



**CASH WAGGNER
& ASSOCIATES, PC**
CONSULTING ENGINEERS & LAND SURVEYORS

DATE: 09.12.18
PROJECT NO.: 15-2184
REFERENCE: Saddle Creek Estates
- Section 1
YOUR FILE NO.:

ATTENTION: Jeff Mueller
COMPANY: Vanderburgh County
Surveyor
ADDRESS: Civic Center Complex -
Room 325
CITY, ST,
ZIP: Evansville, IN 47708
PHONE:

THE FOLLOWING ITEMS:

COPIES:	ORIG./LAST REV. DATE:	DESCRIPTION:
1	09.12.18	Revised Drainage Plan & Details
1		Sub-basin Exhibits
1	09.12.18	Revised Final Drainage Report

*→ SUPERCEDED
BY 9/24/2018
SUBMITTAL*

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- FOR REVIEW & COMMENT
- OTHER

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COMMENTS:

If you have any questions or comments, please give me a call. Thank you

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9-12-18CA**

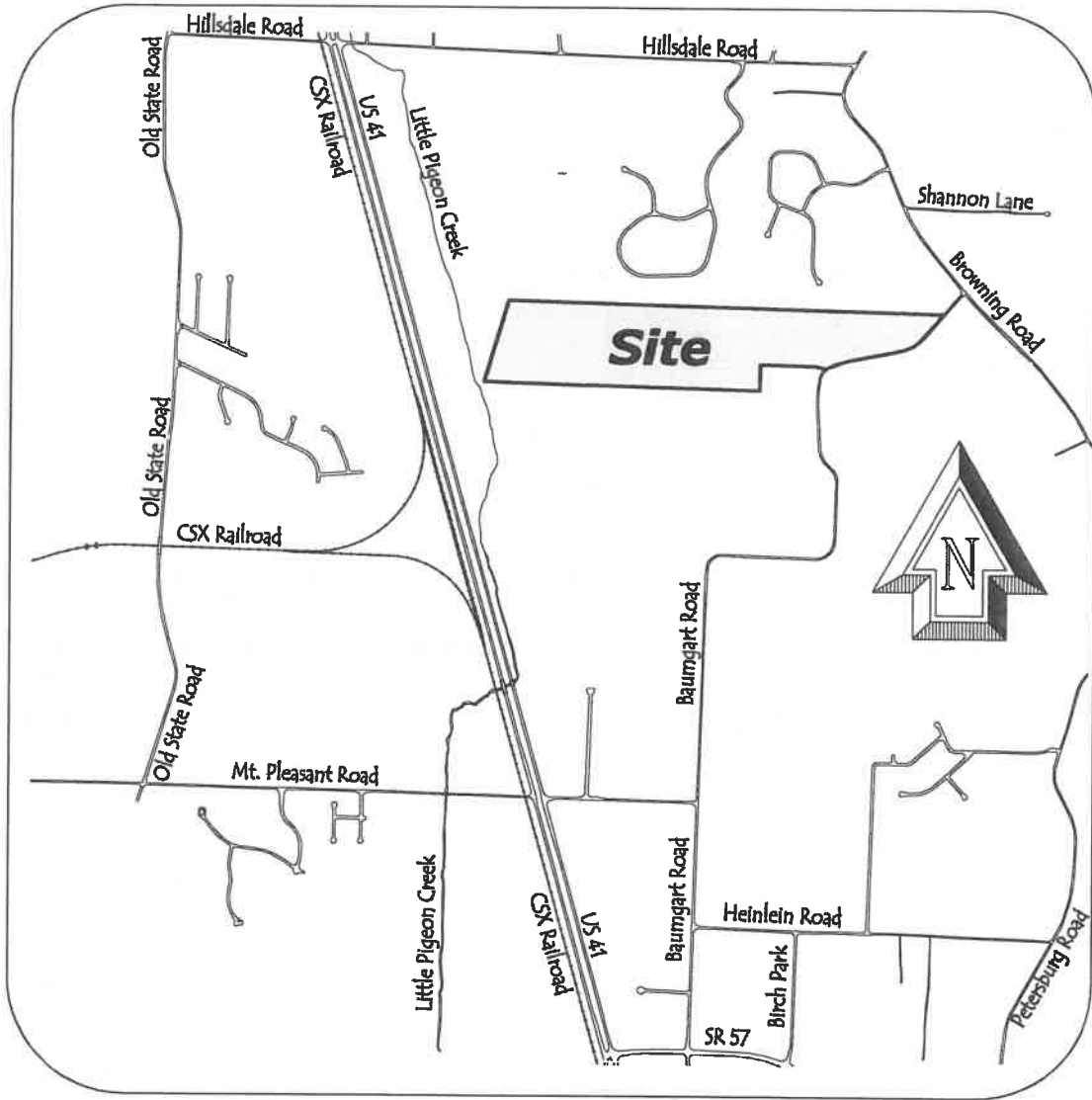
414 CITADEL CIRCLE
SUITE B
EVANSVILLE, IN 47715
PH: 812.401.5561
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GMRITT@CASHWAGGNER.COM

