

Appendix F

Pond 17 Basin Calculations Closed Basin

Pond 17 Existing Basin Summary

Project: Wekiva Parkway - Section 8
Location: Seminole

Condition: Existing Conditions
Date: 12/15/2015 **Date:** 2/24/2016
Prepared: LBF **Checked:** AKC

POND 17 BASIN & RUNOFF VOLUME SUMMARY									
Basin	Total Area (ac)	Tc (min)	CCN	Storage S (in) ⁸	Initial Abstraction I (in) ⁹	Runoff (in)	Runoff Volume (ac-ft)	Runoff (in)	Runoff Volume (ac-ft)
						25 YR/96 HR Storm		100 YR/240 HR Storm	
Post 17	36.70	21	61.7	6.2	1.2	7.0	21.38	13.0	39.73
Pond 17	20.58	19	63.2	5.8	1.2	7.2	12.35	13.3	22.84
TOTAL	57.28						33.73		62.57

Notes:

1. Existing values taken from SR 417 Greenway Project 2 Section 3 Drainage and Stormwater Management Calculations March 1999.

2. From Pg 3C-8 of Calculations (100 year/240 hour storm event):

Pre-Develop Runoff Volume = 49.07 used for comparison to Wekiva Parkway post conditions.
 Existing Runoff Volume = 62.60
 Change in Volume = 13.53

Note: Volume is combined from both basins

3. From Pg 3C-16 & 3B-13 of Calculations (25 year/96 hour storm event):

Pre-Develop Runoff Volume = 26.06 used for comparison to Wekiva Parkway post conditions.
 Existing Runoff Volume = 33.64
 Change in Volume = 7.58

Note: Volume is combined from both basins

4. Pond 17 includes 8.45 Ac of impervious area. Existing pavement in Pond 17 basin is 4.47 Ac as measured in CADD

5. Basin Post 17 contributes directly to Pine Lake and does not contribute to Pond 17

6. Rainfall for 100 year/240 hour (from SR 417 Greenway Proj. 2 Sec. 3 Drainage and Stormwater Management Calcs March 1999.) = 18.83 in

7. Rainfall for 25 year/96 hour (from SR 417 Greenway Proj. 2 Sec. 3 Drainage and Stormwater Management Calcs March 1999.) = 12.20 in

8. Watershed Storage (in) = $S = (1000/CCN) \cdot 10$

9. Initial Abstraction (in) = $I = 0.2 \cdot S$

Pond 17 Basin Pre-Development CN Calculations

Project: Wekiva Parkway - Section 8
Location: Seminole

Condition: Pre Development
Date: 1/21/2016 **Date:** 2/24/2016
Prepared: LBF **Checked:** AKC

Post 17				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		2.15	98	210.68
Open Space (Fair)	A	24.44	49	1197.49
Open Space (Fair)	C	2.59	79	204.97
Open Space (Fair)	D	6.35	84	533.45
Pine Lake		1.16	100	116.14
Total		36.70		2262.73

Proposed CN = 61.7
S=(1000/CN)-10 = 6.2

Pond 17				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		8.45	98	828.20
Open Space (Good condition)	A	12.13	39	473.18
Total		20.58		1301.38

Proposed CN = 63.2
S=(1000/CN)-10 = 5.8

Pond 17 Basin Curve Number Summary - Existing				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		10.60	98	1038.88
Open Space	A	12.13	39	473.18
Open Space	A	24.44	49	1197.49
Open Space	C	2.59	79	204.97
Open Space	D	6.35	84	533.45
Pond Surface		1.16	100	116.14
Total		57.28		3564.11

Pre-Development CN = 62.2
S=(1000/CN)-10 = 6.07

Notes:

1. CN = Sum (CN x Area) / Total Area
2. Existing values taken from SR 417 Greenway Project 2 Section 3 Drainage and Stormwater Management Calculations March 199

Pond 17 Post-Development Basin Summary

Project: Wekiva Parkway - Section 8
Location: Seminole

Condition: Post Development
Date: 12/15/2015 **Date:** 2/24/2016
Prepared: LBF **Checked:** AKC

POND 17 BASIN & RUNOFF VOLUME SUMMARY												
Basin	Total Area (ac)	Pervious (ac)	Impervious (ac)	Pond Surface (ac)	Tc (min)	CCN	Storage S (in) ³	Initial Abstraction I (in) ⁴	25 YR/ 96 HR Storm		100 YR/ 240 HR Storm	
									Runoff (in) ⁵	Runoff Volume (ac-ft) ⁶	Runoff (in) ⁵	Runoff Volume (ac-ft) ⁶
Post 17	36.70	33.39	2.15	1.16	21	61.7	6.2	1.2	7.0	21.38	13.0	39.73
Pond 17	20.58	10.72	8.00	1.86	19	67.4	4.8	1.0	7.9	13.48	14.1	24.12
TOTAL	57.28	44.11	10.15	3.02						27.06		0.00

Notes:

1. Rainfall for 100 year/240 hour (from SR 417 Greenway Proj. 2 Sec. 3 Drainage and Stormwater Management Calcs March 1999.) =

18.83	in
-------	----
2. Rainfall for 25 year/96 hour (from SR 417 Greenway Proj. 2 Sec. 3 Drainage and Stormwater Management Calcs March 1999.) =

12.20	in
-------	----
3. Watershed Storage (in) = $S = (1000/CCN) \cdot I$
4. Initial Abstraction (in) = $I = 0.2 \cdot S$
5. Runoff (in) = $Q = (P - I)^2 / (P - I) + S$
6. Runoff Volume (ac-ft) = $\text{Area} \times \text{Runoff} \times (1/12)$
7. Pond 17 impervious area = Travel Lanes + Median
8. Time of Concentration assumed the same as Pre-Development Conditions
9. Values for basin Post 17 taken from SR 417 Greenway Project 2 Section 3 Drainage and Stormwater Management Calculations March 1999.

Pond 17 Basin Post-Development CN Calculations

Project: Wekiva Parkway - Section 8
Location: Seminole

Condition: Post Development
Date: 1/21/2016 **Date:** 2/24/2016
Prepared: LBF **Checked:** AKC

Post 17				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		2.15	98	210.68
Open Space (Fair)	A	24.44	49	1197.49
Open Space (Fair)	C	2.59	79	204.97
Open Space (Fair)	D	6.35	84	533.45
Pine Lake		1.16	100	116.14
Total		36.70		2262.73

Proposed CN = 61.7
S=(1000/CN)-10 = 6.2

Pond 17				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		8.00	98	784.00
Pond 17		1.86	100	186.00
Open Space (Good condition)	A	10.72	39	418.08
Total		20.58		1388.08

Proposed CN = 67.4
S=(1000/CN)-10 = 4.8

Pond 17 Basin Curve Number Summary - Post				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		10.15	98	994.68
Open Space	A	10.72	39	418.08
Open Space	A	24.44	49	1197.49
Open Space	C	2.59	79	204.97
Open Space	D	6.35	84	533.45
Pond Surface		3.02	100	302.14
Total		57.28		3650.81

Post-Development CN = 63.7
S=(1000/CN)-10 = 5.69

Notes:

1. CN = Sum (CN x Area) / Total Area
2. Existing values taken from SR 417 Greenway Project 2 Section 3 Drainage and Stormwater Management Calculations March 199

Water Quality and Volume Summary

Project:	Wekiva Parkway - Section 8	Condition:	Post-Development	
Location:	Seminole	Date:	12/21/2015	Date: 2/16/2016
Basin:	POND 17	Prepared:	LBF	Checked: AKC

1. Calculate Water Quality Volume per SJRWMD requirements 40C-42 FAC

Provide the greater of one (1) inch of runoff from the entire basin area or 2.5 inches of runoff from the impervious area.

A. Total Drainage Area to POND 17 =	20.58 ac
B. Total Drainage Area for Treatment =	20.58 ac
Total Impervious Area =	8.00 ac
*Does not Include pond area	
Pond 17 Area =	1.86
Total Pervious Area =	10.72 ac

C. Treatment Calculations

1" x Drainage Area =	1.72	ac-ft, GOVERNS
2.5" x Imp. Area =	1.67	ac-ft
Total Treatment Provided =	15.15 ac-ft	

2. Calculate the Required Pre -Post Runoff Storage Volume for the 25 year/ 96 hour & 100 year / 240 storm (Closed Basin Criteria) * See Basin Summary Tables for calculations

	25YR/96HR	100YR/240HR	
Pre-Development Runoff Volume =	26.06	49.07	ac-ft
Post-Development Runoff Volume =	34.85	63.85	ac-ft
Pre-Post Runoff Volume =	14.78		8.79 ac-ft
Water Quality Volume =	1.72		ac-ft
Storage Provided in Pond 17 =	15.15		ac-ft

Note: Pre-post runoff volume is based on pre-development conditions. Pond 17 basin only. Post 17 does not require treatment as it is outside of the roadway limits. See proposed drainage map.

Stage Storage Curves

Project: Wekiva Parkway-Section 8
Location: Seminole

Date: 11/10/2015
Prepared: LBF

Date: 2/16/2016
Checked: AKC

Existing Pond 17							
Stage (m) NGVD 29	Stage (ft) NGVD 29	Stage (ft) NAVD 88	Area (ac)	Area (sf)	Storage (ac-ft)	Storage (cf)	Remarks
17.00	55.76	54.76	2.17	94525	0.00	0.00	
18.80	61.68	60.68	3.09	134622	15.57	678275	Grate EL (Per Plans)
19.00	62.32	61.32	3.19	138956	17.58	765820	Top of Bank

Proposed Pond 17							
Stage (m) NGVD 29	Stage (ft) NGVD 29	Stage (ft) NAVD 88	Area (ac)	Area (sf)	Storage (ac-ft)	Storage (cf)	Remarks
17.00	55.76	54.76	1.86	81022	0.00	0.00	
18.98	62.25	61.25	2.81	122295	15.15	659762	Grate EL (Proposed)
19.36	63.50	62.50	2.99	130244	18.77	817599	Inside of Berm
19.66	64.50	63.50	3.58	155945	22.05	960694	Top of Berm

Pond 17 & Pine Lake Max Stage Summary

Project: Wekiva Parkway- Section 8 **Date:** 3/2/2016 **Date:** 3/16/2016
Location: Seminole **Prepared:** LBF **Prepared:** AKC

Pond 17				
	Max Stage (ft)		Max Flow (Q _{out}) cfs	
	25/96 Event	100/240 Event	25/96 Event	100/240 Event
Existing Conditions	59.61	60.97	-	7.52
Proposed Conditions	60.64	61.64	-	11.83

Pine Lake				
	Max Stage (ft)		Max Flow (Q _{out}) cfs	
	25/96 Event	100/240 Event	25/96 Event	100/240 Event
Pre-Development Conditions	51.87	55.51	-	-
Proposed Conditions	50.90	55.46	-	-

Notes:

1. Pond 17 stages compared to existing conditions.
2. Pine Lake stages compared to pre-development conditions.

Pond Recovery Analysis

Project: Wekiva Parkway-Section 8 **Date:** 3/1/2016 **Date:** 3/16/2016
Location: Seminole **Prepared:** LBF **Prepared:** AKC

Pond 17

Existing pond bottom area = 2.17 ac

Impacted pond bottom area = 1.86 ac

Percent change in pond bottom area = 14.29 %

Existing Recovery

Total Post-Volume 100yr/240hr event = 22.84 ac-ft
 Existing Recovery Time = 16.70 days
 Rate of Recovery = 1.37 ac-ft/day

1/2 Post-Volume 100yr/240hr event = 11.42 ac-ft
 Existing Recovery Time = 1.50 days
 Rate of Recovery = 7.61 ac-ft/day

Proposed Recovery

1/2 Post-Volume 100yr/240hr event = 12.06 ac-ft
 Recovery time (1/2 volume) = 1.85 days
 Adjusted rate of recovery (1/2 Post-Volume) = 6.53 ac-ft/day

Total Post-Volume 100yr/240hr event = 24.12 ac-ft
 Recovery time (total volume) = 20.58 days
 Adjusted rate of recovery (Total Post-Volume Proposed Pond 17) = 1.17 ac-ft/day

Recovery time = Volume/Rate of Recovery
 Rate of Recovery = Volume/Existing Recovery Time

Notes:

1. Existing Recovery was obtained from pg 3C-6 of SR 417 Greenway Proj. 2 Sec. 3 Drainage and Stormwater Management Calcs Sept. 1999. (for 100 YR/ 240 HR storm, converted from metric)
2. Recovery volume reduced by same percent reduction in pond bottom, 14.29%, to be conservative.
3. Recovery shown as a linear rate for simplicity. Existing boring information not available.

PRE

ICPR MODEL

Pond 17 Basin
Pre Development (Recreated Model)
Nodal Diagram

Nodes

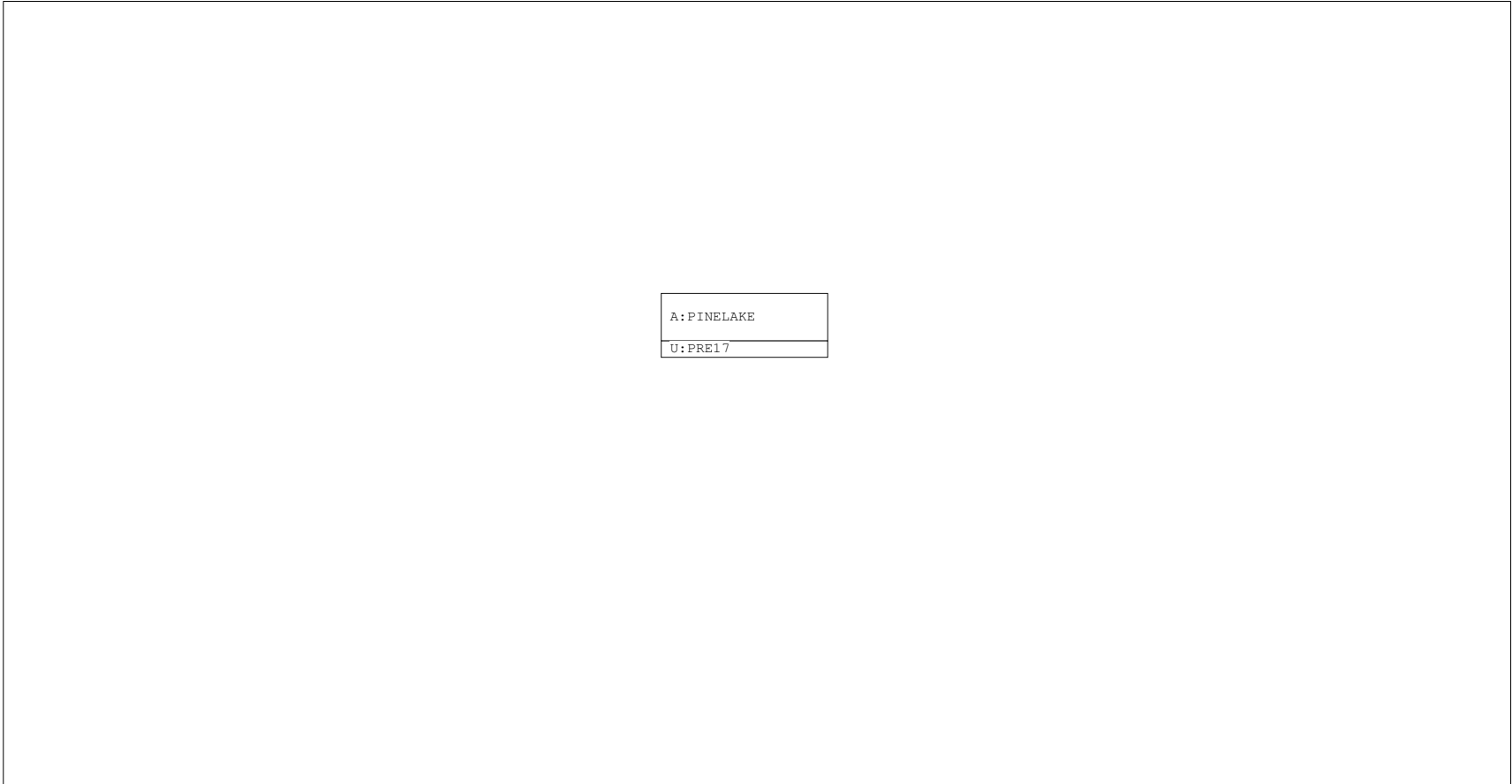
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins

O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links

P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



All elevations NAVD

Pond 17 Basin
Pre Development (Recreated Model)
Input Report

=====
Basins
=====

Name: PRE17 Node: PINELAKE Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 21.00
Area(ac): 46.430 Time Shift(hrs): 0.00
Curve Number: 60.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

=====
Nodes
=====

Name: PINELAKE Base Flow(cfs): 0.000 Init Stage(ft): 44.000
Group: BASE Warn Stage(ft): 0.000
Type: Stage/Area

