

TECHNICAL MEMORANDUM

TO:	City of Port Orchard
FROM:	Whitney Holm, PE
DATE:	July 3, 2018
SUBJECT:	Sedgwick and Bethel Stormwater Concept Plan

1. **PROJECT OVERVIEW**

1.1 Introduction

The City of Port Orchard is proposing major corridor improvements along Bethel Road, between Sedgwick Road (SR 160) and Mile Hill Drive (SR 166), and Sedgwick Road, between SR 16 and Bethel Road. The improvements include roundabouts, roadway widening, nonmotorized facilities, and stormwater facilities. The improvements stretch for roughly 3 miles. This memorandum summarizes the hydraulic features required to treat, store, and discharge stormwater associated with the proposed roadway improvements. While construction is expected to be phased over time, this analysis considered the full build-out. Eight basins were identified for the project area. A basin map is attached.

1.2 Design Criteria

All stormwater improvements proposed have been designed per the Port Orchard Municipal Code Section 20.150 (POMC). Port Orchard has adopted the 2012 Edition (as amended in December 2014) of the Washington State Department of Ecology Stormwater Manual for Western Washington (SWMMWW), and the 2012 Edition of the Puget Sound Partnership Low Impact Development Technical Guidance Manual for Puget Sound. Western Washington Hydrology Model 2012 (WWHM) was used to model the ponds.

2. STORMWATER MANAGEMENT

2.1 Overview

For the preliminary design, it was assumed the runoff from the roadway would sheet into bioretention swales abutting the roadway on both sides. There will be curb cuts every 30 feet to allow the runoff to enter the bioretention swale. The stormwater will be treated through the bioretention swale and then be conveyed by pipes and catch basins to an infiltration pond. The ponds have been designed to either release at the predeveloped rate, per the SWMMWW, or infiltrate 100% of stormwater.



2.2 Modeling

The project is broken up into eight basins. Each basin has been designed to flow to an infiltration pond. Basins 2 and 3 as well as Basins 6 and 7 share a pond.

The basins were determined by analyzing the contours of the area. For the predeveloped scenario the land cover was modeled 100% as forested. The developed impervious area was determined by using Googlemap images dating back to 1990. The developed scenario was modeled using the proposed impervious area from the roadway project as well as all the impervious areas that existed prior to 1990. The rest of the area was assumed to be forested. Any post-1990 development was most likely required to be managed and discharged at predeveloped rates.

Areas	Basin 1	Basin 2	Basin 3	Basin 4	Basin 5	Basin 6	Basin 7	Basin 8
Impervious (ac)	52	7	3	88	39	15	5	104
Pervious (ac)	179	72	49	80	71	82	63	158
Total (ac)	231	79	52	168	110	97	68	262

Table 1.Drainage Basin Areas

2.3 Soils

USDA Soil Survey was used to evaluate the soils in the pond areas. Types A, B, and C were found. See Table 2 for each pond's soil type. Additional soil testing will be required during the design phase. We assumed an infiltration rate based off the USDA Soil Survey information and assumed that groundwater was not an issue.

2.4 Ponds

An infiltration rate of two inches per hour was assumed for all the ponds. They were designed with seven feet of depth, which includes one foot of freeboard and three-to-one slopes on all the pond sides. WWHM was used to model the ponds per SWMMWW requirements. All the ponds, except Pond D, are designed to release the runoff at the predeveloped rate. It was assumed that all the ponds will discharge into Blackjack Creek. For Pond D, which does not have easy access to Blackjack Creek, 100% infiltration was assumed.

Pond	Pond A	Pond B	Pond C	Pond D	Pond E	Pond F
Basin	5	4	2&3	1	6&7	8
Soil	С	С	A/B	A/B	A/B	A/B
Infiltrative area	250,000 sf	200,000 sf	100,000 sf	122,500 sf	38,800 sf	250,000 sf

Table 2. Pond Areas	Гable	2.	Pond	Areas
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For the concept plan we identified possible locations for each pond, however they are subject to change. For this phase of the project we just found undeveloped parcels that could potentially be used. In the design phase for each segment we recommend reevaluating the pond locations.



3. MINIMUM REQUIREMENTS

Per the POMC, the improvements must meet all nine minimum requirements.

<u>Minimum Requirement #1</u> – Plans and Reports – This drainage memo and associated plans serve as the stormwater site plan. A full drainage report will be completed with each phase submittal.

<u>Minimum Requirement #2</u> – Construction Stormwater Pollution Prevention Plans (SWPPP) – An SWPPP will be completed with each phase submittal.

<u>Minimum Requirement #3</u> – Source Control of Pollution – The intent of source control is to prevent pollutants from coming into contact and mixing with stormwater. Source control is not anticipated to be needed after the project has been completed. However, during the construction phase of the project, source control BMPs shall be onsite at all times in the event of a spill or other hazardous situation.

<u>Minimum Requirement #4</u> – Preservation of Natural Drainage Systems and Outfalls – Natural drainage patterns are maintained, and discharge is designed to match historic rates. There will be no negative impacts on downstream areas.

Minimum Requirement #5 – Onsite Stormwater Management: See Section 2.1 of this memo.

<u>Minimum Requirement #6</u> – Runoff Treatment – Runoff treatment will be provided using bioretention swales abutting the roadway. Due to the high annual average daily traffic of over 15,000, enhanced treatment will most likely be required. Bioretention facilities are categorized as enhanced treatment. The bioretention swales have been designed with a perforated pipe below the amended soils to help disperse the stormwater once it is in the swale.

<u>Minimum Requirement #7</u> – Flow Control – Ponds and bioretention facilities will be used for flow control. All the ponds except for Pond D will release the runoff at the predeveloped condition durations for the range of predeveloped discharge rates from 50% of the two-year peak flow up to the full 50-year peak flow. Pond D was sized to infiltrate 100% of the runoff.

<u>Minimum Requirement #8</u> – Wetlands Protection – Surface water runoff will be collected, treated, and conveyed to the detention pond. It will then be released at historic rates prior to reaching the wetland.

<u>Minimum Requirement #9</u> – Operation and Maintenance – An operation and maintenance manual will be completed in final design for each phase and will be in accordance with POMC 20.150.260.

4. CONCLUSION

The stormwater for this project was designed to be compliant with the current manuals. Depending on when each phase goes to further design for permit, revising the model and design may be required if the manuals are no longer current. When each phase goes to the next design level, additional studies and modeling will need to be done. Verifying the pond location, infiltration rates at specific depths, groundwater level and grades will all be critical for the final design.