FROM:

Glen Meritt, Jr.
GLEN MERITT, JR., P.E.

cc: File

LETTER OF TRANSMITTAL



Location Map (No Scale)

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 9-12-18 *CA*

Summary for Pond DB #2: Det. Basin #2

Inflow Area = 27.820 ac, 16.59% Impervious, Inflow Depth > 2.85" for 25-Year event
 Inflow = 94.65 cfs @ 12.12 hrs, Volume= 6.598 af
 Outflow = 14.11 cfs @ 12.75 hrs, Volume= 5.941 af, Atten= 85%, Lag= 37.5 min
 Primary = 14.11 cfs @ 12.75 hrs, Volume= 5.941 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 406.10' @ 12.75 hrs Surf.Area= 49,494 sf Storage= 145,896 cf

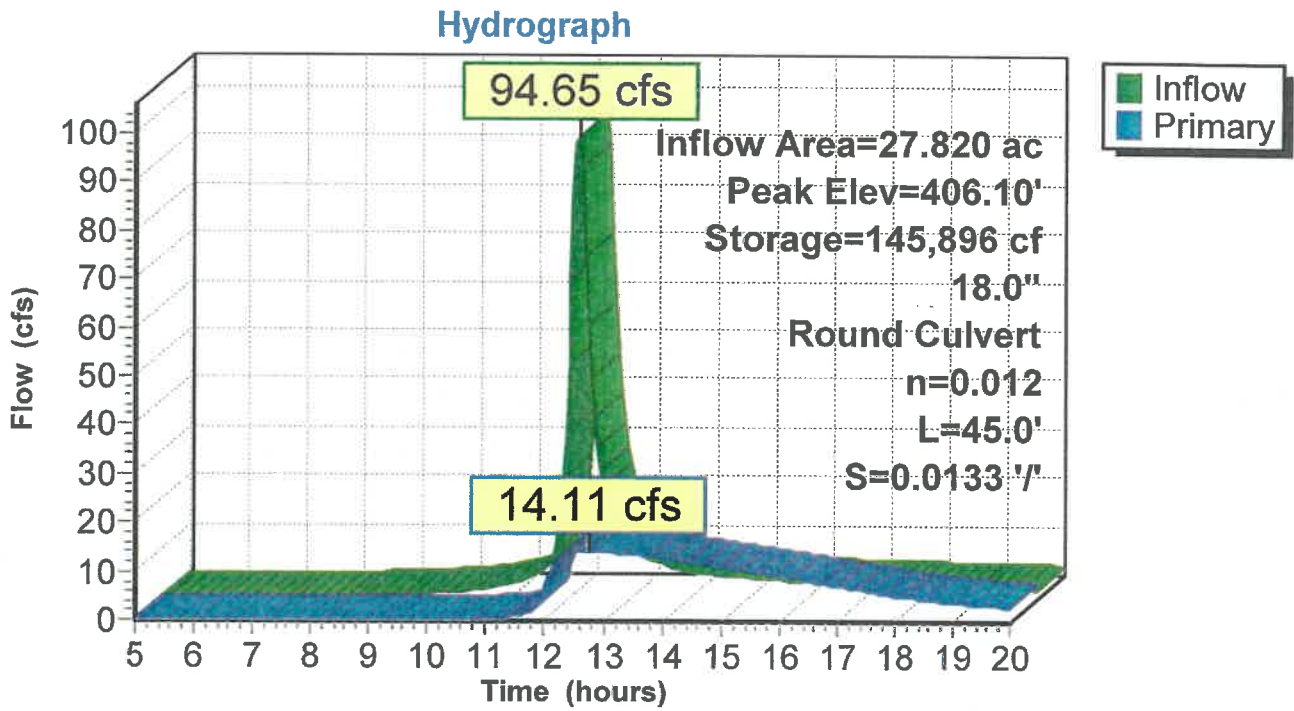
Plug-Flow detention time= 140.0 min calculated for 5.941 af (90% of inflow)
 Center-of-Mass det. time= 107.0 min (899.0 - 792.0)