Stage(ft)	Area(ac)
41.000	0.7290
43.000	1.5770
45.000	2.1920
47.000	2.8170
48.000	3.1380
49.000	3.6800
50.000	4.2250
51.000	4.6200
54.000	5.9300
54.770	7.5360

=====
Hydrology Simulations
=====

Name: 025YR-096HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 17\ICPR\Pre Development\025YR-096HR.R32

Override Defaults: Yes
Storm Duration(hrs): 96.00
Rainfall File: Sjrwm96
Rainfall Amount(in): 12.20

Time(hrs)	Print Inc(min)
96.000	5.00

Name: 100YR-240HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 17\ICPR\Pre Development\100YR-240HR.R32

Override Defaults: Yes
Storm Duration(hrs): 240.00
Rainfall File: Fdot-240
Rainfall Amount(in): 18.83

Time(hrs)	Print Inc(min)
240.000	5.00

=====
Routing Simulations
=====

Name: 025YR-096HR Hydrology Sim: 025YR-096HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 17\ICPR\Pre Development\025YR-096HR.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 96.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

All elevations NAVD

Pond 17 Basin
Pre Development (Recreated Model)
Input Report

Time(hrs)	Print Inc(min)
999.000	15.000
Group	Run
-----	-----
BASE	Yes

Name: 100YR-240HR Hydrology Sim: 100YR-240HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 17\ICPR\Pre Development\100YR-240HR.I32
Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 240.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000
Group	Run
-----	-----
BASE	Yes

Pond 17 Basin
 Pre Development (Recreated Model)
 Node Max

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
PINELAKE	BASE	025YR-096HR	96.00	51.87	0.00	0.0050	217799	60.08	154.51	0.00	0.00
PINELAKE	BASE	100YR-240HR	240.00	55.51	0.00	0.0050	395765	184.00	27.08	0.00	0.00

All elevations NAVD

EXISTING

ICPR MODEL

Pond 17 Basin
 Existing Conditions (Duplicate Model)
 Nodal Diagram

Nodes

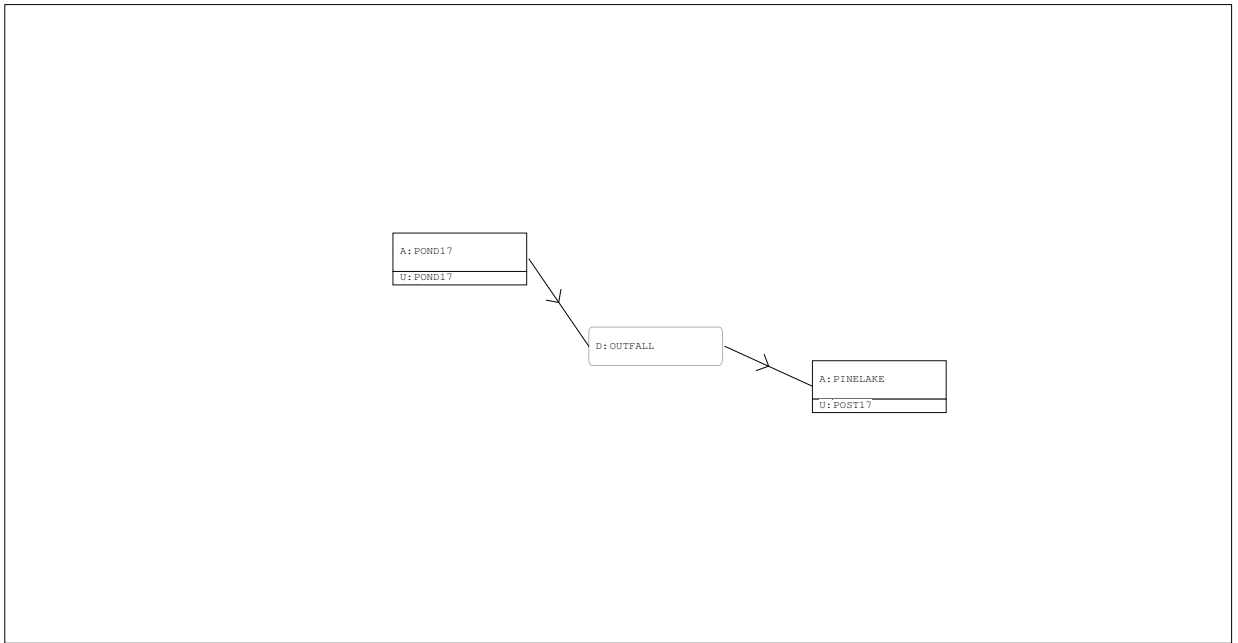
- A Stage/Area
- V Stage/Volume
- T Time/Stage
- M Manhole

Basins

- O Overland Flow
- U SCS Unit CN
- S SBUH CN
- Y SCS Unit GA
- Z SBUH GA

Links

- P Pipe
- W Weir
- C Channel
- D Drop Structure
- B Bridge
- R Rating Curve
- H Breach
- E Percolation
- F Filter
- X Exfil Trench



All elevations in NAVD

Pond 17 Basin
Existing Conditions (Duplicate Model)
Input Report

=====
Basins
=====

Name: POND17 Node: POND17 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Fdot-1 Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 19.00
Area(ac): 20.580 Time Shift(hrs): 0.00
Curve Number: 63.20 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: POST17 Node: PINELAKE Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Fdot-1 Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 21.00
Area(ac): 36.700 Time Shift(hrs): 0.00
Curve Number: 61.70 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

=====
Nodes
=====

Name: PINELAKE Base Flow(cfs): 0.000 Init Stage(ft): 44.000
Group: BASE Warn Stage(ft): 0.000
Type: Stage/Area

Stage(ft)	Area(ac)
41.000	0.7290
43.000	1.5770
45.000	2.1920
47.000	2.8170
48.000	3.1380
49.000	3.6800
50.000	4.2250
51.000	4.6200
54.000	5.9300
54.770	7.5360

Name: POND17 Base Flow(cfs): 0.000 Init Stage(ft): 54.760
Group: BASE Warn Stage(ft): 60.320
Type: Stage/Area

Stage(ft)	Area(ac)
54.760	2.1700
60.680	3.0900
61.320	3.1900

=====
Drop Structures
=====

Name: OUTFALL From Node: POND17 Length(ft): 318.00
Group: BASE To Node: PINELAKE Count: 1

UPSTREAM DOWNSTREAM Friction Equation: Automatic
Geometry: Circular Circular Solution Algorithm: Most Restrictive
Span(in): 18.00 18.00 Flow: Both
Rise(in): 18.00 18.00 Entrance Loss Coef: 0.000
Invert(ft): 54.770 52.140 Exit Loss Coef: 1.000
Manning's N: 0.012000 0.012000 Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000 0.000 Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000 0.000 Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:

All elevations in NAVD

Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure OUTFALL ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 54.00	Invert(ft): 60.680
Rise(in): 36.00	Control Elev(ft): 60.680

=====
 === Hydrology Simulations ===
 =====

Name: 025YR-096HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 17\ICPR\Existing Pond\025YR-096HR.R32

Override Defaults: Yes
 Storm Duration(hrs): 96.00
 Rainfall File: Sjrwm96
 Rainfall Amount(in): 12.20

Time(hrs)	Print Inc(min)
-----	-----
96.000	5.00

Name: 100YR-240HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 17\ICPR\Existing Pond\100YR-240HR.R32

Override Defaults: Yes
 Storm Duration(hrs): 240.00
 Rainfall File: Fdot-240
 Rainfall Amount(in): 18.83

Time(hrs)	Print Inc(min)
-----	-----
240.000	5.00

=====
 === Routing Simulations ===
 =====

Name: 025YR-096HR Hydrology Sim: 025YR-096HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 17\ICPR\Existing Pond\025YR-096HR.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 96.00
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
999.000	15.000

Group	Run
-----	-----
BASE	Yes

Name: 100YR-240HR Hydrology Sim: 100YR-240HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 17\ICPR\Existing Pond\100YR-240HR.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 240.00
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

All elevations in NAVD

Pond 17 Basin
Existing Conditions (Duplicate Model)
Input Report

Time(hrs)	Print Inc(min)
999.000	15.000
Group	Run
-----	-----
BASE	Yes

Pond 17 Basin
 Existing Conditions (Duplicate Model)
 Node Diagram

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
PINELAKE	BASE	025YR-096HR	96.00	50.90	0.00	0.0050	199507	60.08	126.47	0.00	0.00
PINELAKE	BASE	100YR-240HR	239.99	55.26	0.00	0.0050	372870	184.01	28.03	0.00	0.00
POND17	BASE	025YR-096HR	96.00	59.61	60.32	0.0034	127384	60.08	76.62	0.00	0.00
POND17	BASE	100YR-240HR	184.32	60.97	60.32	0.0044	136558	184.00	12.27	184.32	7.40

All elevations in NAVD

POST

ICPR MODEL

Pond 17 Basin
Proposed Conditions
Nodal Diagram

Nodes

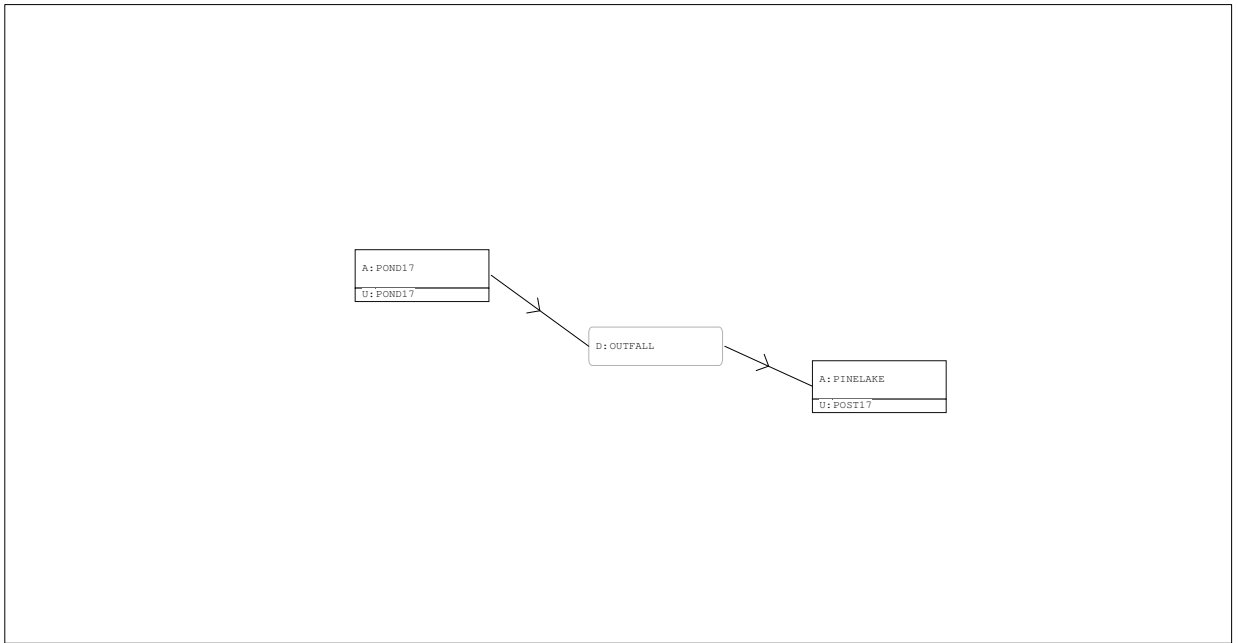
- A Stage/Area
- V Stage/Volume
- T Time/Stage
- M Manhole

Basins

- O Overland Flow
- U SCS Unit CN
- S SBUH CN
- Y SCS Unit GA
- Z SBUH GA

Links

- P Pipe
- W Weir
- C Channel
- D Drop Structure
- B Bridge
- R Rating Curve
- H Breach
- E Percolation
- F Filter
- X Exfil Trench



All elevations in NAVD

Pond 17 Basin
Proposed Conditions
Input Report

=====
Basins
=====

Name: POND17 Node: POND17 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Fdot-1 Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 19.00
Area(ac): 20.580 Time Shift(hrs): 0.00
Curve Number: 67.40 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: POST17 Node: PINELAKE Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Fdot-1 Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 21.00
Area(ac): 36.700 Time Shift(hrs): 0.00
Curve Number: 61.70 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

=====
Nodes
=====

Name: PINELAKE Base Flow(cfs): 0.000 Init Stage(ft): 44.000
Group: BASE Warn Stage(ft): 0.000
Type: Stage/Area

Stage(ft)	Area(ac)
41.000	0.7290
43.000	1.5770
45.000	2.1920
47.000	2.8170
48.000	3.1380
49.000	3.6800
50.000	4.2250
51.000	4.6200
54.000	5.9300
54.770	7.5360

Name: POND17 Base Flow(cfs): 0.000 Init Stage(ft): 54.760
Group: BASE Warn Stage(ft): 62.500
Type: Stage/Area

Stage(ft)	Area(ac)
54.760	1.8600
62.500	2.9900
63.500	3.5800

=====
Drop Structures
=====

Name: OUTFALL From Node: POND17 Length(ft): 318.00
Group: BASE To Node: PINELAKE Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.000
Invert(ft): 54.770	52.140	Exit Loss Coef: 1.000
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:

All elevations in NAVD

Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure OUTFALL ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 54.00	Invert(ft): 61.250
Rise(in): 36.00	Control Elev(ft): 61.250

=====
 Hydrology Simulations
 =====

Name: 025YR-096HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 17\ICPR\Proposed\025YR-096HR.R32

Override Defaults: Yes
 Storm Duration(hrs): 96.00
 Rainfall File: Sjrwm96
 Rainfall Amount(in): 12.20

Time(hrs)	Print Inc(min)
-----	-----
96.000	5.00

Name: 100YR-240HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 17\ICPR\Proposed\100YR-240HR.R32

Override Defaults: Yes
 Storm Duration(hrs): 240.00
 Rainfall File: Fdot-240
 Rainfall Amount(in): 18.83

Time(hrs)	Print Inc(min)
-----	-----
240.000	5.00

=====
 Routing Simulations
 =====

Name: 025YR-096HR Hydrology Sim: 025YR-096HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 17\ICPR\Proposed\025YR-096HR.I32

Execute: Yes	Restart: No	Patch: No
Alternative: No		
Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500	
Time Step Optimizer: 10.000		
Start Time(hrs): 0.000	End Time(hrs): 96.00	
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 60.0000	
Boundary Stages:	Boundary Flows:	

Time(hrs)	Print Inc(min)
-----	-----
999.000	15.000

Group	Run
-----	-----
BASE	Yes

Name: 100YR-240HR Hydrology Sim: 100YR-240HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 17\ICPR\Proposed\100YR-240HR.I32

Execute: Yes	Restart: No	Patch: No
Alternative: No		
Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500	
Time Step Optimizer: 10.000		
Start Time(hrs): 0.000	End Time(hrs): 240.00	
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 60.0000	
Boundary Stages:	Boundary Flows:	

All elevations in NAVD

Pond 17 Basin
Proposed Conditions
Input Report

Time(hrs)	Print Inc(min)
999.000	15.000
Group	Run
-----	-----
BASE	Yes

Pond 17 Basin
 Proposed Conditions
 Node Max

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
PINELAKE	BASE	025YR-096HR	96.01	50.90	0.00	0.0050	199488	60.08	126.43	0.00	0.00
POND17	BASE	025YR-096HR	96.01	60.64	62.50	0.0042	118410	60.08	82.27	0.00	0.00
PINELAKE	BASE	100YR-240HR	240.01	55.46	0.00	0.0050	391244	184.00	33.42	0.00	0.00
POND17	BASE	100YR-240HR	184.10	61.64	62.50	0.0049	124788	184.00	12.57	184.10	11.83

All elevations in NAVD

POND 17 PRE-MODEL FOR 25YR-96 HR STORM

1/6/98

BASIN NAME PRE17
NODE NAME PINELAKE

UNIT HYDROGRAPH UH323
PEAKING FACTOR 323.