BASIN 1

- busht tritedereloped				23
Subbasin Name: Basin 1				
Surface		Interflow	Groundw	ater
Flows To :				
Area in Basin			🔲 Show Only Selecte	d
Available Pervious	Acres		Available Impervious	Acres
A/B, Forest, Flat	0] 🗆	ROADS/FLAT	0
A/B, Forest, Mod	0		ROADS/MOD	0
A/B, Forest, Steep	0] 🗖	ROADS/STEEP	0
A/B, Pasture, Flat	0		ROOF TOPS/FLAT	0
A/B, Pasture, Mod	0		DRIVEWAYS/FLAT	0
A/B, Pasture, Steep	0		DRIVEWAYS/MOD	0
🗂 A/B, Lawn, Flat	0		DRIVEWAYS/STEEP	0
🗖 A/B, Lawn, Mod	0		SIDEWALKS/FLAT	0
🗖 A/B, Lawn, Steep	0		SIDEWALKS/MOD	0
C, Forest, Flat	231		SIDEWALKS/STEEP	0
C, Forest, Mod	0		PARKING/FLAT	0
C, Forest, Steep	0		PARKING/MOD	0
C, Pasture, Flat	0		PARKING/STEEP	0
C, Pasture, Mod	0		POND	0
C, Pasture, Steep	0		Porous Pavement	0
🗖 C, Lawn, Flat	0			
🗖 C, Lawn, Mod	0			
🗖 C, Lawn, Steep	0			
SAT, Forest, Flat	0			
SAT, Forest, Mod	0			
SAT, Forest, Steep	0			

🖘 Basin 1 Mitigated				-
Subbasin Name: Basin 1		🗌 🗌 Desig	nate as Bypass for POC:	
Surface		Interflow	Groundwa	ater
Flows To : Trapezoidal Por	id 1	Trapezoidal	Pond 1	
Area in Basin			🔲 Show Only Selected	ł
Available Pervious	Acres		Available Impervious	Acres
A/B, Forest, Flat	0	~	ROADS/FLAT	9
A/B, Forest, Mod	0		ROADS/MOD	0
A/B, Forest, Steep	0		ROADS/STEEP	0
A/B, Pasture, Flat	0		ROOF TOPS/FLAT	0
A/B, Pasture, Mod	0		DRIVEWAYS/FLAT	0
A/B, Pasture, Steep	0		DRIVEWAYS/MOD	0
A/B, Lawn, Flat	0		DRIVEWAYS/STEEP	0
A/B, Lawn, Mod	0	~	SIDEWALKS/FLAT	2
A/B, Lawn, Steep	0		SIDEWALKS/MOD	0
C, Forest, Flat	179		SIDEWALKS/STEEP	0
C, Forest, Mod	0		PARKING/FLAT	41
C, Forest, Steep	0		PARKING/MOD	0
C, Pasture, Flat	0		PARKING/STEEP	0
C, Pasture, Mod	0		POND	0
C, Pasture, Steep	0		Porous Pavement	0
🗖 C, Lawn, Flat	0			
C, Lawn, Mod	0			
C, Lawn, Steep	0			
SAT, Forest, Flat	0			
SAT, Forest, Mod	0			
SAT, Forest, Steep	0			
Pervious Total 179	Acres			
mpervious Total 52	Acres			
Basin Total 231	Acres			
201				
	_			
Deselect Zero Se	elect By:		GO	

B Trapezoidal Pond	1 Mitigated			
Facility Name	rapezoidal Pon	d 1	Facility Type	Trapezoidal Pond
		Outlet 1	Outlet 2	Outlet 3
Downstream Con	nections	0	0	0
Precipitation Applied	to Facility		Auto Pon	d Quick Pond
Evaporation Applied	to Facility		Facility	Dimension Diagram
Facility Dimensi	ions		Outlet Stru	cture Data
Facility Bottom Elevatio	on (ft)	0	Riser Height (ft)	
Bottom Length (ft)		350	Riser Diameter (in	
Bottom Width (ft)		350	Riser Type 🛛 🔊	lotched -
Effective Depth (ft)		7	Notch Type	actangular 🛁
Left Side Slope (H/V)		3	Notch Height (ft)	
Bottom Side Slope (HA	V)	3	Notch Width (ft)	
Right Side Slope (H/V))	3		14 +1
Top Side Slope (H/V)		3	Orifice Dia	ameter Height
Infiltration		Yes 🕂	Number (in) (ft)
Measured Infiltration Ra	ate (in/hr)	2	1 0	
Reduction Factor(infilt*	factor)	1 +	2 0	
Use Wetted Surface Ar	rea (sidewalls)	NO ÷	3 0	
Total Volume Infiltrated	l (ac-ft)	8730.206		
Total Volume Through	Riser (ac-ft)	0	Pond Volume at F	Riser Head (ac-ft) 18.897
Total Volume Through	Facility (ac-ft)	8730.21	Show Pond	Table Open Table 🕂
Percent Infiltrated		100	Initial Stage (ft)	
Size Infiltration F	Pond			,
Target %: 100	÷.			
Tide Gate Time !	Series Der	nand		
- Determine Outlet V	With Tide Ga	ite		
🗖 Use Tide Gate				
Tide Gate Elevatio	on (ft) 🛛 🛛		Downstream Conr	nection 🗨
Overflow Elevation	n (ft) 🚺		Iterations	0

<u>Basin 2</u>

Surface				
ows To :		Interflow	Groundwa	ter
Area in Basin		I	Show Only Selected	
Available Pervious	Acres	Availa	able Impervious	Acres
A/B, Forest, Flat	0	ROADS	/FLAT	0
A/B, Forest, Mod	0	ROADS	/MOD	0
A/B, Forest, Steep	0	ROADS	/STEEP	0
🗖 A/B, Pasture, Flat	0	ROOF	TOPS/FLAT	0
🗖 A/B, Pasture, Mod	0		WAYS/FLAT	0
🗖 A/B, Pasture, Steep	0	DRIVE	WAYS/MOD	0
🗖 A/B, Lawn, Flat	0	DRIVE	WAYS/STEEP	0
🗖 A/B, Lawn, Mod	0	SIDEW	ALKS/FLAT	0
🗖 A/B, Lawn, Steep	0	SIDEW	ALKS/MOD	0
🔽 C, Forest, Flat	79	SIDEW	ALKS/STEEP	0
C, Forest, Mod	0		IG/FLAT	0
🔲 C, Forest, Steep	0		NG/MOD	0
🔲 C, Pasture, Flat	0	PARKI	NG/STEEP	0
🔲 C, Pasture, Mod	0	POND		0
🔲 C, Pasture, Steep	0	Porous	Pavement	0
🔲 C, Lawn, Flat	0			
🔲 C, Lawn, Mod	0	1		
🔲 C, Lawn, Steep	0			
SAT, Forest, Flat	0			
SAT, Forest, Mod	0	1		
SAT, Forest, Steep	0	1		

🕄 Basin 1 Mitigated					— ×
Subbasin Name: Basin 2		Desig	nate as Bypass for PO	C:	
Surface		Interflow	G	iroundwate	r
Flows To : Trapezoidal Pon	d 1	Trapezoidal F	Pond 1		
Area in Basin			🔲 Show Only	y Selected	
Available Pervious	Acres		Available Impe	rvious A	Acres
A/B, Forest, Flat	0		ROADS/FLAT	4	
A/B, Forest, Mod	0		ROADS/MOD	0	
A/B, Forest, Steep	0		ROADS/STEEP	0	
A/B, Pasture, Flat	0		ROOF TOPS/FLAT	0	
A/B, Pasture, Mod	0		DRIVEWAYS/FLAT	0	
A/B, Pasture, Steep	0		DRIVEWAYS/MOD	0	
🗖 A/B, Lawn, Flat	0		DRIVEWAYS/STEER	P 0	
🗖 A/B, Lawn, Mod	0	V	SIDEWALKS/FLAT	1	
🗖 A/B, Lawn, Steep	0		SIDEWALKS/MOD	0	
C, Forest, Flat	72		SIDEWALKS/STEEP	° 0	
C, Forest, Mod	0		PARKING/FLAT	2	
C, Forest, Steep	0		PARKING/MOD	0	
C, Pasture, Flat	0		PARKING/STEEP	0	
C, Pasture, Mod	0		POND	0	
C, Pasture, Steep	0		Porous Pavement	0	
🗂 C, Lawn, Flat	0				
🗖 C, Lawn, Mod	0				
🗖 C, Lawn, Steep	0	1			
SAT, Forest, Flat	0				
SAT, Forest, Mod	0				
SAT, Forest, Steep	0				
Pervious I otal 72	Acres				
Impervious I otal 7	Acres				
Basin Fotal 79	Acres				
Deselect Zero Se	elect By:		GO		