Volume	Invert	Avail.Storage	Storage Description
#1	402.60'	197,795 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
402.60	34,106	0	0
403.10	36,230	17,584	17,584
404.10	40,553	38,392	55,976
405.10	44,977	42,765	98,741
406.10	49,502	47,240	145,980
407.10	54,127	51,815	197,795

Device	Routing	Invert	Outlet Devices
#1	Primary	402.60'	18.0" Round Culvert L= 45.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 402.60' / 402.00' S= 0.0133 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=14.11 cfs @ 12.75 hrs HW=406.10' (Free Discharge)
 ↳1=Culvert (Inlet Controls 14.11 cfs @ 7.98 fps)

Pond DB #2: Det. Basin #2



Summary for Pond DB #2: Det. Basin #2

Inflow Area = 27.820 ac, 16.59% Impervious, Inflow Depth > 4.09" for 100-Year event
 Inflow = 134.97 cfs @ 12.12 hrs, Volume= 9.485 af
 Outflow = 86.67 cfs @ 12.30 hrs, Volume= 8.694 af, Atten= 36%, Lag= 10.4 min
 Primary = 86.67 cfs @ 12.30 hrs, Volume= 8.694 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 406.44' @ 12.30 hrs Surf.Area= 51,065 sf Storage= 162,973 cf

Plug-Flow detention time= 114.5 min calculated for 8.694 af (92% of inflow)
 Center-of-Mass det. time= 85.8 min (870.0 - 784.2)

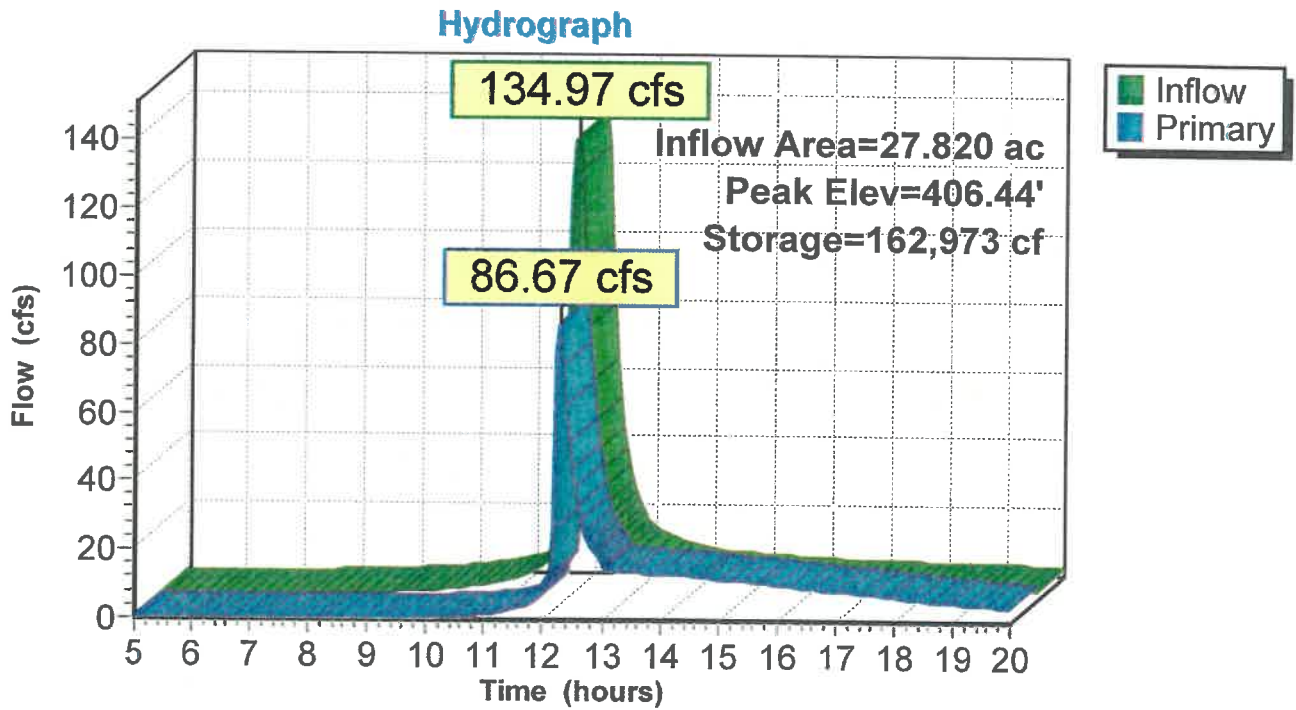
Volume	Invert	Avail.Storage	Storage Description
#1	402.60'	197,795 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
402.60	34,106	0	0
403.10	36,230	17,584	17,584
404.10	40,553	38,392	55,976
405.10	44,977	42,765	98,741
406.10	49,502	47,240	145,980
407.10	54,127	51,815	197,795