RAINFALL FILE SJRWMD96
RAIN AMOUNT (cm) 30.99
STORM DURATION (hrs) 96.00

AREA (ha) 18.79
CURVE NUMBER 60.00
DCIA (%) .00
TC (mins) 21.30
LAG TIME (hrs) .00
BASIN STATUS ONSITE

BASIN QMX (lps) TMX (hrs) **VOL (cm)** NOTES
PRE17 4353.36 60.11 **17.11**

18.79 ha = 46.43 acres

17.11 cm = 6.74 inches = 0.56 feet

46.43 ac x 0.56 ft = 26.06 ac-ft

POND 17 POST MODEL FOR 25 YR - 96 HR STORM
1/6/98

BASIN NAME	POST17	POND17
NODE NAME	PINELAKE	POND17
UNIT HYDROGRAPH	UH323	UH323
PEAKING FACTOR	323.	323.
RAINFALL FILE	SJRWMD96	SJRWMD96
RAIN AMOUNT (cm)	30.99	30.99
STORM DURATION (hrs)	96.00	96.00

AREA (ha)	14.85	8.33
CURVE NUMBER	61.70	63.20
DCIA (%)	.00	.00
TC (mins)	21.30	18.70
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE

BASIN QMX (lps)	TMX (hrs)	VOL (cm)	NOTES
POST17	3560.61	60.11	17.78
POND17	2183.89	60.09	18.36

14.85 ha = 36.70 acres 8.33 ha = 20.58 acres

17.78 cm = 7.0 inches = 0.58 feet

18.36 cm = 7.23 inches = 0.60 feet

36.70 ac x 0.58 ft = 21.38 ac-ft

20.58 ac x 0.60 ft = 12.35 ac-ft

POND 17 POST MODEL FOR 100YR-240HR STORM
6/26/96

BASIN NAME	POST17	POND17
NODE NAME	PINELAKE	POND17
UNIT HYDROGRAPH	UH323	UH323
PEAKING FACTOR	323.	323.
RAINFALL FILE	FDOT-240	FDOT-240
RAIN AMOUNT (cm)	47.85	47.85
STORM DURATION (hrs)	240.00	240.00
AREA (ha)	14.85	8.33
CURVE NUMBER	61.70	63.20
DCIA (%)	.00	.00
TC (mins)	21.30	18.70
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE

Pond 17 Recovery

BASIN	QMX (lps)	TMX (hrs)	VOL (cm)	NOTES
POST17	613.63	183.98	33.05	
POND17	347.76	184.00	33.78	

14.85 ha = 36.70 acres 8.33 ha = 20.58 acres
 33.05 cm = 1.08 ft 33.78 cm = 1.11 ft
 36.70 ac x 1.08 ft = 39.73 ac-ft (Post 17)
 20.58 ac x 1.11 ft = 22.84 ac-ft (Pond 17)

POST VOLUME

$$14.35 \text{ ha} (33.05 \text{ cm}) + 8.33 \text{ ha} (33.78 \text{ cm}) = 77,218 \text{ m}^3$$

This volume recovers in 16.7 days

1/2 of this volume (38,609 m³) recovers in 1.5 days.

See Report of Roadway Soil Survey for Recovery analysis.

Appendix G

SR 417 Basin Calculations Closed Basin

Basin SR 417 Existing Basin Summary

Project: Wekiva Parkway - Section 8 **Condition:** Existing Conditions
Location: Seminole **Date:** 12/17/2015 **Date:** 2/16/2016
Prepared: LBF **Checked:** AKC

SR 417 BASIN & RUNOFF VOLUME SUMMARY									
Basin	Total Area (ac)	Tc (min)	CCN ⁷	Storage S (in) ⁵	Initial Abstraction I (in) ⁶	Runoff (in) ^{1,4}	Runoff Volume (ac-ft) ²	Runoff (in) ³	Runoff Volume (ac-ft) ²
						25/96 Storm Event		100/240 Storm Event	
Pond 18	23.85	21	59.6	6.8	1.4	6.7	13.25	12.6	25.02
417-East	13.15	39	90.3	1.1	0.2	11.0	12.05	17.6	19.29
Pond 21	8.06	10	65.0	5.4	1.1	7.5	5.03	13.6	9.14
TOTAL	45.05						30.34		53.45

Notes:

1. Values taken from SR 417 Greenway Project 2 Section 3 Drainage and Stormwater Management Calculations, Rinehart Rd Interchange basin, Sept. 1999.
2. Runoff Volume = Runoff x Total Area
3. Rainfall Values for 100 year/240 hour event (from SR 417 Greenway Proj. 2 Sec. 3 Drainage and Stormwater Management Calcs Sept. 1999.) =
4. Rainfall Values for 25 year/96 hour event (from SR 417 Greenway Proj. 2 Sec. 3 Drainage and Stormwater Management Calcs Sept. 1999.) =
5. Watershed Storage (in) = $S = (1000/CCN) - 10$
6. Initial Abstraction (in) = $I = 0.2 \times S$
7. CCN = $\text{Sum}(\text{CN} \times \text{Area}) / \text{Total Area}$

18.83	in
12.20	in

SR 417 Basin Pre-Development CN Calculations

Project: Wekiva Parkway - Section 8
Location: Seminole

Condition: Pre Development
Date: 12/17/2015 **Date:** 2/16/2016
Prepared: LBF **Checked:** AKC

Pond 18				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		8.53	98	835.46
Woods (Fair)	A	3.99	36	143.67
Open Space (Good condition)	A	11.33	39	441.86
Total		23.85		1420.99

Pre-development CN = 59.6
 $S=(1000/CN)-10 = 6.8$

SR 417-East				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		11.44	98	1121.21
Open Space (Good condition)	A	1.71	39	66.50
Total		13.15		1187.71

Pre-development CN = 90.3
 $S=(1000/CN)-10 = 1.1$

Pond 21				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		1.85	98	181.62
Open Space (Good condition)	A	3.98	39	155.16
Range (Fair)	B/D	2.22	84	186.81
Total		8.06		523.59

Pre-development CN = 65.0
 $S=(1000/CN)-10 = 5.4$

SR 417 Basin Curve Number Summary - Existing				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		21.82	98	2138.29
Open Space	A	17.01	39	663.51
Range (Fair) (Assume HSG=D)	B/D	2.22	84	186.81
Woods (Fair)	A	3.99	36	143.67
Total		45.05		3132.28

Pre-development CN = 69.5
 $S=(1000/CN)-10 = 4.38$

Notes:

1. $CN = \text{Sum}(CN \times \text{Area}) / \text{Total Area}$
2. Existing values taken from SR 417 Greenway Project 2 Section 3 Drainage and Stormwater Management Calculations, Rinehart Rd Interchange basin, Sept. 1999.

Basin SR 417 Post-Development Basin Summary

Project: Wekiva Parkway - Section 8 **Condition:** **Condition: Post Development**
Location: Seminole **Date:** 12/28/2015 **Date:** 2/16/2016
Prepared: **Prepared:** LBF **Checked:** AKC

SR 417 BASIN & RUNOFF VOLUME SUMMARY												
Basin	Total Area (ac)	Pervious (ac)	Impervious (ac)	Pond Surface (ac)	Tc (min)	CCN ⁶	Storage S (in) ²	Initial Abstraction I (in) ³	Runoff (in) ^{4,7}	Runoff Volume (ac-ft) ⁵	Runoff (in) ^{4,8}	Runoff Volume (ac-ft) ⁵
									25/96 Storm Event		100/240 Storm Event	
Pond 18	23.85	9.85	8.87	5.13	21	74.1	3.5	0.7	8.8	17.52	15.2	30.20
417-East	13.15	1.71	11.44	0.00	39	90.3	1.1	0.2	11.0	12.06	17.6	19.29
Pond 21	8.06	3.60	2.09	2.37	10	72.2	3.8	0.8	8.6	5.75	14.9	10.00
TOTAL	45.06	15.16	22.40	7.50						35.32		59.49

Notes:

1. Values were measured in CADD & from SR 417 Greenway Proj. 2 Sec. 3 Drainage and Stormwater Management Calcs Sept. 1999
2. Watershed Storage (in) = $S = (1000/CCN) \cdot 10$
3. Initial Abstraction (in) = $I = 0.2 \cdot S$
4. Runoff (in) = $Q = (P-I)^2 / (P-I) + S$
5. Runoff Volume (ac-ft) = Area x Runoff, $Q \times (1/12)$ (25 YR/96 HR event)
6. $CCN = \text{Sum} (CN \times \text{Area}) / \text{Total Area}$
7. Rainfall Values for 25 Year/96 Hour event (from SR 417 Greenway Proj. 2 Sec. 3 Drainage and Stormwater Management Calcs Sept. 1999.) =
8. Rainfall Values for 100 Year/240 Hour event (from SR 417 Greenway Proj. 2 Sec. 3 Drainage and Stormwater Management Calcs Sept. 1999.) =
9. No impacts proposed to Pond 19 & 20 north of SR 417

12.20	in
18.83	in

SR 417 Basin POST-Development CN Calculations

Project: Wekiva Parkway - Section 8
Location: Seminole

Condition: Post Development
Date: 12/17/2015 **Date:** 2/16/2016
Prepared: LBF **Checked:** AKC

Pond 18				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		8.87	98	869.26
Open Space (Good condition)	A	9.85	39	384.15
Pond 18		5.13	100	513.00
Total		23.85		1766.41

Proposed CN = 74.1
S=(1000/CN)-10 = 3.5

SR 417-East				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		11.44	98	1121.21
Open Space (Good condition)	A	1.71	39	66.50
Total		13.15		1187.71

Proposed CN = 90.3
S=(1000/CN)-10 = 1.1

Pond 21				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		2.09	98	204.82
Open Space (Good condition)	A	3.60	39	140.40
Pond 21		2.37	100	237.00
Total		8.06		582.22

Proposed CN = 72.2
S=(1000/CN)-10 = 3.8

SR 417 Basin Curve Number Summary - Proposed				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		22.40	98	2195.29
Open Space	A	15.16	39	591.05
Range (Fair) (Assume HSG=D)	B/D	2.37	84	199.08
Woods (Fair)	A	5.13	36	184.68
Total		45.06		3170.10

Proposed CN = 70.4
S=(1000/CN)-10 = 4.21

Notes:

1. CN = Sum (CN x Area) / Total Area
2. Existing values taken from SR 417 Greenway Project 2 Section 3 Drainage and Stormwater Management Calculations, Rinehart Rd Interchange basin, Sept. 1999.

Water Quality and Volume Summary

Project:	Wekiva Parkway - Section 8	Condition:	Post-Development	
Location:	Seminole	Date:	12/28/2015	Date: 2/16/2016
Basin:	SR 417	Prepared:	LBF	Checked: AKC

1. Calculate Water Quality Volume per SJRWMD requirements 40C-42 FAC

Provide the greater of one (1) inch of runoff from the entire basin area or 2.5 inches of runoff from the impervious area.

A. Total Drainage Area to POND 18 & 21 = 45.06 ac

B. Total Drainage Area for Treatment = 45.06 ac

Total Impervious Area = 22.40 ac

*Does not Include pond area

Pond 18 and 21 Area= 7.50

Total Pervious Area = 15.16

C. Treatment Calculations

1" x Drainage Area =	3.75 ac-ft
2.5" x Imp. Area =	4.67 ac-ft, GOVERNS

Total Treatment Provided = 53.06 ac-ft

2. Calculate the Required Post Runoff Storage Volume for the 25 year/ 96 hour storm & 100 year/ 240 hour storm (Closed Basin Criteria) * See Basin Summary Tables for calculations

	<table border="1"> <tr> <th>25YR/96HR Storm</th> <th>100YR/240HR Storm</th> </tr> <tr> <td align="center">35.32</td> <td align="center">59.49</td> </tr> </table>	25YR/96HR Storm	100YR/240HR Storm	35.32	59.49	
25YR/96HR Storm	100YR/240HR Storm					
35.32	59.49					
Post Runoff Volume* =						
Water Quality Volume =	4.67 ac-ft					
Storage Provided in Pond 18 & 21=	53.06 ac-ft					

Stage Storage Curves

Project: Wekiva Parkway- Section 8 **Date:** 12/28/2015 **Date:** 2/16/2016
Location: Seminole **Prepared:** LBF **Checked:** AKC

Pond 18 Existing					
Stage (m) NGVD 29	Stage (ft) NGVD 29	Stage (ft) NAVD 88	Area (ac)	Storage (ac-ft)	Remarks
13.02	42.70	41.70	5.63	0.00	
14.69	48.20	47.20	7.04	34.84	Top of Bank
15.00	49.20	48.20	8.13	42.43	

Pond 21 Existing					
Stage (m) NGVD 29	Stage (ft) NGVD 29	Stage (ft) NAVD 88	Area (ac)	Storage (ac-ft)	Remarks
13.41	44.00	43.00	2.37	0.00	
13.86	45.46	44.46	2.63	3.65	CS EL (To Pond 18)
15.00	49.20	48.20	3.31	14.77	Top of Bank
15.51	50.90	49.90	4.32	21.25	

Existing Total Storage (TOB PND 18 + TOB POND 21) = 49.61 ac-ft

Pond 18 Proposed				
Stage (ft) NGVD 29	Stage (ft) NAVD 88	Area (ac)	Storage (ac-ft)	Remarks
42.70	41.70	5.13	0.00	
49.20	48.20	6.66	38.29	Top of Bank
50.20	49.20	7.62	45.43	

Note: Pond area reduced by roadway widening along the pond.

Pond 21 Proposed				
Stage (ft) NGVD 29	Stage (ft) NAVD 88	Area (ac)	Storage (ac-ft)	Remarks
44.00	43.00	2.37	0	
49.20	48.20	3.31	14.77	Top of Bank
50.90	49.90	4.32	21.25	

Note: There is minor roadway widening along Pond 21; impacts will be insignificant

Proposed Total Storage (TOB PND 18 + TOB POND 21) = 53.06 ac-ft

Pond 18 & 21 Max Stage Summary

Project: Wekiva Parkway- Section 8
Location: Seminole

Date: 12/28/2015
Prepared: LBF
Checked: AKC

Pond 18			
	Max Stage (ft)		
	25YR/96HR	2nd 25YR/96HR	100YR/240HR
Existing Conditions	45.55	-	47.86
Proposed Conditions	46.29	47.88	48.76

Pond 21			
	Max Stage (ft)		
	25YR/96HR	2nd 25YR/96HR	100YR/240HR
Existing Conditions	46.44	-	47.86
Proposed Conditions	46.59	47.89	48.77

Pond 18 & 21 Recovery Analysis

Project:	Wekiva Parkway	Date:	12/28/2015	Date:	2/16/2016
Location:	Seminole	Prepared:	LBF	Checked:	AKC

Pond 18

Existing pond bottom area =	5.63 ac	
Impacted pond bottom area =	5.13 ac	
Percent change in pond bottom area =	8.97 %	
Volume at peak stage EL = 45.55 (Existing Pond)=	23.58 ac-ft	
Volume remaining after 14 days (Existing Pond) ¹ =	16.42 ac-ft	(20258 m ³)
Total Volume Recoverd =	7.16 ac-ft	
Adjusted recovery volume for impacted pond ² =	6.52 ac-ft	
Volume at peak stage EL = 46.29 (Proposed Pond)=	26.01 ac-ft	
Volume remaining after 14 days (Proposed Pond) =	19.49 ac-ft	
Stage at 19.49 ac-ft =	44.21 ft	

Pond 21

Volume remaining after 14 days ¹ =	1.79 ac-ft	(2205 m ³)
Stage at 1.79 ac-ft =	43.63 ft	

Notes:

1. Existing Recovery was obtained from pg 2C-21 of SR 417 Greenway Proj. 2 Sec. 3 Drainage and Stormwater Management Calcs Sept. 1999. (for 25 YR/ 96 HR storm)
2. Recovery volume reduced by same percent reduction in pond bottom, 8.97%, to be conservative.
3. Recovery shown as a linear rate for simplicity. Existing boring information not available.
4. No impacts assumed for Pond 21

EXISTING

ICPR MODEL

Rinehart Road Interchange Basin
 Pond 18 & 21 Existing Conditions (Duplicate Model)
 Nodal Diagram

Nodes

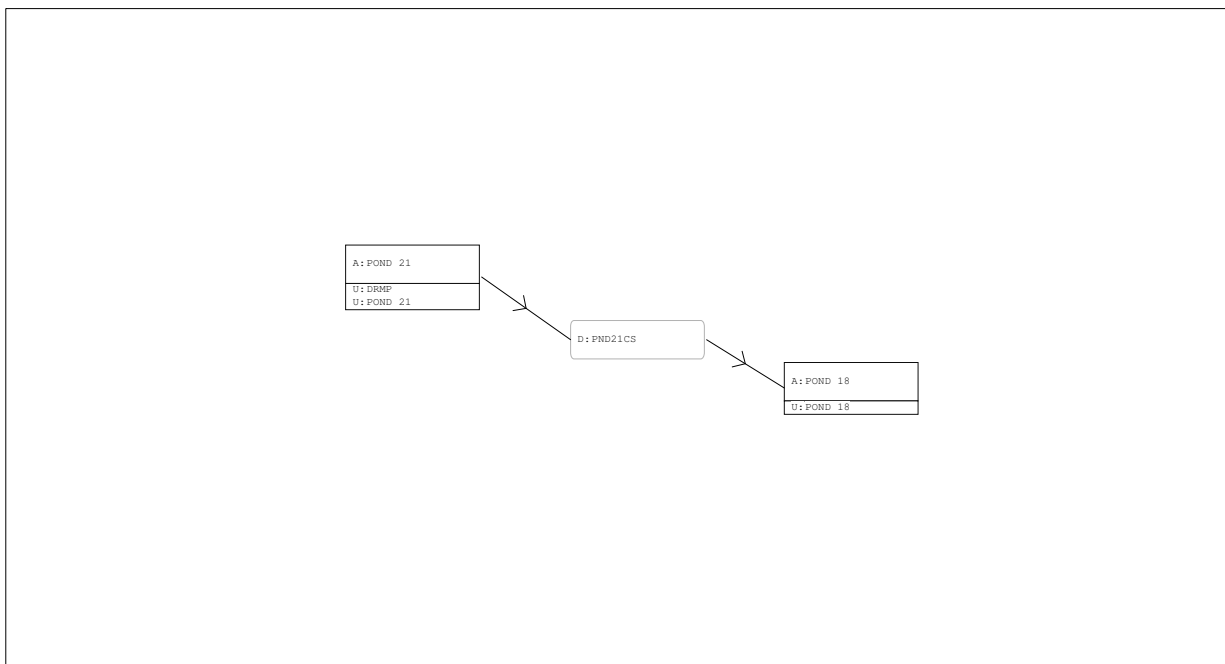
- A Stage/Area
- V Stage/Volume
- T Time/Stage
- M Manhole

