slope (ft/ft 0.1857 1.88 (R-20 me)YR Ra <u>CN</u> 74 89 98 98 98	Description Water Surfa riprap >75% Gras <u>Gravel road</u> Weighted A 45.68% Imp (ft/sec) (ft/sec	Associates <u>0 HydroCAI</u> ace, HSG C s cover, Go s cover, Go s cover, Go capacity (cfs) Sun 1 hrs, Volu CS, Weight s cover, Go ad pavement ing, HSG C verage	, Inc.) Software Sol) Software Sol) pod, HSG C ea Sheet Flow Grass: Shou mmary for ime= ited-CN, Time pod, HSG C t, HSG C	r, rt n= 0.150 P2= 3. Subcatchment 8 5,792 cf, Depth= e Span= 0.00-48.00 l	26" 25: (new Subca 7.96" hrs, dt= 0.05 hrs	Type III 24-hi	[•] 100YR Rainfall=8.68" Printed 11/10/2021 Page 94

00047 Post-Dev-rev1 Prepared by Allen Engineering & Associates, Inc. HydroCAD® 10.10-4b s/n 03871 © 2020 HydroCAD Software Solutions LLC

(min)	11001	/++/++		10161		
0.5	(ieet) 50	0.0411	1 61	(00)	Sheet Flow.	-
0.0	50	0.0-111	1.01		Smooth surfaces n= 0.011 P2= 3.26"	
0.4	75	0.0260	3.27		Shallow Concentrated Flow,	
09	125	Total			Faveu rv-20.3 lps	-
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Ai	rea (sf)	CN	Description			-
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	6,818	98	Paved park	ing, HSG C		_
	8,042	95	Weighted A	verage		
	1,030 7,012		ı∠.ö1% Pe 87.19% Imi	vious Area	i ea	
	194		2.77% Unc	onnected		
To	l enath	Slope	Velocity	Capacity	Description	
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		_
0.5	50	0.0380	1.56		Sheet Flow,	
0.3	62	0.0274	3.36		Shallow Concentrated Flow,	
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0.8	112	Total				
047 5	Post-De				Type III 24-hr 100YR Rainfall=8 6	"
0047 F repare	Post-De	e v-rev1	neerina & /	Associates	<i>Type III 24-hr 100YR Rainfall=8.6</i> s, Inc. Printed 11/10/202	
047 F epared	Post-De d by Alle D® 10.10-	e v-rev1 en Engir 4b s/n 0	neering & / 3871 © 202	Associates 0 HydroCAE	Type III 24-hr 100YR Rainfall=8.60 s, Inc. Printed 11/10/202 D Software Solutions LLC Page 9	" I <u>}</u>
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047 F epare droCAL	Post-De d by Alle D® 10.10-	e v-rev1 en Engir 4b s/n 0	neering & / 3871 © 202	Associates 0 HydroCAE	Type III 24-hr 100YR Rainfall=8.60 s, Inc. Printed 11/10/202 D Software Solutions LLC Page 9 Summary for Subcatchment 10S: ROOF	" I <u>)</u>
0047 F epare droCAI	Post-De d by Alle D® 10.10- =	e v-rev1 en Engir 4b s/n 0 0.58 c	neering & / 3871 © 202 fs @ 12.0	Associates <u>0 HydroCAE</u>	Type III 24-hr 100YR Rainfall=8.68 s, Inc. Printed 11/10/202 D Software Solutions LLC Page S Summary for Subcatchment 10S: ROOF June= 1,857 cf, Depth= 8.44"	" <u>}</u>
0047 F epared droCAI	Post-De d by Alle D® 10.10- =	ev-rev1 en Engir 4b s/n 0 0.58 c	heering & / 3871 © 202 fs @ 12.0	Associates <u>0 HydroCAE</u> 1 hrs, Volu	Type III 24-hr 100YR Rainfall=8.60 S, Inc. Printed 11/10/202 D Software Solutions LLC Page S Summary for Subcatchment 10S: ROOF June= 1,857 cf, Depth= 8.44"	"
1047 F epared droCAI	Post-De d by Alle ⊃® 10.10- = y SCS TF 24-hr 100	ev-rev1 en Engir 4b s/n 0 0.58 c R-20 me DYR Rai	neering & / 3871 © 202 fs @ 12.0 thod, UH=S	Associates <u>0 HydroCAE</u> 1 hrs, Volu SCS, Weigh	<i>Type III 24-hr 100YR Rainfall=8.60</i> s, Inc. Printed 11/10/202 <u>D Software Solutions LLC Page 9</u> Summary for Subcatchment 10S: ROOF urne= 1,857 cf, Depth= 8.44" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	" 1 <u>5</u>
0047 F epared droCAI	Post-De d by Alle ⊃® 10.10- = y SCS TF 24-hr 100	e v-rev1 en Engir 4b s/n 0 0.58 c R-20 me DYR Rai	neering & / 3871 © 202 fs @ 12.0 thod, UH=S nfall=8.68"	Associates <u>0 HydroCAE</u> 1 hrs, Volu SCS, Weigh	<i>Type III 24-hr 100YR Rainfall=8.60</i> s, Inc. Printed 11/10/202 <u>D Software Solutions LLC Page S</u> Summary for Subcatchment 10S: ROOF June= 1,857 cf, Depth= 8.44" nted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	" <u> </u>
0047 F epare droCAI unoff unoff pe III 2	Post-De d by Alle ⊃® 10.10- = y SCS TF 24-hr 100 rea (sf) 2010	e v-rev1 en Engir 4b s/n 0 0.58 c R-20 me DYR Rai OYR Rai	heering & / 3871 © 202 fs @ 12.0 thod, UH=S nfall=8.68" Description	Associates <u>0 HydroCAE</u> 1 hrs, Volu SCS, Weigh	Type III 24-hr 100YR Rainfall=8.66 Printed 11/10/202 D Software Solutions LLC Page S Summary for Subcatchment 10S: ROOF Jume= 1,857 cf, Depth= 8.44" Inted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs	" <u>}</u>
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Runoff by ype III 24		3.61 0	fs @ 12.01	hrs, Volu	me=	11,273 cf, De	epth= 8.20"				
	/ SCS TF 4-hr 100	R-20 me 0YR Rai	thod, UH=S nfall=8.68"	CS, Weigh	ted-CN, Ti	me Span= 0.00-4	48.00 hrs, dt= 0.	05 hrs			
Ar	ea (sf)	CN	Description								
	1,435	74	>75% Grass	cover, Go	od, HSG (C					
1	1,035	98 98	Unconnecte Paved parki	d paveme	nt, HSG C						
1	16,498	96	Weighted A	/erage							
	1,435		8.70% Pervi	ous Area							
1	1.035		6.87% Uncc	ervious Ar	ea						
-	,	0		o "	Б . <i>и</i>						
(min)	(feet)	Siope (ft/ft) (ft/sec)	Capacity (cfs)	Descripti	on					
0.5	50	0.0500	1.74		Sheet FI	ow,					
0.3	76	0.0329	3.68		Smooth s Shallow Paved	surfaces n= 0.0 ² Concentrated F (v= 20.3 fps	11 P2= 3.26" low,				
0.8	126	Total			. urou .	20:0 :00					
				6	non-fe-	Subootohmo	+ 420, 0000				
				Sum	nary tor	Subcatchmei	n 135: KUUH	-CANUPY			
Runoff	=	0.61 c	fs @ 12.03	8 hrs, Volu	me=	2,026 cf, De	epth= 8.44"				
Runoff by Type III 2	/ SCS TF 4-hr 100	R-20 me 0YR Rai	thod, UH=S nfall=8.68"	CS, Weigh	ted-CN, Ti	me Span= 0.00-4	48.00 hrs, dt= 0.	05 hrs			
Δn	ea (sf)	CN	Description								
	2,880	98	Roofs, HSG	С							
	2,880		100.00% Im	pervious A	rea						
)0047 P	Post-De	ev-rev1							Type III 24-h	100YR Rair	nfall=8.68"
D 0047 P Prepared HydroCAD	Post-De d by Alle <u>⊛ 10.10-</u>	e v-rev1 en Engil 4b s/n C	neering & A 3871 © 2020	ssociates) HydroCA[, Inc.	Solutions LLC			Type III 24-h	 100YR Rair Printed ≤ 	nfall=8.68" 11/10/2021 Page <u>98</u>
)00047 P Prepared <u>1ydroCAD</u> Tc	Post-De d by Alle 0® 10.10- Length	ev-rev1 en Engi 4b s/n 0 Slope	neering & A 3871 © 2020	ssociates) HydroCAI Capacity	, Inc. Software S	Solutions LLC			Type III 24-h	<i>100YR Rair</i> Printed 7	nfall=8.68" 11/10/2021 Page 98
DOD47 P Prepared <u>HydroCAD</u> Tc (min)	Post-De d by Alle ® 10.10- Length (feet)	e v-rev1 en Engii 4b s/n 0 Slope (ft/ft	neering & A 3871 © 2020 Velocity (ft/sec)	ssociates HydroCAI Capacity (cfs)	, Inc. Software S	Solutions LLC			Type III 24-h	 100YR Rair Printed ≤ 	nfall=8.68″ 11/10/2021 Page 98
DOO47 P Prepared <u>-lydroCAD</u> Tc _(min) 	Post-De d by Alle ∞ 10.10- Length (feet)	e v-rev1 en Engiu 4b s/n 0 Slope (ft/ft	1eering & A 3871 © 2020 ∵ Velocity ⊢ (ft/sec)	ssociates) HydroCAI Capacity (cfs)	, Inc. Software S Descripti Direct E	Solutions LLC on ntry,			Type III 24-h	⁻ 100ΥR Rair Printed ^{-∕}	nfall=8.68" 11/10/2021 Page 98
DOO47 P Prepared HydroCAD Tc (min) 2.0	Post-De d by Alle № 10.10- Length (feet)	e v-rev1 en Engir 4 <u>b s/n C</u> Slope (ft/ft	neering & A <u>3871 © 2020</u> ∋ Velocity ∋ (ft/sec)	ssociates) <u>HydroCAI</u> Capacity (cfs) Sur	, Inc. Software 1 Descripti Direct En	Solutions LLC on ntry, r Subcatchme	ent 14S: (new	/ Subcat)	Type III 24-h	 100YR Rair Printed ≤ 	nfall=8.68" 11/10/2021 Page 98
DOO47 P Prepared HydroCAD Tc (min) 2.0 Sunoff	Post-De d by Alle)® 10.10- Length (feet)	ev-rev1 en Engin 4b s/n 0 Slope (ft/ft	neering & A 3871 © 2020 : Velocity i (ft/sec) fs @ 12.07	ssociates) <u>HydroCAI</u> Capacity (cfs) Sur	, Inc. <u>Software</u> : Descripti Direct En mary fo me=	Solutions LLC on ntry, or Subcatchme 9.956 cf De	ent 14S: (new	v Subcat)	Type III 24-h	7 100YR Rain Printed	nfall=8.68" 11/10/2021 Page 98
00047 P Prepared HydroCAD Tc (min) 2.0 Runoff	Post-De d by Alle ® 10.10- Length (feet)	ev-rev1 en Engin 4b s/n C Slope (ft/ft 2.96 c	neering & A 3871 © 2020 Velocity (ft/sec) fs @ 12.07	ssociates) <u>HydroCAI</u> Capacity (cfs) Sur Y hrs, Volu	, Inc. <u>Software s</u> Descripti Direct E mary fo me=	Solutions LLC on ntry, 9,956 cf, De	ent 14S: (new	v Subcat)	Type III 24-h	7 100YR Rain Printed 7	nfall=8.68" 11/10/2021 Page 98
00047 P Prepared <u>HydroCAD</u> Tc (min) 2.0 Runoff Runoff by Fype III 2:	Post-De d by Alle	ev-rev1 en Engli 4b s/n (Slope (ft/ft 2.96 c R-20 me DYR Rai	neering & A 3871 © 2020 : Velocity (ft/sec) fs @ 12.07 thod, UH=Si nfall=8.68"	ssociates) HydroCAI Capacity (cfs) Sur ? hrs, Volu CS, Weigh	, Inc. <u>Software 1</u> Descripti Direct E Imary fo me= ted-CN, Ti	Solutions LLC on ntry, r Subcatchme 9,956 cf, De me Span= 0.00-4	ent 14S: (new epth= 7.72" 48.00 hrs, dt= 0.	/ Subcat) 05 hrs	Type III 24-h	7 100YR Rain Printed	nfall=8.68" 11/10/2021 Page 98
00047 P Prepared <u>HydroCAD</u> Tc (min) 2.0 Runoff Runoff Sunoff by Fype III 2-	Post-De d by Alle	ev-rev1 en Engin 4b s/n C Slope (ft/ft 2.96 c R-20 me DYR Rai	neering & A <u>3871 © 202(</u> Velocity (ft/sec) fs @ 12.07 thod, UH=Si nfall=8.68"	ssociates) HydroCAI Capacity (cfs) Sur ? hrs, Volu CS, Weigh	, Inc. <u>Software 1</u> Descripti Direct E 11 11 11 11 11 11 11 1	Solutions LLC on ntry, r Subcatchme 9,956 cf, De me Span= 0.00-4	ent 14S: (new epth= 7.72" 48.00 hrs, dt= 0.	/ Subcat) 05 hrs	Type III 24-h	7 100YR Rain Printed 7	nfall=8.68" 11/10/2021 Page 98
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DOD47 P Prepared HydroCAD Tc (min) 2.0 Runoff Runoff Runoff Type III 2 L Ard	Post-De d by Alle ≥ 10.10- Length (feet) = × SCS TF 4-hr 100 ea (sf) 614 211	ev-rev1 en Engin 4b s/n C Slope (ft/ft 2.96 c 2.96 c R-20 me DYR Rai DYR Rai 98 98	neering & A <u>13871 © 202(</u> Velocity (ft/sec) fs @ 12.07 thod, UH=S nfall=8.68" <u>Description</u> Unconnecte Paved parki	ssociates) <u>HydroCAI</u> Capacity (cfs) Sur ' hrs, Volu CS, Weigh d pavemeing, HSG C	, Inc. Software S Descripti Direct En mary fo me= ted-CN, Ti at, HSG C	Solutions LLC on ntry, or Subcatchmo 9,956 cf, De me Span= 0.00-4	ent 14S: (new epth= 7.72" 48.00 hrs, dt= 0.	/ Subcat) 05 hrs	Type III 24-h	7 100YR Rain Printed 7	nfall=8.68" 11/10/2021 Page 98
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Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 100YR Rainfall=8.68"