Device	Routing	Invert	Outlet Devices
#1	Primary	402.60'	18.0" Round Culvert L= 45.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 402.60' / 402.00' S= 0.0133 ' / Cc= 0.900 n= 0.012
#2	Primary	406.10'	Special & User-Defined Head (feet) 0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00 Disch. (cfs) 0.000 9.250 29.460 58.060 94.060 136.830 185.980 241.210 302.280 369.030 441.300

Primary OutFlow Max=85.84 cfs @ 12.30 hrs HW=406.44' (Free Discharge)

- 1=Culvert (Inlet Controls 14.95 cfs @ 8.46 fps)
- 2=Special & User-Defined (Custom Controls 70.89 cfs)

Pond DB #2: Det. Basin #2



Open Channel Flow Calculations

Swale #: **Emergency
Spillway #2**

Side slope = 4
 Bottom width = 45
 Manning's coefficient = 0.035
 Slope of channel = 0.05

Depth (ft)	Wetted Perimeter (ft)	Area (ft ²)	Hydraulic Radius (ft)	Hydraulic Depth (ft)	Flowrate (cfs)	Velocity (ft/s)	F value
0.0	45.00	0.00	0.00	0.00	0.00	#DIV/0!	1.0
0.1	45.82	4.54	0.10	0.10	9.25	2.04	1.1
0.2	46.65	9.16	0.20	0.20	29.46	3.22	1.2
0.3	47.47	13.86	0.29	0.29	58.06	4.19	1.3
0.4	48.30	18.64	0.39	0.39	94.06	5.05	1.4
0.5	49.12	23.50	0.48	0.48	136.83	5.82	1.5

Open Channel Flow Calculations

Swale #: 22

Side slope = 3
 Bottom width = 1
 Manning's coefficient = 0.035
 Slope of channel = 0.0279

Depth (ft)	Wetted Perimeter (ft)	Area (ft ²)	Hydraulic Radius (ft)	Hydraulic Depth (ft)	Flowrate (cfs)	Velocity (ft/s)	F value
0.0	1.00	0.00	0.00	0.00	0.00	#DIV/0!	1.0
0.1	1.63	0.13	0.08	0.08	0.17	1.32	1.1
0.2	2.26	0.32	0.14	0.15	0.62	1.93	1.2
0.3	2.90	0.57	0.20	0.20	1.37	2.41	1.3
0.4	3.53	0.88	0.25	0.26	2.48	2.82	1.4
0.5	4.16	1.25	0.30	0.31	3.99	3.19	1.5
0.6	4.79	1.68	0.35	0.37	5.94	3.53	1.6
0.7	5.43	2.17	0.40	0.42	8.37	3.86	1.7
0.8	6.06	2.72	0.45	0.47	11.34	4.17	1.8
0.9	6.69	3.33	0.50	0.52	14.87	4.47	1.9
1.0	7.32	4.00	0.55	0.57	19.00	4.75	2.0
1.1	7.96	4.73	0.59	0.62	23.78	5.03	2.1
1.2	8.59	5.52	0.64	0.67	29.23	5.30	2.2
1.3	9.22	6.37	0.69	0.72	35.39	5.56	2.3
1.4	9.85	7.28	0.74	0.77	42.30	5.81	2.4
1.5	10.49	8.25	0.79	0.83	49.99	6.06	2.5
1.6	11.12	9.28	0.83	0.88	58.49	6.30	2.6
1.7	11.75	10.37	0.88	0.93	67.84	6.54	2.7
1.8	12.38	11.52	0.93	0.98	78.06	6.78	2.8
1.9	13.02	12.73	0.98	1.03	89.19	7.01	2.9
2.0	13.65	14.00	1.03	1.08	101.25	7.23	3.0

Open Channel Flow Calculations

Swale #: 23

Side slope = 3
 Bottom width = 1
 Manning's coefficient = 0.035
 Slope of channel = 0.0116

