Wetland Discharge Analysis

Aspen Solar Project

Fannett Township

Franklin County, PA

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1.0 EXECUTIVE SUMMARY

1.1 PROJECT OVERVIEW

The following report will provide details on how the proposed stormwater management design will be utilized to achieve compliance with the Franklin County Subdivision and Land Development Township Stormwater Management Ordinance (SALDO), PADEP FAQ for Chapter 102 Permitting for Solar Panel Farms (dated 01/02/19) and all the standard design criteria from 25 Pa. Code Chapter 102.8(g)(2) and (3).

The subject properties are situated Fannett Township, on the summation of eleven (11) properties totaling approximately 1,074 total acres. The development properties existing conditions consist of agricultural land, open fields, watercourses, floodplains, and wetlands. The wetlands have been field verified by a wetland's specialist. Existing structures and other existing impervious features are generally outside of the proposed development areas designated for installation of the solar arrays.

The Aspen Solar Project consists of installation of solar array fields on eleven (11) separate parcels within Fannett Township, Franklin County, PA. All solar fields will be connected through a series of underground electric conduits that converge at the southernmost edge of all the associated parcels. This is the location of the project's proposed substation (point of interconnect) that will service all the sites and will include an O&M Building and various other equipment and appurtenances (e.g., switchgear, transformers, inverters, and overhead and underground electrical conveyance). Each solar array field is serviced by a crushed aggregate access road with designated operation/maintenance areas on a crushed aggregate pad. Minor earth disturbance is associated with the solar panel installation and the focus of this report will be to mitigate all access roads and equipment pad areas for each subject property, independently of one another.

1.2 GENERAL SITE DESCRIPTION AND CONSIDERATIONS

Each site contains multiple points of interest requiring analysis be performed to different degrees per a site-by-site basis. Existing structures and other existing impervious features are generally outside of the proposed development areas designated for installation of the solar arrays. Drainage areas feeding existing wetland areas are intended to maintain current hydrologic patterns and preserve the water sources for each wetland area.

The proposed site improvements consist of ground mounted solar panel on steel racks with driven W-Section steel beams as the preferred foundation support with crushed aggregate access roads and operation/maintenance staging areas. The stormwater runoff from the proposed gravel access roads/pad areas will be directed to an adjacent stormwater BMP (amended soils, infiltration basin and a managed release concept (MRC) bioretention basin for the substation) placed along the down slope for each development site. The elevated ground-mounted solar arrays will provide a grass/meadow condition underneath, thus mimicking the pre-existing hydrology. Therefore, no stormwater management facilities are required to mitigate stormwater runoff from these areas as they will be considered a restoration type BMP. The proposed amended soils will achieve groundwater recharge requirements and will help reduce peak rates to comply with the release rate requirements in accordance with section §409-4-B of the Franklin County SALDO.

2.0 WETLAND PRIMARY SOURCE HYDROLOGY

2.1 WETLAND #1 (10W1 & 10w2 WETLAND COMPLEXES)

The wetlands are associated with stream system and are hydrologically supported via groundwater discharge, surface runoff and a varying seasonal high-water table associated with the stream. (Dry Run)
The following groundcover assumptions were made for all volume control and peak rate runoff calculations for regulated activities involving development sites.

2.2 WETLAND #2 (9W1 WETLAND COMPLEX)

This forested wetland is thought to be sourced from trapped runoff and stormwater resultant from old logging activities which may have impacted a drainage channel. (This opinion is based on site conditions and microtopography.)

2.3 WETLAND #3 (DW1 & DW2 WETLAND COMPLEXES)

These wetlands are contiguous to an unnamed tributary that conveys drainage to Dry Run. Wetlands are supported hydrologically by stormwater conveyed via the tributary, groundwater discharge and seasonal varying water table. The tributary has historically been impacted by farming activities.

2.4 WETLAND #4 (CW1, CW2, CW3 & CW4 WETLAND COMPLEXES)

The wetlands associated with Corridor C are supported hydrologically via stormwater, snow melt drainage that is conveyed via the adjacent tributary as well as from upslope runoff. The wetland is likely sustained by a shallow varying water table, springs, and seeps as ground water discharge. The upgradient unnamed tributary to Dry Run, does not contain consistent flow but contains bed and bank with a rock substrate. The wetlands commence at the interface of where the stream "daylights" from a thin wooded corridor. and continue contiguous to the channel that continues through the field. This area has been impacted by farming activities.

2.5 WETLAND #5 (3W1 WETLAND COMPLEX)

This wetland is fed primarily from upgradient drainage from a stormwater channel conveys field runoff. The drainage discharges through a culvert after which the water dissipates continues through the wetland area but overflows and fans out within the wetland. Runoff from the adjacent farmed slopes also contributes flow to the wetland. A seasonal high-water table may be present. The flow from this system drains to Dry Run.

2.6 WETLAND #6 (SUPPLEMENTAL WETLAND COMPLEX)

The large, wet hillslope is fed primarily by groundwater seepage. A small stream on the southern side of this wetland conveys surface water to a seemingly human-made pond, which then outfalls off site. The two small wetlands to the south of the pond are wet swales believed to be fed primarily by stormwater captured from upgradient areas.

3.0 ROUTED WETLAND STORMWATER VOLUME

3.1 WETLAND #1 (10W1 & 10w2 WETLAND COMPLEXES)

The wetlands do not experience a change in volume due to no changes occurring within the tributary area within the development area. No impervious area is proposed within the tributary area.

3.2 WETLAND #2 (9W1 WETLAND COMPLEX)

This forested wetland exists upstream of proposed development, and thus stormwater volume impacts are not anticipated.

3.3 WETLAND #3 (DW1 & DW2 WETLAND COMPLEXES)

The wetlands experience a slight increase in volume per the proposed changes within the tributary area. The volume to the wetland complex increases slightly due to the increase of impervious area within the tributary area. Soil amendments are proposed within the area to treat stormwater rate, volume, and water quality, and thus an increase of volume occurs. Negative stormwater volume impacts are not anticipated due to the increase in stormwater volume.

3.4 WETLAND #4 (CW1, CW2, CW3 & CW4 WETLAND COMPLEXES)

The wetlands experience a slight decrease in volume per the proposed changes within the tributary area. This decrease is due to the proposed soil amendments within the tributary area to satisfy the rate, volume, and water quality requirements within the several analyzed discharge points, found withing Module 2 (DP014, DP020, DP021, and DP022). This wetland complex exists adjacent to an existing tributary to Dry Run which is fed by several other tributaries. Negative stormwater volume impacts are not anticipated for this wetland complex.

3.5 WETLAND #5 (3W1 WETLAND COMPLEX)

The wetlands experience a slight decrease in volume per the proposed changes within the tributary area. This decrease is due to the proposed soil amendments within the tributary area to satisfy the rate, volume, and water quality requirements within the several analyzed discharge points, found withing Module 2 (DP016 and DP022). Negative stormwater volume impacts are not anticipated for this wetland complex.

