

Blue Heron Commercial
City of Rivera Beach, Florida

Water Management Calculations

Prepared: August 2018

Revised: February 2021

Revised: March 2021

Revised: April 2021

Job # 17-098

SIMMONS & WHITE, INC.

Cody Floyd, E.I.

Engineers • Planners • Consultants

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Certificate of Authorization Number 3452

Project Summary:

The site is located at the northeast corner of the intersection of Blue Heron Boulevard. and RJ Hendley Avenue in Rivera Beach. The existing site is approximately 4.91 acres and currently a vacant lot. Proposed site improvements consist of retail building, a medical clinic, and associated parking. Runoff will be collected via a system of inlets and drainage pipes. Water quality will be provided in dry detention.

Proposed Land Use:

<u>Land Use</u>	<u>Area (ac)</u>	<u>Elevation (ft-NAVD)</u>
Building	0.72	17.5 F.F.E
Impervious	2.20	15.5 – 17.0
Dry Detention	0.22	10.0 – UP
Dry Detention Slope	0.19	10.0 – 15.0
Pervious	1.59	15.0 – 17.0
Total	4.91	

Soil Storage:

$$S = [(0.22\text{ac} * 8.18'') + (1.59\text{ac} * 8.18'') + (0.19\text{ac} * 8.18'')] / 4.91 \text{ ac} = \mathbf{3.33''}$$

Water Quality:

½" Dry Pre-treatment: $1/2'' \times 4.91\text{ac} = 2.45 \text{ ac-in} = 0.20 \text{ ac-ft}$
(storage met in 27 ft. of exfiltration trench)

1" Over the Site: $1'' \times 4.91 \text{ ac} = 4.91 \text{ ac-in} = 0.41 \text{ ac-ft}$

2.5" x % Impervious: $2.5'' \times 4.91 \text{ ac} \times \frac{2.20 \text{ ac}}{(4.91 \text{ ac} - 0.72 \text{ ac})} = 6.45 \text{ ac-in}$
 $= \mathbf{0.54 \text{ ac-ft}}$
(Controls - storage met in dry detention at Elev. 12.2)

Proposed Control Structure:

The proposed control structure will have a weir crest elevation of 15.9 ft based on the 25 year, 3 day storm and a 3 in. circular bleeder, which is the SFWMD minimum bleeder size, at an invert elevation of 4.5 ft. The water management system will connect to the existing Rivera Beach Canal for legal positive outfall.

Stage/Storage/Discharge Summary

Storm Event	Rainfall (in)	Max Stage (ft.)	Discharge (cfs)	Design Minimums
5 year – 1 Day	7	12.32	0.66	Min. Road = 12.5
25 year – 3 day	13	15.82	0.55	Min. Perimeter Berm = 15.9
100 year – 3 day	16	16.86	N/A	Min. FFE = 16.9

Control Water Elevation = 4.5 ft.

SIMMONS & WHITE INC.