Depth (ft)	Wetted Perimeter (ft)	Area (ft ²)	Hydraulic Radius (ft)	Hydraulic Depth (ft)	Flowrate (cfs)	Velocity (ft/s)	F value
0.0	1.00	0.00	0.00	0.00	0.00	#DIV/0!	1.0
0.1	1.63	0.13	0.08	0.08	0.11	0.85	1.1
0.2	2.26	0.32	0.14	0.15	0.40	1.24	1.2
0.3	2.90	0.57	0.20	0.20	0.88	1.55	1.3
0.4	3.53	0.88	0.25	0.26	1.60	1.82	1.4
0.5	4.16	1.25	0.30	0.31	2.57	2.06	1.5
0.6	4.79	1.68	0.35	0.37	3.83	2.28	1.6
0.7	5.43	2.17	0.40	0.42	5.40	2.49	1.7
0.8	6.06	2.72	0.45	0.47	7.31	2.69	1.8
0.9	6.69	3.33	0.50	0.52	9.59	2.88	1.9
1.0	7.32	4.00	0.55	0.57	12.25	3.06	2.0
1.1	7.96	4.73	0.59	0.62	15.33	3.24	2.1
1.2	8.59	5.52	0.64	0.67	18.85	3.41	2.2
1.3	9.22	6.37	0.69	0.72	22.82	3.58	2.3
1.4	9.85	7.28	0.74	0.77	27.28	3.75	2.4
1.5	10.49	8.25	0.79	0.83	32.24	3.91	2.5
1.6	11.12	9.28	0.83	0.88	37.72	4.06	2.6
1.7	11.75	10.37	0.88	0.93	43.74	4.22	2.7
1.8	12.38	11.52	0.93	0.98	50.33	4.37	2.8
1.9	13.02	12.73	0.98	1.03	57.51	4.52	2.9
2.0	13.65	14.00	1.03	1.08	65.29	4.68	3.0

Open Channel Flow Calculations

Swale #: 24

Side slope = 3
 Bottom width = 1
 Manning's coefficient = 0.035
 Slope of channel = 0.008

Depth (ft)	Wetted Perimeter (ft)	Area (ft ²)	Hydraulic Radius (ft)	Hydraulic Depth (ft)	Flowrate (cfs)	Velocity (ft/s)	F value
0.0	1.00	0.00	0.00	0.00	0.00	#DIV/0!	1.0
0.1	1.63	0.13	0.08	0.08	0.09	0.70	1.1
0.2	2.26	0.32	0.14	0.15	0.33	1.03	1.2
0.3	2.90	0.57	0.20	0.20	0.73	1.29	1.3
0.4	3.53	0.88	0.25	0.26	1.33	1.51	1.4
0.5	4.16	1.25	0.30	0.31	2.13	1.71	1.5
0.6	4.79	1.68	0.35	0.37	3.18	1.89	1.6
0.7	5.43	2.17	0.40	0.42	4.48	2.07	1.7
0.8	6.06	2.72	0.45	0.47	6.07	2.23	1.8
0.9	6.69	3.33	0.50	0.52	7.96	2.39	1.9
1.0	7.32	4.00	0.55	0.57	10.18	2.54	2.0
1.1	7.96	4.73	0.59	0.62	12.73	2.69	2.1
1.2	8.59	5.52	0.64	0.67	15.65	2.84	2.2
1.3	9.22	6.37	0.69	0.72	18.95	2.98	2.3
1.4	9.85	7.28	0.74	0.77	22.65	3.11	2.4
1.5	10.49	8.25	0.79	0.83	26.77	3.24	2.5
1.6	11.12	9.28	0.83	0.88	31.32	3.38	2.6
1.7	11.75	10.37	0.88	0.93	36.33	3.50	2.7
1.8	12.38	11.52	0.93	0.98	41.80	3.63	2.8
1.9	13.02	12.73	0.98	1.03	47.76	3.75	2.9
2.0	13.65	14.00	1.03	1.08	54.22	3.87	3.0

Open Channel Flow Calculations

Swale #: 25

Side slope = 3
 Bottom width = 1
 Manning's coefficient = 0.035
 Slope of channel = 0.0201