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2,24 12,23 39 00047 Post - Prepared by iydroCAD® 10 Tc Leng (min) (fe 4.2 0.7 1 4.9 2 Runoff = Runoff by SCS ype III 24-hr <u>Area (s 8,64</u> 5,26	-Dev-re Allen Er .10-4b s/ gth Skd itt	84.51% Imj 3.24% Unc 3.24% Unc gineering & / n 03871 © 202 ope Velocity (ft/sec) 100 0.20 874 3.93 al 4 cfs @ 12.0 method, UH=S Rainfall=8.68" Description >75% Gras Paved park Meciet of the second part of the second pa	Associates, 0 HydroCAD Capacity (cfs) Sum 6 hrs, Volur CS, Weighte s cover, Goo	a Inc. Software So Description Sheet Flow Grass: Sho Shallow C Paved Kv mary for ne= ed-CN, Tim od, HSG C	Subcatchment 17S: (new Subcatchment 17S: 7,684 cf, Depth= 6.63" ne Span= 0.00-48.00 hrs, dt= 0.05 hrs	Type III 24-hr	100YR Rainfall=8.68" Printed 11/10/2021 Page 100
2,24 12,23 39 100047 Post Prepared by iydroCAD® 10 Tc Leng (min) (fe 4.2 0.7 1 4.9 2 Runoff = Runoff by SCS ype III 24-hr <u>Area (s</u> 8,64 5,26 13,91 8,64	-Dev-re Allen Er 0.10-4b s/ gth Slo eet) (f 50 0.04 74 0.03 224 Tota 225 S TR-20 100YR f 36 50 CN 46 74 35 98 11 83 46	84.51% Imj 3.24% Unc 3.24% Unc gineering & J n 03871 © 202 ope Velocity vft) (ft/sec) 000 0.20 374 3.93 al 4 cfs @ 12.0 method, UH=S Rainfall=8.68" Description >75% Gras Paved park Weighted A 62 15% Po 62	Associates, 0 HydroCAD Capacity (cfs) 6 hrs, Volur iCS, Weighte s cover, Goo ing, HSG C verage vigus Area	Inc. Software So Description Sheet Flow Grass: Sho Shallow C Paved Kv mary for me= ed-CN, Tim od, HSG C	blutions LLC n w, ort n= 0.150 P2= 3.26" concentrated Flow, v= 20.3 fps Subcatchment 17S: (new Subcat 7,684 cf, Depth= 6.63" ne Span= 0.00-48.00 hrs, dt= 0.05 hrs	Type III 24-hr	100YR Rainfall=8.68" Printed 11/10/2021 Page 100
2,24 12,23 39 100047 Post Prepared by iydroCAD® 10 Tc Leng (min) (fe 4.2 0.7 1 4.9 2 Runoff = Runoff by SCS 'ype III 24-hr <u>Area (s</u> 8,64 5,26 13,91 8,64 5,26	-Dev-re Allen Er 0.10-4b s/ gth Sla iet) (ff 50 0.04 i74 0.03 i224 Tota i224 Tota i224 Tota i224 Tota i225 S TR-20 i 100YR f i1 83 i5	84.51% Imj 3.24% Unc 3.24% Unc gineering & J n 03871 © 202 ppe Velocity Vft) (ft/sec) 100 0.20 374 3.93 al 4 cfs @ 12.0 method, UH=S Rainfall=8.68" Description >75% Gras Paved park Weighted A 62.15% Per 37.85% Imi	Associates, 0 HydroCAD Capacity (cfs) Sum 6 hrs, Volur iCS, Weighto s cover, Goo ing, HSG C verage vious Area ervious Area	a Inc. Software So Description Sheet Flow Grass: Sho Shallow C Paved Kv mary for me= ed-CN, Tim od, HSG C	blutions LLC n w, ort n= 0.150 P2= 3.26" concentrated Flow, v= 20.3 fps Subcatchment 17S: (new Subcat 7,684 cf, Depth= 6.63" he Span= 0.00-48.00 hrs, dt= 0.05 hrs	Type III 24-hr	100YR Rainfall=8.68" Printed 11/10/2021 Page 100
2,24 12,23 39 100047 Post Prepared by lydroCAD® 10 Tc Leng (min) (fe 4.2 0.7 1 4.9 2 Runoff = Runoff by SCS ype III 24-hr Area (s 8,64 5,26 13,91 8,64 5,26	-Dev-re Allen Er 0.10-4b s/ gth Sla et) (f 50 0.04 174 0.03 224 Tota 225 S TR-20 1 100YR f 224 Tota 2.5 S TR-20 1 100YR f 100YR f 35 98 11 83 35	84.51% Im; 3.24% Unc 3.24% Unc gineering & / n 03871 © 202 000 0.20 374 3.93 al 4 cfs @ 12.0 method, UH=5 Rainfall=8.68" Description >75% Gras Paved park Weighted A 62.15% Pe 37.85% Im;	Associates, 0 HydroCAD Capacity (cfs) 6 hrs, Volur iCS, Weighte s cover, Goo ing, HSG C verage vious Area ervious Area	a Inc. Software So Description Sheet Flow Grass: Shc Shallow C Paved Kv mary for ne= ed-CN, Tim od, HSG C	blutions LLC n w, ort n= 0.150 P2= 3.26" concentrated Flow, v= 20.3 fps Subcatchment 17S: (new Subcat 7,684 cf, Depth= 6.63" ne Span= 0.00-48.00 hrs, dt= 0.05 hrs	Type III 24-hr	100YR Rainfall=8.68" Printed 11/10/2021 Page 100
$\frac{2,24}{12,23}$ $\frac{12,23}{35}$ $\frac{12,24}{12,23}$ $\frac{12,24}{12,23}$ $\frac{12,24}{12,23}$ $\frac{12,24}{12,24}$ $\frac{12}{12,24}$ $\frac{12}$	-Dev-re Allen Er 0.10-4b s/ gth Sla et) (f 50 0.04 74 0.03 74 0.03 75 0.04 76 0.04 77 0.05 77 0.04 76	84.51% Imj 3.24% Unc 3.24% Unc gineering & / n 03871 © 202 ppe Velocity Uft) (ft/sec) 100 0.20 374 3.93 al 4 cfs @ 12.0 method, UH=S Rainfall=8.68" Description >75% Gras Paved park Weighted A 62.15% Pe 37.85% Imj ope Velocity Velocity Unc	Associates, 0 HydroCAD Capacity (cfs) Capacity (cfs) 6 hrs, Volur CS, Weighte s cover, Goo ing, HSG C verage vious Area pervious Area pervious Area	a Inc. Software So Description Shaet Flow Grass: Shc Grass: Shc Shallow C Paved Kv mary for ne= ed-CN, Tim od, HSG C a Description	n w, ort n= 0.150 P2= 3.26" concentrated Flow, /= 20.3 fps Subcatchment 17S: (new Subcat 7,684 cf, Depth= 6.63" ne Span= 0.00-48.00 hrs, dt= 0.05 hrs n	Type III 24-hr	100YR Rainfall=8.68" Printed 11/10/2021 Page 100
2,24 12,23 39 00047 Post Prepared by Prepared by tydroCAD® 10 Tc Leng (min) (fe 4.2 0.7 1 4.9 2 Runoff by SC3 ype III 24-hr Area (s 8,64 5,26 13,91 8,64 5,26 Tc Leng (min) (fe 2,5 Tc Leng (min) (fe (fe (fe) (fe) (fe) (fe) (fe) (fe) (fe) (fe)	-Dev-re Allen Er 0.10-4b s/ gth Skeet) (ff 50 0.04 74 0.03 74 0.03 75 5 76 7 76 7 76 7 76 7 76 7 76 7 76 7	84.51% Im; 3.24% Unc 3.24% Unc gineering & <i>J</i> n 03871 © 202 ppe Velocity <i>V</i> (ft) (ft/sec) 100 0.20 374 3.93 al 4 cfs @ 12.0 method, UH=5 Rainfall=8.68" <u>Description</u> >75% Gras Paved park Weighted <i>A</i> 62.15% Pe 37.85% Im; ppe Velocity <i>V</i> (ft/sec) 0.00	Associates, 0 HydroCAD Capacity (cfs) Sum 6 hrs, Volur CS, Weighte s cover, Goo ing, HSG C verage vious Area pervious Area pervious Area capacity (cfs)	a Inc. Software So Description Sheet Flov Grass: Shc Paved Kv mary for me= ed-CN, Tim od, HSG C a Description	blutions LLC n w, ort n= 0.150 P2= 3.26" concentrated Flow, /= 20.3 fps Subcatchment 17S: (new Subcat 7,684 cf, Depth= 6.63" ne Span= 0.00-48.00 hrs, dt= 0.05 hrs n	Type III 24-hr	100YR Rainfall=8.68" Printed 11/10/2021 Page 100
2,24 12,23 39 7repared by 1ydroCAD® 10 Tc Leng (min) (fe 4.2 0.7 1 4.9 2 Runoff by SC3 ype III 24-hr Area (s 8,64 5,26 13,91 8,64 5,26 Tc Leng (min) (fe 3.5	-Dev-re Allen Er 2017 Allen Er 2019 50 0.04 74 0.03 74 0.03 75 0.04 76 74 76 75 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 7	84.51% Imj 3.24% Unc 3.24% Unc gineering & J n 03871 © 202 ppe Velocity (ft/sec) 1400 0.20 374 3.93 al 4 cfs @ 12.0 method, UH=S Rainfall=8.68" Pescription >75% Gras Paved park Weighted A 62.15% Pe 37.85% Imj ope Velocity (ft/sec) 360 0.24	Associates, 0 HydroCAD Capacity (cfs) Sum 6 hrs, Volur iCS, Weighte s cover, Goo ing, HSG C verage vious Area pervious Area pervious Area (cfs)	a Inc. Software So Description Sheet Flow Grass: Shc Paved Kv mary for me= ed-CN, Tim od, HSG C a Description Sheet Flow Grass: Sbc	blutions LLC n w, ort n= 0.150 P2= 3.26" concentrated Flow, /= 20.3 fps Subcatchment 17S: (new Subcat 7,684 cf, Depth= 6.63" ne Span= 0.00-48.00 hrs, dt= 0.05 hrs n w, ort n= 0.150 P2= 3.26"	Type III 24-hr	100YR Rainfall=8.68" Printed 11/10/2021 Page 100
2,24 12,23 39 10047 Post Prepared by lydroCAD® 10 Tc Leng (min) (fe 4.2 0.7 1 4.9 2 Runoff by SC3 ype III 24-hr Area (s 8,64 5,26 13,91 8,64 5,26 Tc Leng (min) (fe 3.5 0.3	-Dev-re Allen Er).10-4b s/ gth Sk (ff 50 0.04 74 0.03 74 0.03 74 0.03 74 0.03 74 0.03 74 0.03 74 0.03 74 0.03 75 0.04 8 100YR f 35 98 11 83 46 55 0.04 55 0.04 61 0.02	84.51% Imj 3.24% Unc 3.24% Unc gineering & J n 03871 © 202 ppe Velocity Uff) (ft/sec) 100 0.20 374 3.93 al 4 cfs @ 12.0 method, UH=S Rainfall=8.68" <u>Description</u> >75% Gras Paved park Weighted A 62.15% Pe 37.85% Imj ope Velocity Uft) (ft/sec) 160 0.24	Associates, 0 HydroCAD Capacity (cfs) Capacity (cfs) Sum 6 hrs, Volur iCS, Weighte s cover, Goo ing, HSG C .verage vious Area ervious Area ervious Area (cfs)	a Inc. Software So Description Sheet Flow Grass: Sho Shallow C mary for me= ed-CN, Tim od, HSG C a Description Sheet Flow Grass: Sho Shallow C	blutions LLC n w, ort n = 0.150 P2= 3.26" concentrated Flow, /= 20.3 fps Subcatchment 17S: (new Subcat 7,684 cf, Depth= 6.63" ne Span= 0.00-48.00 hrs, dt= 0.05 hrs n w, ort n = 0.150 P2= 3.26" concentrated Flow,	Type III 24-hr	100YR Rainfall=8.68" Printed 11/10/2021 Page 100
2,24 12,23 39 10047 Post- Prepared by lydroCAD® 10 Tc Leng (min) (fe 4.2 0.7 1 4.9 2 tunoff by SCS ype III 24-hr Area (s 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 13,91 14,9 10 10 10 10 10 10 10 10 10 10	-Dev-re Allen Er <u>).10-4b s/</u> gth Sk tet) (ff 50 0.04 74 0.03 74 0.03 724 Tota 224 Tota 225 S TR-20 1 100YR f 50 0.04 55 98 11 83 46 55 98 11 83 46 55 98 11 83 46 55 98 11 83 46 55 98 11 83 46 55 98 11 83 46 55 98 11 83 46 55 50 0.04 61 0.02	84.51% Im; 3.24% Unc 3.24% Unc 9 (gineering & J n 03871 © 202 9 (ft/sec) 9 (f	Associates, 0 HydroCAD Capacity (cfs) 6 hrs, Volur iCS, Weighte s cover, Goo ing, HSG C verage vious Area pervious Area pervious Area	a Inc. Software So Description Sheet Flov Grass: Sho Shallow Cr mary for me= ed-CN, Tim od, HSG C a Description Sheet Flov Grass: Shol Shallow C Paved Kv	blutions LLC n w, ort n = 0.150 P2= 3.26" concentrated Flow, /= 20.3 fps Subcatchment 17S: (new Subcat 7,684 cf, Depth= 6.63" ne Span= 0.00-48.00 hrs, dt= 0.05 hrs n w, ort n = 0.150 P2= 3.26" concentrated Flow, /= 20.3 fps	Type III 24-hr	100YR Rainfall=8.68" Printed 11/10/2021 Page 100
2,24 12,23 38 12,23 39 12,23 39 Prepared by iydroCAD® 10 Tc Leng (min) (fe 4.2 0.7 4.9 2 Runoff Area (s 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 13,91 8,64 5,26 0.3 3.5 0.3 3.8	-Dev-re Allen Er <u>).10-4b s/</u> gth Skd iet) (f 50 0.04 74 0.03 224 Tota 224 Tota 224 Tota 225 S TR-20 1 100YR f 50 0.04 55 98 11 83 46 55 gth Skd if 50 0.06 61 0.02 61 0.02	84.51% Im; 3.24% Unc 3.24% Unc gineering & / n 03871 © 202 ppe Velocity Uft) (ft/sec) 100 0.20 374 3.93 al 4 cfs @ 12.0 method, UH=S Rainfall=8.68" Description >75% Gras Paved park Weighted A 62.15% Pe 37.85% Im; ppe Velocity Uft) (ft/sec) 360 0.24	Associates, 0 HydroCAD Capacity (cfs) 6 hrs, Volur iCS, Weighte s cover, Goo ing, HSG C .verage vious Area pervious Area capacity (cfs)	a Inc. Software So Description Sheet Flov Grass: Sho Shallow Cr Paved Kv mary for ne= ed-CN, Tim od, HSG C a Description Sheet Flov Grass: Sho Shallow C Paved Kv	blutions LLC n w, ort n = 0.150 P2= 3.26" concentrated Flow, - 20.3 fps Subcatchment 17S: (new Subcat) 7,684 cf, Depth= 6.63" - n - - - m - - - - m - - - - m - - - - - n - <td>Type III 24-hr</td> <td>100YR Rainfall=8.68" Printed 11/10/2021 Page 100</td>	Type III 24-hr	100YR Rainfall=8.68" Printed 11/10/2021 Page 100