ち Trapezoidal Pond 1 Mitigated	l .	×
Facility Name Trapezoidal Po	ond 2	Facility Type Trapezoidal Pond
	Outlet 1	Outlet 2 Outlet 3
Downstream Connections	0	0 0
Precipitation Applied to Facility		Auto Pond Quick Pond
Evaporation Applied to Facility		Facility Dimension Diagram
Facility Dimensions		Outlet Structure Data
Facility Bottom Elevation (ft)	0	Riser Height (ft)
Bottom Length (ft)	150	Riser Diameter (in)
Bottom Width (ft)	150	Riser Type Notched
Effective Depth (ft)	7	Notch Type Rectangular
Left Side Slope (H/V)	3	Notch Height (ft)
Bottom Side Slope (H/V)	3	Notch Width (ft)
Right Side Slope (H/V)	3	12 .1
Top Side Slope (H/V)	3	Orifice Diameter Height
Infiltration	Yes 🕂	Number (in) (ft)
Measured Infiltration Rate (in/hr)	2 ÷	
Reduction Factor(infilt*factor)	1 ÷	2 0 - 0 -
Use Wetted Surface Area (sidewalls) NO 🕂	3 0 - 0 -
Total Volume Infiltrated (ac-ft)	5235.191	
Total Volume Through Riser (ac-ft)	1848.587	Pond Volume at Riser Head (ac-ft) 3.956
Total Volume Through Facility (ac-ft)	7083.78	Show Pond Table Open Table 🕂
Percent Infiltrated	73.9	Initial Stage (ft)
Size Infiltration Pond		
Target %: 100 ÷		
Tide Gate Time Series Di	emand	
- Determine Outlet With Tide O	iate	
🗖 Use Tide Gate		
Tido Cato Elovation (#)	0	Downstream Connection
	-	
Overtiow Elevation (tt)	U	Iterations J0

<u>Basin 3</u>

B> Basin 1 Predeveloped				×
Subbasin Name: Basin 3				
Surface		Interflow	Groundw	ater
Flows To :				
Area in Basin			Show Only Selected	i
Available Pervious	Acres		Available Impervious	Acres
▲ 🔽 A/B, Forest, Flat	52		ROADS/FLAT	0
A/B, Forest, Mod	0		ROADS/MOD	0
A/B, Forest, Steep	0		ROADS/STEEP	0
A/B, Pasture, Flat	0		ROOF TOPS/FLAT	0
A/B, Pasture, Mod	0		DRIVEWAYS/FLAT	0
A/B, Pasture, Steep	0		DRIVEWAYS/MOD	0
A/B, Lawn, Flat	0		DRIVEWAYS/STEEP	0
A/B, Lawn, Mod	0		SIDEWALKS/FLAT	0
A/B, Lawn, Steep	0		SIDEWALKS/MOD	0
C, Forest, Flat	0		SIDEWALKS/STEEP	0
C, Forest, Mod	0		PARKING/FLAT	0
C, Forest, Steep	0		PARKING/MOD	0
C, Pasture, Flat	0		PARKING/STEEP	0
C, Pasture, Mod	0		POND	0
C, Pasture, Steep	0		Porous Pavement	0
C, Lawn, Flat	0			
C, Lawn, Mod	0			
C, Lawn, Steep	0			
SAT, Forest, Flat	0			
SAT, Forest, Mod	0			
SAT, Forest, Steep	0			
Pensieur Tatal	A			
Imperview Total 0	Acres			
Racin Total E2	Acres			
Jaan Total J2	A0103			
Deselect Zero S	elect By:		GO	