Basins

- O Overland Flow
- U SCS Unit CN
- S SBUH CN
- Y SCS Unit GA
- Z SBUH GA

Links

- P Pipe
- W Weir
- C Channel
- D Drop Structure
- B Bridge
- R Rating Curve
- H Breach
- E Percolation
- F Filter
- X Exfil Trench



All elevations in NAVD

Rinehart Road Interchange Basin
Pond 18 & 21 Existing Conditions (Duplicate Model)
Input Report

=====
Basins
=====

```

Name: DRMP           Node: POND 21           Status: Onsite
Group: BASE         Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323          Peaking Factor: 323.0
Rainfall File:                Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000      Time of Conc(min): 39.10
Area(ac): 13.150              Time Shift(hrs): 0.00
Curve Number: 90.30          Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
    
```

```

Name: POND 18       Node: POND 18           Status: Onsite
Group: BASE         Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323          Peaking Factor: 323.0
Rainfall File:                Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000      Time of Conc(min): 21.20
Area(ac): 23.850              Time Shift(hrs): 0.00
Curve Number: 59.60          Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
    
```

```

Name: POND 21       Node: POND 21           Status: Onsite
Group: BASE         Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323          Peaking Factor: 323.0
Rainfall File:                Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000      Time of Conc(min): 10.00
Area(ac): 8.060              Time Shift(hrs): 0.00
Curve Number: 65.00          Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
    
```

=====
Nodes
=====

```

Name: POND 18       Base Flow(cfs): 0.000   Init Stage(ft): 41.700
Group: BASE         Warn Stage(ft): 47.200
Type: Stage/Area
    
```

Stage(ft)	Area(ac)
41.700	5.6300
47.200	7.0400
48.200	8.1300

```

Name: POND 21       Base Flow(cfs): 0.000   Init Stage(ft): 43.000
Group: BASE         Warn Stage(ft): 48.200
Type: Stage/Area
    
```

Stage(ft)	Area(ac)
43.000	2.3700
44.460	2.6300
48.200	3.3100
49.900	4.3200

=====
Drop Structures
=====

```

Name: PND21CS      From Node: POND 21     Length(ft): 175.00
Group: BASE        To Node: POND 18      Count: 1

UPSTREAM           DOWNSTREAM             Friction Equation: Automatic
Geometry: Circular Circular              Solution Algorithm: Most Restrictive
Span(in): 18.00    18.00                  Flow: Both
Rise(in): 18.00    18.00                  Entrance Loss Coef: 0.000
Invert(ft): 41.810 41.650                 Exit Loss Coef: 1.000
Manning's N: 0.012000 0.012000             Outlet Ctrl Spec: Use dc or tw
    
```

All elevations in NAVD

Rinehart Road Interchange Basin
 Pond 18 & 21 Existing Conditions (Duplicate Model)
 Input Report

Top Clip(in): 0.000 0.000 Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000 0.000 Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure PND21CS ***

TABLE

Count: 1 Bottom Clip(in): 0.000
 Type: Horizontal Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200
 Geometry: Rectangular Orifice Disc Coef: 0.600

 Span(in): 54.00 Invert(ft): 44.460
 Rise(in): 36.00 Control Elev(ft): 44.460

==== Hydrology Simulations =====

Name: 025YR-096HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\SR 417 Basin\ICPR\Existing Pond\025YR-096HR.R32

Override Defaults: Yes
 Storm Duration(hrs): 96.00
 Rainfall File: Sjrwm96
 Rainfall Amount(in): 12.20

Time(hrs) Print Inc(min)

 96.000 5.00

Name: 100YR-240HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\SR 417 Basin\ICPR\Existing Pond\100YR-240HR.R32

Override Defaults: Yes
 Storm Duration(hrs): 240.00
 Rainfall File: Fdot-240
 Rainfall Amount(in): 18.83

Time(hrs) Print Inc(min)

 240.000 5.00

==== Routing Simulations =====

Name: 025YR-096HR Hydrology Sim: 025YR-096HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\SR 417 Basin\ICPR\Existing Pond\025YR-096HR.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 96.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

 999.000 15.000

Group Run

 BASE Yes

Name: 100YR-240HR Hydrology Sim: 100YR-240HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\SR 417 Basin\ICPR\Existing Pond\100YR-240HR.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500

All elevations in NAVD

Rinehart Road Interchange Basin
Pond 18 & 21 Existing Conditions (Duplicate Model)
Input Report

Time Step Optimizer: 10.000
Start Time(hrs): 0.000
Min Calc Time(sec): 0.5000
Boundary Stages:

End Time(hrs): 240.00
Max Calc Time(sec): 60.0000
Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000

Group	Run
BASE	Yes

All elevations in NAVD

Rinehart Road Interchange Basin
 Pond 18 & 21 Existing Conditions (Duplicate Model)
 Node Max

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
POND 18	BASE	025YR-096HR	96.00	45.55	47.20	0.0039	288290	60.08	89.07	0.00	0.00
POND 21	BASE	025YR-096HR	62.02	46.44	48.20	0.0050	130206	60.08	75.64	60.73	12.89
POND 18	BASE	100YR-240HR	240.00	47.86	47.20	0.0037	338117	184.00	18.56	0.00	0.00
POND 21	BASE	100YR-240HR	240.00	47.86	48.20	0.0048	141525	183.92	13.41	184.07	4.70

All elevations in NAVD

POST

ICPR MODEL

Rinehart Road Interchange Basin
Pond 18 & 21 Proposed Conditions
Nodal Diagram

Nodes

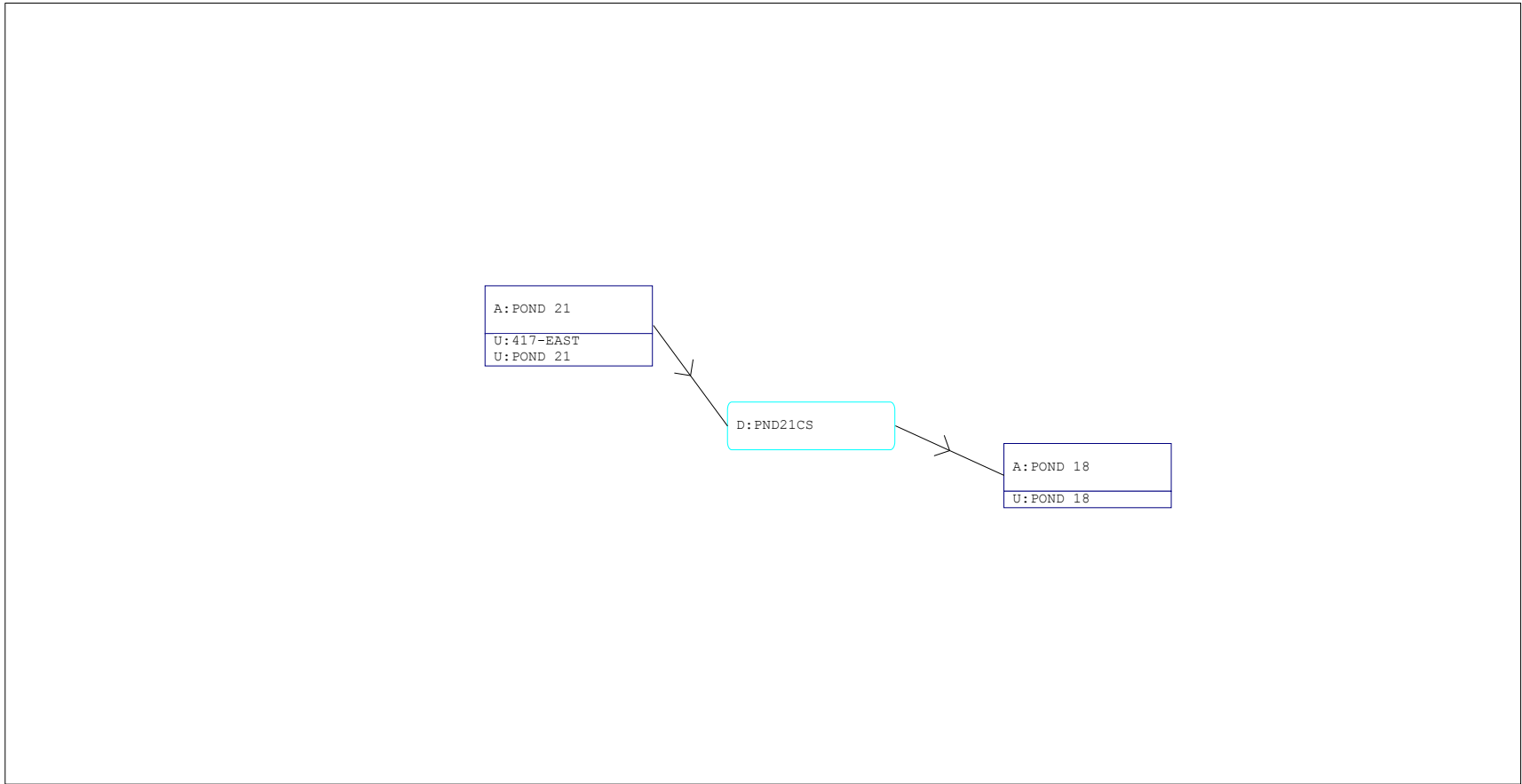
- A Stage/Area
- V Stage/Volume
- T Time/Stage
- M Manhole

Basins

- O Overland Flow
- U SCS Unit CN
- S SBUH CN
- Y SCS Unit GA
- Z SBUH GA

Links

- P Pipe
- W Weir
- C Channel
- D Drop Structure
- B Bridge
- R Rating Curve
- H Breach
- E Percolation
- F Filter
- X Exfil Trench



All elevations are in NAVD

Rinehart Road Interchange Basin
 Pond 18 & 21 Proposed Conditions
 Input Report

=====
 Basins
 =====

```

Name: 417-EAST      Node: POND 21      Status: Onsite
Group: BASE        Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323      Peaking Factor: 323.0
Rainfall File:              Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000  Time of Conc(min): 39.10
Area(ac): 13.150           Time Shift(hrs): 0.00
Curve Number: 90.30       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
    
```

```

Name: POND 18      Node: POND 18      Status: Onsite
Group: BASE        Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323      Peaking Factor: 323.0
Rainfall File:              Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000  Time of Conc(min): 21.20
Area(ac): 23.850           Time Shift(hrs): 0.00
Curve Number: 74.10       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
    
```

```

Name: POND 21      Node: POND 21      Status: Onsite
Group: BASE        Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323      Peaking Factor: 323.0
Rainfall File:              Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000  Time of Conc(min): 10.00
Area(ac): 8.060           Time Shift(hrs): 0.00
Curve Number: 72.20       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
    
```

=====
 Nodes
 =====

```

Name: POND 18      Base Flow(cfs): 0.000      Init Stage(ft): 41.700
Group: BASE        Warn Stage(ft): 48.200
Type: Stage/Area
    
```

Stage(ft)	Area(ac)
41.700	5.1300
48.200	6.6600
49.200	7.6200

```

Name: POND 21      Base Flow(cfs): 0.000      Init Stage(ft): 43.000
Group: BASE        Warn Stage(ft): 48.200
Type: Stage/Area
    
```

Stage(ft)	Area(ac)
43.000	2.3700
44.460	2.6300
48.200	3.3100
49.900	4.3200

=====
 Drop Structures
 =====

```

Name: PND21CS      From Node: POND 21      Length(ft): 175.00
Group: BASE        To Node: POND 18      Count: 1

UPSTREAM          DOWNSTREAM          Friction Equation: Automatic
Geometry: Circular Circular          Solution Algorithm: Most Restrictive
Span(in): 18.00   18.00              Flow: Both
Rise(in): 18.00   18.00              Entrance Loss Coef: 0.000
Invert(ft): 41.810 41.650             Exit Loss Coef: 1.000
Manning's N: 0.012000 0.012000          Outlet Ctrl Spec: Use dc or tw
    
```

All elevations are in NAVD

Rinehart Road Interchange Basin
 Pond 18 & 21 Proposed Conditions
 Input Report

Top Clip(in): 0.000 0.000 Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000 0.000 Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure PND21CS ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Horizontal	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 54.00	Invert(ft): 44.460	
Rise(in): 36.00	Control Elev(ft): 44.460	

==== Hydrology Simulations =====

Name: 025YR-096HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\SR 417 Basin\ICPR\Proposed Pond\1st Storm\025YR-0
 Override Defaults: Yes
 Storm Duration(hrs): 96.00
 Rainfall File: Sjrwm96
 Rainfall Amount(in): 12.20

Time(hrs)	Print Inc(min)
-----	-----
96.000	5.00

Name: 100YR-240HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\SR 417 Basin\ICPR\Proposed Pond\1st Storm\100YR-2
 Override Defaults: Yes
 Storm Duration(hrs): 240.00
 Rainfall File: Fdot-240
 Rainfall Amount(in): 18.83

Time(hrs)	Print Inc(min)
-----	-----
240.000	5.00

==== Routing Simulations =====

Name: 025YR-096HR Hydrology Sim: 025YR-096HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\SR 417 Basin\ICPR\Proposed Pond\1st Storm\025YR-0
 Execute: Yes Restart: No Patch: No
 Alternative: No
 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 96.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
999.000	15.000

Group	Run
-----	-----
BASE	Yes

Name: 100YR-240HR Hydrology Sim: 100YR-240HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\SR 417 Basin\ICPR\Proposed Pond\1st Storm\100YR-2
 Execute: Yes Restart: No Patch: No
 Alternative: No
 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500

All elevations are in NAVD

Rinehart Road Interchange Basin
Pond 18 & 21 Proposed Conditions
Input Report

Time Step Optimizer: 10.000
Start Time (hrs): 0.000
Min Calc Time (sec): 0.5000
Boundary Stages:

End Time (hrs): 240.00
Max Calc Time (sec): 60.0000
Boundary Flows:

Time (hrs)	Print Inc (min)
999.000	15.000
Group	Run
-----	-----
BASE	Yes

All elevations are in NAVD

Rinehart Road Interchange Basin
 Pond 18 & 21 Proposed Conditions
 Node Max Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
POND 18	BASE	025YR-096HR	95.99	46.34	48.20	0.0049	271004	60.08	110.42	0.00	0.00
POND 21	BASE	025YR-096HR	62.21	46.62	48.20	0.0050	131675	60.08	79.13	60.06	11.22
POND 18	BASE	100YR-240HR	240.00	48.81	48.20	0.0041	315583	183.92	18.93	0.00	0.00
POND 21	BASE	100YR-240HR	240.00	48.81	48.20	0.0049	159976	183.92	13.58	40.37	4.39

All elevations are in NAVD

Rinehart Road Interchange
Pond 18 & 21 Post-Development 2nd Storm Event
Nodal Diagram