3.6 WETLAND #6 (SUPPLEMENTAL WETLAND COMPLEX)

The large, wet hillslope wetland complex is upstream of proposed development, and thus stormwater volume impacts are not anticipated.

4.0 TIME OF CONCENTRATION (TC) PATH TO WETLANDS

The

2.1 WETLAND #1 (10W1 & 10w2 WETLAND COMPLEXES)

The wetlands do not experience a change in the time of concentration from the pre-development conditions to the post-development conditions. The areas within the limit of disturbance of tributary area to the wetland remain unchanged in terms of land coverage and impervious area.

2.2 WETLAND #2 (9W1 WETLAND COMPLEX)

This forested wetland exists upstream of proposed development, and thus time of concentration impacts are not anticipated.

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The wetlands do not experience a change in the time of concentration from the pre-development conditions to the post-development conditions. The areas within the limit of disturbance of tributary area to the wetland remain unchanged in terms of land coverage and impervious area.

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2.5 WETLAND #5 (3W1 WETLAND COMPLEX)

The wetlands do not experience a change in the time of concentration from the pre-development conditions to the post-development conditions. The areas within the limit of disturbance of tributary area to the wetland remain unchanged in terms of land coverage and impervious area.

2.6 WETLAND #6 (SUPPLEMENTAL WETLAND COMPLEX)

The large, wet hillslope wetland complex is upstream of proposed development, and thus time of concentration impacts are not anticipated.

6.0 CONCLUSIONS

The results of the analysis indicate that the wetlands within the project boundary that receive stormwater flow downstream from proposed development are not anticipated to receive negative impacts in terms of stormwater volume and time of concentration of stormwater. It is anticipated that the wetlands that exist within the project area will have a beneficial impact due to the change of land use from intense agriculture to a more native vegetative specie land use.

APPENDIX A – VOLUME REDUCTION (GROUNDWATER RECHARGE) ANALYSIS

General Information

Instructions | *General* | Volume | Rate | Quality

Project Name: **Aspen Solar Project**

Application Type: **Individual NPDES Application**

County: **Franklin**

Municipality: **Fannett Township**

Project Type: **New Utilities**

(●) New Project ( ) Minor / Major Amendment

Area: **1,073.74** acres
(In Watershed)

Total Earth Disturbance: **755.88** acres
(In Watershed)

No. of Post-Construction Discharge Points: **1**

Start DP Numbering at: **001**

Discharge Point (DP) No.	Drainage Area (DA) (acres)	Earth Disturbance in DA (acres)	Existing Impervious in DA (acres)	Proposed Impervious in DA (acres)	Receiving Waters	Ch. 93 Class	Structural BMP(s)
001	3.49	3.49	0.00	0.00	Discharge to Non-Surface Waters	CWF, MF	No
Undetained Areas							
Totals:	**3.49**	**3.49**					

Volume Management

Project: Aspen Solar Project

Instructions | General | *Volume* | Rate | Quality

2-Year / 24-Hour Storm Event (NOAA Atlas 14): _____ inches

Alternative 2-Year / 24-Hour Storm Event: **2.9** inches

Alternative Source: **Franklin County SALDO**

Pre-Construction Conditions: *No. Rows:* **3** ☐ *Exempt from Meadow in Good Condition* ☑ *Automatically Calculate CN, Ia, Runoff and Volume*

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Pervious as Meadow	3.09	B	58	1.448	0.24	2,718
Pervious as Meadow	0.34	C	71	0.817	0.70	873
Forested (Good Condition)	0.06	C	70	0.857	0.66	146
TOTAL (ACRES):	**3.49**				**TOTAL (CF):**	**3,737**

Post-Construction Conditions: *No. Rows:* **3**

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	3.09	B	58	1.448	0.24	2,718
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	0.34	C	71	0.817	0.70	873
Woods (Good Condition)	0.06	C	70	0.857	0.66	146
TOTAL (ACRES):	**3.49**				**TOTAL (CF):**	**3,737**

NET CHANGE IN VOLUME TO MANAGE (CF): **0**

Non-Structural BMP Volume Credits:

☐ Tree Planting Credit

☐ Other (attach calculations):

Structural BMP Volume Credits: *No. Structural BMPs:* *Start BMP Numbering at:*

DP No.	BMP No.	BMP Name	MRC?	Discharge	Incremental BMP DA (acres)	Volume Routed to BMP (CF)	Infiltration / Vegetated Area (SF)	Infiltration Rate (in/hr)	Infiltration Period (hrs)	Vegeta-ted?	Media Depth (ft)	Storage Volume (CF)	Infiltration Credit (CF)	ET Credit (CF)
												Totals:		

INFILTRATION & ET CREDITS (CF):

NET CHANGE IN VOLUME TO MANAGE (CF): **0**

TOTAL CREDITS (CF):

General Information

Instructions | *General* | Volume | Rate | Quality

Project Name: **Aspen Solar Project**

Application Type: **Individual NPDES Application**

County: **Franklin**

Municipality: **Fannett Township**

Project Type: **New Utilities**

(●) New Project ( ) Minor / Major Amendment

Area: **1,073.74** acres
(In Watershed)

Total Earth Disturbance: **755.88** acres
(In Watershed)

No. of Post-Construction Discharge Points: **1**

Start DP Numbering at: **001**

Discharge Point (DP) No.	Drainage Area (DA) (acres)	Earth Disturbance in DA (acres)	Existing Impervious in DA (acres)	Proposed Impervious in DA (acres)	Receiving Waters	Ch. 93 Class	Structural BMP(s)
001	11.26	11.26	0.04	0.32	Discharge to Non-Surface Waters	CWF, MF	No
Undetained Areas							
Totals:	**11.26**	**11.26**	**0.038**	**0.316**			

Volume Management

Project: Aspen Solar Project

Instructions | General | *Volume* | Rate | Quality

2-Year / 24-Hour Storm Event (NOAA Atlas 14): inches

Alternative 2-Year / 24-Hour Storm Event **2.9** inches

Alternative Source: **Franklin County SALDO**

Pre-Construction Conditions: *No. Rows:* **3** ☐ *Exempt from Meadow in Good Condition* ☑ *Automatically Calculate CN, Ia, Runoff and Volume*

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Pervious as Meadow	9.00	B	58	1.448	0.24	7,917
Pervious as Meadow	2.23	C	71	0.817	0.70	5,688
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	0.04	C	98	0.041	2.67	368
TOTAL (ACRES):	**11.26**				**TOTAL (CF):**	**13,973**

Post-Construction Conditions: *No. Rows:* **3**

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	8.92	B	58	1.448	0.24	7,852
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	2.02	C	71	0.817	0.70	5,167
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	0.32	C	98	0.041	2.67	3,061
TOTAL (ACRES):	**11.26**				**TOTAL (CF):**	**16,079**

NET CHANGE IN VOLUME TO MANAGE (CF): **2,107**

Non-Structural BMP Volume Credits:

☐ Tree Planting Credit

☑ Other (attach calculations):