🗈 Basin 1 Mitigated			×
Subbasin Name: Basin 3		Designate as Bypass for POC:	
Surface	Ir	terflow Groundw	ater
Flows To : Trapezoidal Pon	d 1 T	rapezoidal Pond 1	
Area in Basin		Show Only Selecte	d
Available Pervious	Acres	Available Impervious	Acres
A/B, Forest, Flat	49		0
A/B, Forest, Steep	0	ROADS/STEEP	0
A/B, Pasture, Flat	0	ROOF TOPS/FLAT	0
A/B, Pasture, Mod	0	DRIVEWAYS/FLAT	0
A/B, Pasture, Steep	0	DRIVEWAYS/MOD	0
A/B, Lawn, Flat	0	DRIVEWAYS/STEEP	0
A/B, Lawn, Mod	0	SIDEWALKS/FLAT	0
A/B, Lawn, Steep	0		0
C. Forest, Flat	0		1
C. Forest, Steep	0		
C, Pasture, Flat	0	PARKING/STEEP	0
C, Pasture, Mod	0	POND	0
C, Pasture, Steep	0	Porous Pavement	0
C, Lawn, Flat	0		
C, Lawn, Mod	0		
C, Lawn, Steep	0		
SAT, Forest, Flat	0		
SAT, Forest, Mod	0		
	U		
Pervious Total 49	Acres		
Impervious Total 3	Acres		
Basin Lotal 52	Acres		
Deselect Zero Se	elect By:	GO	
,	- ,		
B Trapezoidal Pond 1 Mitigated	d		X
5 • Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P	d 'ond 3	Facility Type Trapezoidal P	ond
B) Trapezoidal Pond 1 Mitigatee Facility Name Trapezoidal P	d fond 3 Outlet 1	Facility Type Trapezoidal P Outlet 2 Outl	ond let 3
B) Trapezoidal Pond 1 Mitigatee Facility Name Trapezoidal P Downstream Connections	d fond 3 Outlet 1 0	Facility Type Trapezoidal P Outlet 2 Outl 0 0 0	ond let 3
B. Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility	d lond 3 Outlet 1 0	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C	ond let 3
S. Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility	d ond 3 Outlet 1 0	Facility Type Trapezoidal P Outlet 2 Outl 0 0 Auto Pond C Facility Dimension	ond let 3 luick Pond Diagram
S Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions	d ond 3 Outlet 1	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension Outlet Structure Data	ond let 3 luick Pond Diagram
S - Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Bottom Elevation (R) Development (m)	d ond 3 Outlet 1 0	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension Outlet Structure Data Riser Height (N) 6	Inter the second
S Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Bottom Elevation (R) Bottom Length (R)	d ond 3 Outlet 1 0 275 275	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension Outlet Structure Data Riser Height (It) 6 Riser Diameter (in) 24	Inter a second s
S - Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Bottom Levation (R) Bottom Width (R) Evtervise Deth (R)	0 0 0 0 0 275 275 7	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension Outlet Structure Data Riser Height (It) 6 Riser Diameter (in) 24 Riser Type Notched	ond let 3 luick Pond Diagram
S - Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Bottom Elevation (It) Bottom Length (It) Bottom Width (It) Effective Depth (It) Left Side Shoon (H/V)	d formd 3 Outlet 1 0 275 275 7 3	Facility Type Trapezoidal P Outlet 2 Outl 0 0 Auto Pond C Facility Dimension C Outlet Structure Data Riser Height (It) Riser Diameter (in) 24 Riser Type Notched Notch Type Rectangular	et 3 Utick Pond Diagram
S- Trapezoidal Pond 1 Mitigates Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Facility Dimensions Facility Bottom Elevation (R) Bottom Length (R) Bottom Width (R) Effective Depth (R) Left Side Slope (H/V) Bottom Side Slope (H/V)	0 0 275 275 7 3 3	Facility Type Trapezoidal P Outlet 2 Outl 0 0 Auto Pond C Facility Dimension Outlet Structure Data Riser Height (II) 6 Riser Diameter (in) 24 Riser Jype Notched Notch Type Rectangular Notch Height (II) 1.76	ond let 3 luick Pond Diagram
S - Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Facility Dimensions Facility Dimensions Facility Bottom Elevation (It) Bottom Levation (It) Bottom Width (It) Effective Depth (It) Bottom Side Slope (H/V) Bight Side Slope (H/V)	d formd 3 Outlet 1 0 275 275 7 3 3 3 3 3	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension C Outlet Structure Data Riser Height (ft) Riser Diameter (in) 24 Riser Type Notch Height (ft) Notch Height (ft) 1.76 Notch Width (ft) 2	Inter 3
S - Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Dimensions Facility Bottom Elevation (It) Bottom Levation (It) Bottom Width (It) Effective Depth (It) Left Side Slope (H/V) Bottom Side Slope (H/V) Top Side Slope (H/V)	d Torond 3 Outlet 1 0 275 275 275 7 3 3 3 3 3 3	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension C Outlet Structure Data Riser Height (ft) Riser Diameter (in) 24 Riser Type Notch Height (ft) Notch Height (ft) 1.76 Notch Width (ft) 2	ond let 3 Diagram
S Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Bottom Elevation (It) Bottom Length (It) Bottom Width (It) Effective Depth (It) Left Side Slope (H/V) Bottom Side Slope (H/V) Inght Side Slope (H/V) Infiltration	0 0 0 275 275 275 7 3 3 3 3 3 Yes	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension C Outlet Structure Data Riser Height (ft) Riser Height (ft) 6 Riser Type Notched Notch Type Rotchad Notch Height (ft) 1.76 Notch Width (ft) 2 Orifice Diameter Height (ft)	et 3 Luick Pond Diagram
S. Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Bottom Elevation (It) Bottom Wridth (It) Effective Depth (It) Left Side Slope (H/V) Bottom Side Slope (H/V) Right Side Slope (H/V) Top Side Slope (H/V) Infiltration Measured Infiltration Rate (in/hr)	0 0 0 275 275 7 3 3 3 3 3 1 Yes 2 2 2 2 2 2 2 2 2 2 2 2 2	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension C Outlet Structure Data Riser Height (ft) Riser Height (ft) 6 Riser Type Notchd Notch Type Rotchd Notch Width (ft) 2 Orifice Diameter Height (ft) Number (in) 1 1082	et 3 buick Pond Diagram
S Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Dimensions Facility Bottom Elevation (It) Bottom Vidth (It) Effective Depth (It) Left Side Slope (H/V) Bottom Side Slope (H/V) Bottom Side Slope (H/V) Top Side Slope (H/V) Infiltration Measured Infiltration Rate (in/hr) Reduction Factor(infilt"factor)	0 0 0 275 275 7 3 3 3 3 Yes 1 4 4 4 4 4 4 4 4 4 4 4 4 4	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension C Outlet Structure Data Riser Height (t) Riser Diameter (in) 24 Riser Type Notched Notch Height (t) 1.76 Notch Width (t) 2 Orifice Diameter Height (n) 1 0.82 2 0	et 3 Luick Pond Diagram
S Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Dimensions Facility Domensions Facility Facility Domensions Facility Facility Domensions Facility Domensi Facility Domensions Fa	d ond 3 Outlet 1 0 275 275 7 3 3 3 3 3 3 3 3 3 5 NO +1	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension C Outlet Structure Data Riser Height (t) Riser Diameter (in) 24 Riser Diameter (in) 24 Notch Type Rectangular Notch Height (t) 1.76 Notch Width (t) 1.76 Notch Width (t) 1.76 Notch Width (t) 1.76 Notch Uidth (t) 1.76 Notch Vidth (t) 1.76 Notch Uidth (t) 1.76	ond let 3 Diagram
S Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Dimension Facility Dimensions Fa	d fond 3 Outlet 1 0 275 275 275 3 3 3 3 3 3 3 5 NO 4 636.727	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension C Outlet Structure Data Riser Height (ft) 6 Riser Diameter (in) 24 - Riser Diameter (in) 24 - Notch Height (ft) 1.76 - Notch Height (ft) 1.76 - Notch Width (ft) 2 - Q 0 - (ft) 1 0.82 - (0) 2 0 - (0) 3 0 - (0)	ond let 3 Luick Pond Diagram J J J J J J J J J J J J J
S - Trapezoidal Pond 1 Mitigates Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Dimensions Facility Bottom Elevation (R) Bottom Vidth (R) Effective Depth (R) Bottom Vidth (R) Effective Depth (R) Bottom Side Slope (H/V) Right Side Slope (H/V) Right Side Slope (H/V) Infiltration Measured Infiltration Rate (inr/hr) Reduction Factor(infilt*factor) Use Wetted Surface Area (sidewalit Total Volume Infiltrated (ac-R) Total Volume Through Riser (ac-R)	0 0 0 0 0 0 0 0 0 0 0 0 0 0	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension Outlet Structure Data Riser Height (II) 6 Riser Diameter (in) 24 Notch Type Notched Notch Height (II) 1.76 Notch Width (II) 1.76 Notch Width (II) 1.76 Notch Vidth (II) 1.76 Orifice Diameter Height (II) 1 10.82 0	and iet 3 iuick Pond Diagram J J J J Bht Thissty - J J J J J J J J J J J J J
Content of the second	d fond 3 Outlet 1 0 275 275 7 3 3 3 3 3 3 3 3 3 3 3 3 3	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension Outlet Structure Data Riser Height (II) 6 Riser Diameter (in) 24 Riser Type Notch Height (II) Notch Height (II) 1.76 Notch Width (II) 2 Orifice Diameter Height (II) 1 0.82 2 0 3 0 0 Pond Volume at Riser Head (ac/th 0	International and the second of the second o
S - Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Dimensions Facility Bottom Elevation (It) Bottom Levation (It) Bottom Width (It) Effective Depth (It) Effective Depth (It) Bottom Side Slope (H/V) Bottom Side Slope (H/V) Infiltration Measured Infiltration Rate (in/hr) Reduction Factor(Infilt*factor) Use Wetted Surface Area (sidewalit Total Volume Through Fiser (ac-ft) Total Volume Through Facility (ac-ft Percent Infiltrated	d fond 3 Outlet 1 0 275 275 7 3 3 3 3 3 3 3 3 3 3 3 5 N(Pes ÷1) 636.727 0.926 537.65 99.85	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension Outlet Structure Data Riser Height (II) 6 Riser Diameter (in) 24 Riser Diameter (in) 74 Notch Type Rotched Notch Height (II) 1.76 Notch Width (II) 2 Orifice Diameter Height (II) Number (in) 1 0.82 2 0 3 0 0 Pond Volume at Riser Head (acft Show Pond Table 0p Initial Stage (ft) 0 0 0	and let 3 luick Pond Diagram J J J J J J J J J J J J J
S - Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Dimensions Facility Dimensions Facility Dimensions Facility Bottom Elevation (It) Bottom Levation (It) Bottom Width (It) Effective Depth (It) Left Side Slope (H/V) Bottom Side Slope (H/V) Infiltration Measured Infiltration Rate (in/hr) Reduction Factor(infilt*factor) Use Wetted Surface Area (sidewall: Total Volume Through Facility (ac-ft) Total Volume Through Facility (ac-ft) Size Infiltration Pond	d fond 3 Outlet 1 0 275 275 7 3 3 3 3 3 1 1 ↓ 1 ↓ 0 0 275 275 275 275 275 275 275 275	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension C Outlet Structure Data Riser Height (ft) Riser Height (ft) 6 Priser Diameter (in) 24 Notch Type Notched Notch Height (ft) 1.76 Notch Type Riser Langular Notch Width (ft) 2 Q Q 1 0.82 2 0 3 0 0 2 Pond Volume at Riser Head (ac-ft Show Pond Table Op Initial Stage (ft)	et 3 tuick Pond Diagram J H H H H H H H H H H H H H
S. Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Dimensions Facility Dimensions Facility Bottom Elevation (It) Bottom Length (It) Bottom Length (It) Bottom Side Slope (H/V) Bottom Side Slope (H/V) Right Side Slope (H/V) Infiltration Measured Infiltration Rate (in/hr) Reduction Factor(infilt*factor) Use Wetted Surface Area (sidewalla Total Volume Through Facility (ac-tt Percent Infiltrated Size Infiltration Pond Target %: 100	d fond 3 Outlet 1 0 275 275 275 7 3 3 3 3 3 3 3 1 Yes ↓ 1 ↓ 0 0 275 275 275 275 275 275 275 275	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension C Outlet Structure Data Riser Height (ft) Riser Height (ft) 6 Riser Type Notchd Notch Type Rotchd Notch Type Rotchd Notch Width (ft) 2 Orifice Diameter Height (ft) Number (in) 1 0.82 2 0 2 0 3 0 Pond Volume at Riser Head (acftt Show Pond Table Op Initial Stage (ft) 0	ond let 3 tuick Pond Diagram J H H H H H H H H H H H H H
S. Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Dimensions Facility Bottom Elevation (It) Bottom Vidth (It) Effective Depth (It) Left Side Slope (H/V) Bottom Side Slope (H/V) Bottom Side Slope (H/V) Infiltration Measured Infiltration Rate (in/hr) Reduction Factor(infilt*factor) Use Wetted Surface Area (sidewalk Total Volume Through Facility (ac-ft Percent Infiltrated Size Infiltration Factor(Infilt*factor) Escent Infiltrated Facility Colume Through Facility (ac-ft Percent Infiltrated Factor) Target %: 100 Tide Coste	d ond 3 Outlet 1 0 275 275 7 3 3 3 3 3 3 3 3 3 3 3 3 3	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension C Outlet Structure Data Riser Height (ft) Riser Height (ft) 6 Riser Type Rectangular Notch Type Rectangular Notch Height (ft) 1.76 Notch Wridth (ft) 2 2 0 1 10.82 10 2 0 10 3 0 10 Pond Volume at Riser Head (ac/th Show Pond Table Op Initial Stage (ft) 0	ond let 3 tuick Pond Diagram J H H H H H H H H H H H H H
S Trapezoidal Pond 1 Mitigated Facility Name Trapezoidal P Downstream Connections Precipitation Applied to Facility Evaporation Applied to Facility Facility Dimensions Facility Dimensions Facility Dimensions Facility Dimensions Facility Bottom Elevation (It) Bottom Width (It) Effective Depth (It) Left Side Slope (H/V) Bottom Side Slope (H/V) Bottom Side Slope (H/V) Infiltration Measured Infiltration Rate (in/hr) Reduction Factor(infil*factor) Use Wetted Surface Area (sidewalk Total Volume Through Facility (ac-ft) Precent Infiltrated Size Infiltration Pond Target %: 100 Tide Gate Time Series D Determing Outlet With Tideo	d fond 3 Outlet 1 0 275 275 7 3 3 3 3 3 3 3 3 3 3 3 3 3	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension C Outlet Structure Data Riser Height (ft) Riser Diameter (in) 24 Riser Type Notched Notch Height (ft) 1.76 Notch Height (ft) 1.76 Notch Width (ft) 2 Orifice Diameter Height (ft) Number (in) 1 0.82 2 0 3 0 Pond Volume at Riser Head (ac/tt Show Pond Table Op Initial Stage (ft) 0 0	et 3 Luick Pond Diagram J H H H H H H H H H H H H H
Construction Constend Construction Construction Construction Const	d fond 3 Outlet 1 0 275 275 7 3 3 3 3 3 3 3 3 3 3 3 3 3	Facility Type Trapezoidal P Outlet 2 Outlet O O Auto Pond C Facility Dimension Outlet Structure Data Outlet Structure Data Riser Height (II) Riser Diameter (in) 24 Notch Type Notched Notch Height (II) 1.76 Notch Width (II) 1.76 Notch Width (II) 1.76 Orifice Diameter Height (II) 1 10.82 0	et 3 luick Pond Diagram
Constraints of the series	d fond 3 Outlet 1 0 275 275 7 3 3 3 3 3 3 3 3 3 3 3 3 3	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension Outlet Structure Data Biser Height (II) 6 Riser Diameter (in) 24 Riser Diameter (in) 24 Notch Type Rotrangular Notch Height (II) 1.76 Notch Width (II) 1.76 Notch Width (II) 2 Orifice Diameter Height (II) 1 0.82 2 0 3 0 0 3 Pond Volume at Riser Head (acth Show Pond Table Op Initial Stage (II)	ond let 3 luick Pond Diagram
Constraints of the series	d fond 3 Outlet 1 0 275 275 7 3 3 3 3 3 3 3 3 3 3 3 3 3	Facility Type Trapezoidal P Outlet 2 Outlet 0 0 Auto Pond C Facility Dimension Outlet Structure Data Outlet Structure Data Riser Height (ft) Riser Diameter (in) 24 Notch Type Notched Notch Height (ft) 1.76 Notch Width (ft) 2 2 0 3 0 9 Orifice Diameter (in) (ft) 1 0.82 2 0 3 0 0 0	et 3 tuick Pond Diagram d d d d d d d d d d d d d