Nodes

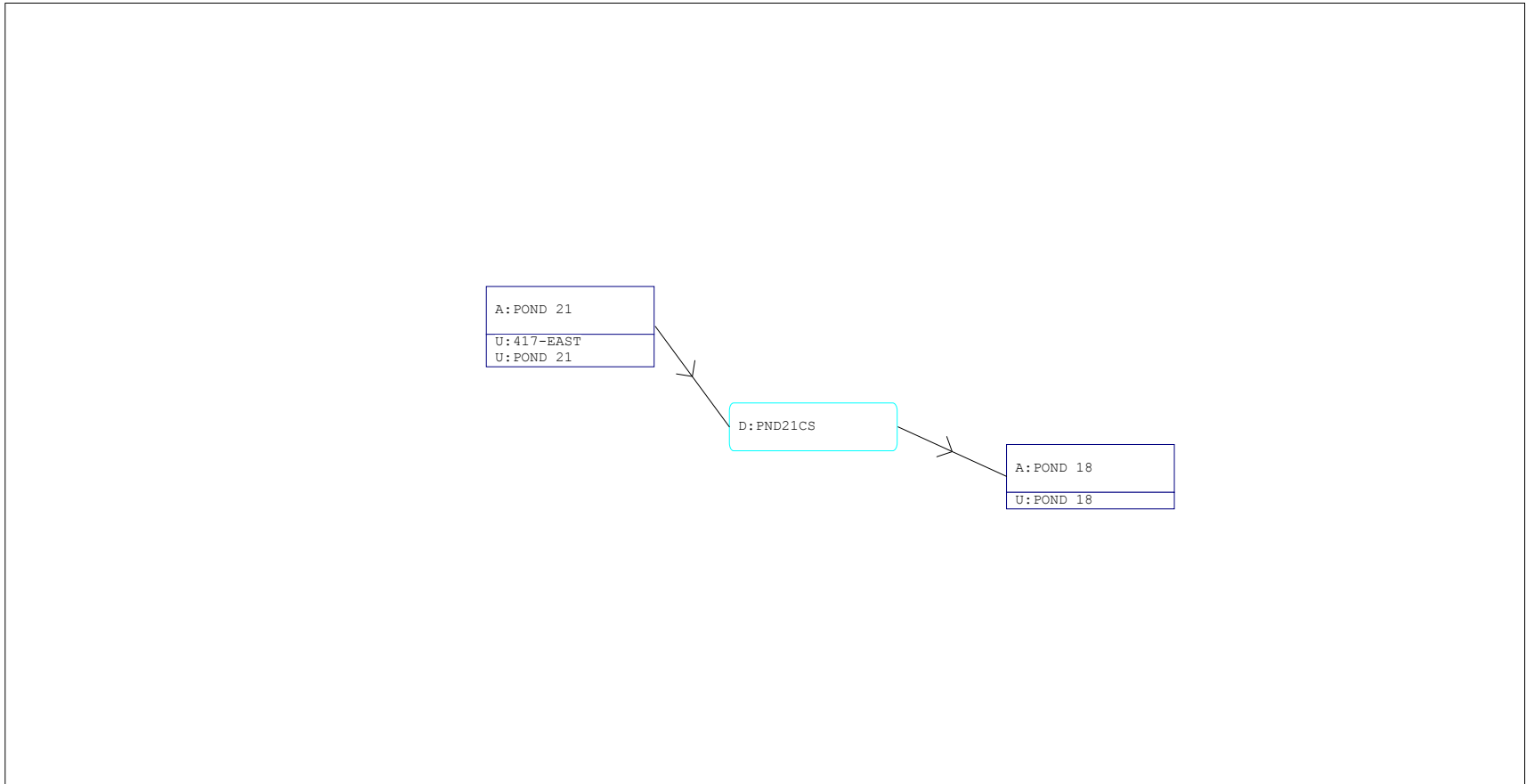
- A Stage/Area
- V Stage/Volume
- T Time/Stage
- M Manhole

Basins

- O Overland Flow
- U SCS Unit CN
- S SBUH CN
- Y SCS Unit GA
- Z SBUH GA

Links

- P Pipe
- W Weir
- C Channel
- D Drop Structure
- B Bridge
- R Rating Curve
- H Breach
- E Percolation
- F Filter
- X Exfil Trench



All elevations in NAVD

Rinehart Road Interchange
 Pond 18 & 21 Post-Development 2nd Storm Event
 Input Report

=====
 Basins
 =====

```

Name: 417-EAST      Node: POND 21      Status: Onsite
Group: BASE        Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323      Peaking Factor: 323.0
Rainfall File:              Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000  Time of Conc(min): 39.10
Area(ac): 13.150           Time Shift(hrs): 0.00
Curve Number: 90.30       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
    
```

```

Name: POND 18      Node: POND 18      Status: Onsite
Group: BASE        Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323      Peaking Factor: 323.0
Rainfall File:              Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000  Time of Conc(min): 21.20
Area(ac): 23.850           Time Shift(hrs): 0.00
Curve Number: 74.10       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
    
```

```

Name: POND 21      Node: POND 21      Status: Onsite
Group: BASE        Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323      Peaking Factor: 323.0
Rainfall File:              Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000  Time of Conc(min): 10.00
Area(ac): 8.060           Time Shift(hrs): 0.00
Curve Number: 72.20       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
    
```

=====
 Nodes
 =====

```

Name: POND 18      Base Flow(cfs): 0.000      Init Stage(ft): 44.210
Group: BASE        Warn Stage(ft): 48.200
Type: Stage/Area
    
```

Initial stage is elevation after 14 days for 25YR/96HR event.

Stage(ft)	Area(ac)
41.700	5.1300
48.200	6.6600
49.200	7.6200

```

Name: POND 21      Base Flow(cfs): 0.000      Init Stage(ft): 43.630
Group: BASE        Warn Stage(ft): 48.200
Type: Stage/Area
    
```

Initial stage is elevation after 14 days for 25YR/96HR event.

Stage(ft)	Area(ac)
43.000	2.3700
44.460	2.6300
48.200	3.3100
49.900	4.3200

=====
 Drop Structures
 =====

```

Name: PND21CS      From Node: POND 21      Length(ft): 175.00
Group: BASE        To Node: POND 18      Count: 1

UPSTREAM          DOWNSTREAM          Friction Equation: Automatic
Geometry: Circular      Circular          Solution Algorithm: Most Restrictive
Span(in): 18.00         18.00            Flow: Both
Rise(in): 18.00         18.00            Entrance Loss Coef: 0.000
Invert(ft): 41.810     41.650           Exit Loss Coef: 1.000
Manning's N: 0.012000  0.012000        Outlet Ctrl Spec: Use dc or tw
    
```

All elevations in NAVD

Rinehart Road Interchange
 Pond 18 & 21 Post-Development 2nd Storm Event
 Input Report

Top Clip(in): 0.000 0.000 Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000 0.000 Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure PND21CS ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Horizontal	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 54.00	Invert(ft): 44.460	
Rise(in): 36.00	Control Elev(ft): 44.460	

==== Hydrology Simulations =====

Name: 025YR-096HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\SR 417 Basin\ICPR\Proposed Pond\2nd Storm\025YR-0
 Override Defaults: Yes
 Storm Duration(hrs): 96.00
 Rainfall File: Sjrwm96
 Rainfall Amount(in): 12.20

Time(hrs)	Print Inc(min)
-----	-----
96.000	5.00

Name: 100YR-240HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Rinehart Road Basin\ICPR\Proposed Pond\2nd Storm\
 Override Defaults: Yes
 Storm Duration(hrs): 240.00
 Rainfall File: Fdot-240
 Rainfall Amount(in): 18.83

Time(hrs)	Print Inc(min)
-----	-----
240.000	5.00

==== Routing Simulations =====

Name: 025YR-096HR Hydrology Sim: 025YR-096HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\SR 417 Basin\ICPR\Proposed Pond\2nd Storm\025YR-0
 Execute: Yes Restart: No Patch: No
 Alternative: No
 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 96.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
999.000	15.000

Group	Run
-----	-----
BASE	Yes

Name: 100YR-240HR Hydrology Sim: 100YR-240HR
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Rinehart Road Basin\ICPR\Proposed Pond\2nd Storm\
 Execute: No Restart: No Patch: No
 Alternative: No
 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500

All elevations in NAVD

Rinehart Road Interchange
Pond 18 & 21 Post-Development 2nd Storm Event
Input Report

Time Step Optimizer: 10.000
Start Time (hrs): 0.000
Min Calc Time (sec): 0.5000
Boundary Stages:

End Time (hrs): 240.00
Max Calc Time (sec): 60.0000
Boundary Flows:

Time (hrs)	Print Inc (min)
999.000	15.000
Group	Run
-----	-----
BASE	Yes

All elevations in NAVD

Rinehart Road Interchange
 Pond 18 & 21 Post-Development 2nd Storm Event
 Node Max Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
POND 18	BASE	025YR-096HR	96.00	47.93	48.20	0.0036	287310	60.08	103.96	0.00	0.00
POND 21	BASE	025YR-096HR	96.00	47.93	48.20	0.0050	142043	60.08	79.12	61.73	6.43

All elevations in NAVD

SR 417 Basin Permitted Recovery Calculations

G-26
20-21

URS Greiner Woodward Clyde

Job SR 417 Project No. V1000170, 50
 Description RINEHART Rd BASIN Computed by REC
POND 18, 19, 20 & 21 Checked by CCB
RECOVERY ANALYSIS

Page ___ of ___
 Sheet ___ of ___
 Date 8/17/99
 Date 8/20/99
 Reference

FROM GEC FAX dated 8/17/99

POND 20 recovers in 0.2 days (72hrs recovery requirement) - O.K.

(water quality vol < NET Post-PRE vol)

POND 18

Vol. remaining after 14 days = 20258 m³
 STAGE @ 20258 m³ = 13.4 + $\frac{20258 - 9400}{25,860}$ (1) = 13.82

POND 21

Vol. remaining after 14 days = 2205 m³
 STAGE @ 2205 m³ = 13.4 + $\frac{2205}{10770}$ (1) = 13.60

Ponds 18 & 21 (interconnected)

2nd 25/96 storm + remaining = 37,430 + 20,258 + 2,205 = 59,893 m³
 APPROX. STAGE OF PONDS 18 & 21 @ 59,893 m³

Ponds 18 & 21 (combined)

STAGE (m)	STORAGE (hr-m)
13.4	0.940
14.4	4,603
x → 15.0	7,128 ← 5,9893

$$\frac{7,128 - 5,9893}{7,128 - 4,603} = \frac{15,0 - X}{15,0 - 14,4}$$

X = 14.729 (STAGE 18 & 21 @ 59,893 m³)

Appendix H

Loch Lehman Basin Calculations Closed Basin

Loch Lehman Pre-Development Basin Summary

Project: Wekiva Parkway - Section 8 **Condition:** Pre Development
Location: Seminole **Date:** 12/30/2015 **Date:** 3/15/2016
Prepared: AKC **Checked:** SPW

Loch Lehman Basin Summary							
Basin	Total Area (ac)	Pervious (ac)	Impervious (ac)	Pond Surface (ac)	Pervious CN ²	Tc (min)	CCN ¹
Basin I	41.17	29.16	0.49	11.52	39	20	56.1

Notes:

1. $CCN = [CN (imp) \times Area (imp) + CN (perv) \times Area (perv) + CN (pond) \times Area (pond)] / Total Area$
2. 6.08 ac impervious area in pre-development (before SR 417) for Loch Lehman from drainage calculations for SR 417 Greenway Seminole County Expressway Project 2, Section 3.

Loch Lehman Post-Development Basin Summary

Project: Wekiva Parkway - Section 8
Location: Seminole

Condition: Post Development
Date: 12/30/2015 **Date:** 3/15/2016
Prepared: AKC **Checked:** SPW

Loch Lehman Basin Summary							
Basin	Total Area (ac)	Pervious (ac)	Impervious (ac)	Pond Surface (ac)	Pervious CN ²	Tc (min)	CCN ³
Basin I	31.59	12.79	6.08	12.72	39	20	74.9

Notes:

1. $CCN = [CN (imp) \times Area (imp) + CN (perv) \times Area (perv) + CN (pond) \times Area (pond)] / Total Area$
2. 6.08 ac impervious area in pre-development (before SR 417) for Loch Lehman from drainage calculations for SR 417 Greenway Seminole County Expressway Project 2, Section 3.

Loch Lehman Stage Storage Summary

Project: Wekiva Parkway - Section 8 **Date:** 12/30/2015
Location: Seminole **Prepared:** AKC
Checked: SPW

Loch Lehman Existing Stage-Storage					
Stage (NGVD) (m)	Stage (NGVD) (ft)	Stage (NAVD) (ft)	Area (ac)	Incremental Storage (ac-ft)	Cumulative Storage (ac-ft)
17.68	58.00	57.00	11.52	0.00	0.00
20.00	65.62	64.62	17.67	111.14	111.14
20.50	67.27	66.27	19.82	31.02	142.16

Loch Lehman Proposed Stage-Storage					
Stage (NGVD) (m)	Stage (NGVD) (ft)	Stage (NAVD) (ft)	Area (ac)	Incremental Storage (ac-ft)	Cumulative Storage (ac-ft)
17.68	58.00	57.00	12.72	0.00	0.00
20.04	65.75	64.75	16.06	111.52	111.52
20.50	67.27	66.27	17.42	25.48	137.00

Notes:

- 1) Existing stage storage values taken from SR 417 Greenway, Seminole County Expressway, Project 2, Section 3, Drainage & Stormwater Management Calculations Volume 1 of 2. FPID 242593-2-52-01
- 2) Proposed stage storage values are based on CADD measurements.

EXISTING

ICPR MODEL

Existing Conditions
Loch Lehman Basin.
Node Diagram

Nodes

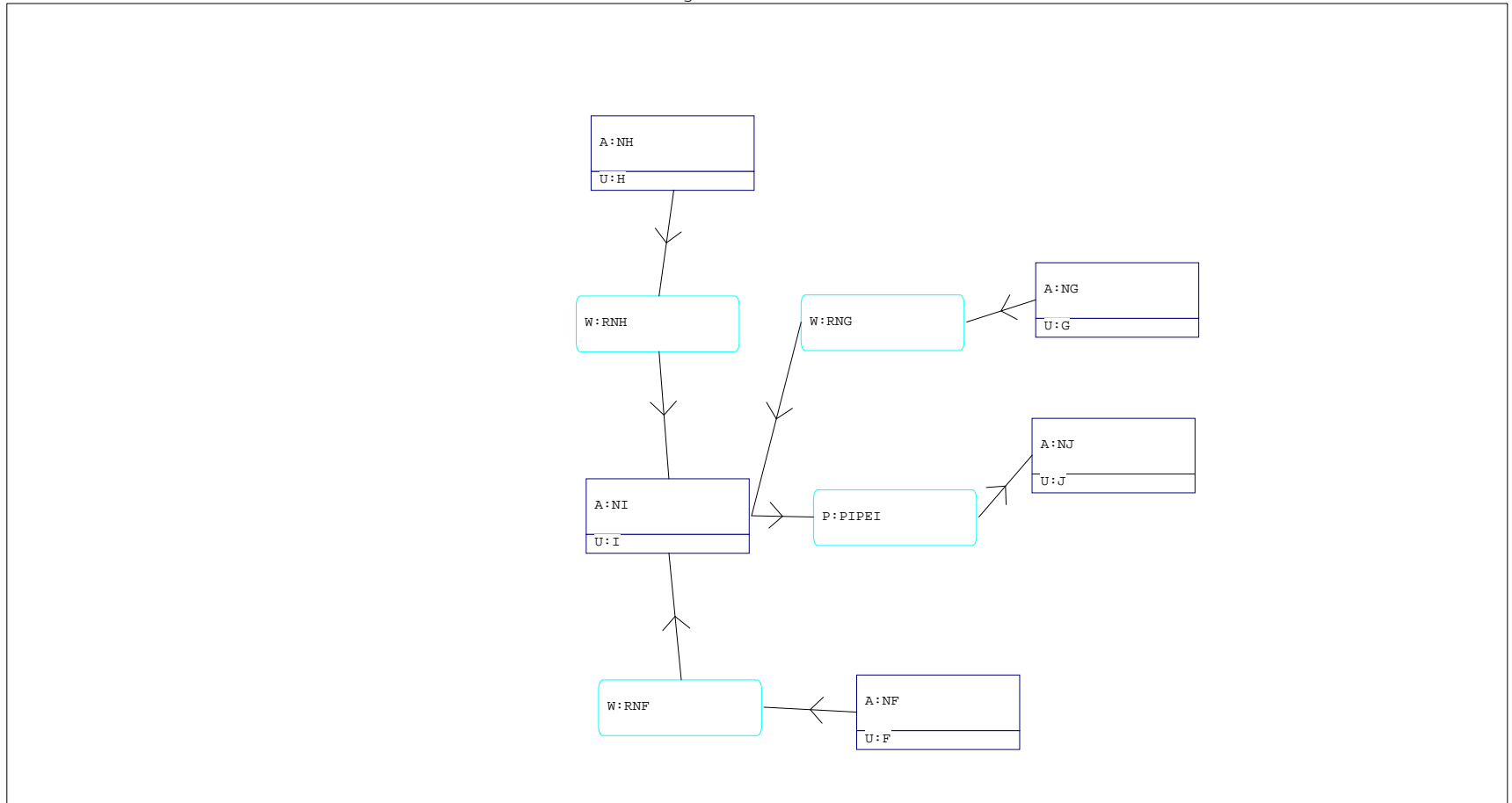
- A Stage/Area
- V Stage/Volume
- T Time/Stage
- M Manhole

Basins

- O Overland Flow
- U SCS Unit CN
- S SBUH CN
- Y SCS Unit GA
- Z SBUH GA

Links

- P Pipe
- W Weir
- C Channel
- D Drop Structure
- B Bridge
- R Rating Curve
- H Breach
- E Percolation
- F Filter
- X Exfil Trench