2581 Metrocentre Blvd, Suite 3
 WEST PALM BEACH, FLORIDA 33407

CERTIFICATE OF AUTHORIZATION #3452

EXFILTRATION TRENCH LENGTH CALCULATION

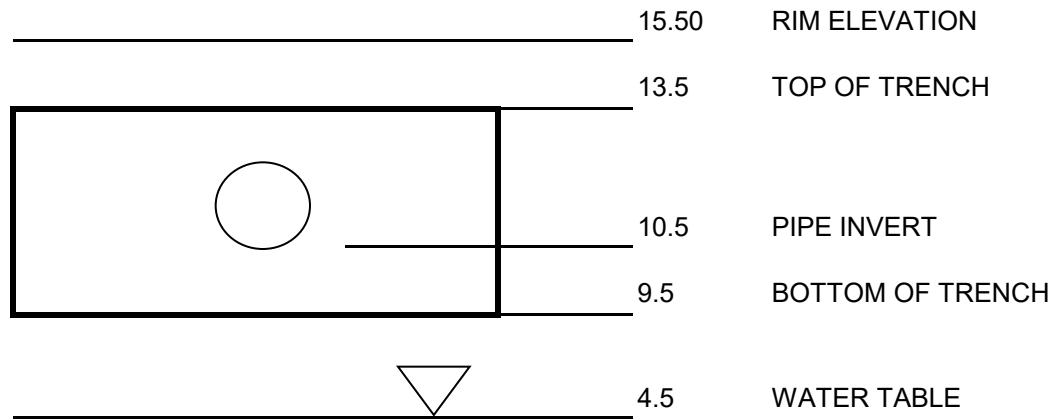
Blue Heron Commercial

JOB NO: 17-098

DATE: 2/22/2021

$$L = \frac{V}{K(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})W D_U}$$

V= VOLUME TO BE TREATED.	0.2 AC-FT
W= WIDTH OF TRENCH	2.4 AC-IN
K= HYDRAULIC CONDUCTIVITY	8 FT
H2= DEPTH TO WATER TABLE FROM CONTROL ELEVATION	0.000663 CFS/SF-FT
DU= NON-SATURATED TRENCH DEPTH	9.0 FT
DS= SATURATED TRENCH DEPTH	4.0 FT
	0.0 FT
L= REQUIRED TRENCH LENGTH	<u>27 FT</u>



Project Name: Blue Heron Commercial

Reviewer: CF

Project Number: 17-098

Period Begin: Jan 01, 2000;0000 hr End: Jan 02, 2000;0000 hr Duration: 24 hr

Time Step: 0.016 hr, Iterations: 10

Basin 1: Basin 1

Method: Santa Barbara Unit Hydrograph

Rainfall Distribution: SFWMD - 24 hr

Design Frequency: 5 year

1 Day Rainfall: 7 inches

Area: 4.91 acres

Ground Storage: 3.33 inches

Time of Concentration: 0.5 hours

Initial Stage: 10 ft NGVD

Stage (ft NGVD)	Storage (acre-ft)
10.00	0.00
10.50	0.11
11.00	0.24
11.50	0.37
12.00	0.52
12.50	0.67
13.00	0.83
13.50	1.00
14.00	1.18
14.50	1.37
15.00	1.58
15.50	1.88
16.00	2.57
16.50	3.82
17.00	5.63
17.50	7.73

Offsite Receiving Body: Offsitel

Time (hr)	Stage (ft NGVD)
0.00	4.50
24.00	4.50

Structure: 1

From Basin: Basin 1

To Basin: Offsitel

Structure Type: Gravity

Weir: Sharp Crested, Crest Elev = 15.9 ft NGVD, Length = 4 ft

Bleeder: Circular, Invert Elev = 4.5 ft NGVD, Diameter = 0.25 ft

Default Coefs: Weir Coef = 0.6, Orifice Coef = 0.6

Pipe: Diameter = 1.5 ft, Manning's n = 0.013, Length = 50 ft

US Invert Elev = 4.5 ft NGVD, DS Invert Elev = 4.5 ft NGVD, no flap gate

Time (hr)	Cumulative Rainfall (in)	Instant Runoff (cfs)	Current Discharge (cfs)	Cumulative Discharge (acre-ft)	Head Water Stage (ft NGVD)	Tail Water Stage (ft NGVD)
0.00	0.00	0.00	0.55	0.00	10.00	4.50
1.00	0.07	0.00	0.55	0.05	10.00	4.50
2.00	0.14	0.00	0.55	0.09	10.00	4.50
3.00	0.22	0.00	0.55	0.14	10.00	4.50
4.00	0.31	0.00	0.55	0.18	10.00	4.50
5.00	0.43	0.00	0.55	0.23	10.00	4.50
6.00	0.58	0.00	0.55	0.27	10.00	4.50
7.00	0.76	0.02	0.55	0.32	10.00	4.50
8.00	0.96	0.11	0.55	0.36	10.00	4.50
9.00	1.20	0.25	0.55	0.41	10.00	4.50
10.00	1.49	0.45	0.55	0.45	10.00	4.50

Time (hr)	Cumulative Rainfall (in)	Instant Runoff (cfs)	Current Discharge (cfs)	Cumulative Discharge (acre-ft)	Head Water Stage (ft NGVD)	Tail Water Stage (ft NGVD)
11.00	1.88	0.83	0.55	0.50	10.00	4.50
12.00	4.59	10.96	0.55	0.54	10.00	4.50
13.00	5.37	3.80	0.62	0.59	11.52	4.50
14.00	5.73	1.74	0.64	0.64	12.05	4.50
15.00	5.95	1.02	0.65	0.70	12.23	4.50
16.00	6.16	0.91	0.66	0.75	12.31	4.50
17.00	6.29	0.59	0.66	0.81	12.32	4.50
18.00	6.41	0.55	0.65	0.86	12.29	4.50
19.00	6.54	0.54	0.65	0.91	12.26	4.50
20.00	6.66	0.54	0.65	0.97	12.23	4.50
21.00	6.75	0.39	0.65	1.02	12.18	4.50
22.00	6.83	0.37	0.65	1.08	12.10	4.50
23.00	6.92	0.37	0.64	1.13	12.03	4.50
24.00	7.00	0.37	0.64	1.18	11.95	4.50