<u>Basin 4</u>

Basin 1 Mitigated		× 1
Subbasin Name: Basin 4		Designate as Bypass for POC:
Surface		Interflow Groundwater
Flows To : Trapezoidal Po	nd 1	Trapezoidal Pond 1
Area in Basin		Show Only Selected
Available Pervious	Acres	Available Impervious Acres
▲ 🔽 A/B, Forest, Flat	80	ROADS/FLAT 32
A/B, Forest, Mod	0	ROADS/MOD 0
A/B, Forest, Steep	0	ROADS/STEEP 0
A/B, Pasture, Hat	0	
A/B, Pasture, Mod	0	
A/B, Fasture, Steep	0	
A/B Lawn Mod		
A/B Lawn Steen		
C, Forest, Flat	0	SIDEWALKS/STEEP
C. Forest, Mod		PARKING/FLAT 54
C, Forest, Steep	0	PARKING/MOD 0
C, Pasture, Flat	0	PARKING/STEEP 0
C, Pasture, Mod	0	POND 0
C, Pasture, Steep	0	Porous Pavement 0
C, Lawn, Flat	0	
C, Lawn, Mod	0	
C, Lawn, Steep	0	
SAT, Forest, Flat	0	
SAT, Forest, Mod	0	
SAT, Forest, Steep	0	
ervious Total 80	Acres	
pervious Total 88	Acres	
asin Total 168	Acres	
cility Name Trapezoida	Pond 4	Facility Type Trapezoidal Pond
	Outlet 1	Outlet 2 Outlet 3
ownstream Connection	is O	0 0
Precipitation Applied to Facility		Auto Pond Quick Pond
Evaporation Applied to Eacility		Facility Dimension Diagram
acility Dimensions		
acility Bottom Elevation (ft)	0	Diss Using (0)
ottom Length (ft)	440	Riser Height (it) 6 ÷
ottom Width (ft)	440	Riser Diameter (in) 60
ffective Depth (ft)	7	Hiser Type Notched
eft Side Slope (H/V)	3	Notch Height (9)
ottom Side Slope (H/V)	3	Notch Width (P)
ight Side Slope (H/V)	3	
op Side Slope (H/V)	3	Orifica Discussion United
filtration	-	 Unifice Diameter Height Number (in) (ff)
leasured Infiltration Bate (in/hr)		Thirsty 1
eduction Factor(infilt*factor)	1	
se Wetted Surface Area (sidewa	alls) NO	
otal Volume Infiltrated (ac-ft)	18301.68	32
otal Volume Through Riser (ac-fi	t) 68.797	Pond Volume at Biser Head (ac-ft) 29,255
otal Volume Through Facility (ac	-ft) 18370.48	Show Pond Table Open Table
ercent Infiltrated	99.63	Initial Stage (#)
01-1-01		initiai Stage (tt)
Size Infiltration Pond		
arget %: 100		
「arget %: 100 ÷		
Target %: 100 ÷	Demand	
T arget %: 100	Demand Gate	
T arget %: 100 + Tide Gate Time Series Determine Outlet With Tide Use Tide Gate	Demand e Gate	
Target %: [100 + Tide Gate Time Series] Determine Outlet With Tide Use Tide Gate Fide Gate Elevation (ft)	Demand Gate	Downstream Connection