Description: Soil Amendments (16,271 SF) **CREDIT (CF):** **678**

Structural BMP Volume Credits: *No. Structural BMPs:* *Start BMP Numbering at:*

DP No.	BMP No.	BMP Name	MRC?	Discharge	Incremental BMP DA (acres)	Volume Routed to BMP (CF)	Infiltration / Vegetated Area (SF)	Infiltration Rate (in/hr)	Infiltration Period (hrs)	Vegeta-ted?	Media Depth (ft)	Storage Volume (CF)	Infiltration Credit (CF)	ET Credit (CF)
												Totals:		

INFILTRATION & ET CREDITS (CF):

NET CHANGE IN VOLUME TO MANAGE (CF): **2,107**

TOTAL CREDITS (CF): **678**

VOLUME REQUIREMENT NOT SATISFIED

General Information

Instructions | *General* | Volume | Rate | Quality

Project Name: **Aspen Solar Project**

Application Type: **Individual NPDES Application**

County: **Franklin**

Municipality: **Fannett Township**

Project Type: **New Utilities**

(●) New Project ( ) Minor / Major Amendment

Area: **1,073.74** acres
(In Watershed)

Total Earth Disturbance: **755.88** acres
(In Watershed)

No. of Post-Construction Discharge Points: **1**

Start DP Numbering at: **001**

Discharge Point (DP) No.	Drainage Area (DA) (acres)	Earth Disturbance in DA (acres)	Existing Impervious in DA (acres)	Proposed Impervious in DA (acres)	Receiving Waters	Ch. 93 Class	Structural BMP(s)
001	193.32	193.32	1.70	3.25	Discharge to Non-Surface Waters	CWF, MF	No
Undetained Areas							
Totals:	**193.32**	**193.32**	**1.699**	**3.247**			

Volume Management

Project: Aspen Solar Project

Instructions | General | *Volume* | Rate | Quality

2-Year / 24-Hour Storm Event (NOAA Atlas 14): _____ inches

Alternative 2-Year / 24-Hour Storm Event **2.9** inches

Alternative Source: **Franklin County SALDO**

Pre-Construction Conditions: *No. Rows:* **7** ☐ *Exempt from Meadow in Good Condition* ☑ *Automatically Calculate CN, Ia, Runoff and Volume*

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Pervious as Meadow	118.71	B	58	1.448	0.24	104,472
Forested (Good Condition)	6.00	B	55	1.636	0.17	3,682
Pervious as Meadow	46.11	C	71	0.817	0.70	117,759
Forested (Good Condition)	2.53	C	70	0.857	0.66	6,051
Pervious as Meadow	16.34	D	78	0.564	1.06	62,757
Forested (Good Condition)	1.93	D	77	0.597	1.00	7,037
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	1.70	N/A	98	0.041	2.67	16,459
TOTAL (ACRES):	**193.32**				**TOTAL (CF):**	**318,217**

Post-Construction Conditions: *No. Rows:* **4**

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)

Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	124.31	B	58	1.448	0.24	109,394
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	48.70	C	71	0.817	0.70	124,377
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	17.07	D	78	0.564	1.06	65,562
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	3.25	N/A	98	0.041	2.67	31,455
TOTAL (ACRES):	**193.32**				**TOTAL (CF):**	**330,787**

NET CHANGE IN VOLUME TO MANAGE (CF): **12,569**

Non-Structural BMP Volume Credits:

☐ Tree Planting Credit

☑ Other (attach calculations):

Description: Soil Amendments (455,488 SF) **CREDIT (CF):** **18,979**

Structural BMP Volume Credits: *No. Structural BMPs:* *Start BMP Numbering at:*

DP No.	BMP No.	BMP Name	MRC?	Discharge	Incremental BMP DA (acres)	Volume Routed to BMP (CF)	Infiltration / Vegetated Area (SF)	Infiltration Rate (in/hr)	Infiltration Period (hrs)	Vegeta-ted?	Media Depth (ft)	Storage Volume (CF)	Infiltration Credit (CF)	ET Credit (CF)
												Totals:		

INFILTRATION & ET CREDITS (CF):

NET CHANGE IN VOLUME TO MANAGE (CF): **12,569**

TOTAL CREDITS (CF): **18,979**

VOLUME REQUIREMENT SATISFIED

General Information

Instructions | *General* | Volume | Rate | Quality

Project Name: **Aspen Solar Project**

Application Type: **Individual NPDES Application**

County: **Franklin**

Municipality: **Fannett Township**

Project Type: **New Utilities**

(●) New Project ( ) Minor / Major Amendment

Area: **1,073.74** acres
(In Watershed)

Total Earth Disturbance: **755.88** acres
(In Watershed)

No. of Post-Construction Discharge Points: **1**

Start DP Numbering at: **001**

Discharge Point (DP) No.	Drainage Area (DA) (acres)	Earth Disturbance in DA (acres)	Existing Impervious in DA (acres)	Proposed Impervious in DA (acres)	Receiving Waters	Ch. 93 Class	Structural BMP(s)
001	33.69	33.69	0.00	0.61	Discharge to Non-Surface Waters	CWF, MF	No
Undetained Areas							
Totals:	**33.69**	**33.69**		**0.609**			

Volume Management

Project: Aspen Solar Project

Instructions | General | *Volume* | Rate | Quality

2-Year / 24-Hour Storm Event (NOAA Atlas 14): _____ inches

Alternative 2-Year / 24-Hour Storm Event **2.9** inches

Alternative Source: **Franklin County SALDO**

Pre-Construction Conditions: *No. Rows:* **3** ☐ *Exempt from Meadow in Good Condition* ☑ *Automatically Calculate CN, Ia, Runoff and Volume*

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Pervious as Meadow	15.39	B	58	1.448	0.24	13,539
Pervious as Meadow	0.04	C	71	0.817	0.70	100
Pervious as Meadow	18.27	D	78	0.564	1.06	70,163
TOTAL (ACRES):	**33.69**				**TOTAL (CF):**	**83,802**

Post-Construction Conditions: *No. Rows:* **4**

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	15.18	B	58	1.448	0.24	13,355
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	0.04	C	71	0.817	0.70	100
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	17.87	D	78	0.564	1.06	68,631
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	0.61	B	98	0.041	2.67	5,900
TOTAL (ACRES):	**33.69**				**TOTAL (CF):**	**87,984**

NET CHANGE IN VOLUME TO MANAGE (CF): 4,182

Non-Structural BMP Volume Credits:

☐ Tree Planting Credit

☑ Other (attach calculations):

Description: Soil Amendments (136,531 SF) **CREDIT (CF):** 5,689

Structural BMP Volume Credits: *No. Structural BMPs:* *Start BMP Numbering at:*

DP No.	BMP No.	BMP Name	MRC?	Discharge	Incremental BMP DA (acres)	Volume Routed to BMP (CF)	Infiltration / Vegetated Area (SF)	Infiltration Rate (in/hr)	Infiltration Period (hrs)	Vegeta-ted?	Media Depth (ft)	Storage Volume (CF)	Infiltration Credit (CF)	ET Credit (CF)
												Totals:		

INFILTRATION & ET CREDITS (CF):