Depth (ft)	Wetted Perimeter (ft)	Area (ft ²)	Hydraulic Radius (ft)	Hydraulic Depth (ft)	Flowrate (cfs)	Velocity (ft/s)	F value
0.0	1.00	0.00	0.00	0.00	0.00	#DIV/0!	1.0
0.1	1.63	0.13	0.08	0.08	0.15	1.12	1.1
0.2	2.26	0.32	0.14	0.15	0.52	1.64	1.2
0.3	2.90	0.57	0.20	0.20	1.16	2.04	1.3
0.4	3.53	0.88	0.25	0.26	2.10	2.39	1.4
0.5	4.16	1.25	0.30	0.31	3.38	2.71	1.5
0.6	4.79	1.68	0.35	0.37	5.04	3.00	1.6
0.7	5.43	2.17	0.40	0.42	7.11	3.28	1.7
0.8	6.06	2.72	0.45	0.47	9.62	3.54	1.8
0.9	6.69	3.33	0.50	0.52	12.62	3.79	1.9
1.0	7.32	4.00	0.55	0.57	16.13	4.03	2.0
1.1	7.96	4.73	0.59	0.62	20.18	4.27	2.1
1.2	8.59	5.52	0.64	0.67	24.81	4.49	2.2
1.3	9.22	6.37	0.69	0.72	30.04	4.72	2.3
1.4	9.85	7.28	0.74	0.77	35.91	4.93	2.4
1.5	10.49	8.25	0.79	0.83	42.43	5.14	2.5
1.6	11.12	9.28	0.83	0.88	49.65	5.35	2.6
1.7	11.75	10.37	0.88	0.93	57.58	5.55	2.7
1.8	12.38	11.52	0.93	0.98	66.26	5.75	2.8
1.9	13.02	12.73	0.98	1.03	75.70	5.95	2.9
2.0	13.65	14.00	1.03	1.08	85.94	6.14	3.0

Open Channel Flow Calculations

Swale #: **26**

Side slope = 3
 Bottom width = 1
 Manning's coefficient = 0.035
 Slope of channel = 0.0335

Depth (ft)	Wetted Perimeter (ft)	Area (ft ²)	Hydraulic Radius (ft)	Hydraulic Depth (ft)	Flowrate (cfs)	Velocity (ft/s)	F value
0.0	1.00	0.00	0.00	0.00	0.00	#DIV/0!	1.0
0.1	1.63	0.13	0.08	0.08	0.19	1.44	1.1
0.2	2.26	0.32	0.14	0.15	0.68	2.11	1.2
0.3	2.90	0.57	0.20	0.20	1.50	2.64	1.3
0.4	3.53	0.88	0.25	0.26	2.72	3.09	1.4
0.5	4.16	1.25	0.30	0.31	4.37	3.49	1.5
0.6	4.79	1.68	0.35	0.37	6.51	3.87	1.6
0.7	5.43	2.17	0.40	0.42	9.18	4.23	1.7
0.8	6.06	2.72	0.45	0.47	12.42	4.57	1.8
0.9	6.69	3.33	0.50	0.52	16.29	4.89	1.9
1.0	7.32	4.00	0.55	0.57	20.82	5.21	2.0
1.1	7.96	4.73	0.59	0.62	26.06	5.51	2.1
1.2	8.59	5.52	0.64	0.67	32.03	5.80	2.2
1.3	9.22	6.37	0.69	0.72	38.78	6.09	2.3
1.4	9.85	7.28	0.74	0.77	46.36	6.37	2.4
1.5	10.49	8.25	0.79	0.83	54.78	6.64	2.5
1.6	11.12	9.28	0.83	0.88	64.10	6.91	2.6
1.7	11.75	10.37	0.88	0.93	74.34	7.17	2.7
1.8	12.38	11.52	0.93	0.98	85.54	7.43	2.8
1.9	13.02	12.73	0.98	1.03	97.73	7.68	2.9
2.0	13.65	14.00	1.03	1.08	110.95	7.92	3.0

Open Channel Flow Calculations

Swale #: 27

Side slope = 3
 Bottom width = 1
 Manning's coefficient = 0.035
 Slope of channel = 0.008