Summary for Reach R1: (new Reach)



Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Peak Elev= 1,039.43' @ 12.31 hrs

Davias Bouting	Invort	Outlet Devices				
#1 Primary	1,037.95'	12.0" Round Culver	rt L= 12.0' Ke= 0.200)		_
		Inlet / Outlet Invert= 1 n= 0.013 Corrugated	1,037.95' / 1,037.77' S I PE, smooth interior, I	S= 0.0150 '/' Cc= 0.900 Flow Area= 0.79 sf		
rimary OutFlow –1=Culvert(Co	Max=0.00 cfs (ontrols 0.00 cfs)	@ 12.02 hrs HW=1,038	8.71' TW=1,039.02' (Dynamic Tailwater)		
(-	,	Sumn	nary for Pond CB3	: (new Pond)		
low Aroa -	14 479 of	84.51% Imponyious In	flow Dopth = 7.96" f	for 100VP event		
flow =	2.82 cfs @ 1	2.07 hrs, Volume=	9,602 cf			
utflow = imary =	2.82 cfs @ 1 2.82 cfs @ 1	2.07 hrs, Volume= 2.07 hrs, Volume=	9,602 cf, Atten= 9,602 cf	: 0%, Lag= 0.0 min		
outing by Dyn-S	tor-Ind method,	Time Span= 0.00-48.00	0 hrs, dt= 0.05 hrs			
ak Elev= 1,040	.96° @ 12.09 nrs	6				
#1 Primary	1.040.00'	12.0" Round Culver	rt L= 165.0' Ke= 0.20	0		_
	,	Inlet / Outlet Invert= 1 n= 0.013 Corrugated	1,040.00' / 1,037.77' S PE, smooth interior, I	S= 0.0135 '/' Cc= 0.900 Flow Area= 0.79 sf		
imary OutFlow -1=Culvert (Ou	Max=2.44 cfs (Itlet Controls 2.4	@ 12.07 hrs HW=1,040 4 cfs @ 4.31 fps)	0.90' TW=1,039.35' (Dynamic Tailwater)		
		Sumn	nary for Pond CB4	: (new Pond)		
low Area =	7,846 sf,	70.75% Impervious, In	flow Depth = 7.60" f	for 100YR event		
low = Itflow =	1.65 cfs @ 1 1.65 cfs @ 1	2.01 hrs, Volume= 2.01 hrs, Volume=	4,967 cf 4 967 cf Atten=	:0% Lag=0.0 min		
mary =	1.65 cfs @ 1	2.01 hrs, Volume=	4,967 cf	670, Lag 610 mil		
outing by Dyn-S	tor-Ind method,	Time Span= 0.00-48.00	0 hrs, dt= 0.05 hrs			
0047 Post-De	v-rev1				Type III 24-hr 100YR Rainfall=8.68	3″
0047 Post-De repared by Alle ydroCAD® 10.10-	∨-rev1 n Engineering 4b_s/n 03871 ©	& Associates, Inc. 2020 HydroCAD Softward	e Solutions LLC		Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 10	3″ 1 <u>4</u>
0047 Post-De repared by Alle ydroCAD® 10.10- eak Elev= 1,040	v-rev1 n Engineering 4b s/n 03871 © .61' @ 12.02 hrs	& Associates, Inc. 2020 HydroCAD Softward	e Solutions LLC		Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 10	3" 1 <u>4</u>
0047 Post-De repared by Alle ydroCAD® 10.10- eak Elev= 1,040 evice Routing	v-rev1 n Engineering 4 <u>b s/n 03871 ©</u> .61' @ 12.02 hrs Invert	& Associates, Inc. 2020 HydroCAD Softward s Outlet Devices	e Solutions LLC		Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 10	3" 1 <u>4</u>
0047 Post-De repared by Alle ydroCAD® 10.10- eak Elev= 1,040 evice Routing #1 Primary	v-rev1 en Engineering 4 <u>b s/n 03871 ©</u> .61' @ 12.02 hrs <u>Invert</u> 1,040.00'	& Associates, Inc. 2020 HydroCAD Softward s Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= ² n= 0.013 Corrugated	e Solutions LLC rt L= 165.0' Ke= 0.20 1,040.00' / 1,036.38' S 1 PE, smooth interior, f	0 5= 0.0219 '/' Cc= 0.900 Flow Area= 0.79 sf	Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 10	3″ 1 <u>4</u>
0047 Post-De epared by Alle rdroCAD® 10.10- eak Elev= 1,040 evice Routing #1 Primary timary OutFlow -1=Culvert (Ou	v-rev1 n Engineering 4b s/n 03871 © .61' @ 12.02 hrs invert 1,040.00' n Max=1.51 cfs (titlet Controls 1.5	& Associates, Inc. 2020 HydroCAD Softward s Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= ' n= 0.013 Corrugated @ 12.01 hrs HW=1,040 i1 cfs @ 4.46 fps)	e Solutions LLC rt L= 165.0' Ke= 0.20 1,040.00' / 1,036.38' S 1 PE, smooth interior, f 0.59' TW=1,038.45' ()	0 5= 0.0219 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater)	Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 10	3″ 1 <u>4</u>
0047 Post-De repared by Alle (droCAD® 10.10- eak Elev= 1,040 evice Routing #1 Primary #1 Primary rimary OutFlow -1=Culvert (Out	v-rev1 en Engineering 4b s/n 03871 © .61' @ 12.02 hrs 	& Associates, Inc. 2020 HydroCAD Softward s Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= 1 n= 0.013 Corrugated (a) 12.01 hrs HW=1,040 (c) 1 cfs (a) 4.46 fps)	e Solutions LLC rt L= 165.0' Ke= 0.20 1,040.00' / 1,036.38' S 1 PE, smooth interior, F 0.59' TW=1,038.45' (i nary for Pond CB5	0 = 0.0219 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond)	Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 10	3" 1 4
0047 Post-De repared by Alle vdroCAD® 10.10- eak Elev= 1,040 evice Routing #1 Primary fimary OutFlow -1=Culvert (Ou	v-rev1 n Engineering 4b s/n 03871 © .61' @ 12.02 hrs 	& Associates, Inc. 2020 HydroCAD Softward S Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= 1 n= 0.013 Corrugated @ 12.01 hrs HW=1,04(1 cfs @ 4.46 fps) Sumn 87.19% Impervious, In	e Solutions LLC rt L= 165.0' Ke= 0.20 1,040.00' / 1,036.38' S 1 PE, smooth interior, F 0.59' TW=1,038.45' (mary for Pond CB5 flow Depth = 8.08" f	0 3= 0.0219 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond) for 100YR event	Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 10	3″ 1 4
0047 Post-De repared by Alle droCAD® 10.10- eak Elev= 1,040 evice Routing #1 Primary timary OutFlow -1=Culvert (Out flow Area = flow =	v-rev1 n Engineering 4b s/n 03871 © .61' @ 12.02 hrs Invert 1,040.00' Max=1.51 cfs (titlet Controls 1.5 8,042 sf, 1 1.75 cfs @ 1	& Associates, Inc. 2020 HydroCAD Softward S Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= 1 n= 0.013 Corrugated @ 12.01 hrs HW=1,040 11 cfs @ 4.46 fps) Sumn 87.19% Impervious, In 2.01 hrs, Volume= 9.01 hrs, Volume=	e Solutions LLC rt L= 165.0' Ke= 0.20 1,040.00' / 1,036.38' S 1 PE, smooth interior, F 0.59' TW=1,038.45' (() nary for Pond CB5 flow Depth = 8.08" f 5,414 of 5,414 of	0 S= 0.0219 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond) for 100YR event	Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 10	3" 1 4
0047 Post-De repared by Alle droCAD® 10.10- eak Elev= 1,040 evice Routing #1 Primary rimary OutFlow -1=Culvert (Out flow Area = flow = utflow = imary =	v-rev1 n Engineering 4b s/n 03871 © .61' @ 12.02 hrs Invert 1,040.00' n Max=1.51 cfs (titlet Controls 1.5 8,042 sf, # 1.75 cfs @ 1 1.75 cfs @ 1	& Associates, Inc. 2020 HydroCAD Softward S Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= ^ n= 0.013 Corrugated @ 12.01 hrs HW=1,040 11 cfs @ 4.46 fps) Summ 87.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume=	e Solutions LLC rt L= 165.0' Ke= 0.20 1,040.00' / 1,036.38' S I PE, smooth interior, F 0.59' TW=1,038.45' (() nary for Pond CB5 flow Depth = 8.08" f 5,414 cf 5,414 cf 5,414 cf 5,414 cf	0 = 0.0219 '/° Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond) for 100YR event : 0%, Lag= 0.0 min	Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 10	3" 1 <u>4</u>
0047 Post-De repared by Alle ydroCAD® 10.10- eak Elev= 1,040 evice Routing #1 Primary rimary OutFlow -1=Culvert (Out flow Area = flow = utflow = rimary = outing by Dyn-S eak Elev= 1.040	v-rev1 n Engineering 4b s/n 03871 © .61' @ 12.02 hrs Invert 1,040.00' n Max=1.51 cfs (titlet Controls 1.5 8,042 sf, # 1.75 cfs @ 1 1.75 cfs @ 1 1.75 cfs @ 1 tor-Ind method, .96' @ 12.01 hrs	& Associates, Inc. 2020 HydroCAD Softward s Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= 7 n= 0.013 Corrugated @ 12.01 hrs HW=1,040 i1 cfs @ 4.46 fps) Sumn 87.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= Time Span= 0.00-48.00 s	e Solutions LLC rt L= 165.0' Ke= 0.20 1,040.00' / 1,036.38' S I PE, smooth interior, F 0.59' TW=1,038.45' (() mary for Pond CB5 flow Depth = 8.08" f 5,414 cf 5,414 cf 5,414 cf 5,414 cf 0 hrs, dt= 0.05 hrs	0 ⇒ 0.0219 '/° Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond) for 100YR event ≈ 0%, Lag= 0.0 min	Type III 24-hr 100YR Rainfall=8.66 Printed 11/10/202 Page 10	3" 1 4
0047 Post-De repared by Alle ydroCAD® 10.10- eak Elev= 1,040 evice Routing #1 Primary rimary OutFlow -1=Culvert (Ou flow Area = iflow = utflow = imary = outing by Dyn-S eak Elev= 1,040 evice Routing	v-rev1 n Engineering 4b s/n 03871 @ .61' @ 12.02 hrs invert 1,040.00' n Max=1.51 cfs (titlet Controls 1.5 8,042 sf, # 1.75 cfs @ 1 1.75 cfs @ 1 1.75 cfs @ 1 1.75 cfs @ 1 tor-Ind method, .96' @ 12.01 hrs Invert	& Associates, Inc. 2020 HydroCAD Softward S Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= 1 n= 0.013 Corrugated @ 12.01 hrs HW=1,040 11 cfs @ 4.46 fps) Summ 87.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 1.01 hrs, Volume= 2.01 hrs, Volume= 2.	e Solutions LLC rt L= 165.0' Ke= 0.20 1,040.00' / 1,036.38' S 1 PE, smooth interior, F 0.59' TW=1,038.45' (() mary for Pond CB5 flow Depth = 8.08" f 5,414 cf 5,414 cf 5,414 cf 5,414 cf 0 hrs, dt= 0.05 hrs	0 S= 0.0219 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) Cor 100YR event for 100YR event 0%, Lag= 0.0 min	Type III 24-hr 100YR Rainfall=8.66 Printed 11/10/202 Page 10	3" 1 4
0047 Post-De repared by Alle ydroCAD® 10.10- eak Elev= 1,040 #1 Primary rimary OutFlow -1=Culvert (Out flow Area = iflow = utflow = utflow = imary = outing by Dyn-S eak Elev= 1,040 evice Routing #1 Primary	v-rev1 n Engineering 4b s/n 03871 © .61' @ 12.02 hrs .61' @ 12.02 hrs .61' @ 12.02 hrs .61' @ 12.01 hrs 8,042 sf, 12 1.75 cfs @ 1 1.75 cfs @ 1 1.7	& Associates, Inc. 2020 HydroCAD Softward S Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= 1 n= 0.013 Corrugated @ 12.01 hrs HW=1,04(11 cfs @ 4.46 fps) Sumn 87.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= Time Span= 0.00-48.00 S Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= 1 n= 0.013 Corrugated	e Solutions LLC rt L= 165.0' Ke= 0.20 1,040.00' / 1,036.38' S 1 PE, smooth interior, f 0.59' TW=1,038.45' (() mary for Pond CB5 flow Depth = 8.08" f 5,414 cf 5,414 cf 5,414 cf, Atten= 5,414 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.200 1 PE, smooth interior. F	0 S= 0.0219 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond) for 100YR event : 0%, Lag= 0.0 min S= 0.0150 '/' Cc= 0.900 S= 0.0150 '/' Cc= 0.900	Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 10	3" 1 4
20047 Post-De repared by Alle droCAD® 10.10- eak Elev= 1,040 evice Routing #1 Primary rimary OutFlow -1=Culvert (Out flow Area = flow = timary = puting by Dyn-S eak Elev= 1,040 evice Routing #1 Primary	v-rev1 n Engineering 4b s/n 03871 © .61' @ 12.02 hrs .61' @ 12.02 hrs .61' @ 12.02 hrs .61' @ 12.02 hrs .75 cfs @ 1 1.75 cfs @ 1 tor-Ind method, .96' @ 12.01 hrs <u>Invert</u> 1,040.30' n Max=1.69 cfs (rrel Controls 1.6	& Associates, Inc. 2020 HydroCAD Softward S Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= 7 n= 0.013 Corrugated (1 cfs @ 4.46 fps) Sumn 87.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 1.01" Round Culver Inlet / Outlet Invert= 7 n= 0.013 Corrugated (2.01 hrs HW=1,040) (3.0) (3.0) (4.47 fps) (4.47 fps)	e Solutions LLC rt L= 165.0' Ke= 0.20 1,040.00' / 1,036.38' S I PE, smooth interior, F 0.59' TW=1,038.45' (() mary for Pond CB5 flow Depth = 8.08" f 5,414 cf 5,414 cf 5,414 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.200 1,040.30' / 1,039.67' S I PE, smooth interior, F 0.95' TW=1,038.90' (()	0 = 0.0219 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond) for 100YR event : 0%, Lag= 0.0 min = 0.0150 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater)	Type III 24-hr 100YR Rainfall=8.66 Printed 11/10/202 Page 10	3" 1 4 4
0047 Post-De repared by Alle ydroCAD® 10.10- eak Elev= 1,040 evice Routing #1 Primary rimary OutFlow −1=Culvert (Out flow Area = flow = utflow = indep = outing by Dyn-S eak Elev= 1,040 evice Routing #1 Primary rimary OutFlow −1=Culvert (Ba	v-rev1 n Engineering 4b s/n 03871 © .61' @ 12.02 hrs Invert 1,040.00' r Max=1.51 cfs (1.75 cfs @ 1 1.75 c	& Associates, Inc. 2020 HydroCAD Softward S Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= 1 n= 0.013 Corrugated @ 12.01 hrs HW=1,040 1 cfs @ 4.46 fps) Summ 87.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 1.0" Round Culver Inlet / Outlet Invert= 1 n= 0.013 Corrugated @ 12.01 hrs HW=1,040 9 cfs @ 4.47 fps)	e Solutions LLC rt L= 165.0' Ke= 0.20 1,040.00' / 1,036.38' S 1 PE, smooth interior, F 0.59' TW=1,038.45' (() nary for Pond CB5 flow Depth = 8.08" f 5,414 cf 5,414 cf 5,414 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.200 1,040.30' / 1,039.67' S 1 PE, smooth interior, F 0.95' TW=1,038.90' (() nary for Pond CB6	0 S= 0.0219 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond) for 100YR event : 0%, Lag= 0.0 min S= 0.0150 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond)	Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 10	3" 1 4 —
0047 Post-De repared by Alle ydroCAD® 10.10- eak Elev= 1,040 #1 Primary rimary OutFlow —1=Culvert (Ou flow Area = flow = rimary = outing by Dyn-S eak Elev= 1,040 evice Routing #1 Primary rimary OutFlow —1=Culvert (Ba	v-rev1 n Engineering 4b s/n 03871 © .61' @ 12.02 hrs Invert 1,040.00' n Max=1.51 cfs (1.75 cfs @ 1 1.75 c	& Associates, Inc. 2020 HydroCAD Softward S Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= 7 n= 0.013 Corrugated (1 cfs @ 4.46 fps) Summ 87.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 12.0" Round Culver Inlet / Outlet Invert= 7 n= 0.013 Corrugated (2 12.01 hrs HW=1,040 (3 0) (3 0) (4 0) (4 0) (4 0) (4 0) (4 0) (4 0) (5 0) (6 0) (7	e Solutions LLC rt L= 165.0' Ke= 0.20 1,040.00' / 1,036.38' S I PE, smooth interior, F 0.59' TW=1,038.45' (() mary for Pond CB5 flow Depth = 8.08" f 5,414 cf 5,414 cf 5,414 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.200 1,040.30' / 1,039.67' S I PE, smooth interior, F 0.95' TW=1,038.90' (() mary for Pond CB6 flow Depth = 7.96" f	0 ⇒ 0.0219 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond) for 100YR event : 0%, Lag= 0.0 min S= 0.0150 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond) for 100YR event	Type III 24-hr 100YR Rainfall=8.66 Printed 11/10/202 Page 10	3" 1 4 4
0047 Post-De repared by Alle vdroCAD® 10.10- sak Elev= 1,040 evice Routing #1 Primary rimary OutFlow -1=Culvert (Ou flow Area = flow = utflow = imary = puting by Dyn-S sak Elev= 1,040 evice Routing #1 Primary imary OutFlow -1=Culvert (Ba flow Area = flow =	v-rev1 n Engineering <u>4b s/n 03871 ©</u> .61' @ 12.02 hrs <u>Invert</u> 1,040.00' n Max=1.51 cfs (titlet Controls 1.5 8,042 sf, # 1.75 cfs @ 1 1.75 cfs @ 1 1.75 cfs @ 1 1.75 cfs @ 1 tor-Ind method, .96' @ 12.01 hrs <u>Invert</u> 1,040.30' n Max=1.69 cfs (rrel Controls 1.6 8,734 sf, # 1.88 cfs @ 1	& Associates, Inc. 2020 HydroCAD Softward S Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= 7 n= 0.013 Corrugated @ 12.01 hrs HW=1,040 i1 cfs @ 4.46 fps) Summ 87.19% Impervious, In 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 12.0" Round Culver Inlet / Outlet Invert= 7 n= 0.013 Corrugated @ 12.01 hrs HW=1,040 S Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= 7 n= 0.013 Corrugated @ 12.01 hrs HW=1,040 S Summ 81.55% Impervious, In 2.01 hrs, Volume=	e Solutions LLC rt L= 165.0' Ke= 0.20 1,040.00' / 1,036.38' S 1 PE, smooth interior, F 0.59' TW=1,038.45' (i mary for Pond CB5 flow Depth = 8.08" f 5,414 cf 5,414 cf 5,414 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.200 1,040.30' / 1,039.67' S 1 PE, smooth interior, F 0.95' TW=1,038.90' (i mary for Pond CB6 flow Depth = 7.96" f 5,792 cf rt receiver	0 = 0.0219 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond) for 100YR event : 0%, Lag= 0.0 min = 0.0150 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond) for 100YR event 0% Lag= 0.0 in	Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 10	
2047 Post-De repared by Alle repared by 10.10- sak Elev= 1,040 axice Routing #1 Primary imary OutFlow -1=Culvert (Out low Area = low = imary = puting by Dyn-S sak Elev= 1,040 avice Routing #1 Primary with Elev= 1,040 avice Routing #1 Primary imary OutFlow -1=Culvert (Ba low Area = low = itflow = imary OutFlow -1=Culvert (Ba low Area = low = imary =	v-rev1 n Engineering 4b s/n 03871 © .61' @ 12.02 hrs .61' @ 12.02 hrs .1.040.00' n Max=1.51 cfs (1.75 cfs @ 1 1.75 cfs @ 1 1.88 cfs @ 1 1.88 cfs @ 1 1.88 cfs @ 1 1.88 cfs @ 1	& Associates, Inc. 2020 HydroCAD Softward S Outlet Devices 12.0" Round Culver Inlet / Outlet Invert= 7 n= 0.013 Corrugated @ 12.01 hrs HW=1,040 1 cfs @ 4.46 fps) Summ 87.19% Impervious, Im 2.01 hrs, Volume= 2.01 hrs, Volume= 2.01 hrs, Volume= 1.0" Round Culver Inlet / Outlet Invert= 7 n= 0.013 Corrugated @ 12.01 hrs HW=1,040 9 cfs @ 4.47 fps) Summ 81.55% Impervious, Im 2.01 hrs, Volume= 2.01 hrs, Volume=	e Solutions LLC rt L= 165.0' Ke= 0.20 1,040.00' / 1,036.38' S 1 PE, smooth interior, F 0.59' TW=1,038.45' (() mary for Pond CB5 flow Depth = 8.08" f 5,414 cf 5,414 cf 2,414 cf, Atten= 5,414 cf 0 hrs, dt= 0.05 hrs rt L= 42.0' Ke= 0.200 1,040.30' / 1,039.67' S 1 PE, smooth interior, F 0.95' TW=1,038.90' (() mary for Pond CB6 flow Depth = 7.96" f 5,792 cf 5,792 cf, Atten= 5,792 cf	0 ≥ 0.0219 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond) for 100YR event = 0.0150 '/' Cc= 0.900 Flow Area= 0.79 sf Dynamic Tailwater) : (new Pond) for 100YR event : 0%, Lag= 0.0 min	Type III 24-hr 100YR Rainfall=8.66 Printed 11/10/202 Page 10	