NET CHANGE IN VOLUME TO MANAGE (CF): 4,182

TOTAL CREDITS (CF): 5,689

VOLUME REQUIREMENT SATISFIED

APPENDIX B – STORMWATER PEAK RATE CONTROL ANALYSIS

Wetland #1

Time of Concentration (Tc) Tabulations						
Start Node	**Node Elevation (ft)**	**Path Length (ft)**	**End Node**	**Node Elevation (ft)**	**Condition**	**Slope (ft/ft)**
A1	894.00	100.00	B1	892.19	Sheet Flow	0.0181
B1	892.19	231.71	C1	875.74	Shallow Concentrated Flow	0.0710
C1	875.74	299.75	D1	864.13	Shallow Concentrated Flow	0.0387
D1	864.13	161.19	E1	847.88	Shallow Concentrated Flow	0.1008
E1	847.88	279.18	F1	837.99	Shallow Concentrated Flow	0.0354
F1	837.99	552.29	G1	835.87	Shallow Concentrated Flow	0.0038

Wetland #3

Time of Concentration (Tc) Tabulations						
Start Node	**Node Elevation (ft)**	**Path Length (ft)**	**End Node**	**Node Elevation (ft)**	**Condition**	**Slope (ft/ft)**
A3	932.59	100.00	B3	925.36	Sheet Flow	0.0723
B3	925.36	663.99	C3	881.99	Shallow Concentrated Flow	0.0653
C3	881.99	147.00	D3	878.00	Shallow Concentrated Flow	0.0271
D3	878.00	224.58	E3	874.00	Channel Flow	0.0178

Wetland #4

Time of Concentration (Tc) Tabulations						
Start Node	**Node Elevation (ft)**	**Path Length (ft)**	**End Node**	**Node Elevation (ft)**	**Condition**	**Slope (ft/ft)**
A4	1150.61	100.00	B4	1138.64	Sheet Flow	0.1197
B4	1138.64	502.93	C4	1062.70	Shallow Concentrated Flow	0.1510
C4	1062.70	1446.71	D4	983.98	Shallow Concentrated Flow	0.0544
D4	983.98	860.98	E4	932.04	Shallow Concentrated Flow	0.0603
E4	932.04	3393.24	F4	920.53	Channel Flow	0.0034

Wetland #5

Time of Concentration (Tc) Tabulations						
Start Node	**Node Elevation (ft)**	**Path Length (ft)**	**End Node**	**Node Elevation (ft)**	**Condition**	**Slope (ft/ft)**
A5	987.98	100.00	B5	984.96	Sheet Flow	0.0302
B5	984.96	536.07	C5	946.03	Shallow Concentrated Flow	0.0726
C5	946.03	781.12	D5	934.31	Shallow Concentrated Flow	0.0150

PRE-DEVELOPMENT

WETLAND #1

WETLAND #3

WETLAND #4

WETLAND #5

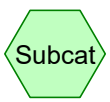
POST-DEVELOPMENT

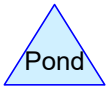
WETLAND #1

WETLAND #3

WETLAND #4

WETLAND #5





Routing Diagram for Wetland Tc
Prepared by Kimley-Horn & Associates, Printed 9/28/2023

Summary for Subcatchment POST W1: WETLAND #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 Year Rainfall=2.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0181	0.17		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
0.9	232	0.0710	4.29		**Shallow Concentrated Flow, B1** Unpaved Kv= 16.1 fps
1.6	300	0.0387	3.17		**Shallow Concentrated Flow, C1** Unpaved Kv= 16.1 fps
0.5	161	0.1008	5.11		**Shallow Concentrated Flow, D1** Unpaved Kv= 16.1 fps
1.5	279	0.0354	3.03		**Shallow Concentrated Flow, E1** Unpaved Kv= 16.1 fps
8.4	500	0.0038	0.99		**Shallow Concentrated Flow, F1** Unpaved Kv= 16.1 fps
22.5	1,572	Total			

Summary for Subcatchment POST W3: WETLAND #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 Year Rainfall=2.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0723	0.30		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
2.7	664	0.0653	4.11		**Shallow Concentrated Flow, B2** Unpaved Kv= 16.1 fps
0.9	147	0.0271	2.65		**Shallow Concentrated Flow, C2** Unpaved Kv= 16.1 fps
0.7	225	0.0178	5.68	28.39	**Channel Flow, D2** Area= 5.0 sf Perim= 10.0' r= 0.50' n= 0.022 Earth, clean & straight
9.8	1,136	Total			

Summary for Subcatchment POST W4: WETLAND #4

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to nonexistent node PRE POI#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 Year Rainfall=2.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.1197	0.23		**Sheet Flow, A21-B21** Grass: Dense n= 0.240 P2= 2.90"
1.3	503	0.1510	6.26		**Shallow Concentrated Flow, B21-C21** Unpaved Kv= 16.1 fps
6.4	1,447	0.0544	3.76		**Shallow Concentrated Flow, C21-D21** Unpaved Kv= 16.1 fps
3.6	861	0.0603	3.95		**Shallow Concentrated Flow, D21-E21** Unpaved Kv= 16.1 fps
9.1	3,393	0.0153	6.22	105.82	**Channel Flow, E21-F21** Area= 17.0 sf Perim= 16.6' r= 1.02' n= 0.030 Earth, grassed & winding
27.7	6,304	Total			

Summary for Subcatchment POST W5: WETLAND #5

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 Year Rainfall=2.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0302	0.21		**Sheet Flow, A5** Range n= 0.130 P2= 2.90"
2.1	536	0.0726	4.34		**Shallow Concentrated Flow, B5** Unpaved Kv= 16.1 fps
6.6	781	0.0150	1.97		**Shallow Concentrated Flow, C5** Unpaved Kv= 16.1 fps
16.5	1,417	Total			

Summary for Subcatchment PRE W1: WETLAND #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 Year Rainfall=2.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0181	0.17		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
0.9	232	0.0710	4.29		**Shallow Concentrated Flow, B1** Unpaved Kv= 16.1 fps
1.6	300	0.0387	3.17		**Shallow Concentrated Flow, C1** Unpaved Kv= 16.1 fps
0.5	161	0.1008	5.11		**Shallow Concentrated Flow, D1** Unpaved Kv= 16.1 fps
1.5	279	0.0354	3.03		**Shallow Concentrated Flow, E1** Unpaved Kv= 16.1 fps
8.4	500	0.0038	0.99		**Shallow Concentrated Flow, F1** Unpaved Kv= 16.1 fps
22.5	1,572	Total			

Summary for Subcatchment PRE W3: WETLAND #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 Year Rainfall=2.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0723	0.30		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
2.7	664	0.0653	4.11		**Shallow Concentrated Flow, B2** Unpaved Kv= 16.1 fps
0.9	147	0.0271	2.65		**Shallow Concentrated Flow, C2** Unpaved Kv= 16.1 fps
0.7	225	0.0178	5.68	28.39	**Channel Flow, D2** Area= 5.0 sf Perim= 10.0' r= 0.50' n= 0.022 Earth, clean & straight
9.8	1,136	Total			