Depth (ft)	Wetted Perimeter (ft)	Area (ft ²)	Hydraulic Radius (ft)	Hydraulic Depth (ft)	Flowrate (cfs)	Velocity (ft/s)	F value
0.0	1.00	0.00	0.00	0.00	0.00	#DIV/0!	1.0
0.1	1.63	0.13	0.08	0.08	0.09	0.70	1.1
0.2	2.26	0.32	0.14	0.15	0.33	1.03	1.2
0.3	2.90	0.57	0.20	0.20	0.73	1.29	1.3
0.4	3.53	0.88	0.25	0.26	1.33	1.51	1.4
0.5	4.16	1.25	0.30	0.31	2.13	1.71	1.5
0.6	4.79	1.68	0.35	0.37	3.18	1.89	1.6
0.7	5.43	2.17	0.40	0.42	4.48	2.07	1.7
0.8	6.06	2.72	0.45	0.47	6.07	2.23	1.8
0.9	6.69	3.33	0.50	0.52	7.96	2.39	1.9
1.0	7.32	4.00	0.55	0.57	10.18	2.54	2.0
1.1	7.96	4.73	0.59	0.62	12.73	2.69	2.1
1.2	8.59	5.52	0.64	0.67	15.65	2.84	2.2
1.3	9.22	6.37	0.69	0.72	18.95	2.98	2.3
1.4	9.85	7.28	0.74	0.77	22.65	3.11	2.4
1.5	10.49	8.25	0.79	0.83	26.77	3.24	2.5
1.6	11.12	9.28	0.83	0.88	31.32	3.38	2.6
1.7	11.75	10.37	0.88	0.93	36.33	3.50	2.7
1.8	12.38	11.52	0.93	0.98	41.80	3.63	2.8
1.9	13.02	12.73	0.98	1.03	47.76	3.75	2.9
2.0	13.65	14.00	1.03	1.08	54.22	3.87	3.0

Open Channel Flow Calculations

Swale #: **28**

Side slope = **3**
 Bottom width = **1**
 Manning's coefficient = **0.035**
 Slope of channel = **0.0341**

Depth (ft)	Wetted Perimeter (ft)	Area (ft ²)	Hydraulic Radius (ft)	Hydraulic Depth (ft)	Flowrate (cfs)	Velocity (ft/s)	F value
0.0	1.00	0.00	0.00	0.00	0.00	#DIV/0!	1.0
0.1	1.63	0.13	0.08	0.08	0.19	1.46	1.1
0.2	2.26	0.32	0.14	0.15	0.68	2.13	1.2
0.3	2.90	0.57	0.20	0.20	1.52	2.66	1.3
0.4	3.53	0.88	0.25	0.26	2.74	3.11	1.4
0.5	4.16	1.25	0.30	0.31	4.41	3.53	1.5
0.6	4.79	1.68	0.35	0.37	6.56	3.91	1.6
0.7	5.43	2.17	0.40	0.42	9.26	4.27	1.7
0.8	6.06	2.72	0.45	0.47	12.54	4.61	1.8
0.9	6.69	3.33	0.50	0.52	16.44	4.94	1.9
1.0	7.32	4.00	0.55	0.57	21.01	5.25	2.0
1.1	7.96	4.73	0.59	0.62	26.29	5.56	2.1
1.2	8.59	5.52	0.64	0.67	32.32	5.85	2.2
1.3	9.22	6.37	0.69	0.72	39.13	6.14	2.3
1.4	9.85	7.28	0.74	0.77	46.77	6.42	2.4
1.5	10.49	8.25	0.79	0.83	55.27	6.70	2.5
1.6	11.12	9.28	0.83	0.88	64.67	6.97	2.6
1.7	11.75	10.37	0.88	0.93	75.00	7.23	2.7
1.8	12.38	11.52	0.93	0.98	86.30	7.49	2.8
1.9	13.02	12.73	0.98	1.03	98.60	7.75	2.9
2.0	13.65	14.00	1.03	1.08	111.94	8.00	3.0

Open Channel Flow Calculations

Swale #: **29**

Side slope = **3**
 Bottom width = **1**
 Manning's coefficient = **0.035**
 Slope of channel = **0.0213**