STRUCTURE MAXIMUM AND MINIMUM DISCHARGES

Struc	Max (cfs)	Time (hr)	Min (cfs)	Time (hr)
1	0.66	16.57	0.55	0.00

BASIN MAXIMUM AND MINIMUM STAGES

Basin	Max (ft)	Time (hr)	Min (ft)	Time (hr)
Basin 1	12.32	16.57	10.00	0.00

BASIN WATER BUDGETS (all units in acre-ft)

Basin	Total Runoff	Structure Inflow	Structure Outflow	Initial Storage	Final Storage	Residual
Basin 1	1.68	0.00	1.18	0.00	0.50	0.00

Project Name: Blue Heron Commercial
Reviewer: CF

Project Number: 17-098

Period Begin: Jan 01, 2000;0000 hr End: Jan 10, 2000;0000 hr Duration: 216 hr

Time Step: 0.016 hr, Iterations: 10

Basin 1: Basin 1

Method: Santa Barbara Unit Hydrograph
Rainfall Distribution: SFWMD - 3day
Design Frequency: 25 year
3 Day Rainfall: 13 inches
Area: 4.91 acres
Ground Storage: 3.33 inches
Time of Concentration: 0.5 hours
Initial Stage: 10 ft NGVD

Stage (ft NGVD)	Storage (acre-ft)
10.00	0.00
10.50	0.11
11.00	0.24
11.50	0.37
12.00	0.52
12.50	0.67
13.00	0.83
13.50	1.00
14.00	1.18
14.50	1.37
15.00	1.58
15.50	1.88
16.00	2.57
16.50	3.82
17.00	5.63
17.50	7.73

Offsite Receiving Body: Offsitel

Time (hr)	Stage (ft NGVD)
0.00	4.50
72.00	13.00
216.00	4.50

Structure: 1

From Basin: Basin 1

To Basin: Offsitel

Structure Type: Gravity

Weir: Sharp Crested, Crest Elev = 15.9 ft NGVD, Length = 4 ft

Bleeder: Circular, Invert Elev = 4.5 ft NGVD, Diameter = 0.25 ft

Default Coefs: Weir Coef = 0.6, Orifice Coef = 0.6

Pipe: Diameter = 1.5 ft, Manning's n = 0.013, Length = 50 ft

US Invert Elev = 4.5 ft NGVD, DS Invert Elev = 4.5 ft NGVD, no flap gate

Time (hr)	Cumulative Rainfall (in)	Instant Runoff (cfs)	Current Discharge (cfs)	Cumulative Discharge (acre-ft)	Head Water Stage (ft NGVD)	Tail Water Stage (ft NGVD)
0.00	0.00	0.00	0.55	0.00	10.00	4.50
1.00	0.06	0.00	0.55	0.05	10.00	4.62
2.00	0.12	0.00	0.54	0.09	10.00	4.74
3.00	0.17	0.00	0.54	0.13	10.00	4.85
4.00	0.23	0.00	0.53	0.18	10.00	4.97
5.00	0.29	0.00	0.52	0.22	10.00	5.09
6.00	0.35	0.00	0.52	0.27	10.00	5.21
7.00	0.41	0.00	0.51	0.31	10.00	5.33
8.00	0.47	0.00	0.50	0.35	10.00	5.44
9.00	0.52	0.00	0.50	0.39	10.00	5.56