Peak Elev= 1,041.53' @ 12.02 hrs

Device Routing	Invert	t Outlet Devices	art 1 - 26.0' Ko- 0.200	
#1 Fiinary	1,040.75	Inlet / Outlet Invert= n= 0.013 Corrugate	eft L= 30.0 Ke= 0.200 : 1,040.75' / 1,040.39' S= 0.0100 '/' Cc= 0.900 ed PE, smooth interior, Flow Area= 0.79 sf)
Primary OutFlow 1=Culvert (Ou	Max=1.75 cfs tlet Controls 1.	@ 12.01 hrs HW=1,0 75 cfs @ 3.78 fps)	41.51' TW=1,041.02' (Dynamic Tailwater)	
		Sum	imary for Pond CB7: (new Pond)	
nflow Area =	16,498 sf,	91.30% Impervious, I	nflow Depth = 8.20" for 100YR event	
nflow = Outflow =	3.61 cfs @ 3.61 cfs @	12.01 hrs, Volume= 12.01 hrs, Volume=	11,273 cf 11,273 cf, Atten= 0%, Lag= 0.0 min	
Primary =	3.61 cfs @	12.01 hrs, Volume=	11,273 cf	
Routing by Dyn-S Peak Elev= 1,042	tor-Ind method, .70' @ 12.01 h	, Time Span= 0.00-48.0 rs	00 hrs, dt= 0.05 hrs	
Device Routing	Invert	t Outlet Devices		
#1 Primary	1,041.50	Inlet / Outlet Inverter n= 0.013 Corrugate	ert L= 128.0' Ke= 0.200 : 1,041.50' / 1,040.22' S= 0.0100 '/' Cc= 0.900 ed PE, smooth interior, Flow Area= 0.79 sf	
Primary OutFlow	Max=3.52 cfs rrel Controls 3.	@ 12.01 hrs HW=1,0 52 cfs @ 4.83 fps)	42.66' TW=1,041.02' (Dynamic Tailwater)	
		Sum	mary for Pond CB8: (new Pond)	
nflow Area =	15,482 sf,	73.05% Impervious, I	nflow Depth = 7.72" for 100YR event	
nflow = Outflow =	2.96 cfs @ 2.96 cfs @	12.07 hrs, Volume= 12.07 hrs, Volume=	9,956 cf 9,956 cf,Atten= 0%,Lag= 0.0 min	
Primary =	2.96 cfs @	12.07 hrs, Volume=	9,956 cf	
Routing by Dyn-S	tor-Ind method,	, Time Span= 0.00-48.0	00 hrs, dt= 0.05 hrs	
00047 Post-De Prepared by Alle	v-rev1 n Engineering	g & Associates, Inc.		<i>Type III 24-hr 100YR Rainfall=8.68"</i> Printed 11/10/2021
00047 Post-De Prepared by Alle HydroCAD® 10.10-	∨-rev1 n Engineering 4b s/n 03871 ©	g & Associates, Inc. 2020 HydroCAD Softwa	are Solutions LLC	<i>Type III 24-hr 100YR Rainfall=8.68"</i> Printed 11/10/2021 Page 106
00047 Post-De Prepared by Alle HydroCAD® 10.10- Peak Elev= 1,041	v-rev1 in Engineering 4 <u>b s/n 03871 ©</u> .84' @ 12.10 hi	g & Associates, Inc. 2020 HydroCAD Softwa	are Solutions LLC	<i>Type III 24-hr 100YR Rainfall=8.68"</i> Printed 11/10/2021 Page 106
00047 Post-De Prepared by Alle HydroCAD® 10.10- Peak Elev= 1,041 Device Routing	v-rev1 In Engineering 4b s/n 03871 © .84' @ 12.10 hi Inver	g & Associates, Inc. 2020 HydroCAD Softwa rs t Outlet Devices	are Solutions LLC	<i>Type III 24-hr 100YR Rainfall=8.68"</i> Printed 11/10/2021 Page 106
00047 Post-De Prepared by Alle HydroCAD® 10.10- Peak Elev= 1,041 Device Routing #1 Primary	v-rev1 n Engineering 4 <u>b s/n 03871 @</u> .84' @ 12.10 hi 	g & Associates, Inc. 2020 HydroCAD Softwa rs t Outlet Devices ' 18.0" Round Culv Inlet / Outlet Invert= n= 0.013 Corrugate	ert L= 7.0' Ke= 0.200 1,040.78' / 1,040.68' S= 0.0143 '/' Cc= 0.900 2d PE, smooth interior, Flow Area= 1.77 sf	<i>Type III 24-hr 100YR Rainfall=8.68"</i> Printed 11/10/2021 Page 106
DOD47 Post-De Prepared by Alle HydroCAD® 10.10- Peak Elev= 1,041 Device Routing #1 Primary Primary OutFlow 1=Culvert (Out	v-rev1 in Engineering 4 <u>b s/n 03871 @</u> .84' @ 12.10 hi .84' @ 12.10 hi .040.78' 1,040.78' Max=2.37 cfs titet Controls 2.	g & Associates, Inc. 2 2020 HydroCAD Softwars t Outlet Devices ' 18.0" Round Culv Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.07 hrs HW=1,0 37 cfs @ 2.69 fps)	ert L= 7.0' Ke= 0.200 1,040.78' / 1,040.68' S= 0.0143 '/ Cc= 0.900 ed PE, smooth interior, Flow Area= 1.77 sf 41.78' TW=1,041.63' (Dynamic Tailwater)	<i>Type III 24-hr 100YR Rainfall=8.68"</i> Printed 11/10/2021 Page 106
00047 Post-De Prepared by Alle HydroCAD® 10.10- Peak Elev= 1,041 Device Routing #1 Primary Primary OutFlow	v-rev1 n Engineering 4b s/n 03871 @ .84' @ 12.10 hi 	g & Associates, Inc. 2020 HydroCAD Softwars rs t Outlet Devices ' 18.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.07 hrs HW=1,0 37 cfs @ 2.69 fps) Sum	ert L= 7.0' Ke= 0.200 ert L= 7.0' Ke= 0.200 : 1,040.78' / 1,040.68' S= 0.0143 '/' Cc= 0.900 ed PE, smooth interior, Flow Area= 1.77 sf 41.78' TW=1,041.63' (Dynamic Tailwater) htmary for Pond DRI: (new Pond)	<i>Type III 24-hr 100YR Rainfall=8.68"</i> Printed 11/10/2021 Page 106
00047 Post-De Prepared by Alle HydroCAD® 10.10- Peak Elev= 1,041 Device Routing #1 Primary #1 Primary Primary OutFlow 1=Culvert (Ou	v-rev1 In Engineering <u>4b s/n 03871 @</u> .84' @ 12.10 hi 	g & Associates, Inc. 2020 HydroCAD Softwars t Outlet Devices 18.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.07 hrs HW=1,0 37 cfs @ 2.69 fps) Sum 37.85% Impervious, 1	ert L= 7.0' Ke= 0.200 1,040.78' / 1,040.68' S= 0.0143 '/' Cc= 0.900 ed PE, smooth interior, Flow Area= 1.77 sf 41.78' TW=1,041.63' (Dynamic Tailwater) mary for Pond DRI: (new Pond) nflow Depth = 6.63" for 100YR event	<i>Type III 24-hr 100YR Rainfall=8.68"</i> Printed 11/10/2021 Page 106
000047 Post-De Prepared by Alle HydroCAD® 10.10- Peak Elev= 1,041 Device Routing #1 Primary #1 Primary Primary OutFlow 1=Culvert (Out Inflow Area = Outflow = Primary =	v-rev1 en Engineering <u>4b s/n 03871 @</u> .84' @ 12.10 hi <u>Invert</u> 1,040.78' r Max=2.37 cfs r Max=2.37 cfs titlet Controls 2. 13,911 sf, 2.54 cfs @ 2.54 cfs @ 2.54 cfs @	g & Associates, Inc. 2020 HydroCAD Softwa rs t Outlet Devices ' 18.0" Round Culv. Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.07 hrs HW=1,0 37 cfs @ 2.69 fps) Surr 37.85% Impervious, I 12.06 hrs, Volume= 12.06 hrs, Volume=	ert L= 7.0' Ke= 0.200 1,040.78' / 1,040.68' S= 0.0143 '/ Cc= 0.900 ed PE, smooth interior, Flow Area= 1.77 sf 41.78' TW=1,041.63' (Dynamic Tailwater) 1000 Marching Straight Straig	<i>Type III 24-hr 100YR Rainfall=8.68"</i> Printed 11/10/2021 Page 106
00047 Post-De Prepared by Alle HydroCAD® 10.10- Peak Elev= 1,041 Device Routing #1 Primary Primary OutFlow 1=Culvert (Out Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,044	v-rev1 en Engineering 4b s/n 03871 @ .84' @ 12.10 ht 1,040.78 7 Max=2.37 cfs 7 Ma	g & Associates, Inc. 2020 HydroCAD Softwa rs t Outlet Devices ' 18.0" Round Culv. Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.07 hrs HW=1,0 37 cfs @ 2.69 fps) Sum 37.85% Impervious, I 12.06 hrs, Volume= 12.06 hr	ert L= 7.0' Ke= 0.200 1,040.78' / 1,040.68' S= 0.0143 '/' Cc= 0.900 ad PE, smooth interior, Flow Area= 1.77 sf 41.78' TW=1,041.63' (Dynamic Tailwater) mmary for Pond DRI: (new Pond) Inflow Depth = 6.63" for 100YR event 7,684 cf 7,684 cf 7,684 cf 7,684 cf 00 hrs, dt= 0.05 hrs	Type III 24-hr 100YR Rainfall=8.68" Printed 11/10/2021 Page 106
00047 Post-De Prepared by Alle HydroCAD® 10.10- Peak Elev= 1,041 Device Routing #1 Primary Primary OutFlow -1=Culvert (Out Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S: Peak Elev= 1,044 Device Routing	v-rev1 In Engineering the s/n 03871 @ .84' @ 12.10 hi .84' @ 12.10 hi 1,040.78' Max=2.37 cfs titlet Controls 2. 13,911 sf, 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 12.06 hi Invertieve	g & Associates, Inc. 2020 HydroCAD Softwars t Outlet Devices 18.0" Round Culve Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.07 hrs HW=1,0 37 cfs @ 2.69 fps) Sum 37.85% Impervious, I 12.06 hrs, Volume= 12.06 hrs, V	ert L= 7.0' Ke= 0.200 : 1,040.78' / 1,040.68' S= 0.0143 '/' Cc= 0.900 ed PE, smooth interior, Flow Area= 1.77 sf 41.78' TW=1,041.63' (Dynamic Tailwater) mmary for Pond DRI: (new Pond) Inflow Depth = 6.63" for 100YR event 7,684 cf 7,684 cf 7,684 cf 00 hrs, dt= 0.05 hrs	<i>Type III 24-hr 100YR Rainfall=8.68"</i> Printed 11/10/2021 Page 106