All elevations are NAVD

Existing Conditions
Loch Lehman Basin.
Input Report

=====
Basins
=====

Name: F Node: NF Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 20.00
Area(ac): 5.580 Time Shift(hrs): 0.00
Curve Number: 40.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: G Node: NG Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 17.00
Area(ac): 17.820 Time Shift(hrs): 0.00
Curve Number: 50.17 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: H Node: NH Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 21.70
Area(ac): 70.200 Time Shift(hrs): 0.00
Curve Number: 55.04 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: I Node: NI Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 16.70
Area(ac): 41.170 Time Shift(hrs): 0.00
Curve Number: 56.10 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Contributes to Loch Lehman

Name: J Node: NJ Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 20.10
Area(ac): 14.130 Time Shift(hrs): 0.00
Curve Number: 60.90 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

=====
Nodes
=====

Name: NF Base Flow(cfs): 0.000 Init Stage(ft): 66.000
Group: BASE Warn Stage(ft): 74.000
Type: Stage/Area

Stage(ft)	Area(ac)
66.000	0.1900
67.000	0.2700
68.000	0.4700
69.000	0.6400
70.000	1.0100

All elevations are NAVD

Existing Conditions
Loch Lehman Basin.
Input Report

71.000 1.4500

Name: NG Base Flow(cfs): 0.000 Init Stage(ft): 60.000
Group: BASE Warn Stage(ft): 74.000
Type: Stage/Area

Stage(ft)	Area(ac)
60.000	1.2500
64.000	2.2900
69.000	3.4300
70.000	4.2000
71.000	6.2000

Name: NH Base Flow(cfs): 0.000 Init Stage(ft): 61.500
Group: BASE Warn Stage(ft): 74.000
Type: Stage/Area

Stage(ft)	Area(ac)
61.500	1.3600
64.000	1.6900
66.500	2.5900
69.000	3.5100
70.000	4.3500
71.000	5.3400
72.000	6.8900
73.000	13.9400
74.000	22.3400

Name: NI Base Flow(cfs): 0.000 Init Stage(ft): 57.000
Group: BASE Warn Stage(ft): 64.600
Type: Stage/Area

LOCH LEHMAN EXISTING CONDITIONS

Stage(ft)	Area(ac)
57.000	11.5200
64.620	17.6700
66.270	19.8200

Name: NJ Base Flow(cfs): 0.000 Init Stage(ft): 57.000
Group: BASE Warn Stage(ft): 64.000
Type: Stage/Area

Stage(ft)	Area(ac)
54.800	1.0100
58.100	2.6900
61.300	3.5100
64.600	4.2500

=====
=== Cross Sections =====
=====

Name: F Group: BASE
Encroachment: No

NF TO NI

Station(ft)	Elevation(ft)	Manning's N
0.000	75.000	0.400000
80.000	73.000	0.400000
180.000	72.000	0.400000
380.000	70.000	0.400000
420.000	72.000	0.400000
440.000	75.000	0.400000

Name: G Group: BASE
Encroachment: No

All elevations are NAVD

Existing Conditions
Loch Lehman Basin.
Input Report

Group: BASE To Node: NI
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Irregular

 XSec: H
 Invert(ft): 73.300
Control Elevation(ft): 73.300
Struct Opening Dim(ft): 140.00

TABLE

 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

=====
=== Hydrology Simulations ===
=====

Name: 025YR-096HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Lock Lehman\ICPR\Pre\025YR-096HR.R32

Override Defaults: Yes
Storm Duration(hrs): 96.00
Rainfall File: Sjrwnd96
Rainfall Amount(in): 12.20

Time(hrs)	Print Inc(min)
96.000	5.00

Name: 100YR-024HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Lock Lehman\ICPR\Pre\100YR-024HR.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 11.40

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 100YR-240HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Lock Lehman\ICPR\Pre\100YR-240HR.R32

Override Defaults: Yes
Storm Duration(hrs): 240.00
Rainfall File: Fdot-240
Rainfall Amount(in): 18.50

Time(hrs)	Print Inc(min)
240.000	5.00

=====
=== Routing Simulations ===
=====

Name: 025YR-096HR Hydrology Sim: 025YR-096HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Lock Lehman\ICPR\Pre\025YR-096HR.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 96.00
Min Calc Time(sec): 0.50000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000

Group	Run
BASE	Yes

All elevations are NAVD

Existing Conditions
Loch Lehman Basin.
Input Report

Name: 100YR-024HR Hydrology Sim: 100YR-024HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Lock Lehman\ICPR\Pre\100YR-024HR.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 24.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000

Group	Run
BASE	Yes

Name: 100YR-240HR Hydrology Sim: 100YR-240HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Lock Lehman\ICPR\Pre\100YR-240HR.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 360.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000

Group	Run
BASE	Yes

All elevations are NAVD

Existing Conditions
Loch Lehman Basin.
Node Max Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
NI	BASE	025YR-096HR	96.00	58.95	64.60	0.0009	571541	60.08	138.42	0.00	0.00
NI	BASE	100YR-240HR	360.00	61.52	64.60	0.0016	663137	183.92	22.76	193.43	0.76
NJ	BASE	025YR-096HR	96.00	58.95	64.00	0.0011	126724	60.08	44.87	0.00	0.00
NJ	BASE	100YR-240HR	359.95	61.52	64.00	0.0016	155042	183.91	5.68	0.00	0.00

All elevations are NAVD

POST

ICPR MODEL

Post-Development
Loch Lehman Basin
Node Diagram

Nodes

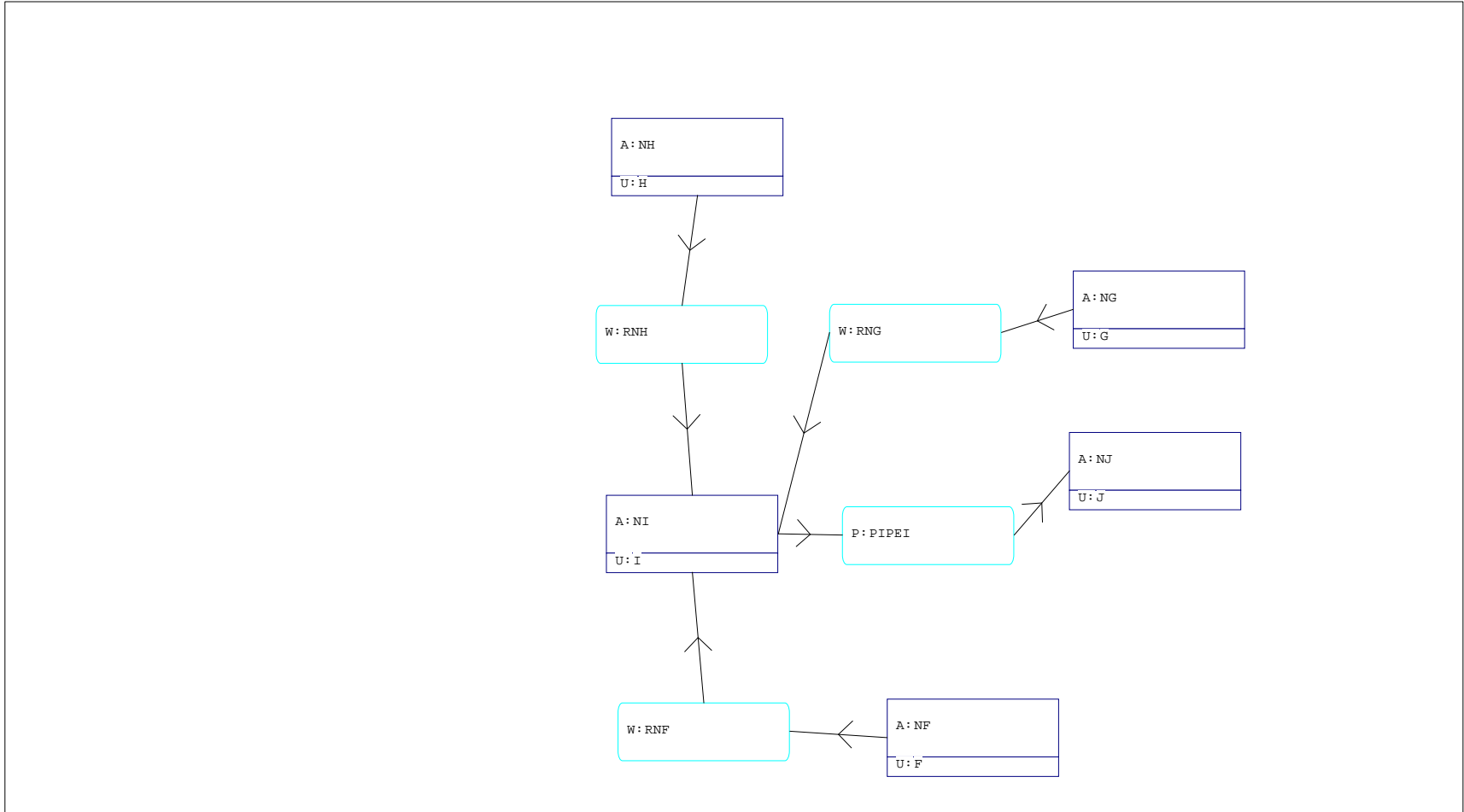
- A Stage/Area
- V Stage/Volume
- T Time/Stage
- M Manhole

Basins

- O Overland Flow
- U SCS Unit CN
- S SBUH CN
- Y SCS Unit GA
- Z SBUH GA

Links

- P Pipe
- W Weir
- C Channel
- D Drop Structure
- B Bridge
- R Rating Curve
- H Breach
- E Percolation
- F Filter
- X Exfil Trench



All elevations are NAVD

Post-Development
Loch Lehman Basin
Input Report

71.000 1.4500

Name: NG Base Flow(cfs): 0.000 Init Stage(ft): 60.000
Group: BASE Warn Stage(ft): 74.000
Type: Stage/Area

Stage(ft)	Area(ac)
60.000	1.2500
64.000	2.2900
69.000	3.4300
70.000	4.2000
71.000	6.2000

Name: NH Base Flow(cfs): 0.000 Init Stage(ft): 61.500
Group: BASE Warn Stage(ft): 74.000
Type: Stage/Area

Stage(ft)	Area(ac)
61.500	1.3600
64.000	1.6900
66.500	2.5900
69.000	3.5100
70.000	4.3500
71.000	5.3400
72.000	6.8900
73.000	13.9400
74.000	22.3400

Name: NI Base Flow(cfs): 0.000 Init Stage(ft): 57.000
Group: BASE Warn Stage(ft): 64.600
Type: Stage/Area

Stage(ft)	Area(ac)
57.000	12.7200
64.750	16.0600
66.270	17.4200

Name: NJ Base Flow(cfs): 0.000 Init Stage(ft): 57.000
Group: BASE Warn Stage(ft): 64.000
Type: Stage/Area

Stage(ft)	Area(ac)
54.800	1.0100
58.100	2.6900
61.300	3.5100
64.600	4.2500

=====
=== Cross Sections =====
=====

Name: F Group: BASE
Encroachment: No

NF TO NI

Station(ft)	Elevation(ft)	Manning's N
0.000	75.000	0.400000
80.000	73.000	0.400000
180.000	72.000	0.400000
380.000	70.000	0.400000
420.000	72.000	0.400000
440.000	75.000	0.400000

Name: G Group: BASE
Encroachment: No

All elevations are NAVD

Post-Development
Loch Lehman Basin
Input Report

Group: BASE To Node: NI
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Irregular

 XSec: H
 Invert(ft): 73.300
Control Elevation(ft): 73.300
Struct Opening Dim(ft): 140.00

TABLE

 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

=====
=== Hydrology Simulations ===
=====

Name: 025YR-096HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Loch Lehman\ICPR\Post\025YR-096HR.R32

Override Defaults: Yes
Storm Duration(hrs): 96.00
Rainfall File: Sjrwnd96
Rainfall Amount(in): 12.20

Time(hrs)	Print Inc(min)
96.000	5.00

Name: 100YR-024HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Loch Lehman\ICPR\Post\100YR-024HR.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 11.40

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 100YR-240HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Loch Lehman\ICPR\Post\100YR-240HR.R32

Override Defaults: Yes
Storm Duration(hrs): 240.00
Rainfall File: Fdot-240
Rainfall Amount(in): 18.50

Time(hrs)	Print Inc(min)
240.000	5.00

=====
=== Routing Simulations ===
=====

Name: 025YR-096HR Hydrology Sim: 025YR-096HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Loch Lehman\ICPR\Post\025YR-096HR.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 96.00
Min Calc Time(sec): 0.50000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000

Group	Run
BASE	Yes

All elevations are NAVD

Post-Development
Loch Lehman Basin
Input Report

Name: 100YR-024HR Hydrology Sim: 100YR-024HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Loch Lehman\ICPR\Post\100YR-024HR.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 24.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000

Group	Run
BASE	Yes

Name: 100YR-240HR Hydrology Sim: 100YR-240HR
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Loch Lehman\ICPR\Post\100YR-240HR.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 360.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000

Group	Run
BASE	Yes

Post-Development
Loch Lehman Basin
Node Max Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
NF	BASE	025YR-096HR	96.00	69.62	74.00	0.0019	37839	60.08	9.71	0.00	0.00
NF	BASE	100YR-024HR	24.00	69.33	74.00	0.0016	33263	12.17	8.70	0.00	0.00
NF	BASE	100YR-240HR	240.02	71.30	74.00	0.0025	68856	184.00	2.45	0.00	0.00
NG	BASE	025YR-096HR	96.00	64.25	74.00	0.0019	102284	60.08	50.44	0.00	0.00
NG	BASE	100YR-024HR	24.00	63.86	74.00	0.0018	98159	12.08	49.93	0.00	0.00
NG	BASE	100YR-240HR	240.02	67.11	74.00	0.0033	130644	184.00	9.25	0.00	0.00
NH	BASE	025YR-096HR	96.00	72.38	74.00	0.0050	415718	60.08	205.62	0.00	0.00
NH	BASE	100YR-024HR	24.00	71.88	74.00	0.0050	292196	12.17	210.27	0.00	0.00
NH	BASE	100YR-240HR	192.40	73.54	74.00	0.0050	804976	184.00	38.38	192.40	5.86
NI	BASE	025YR-096HR	96.00	59.00	64.60	0.0008	591706	60.08	145.67	32.77	0.09
NI	BASE	100YR-024HR	24.00	58.83	64.60	0.0010	588700	12.08	164.15	8.82	0.25
NI	BASE	100YR-240HR	360.00	61.42	64.60	0.0014	637164	183.91	19.54	217.07	0.70
NJ	BASE	025YR-096HR	96.00	59.00	64.00	0.0010	127285	60.08	44.74	0.00	0.00
NJ	BASE	100YR-024HR	24.00	58.83	64.00	0.0011	125431	12.17	47.74	0.00	0.00
NJ	BASE	100YR-240HR	359.95	61.42	64.00	0.0016	154143	183.91	5.05	0.00	0.00

All elevations are NAVD

Appendix I

Pond 13 Basin Calculations Open Basin

Pond 13 Pre-Development Basin Summary

Project:	Wekiva Parkway - Section 8	Condition:	Pre Development	
Location:	Seminole	Date:	1/18/2016	Date: 3/10/2016
		Prepared:	NEG	Checked: AKC

Pond 13 Basin Summary					
Basin	Total Area (ac)	Pervious (ac)	Impervious (ac)	Tc (min)	CCN
Pond 13	49.52	25.01	24.51	34	75.09
<i>To Pond 13</i>	<i>49.52</i>	<i>25.01</i>	<i>24.51</i>	-	-

Notes:

1. Pre Development characteristics taken from Pond 13 ultimate post development calculations for the I-4/SR 46 Ramp Improvements Project. SJRWMD Permit No. 4-117-22514-10

Pond 13 Basin Pre-Development CN Calculations

Project:	Wekiva Parkway - Section 8	Condition:	Pre Development
Location:	Seminole	Date:	1/18/2016
		Prepared:	NEG
		Checked:	AKC

Pond 13 Basin				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		21.54	98	2110.92
Pond Surface		2.97	100	297.00
Grass (Good Cover)	A	11.32	39	441.48
Grass (Pond)	A	4.11	39	160.29
Grass (Good Cover)	C	9.58	74	708.92
Total		49.52		3718.61

Pre-Development CN = 75.09
S=(1000/CN)-10 = 3.32

Notes:

1. Pre Development characteristics taken from Pond 13 ultimate post development calculations for the I-4/SR 46 Ramp Improvements Project. SJRWMD Permit No. 4-117-22514-10

Pond 13 Basin Pre-Development Model Comparison

Project:	Wekiva Parkway - Section 8	Condition:	Pre Development
Location:	Seminole	Date:	2/8/2016
		Prepared:	NEG
		Checked:	AKC

Pond 13 Basin				
Storm Event	Permitted Model		Duplicate Model	
	Stage (ft)	Discharge (cfs)	Stage (ft)	Discharge (cfs)
Mean Annual	56.04	2.70	56.04	2.70
25 year/ 24 hour	58.11	15.25	58.11	15.25

The permitted model matches the duplicate model.