Time (hr)	Cumulative Rainfall (in)	Instant Runoff (cfs)	Current Discharge (cfs)	Cumulative Discharge (acre-ft)	Head Water Stage (ft NGVD)	Tail Water Stage (ft NGVD)
10.00	0.58	0.00	0.49	0.43	10.00	5.68
11.00	0.64	0.00	0.48	0.47	10.00	5.80
12.00	0.70	0.00	0.48	0.51	10.00	5.92
13.00	0.76	0.01	0.47	0.55	10.00	6.03
14.00	0.81	0.02	0.46	0.59	10.00	6.15
15.00	0.87	0.03	0.46	0.63	10.00	6.27
16.00	0.93	0.04	0.45	0.67	10.00	6.39
17.00	0.99	0.04	0.44	0.70	10.00	6.51
18.00	1.05	0.05	0.43	0.74	10.00	6.62
19.00	1.11	0.06	0.43	0.77	10.00	6.74
20.00	1.16	0.07	0.42	0.81	10.00	6.86
21.00	1.22	0.07	0.41	0.84	10.00	6.98
22.00	1.28	0.08	0.40	0.88	10.00	7.10
23.00	1.34	0.09	0.39	0.91	10.00	7.22
24.00	1.40	0.09	0.39	0.94	10.00	7.33
25.00	1.48	0.14	0.38	0.97	10.00	7.45
26.00	1.57	0.15	0.37	1.00	10.00	7.57
27.00	1.65	0.16	0.36	1.03	10.00	7.69
28.00	1.74	0.17	0.35	1.06	10.00	7.81
29.00	1.82	0.18	0.34	1.09	10.00	7.92
30.00	1.91	0.19	0.33	1.12	10.00	8.04
31.00	1.99	0.20	0.32	1.15	10.00	8.16
32.00	2.08	0.21	0.31	1.17	10.00	8.28
33.00	2.16	0.22	0.30	1.20	10.00	8.40
34.00	2.25	0.22	0.29	1.22	10.00	8.51
35.00	2.33	0.23	0.28	1.25	10.00	8.63
36.00	2.42	0.24	0.26	1.27	10.00	8.75
37.00	2.50	0.24	0.25	1.29	10.00	8.87
38.00	2.59	0.25	0.24	1.31	10.00	8.99
39.00	2.67	0.25	0.22	1.33	10.00	9.10
40.00	2.75	0.26	0.21	1.35	10.00	9.22
41.00	2.84	0.26	0.19	1.36	10.00	9.34
42.00	2.92	0.27	0.17	1.38	10.00	9.46
43.00	3.01	0.27	0.15	1.39	10.00	9.58
44.00	3.09	0.28	0.13	1.40	10.00	9.69
45.00	3.18	0.28	0.10	1.41	10.00	9.81
46.00	3.26	0.29	0.06	1.42	10.00	9.93
47.00	3.35	0.29	-0.05	1.42	10.00	10.05
48.00	3.43	0.29	-0.10	1.41	10.00	10.17
49.00	3.53	0.33	-0.13	1.41	10.00	10.28
50.00	3.63	0.34	-0.15	1.39	10.00	10.40
51.00	3.74	0.40	-0.17	1.38	10.00	10.52
52.00	3.86	0.46	-0.19	1.37	10.00	10.64
53.00	4.03	0.60	-0.21	1.35	10.00	10.76
54.00	4.23	0.75	-0.22	1.33	10.00	10.88
55.00	4.47	0.91	-0.24	1.31	10.00	10.99
56.00	4.74	1.08	-0.25	1.29	10.00	11.11
57.00	5.07	1.30	-0.26	1.27	10.00	11.23
58.00	5.47	1.63	-0.27	1.25	10.00	11.35
59.00	6.01	2.29	-0.28	1.23	10.11	11.47
60.00	9.71	19.55	0.23	1.22	12.54	11.58
61.00	10.77	6.28	0.43	1.25	15.05	11.70
62.00	11.26	2.73	0.45	1.28	15.52	11.82
63.00	11.57	1.57	0.45	1.32	15.61	11.94
64.00	11.85	1.38	0.45	1.36	15.67	12.06
65.00	12.02	0.88	0.44	1.39	15.71	12.17
66.00	12.20	0.82	0.44	1.43	15.73	12.29
67.00	12.37	0.81	0.43	1.47	15.75	12.41
68.00	12.54	0.81	0.43	1.50	15.78	12.53
69.00	12.66	0.58	0.42	1.54	15.79	12.65
70.00	12.77	0.55	0.41	1.57	15.80	12.76
71.00	12.89	0.54	0.40	1.61	15.81	12.88
72.00	13.00	0.54	0.40	1.64	15.82	13.00
73.00	13.00	0.07	0.40	1.67	15.81	12.94
74.00	13.00	0.01	0.40	1.70	15.78	12.88
75.00	13.00	0.00	0.40	1.74	15.76	12.82
76.00	13.00	0.00	0.41	1.77	15.73	12.76
77.00	13.00	0.00	0.41	1.81	15.71	12.70
78.00	13.00	0.00	0.41	1.84	15.69	12.65
79.00	13.00	0.00	0.41	1.87	15.66	12.59