00047 Post-De Prepared by Alle HydroCAD® 10.10- Peak Elev= 1,041 Device Routing #1 Primary Primary OutFlow T=Culvert (Out Inflow Area = Inflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,044 Device Routing #1 Primary	v-rev1 en Engineering <u>4b s/n 03871 @</u> .84' @ 12.10 hi <u>Invert</u> 1,040.78' 7 Max=2.37 cfs 7 Max=2.37 cfs 7 Max=2.37 cfs 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 12.06 hi <u>Invert</u> 1,043.75'	g & Associates, Inc. 2020 HydroCAD Softwa rs t Outlet Devices ' 18.0" Round Culv. Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.07 hrs HW=1,0 37 cfs @ 2.69 fps) Surr 37.85% Impervious, I 12.06 hrs, Volume= 12.06 hrs, Volume= 12.07 Round Culv. Inlet / Outlet Invert= n= 0.013 Cast iron,	ert L= 7.0' Ke= 0.200 1,040.78' / 1,040.68' S= 0.0143 '/ Cc= 0.900 ed PE, smooth interior, Flow Area= 1.77 sf 41.78' TW=1,041.63' (Dynamic Tailwater) mary for Pond DRI: (new Pond) Inflow Depth = 6.63" for 100YR event 7,684 cf 7,684 cf 7,684 cf 7,684 cf 00 hrs, dt= 0.05 hrs ert L= 59.0' Ke= 0.200 1,043.75' / 1,042.59' S= 0.0197 '/ Cc= 0.900 , coated, Flow Area= 0.79 sf	Type III 24-hr 100YR Rainfall=8.68" Printed 11/10/2021 Page 106
D0047 Post-De Prepared by Alle HydroCAD® 10.10- Peak Elev= 1,041 Device Routing #1 Primary #1 Primary Primary OutFlow mflow Area = nflow = Dutflow = Primary = Routing by Dyn-S Peak Elev= 1,044 Device Routing #1 Primary	v-rev1 In Engineering <u>4b s/n 03871 @</u> .84' @ 12.10 hi <u>1,040.78'</u> Max=2.37 cfs 13,911 sf, 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 13,043.75' tor-Ind method, .55' @ 12.06 hi <u>1,043.75'</u> Max=2.49 cfs et Controls 2.45	g & Associates, Inc. 2020 HydroCAD Softwa rs t Outlet Devices ' 18.0" Round Culv Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.07 hrs HW=1,0 37.85% Impervious, I 12.06 hrs, Volume= 12.06 hrs, Volume= 0.00-48.0 rs t Outlet Devices ' 12.0" Round Culv Inlet / Outlet Invert= n= 0.013 Cast iron, @ 12.06 hrs HW=1,0 9 cfs @ 3.77 fps)	are Solutions LLC ert L= 7.0' Ke= 0.200 :1,040.78' / 1,040.68' S= 0.0143 '/' Cc= 0.900 ad PE, smooth interior, Flow Area= 1.77 sf 41.78' TW=1,041.63' (Dynamic Tailwater) nmary for Pond DRI: (new Pond) inflow Depth = 6.63" for 100YR event 7,684 cf 7,684 cf 7,684 cf 00 hrs, dt= 0.05 hrs ert L= 59.0' Ke= 0.200 : 1,043.75' / 1,042.59' S= 0.0197 '/' Cc= 0.900 : coated, Flow Area= 0.79 sf 44.53' TW=1,043.32' (Dynamic Tailwater)	Type III 24-hr 100YR Rainfall=8.68" Printed 11/10/2021 Page 106
00047 Post-De Prepared by Alle HydroCAD® 10.10- Peak Elev= 1,041 Device Routing #1 Primary Primary OutFlow 1=Culvert (Out Inflow Area = Inflow Area = Outflow = Outflow = Primary = Routing by Dyn-S Peak Elev= 1,044 Device Routing #1 Primary #1 Primary Primary OutFlow #1 Primary	v-rev1 n Engineering 4b s/n 03871 @ .84' @ 12.10 hi .1,040.78' 1,040.78' 1,040.78' 1,040.78' 1,040.78' 1,040.78' 1,040.78' 1,040.78' 1,040.78' 1,043.75' 1,045.75'	g & Associates, Inc. 2020 HydroCAD Softwa rs t Outlet Devices 18.0" Round Culv. Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.07 hrs HW=1,0 37.85% Impervious, I 12.06 hrs, Volume= 12.06 hrs, Volume= 12.07 Round Culv. Inlet / Outlet Invert= n= 0.013 Cast iron, @ 12.06 hrs HW=1,0 9 cfs @ 3.77 fps) Sun	ert L= 7.0' Ke= 0.200 1,040.78' / 1,040.68' S= 0.0143 '/ Cc= 0.900 ed PE, smooth interior, Flow Area= 1.77 sf 41.78' TW=1,041.63' (Dynamic Tailwater) mary for Pond DRI: (new Pond) Inflow Depth = 6.63" for 100YR event 7,684 cf 7,684 cf 7,684 cf 7,684 cf 00 hrs, dt= 0.05 hrs ert L= 59.0' Ke= 0.200 1,043.75' / 1,042.59' S= 0.0197 '/ Cc= 0.900 1,043.75' / 1,042.59' S= 0.0197 '/ Cc= 0.900 1,043.75' / 1,043.32' (Dynamic Tailwater) 44.53' TW=1,043.32' (Dynamic Tailwater) mmary for Pond FB: (new Pond)	Type III 24-hr 100YR Rainfall=8.68" Printed 11/10/2021 Page 106
00047 Post-De Prepared by Alle HydroCAD® 10.10- Peak Elev= 1,041 Device Routing #1 Primary #1 Primary Primary OutFlow 1=Culvert (Outher the second	v-rev1 In Engineering 4b s/n 03871 @ .84' @ 12.10 hi Invert 1,040.78' Max=2.37 cfs 13,911 sf, 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 13,911 sf, 2.54 cfs @ 13,911 sf, 2.54 cfs @ 2.54 cfs @ 11,043.75' Max=2.49 cfs at Controls 2.49 119,356 sf,	g & Associates, Inc. 2020 HydroCAD Softwa rs t Outlet Devices ' 18.0" Round Culv. Inlet / Outlet Invert= n= 0.013 Corrugate @ 12.07 hrs HW=1,0 37.85% Impervious, I 12.06 hrs, Volume= 12.06 hrs, Volume= 0.013 Cast iron, @ 12.06 hrs HW=1,0 9 cfs @ 3.77 fps) Sun 78.71% Impervious, I	are Solutions LLC ert L= 7.0' Ke= 0.200 :1,040.78' / 1,040.68' S= 0.0143 '/' Cc= 0.900 ad PE, smooth interior, Flow Area= 1.77 sf 41.78' TW=1,041.63' (Dynamic Tailwater) mmary for Pond DRI: (new Pond) Inflow Depth = 6.63" for 100YR event 7,684 cf 7,684 cf 7,684 cf 7,684 cf 7,684 cf 7,684 cf 00 hrs, dt= 0.05 hrs ert L= 59.0' Ke= 0.200 : 1,043.75' / 1,042.59' S= 0.0197 '/' Cc= 0.900 : coated, Flow Area= 0.79 sf 44.53' TW=1,043.32' (Dynamic Tailwater) nmary for Pond FB: (new Pond) nflow Depth = 7.83" for 100YR event	Type III 24-hr 100YR Rainfall=8.68" Printed 11/10/2021 Page 106
000047 Post-De Prepared by Alle HydroCAD® 10.10- Pack Elev= 1,041 Device Routing #1 Primary Primary OutFlow 1=Culvert (Ou nflow Area = nflow Area nflow Area = nflow area Noting by Dyn-S Peak Elev= 1,044 Device Routing #1 Primary */imary = Routing by Dyn-S Peak Elev= 1,044 Device Routing #1 Primary */imary OutFlow */inflow Area = nflow = Dutflow = Primary =	v-rev1 In Engineering <u>4b s/n 03871 @</u> .84' @ 12.10 hi .84' @ 12.10 hi 1,040.78' Max=2.37 cfs titlet Controls 2. 13,911 sf, 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 2.54 cfs @ 10,043.75' Max=2.49 cfs et Controls 2.49 119,356 sf, 22.98 cfs @ 19.33 cfs @ 19.33 cfs @	g & Associates, Inc. 2020 HydroCAD Softwa rs t Outlet Devices ' 18.0" Round Culv Inlet / Outlet Invert= n = 0.013 Corrugate @ 12.07 hrs HW=1,0 37 cfs @ 2.69 fps) Sum 37.85% Impervious, I 12.06 hrs, Volume= 12.06 hrs, Volume= 12.06 hrs, Volume= 12.06 hrs, Volume= 12.06 hrs, Volume= 12.06 hrs, Volume= 12.06 hrs, Volume= () 12.06 hrs HW=1,0 9 cfs @ 3.77 fps) Sun 78.71% Impervious, I 12.03 hrs, Volume= 12.02 hrs, Volume= 12.02 hrs, Volume=	are Solutions LLC ert L = 7.0' Ke= 0.200 : 1,040.78' / 1,040.68' S= 0.0143 '/' Cc= 0.900 ad PE, smooth interior, Flow Area= 1.77 sf 41.78' TW=1,041.63' (Dynamic Tailwater) nmary for Pond DRI: (new Pond) nflow Depth = 6.63" for 100YR event 7,684 cf 7,684 cf 7,684 cf 00 hrs, dt= 0.05 hrs ert L= 59.0' Ke= 0.200 : 1,043.75' / 1,042.59' S= 0.0197 '/' Cc= 0.900 : coated, Flow Area= 0.79 sf 44.53' TW=1,043.32' (Dynamic Tailwater) nmary for Pond FB: (new Pond) nflow Depth = 7.83" for 100YR event 77,916 cf 76,380 cf, Atten= 16%, Lag= 0.0 min 76,380 cf	Type III 24-hr 100YR Rainfall=8.68" Printed 11/10/2021 Page 106 Page 106

Peak Elev= 1,039.12' @ 12.21 hrs Surf.Area= 1,652 sf Storage= 6,356 cf

Plug-Flow detention time= 30.5 min calculated for 76,301 cf (98% of inflow) Center-of-Mass det. time= 18.1 min (775.2 - 757.0)

Volume	Invert	Avai	il.Storage	Storage Description	า	
#1	1,033.30'		7,896 cf	Custom Stage Dat	ta (Irregular)Listed	d below (Recalc)
Elevation	Sur	f.Area	Perim.	Inc.Store	Cum.Store	Wet.Area
(feet)		(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)
1,033.30		579	98.5	0	0	579
1,034.00		712	108.0	451	451	751
1,036.00		1,036	129.0	1,738	2,189	1,213
1,038.00		1,422	151.0	2,448	4,637	1,777
1,040.00		1,846	172.0	3,259	7,896	2,406

 Device
 Routing
 Invert
 Outlet Devices

 #1
 Primary
 1,035.00'
 153.0 deg x 37

1,035.00' 153.0 deg x 37.0' long Sharp-Crested Vee/Trap Weir Cv= 2.47 (C= 3.09)

Primary OutFlow Max=0.00 cfs @ 12.02 hrs HW=1,037.96' TW=1,038.45' (Dynamic Tailwater) 1=Sharp-Crested Vee/Trap Weir (Controls 0.00 cfs)

Summary for Pond IB: (new Pond)

Inflow Area	a =	132,521 sf, 75.43% Impervious, Inflow Depth = 7	.61" for 100YR event
Inflow	=	21.81 cfs @ 12.02 hrs, Volume= 84,051 cf	
Outflow	=	12.65 cfs @ 12.16 hrs, Volume= 80,956 cf,	Atten= 42%, Lag= 8.3 min
Primary	=	12.65 cfs @ 12.16 hrs, Volume= 80,956 cf	-

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,039.12' @ 12.16 hrs Surf.Area= 4,648 sf Storage= 19,488 cf