Basin 1 Mitigated					×
Subbasin Name: Basin 4		Desig	inate as Bypass for P	'OC:	
Surface		Interflow		Groundwa	ater
Flows To : Trapezoidal Por	nd 1	Trapezoidal	Pond 1		
Area in Basin			🔲 Show Or	nly Selected	i
Available Pervious	Acres		Available Imp	ervious	Acres
A/B, Forest, Flat	80	v	ROADS/FLAT		32
A/B, Forest, Mod	0		ROADS/MOD		0
A/B, Forest, Steep	0		ROADS/STEEP		0
A/B, Pasture, Flat	0		ROOF TOPS/FLAT	•	0
A/B, Pasture, Mod	0		DRIVEWAYS/FLA	T	0
A/B, Pasture, Steep	0		DRIVEWAYS/MOD)	0
A/B, Lawn, Flat	0		DRIVEWAYS/STE	EP	0
A/B, Lawn, Mod	0		SIDEWALKS/FLAT	1	2
A/B, Lawn, Steep	0		SIDEWALKS/MOD)	0
C, Forest, Flat	0		SIDEWALKS/STEE	EP	0
C, Forest, Mod	0		PARKING/FLAT		54
C, Forest, Steep	0		PARKING/MOD		0
C, Pasture, Flat	0		PARKING/STEEP		0
C, Pasture, Mod	0		POND		0
C, Pasture, Steep	0		Porous Pavement		0
C, Lawn, Flat	0				
C, Lawn, Mod	0				
C, Lawn, Steep	0				
SAT, Forest, Flat	0				
SAT, Forest, Mod	0				
SAT, Forest, Steep	0				
Pervious Lotal 80	Acres				
Impervious Lotal 88	Acres				
basin rotar 168	Acres				
Deselect Zero St	elect By:		GO		

Basin 5

🗈 Basin 1 Predeveloped				×
Subbasin Name: Basin 5				
Surface		Interflow	Groundwa	ater
Flows To :				
Area in Basin			🔲 Show Only Selected	ł
Available Pervious	Acres		Available Impervious	Acres
A/B, Forest, Flat	110		ROADS/FLAT	0
A/B, Forest, Mod	0		ROADS/MOD	0
A/B, Forest, Steep	0		ROADS/STEEP	0
A/B, Pasture, Flat	0		ROOF TOPS/FLAT	0
A/B, Pasture, Mod	0		DRIVEWAYS/FLAT	0
A/B, Pasture, Steep	0		DRIVEWAYS/MOD	0
A/B, Lawn, Flat	0		DRIVEWAYS/STEEP	0
A/B, Lawn, Mod	0	v	SIDEWALKS/FLAT	0
A/B, Lawn, Steep	0		SIDEWALKS/MOD	0
C, Forest, Flat	0		SIDEWALKS/STEEP	0
C, Forest, Mod	0		PARKING/FLAT	0
C, Forest, Steep	0		PARKING/MOD	0
C, Pasture, Flat	0		PARKING/STEEP	0
C, Pasture, Mod	0		POND	0
C, Pasture, Steep	0		Porous Pavement	0
C, Lawn, Flat	0			
C, Lawn, Mod	0			
C, Lawn, Steep	0			
SAT, Forest, Flat	0			
SAT, Forest, Mod	0			
SAT, Forest, Steep	0			
Pervious Total 110	Ácres			
Impervious Total 0	Ácres			
Basin Total 110	Acres			
110				
Developing 1			- C0	
Ueselect∠eroS	elect By:		GU	

🗊 Basin 1 Mitigated		
Subbasin Name: Basin 5	Designate as Bypass for POC:	
Surface	Interflow Groundwater	
Flows To : Trapezoidal Pond 1	Trapezoidal Pond 1	
Area in Basin	Show Only Selected	
Available Pervious Acres	Available Impervious Ac	cres
A/B, Forest, Flat 71	ROADS/FLAT 12	
A/B, Forest, Mod 0	ROADS/MOD 0	
A/B, Forest, Steep 0	ROADS/STEEP 0	
A/B, Pasture, Flat 0	ROOF TOPS/FLAT 13	
A/B, Pasture, Mod 0	DRIVEWAYS/FLAT 0	
A/B, Pasture, Steep 0	DRIVEWAYS/MOD 0	
A/B, Lawn, Flat 0	DRIVEWAYS/STEEP 0	
A/B, Lawn, Mod 0	SIDEWALKS/FLAT 2	
A/B, Lawn, Steep 0	SIDEWALKS/MOD 0	
C, Forest, Flat 0	SIDEWALKS/STEEP 0	
C, Forest, Mod 0	PARKING/FLAT 12	
C, Forest, Steep 0	PARKING/MOD 0	
C, Pasture, Flat 0	PARKING/STEEP 0	
C, Pasture, Mod 0	POND	
C, Pasture, Steep 0	Porous Pavement 0	
C, Lawn, Flat 0		
C, Lawn, Mod 0		
C, Lawn, Steep 0		
SAT, Forest, Flat 0		
SAT, Forest, Mod 0		
SAT, Forest, Steep 0		
Pervious Total 71 Acres		
Impervious Total 39 Acres		
Basin Total 110 Acres		
Develoct Zero Scloot Bur	60	



<u>Basin 6</u>

Basin 1 Predeveloped			×
Subbasin Name: Basin 6			
Surface	Interflow	Groundw	ater
Flows To :			
Area in Basin		🔲 Show Only Selecte	d
Available Pervious Acr	es	Available Impervious	Acres
▲ 🗸 A/B, Forest, Flat 97		ROADS/FLAT	0
A/B, Forest, Mod 0		ROADS/MOD	0
A/B, Forest, Steep 0		ROADS/STEEP	0
A/B, Pasture, Flat 0		ROOF TOPS/FLAT	0
A/B, Pasture, Mod 0		DRIVEWAYS/FLAT	0
A/B, Pasture, Steep 0		DRIVEWAYS/MOD	0
A/B, Lawn, Flat 0		DRIVEWAYS/STEEP	0
A/B, Lawn, Mod	~	SIDEWALKS/FLAT	0
A/B, Lawn, Steep 0		SIDEWALKS/MOD	0
C, Forest, Flat 0		SIDEWALKS/STEEP	0
C, Forest, Mod 0	V	PARKING/FLAT	0
C, Forest, Steep 0		PARKING/MOD	0
C, Pasture, Flat 0		PARKING/STEEP	0
C, Pasture, Mod 0		POND	0
C, Pasture, Steep 0		Porous Pavement	0
C, Lawn, Flat 0			
C, Lawn, Mod 0			
C, Lawn, Steep 0			
SAT, Forest, Flat 0			
SAT, Forest, Mod 0			
SAT, Forest, Steep 0			
_			
Pervious Total 97 Acres			
mpervious Total 0 Acres			
Resin Total 97 Acres			
Acres Acres			
Deselect Zero Select	By:	GO	