Time (hr)	Cumulative Rainfall (in)	Instant Runoff (cfs)	Current Discharge (cfs)	Cumulative Discharge (acre-ft)	Head Water Stage (ft NGVD)	Tail Water Stage (ft NGVD)
80.00	13.00	0.00	0.42	1.91	15.64	12.53
81.00	13.00	0.00	0.42	1.94	15.61	12.47
82.00	13.00	0.00	0.42	1.98	15.58	12.41
83.00	13.00	0.00	0.42	2.01	15.56	12.35
84.00	13.00	0.00	0.43	2.05	15.53	12.29
85.00	13.00	0.00	0.43	2.08	15.51	12.23
86.00	13.00	0.00	0.43	2.12	15.46	12.17
87.00	13.00	0.00	0.43	2.15	15.40	12.11
88.00	13.00	0.00	0.43	2.19	15.34	12.06
89.00	13.00	0.00	0.43	2.22	15.29	12.00
90.00	13.00	0.00	0.43	2.26	15.23	11.94
91.00	13.00	0.00	0.43	2.29	15.17	11.88
92.00	13.00	0.00	0.43	2.33	15.11	11.82
93.00	13.00	0.00	0.43	2.37	15.05	11.76
94.00	13.00	0.00	0.43	2.40	14.99	11.70
95.00	13.00	0.00	0.43	2.44	14.90	11.64
96.00	13.00	0.00	0.42	2.47	14.82	11.58
97.00	13.00	0.00	0.42	2.51	14.73	11.52
98.00	13.00	0.00	0.42	2.54	14.64	11.47
99.00	13.00	0.00	0.42	2.58	14.55	11.41
100.00	13.00	0.00	0.42	2.61	14.47	11.35
101.00	13.00	0.00	0.42	2.65	14.38	11.29
102.00	13.00	0.00	0.41	2.68	14.29	11.23
103.00	13.00	0.00	0.41	2.71	14.20	11.17
104.00	13.00	0.00	0.41	2.75	14.11	11.11
105.00	13.00	0.00	0.41	2.78	14.02	11.05
106.00	13.00	0.00	0.40	2.81	13.93	10.99
107.00	13.00	0.00	0.40	2.85	13.84	10.93
108.00	13.00	0.00	0.40	2.88	13.74	10.88
109.00	13.00	0.00	0.40	2.91	13.65	10.82
110.00	13.00	0.00	0.40	2.95	13.56	10.76
111.00	13.00	0.00	0.39	2.98	13.47	10.70
112.00	13.00	0.00	0.39	3.01	13.38	10.64
113.00	13.00	0.00	0.39	3.04	13.28	10.58
114.00	13.00	0.00	0.39	3.08	13.19	10.52
115.00	13.00	0.00	0.38	3.11	13.10	10.46
116.00	13.00	0.00	0.38	3.14	13.01	10.40
117.00	13.00	0.00	0.38	3.17	12.91	10.34
118.00	13.00	0.00	0.38	3.20	12.81	10.28
119.00	13.00	0.00	0.37	3.23	12.72	10.23
120.00	13.00	0.00	0.37	3.26	12.62	10.17
121.00	13.00	0.00	0.37	3.29	12.53	10.11
122.00	13.00	0.00	0.36	3.32	12.43	10.05
123.00	13.00	0.00	0.36	3.35	12.33	9.99
124.00	13.00	0.00	0.36	3.38	12.24	9.93
125.00	13.00	0.00	0.36	3.41	12.14	9.87
126.00	13.00	0.00	0.35	3.44	12.04	9.81
127.00	13.00	0.00	0.35	3.47	11.94	9.75
128.00	13.00	0.00	0.35	3.50	11.84	9.69
129.00	13.00	0.00	0.34	3.53	11.74	9.64
130.00	13.00	0.00	0.34	3.56	11.65	9.58
131.00	13.00	0.00	0.34	3.59	11.55	9.52
132.00	13.00	0.00	0.33	3.61	11.45	9.46
133.00	13.00	0.00	0.33	3.64	11.35	9.40
134.00	13.00	0.00	0.33	3.67	11.24	9.34
135.00	13.00	0.00	0.32	3.70	11.14	9.28
136.00	13.00	0.00	0.32	3.72	11.05	9.22
137.00	13.00	0.00	0.32	3.75	10.94	9.16
138.00	13.00	0.00	0.31	3.77	10.84	9.10
139.00	13.00	0.00	0.31	3.80	10.74	9.05
140.00	13.00	0.00	0.30	3.82	10.63	8.99
141.00	13.00	0.00	0.30	3.85	10.53	8.93
142.00	13.00	0.00	0.30	3.87	10.43	8.87
143.00	13.00	0.00	0.29	3.90	10.32	8.81
144.00	13.00	0.00	0.29	3.92	10.22	8.75
145.00	13.00	0.00	0.28	3.95	10.12	8.69
146.00	13.00	0.00	0.28	3.97	10.02	8.63
147.00	13.00	0.00	0.28	3.99	10.00	8.57
148.00	13.00	0.00	0.29	4.02	10.00	8.51
149.00	13.00	0.00	0.29	4.04	10.00	8.45