Plug-Flow detention time= 74.5 min calculated for 80,872 cf (96% of inflow) Center-of-Mass det. time= 53.5 min (829.2 - 775.7)

HydroCAD	® 10.10-4b	<u>s/n 03871</u>	© 2020 H	ydroCAD Software So	lutions LLC			Page 10
volume #1	1 033 30'	Avaii	.Storage	Storage Description	1 2 (Irrogular) istod	holow (Pocale)		
#1	1,055.50	2	23,701 01	Custom Stage Dat				
Elevation	n Su	ırf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area		
(feet))	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)		
1,033.30)	2,117	216.0	0	0	2,117		
1,034.00)	2,388	227.0	1,576	1,576	2,535		
1,036.00)	3,250	253.5	5,616	7,192	3,656		
1,038.00)	4,145	275.0	7,377	14,569	4,703		
1,040.00)	5,063	295.0	9,193	23,761	5,775		
Device I	Routing	Inv	vert Outle	et Devices				
#1 I	Primary	1,033.	50' 18.0	" Round Culvert L	= 56.0' Ke= 0.200			
			Inlet	/ Outlet Invert= 1,03	3.50'/1,031.00' S	= 0.0446 '/' Cc=	0.900	
	- · ·	4 00 4	n= 0	.013 Corrugated PE	, smooth interior, I	-low Area= 1.// si		
#2 1	Device 1	1,034.	60° 5.0 °	Vert. Orifice/Grate	X 2.00 C= 0.600	Limited to weir flo	w at low heads	
#3 I #4 I		1,036.	94 8.0 ^m	Vert. Orifice/Grate	X 3.00 C= 0.600	Limited to weir flo	w at low neads	
#4 1	Device i Primony	1,030.	20' 452	X 24.0 HOFIZ. UFI	100/Grate C= 0.00	ostod Voo/Trap V	Noir C_{V} = 2.47 (C = 3.00)	
#4 #5	Device 1 Primary	1,038. 1,039.	88' 24.0 20' 153 .	" x 24.0" Horiz. Orif 0 deg x 6.0' long x 2	ice/Grate C= 0.60 2.00' rise Sharp-Ci	0 Limited to weir rested Vee/Trap V	flow at low heads Veir Cv= 2.47 (C= 3.09)	
-1=Culv -2=C -3=C -4=C	vert (Passe Drifice/Grat Drifice/Grat Drifice/Grat	es 12.56 c e (Orifice e (Orifice e (Weir C	cfs of 23.4 cfs of 23.4 controls controls controls 2.	6 cfs potential flow) 2.73 cfs @ 9.99 fps) 6.84 cfs @ 6.54 fps) 99 cfs @ 1.59 fps)	2 100-1,031.36	(Dynamic Tailwate	21)	

Summary for Pond MH1: (new Pond)

Inflow Area	a =	48,347 sf,	82.38% Impervious,	Inflow Depth = 7.	92" for 100YR event
Inflow	=	9.43 cfs @	12.03 hrs, Volume=	31,929 cf	
Outflow	=	9.43 cfs @	12.03 hrs, Volume=	31,929 cf,	Atten= 0%, Lag= 0.0 min
Primary	=	9.43 cfs @	12.03 hrs, Volume=	31,929 cf	-

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 1,039.26' @ 12.23 hrs Flood Elev= 1,040.82'

Device Routing #1 Primary	1,035.77	" 18.0" Round Culv Inlet / Outlet Inverter n= 0.013 Corrugat	rert L= 52.0' Ke= 0.200 = 1,035.77' / 1,035.00' S= (ed PE, smooth interior, Flow	0.0148 '/' Cc= 0.900 w Area= 1.77 sf	
Primary OutFlow	Max=6.72 cfs	@ 12.03 hrs HW=1,0 .72 cfs @ 3.80 fps))38.55' TW=1,038.07' (Dyr	namic Tailwater)	
		Sun	nmary for Pond MH2: (new Pond)	
Inflow Area = Inflow = Outflow = Primary =	25,434 sf, 4.86 cfs @ 4.86 cfs @ 4.86 cfs @	82.76% Impervious, 12.05 hrs, Volume= 12.05 hrs, Volume= 12.05 hrs, Volume=	Inflow Depth = 7.91" for 16,769 cf 16,769 cf, Atten= 0% 16,769 cf	100YR event %, Lag= 0.0 min	
Routing by Dyn-S Peak Elev= 1,039	otor-Ind method 0.42' @ 12.26 h	, Time Span= 0.00-48. rs	00 hrs, dt= 0.05 hrs		
Device Routing #1 Primary	Inver 1,037.52	t Outlet Devices 15.0" Round Culv Inlet / Outlet Invert- n= 0.013 Corrugat	rert L= 120.0' Ke= 0.200 = 1,037.52' / 1,036.02' S= (ed PE, smooth interior, Flor	0.0125 '/' Cc= 0.900 w Area= 1.23 sf	
Primary OutFlow	Max=3.88 cfs utlet Controls 3	@ 12.05 hrs HW=1,0 .88 cfs @ 3.16 fps))39.30' TW=1,038.68' (Dyi	namic Tailwater)	
		Sum	mary for Pond MH3i: (new Pond)	
Inflow Area = Inflow = Outflow = Primary = Secondary =	71,009 sf, 13.55 cfs @ 13.55 cfs @ 11.19 cfs @ 3.95 cfs @	76.21% Impervious, 12.03 hrs, Volume= 12.03 hrs, Volume= 12.04 hrs, Volume= 12.35 hrs, Volume=	Inflow Depth = 7.77" for 45,987 cf 45,987 cf, Atten= 09 23,173 cf 22,814 cf	100YR event 6, Lag= 0.0 min	
)0047 Post-De	ev-rev1	a & Associates Inc.			Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202
00047 Post-De Prepared by Alle HydroCAD® 10.10 Routing by Dyn-S	ev-rev1 en Engineering -4b s/n 03871 (itor-Ind method	g & Associates, Inc. ∋ 2020 HydroCAD Softw , Time Span= 0.00-48.	are Solutions LLC 00 hrs, dt= 0.05 hrs		Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 11
00047 Post-De Prepared by Alle HydroCAD® 10.10 Routing by Dyn-S Peak Elev= 1,039	ev-rev1 en Engineering 4b s/n 03871 @ Stor-Ind method 0.36' @ 12.28 h	g & Associates, Inc. ⊇ 2020 HydroCAD Softw , Time Span= 0.00-48. rs	are Solutions LLC 00 hrs, dt= 0.05 hrs		Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 11
00047 Post-De Prepared by Alle HydroCAD® 10.10 Routing by Dyn-S Peak Elev= 1,039 Device Routing #1 Primary #2 Seconda	ev-rev1 en Engineering 4b s/n 03871 @ stor-Ind method 0.36' @ 12.28 h Inver 1,036.75 ary 1,036.37	g & Associates, Inc. 2 2020 HydroCAD Softw , Time Span= 0.00-48. rs t Outlet Devices ' 5.0' long x 0.5' br Head (feet) 0.20 (Coef. (English) 2.8 '' 12.0'' Round Culv Inlet / Outlet Invert- n= 0.013 Corrugat	are Solutions LLC 00 hrs, dt= 0.05 hrs eadth Broad-Crested Rect .40 0.60 0.80 1.00 .00 2.92 3.08 3.30 3.32 rert L= 5.0' K= 0.200 ert 1,036.37' / 1,036.30' S= (ed PE, smooth interior, Flo	angular Weir 0.0140 '/' Cc= 0.900 w Area= 0.79 sf	Type III 24-hr 100YR Rainfall=8.66 Printed 11/10/202 Page 11
00047 Post-De Prepared by Alle HydroCAD® 10.10 Routing by Dyn-S Peak Elev= 1,035 Device Routing #1 Primary #2 Second: #2 Second: Primary OutFlow	ev-rev1 en Engineering 4b s/n 03871 @ Stor-Ind method 0.36' @ 12.28 h Inver 1,036.75 ary 1,036.37 ary 1,036.37	g & Associates, Inc. 2 2020 HydroCAD Softw , Time Span= 0.00-48. rs t Outlet Devices f 5.0' long x 0.5' br Head (feet) 0.20 (Coef. (English) 2.8 " 12.0" Round Culy Inlet / Outlet Invert- n= 0.013 Corrugat @ 12.04 hrs HW=1,0 lar Weir (Controls 0.0	are Solutions LLC 00 hrs, dt= 0.05 hrs eadth Broad-Crested Rect 0.40 0.60 0.80 1.00 10 2.92 3.08 3.30 3.32 rert L= 5.0' Ke= 0.200 = 1,036.37' / 1,036.30' S= (ed PE, smooth interior, Flov 0.38.06' TW=1,038.24' (Dyn 0 cfs)	angular Weir 0.0140 '/' Cc= 0.900 w Area= 0.79 sf namic Tailwater)	Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 11
00047 Post-De Prepared by Alle HydroCAD® 10.10 Routing by Dyn-S Peak Elev= 1,039 Device Routing #1 Primary #2 Second Primary OutFlow 1=Broad-Cres Secondary OutF	ev-rev1 en Engineering 4b s/n 03871 (itor-Ind method 0.36' @ 12.28 h Inver 1,036.75 ary 1,036.37 v Max=0.00 cfs ited Rectangu Iow Max=0.00 ontrols 0.00 cfs	g & Associates, Inc. 2 0200 HydroCAD Softw , Time Span= 0.00-48. rs t Outlet Devices ' 5.0' Iong x 0.5' br Head (feet) 0.20 (Coef. (English) 2.8 ' 12.0" Round Culv Inlet / Outlet Invert- n= 0.013 Corrugat @ 12.04 hrs HW=1,(Iar Weir (Controls 0.0 cfs @ 12.35 hrs HW= s)	are Solutions LLC 00 hrs, dt= 0.05 hrs eadth Broad-Crested Rect).40 0.60 0.80 1.00 10 2.92 3.08 3.30 3.32 ert L = 5.0' Ke= 0.200 = 1,036.37' / 1,036.30' S= (ed PE, smooth interior, Flor)38.06' TW=1,038.24' (Dyr 0 cfs) =1,037.83' TW=1,039.85' (angular Weir 0.0140 '/' Cc= 0.900 w Area= 0.79 sf namic Tailwater) Dynamic Tailwater)	Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 11
00047 Post-De Prepared by Alle HydroCAD® 10.10 Routing by Dyn-S Peak Elev= 1,035 Device Routing #1 Primary #2 Second #1 Primary #2 Second Frimary OutFlow 1=Broad-Cres Secondary OutF	ev-rev1 en Engineering 4b s/n 03871 @ itor-Ind method 0.36' @ 12.28 h Inver 1,036.75 ary 1,036.37 ary 1,036.37 w Max=0.00 cfs sted Rectangu Iow Max=0.00 cfs	g & Associates, Inc. 2 2020 HydroCAD Softw , Time Span= 0.00-48. rs t Outlet Devices ' 5.0' long x 0.5' brn Head (feet) 0.20 (Coef. (English) 2.8 '' 12.0'' Round Culv Inlet / Outlet Inverts n= 0.013 Corrugat (@ 12.04 hrs HW=1,0 lar Weir (Controls 0.0 cfs @ 12.35 hrs HW=) Sum	are Solutions LLC 00 hrs, dt= 0.05 hrs eadth Broad-Crested Rect 0.40 0.60 0.80 1.00 10 2.92 3.08 3.30 3.32 rert L= 5.0' Ke= 0.200 e1,036.37' / 1,036.30' S= (ed PE, smooth interior, Flow 0.38.06' TW=1,038.24' (Dyn 0 cfs) c1,037.83' TW=1,039.85' (mary for Pond MH30: (angular Weir 0.0140 '/' Cc= 0.900 w Area= 0.79 sf namic Tailwater) Dynamic Tailwater)	Type III 24-hr 100YR Rainfall=8.68 Printed 11/10/202 Page 11
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Inflow Ar	ea =	71,009 sf, 7	6.21% Impervious,	, Inflow Depth = 7.77" for 100YR event	
Inflow	=	13.55 cfs @ 1	2.03 hrs, Volume=	45,987 cf	
Outflow	=	13.55 cfs @ 1	2.03 hrs, Volume=	45,987 cf, Atten= 0%, Lag= 0.0 min	
Primary	=	13.55 cfs @ 1	2.03 hrs, Volume=	45,987 cf	
Routing Peak Ele	by Dyn-S ev= 1,039	Stor-Ind method, ⁻ 9.29' @ 12.32 hrs	Time Span= 0.00-48	8.00 hrs, dt= 0.05 hrs	
Device	Routing	Invert	Outlet Devices		

 #1
 Primary
 1,037.35'
 24.0" Round Culvert L= 57.0'
 Ke= 0.200

 Inlet / Outlet Invert= 1,037.35' / 1,036.37'
 S= 0.0172 '/'
 Cc= 0.900

 n= 0.013
 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=11.35 cfs @ 12.03 hrs HW=1,038.95' TW=1,038.02' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 11.35 cfs @ 5.76 fps)

Summary for Pond MH5: (new Pond)

Inflow Area	a =	28,054 sf,	89.14% Impervious,	Inflow Depth = 8.15"	for 100YR event
Inflow	=	6.11 cfs @	12.01 hrs, Volume=	19,050 cf	
Outflow	=	6.11 cfs @	12.01 hrs, Volume=	19,050 cf, Atte	en= 0%, Lag= 0.0 min
Primary	=	6.11 cfs @	12.01 hrs, Volume=	19,050 cf	-

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,041.05' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	1,039.89'	18.0" Round Culvert L= 132.0' Ke= 0.200 Inlet / Outlet Invert= 1,039.89' / 1,038.44' S= 0.0110 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.89 cfs @ 12.01 hrs HW=1,041.02' TW=1,038.90' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 5.89 cfs @ 5.73 fps)