Notes:

1. Pre Development characteristics taken from Pond 13 ultimate post development calculations for the I-4/SR 46 Ramp Improvements Project. SJRWMD Permit No. 4-117-22514-10

Pond 13 Post-Development Basin Summary

Project:	Wekiva Parkway - Section 8	Condition:	Post Development	
Location:	Seminole	Date:	1/18/2016	Date: 3/10/2016
		Prepared:	NEG	Checked: AKC

Pond 13 Basin Summary					
Basin	Total Area (ac)	Pervious (ac)	Impervious (ac)	Tc (min)	CCN ³
Pond 13	37.46	8.41	29.05	34	86.1
<i>To Pond 13</i>	<i>37.46</i>	<i>8.41</i>	<i>29.05</i>	-	-

Notes:

1. Pond area included in Impervious area.

Pond 13 Basin Post-Development CN Calculations

Project:	Wekiva Parkway - Section 8	Condition:	Post Development
Location:	Seminole	Date:	1/18/2016
		Prepared:	NEG
		Checked:	AKC

Pond 13 Basin				
Land Use Description	HSG	Area (ac)	CN	Product
Roadway		26.55	98	2601.90
Open Space	A	8.41	45	378.45
Pond Surface		2.5	100	250.00
Total		37.46		3230.35

Post-Development CN = 86.2
 S=(1000/CN)-10 = 1.60

Water Quality and Volume Summary

Project:	Wekiva Parkway - Section 8	Condition:	Post-Development	
Location:	Seminole	Date:	1/18/2016	Date: 3/10/2016
Basin:	Pond 13	Prepared:	NEG	Checked: AKC

1. Calculate Water Quality Volume per SJRWMD requirements 40C-42 FAC

Provide the greater of one (1) inch of runoff from the entire basin area or 2.5 inches of runoff from the impervious area.

A. Total Drainage Area to Pond 13 = 37.46 ac

B. Total Drainage Area for Treatment = 37.46 ac

Total Impervious Area = 26.55 ac

*Does not include pond area

Total Pervious Area = 8.41

Total Pond Area = 2.50

C. Treatment Calculations

1" x Drainage Area = 3.12 ac-ft

2.5" x Impervious Area = 5.53 ac-ft, GOVERNS

Water Quality Volume = 5.53 ac-ft

Storage Provided in Pond 13= 6.39 ac-ft

Pond 13 Stage Storage Calculations

Project: Wekiva Parkway - Section 8
Location: Seminole

Date: 1/18/2016
Prepared: NEG
Checked: AKC

POND 13 Basin			
Stage (ft-el)	Area (ac)	Storage (ac-ft)	Remarks
44.12	1.25	0.00	
54.12	2.50	0.00	NWL / SHGWT
56.50	2.87	6.39	Weir Elevation
57.00	3.02	7.86	
58.00	3.32	11.03	
59.00	3.65	14.52	
60.00	4.34	18.51	Inside edge of Maint. Berm
61.50	5.39	25.81	TOB

	A	B	C	D	E	F	G	H	I	J				
1	Pond 13 - Recovery Calculations													
2														
3	Recover 1/2 the Treatment Volume in 24-30 Hours							Treatment Vol.	5.53					
4								Stage-Storage						
5								Elevation	acres	acre-ft	then weir crest			
6	Orifice Eq: $Q = CA(2gH)^{0.5}$; Weir Eq. $Q = CLH^{1.5}$							54.12	2.50	0.00	56.18			
7	Dimension of Orifice: input units in inches.							56.50	2.87	6.39	Set weir at 56.50 = 6.39 ac-ft			
8	Diameter	6.00								57.00	3.02	7.86	for w.q. vol = 5.53 ac-ft	
9								58.00	3.32	11.03				
10	Disch C=	0.6								59.00	3.65	14.52		
11								60.00	4.34	18.51				
12	Area sq.ft. =	0.20	=3.14159*(B7/24)^2								61.50	5.39	25.81	
13	inflow elev=	54.12												
14	Number Orif	1	Treatment volume =							5.53	2.77	=1/2 Treatment Vol.		
15	$Q = IF(B16 > \$B\$11 + (\$B\$7/12), \$B\$12 * \$B\$9 * \$B\$10 * ((B16 - (\$B\$11 + \$B\$7/24)) * 64.4)^{0.5}, (\$B\$12 * 3 * \$B\$7/12 * (B16 - \$B\$11)^{1.5}))$													
16														
17	H	Stage	Q (cfs)	Average Q (cfs)	Incremental Vol. (Acre-ft)	Cumulative Vol Recovered	Time in Sec	Time in Hr.	Total Recovery Time (hours)					
18	0.01	54.13	0.00	0.0007	0.03	6.14	1559448	433.18	718					
19	0.10	54.22	0.04	0.0220	0.27	6.11	532581	147.94	285					
20	0.20	54.32	0.13	0.0865	0.27	5.84	135145	37.54	137					
21	0.30	54.42	0.24	0.1848	0.27	5.57	63306	17.58	99					
22	0.40	54.52	0.37	0.3064	0.27	5.30	38177	10.60	82					
23	0.50	54.62	0.52	0.4474	0.27	5.03	26143	7.26	71					
24	0.60	54.72	0.56	0.5389	0.27	4.77	21705	6.03	64					
25	0.70	54.82	0.63	0.5930	0.27	4.50	19724	5.48	58					
26	0.80	54.92	0.70	0.6643	0.27	4.23	17606	4.89	52					
27	0.90	55.02	0.76	0.7286	0.27	3.96	16052	4.46	47					
28	1.00	55.12	0.82	0.7877	0.27	3.69	14849	4.12	43					
29	1.10	55.22	0.87	0.8425	0.55	3.42	28457	7.90	39	Recovery				
30	1.30	55.42	0.97	0.9189	0.11	2.87	5091	1.41	31	1/2 Volume				
31	1.34	55.46	0.99	0.9779	0.16	2.77	7176	1.99	29	1/2 TV= 2.77AF				
32	1.40	55.52	1.01	1.0004	0.13	2.60	5845	1.62	27					
33	1.45	55.57	1.04	1.0248	0.13	2.47	5707	1.59	26					
34	1.50	55.62	1.06	1.0463	0.13	2.34	5589	1.55	24					
35	1.55	55.67	1.08	1.0675	0.13	2.20	5478	1.52	23					
36	1.60	55.72	1.10	1.0882	0.13	2.07	5374	1.49	21					
37	1.65	55.77	1.12	1.1086	0.13	1.93	5275	1.47	20					
38	1.70	55.82	1.14	1.1285	0.54	1.80	20728	5.76	18					
39	1.90	56.02	1.21	1.1764	0.54	1.26	19884	5.52	12					
40	2.10	56.22	1.29	1.2502	0.27	0.72	9355	2.60	7					
41	2.20	56.32	1.32	1.3031	0.46	0.46	15259	4.24	4					
42	2.37	56.49	1.38	1.3484										
43														
44														
45														
46														
47														
48														
49														

Permanent Pool Volume

Project: Wekiva Parkway - Section 8
Pond: Pond 13
Computed by: NEG **Checked by:** AKC
Date: 1/18/2016

Wet Season Rainfall	
Month	Days
June	30
July	31
August	31
September	30
October	31
Total	153

Permanent Pool Volume			
Depth	Elevation	acres	acre-ft
-10.00	44.12	1.25	0.00
0.00	54.12	2.50	18.75

31 " of rainfall over wet season¹

RT = PPV/FR where;

RT = Residence Time

PPV = Permanent Pool Volume

FR = Flow Rate

The flow rate is defined as the runoff from the site over the wet period:

FR = Area*C*P/Time

Total	Area (acres)				C	P (in)	Time (days)	FR (ac-ft/day)
	Impervious ²	Woods ²	Business ²	Grass ²				
37.46	29.1	0.0	0.0	8.4	0.78	31	153	0.494

PPV required for 14 day residence time: PPV = RT*FR

PPV_{req} = 6.92 Acre-ft

Volume Available = **18.75 Acre-ft**

Volume = **2.7 x PPV_{req} sufficient PPV**

- Notes:**
1. Rainfall data from National Climatic Data Center (Long Term Average).
 2. C = 0.98 for impervious area, 0.15 for wooded area, 0.70 for business and 0.20 for grassed area.
 3. Littoral shelf not provided. 1.5x PPV required.

Pond 13 Pre vs. Post Discharge - SJRWMD

Project: Wekiva Parkway **Date:** 2/12/2016 **Date:** 3/10/2016
Location: Seminole **Prepared:** NEG **Checked:** AKC

PRE vs POST DISCHARGE RATE COMPARISON - SJRWMD				
NODE	MEAN ANNUAL		25YR/24HR	
	PRE Q (CFS)	POST Q (CFS)	PRE Q (CFS)	POST Q (CFS)
Pond13_ult	2.70	2.28	15.25	15.25

Notes:

1. Pre Q established using the replicated ICPR model from SJRWMD Permit #4-117-22514-10.
2. FLMOD distribution used.

Pond 13 Pre vs. Post Discharge - FDOT Critical Duration

Project: Wekiva Parkway 2/12/2016
Location: Seminole NEG

Date: 3/10/2016
Checked: AKC

PRE vs POST Modeling Summary - Critical Duration				
STORM EVENT		POST-DISCHARGE (CFS)	DELTA Q	MAXIMUM STAGE
2 YR	1 HR ³	0.94	-0.15	55.36
2 YR	2 HR ³	1.15	-0.17	55.85
2 YR	4 HR ³	1.30	-0.17	56.25
2 YR	8 HR ³	2.15	-0.01	56.80
2 YR	24 HR	3.12	0.69	57.04
2 YR	72 HR	3.86	1.20	57.19
5 YR	1 HR ³	1.12	-0.14	55.78
5 YR	2 HR ³	1.33	0.01	56.36
5 YR	4 HR	2.42	1.04	56.88
5 YR	8 HR	4.47	0.91	57.30
5 YR	24 HR	6.64	1.08	57.65
5 YR	72 HR	7.10	1.53	57.72
10 YR	1 HR ³	1.22	-0.15	56.04
10 YR	2 HR	2.16	0.44	56.81
10 YR	4 HR	4.73	0.62	57.34
10 YR	8 HR	7.61	0.96	57.79
10 YR	24 HR	9.54	1.29	58.06
10 YR	72 HR	9.24	1.77	58.02
25 YR	1 HR	1.37	0.34	56.48
25 YR	2 HR	4.41	0.59	57.29
25 YR	4 HR	7.98	1.23	57.84
25 YR	8 HR	10.65	1.31	58.21
25 YR	24 HR	12.03	1.49	58.38
25 YR	72 HR	11.71	1.97	58.35
50 YR	1 HR	1.92	0.89	56.74
50 YR	2 HR	6.70	0.69	57.66
50 YR	4 HR	11.43	0.84	58.31
50 YR	8 HR	14.27	0.28	58.67
50 YR	24 HR	14.06	1.21	58.65
50 YR	72 HR	13.99	1.26	58.64
100 YR	1 HR	3.66	0.75	57.15
100 YR	2 HR	9.69	0.21	58.08
100 YR	4 HR ^{3,4}	14.66	-0.22	58.72
100 YR	8 HR	16.29	0.09	59.02
100 YR	24 HR	16.16	0.88	59.00
100 YR	72 HR	15.20	1.17	58.81

Notes:

1. Pre Q taken from Post-Discharge for Ultimate I-4 Summary of Modeling Results table from SJRWMD Permit #4-117-22514-10.
2. FDOT critical duration storms using FDOT rainfall distributions
3. Post Q > Pre Q for storm event. Discharge is through orifice only & max stage is below weir. These small increases in discharge do not adversely impact outfall.
4. Discharge is 14.47 CFS for Pre Pond 13 taken from SJRWMD Permit #4-117-22514-10. The 0.17 CFS increase to 14.61 CFS in ultimate condition is less than max storm discharge and less than pre-development conditions for

PRE

ICPR MODEL

Pond 13
Existing Conditions (Duplicate Model)
Node Diagram

Nodes

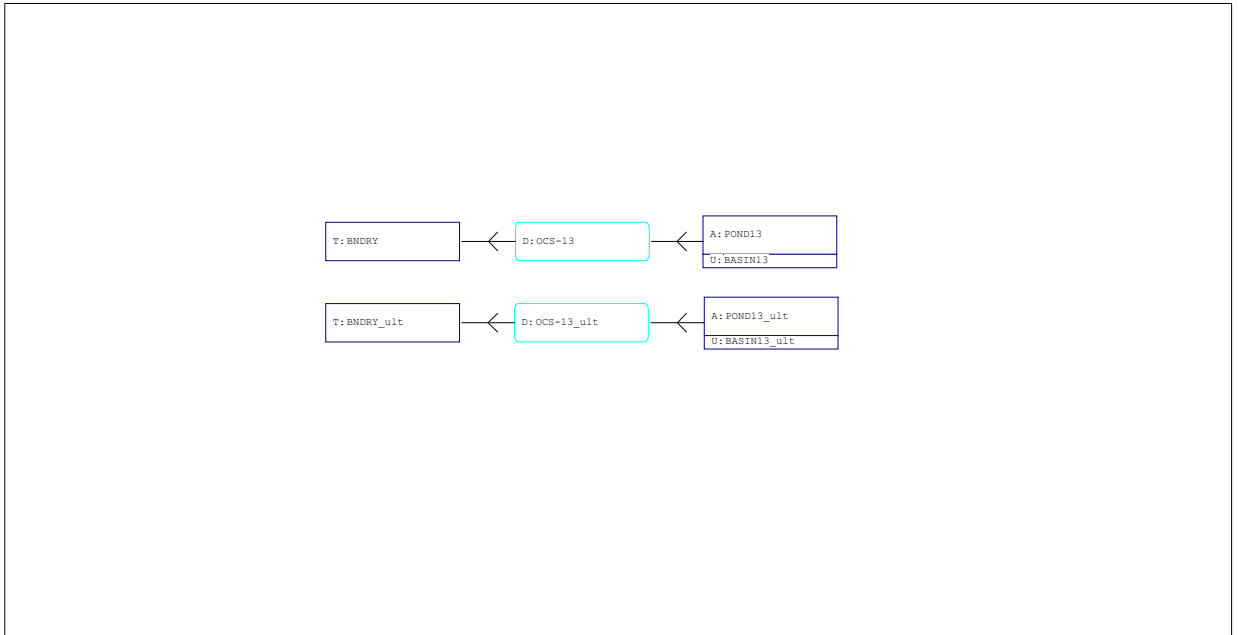
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins

O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links

P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



Pond 13
Existing Conditions (Duplicate Model)
Input Report

=====
Basins =====
=====

Name: BASIN13 Node: POND13 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Flmod Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.600 Time of Conc(min): 34.08
Area(ac): 49.520 Time Shift(hrs): 0.00
Curve Number: 69.11 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: BASIN13_ult Node: POND13_ult Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Flmod Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.600 Time of Conc(min): 34.08
Area(ac): 49.520 Time Shift(hrs): 0.00
Curve Number: 75.09 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

=====
Nodes =====
=====

Name: BNDRY Base Flow(cfs): 0.000 Init Stage(ft): 49.000
Group: BASE Warn Stage(ft): 0.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	49.000
12.00	50.800
24.00	49.000

Name: BNDRY_ult Base Flow(cfs): 0.000 Init Stage(ft): 49.000
Group: BASE Warn Stage(ft): 0.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	49.000
12.00	50.800
24.00	49.000

Name: POND13 Base Flow(cfs): 0.000 Init Stage(ft): 54.120
Group: BASE Warn Stage(ft): 59.000
Type: Stage/Area

Elevations in NGVD.