Summary for Subcatchment PRE W4: WETLAND #4

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to nonexistent node PRE POI#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 Year Rainfall=2.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.1197	0.23		**Sheet Flow, A21-B21** Grass: Dense n= 0.240 P2= 2.90"
1.3	503	0.1510	6.26		**Shallow Concentrated Flow, B21-C21** Unpaved Kv= 16.1 fps
6.4	1,447	0.0544	3.76		**Shallow Concentrated Flow, C21-D21** Unpaved Kv= 16.1 fps
3.6	861	0.0603	3.95		**Shallow Concentrated Flow, D21-E21** Unpaved Kv= 16.1 fps
9.1	3,393	0.0153	6.22	105.82	**Channel Flow, E21-F21** Area= 17.0 sf Perim= 16.6' r= 1.02' n= 0.030 Earth, grassed & winding
27.7	6,304	Total			

Summary for Subcatchment PRE W5: WETLAND #5

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 Year Rainfall=2.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0302	0.21		**Sheet Flow, A5** Range n= 0.130 P2= 2.90"
2.1	536	0.0726	4.34		**Shallow Concentrated Flow, B5** Unpaved Kv= 16.1 fps
6.6	781	0.0150	1.97		**Shallow Concentrated Flow, C5** Unpaved Kv= 16.1 fps
16.5	1,417	Total			

Summary for Subcatchment POST W1: WETLAND #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 5 Year Rainfall=3.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0181	0.17		**Sheet Flow, A1**
					Range n= 0.130 P2= 2.90"
0.9	232	0.0710	4.29		**Shallow Concentrated Flow, B1**
					Unpaved Kv= 16.1 fps
1.6	300	0.0387	3.17		**Shallow Concentrated Flow, C1**
					Unpaved Kv= 16.1 fps
0.5	161	0.1008	5.11		**Shallow Concentrated Flow, D1**
					Unpaved Kv= 16.1 fps
1.5	279	0.0354	3.03		**Shallow Concentrated Flow, E1**
					Unpaved Kv= 16.1 fps
8.4	500	0.0038	0.99		**Shallow Concentrated Flow, F1**
					Unpaved Kv= 16.1 fps
22.5	1,572	Total			

Summary for Subcatchment POST W3: WETLAND #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 5 Year Rainfall=3.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0723	0.30		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
2.7	664	0.0653	4.11		**Shallow Concentrated Flow, B2** Unpaved Kv= 16.1 fps
0.9	147	0.0271	2.65		**Shallow Concentrated Flow, C2** Unpaved Kv= 16.1 fps
0.7	225	0.0178	5.68	28.39	**Channel Flow, D2** Area= 5.0 sf Perim= 10.0' r= 0.50' n= 0.022 Earth, clean & straight
9.8	1,136	Total			

Summary for Subcatchment POST W4: WETLAND #4

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to nonexistent node PRE POI#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 5 Year Rainfall=3.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.1197	0.23		**Sheet Flow, A21-B21** Grass: Dense n= 0.240 P2= 2.90"
1.3	503	0.1510	6.26		**Shallow Concentrated Flow, B21-C21** Unpaved Kv= 16.1 fps
6.4	1,447	0.0544	3.76		**Shallow Concentrated Flow, C21-D21** Unpaved Kv= 16.1 fps
3.6	861	0.0603	3.95		**Shallow Concentrated Flow, D21-E21** Unpaved Kv= 16.1 fps
9.1	3,393	0.0153	6.22	105.82	**Channel Flow, E21-F21** Area= 17.0 sf Perim= 16.6' r= 1.02' n= 0.030 Earth, grassed & winding
27.7	6,304	Total			

Summary for Subcatchment POST W5: WETLAND #5

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 5 Year Rainfall=3.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0302	0.21		**Sheet Flow, A5** Range n= 0.130 P2= 2.90"
2.1	536	0.0726	4.34		**Shallow Concentrated Flow, B5** Unpaved Kv= 16.1 fps
6.6	781	0.0150	1.97		**Shallow Concentrated Flow, C5** Unpaved Kv= 16.1 fps
16.5	1,417	Total			

Summary for Subcatchment PRE W1: WETLAND #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 5 Year Rainfall=3.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0181	0.17		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
0.9	232	0.0710	4.29		**Shallow Concentrated Flow, B1** Unpaved Kv= 16.1 fps
1.6	300	0.0387	3.17		**Shallow Concentrated Flow, C1** Unpaved Kv= 16.1 fps
0.5	161	0.1008	5.11		**Shallow Concentrated Flow, D1** Unpaved Kv= 16.1 fps
1.5	279	0.0354	3.03		**Shallow Concentrated Flow, E1** Unpaved Kv= 16.1 fps
8.4	500	0.0038	0.99		**Shallow Concentrated Flow, F1** Unpaved Kv= 16.1 fps
22.5	1,572	Total			

Summary for Subcatchment PRE W3: WETLAND #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 5 Year Rainfall=3.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0723	0.30		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
2.7	664	0.0653	4.11		**Shallow Concentrated Flow, B2** Unpaved Kv= 16.1 fps
0.9	147	0.0271	2.65		**Shallow Concentrated Flow, C2** Unpaved Kv= 16.1 fps
0.7	225	0.0178	5.68	28.39	**Channel Flow, D2** Area= 5.0 sf Perim= 10.0' r= 0.50' n= 0.022 Earth, clean & straight
9.8	1,136	Total			

Summary for Subcatchment PRE W4: WETLAND #4

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to nonexistent node PRE POI#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 5 Year Rainfall=3.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.1197	0.23		**Sheet Flow, A21-B21** Grass: Dense n= 0.240 P2= 2.90"
1.3	503	0.1510	6.26		**Shallow Concentrated Flow, B21-C21** Unpaved Kv= 16.1 fps
6.4	1,447	0.0544	3.76		**Shallow Concentrated Flow, C21-D21** Unpaved Kv= 16.1 fps
3.6	861	0.0603	3.95		**Shallow Concentrated Flow, D21-E21** Unpaved Kv= 16.1 fps
9.1	3,393	0.0153	6.22	105.82	**Channel Flow, E21-F21** Area= 17.0 sf Perim= 16.6' r= 1.02' n= 0.030 Earth, grassed & winding
27.7	6,304	Total			

Summary for Subcatchment PRE W5: WETLAND #5

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 5 Year Rainfall=3.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0302	0.21		**Sheet Flow, A5** Range n= 0.130 P2= 2.90"
2.1	536	0.0726	4.34		**Shallow Concentrated Flow, B5** Unpaved Kv= 16.1 fps
6.6	781	0.0150	1.97		**Shallow Concentrated Flow, C5** Unpaved Kv= 16.1 fps
16.5	1,417	Total			