Time (hr)	Cumulative Rainfall (in)	Instant Runoff (cfs)	Current Discharge (cfs)	Cumulative Discharge (acre-ft)	Head Water Stage (ft NGVD)	Tail Water Stage (ft NGVD)
150.00	13.00	0.00	0.30	4.06	10.00	8.40
151.00	13.00	0.00	0.30	4.09	10.00	8.34
152.00	13.00	0.00	0.31	4.11	10.00	8.28
153.00	13.00	0.00	0.32	4.14	10.00	8.22
154.00	13.00	0.00	0.32	4.17	10.00	8.16
155.00	13.00	0.00	0.33	4.19	10.00	8.10
156.00	13.00	0.00	0.33	4.22	10.00	8.04
157.00	13.00	0.00	0.34	4.25	10.00	7.98
158.00	13.00	0.00	0.34	4.28	10.00	7.92
159.00	13.00	0.00	0.35	4.30	10.00	7.86
160.00	13.00	0.00	0.35	4.33	10.00	7.81
161.00	13.00	0.00	0.35	4.36	10.00	7.75
162.00	13.00	0.00	0.36	4.39	10.00	7.69
163.00	13.00	0.00	0.36	4.42	10.00	7.63
164.00	13.00	0.00	0.37	4.45	10.00	7.57
165.00	13.00	0.00	0.37	4.48	10.00	7.51
166.00	13.00	0.00	0.38	4.51	10.00	7.45
167.00	13.00	0.00	0.38	4.55	10.00	7.39
168.00	13.00	0.00	0.39	4.58	10.00	7.33
169.00	13.00	0.00	0.39	4.61	10.00	7.27
170.00	13.00	0.00	0.39	4.64	10.00	7.22
171.00	13.00	0.00	0.40	4.67	10.00	7.16
172.00	13.00	0.00	0.40	4.71	10.00	7.10
173.00	13.00	0.00	0.41	4.74	10.00	7.04
174.00	13.00	0.00	0.41	4.77	10.00	6.98
175.00	13.00	0.00	0.41	4.81	10.00	6.92
176.00	13.00	0.00	0.42	4.84	10.00	6.86
177.00	13.00	0.00	0.42	4.88	10.00	6.80
178.00	13.00	0.00	0.43	4.91	10.00	6.74
179.00	13.00	0.00	0.43	4.95	10.00	6.68
180.00	13.00	0.00	0.43	4.98	10.00	6.62
181.00	13.00	0.00	0.44	5.02	10.00	6.57
182.00	13.00	0.00	0.44	5.06	10.00	6.51
183.00	13.00	0.00	0.45	5.09	10.00	6.45
184.00	13.00	0.00	0.45	5.13	10.00	6.39
185.00	13.00	0.00	0.45	5.17	10.00	6.33
186.00	13.00	0.00	0.46	5.20	10.00	6.27
187.00	13.00	0.00	0.46	5.24	10.00	6.21
188.00	13.00	0.00	0.46	5.28	10.00	6.15
189.00	13.00	0.00	0.47	5.32	10.00	6.09
190.00	13.00	0.00	0.47	5.36	10.00	6.03
191.00	13.00	0.00	0.47	5.40	10.00	5.98
192.00	13.00	0.00	0.48	5.44	10.00	5.92
193.00	13.00	0.00	0.48	5.48	10.00	5.86
194.00	13.00	0.00	0.48	5.52	10.00	5.80
195.00	13.00	0.00	0.49	5.56	10.00	5.74
196.00	13.00	0.00	0.49	5.60	10.00	5.68
197.00	13.00	0.00	0.49	5.64	10.00	5.62
198.00	13.00	0.00	0.50	5.68	10.00	5.56
199.00	13.00	0.00	0.50	5.72	10.00	5.50
200.00	13.00	0.00	0.50	5.76	10.00	5.44
201.00	13.00	0.00	0.51	5.80	10.00	5.39
202.00	13.00	0.00	0.51	5.85	10.00	5.33
203.00	13.00	0.00	0.51	5.89	10.00	5.27
204.00	13.00	0.00	0.52	5.93	10.00	5.21
205.00	13.00	0.00	0.52	5.97	10.00	5.15
206.00	13.00	0.00	0.52	6.02	10.00	5.09
207.00	13.00	0.00	0.53	6.06	10.00	5.03
208.00	13.00	0.00	0.53	6.10	10.00	4.97
209.00	13.00	0.00	0.53	6.15	10.00	4.91
210.00	13.00	0.00	0.54	6.19	10.00	4.85
211.00	13.00	0.00	0.54	6.24	10.00	4.80
212.00	13.00	0.00	0.54	6.28	10.00	4.74
213.00	13.00	0.00	0.55	6.33	10.00	4.68
214.00	13.00	0.00	0.55	6.37	10.00	4.62
215.00	13.00	0.00	0.55	6.42	10.00	4.56
216.00	13.00	0.00	0.55	6.46	10.00	4.50

```
=====
  Struc   Max (cfs)   Time (hr)   Min (cfs)   Time (hr)
  =====
      1         0.55         0.00        -0.28        58.88
  =====
```