		Derie	mate as Ruppes for POC-	
		Interflow	nate as bypass for FOC.	
Inws To : Transzoidal Po	nd 1	Tranezoidal I	Pond 1	itei
tara in Brain		Tapozoldan	Chair Only Selected	
Area in Dasin	•		Augusta bla lava agricua	•
AVailable Pervious	Acres 82		ROADS/FLAT	Acres
A/B, Forest, Mod	0		ROADS/MOD	0
A/B, Forest, Steep	0		ROADS/STEEP	0
A/B, Pasture, Flat	0	1 -	ROOF TOPS/FLAT	0
🗖 A/B, Pasture, Mod	0		DRIVEWAYS/FLAT	0
A/B, Pasture, Steep	0		DRIVEWAYS/MOD	0
🗖 A/B, Lawn, Flat	0		DRIVEWAYS/STEEP	0
A/B, Lawn, Mod	0		SIDEWALKS/FLAT	1
A/B, Lawn, Steep	0		SIDEWALKS/MOD	0
C, Forest, Flat	0		SIDEWALKS/STEEP	0
C, Forest, Mod	0		PARKING/FLAT	10
C, Forest, Steep	0		PARKING/MOD	0
C, Pasture, Flat	0		PARKING/STEEP	0
C, Pasture, Mod	0		POND	0
C, Pasture, Steep	0		Porous Pavement	0
C, Lawn, Flat	0			
C, Lawn, Mod	0			
C, Lawn, Steep	0			
SAT, Forest, Flat	0			
SAT, Forest, Mod	0			
SAT, Forest, Steep	0			

Trapezoidal Pond 1 Mitigated			
Facility Name Tracezoidal Po	nd 6	Facility Type	Trapezoidal Pond
	Outlet 1	Outlet 2	Outlet 3
Downstream Connections	0	0	0
Precipitation Applied to Facility		Auto Pond	Quick Pond
Evaporation Applied to Facility		Facility D	imension Diagram
Facility Dimensions		Outlot Strug	ture Doto
Facility Bottom Elevation (ft)	0	Biser Height (ft)	
Bottom Length (ft)	180	Riser Diameter (in)	
Bottom Width (ft)	180	River Tune	24 •
Effective Depth (ft)	7	Notch Tupe	toned
Left Side Slope (H/V)	3	Notch Height (ft)	ctangular -
Bottom Side Slope (H/V)	3	Notch Width (ft)	
Right Side Slope (H/V)	3	Notern wider (rg	2
Top Side Slope (H/V)	3	0-ifi Di-	
Infiltration Measured Infiltration Rate (in/hr) Reduction Factor(infilt*factor) Use Wetted Surface Area (sidewalls) Total Volume Infiltrated (ac-ft) Total Volume Through Facility (ac-ft) Percent Infiltrated Size Infiltration Pond	Yes + 2 1 NO + 2941.486 212.787 3154.27 93.25	Number (in) 1 3 2 0 3 0 Pond Volume at Ric Show Pond T Initial Stage (ft)	(ft) → 0 → 0 → 0 → 0 → 0 → 0 → 0 → 0
Target %: 100			
Tide Gate Time Series De	emand		
-Determine Outlet With Tide G	ate		
🗖 Use Tide Gate			
Tide Gate Elevation (ff)	n	Downstream Conne	ection
Overflew Elevation (ft)	9	Iterationa	
oveniuw Elevation (it)	0	Renduons	JU

<u>Basin 7</u>

3» Basin 1 Predeveloped				
Subbasin Name: Basin 7				
Surface	I	nterflow	Groundw	ater
Flows To :				
Area in Basin			Show Only Selected	đ
Available Pervious	Acres		Available Impervious	Acres
▲ 🗸 A/B, Forest, Flat	68		ROADS/FLAT	0
A/B, Forest, Mod	0		ROADS/MOD	0
A/B, Forest, Steep	0		ROADS/STEEP	0
A/B, Pasture, Flat	0		ROOF TOPS/FLAT	0
A/B, Pasture, Mod	0		DRIVEWAYS/FLAT	0
A/B, Pasture, Steep	0		DRIVEWAYS/MOD	0
A/B, Lawn, Flat	0		DRIVEWAYS/STEEP	0
A/B, Lawn, Mod	0		SIDEWALKS/FLAT	0
A/B, Lawn, Steep	0		SIDEWALKS/MOD	0
C, Forest, Flat	0		SIDEWALKS/STEEP	0
C, Forest, Mod	0		PARKING/FLAT	0
C, Forest, Steep	0		PARKING/MOD	0
C, Pasture, Flat	0	Г	PARKING/STEEP	0
C, Pasture, Mod	0		POND	0
C, Pasture, Steep	0	Г	Porous Pavement	0
C, Lawn, Flat	0			
C, Lawn, Mod	0			
C, Lawn, Steep	0			
SAT, Forest, Flat	0			
SAT, Forest, Mod	0			
SAT, Forest, Steep	0			
Pervious Total 68	Acres			
Impervious Total 0	Acres			
Basin Total 68	Acres			
Basin Total 68	Acres		60	

🖘 Basin 1 Mitigated				×
Subbasin Name: Basin 7		Desid	nate as Bypass for POC:	
Surface		Interflow	Groundy	vater
Flows To : Trapezoidal Por	nd 7	Trapezoidal	Pond 7	
Area in Basin			Show Only Select	ed
Available Pervious	Acres		Available Impervious	Acres
▲ 🔽 A/B, Forest, Flat	63		ROADS/FLAT	4
A/B, Forest, Mod	0		ROADS/MOD	0
A/B, Forest, Steep	0		ROADS/STEEP	0
A/B, Pasture, Flat	0		ROOF TOPS/FLAT	0
A/B, Pasture, Mod	0		DRIVEWAYS/FLAT	0
A/B, Pasture, Steep	0		DRIVEWAYS/MOD	0
A/B, Lawn, Flat	0		DRIVEWAYS/STEEP	0
A/B, Lawn, Mod	0	~	SIDEWALKS/FLAT	1
🖂 A/B, Lawn, Steep	0		SIDEWALKS/MOD	0
C, Forest, Flat	0		SIDEWALKS/STEEP	0
C, Forest, Mod	0	v	PARKING/FLAT	0
C, Forest, Steep	0		PARKING/MOD	0
C, Pasture, Flat	0		PARKING/STEEP	0
C, Pasture, Mod	0		POND	0
C, Pasture, Steep	0		Porous Pavement	0
C, Lawn, Flat	0			
🔲 C, Lawn, Mod	0			
C, Lawn, Steep	0			
SAT, Forest, Flat	0			
SAT, Forest, Mod	0			
🗾 🔲 SAT, Forest, Steep	0			
Dention Total	A			
Impervious Total	Acres			
Regin Total CO	Acres			
Dasin rolai 00	AURS			
	_		_	
Deselect Zero Si	elect By: 📗		GO	