Depth (ft)	Wetted Perimeter (ft)	Area (ft ²)	Hydraulic Radius (ft)	Hydraulic Depth (ft)	Flowrate (cfs)	Velocity (ft/s)	F value
0.0	1.00	0.00	0.00	0.00	0.00	#DIV/0!	1.0
0.1	1.63	0.13	0.08	0.08	0.15	1.15	1.1
0.2	2.26	0.32	0.14	0.15	0.54	1.69	1.2
0.3	2.90	0.57	0.20	0.20	1.20	2.10	1.3
0.4	3.53	0.88	0.25	0.26	2.17	2.46	1.4
0.5	4.16	1.25	0.30	0.31	3.48	2.79	1.5
0.6	4.79	1.68	0.35	0.37	5.19	3.09	1.6
0.7	5.43	2.17	0.40	0.42	7.32	3.37	1.7
0.8	6.06	2.72	0.45	0.47	9.91	3.64	1.8
0.9	6.69	3.33	0.50	0.52	12.99	3.90	1.9
1.0	7.32	4.00	0.55	0.57	16.60	4.15	2.0
1.1	7.96	4.73	0.59	0.62	20.78	4.39	2.1
1.2	8.59	5.52	0.64	0.67	25.54	4.63	2.2
1.3	9.22	6.37	0.69	0.72	30.93	4.85	2.3
1.4	9.85	7.28	0.74	0.77	36.96	5.08	2.4
1.5	10.49	8.25	0.79	0.83	43.68	5.29	2.5
1.6	11.12	9.28	0.83	0.88	51.11	5.51	2.6
1.7	11.75	10.37	0.88	0.93	59.27	5.72	2.7
1.8	12.38	11.52	0.93	0.98	68.21	5.92	2.8
1.9	13.02	12.73	0.98	1.03	77.93	6.12	2.9
2.0	13.65	14.00	1.03	1.08	88.47	6.32	3.0

Open Channel Flow Calculations							Swale #: Surface Overflow Lots 23 & 24
Side slope =		3					
Bottom width =		0					
Manning's coefficient =		0.035					
Slope of channel =		0.01					
Depth (ft)	Wetted Perimeter (ft)	Area (ft ²)	Hydraulic Radius (ft)	Hydraulic Depth (ft)	Flowrate (cfs)	Velocity (ft/s)	F value
0.0	0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.0
0.1	0.63	0.03	0.05	0.05	0.02	0.56	1.1
0.2	1.26	0.12	0.09	0.10	0.11	0.89	1.2
0.3	1.90	0.27	0.14	0.15	0.31	1.16	1.3
0.4	2.53	0.48	0.19	0.20	0.67	1.41	1.4
0.5	3.16	0.75	0.24	0.25	1.22	1.63	1.5
0.6	3.79	1.08	0.28	0.30	1.99	1.84	1.6
0.7	4.43	1.47	0.33	0.35	3.00	2.04	1.7
0.8	5.06	1.92	0.38	0.40	4.28	2.23	1.8
0.9	5.69	2.43	0.43	0.45	5.87	2.41	1.9
1.0	6.32	3.00	0.47	0.50	7.77	2.59	2.0
1.1	6.96	3.63	0.52	0.55	10.02	2.76	2.1
1.2	7.59	4.32	0.57	0.60	12.63	2.92	2.2
1.3	8.22	5.07	0.62	0.65	15.64	3.08	2.3
1.4	8.85	5.88	0.66	0.70	19.05	3.24	2.4
1.5	9.49	6.75	0.71	0.75	22.90	3.39	2.5
1.6	10.12	7.68	0.76	0.80	27.20	3.54	2.6

25-year flow from sub-basins #2, #5, #7, #8, #10, #11, #12, #15 + #16 = 30.53 cfs

Available Capacity in Surface Overflow Spillways between Lots 23 + 24 and 24 + 25 = 32.14 cfs

Open Channel Flow Calculations							Swale #: Surface Overflow Lots 24 & 25
		Side slope =	3				
		Bottom width =	0				
		Manning's coefficient =	0.035				
		Slope of channel =	0.0133				
Depth (ft)	Wetted Perimeter (ft)	Area (ft ²)	Hydraulic Radius (ft)	Hydraulic Depth (ft)	Flowrate (cfs)	Velocity (ft/s)	F value
0.0	0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.0
0.1	0.63	0.03	0.05	0.05	0.02	0.64	1.1
0.2	1.26	0.12	0.09	0.10	0.12	1.02	1.2
0.3	1.90	0.27	0.14	0.15	0.36	1.34	1.3
0.4	2.53	0.48	0.19	0.20	0.78	1.62	1.4
0.5	3.16	0.75	0.24	0.25	1.41	1.88	1.5
0.6	3.79	1.08	0.28	0.30	2.29	2.12	1.6
0.7	4.43	1.47	0.33	0.35	3.46	2.35	1.7
0.8	5.06	1.92	0.38	0.40	4.94	2.57	1.8

25-year flow from sub-basins #2, #5, #7, #8,
#10, #11, #12, #15 + #16 = 30.53 cfs

Available Capacity in Surface Overflow
Spillways between Lots 23 + 24 and 24 + 25
= 32.14 cfs