Summary for Subcatchment POST W1: WETLAND #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 Year Rainfall=4.80"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0181	0.17		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
0.9	232	0.0710	4.29		**Shallow Concentrated Flow, B1** Unpaved Kv= 16.1 fps
1.6	300	0.0387	3.17		**Shallow Concentrated Flow, C1** Unpaved Kv= 16.1 fps
0.5	161	0.1008	5.11		**Shallow Concentrated Flow, D1** Unpaved Kv= 16.1 fps
1.5	279	0.0354	3.03		**Shallow Concentrated Flow, E1** Unpaved Kv= 16.1 fps
8.4	500	0.0038	0.99		**Shallow Concentrated Flow, F1** Unpaved Kv= 16.1 fps
22.5	1,572	Total			

Summary for Subcatchment POST W3: WETLAND #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 Year Rainfall=4.80"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0723	0.30		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
2.7	664	0.0653	4.11		**Shallow Concentrated Flow, B2** Unpaved Kv= 16.1 fps
0.9	147	0.0271	2.65		**Shallow Concentrated Flow, C2** Unpaved Kv= 16.1 fps
0.7	225	0.0178	5.68	28.39	**Channel Flow, D2** Area= 5.0 sf Perim= 10.0' r= 0.50' n= 0.022 Earth, clean & straight
9.8	1,136	Total			

Summary for Subcatchment POST W4: WETLAND #4

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to nonexistent node PRE POI#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 Year Rainfall=4.80"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.1197	0.23		**Sheet Flow, A21-B21** Grass: Dense n= 0.240 P2= 2.90"
1.3	503	0.1510	6.26		**Shallow Concentrated Flow, B21-C21** Unpaved Kv= 16.1 fps
6.4	1,447	0.0544	3.76		**Shallow Concentrated Flow, C21-D21** Unpaved Kv= 16.1 fps
3.6	861	0.0603	3.95		**Shallow Concentrated Flow, D21-E21** Unpaved Kv= 16.1 fps
9.1	3,393	0.0153	6.22	105.82	**Channel Flow, E21-F21** Area= 17.0 sf Perim= 16.6' r= 1.02' n= 0.030 Earth, grassed & winding
27.7	6,304	Total			

Summary for Subcatchment POST W5: WETLAND #5

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 Year Rainfall=4.80"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0302	0.21		**Sheet Flow, A5** Range n= 0.130 P2= 2.90"
2.1	536	0.0726	4.34		**Shallow Concentrated Flow, B5** Unpaved Kv= 16.1 fps
6.6	781	0.0150	1.97		**Shallow Concentrated Flow, C5** Unpaved Kv= 16.1 fps
16.5	1,417	Total			

Summary for Subcatchment PRE W1: WETLAND #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 Year Rainfall=4.80"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0181	0.17		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
0.9	232	0.0710	4.29		**Shallow Concentrated Flow, B1** Unpaved Kv= 16.1 fps
1.6	300	0.0387	3.17		**Shallow Concentrated Flow, C1** Unpaved Kv= 16.1 fps
0.5	161	0.1008	5.11		**Shallow Concentrated Flow, D1** Unpaved Kv= 16.1 fps
1.5	279	0.0354	3.03		**Shallow Concentrated Flow, E1** Unpaved Kv= 16.1 fps
8.4	500	0.0038	0.99		**Shallow Concentrated Flow, F1** Unpaved Kv= 16.1 fps
22.5	1,572	Total			

Summary for Subcatchment PRE W3: WETLAND #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 Year Rainfall=4.80"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0723	0.30		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
2.7	664	0.0653	4.11		**Shallow Concentrated Flow, B2** Unpaved Kv= 16.1 fps
0.9	147	0.0271	2.65		**Shallow Concentrated Flow, C2** Unpaved Kv= 16.1 fps
0.7	225	0.0178	5.68	28.39	**Channel Flow, D2** Area= 5.0 sf Perim= 10.0' r= 0.50' n= 0.022 Earth, clean & straight
9.8	1,136	Total			

Summary for Subcatchment PRE W4: WETLAND #4

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to nonexistent node PRE POI#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 Year Rainfall=4.80"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.1197	0.23		**Sheet Flow, A21-B21** Grass: Dense n= 0.240 P2= 2.90"
1.3	503	0.1510	6.26		**Shallow Concentrated Flow, B21-C21** Unpaved Kv= 16.1 fps
6.4	1,447	0.0544	3.76		**Shallow Concentrated Flow, C21-D21** Unpaved Kv= 16.1 fps
3.6	861	0.0603	3.95		**Shallow Concentrated Flow, D21-E21** Unpaved Kv= 16.1 fps
9.1	3,393	0.0153	6.22	105.82	**Channel Flow, E21-F21** Area= 17.0 sf Perim= 16.6' r= 1.02' n= 0.030 Earth, grassed & winding
27.7	6,304	Total			

Summary for Subcatchment PRE W5: WETLAND #5

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 Year Rainfall=4.80"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0302	0.21		**Sheet Flow, A5** Range n= 0.130 P2= 2.90"
2.1	536	0.0726	4.34		**Shallow Concentrated Flow, B5** Unpaved Kv= 16.1 fps
6.6	781	0.0150	1.97		**Shallow Concentrated Flow, C5** Unpaved Kv= 16.1 fps
16.5	1,417	Total			

Summary for Subcatchment POST W1: WETLAND #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 Year Rainfall=5.10"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0181	0.17		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
0.9	232	0.0710	4.29		**Shallow Concentrated Flow, B1** Unpaved Kv= 16.1 fps
1.6	300	0.0387	3.17		**Shallow Concentrated Flow, C1** Unpaved Kv= 16.1 fps
0.5	161	0.1008	5.11		**Shallow Concentrated Flow, D1** Unpaved Kv= 16.1 fps
1.5	279	0.0354	3.03		**Shallow Concentrated Flow, E1** Unpaved Kv= 16.1 fps
8.4	500	0.0038	0.99		**Shallow Concentrated Flow, F1** Unpaved Kv= 16.1 fps
22.5	1,572	Total			

Summary for Subcatchment POST W3: WETLAND #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 Year Rainfall=5.10"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0723	0.30		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
2.7	664	0.0653	4.11		**Shallow Concentrated Flow, B2** Unpaved Kv= 16.1 fps
0.9	147	0.0271	2.65		**Shallow Concentrated Flow, C2** Unpaved Kv= 16.1 fps
0.7	225	0.0178	5.68	28.39	**Channel Flow, D2** Area= 5.0 sf Perim= 10.0' r= 0.50' n= 0.022 Earth, clean & straight
9.8	1,136	Total			

Summary for Subcatchment POST W4: WETLAND #4

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to nonexistent node PRE POI#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 Year Rainfall=5.10"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.1197	0.23		**Sheet Flow, A21-B21** Grass: Dense n= 0.240 P2= 2.90"
1.3	503	0.1510	6.26		**Shallow Concentrated Flow, B21-C21** Unpaved Kv= 16.1 fps
6.4	1,447	0.0544	3.76		**Shallow Concentrated Flow, C21-D21** Unpaved Kv= 16.1 fps
3.6	861	0.0603	3.95		**Shallow Concentrated Flow, D21-E21** Unpaved Kv= 16.1 fps
9.1	3,393	0.0153	6.22	105.82	**Channel Flow, E21-F21** Area= 17.0 sf Perim= 16.6' r= 1.02' n= 0.030 Earth, grassed & winding
27.7	6,304	Total			