Summary for Pond MH6: (new Pond)	
32,273 sf, 60.28% Impervious, Inflow Depth = 7.31" for 100YR event 6.06 cfs @ 12.06 hrs, Volume= 19,666 cf 6.06 cfs @ 12.06 hrs, Volume= 19,666 cf, Atten= 0%, Lag= 0.0 min 6.06 cfs @ 12.06 hrs, Volume= 19,666 cf or-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 5' @ 12.06 hrs	
Invert Outlet Devices 1,040.58' 18.0'' Round Culvert L= 116.0' Ke= 0.200 Inlet (Outlet Invert= 1.040.58' / 1.038.84', S= 0.0150.1'/, Cc= 0.1	900
Controls 5.89 cfs @ 4.39 fps) Summary for Pond MH7: (new Pond)	
13 911 sf 37 85% Impervious Inflow Depth = 6.63" for 100YR event	
2.54 cfs @ 12.06 hrs, Volume= 7,684 cf 2.54 cfs @ 12.06 hrs, Volume= 7,684 cf, Atten= 0%, Lag= 0.0 min 2.54 cfs @ 12.06 hrs, Volume= 7,684 cf	
r-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 3' @ 12.06 hrs	
Invert Outlet Devices	
1,042.49' 12.0" Round Culvert L= 23.0' Ke= 0.200 Inlet / Outlet Invert= 1,042.49' / 1,042.04' S= 0.0196 '/' Cc= 0.1000 Corrugated PE, smooth interior, Flow Area= 0.79 sf	900
	3.06 cts @ 12.06 hrs, Volume= 19,666 cf -Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 19,666 cf -Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 10,040.58' Invert Outlet Devices 1,040.58' 18.0" Round Culvert L= 116.0' Ke= 0.200 Inlet / Outlet Invert= 1,040.58' / 1,038.84' S= 0.0150 '/' Cc= 0.9 methods n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf Max=5.89 cfs @ 12.06 hrs HW=1,041.64' TW=1,038.98' (Dynamic Tailwater) Controls 5.89 cfs @ 4.39 fps) Summary for Pond MH7: (new Pond) 13,911 sf, 37.85% Impervious, Inflow Depth = 6.63" for 100YR event 2.54 cfs @ 12.06 hrs, Volume= 7,684 cf 2.54 cfs @ 12.06 hrs, Volume= 7,684 cf r-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs 3'@ 12.06 hrs ''@ 12.06 hrs Volume= 7,684 cf 'Inder Houte Devices 1,042.49' 12.0" Round Culvert L= 23.0' Ke= 0.200 Inlet / Outlet Devices 1,042.49' 12.0" Round Culvert L= 23.0' Ke= 0.200 Inlet / Outlet Invert= 1,042.49' / 1,042.04' S= 0.0196 '/' Cc= 0. n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Summary for Pond STU1: (new Pond)

Inflow	=	3.95 cfs @	12.35 hrs,	Volume=	22,814 cf
Outflow	=	3.95 cfs @	12.35 hrs,	Volume=	22,814 cf, Atten= 0%, Lag= 0.0 min
Primary	=	3.95 cfs @	12.35 hrs,	Volume=	22,814 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs Peak Elev= 1,040.07' @ 12.37 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	1,036.30'	12.0" Round Cu

 1,036.30'
 12.0''
 Round Culvert
 L= 5.0'
 Ke= 0.200

 Inlet / Outlet Invert= 1,036.30' / 1,036.20'
 S= 0.0200 '/'
 Cc= 0.900

 n= 0.013
 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.12 cfs @ 12.35 hrs HW=1,039.85' TW=1,039.09' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 4.12 cfs @ 5.24 fps)



Massachusetts Department of Environmental Protection Bureau of Resource Protection - Wetlands Program Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Longterm Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



Signature and Date

9/23/2,

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

New development



Mix of New Development and Redevelopment



LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- No disturbance to any Wetland Resource Areas
- Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
 - Credit 1
 - Credit 2
 - Credit 3
- Use of "country drainage" versus curb and gutter conveyance and pipe
- Bioretention Cells (includes Rain Gardens)
- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- □ Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe): Country drainage was considered, however the land area required to implement it conflicted with the space needed for required parking

Standard 1: No New Untreated Discharges

- No new untreated discharges
- \boxtimes Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

Calculations provided to show that post-development peak discharge rates do not exceed predevelopment rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24hour storm.

Standard 3: Recharge

\boxtimes	Soil /	Analy	/sis	provided.
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- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.

🖂 Static	Simple Dynamic
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Dynamic Field¹

- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

\boxtimes	Recharge BMPs	have been s	sized to infiltrate	the Required	Recharge Volume.
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- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
 - Site is comprised solely of C and D soils and/or bedrock at the land surface
 - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - Solid Waste Landfill pursuant to 310 CMR 19.000
 - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- \boxtimes Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

	Property includes a M.G.L. c. 21E site or a solid waste landfill and a mount	nding analysis is included.
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¹ 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
- Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
 - is within the Zone II or Interim Wellhead Protection Area
 - is near or to other critical areas
 - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
 - \boxtimes involves runoff from land uses with higher potential pollutant loads.
- The Required Water Quality Volume is reduced through use of the LID site Design Credits.
- Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



Checklist (c	continued)
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Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
 - The 1/2" or 1" Water Quality Volume or
 - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does *not* cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has *not* been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

Limited Projec

- Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- Bike Path and/or Foot Path
- Redevelopment Project
- Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has *not* been included in the Stormwater Report but will be submitted *before* land disturbance begins.
- The project is *not* covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
 - Name of the stormwater management system owners;
 - Party responsible for operation and maintenance;
 - Schedule for implementation of routine and non-routine maintenance tasks;
 - Plan showing the location of all stormwater BMPs maintenance access areas;
 - Description and delineation of public safety features;
 - Estimated operation and maintenance budget; and
 - Operation and Maintenance Log Form.
- The responsible party is *not* the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
 - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
 - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted *prior to* the discharge of any stormwater to post-construction BMPs.

STORMWATER MANAGEMENT COMPLIANCE

<u>Standard #1</u> No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

• No new conveyances will discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. The new stormwater discharges are treated and provided with hardened outfalls to avoid surface erosion.

Standard #2 Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.

• See table, Page iii, "Summary of Peak Rates of Stormwater Runoff" Site post-development peak discharge rates do not exceed existing peak discharge rates. The peak rate/HydroCAD calculations herein do not include any dynamic infiltration/exfiltration discharges for peak rate attenuation.

Standard #3 Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

• <u>Recharge Volume</u>

(Impervious area = proposed buildings, walkways, paved parking, and driveways)Impervious area HSG-C (0.25") = 25,658 sfRequired Recharge = 535 cfImpervious area HSG-C/D (0.25") = 68,284 sfRequired Recharge = 1,423 cf

Total Recharge Required1,958 cfTotal Recharge Provided3,083 cf(Basin volume at lowest outlet)

• <u>Recharge Drawdown (Static)</u>

Infiltration Basin – Bottom Area = 2,117 sf, Volume at lowest outlet = 3,083 cf 3,083 cf/2,117 sf = 1.46 ft or 17.48 inches 1982 Rawls Rate = 0.27" per hour (Silt Loam) 17.48"/0.27" per hour = 64.7 hours

Recharge Drawdown Required72 hours MaximumRecharge Drawdown Provided65 hours

<u>Standard #4</u> Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:

a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;b. Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and

c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

Water Quality Volume (WQV)

Building #1603 Site (1/2" Treatment)

Required volume = 0.5" (0.04167') x Impervious Paved Area (Driveway/Parking) Impervious Paved Area (sf) = 28,132 sf <u>WQV Required = 1,173 cf</u> <u>WQV Provided = 1,940 cf</u>

Building #1605 Site (LUHPPL-1.0" Treatment)

WQV Conversion to Water Quality Flow (WQF) Q₁ Discharge Rate Q₁=(qu)(A)(WQV)

qu=831 csm/in (Tc=0.05hr, Ia/P=0.034) A=0.00156 sm (43,470 sf impervious paved area=0.00156 sm) WQV=1" Q1=(831)(0.00156)(1)=1.31 cfs

<u>WQF Required = 1.30 cfs</u> WQF Provided = 1.89 cfs*

WQF Provided = 1.88 cfs*

(*Hydro International First Defense High-Capacity FD-4HC, max. treatment flow rate)

Sediment Forebay Volume

Required volume = 0.1" (0.0083') x Impervious Paved Area (Roads/Driveways)Total Paved Area = 71,602 sf71,602 x .0083 =**597 cf Required**1,239 cf Provided

Total Suspended Solids Removal (TSS)

TSS Removal Required = 80%

TSS Removal Provided

Building #1603 Site = $\underline{85\%^{**}}$ Building #1605 Site = $\underline{88\%^{**}}$ (**TSS Worksheets follow)



Version 1, Automated: Mar. 4, 2008

 \geq

Mass. Dept. of Environmental Protection

INSTRUCTIONS:

Non-automated: Mar. 4, 2008

1. Sheet is nonautomated. Print sheet and complete using hand calculations. Column A and B: See MassDEP Structural BMP Table

2. The calculations must be completed using the Column Headings specified in Chart and Not the Excel Column Headings

To complete Chart Column D, multiple Column B value within Row x Column C value within Row
 To complete Chart Column E value, subtract Column D value within Row from Column C within Row

5. Total TSS Removal = Sum All Values in Column D

	ш	Remaining	Load (C-D)	0.75		0.15	0.12			Separate Form Needs to	Outlet or BMP Train	Ð	n previous BMP (E)	
	Ω	Amount	Removed (B*C)	0.25		09.0	0.03			/000	% 00		*Equals remaining load fror	which enters the BMP
ster, MA (LUHPPL)	O	Starting TSS	Load*		1.00	0.75	0.15			Data Follows	SS Removal =	-		
#1605 Main Street, Leice	В	TSS Removal	Rate ¹	0.25		0.80*	0.25			*Manufacturer's [Total T	00047	B.Williams	04-05-2021
Location:	A		BMP ¹	Deep Sump Catch Basin		Proprietary Separator	Sediment Forebay					Project:	Prepared By:	Date:
Calculation Worksheet Calculation Worksheet														

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed 1. From MassDEP Stormwater Handbook Vol. 1

<u>Standard #5</u> For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable.

• The #1605 Building site does meet the criteria to be designated as a "LUHPPL as it has an auto fueling facility and parking lot with high intensity use. The fueling area shall be protected from precipitation and runoff by an overhead canopy. A positive Limiting Barrier will be installed as required to contain fuel spills. All surface runoff from this portion of the site will be routed through an off-line oil grit separator. Water quality calculations and BMP's for this area are based on the "1 inch rule" and 44% TSS removal pre-treatment requirement (see Standard 4).

Standard #6 Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook.

• Stormwater does not discharge within the Zone II or Interim Wellhead Protection Area of a public water supply or to any other critical area.

Standard #7 A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

• The site is not a redevelopment project.

<u>Standard #8</u> A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

• The plan set includes an Erosion Control Plan (Sheet 7). Notes and construction details are provided to avoid sediment migration and construction period erosion. Additional detailed methods and schedules to be incorporated into the Storm Water Pollution Prevention Plan as required by the EPA/NPDES Construction Activities Permit prior to construction.

<u>Standard #9</u> A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

• Long-term operation and maintenance plan

The proposed stormwater management system and the Best Management Practices (BMP's) are to be constructed in accordance with the approved site design plans. During the construction process the

general site contractor and property owner shall be designated as the owners of the BMP's and will be responsible for their operation and maintenance. Once the BMP's are constructed, they are to be protected from sedimentation until the site is stabilized and vegetated. Inspections should be performed routinely and after every major storm event. Any accumulated sediments and debris are to be removed and any eroded areas are to be re-graded and re-vegetated.

Post-Development Phase Ownership:

After the completion of the site construction, the entire drainage system will be the responsibility of the property owner, currently Leicester Main, LLC.

Emergency Fuel Spill Response:

In the event of a fuel spill the responsible party shall call 9-1-1. They shall follow local and state removal procedures for the contaminant. The responsible contractor shall also call the Leicester Board of Health at (508) 892-7008, and the Mass DEP at (508) 792-7650. Any contaminated soil must be completely removed from the property and be delivered to a certified land fill.

Operation & Maintenance:

The following are the minimum maintenance criteria for the proposed BMP's. Responsible parties should however review the Mass DEP Stormwater Handbook for further explanation.

Deep Sump Hooded Catch Basins and Manholes

The catch basin shall be inspected and cleaned twice per year (early spring/late fall) and after each major storm event. Also, any catch basin or manhole shall be cleaned out if 12 inches of sediment has accumulated. Inspections shall include structural integrity of hood, depth of sediment in sump and amount of trash and/or debris around grate. Any leaf litter and/or debris shall be removed from catch basin grates after each major storm event.

Stormwater Treatment Unit

The operation and maintenance of the First Defense High Capacity vortex separator shall be performed per the owner's manual found in Section 4 of this report.

Sediment Forebay and Infiltration Basin

In the first few months of use inspect the basin after every major storm to ensure it is stabilized and functioning properly. Thereafter mow grass and inspect at least twice per year. Remove grass clippings and any accumulated organic matter and debris. Remove sediment within forebay when within six inches of weir crest. Perform maintenance only when dry – do not compact the basin bottom.

Standard #10

Illicit Discharge Compliance Statement

Owner:Leicester Main, LLCAddress:One Charlesview Road, Suite 1, Hopedale, MA 01747Tel.(508) 478-6235

Responsibility

Owners are responsible for ultimate compliance with all provisions of the Massachusetts Stormwater Management Policy, the USEPA NPDES Construction General Permit and responsible for identifying and eliminating illicit discharges (as defined by the USEPA).

Engineer's Compliance Statement:

To the best of my knowledge, the submitted plans, computations and specifications meet the requirements of Standard 10 of the Massachusetts Stormwater Handbook regarding illicit discharges to the stormwater management system and that no detectable illicit discharges exist on the site. All documents and attachments were prepared under my direction and qualified personnel properly gathered and evaluated the information submitted, to the best of my knowledge.

Included with this statement are site plans, drawn to scale, that identify the location of systems for conveying stormwater on the site and show that these systems do not allow the entry of any illicit discharges into the stormwater management system. The plans also show any systems for conveying wastewater and/or groundwater on the site and show that there are no connections between the stormwater and wastewater systems.

For a redevelopment project (if applicable), all actions taken to identify and remove illicit discharges, including without limitation, visual screening, dye or smoke testing, and the removal of any sources of illicit discharges to the stormwater management system are documented and included with this statement.