Trapezoidal Pond 1 Mitigated			
Facility Name Trapezoidal Po	nd 7	Facility Type	Trapezoidal Pond
	Outlet 1	Outlet 2	Outlet 3
Downstream Connections	0	0	0
Precipitation Applied to Facility		Auto Pond	d Quick Pond
Evaporation Applied to Facility		Facility [Dimension Diagram
Facility Dimensions		Outlet Struc	cture Data
Facility Bottom Elevation (ft)	0	Riser Height (ft)	E -
Bottom Length (ft)	80	Biser Diameter (in)	
Bottom Width (ft)	80	Biser Type	tohed -
Effective Depth (ft)	7	Notch Type	
Left Side Slope (H/V)	3	Notch Height (ft)	
Bottom Side Slope (H/V)	3	Notch Width (ft)	
Right Side Slope (H/V)	3		12 1
Top Side Slope (H/V)	3	Orifice Dis	motor Hoight
Infiltration	Yes	Number (in)	(ft)
Measured Infiltration Rate (in/hr)	2	1 3	Thirsty
Reduction Factor(infilt*factor)	1	2 0	
Use Wetted Surface Area (sidewalls)	NO ÷	3 0	
Total Volume Infiltrated (ac-ft)	742.462	- 10	
Total Volume Through Riser (ac-ft)	321.056	Pond Volume at R	iser Head (ac-ft) 1.358
Total Volume Through Facility (ac-ft)	1063.52	Show Pond 1	Table Open Table
Percent Infiltrated	69.81	Initial Stage (ff)	
Size Infiltration Pond		inner energe (i)	
Target %: 100 ÷			
Tide Gate Time Series De	emand		
Determine Outlet With Tide G	ate		
🗖 Use Tide Gate			
Tide Gate Elevation (#)	0	Downstream Conn	ection
Overflow Elevation (ft)	ų	Iterations	JU

<u>Basin 8</u>

B Basin 1 Predeveloped				— ×
Subbasin Name: Basin 8				
Surface		Interflow	Groundw	ater
Flows To :				
Area in Basin			Show Only Selected	ł
Available Pervious	Acres		Available Impervious	Acres
▲ 🗸 A/B, Forest, Flat	262	~	ROADS/FLAT	0
A/B, Forest, Mod	0		ROADS/MOD	0
A/B, Forest, Steep	0		ROADS/STEEP	0
A/B, Pasture, Flat	0		ROOF TOPS/FLAT	0
A/B, Pasture, Mod	0		DRIVEWAYS/FLAT	0
A/B, Pasture, Steep	0		DRIVEWAYS/MOD	0
A/B, Lawn, Flat	0		DRIVEWAYS/STEEP	0
A/B, Lawn, Mod	0		SIDEWALKS/FLAT	0
A/B, Lawn, Steep	0		SIDEWALKS/MOD	0
C, Forest, Flat	0		SIDEWALKS/STEEP	0
C, Forest, Mod	0		PARKING/FLAT	0
C, Forest, Steep	0		PARKING/MOD	0
C, Pasture, Flat	0		PARKING/STEEP	0
C, Pasture, Mod	0		POND	0
C, Pasture, Steep	0		Porous Pavement	0
C, Lawn, Flat	0			
C, Lawn, Mod	0	Ī		
C, Lawn, Steep	0	1		
SAT, Forest, Flat	0			
SAT, Forest, Mod	0	Ĩ		
SAT, Forest, Steep	0			
Den inne Tabel - 1999	4			
Pervious Lotal 262	Acres			
Impervious Lotal U	Acres			
basin rotai 262	Acres			
Deselect Zero Se	elect By:	_	GO	
	- /			

Basin 1 Mitigated				
		Desirrate et D	none for PDC.	
Subbasin Name. Basin 8		Interflow	Grounduu	ator
Flows To : Transzoidal Por	d 8	Interriow Tranezoidal Pond. 8	Groundwa	ater
Area in Pasia			Show Only Selected	4
Area in basin Augilable Domigue	A	Ausilah	le Imperieue	Aprop
AValiable Pervious ▲ V A/B. Forest. Flat	158	ROADS/F	LAT	4
A/B. Forest. Mod	0	ROADS/M	10D	· 0
A/B, Forest, Steep	0	ROADS/S	TEEP	0
A/B, Pasture, Flat	0	ROOF TO	PS/FLAT	0
A/B, Pasture, Mod	0	DRIVEWA	YS/FLAT	0
A/B, Pasture, Steep	0	DRIVEWA	YS/MOD	0
A/B, Lawn, Flat	0	DRIVEWA	YS/STEEP	0
A/B, Lawn, Mod	0	SIDEWAL	KS/FLAT	0
A/B, Lawn, Steep	0	SIDEWAL	KS/MOD	0
C, Forest, Flat	0	SIDEWAL	KS/STEEP	0
C, Forest, Mod	0	PARKING	/FLAT	100
C, Forest, Steep	0	PARKING	/MOD	0
C, Pasture, Flat	0	PARKING	/STEEP	0
C, Pasture, Mod	0	POND		0
C, Pasture, Steep	0	Porous Pa	vement	0
C, Lawn, Flat	0			
C, Lawn, Mod	0			
C, Lawn, Steep	0	1		
SAT, Forest, Flat	0			
SAT, Forest, Mod	0			
SAT, Forest, Steep	0	Ī		
		-		
'ervious I otal 158	Acres			
npervious I otal 104	Acres			
asiri i utai 262	Acres			
Trapezoidal Pond 1 Mitigated				
acility Name Trapezoidal Po	nd 8	Facility Type	Trapezoidal Pond	
	Outlet 1	Outlet 2	Outlet	3
ownstream Connections	0	0	0	
Precipitation Applied to Facility		Auto Por	id Quic	k Pond
Evaporation Applied to Facility		Facility	Dimension Di	agram
Facility Dimensions		Outlet Stru	cture Data	
acility Bottom Elevation (ft)	0	Riser Height (ft)		
Bottom Length (ft)	500	Riser Diameter fir	1 24	
Bottom Width (ft)	500	Riser Type	lotched	
ffective Depth (ft)	7	Notch Type	Rectangular	
eft Side Slope (H/V)	3	Notch Height (ft)	2	
Sottom Side Slope (H/V)	3	Notch Width (ft)	2	
Right Side Slope (H/V)	3			
op Side Slope (H/V)	3	Orifice Di	ameter Height	t
nfiltration	Yes ÷	Number (in) (ft)	
feasured Infiltration Rate (in/hr)	2	1 6	+ 0	
Reduction Factor(infilt*factor)	1 ÷	20		÷
Jse Wetted Surface Area (sidewalls	NO ÷	3 0		4
otal Volume Infiltrated (ac-ft)	20986.487	10		
fotal Volume Through Riser (ac-ft)	739.255	Pond Volume at I	Riser Head (ac-ft)	37.414
otal Volume Through Facility (ac-ft)	21725.74	Show Pond	Table Open 1	Fable
Percent Infiltrated	96.6	Initial Stage (f	0	
Size Infiltration Pond		initial orage (i	y I	
Terret % 100 11				
rarget %: 100 🕂				
Tide Gate Time Series De				
	emand			
Determine Outlet With Tide G	emand iate			
Determine Outlet With Tide C Use Tide Gate	emand iate			
Determine Outlet With Tide C Use Tide Gate Tide Gate Elevation (ff)	ate	Downstream Con	nection	
Determine Outlet With Tide C Use Tide Gate Tide Gate Elevation (ft)	emand iate 0	Downstream Con	nection	•