Summary for Subcatchment POST W5: WETLAND #5

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 Year Rainfall=5.10"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0302	0.21		**Sheet Flow, A5** Range n= 0.130 P2= 2.90"
2.1	536	0.0726	4.34		**Shallow Concentrated Flow, B5** Unpaved Kv= 16.1 fps
6.6	781	0.0150	1.97		**Shallow Concentrated Flow, C5** Unpaved Kv= 16.1 fps
16.5	1,417	Total			

Summary for Subcatchment PRE W1: WETLAND #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 Year Rainfall=5.10"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0181	0.17		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
0.9	232	0.0710	4.29		**Shallow Concentrated Flow, B1** Unpaved Kv= 16.1 fps
1.6	300	0.0387	3.17		**Shallow Concentrated Flow, C1** Unpaved Kv= 16.1 fps
0.5	161	0.1008	5.11		**Shallow Concentrated Flow, D1** Unpaved Kv= 16.1 fps
1.5	279	0.0354	3.03		**Shallow Concentrated Flow, E1** Unpaved Kv= 16.1 fps
8.4	500	0.0038	0.99		**Shallow Concentrated Flow, F1** Unpaved Kv= 16.1 fps
22.5	1,572	Total			

Summary for Subcatchment PRE W3: WETLAND #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 Year Rainfall=5.10"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0723	0.30		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
2.7	664	0.0653	4.11		**Shallow Concentrated Flow, B2** Unpaved Kv= 16.1 fps
0.9	147	0.0271	2.65		**Shallow Concentrated Flow, C2** Unpaved Kv= 16.1 fps
0.7	225	0.0178	5.68	28.39	**Channel Flow, D2** Area= 5.0 sf Perim= 10.0' r= 0.50' n= 0.022 Earth, clean & straight
9.8	1,136	Total			

Summary for Subcatchment PRE W4: WETLAND #4

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to nonexistent node PRE POI#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 Year Rainfall=5.10"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.1197	0.23		**Sheet Flow, A21-B21** Grass: Dense n= 0.240 P2= 2.90"
1.3	503	0.1510	6.26		**Shallow Concentrated Flow, B21-C21** Unpaved Kv= 16.1 fps
6.4	1,447	0.0544	3.76		**Shallow Concentrated Flow, C21-D21** Unpaved Kv= 16.1 fps
3.6	861	0.0603	3.95		**Shallow Concentrated Flow, D21-E21** Unpaved Kv= 16.1 fps
9.1	3,393	0.0153	6.22	105.82	**Channel Flow, E21-F21** Area= 17.0 sf Perim= 16.6' r= 1.02' n= 0.030 Earth, grassed & winding
27.7	6,304	Total			

Summary for Subcatchment PRE W5: WETLAND #5

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 Year Rainfall=5.10"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0302	0.21		**Sheet Flow, A5** Range n= 0.130 P2= 2.90"
2.1	536	0.0726	4.34		**Shallow Concentrated Flow, B5** Unpaved Kv= 16.1 fps
6.6	781	0.0150	1.97		**Shallow Concentrated Flow, C5** Unpaved Kv= 16.1 fps
16.5	1,417	Total			

Summary for Subcatchment POST W1: WETLAND #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 Year Rainfall=5.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0181	0.17		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
0.9	232	0.0710	4.29		**Shallow Concentrated Flow, B1** Unpaved Kv= 16.1 fps
1.6	300	0.0387	3.17		**Shallow Concentrated Flow, C1** Unpaved Kv= 16.1 fps
0.5	161	0.1008	5.11		**Shallow Concentrated Flow, D1** Unpaved Kv= 16.1 fps
1.5	279	0.0354	3.03		**Shallow Concentrated Flow, E1** Unpaved Kv= 16.1 fps
8.4	500	0.0038	0.99		**Shallow Concentrated Flow, F1** Unpaved Kv= 16.1 fps
22.5	1,572	Total			

Summary for Subcatchment POST W3: WETLAND #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 Year Rainfall=5.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0723	0.30		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
2.7	664	0.0653	4.11		**Shallow Concentrated Flow, B2** Unpaved Kv= 16.1 fps
0.9	147	0.0271	2.65		**Shallow Concentrated Flow, C2** Unpaved Kv= 16.1 fps
0.7	225	0.0178	5.68	28.39	**Channel Flow, D2** Area= 5.0 sf Perim= 10.0' r= 0.50' n= 0.022 Earth, clean & straight
9.8	1,136	Total			

Summary for Subcatchment POST W4: WETLAND #4

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to nonexistent node PRE POI#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 Year Rainfall=5.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.1197	0.23		**Sheet Flow, A21-B21** Grass: Dense n= 0.240 P2= 2.90"
1.3	503	0.1510	6.26		**Shallow Concentrated Flow, B21-C21** Unpaved Kv= 16.1 fps
6.4	1,447	0.0544	3.76		**Shallow Concentrated Flow, C21-D21** Unpaved Kv= 16.1 fps
3.6	861	0.0603	3.95		**Shallow Concentrated Flow, D21-E21** Unpaved Kv= 16.1 fps
9.1	3,393	0.0153	6.22	105.82	**Channel Flow, E21-F21** Area= 17.0 sf Perim= 16.6' r= 1.02' n= 0.030 Earth, grassed & winding
27.7	6,304	Total			

Summary for Subcatchment POST W5: WETLAND #5

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 Year Rainfall=5.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0302	0.21		**Sheet Flow, A5** Range n= 0.130 P2= 2.90"
2.1	536	0.0726	4.34		**Shallow Concentrated Flow, B5** Unpaved Kv= 16.1 fps
6.6	781	0.0150	1.97		**Shallow Concentrated Flow, C5** Unpaved Kv= 16.1 fps
16.5	1,417	Total			

Summary for Subcatchment PRE W1: WETLAND #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 Year Rainfall=5.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0181	0.17		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
0.9	232	0.0710	4.29		**Shallow Concentrated Flow, B1** Unpaved Kv= 16.1 fps
1.6	300	0.0387	3.17		**Shallow Concentrated Flow, C1** Unpaved Kv= 16.1 fps
0.5	161	0.1008	5.11		**Shallow Concentrated Flow, D1** Unpaved Kv= 16.1 fps
1.5	279	0.0354	3.03		**Shallow Concentrated Flow, E1** Unpaved Kv= 16.1 fps
8.4	500	0.0038	0.99		**Shallow Concentrated Flow, F1** Unpaved Kv= 16.1 fps
22.5	1,572	Total			

Summary for Subcatchment PRE W3: WETLAND #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 Year Rainfall=5.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0723	0.30		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
2.7	664	0.0653	4.11		**Shallow Concentrated Flow, B2** Unpaved Kv= 16.1 fps
0.9	147	0.0271	2.65		**Shallow Concentrated Flow, C2** Unpaved Kv= 16.1 fps
0.7	225	0.0178	5.68	28.39	**Channel Flow, D2** Area= 5.0 sf Perim= 10.0' r= 0.50' n= 0.022 Earth, clean & straight
9.8	1,136	Total			