BASIN MAXIMUM AND MINIMUM STAGES

```
=====
      Basin   Max (ft)   Time (hr)   Min (ft)   Time (hr)
  =====
  Basin 1     15.82         72.15        10.00         0.00
  =====
```

BASIN WATER BUDGETS (all units in acre-ft)

```
=====
      Basin   Total   Structure   Structure   Initial   Final
      Runoff  Inflow   Outflow    Storage   Storage   Residual
  =====
  Basin 1     3.97     0.00       6.46      0.00     -2.49     0.00
  =====
```

Project Name: Blue Heron Commercial

Reviewer: CF

Project Number: 17-098

Period Begin: Jan 01, 2000;0000 hr End: Jan 04, 2000;0000 hr Duration: 72 hr

Time Step: 0.016 hr, Iterations: 10

Basin 1: Basin 1

Method: Santa Barbara Unit Hydrograph

Rainfall Distribution: SFWMD - 3day

Design Frequency: 100 year

3 Day Rainfall: 16 inches

Area: 4.91 acres

Ground Storage: 3.33 inches

Time of Concentration: 0.5 hours

Initial Stage: 10 ft NGVD

Stage (ft NGVD)	Storage (acre-ft)
10.00	0.00
10.50	0.11
11.00	0.24
11.50	0.37
12.00	0.52
12.50	0.67
13.00	0.83
13.50	1.00
14.00	1.18
14.50	1.37
15.00	1.58
15.50	1.88
16.00	2.57
16.50	3.82
17.00	5.63
17.50	7.73

Offsite Receiving Body: Offsitel

Time (hr)	Stage (ft NGVD)
0.00	4.50
72.00	4.50

STRUCTURE MAXIMUM AND MINIMUM DISCHARGES

Struc	Max (cfs)	Time (hr)	Min (cfs)	Time (hr)

BASIN MAXIMUM AND MINIMUM STAGES

Basin	Max (ft)	Time (hr)	Min (ft)	Time (hr)
Basin 1	16.86	72.00	10.00	0.00

BASIN WATER BUDGETS (all units in acre-ft)

Basin	Total Runoff	Structure Inflow	Structure Outflow	Initial Storage	Final Storage	Residual
Basin 1	5.13	0.00	0.00	0.00	5.13	0.00