Professional Engineer

Date

Supplemental Information



National Flood Hazard Layer FIRMette

250

500

1,000

1,500





The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 12/2/2020 at 7:55 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



2,000

FORM 11 - SOIL EVALUATOR FORM Page 2 of 3

Location Address or Lot No.: 1603 & 1605 Main St Leicester, Massachusetts

On-site Review

Deep Hole Number: DTH-3 Date: 7/25/13 Time: 11:00 am Weather: Clouds 65°F Location (identify on site plan): Land Use: Wooded Residential Slope (%): 3-5% Surface Stones: Few Wooded with Pines, Maple, Oaks Vegetation: Landform: **Outwash Plain** Position on landscape: (sketch on the back): See Attached Plan Distances from: Open Water Body: ≥ 100 feet Drainage Way: ≥100 feet Possible Wet Area: ≥ 100 feet Property Line: $65\pm$ feet Drinking Water Well: N/A Other:

DEEP OBSERVATION HOLE LOG*

Depth from	Soil Horizon	Soil Texture	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders,
Surface (menes)		(USDA)	(Mulisell)		Consistency, & Oraver)
0-10"	O/A	SL	10 YR 3/2		
10"-30"	В	SL	10 YR 6/8		
30"-96"	С	Sandy Loam	10 YR 4/4	@52" 5 Y 5/8	Small & Large Stones Throughout 2" – 12" diam., sharp angular

MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

 Parent Material (geologic):
 glacial outwash
 Depth to Bedrock:
 96"

 Depth to Groundwater:
 Standing Water in the Hole:
 None Found
 Weeping from Pit Face:
 None Found

 Estimated Seasonal High Groundwater:
 52" to mottles

 DEP APPROVED FORM – 12/07/95

FORM 11 - SOIL EVALUATOR FORM Page 2 of 3

Location Address or Lot No.: 1603 & 1605 Main St Leicester, Massachusetts

On-site Review

Deep Hole Number: DTH-4 Date: 7/25/13 Time: 11:00 am Weather: Clouds 65°F Location (identify on site plan): Surface Stones: Few Land Use: Wooded Residential Slope (%): 3-5% Wooded with Pines, Maple, Oaks Vegetation: Landform: Outwash Plain Position on landscape: (sketch on the back): See Attached Plan Distances from: Open Water Body: ≥ 100 feet Drainage Way: ≥100 feet Possible Wet Area: ≥ 100 feet Property Line: $110\pm$ feet Drinking Water Well: N/A Other:

DEEP OBSERVATION HOLE LOG*

Depth from Surface (Inches)	Soil Horizon	Soil Texture	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency & Gravel)
Surface (menes)		(USDII)	(Withisteri)		
0-8"	O/A	SL	10 YR 3/2		
8"-26"	В	SL	10 YR 6/8		
26"-120"	С	Sandy Loam	10 YR 4/4	@56" 5 Y 5/8	Small & Large Stones Throughout 2" – 12" diam., sharp angular

MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

 Parent Material (geologic):
 glacial outwash
 Depth to Bedrock:
 120"

 Depth to Groundwater:
 Standing Water in the Hole:
 None Found
 Weeping from Pit Face:
 None Found

 Estimated Seasonal High Groundwater:
 56" to mottles

 DEP APPROVED FORM – 12/07/95



United States Department of Agriculture

Natural Resources Conservation Service A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants Custom Soil Resource Report for Worcester County, Massachusetts, Southern Part



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/? cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Custom Soil Resource Report

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Descriptions (00047)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas

shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Worcester County, Massachusetts, Southern Part

307B—Paxton fine sandy loam, 0 to 8 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w675 Elevation: 0 to 1,580 feet Mean annual precipitation: 36 to 71 inches Mean annual air temperature: 39 to 55 degrees F Frost-free period: 140 to 240 days Farmland classification: Not prime farmland

Map Unit Composition

Paxton, extremely stony, and similar soils: 80 percent Minor components: 20 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton, Extremely Stony

Setting

Landform: Drumlins, hills, ground moraines Landform position (two-dimensional): Summit, shoulder, backslope Landform position (three-dimensional): Crest, side slope Down-slope shape: Linear, convex Across-slope shape: Convex, linear Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material *A - 2 to 10 inches:* fine sandy loam *Bw1 - 10 to 17 inches:* fine sandy loam *Bw2 - 17 to 28 inches:* fine sandy loam *Cd - 28 to 67 inches:* gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7s Hydrologic Soil Group: C Ecological site: F144AY007CT - Well Drained Dense Till Uplands Hydric soil rating: No
Minor Components

Woodbridge, extremely stony

Percent of map unit: 10 percent Landform: Ground moraines, drumlins, hills Landform position (two-dimensional): Backslope, footslope, summit Landform position (three-dimensional): Side slope, crest Down-slope shape: Concave Across-slope shape: Linear Hydric soil rating: No

Charlton, extremely stony

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Shoulder, summit, backslope Landform position (three-dimensional): Crest, side slope Down-slope shape: Convex Across-slope shape: Convex Hydric soil rating: No

Ridgebury, extremely stony

Percent of map unit: 4 percent Landform: Hills, ground moraines, depressions, drainageways, drumlins Landform position (two-dimensional): Toeslope, footslope Landform position (three-dimensional): Base slope, head slope Down-slope shape: Concave Across-slope shape: Concave Hydric soil rating: Yes

Whitman, extremely stony

Percent of map unit: 1 percent Landform: Depressions Down-slope shape: Concave Across-slope shape: Concave Hydric soil rating: Yes

310B—Woodbridge fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t2ql Elevation: 0 to 1,470 feet Mean annual precipitation: 36 to 71 inches Mean annual air temperature: 39 to 55 degrees F Frost-free period: 140 to 240 days Farmland classification: All areas are prime farmland

Map Unit Composition

Woodbridge, fine sandy loam, and similar soils: 82 percent Minor components: 18 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodbridge, Fine Sandy Loam

Setting

Landform: Hills, drumlins, ground moraines Landform position (two-dimensional): Backslope, footslope, summit Landform position (three-dimensional): Side slope Down-slope shape: Concave Across-slope shape: Linear Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 7 inches: fine sandy loam Bw1 - 7 to 18 inches: fine sandy loam Bw2 - 18 to 30 inches: fine sandy loam Cd - 30 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: C/D Ecological site: F144AY037MA - Moist Dense Till Uplands Hydric soil rating: No

Minor Components

Paxton

Percent of map unit: 10 percent Landform: Drumlins, hills, ground moraines Landform position (two-dimensional): Backslope, summit, shoulder Landform position (three-dimensional): Side slope, crest, nose slope Down-slope shape: Linear, convex Across-slope shape: Convex Hydric soil rating: No

Ridgebury

Percent of map unit: 8 percent Landform: Drainageways, hills, ground moraines, depressions Landform position (two-dimensional): Backslope, footslope, toeslope Landform position (three-dimensional): Head slope, base slope, dip Down-slope shape: Concave Across-slope shape: Concave Hydric soil rating: Yes Custom Soil Resource Report

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group (00047)

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Table—Hydrologic Soil Group (00047)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
307B	Paxton fine sandy loam, 0 to 8 percent slopes, extremely stony	C	1.0	20.2%
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	4.0	79.8%
Totals for Area of Interest			5.0	100.0%

Rating Options—Hydrologic Soil Group (00047)

Aggregation Method: Dominant Condition Component Percent Cutoff: None Specified Tie-break Rule: Higher

Depth to Any Soil Restrictive Layer (00047)

A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is presented. If no restrictive layer is described in a map unit, it is represented by the "> 200" depth class.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Table—Depth to Any Soil Restrictive Layer (00047)

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
307B	Paxton fine sandy loam, 0 to 8 percent slopes, extremely stony	71	1.0	20.2%
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	76	4.0	79.8%
Totals for Area of Interest			5.0	100.0%

Rating Options—Depth to Any Soil Restrictive Layer (00047)

Units of Measure: centimeters Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

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Operation and Maintenance Manual

First Defense® High Capacity and First Defense® Optimum

Vortex Separator for Stormwater Treatment

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I. First Defense® by Hydro International

Introduction

The First Defense[®] is an enhanced vortex separator that combines an effective and economical stormwater treatment chamber with an integral peak flow bypass. It efficiently removes total suspended solids (TSS), trash and hydrocarbons from stormwater runoff without washing out previously captured pollutants. The First Defense[®] is available in several model configurations to accommodate a wide range of pipe sizes, peak flows and depth constraints.

The two product models described in this guide are the First Defense[®] High Capacity and the First Defense[®] Optimum; they are inspected and maintained identically.

Operation

The First Defense[®] operates on simple fluid hydraulics. It is selfactivating, has no moving parts, no external power requirement and is fabricated with durable non-corrosive components. No manual procedures are required to operate the unit and maintenance is limited to monitoring accumulations of stored pollutants and periodic clean-outs. The First Defense[®] has been designed to allow for easy and safe access for inspection, monitoring and clean-out procedures. Neither entry into the unit nor removal of the internal components is necessary for maintenance, thus safety concerns related to confined-spaceentry are avoided.

Pollutant Capture and Retention

The internal components of the First Defense[®] have been designed to optimize pollutant capture. Sediment is captured and retained in the base of the unit, while oil and floatables are stored on the water surface in the inner volume (Fig.1).

The pollutant storage volumes are isolated from the built-in bypass chamber to prevent washout during high-flow storm events. The sump of the First Defense[®] retains a standing water level between storm events. This ensures a quiescent flow regime at the onset of a storm, preventing resuspension and washout of pollutants captured during previous events.

Accessories such as oil absorbent pads are available for enhanced oil removal and storage. Due to the separation of the oil and floatable storage volume from the outlet, the potential for washout of stored pollutants between clean-outs is minimized.

Applications

- Stormwater treatment at the point of entry into the drainage line
- Sites constrained by space, topography or drainage profiles with limited slope and depth of cover
- Retrofit installations where stormwater treatment is placed on or tied into an existing storm drain line
- · Pretreatment for filters, infiltration and storage

Advantages

- · Inlet options include surface grate or multiple inlet pipes
- Integral high capacity bypass conveys large peak flows without the need for "offline" arrangements using separate junction manholes
- Long flow path through the device ensures a long residence time within the treatment chamber, enhancing pollutant settling
- Delivered to site pre-assembled and ready for installation



Fig.1 Pollutant storage volumes in the First Defense®.

II. Model Sizes & Configurations

The First Defense[®] inlet and internal bypass arrangements are available in several model sizes and configurations. The components have modified geometries allowing greater design flexibility to accommodate various site constraints.

All First Defense[®] models include the internal components that are designed to remove and retain total suspended solids (TSS), gross solids, floatable trash and hydrocarbons (Fig.2). First Defense[®] model sizes (diameter) are shown in Table 1.

III. Maintenance

First Defense® Components

- 1. Built-In Bypass
- 2. Inlet Pipe
- 3. Inlet Chute
- 4. Floatables Draw-off Port
- 5. Outlet Pipe
- 6. Floatables Storage
- 7. Sediment Storage
- 8. Inlet Grate or Cover



Overview

The First Defense[®] protects the environment by removing a wide range of pollutants from stormwater runoff. Periodic removal of these captured pollutants is essential to the continuous, long-term functioning of the First Defense[®]. The First Defense[®] will capture and retain sediment and oil until the sediment and oil storage volumes are full to capacity. When sediment and oil storage capacities are reached, the First Defense[®] will no longer be able to store removed sediment and oil.

The First Defense[®] allows for easy and safe inspection, monitoring and clean-out procedures. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables. Access ports are located in the top of the manhole.

Maintenance events may include Inspection, Oil & Floatables Removal, and Sediment Removal. Maintenance events do not require entry into the First Defense[®], nor do they require the internal components of the First Defense[®] to be removed. In the case of inspection and floatables removal, a vactor truck is not required. However, a vactor truck is required if the maintenance event is to include oil removal and/or sediment removal.

Maintenance Equipment Considerations

The internal components of the First Defense[®] have a centrally located circular shaft through which the sediment storage sump can be accessed with a sump vac hose. The open diameter of this access shaft is 15 inches in diameter (Fig.3). Therefore, the nozzle fitting of any vactor hose used for maintenance should be less than 15 inches in diameter.



Fig.3 The central opening to the sump of the First Defense®is 15 inches in diameter.

Determining Your Maintenance Schedule

The frequency of clean out is determined in the field after installation. During the first year of operation, the unit should be inspected every six months to determine the rate of sediment and floatables accumulation. A simple probe such as a Sludge-Judge[®] can be used to determine the level of accumulated solids stored in the sump. This information can be recorded in the maintenance log (see page 9) to establish a routine maintenance schedule.

The vactor procedure, including both sediment and oil / flotables removal, for First Defense[®] typically takes less than 30 minutes and removes a combined water/oil volume of about 765 gallons.

Inspection Procedures

- Set up any necessary safety equipment around the access port or grate of the First Defense[®] as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.
- 2. Remove the grate or lid to the manhole.
- Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities. Fig.4 shows the standing water level that should be observed.
- Without entering the vessel, use the pole with the skimmer net to remove floatables and loose debris from the components and water surface.
- Using a sediment probe such as a Sludge Judge[®], measure the depth of sediment that has collected in the sump of the vessel.
- 6. On the Maintenance Log (see page 9), record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components or blockages.
- 7. Securely replace the grate or lid.
- 8. Take down safety equipment.
- Notify Hydro International of any irregularities noted during inspection.

Floatables and Sediment Clean Out

Floatables clean out is typically done in conjunction with sediment removal. A commercially or municipally owned sumpvac is used to remove captured sediment and floatables (Fig.4).

Floatables and loose debris can also be netted with a skimmer and pole. The access port located at the top of the manhole provides unobstructed access for a vactor hose to be lowered to the base of the sump.

Scheduling

- Floatables and sump clean out are typically conducted once a year during any season.
- Floatables and sump clean out should occur as soon as possible following a spill in the contributing drainage area.

First Defense® Operation and Maintenance Manual



Fig.4 Floatables are removed with a vactor hose

Recommended Equipment

- · Safety Equipment (traffic cones, etc)
- · Crow bar or other tool to remove grate or lid
- Pole with skimmer or net (if only floatables are being removed)
- Sediment probe (such as a Sludge Judge[®])
- · Vactor truck (flexible hose recommended)
- First Defense® Maintenance Log

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102 Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

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Floatables and Sediment Clean Out Procedures

- Set up any necessary safety equipment around the access port or grate of the First Defense[®] as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.
- 2. Remove the grate or lid to the manhole.
- **3.** Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities.
- 4. Remove oil and floatables stored on the surface of the water with the vactor hose or with the skimmer or net
- Using a sediment probe such as a Sludge Judge[®], measure the depth of sediment that has collected in the sump of the vessel and record it in the Maintenance Log (page 9).
- Once all floatables have been removed, drop the vactor hose to the base of the sump. Vactor out the sediment and gross debris off the sump floor
- 7. Retract the vactor hose from the vessel.
- 8. On the Maintenance Log provided by Hydro International, record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components, blockages, or irregularly high or low water levels.
- 9. Securely replace the grate or lid.

Maintenance at a Glance

Inspection	- Regularly during first year of installation
Oil and Floatables	- Once per year, with sediment removal
Removal	- Following a spill in the drainage area
Sediment Removal	- Once per year or as needed
	- Following a spill in the drainage area
NOTE: For most clear first few inches of oils	n outs the entire volume of liquid does not need to be removed from the manhole. Only remove the and floatables from the water surface to reduce the total volume of liquid removed during a clean out.



First Defense® Installation Log

HYDRO INTERNATIONAL REFERENCE NUMBER:	
SITE NAME:	
SITE LOCATION:	
OWNER:	CONTRACTOR:
CONTACT NAME:	CONTACT NAME:
COMPANY NAME:	COMPANY NAME:
ADDRESS:	ADDRESS:
TELEPHONE:	TELEPHONE:
FAX:	FAX:

INSTALLATION DATE: / /

MODEL SIZE (CIRCLE ONE):[3-FT][4-FT][5-FT][6-FT][8-FT][10-FT]INLET (CIRCLE ALL THAT APPLY):GRATED INLET (CATCH BASIN)INLET PIPE (FLOW THROUGH)



First Defense[®] Inspection and Maintenance Log

Date	Initials	Depth of Floatables and Oils	Sediment Depth Measured	Volume of Sediment Removed	Site Activity and Comments

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Notes



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