Summary for Subcatchment PRE W4: WETLAND #4

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to nonexistent node PRE POI#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 Year Rainfall=5.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.1197	0.23		**Sheet Flow, A21-B21** Grass: Dense n= 0.240 P2= 2.90"
1.3	503	0.1510	6.26		**Shallow Concentrated Flow, B21-C21** Unpaved Kv= 16.1 fps
6.4	1,447	0.0544	3.76		**Shallow Concentrated Flow, C21-D21** Unpaved Kv= 16.1 fps
3.6	861	0.0603	3.95		**Shallow Concentrated Flow, D21-E21** Unpaved Kv= 16.1 fps
9.1	3,393	0.0153	6.22	105.82	**Channel Flow, E21-F21** Area= 17.0 sf Perim= 16.6' r= 1.02' n= 0.030 Earth, grassed & winding
27.7	6,304	Total			

Summary for Subcatchment PRE W5: WETLAND #5

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 Year Rainfall=5.90"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0302	0.21		**Sheet Flow, A5** Range n= 0.130 P2= 2.90"
2.1	536	0.0726	4.34		**Shallow Concentrated Flow, B5** Unpaved Kv= 16.1 fps
6.6	781	0.0150	1.97		**Shallow Concentrated Flow, C5** Unpaved Kv= 16.1 fps
16.5	1,417	Total			

Summary for Subcatchment POST W1: WETLAND #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 Year Rainfall=6.00"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0181	0.17		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
0.9	232	0.0710	4.29		**Shallow Concentrated Flow, B1** Unpaved Kv= 16.1 fps
1.6	300	0.0387	3.17		**Shallow Concentrated Flow, C1** Unpaved Kv= 16.1 fps
0.5	161	0.1008	5.11		**Shallow Concentrated Flow, D1** Unpaved Kv= 16.1 fps
1.5	279	0.0354	3.03		**Shallow Concentrated Flow, E1** Unpaved Kv= 16.1 fps
8.4	500	0.0038	0.99		**Shallow Concentrated Flow, F1** Unpaved Kv= 16.1 fps
22.5	1,572	Total			

Summary for Subcatchment POST W3: WETLAND #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 Year Rainfall=6.00"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0723	0.30		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
2.7	664	0.0653	4.11		**Shallow Concentrated Flow, B2** Unpaved Kv= 16.1 fps
0.9	147	0.0271	2.65		**Shallow Concentrated Flow, C2** Unpaved Kv= 16.1 fps
0.7	225	0.0178	5.68	28.39	**Channel Flow, D2** Area= 5.0 sf Perim= 10.0' r= 0.50' n= 0.022 Earth, clean & straight
9.8	1,136	Total			

Summary for Subcatchment POST W4: WETLAND #4

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to nonexistent node PRE POI#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 Year Rainfall=6.00"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.1197	0.23		**Sheet Flow, A21-B21** Grass: Dense n= 0.240 P2= 2.90"
1.3	503	0.1510	6.26		**Shallow Concentrated Flow, B21-C21** Unpaved Kv= 16.1 fps
6.4	1,447	0.0544	3.76		**Shallow Concentrated Flow, C21-D21** Unpaved Kv= 16.1 fps
3.6	861	0.0603	3.95		**Shallow Concentrated Flow, D21-E21** Unpaved Kv= 16.1 fps
9.1	3,393	0.0153	6.22	105.82	**Channel Flow, E21-F21** Area= 17.0 sf Perim= 16.6' r= 1.02' n= 0.030 Earth, grassed & winding
27.7	6,304	Total			

Summary for Subcatchment POST W5: WETLAND #5

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 Year Rainfall=6.00"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0302	0.21		**Sheet Flow, A5** Range n= 0.130 P2= 2.90"
2.1	536	0.0726	4.34		**Shallow Concentrated Flow, B5** Unpaved Kv= 16.1 fps
6.6	781	0.0150	1.97		**Shallow Concentrated Flow, C5** Unpaved Kv= 16.1 fps
16.5	1,417	Total			

Summary for Subcatchment PRE W1: WETLAND #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 Year Rainfall=6.00"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0181	0.17		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
0.9	232	0.0710	4.29		**Shallow Concentrated Flow, B1** Unpaved Kv= 16.1 fps
1.6	300	0.0387	3.17		**Shallow Concentrated Flow, C1** Unpaved Kv= 16.1 fps
0.5	161	0.1008	5.11		**Shallow Concentrated Flow, D1** Unpaved Kv= 16.1 fps
1.5	279	0.0354	3.03		**Shallow Concentrated Flow, E1** Unpaved Kv= 16.1 fps
8.4	500	0.0038	0.99		**Shallow Concentrated Flow, F1** Unpaved Kv= 16.1 fps
22.5	1,572	Total			

Summary for Subcatchment PRE W3: WETLAND #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 Year Rainfall=6.00"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0723	0.30		**Sheet Flow, A1** Range n= 0.130 P2= 2.90"
2.7	664	0.0653	4.11		**Shallow Concentrated Flow, B2** Unpaved Kv= 16.1 fps
0.9	147	0.0271	2.65		**Shallow Concentrated Flow, C2** Unpaved Kv= 16.1 fps
0.7	225	0.0178	5.68	28.39	**Channel Flow, D2** Area= 5.0 sf Perim= 10.0' r= 0.50' n= 0.022 Earth, clean & straight
9.8	1,136	Total			

Summary for Subcatchment PRE W4: WETLAND #4

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to nonexistent node PRE POI#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 Year Rainfall=6.00"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.1197	0.23		**Sheet Flow, A21-B21** Grass: Dense n= 0.240 P2= 2.90"
1.3	503	0.1510	6.26		**Shallow Concentrated Flow, B21-C21** Unpaved Kv= 16.1 fps
6.4	1,447	0.0544	3.76		**Shallow Concentrated Flow, C21-D21** Unpaved Kv= 16.1 fps
3.6	861	0.0603	3.95		**Shallow Concentrated Flow, D21-E21** Unpaved Kv= 16.1 fps
9.1	3,393	0.0153	6.22	105.82	**Channel Flow, E21-F21** Area= 17.0 sf Perim= 16.6' r= 1.02' n= 0.030 Earth, grassed & winding
27.7	6,304	Total			

Summary for Subcatchment PRE W5: WETLAND #5

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 Year Rainfall=6.00"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0302	0.21		**Sheet Flow, A5** Range n= 0.130 P2= 2.90"
2.1	536	0.0726	4.34		**Shallow Concentrated Flow, B5** Unpaved Kv= 16.1 fps
6.6	781	0.0150	1.97		**Shallow Concentrated Flow, C5** Unpaved Kv= 16.1 fps
16.5	1,417	Total			

APPENDIX C – OVERALL WETLAND DRAINAGE AREA MAP