Stage(ft)	Area(ac)
54.120	2.9700
55.400	3.3700
56.000	3.4100
57.000	3.8200
58.000	4.2900
59.000	4.8000
60.000	5.3600

Name: POND13_ult Base Flow(cfs): 0.000 Init Stage(ft): 54.120
Group: BASE Warn Stage(ft): 59.000
Type: Stage/Area

Stage(ft)	Area(ac)
-----------	----------

Pond 13
Existing Conditions (Duplicate Model)
Input Report

54.120	2.9700
55.500	3.3800
56.000	3.4100
57.000	3.8200
58.000	4.2900
59.000	4.8000
60.000	5.3600

==== Operating Tables =====

Name: Group: BASE
Type: Bottom Clip
Function: Time vs. Depth of Clip

Time(hrs) Clip Depth(in)

==== Pipes =====

Name:	From Node:	Length(ft): 0.00
Group: BASE	To Node:	Count: 1
		Friction Equation: Automatic
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 0.00	0.00	Entrance Loss Coef: 0.00
Rise(in): 0.00	0.00	Exit Loss Coef: 1.00
Invert(ft): 0.000	0.000	Bend Loss Coef: 0.00
Manning's N: 0.000000	0.000000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

==== Drop Structures =====

Name: OCS-13	From Node: POND13	Length(ft): 210.00
Group: BASE	To Node: BNDRY	Count: 1
		Friction Equation: Average Conveyance
UPSTREAM	DOWNSTREAM	Solution Algorithm: Automatic
Geometry: Circular	Circular	Flow: Both
Span(in): 18.00	18.00	Entrance Loss Coef: 0.000
Rise(in): 18.00	18.00	Exit Loss Coef: 0.000
Invert(ft): 52.000	51.700	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dn
Top Clip(in): 0.000	0.000	Solution Incs: 10
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 3 for Drop Structure OCS-13 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Circular	Orifice Disc Coef: 0.600	
Span(in): 6.00	Invert(ft): 53.120	
Rise(in): 6.00	Control Elev(ft): 54.120	

*** Weir 2 of 3 for Drop Structure OCS-13 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	

Pond 13
Existing Conditions (Duplicate Model)
Input Report

Flow: Both Weir Disc Coef: 3.200
Geometry: Rectangular Orifice Disc Coef: 0.600
Span(in): 15.00 Invert(ft): 55.550
Rise(in): 41.40 Control Elev(ft): 55.550

*** Weir 3 of 3 for Drop Structure OCS-13 ***

Count: 1 Bottom Clip(in): 0.000
Type: Horizontal Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Rectangular Orifice Disc Coef: 0.600
Span(in): 37.00 Invert(ft): 59.000
Rise(in): 49.00 Control Elev(ft): 59.000

TABLE

Name: OCS-13_ult From Node: POND13_ult Length(ft): 210.00
Group: BASE To Node: BNDRY_ult Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Automatic
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.000
Invert(ft): 52.000	51.700	Exit Loss Coef: 0.000
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 3 for Drop Structure OCS-13_ult ***

Count: 1 Bottom Clip(in): 0.000
Type: Vertical: Mavis Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Circular Orifice Disc Coef: 0.600
Span(in): 6.00 Invert(ft): 53.120
Rise(in): 6.00 Control Elev(ft): 54.120

TABLE

*** Weir 2 of 3 for Drop Structure OCS-13_ult ***

Count: 1 Bottom Clip(in): 0.000
Type: Vertical: Mavis Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Rectangular Orifice Disc Coef: 0.600
Span(in): 15.00 Invert(ft): 55.550
Rise(in): 41.40 Control Elev(ft): 55.550

TABLE

*** Weir 3 of 3 for Drop Structure OCS-13_ult ***

Count: 1 Bottom Clip(in): 0.000
Type: Horizontal Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Rectangular Orifice Disc Coef: 0.600
Span(in): 37.00 Invert(ft): 59.000
Rise(in): 49.00 Control Elev(ft): 59.000

TABLE

=====
=== Hydrology Simulations ===
=====

Name: 100Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\100Y1H.R32

Override Defaults: Yes
Storm Duration(hrs): 1.00
Rainfall File: Fdot-1
Rainfall Amount(in): 4.50

Time(hrs)	Print Inc(min)
-----	-----
2.000	2.50

Pond 13
Existing Conditions (Duplicate Model)
Input Report

```

-----
Name: 100Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\100Y24H.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Fdot-24
Rainfall Amount(in): 10.60

Time(hrs)      Print Inc(min)
-----
30.000        5.00

```

```

-----
Name: 100Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\100Y2H.R32

Override Defaults: Yes
Storm Duration(hrs): 2.00
Rainfall File: Fdot-2
Rainfall Amount(in): 5.60

Time(hrs)      Print Inc(min)
-----
4.000         2.50

```

```

-----
Name: 100Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\100Y4H.R32

Override Defaults: Yes
Storm Duration(hrs): 4.00
Rainfall File: Fdot-4
Rainfall Amount(in): 6.64

Time(hrs)      Print Inc(min)
-----
8.000         2.50

```

```

-----
Name: 100Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\100Y72H.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Fdot-72
Rainfall Amount(in): 13.80

Time(hrs)      Print Inc(min)
-----
80.000        5.00

```

```

-----
Name: 100Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\100Y8H.R32

Override Defaults: Yes
Storm Duration(hrs): 8.00
Rainfall File: Fdot-8
Rainfall Amount(in): 7.84

Time(hrs)      Print Inc(min)
-----
16.000        2.50

```

```

-----
Name: 10Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\10Y1H.R32

Override Defaults: Yes
Storm Duration(hrs): 1.00
Rainfall File: Fdot-1
Rainfall Amount(in): 3.20

Time(hrs)      Print Inc(min)
-----
2.000         2.50

```

```

-----
Name: 10Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\10Y24H.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Fdot-24

```

Pond 13
Existing Conditions (Duplicate Model)
Input Report

Rainfall Amount(in): 7.50

Time(hrs)	Print Inc(min)
30.000	5.00

 Name: 10Y2H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\10Y2H.R32
 Override Defaults: Yes
 Storm Duration(hrs): 2.00
 Rainfall File: Fdot-2
 Rainfall Amount(in): 3.90

Time(hrs)	Print Inc(min)
4.000	5.00

 Name: 10Y4H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\10Y4H.R32
 Override Defaults: Yes
 Storm Duration(hrs): 4.00
 Rainfall File: Fdot-4
 Rainfall Amount(in): 4.60

Time(hrs)	Print Inc(min)
8.000	2.50

 Name: 10Y72H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\10Y72H.R32
 Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Fdot-72
 Rainfall Amount(in): 9.00

Time(hrs)	Print Inc(min)
80.000	5.00

 Name: 10Y8H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\10Y8H.R32
 Override Defaults: Yes
 Storm Duration(hrs): 8.00
 Rainfall File: Fdot-8
 Rainfall Amount(in): 5.56

Time(hrs)	Print Inc(min)
16.000	2.50

 Name: 25Y1H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\25Y1H.R32
 Override Defaults: Yes
 Storm Duration(hrs): 1.00
 Rainfall File: Fdot-1
 Rainfall Amount(in): 3.70

Time(hrs)	Print Inc(min)
2.000	2.50

 Name: 25Y24H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\25Y24H.R32
 Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Fdot-24
 Rainfall Amount(in): 8.60

Time(hrs)	Print Inc(min)
30.000	5.00

Pond 13
Existing Conditions (Duplicate Model)
Input Report

Name: 25Y24H_SJRWMD
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\25Y24H_SJRWMD.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 8.60

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 25Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\25Y2H.R32

Override Defaults: Yes
Storm Duration(hrs): 2.00
Rainfall File: Fdot-2
Rainfall Amount(in): 4.50

Time(hrs)	Print Inc(min)
4.000	2.50

Name: 25Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\25Y4H.R32

Override Defaults: Yes
Storm Duration(hrs): 4.00
Rainfall File: Fdot-4
Rainfall Amount(in): 5.30

Time(hrs)	Print Inc(min)
8.000	2.50

Name: 25Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\25Y72H.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Fdot-72
Rainfall Amount(in): 10.90

Time(hrs)	Print Inc(min)
80.000	5.00

Name: 25Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\25Y8H.R32

Override Defaults: Yes
Storm Duration(hrs): 8.00
Rainfall File: Fdot-8
Rainfall Amount(in): 6.32

Time(hrs)	Print Inc(min)
16.000	2.50

Name: 2Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\2Y1H.R32

Override Defaults: Yes
Storm Duration(hrs): 1.00
Rainfall File: Fdot-1
Rainfall Amount(in): 2.40

Time(hrs)	Print Inc(min)
2.000	2.50

Name: 2Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\2Y24H.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Fdot-24
Rainfall Amount(in): 4.75

Pond 13
Existing Conditions (Duplicate Model)
Input Report

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 2Y2H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\2Y2H.R32

Override Defaults: Yes
 Storm Duration(hrs): 2.00
 Rainfall File: Fdot-2
 Rainfall Amount(in): 2.85

Time(hrs)	Print Inc(min)
4.000	2.50

Name: 2Y4H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\2Y4H.R32

Override Defaults: Yes
 Storm Duration(hrs): 4.00
 Rainfall File: Fdot-4
 Rainfall Amount(in): 3.30

Time(hrs)	Print Inc(min)
8.000	2.50

Name: 2Y72H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\2Y72H.R32

Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Fdot-72
 Rainfall Amount(in): 6.00

Time(hrs)	Print Inc(min)
80.000	5.00

Name: 2Y8H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\2Y8H.R32

Override Defaults: Yes
 Storm Duration(hrs): 8.00
 Rainfall File: Fdot-8
 Rainfall Amount(in): 4.00

Time(hrs)	Print Inc(min)
16.000	2.50

Name: 50Y1H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\50Y1H.R32

Override Defaults: Yes
 Storm Duration(hrs): 1.00
 Rainfall File: Fdot-1
 Rainfall Amount(in): 4.00

Time(hrs)	Print Inc(min)
2.000	2.50

Name: 50Y24H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\50Y24H.R32

Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Fdot-24
 Rainfall Amount(in): 9.50

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 50Y2H

Pond 13
Existing Conditions (Duplicate Model)
Input Report

Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\50Y2H.R32

Override Defaults: Yes
Storm Duration(hrs): 2.00
Rainfall File: Fdot-2
Rainfall Amount(in): 5.00

Time(hrs)	Print Inc(min)
4.000	2.50

Name: 50Y4H

Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\50Y4H.R32

Override Defaults: Yes
Storm Duration(hrs): 4.00
Rainfall File: Fdot-4
Rainfall Amount(in): 6.00

Time(hrs)	Print Inc(min)
8.000	2.50

Name: 50Y72H

Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\50Y72H.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Fdot-72
Rainfall Amount(in): 12.70

Time(hrs)	Print Inc(min)
80.000	5.00

Name: 50Y8H

Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\50Y8H.R32

Override Defaults: Yes
Storm Duration(hrs): 8.00
Rainfall File: Fdot-8
Rainfall Amount(in): 7.20

Time(hrs)	Print Inc(min)
16.000	2.50

Name: 5Y1H

Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\5Y1H.R32

Override Defaults: Yes
Storm Duration(hrs): 1.00
Rainfall File: Fdot-1
Rainfall Amount(in): 2.90

Time(hrs)	Print Inc(min)
2.000	2.50

Name: 5Y24H

Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\5Y24H.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Fdot-24
Rainfall Amount(in): 6.25

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 5Y2H

Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\5Y2H.R32

Override Defaults: Yes
Storm Duration(hrs): 2.00
Rainfall File: Fdot-2
Rainfall Amount(in): 3.40

Pond 13
Existing Conditions (Duplicate Model)
Input Report

Time(hrs) Print Inc(min)

4.000 2.50

Name: 5Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\5Y4H.R32

Override Defaults: Yes
Storm Duration(hrs): 4.00
 Rainfall File: Fdot-4
Rainfall Amount(in): 4.00

Time(hrs) Print Inc(min)

8.000 2.50

Name: 5Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\5Y72H.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
 Rainfall File: Fdot-72
Rainfall Amount(in): 7.60

Time(hrs) Print Inc(min)

80.000 5.00

Name: 5Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\5Y8H.R32

Override Defaults: Yes
Storm Duration(hrs): 8.00
 Rainfall File: Fdot-8
Rainfall Amount(in): 4.72

Time(hrs) Print Inc(min)

16.000 2.50

Name: MEANANNUAL
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\MEANANNUAL.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
 Rainfall File: Fdot-24
Rainfall Amount(in): 4.50

Time(hrs) Print Inc(min)

30.000 5.00

Name: MEANANNUAL_SJRW
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\MEANANNUAL_SJRW.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
 Rainfall File: Flmod
Rainfall Amount(in): 4.50

Time(hrs) Print Inc(min)

30.000 5.00

=====
==== Routing Simulations =====
=====

Name: 100Y1H_R Hydrology Sim: 100Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\100Y1H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 2.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Pond 13
Existing Conditions (Duplicate Model)
Input Report

```

Time(hrs)      Print Inc(min)
-----
999.000      5.000

Group          Run
-----
BASE          Yes

```

```

-----
Name: 100Y24H_R      Hydrology Sim: 100Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\100Y24H_R.I32

Execute: No      Restart: No      Patch: No
Alternative: No

Max Delta Z(ft): 1.00      Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000      End Time(hrs): 30.00
Min Calc Time(sec): 0.0250      Max Calc Time(sec): 60.0000
Boundary Stages:      Boundary Flows:

```

```

Time(hrs)      Print Inc(min)
-----
999.000      15.000

Group          Run
-----
BASE          Yes

```

```

-----
Name: 100Y2H_R      Hydrology Sim: 100Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\100Y2H_R.I32

Execute: No      Restart: No      Patch: No
Alternative: No

Max Delta Z(ft): 1.00      Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000      End Time(hrs): 4.00
Min Calc Time(sec): 0.0250      Max Calc Time(sec): 60.0000
Boundary Stages:      Boundary Flows:

```

```

Time(hrs)      Print Inc(min)
-----
999.000      5.000

Group          Run
-----
BASE          Yes

```

```

-----
Name: 100Y4H_R      Hydrology Sim: 100Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\100Y4H_R.I32

Execute: No      Restart: No      Patch: No
Alternative: No

Max Delta Z(ft): 1.00      Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000      End Time(hrs): 8.00
Min Calc Time(sec): 0.0250      Max Calc Time(sec): 60.0000
Boundary Stages:      Boundary Flows:

```

```

Time(hrs)      Print Inc(min)
-----
999.000      5.000

Group          Run
-----
BASE          Yes

```

```

-----
Name: 100Y72H_R      Hydrology Sim: 100Y72H

```

Pond 13
Existing Conditions (Duplicate Model)
Input Report

Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\100Y72H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 80.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 60.000

Group Run

BASE Yes

Name: 100Y8H_R Hydrology Sim: 100Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\100Y8H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 10.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 30.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 5.000

Group Run

BASE Yes

Name: 10Y1H_R Hydrology Sim: 10Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\10Y1H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 2.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 5.000

Group Run

BASE Yes

Name: 10Y24H_R Hydrology Sim: 10Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\10Y24H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Pond 13
Existing Conditions (Duplicate Model)
Input Report

Time (hrs)	Print Inc (min)
-----	-----
30.000	15.000
Group	Run
-----	-----
BASE	Yes

Name: 10Y2H_R	Hydrology Sim: 10Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\10Y2H_R.I32	
Execute: No	Restart: No
Alternative: No	Patch: No
Max Delta Z (ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time (hrs): 0.000	End Time (hrs): 4.00
Min Calc Time (sec): 0.0250	Max Calc Time (sec): 60.0000
Boundary Stages:	Boundary Flows:

Time (hrs)	Print Inc (min)
-----	-----
999.000	5.000
Group	Run
-----	-----
BASE	Yes

Name: 10Y4H_R	Hydrology Sim: 10Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\10Y4H_R.I32	
Execute: No	Restart: No
Alternative: No	Patch: No
Max Delta Z (ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time (hrs): 0.000	End Time (hrs): 8.00
Min Calc Time (sec): 0.0250	Max Calc Time (sec): 60.0000
Boundary Stages:	Boundary Flows:

Time (hrs)	Print Inc (min)
-----	-----
999.000	5.000
Group	Run
-----	-----
BASE	Yes

Name: 10Y72H_R	Hydrology Sim: 10Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\10Y72H_R.I32	
Execute: No	Restart: No
Alternative: No	Patch: No
Max Delta Z (ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time (hrs): 0.000	End Time (hrs): 80.00
Min Calc Time (sec): 0.0250	Max Calc Time (sec): 60.0000
Boundary Stages:	Boundary Flows:

Time (hrs)	Print Inc (min)
-----	-----
999.000	60.000
Group	Run
-----	-----
BASE	Yes

Name: 10Y8H_R	Hydrology Sim: 10Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\10Y8H_R.I32	

Pond 13
Existing Conditions (Duplicate Model)
Input Report

Execute: No	Restart: No	Patch: No
Alternative: No		
Max Delta Z(ft): 1.00		Delta Z Factor: 0.00500
Time Step Optimizer: 10.000		
Start Time(hrs): 0.000		End Time(hrs): 16.00
Min Calc Time(sec): 0.0250	Max	Calc Time(sec): 60.0000
Boundary Stages:		Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
999.000	5.000
Group	Run
-----	-----
BASE	Yes

Name: 25Y1H_R	Hydrology Sim: 25Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\25Y1H_R.I32	

Execute: No	Restart: No	Patch: No
Alternative: No		
Max Delta Z(ft): 1.00		Delta Z Factor: 0.00500
Time Step Optimizer: 10.000		
Start Time(hrs): 0.000		End Time(hrs): 2.00
Min Calc Time(sec): 0.0250	Max	Calc Time(sec): 60.0000
Boundary Stages:		Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
999.000	5.000
Group	Run
-----	-----
BASE	Yes

Name: 25Y24H_R	Hydrology Sim: 25Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\25Y24H_R.I32	

Execute: Yes	Restart: No	Patch: No
Alternative: No		
Max Delta Z(ft): 1.00		Delta Z Factor: 0.00500
Time Step Optimizer: 10.000		
Start Time(hrs): 0.000		End Time(hrs): 30.00
Min Calc Time(sec): 0.0250	Max	Calc Time(sec): 60.0000
Boundary Stages:		Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
30.000	15.000
Group	Run
-----	-----
BASE	Yes

Name: 25Y24H_R_SJRWMD	Hydrology Sim: 25Y24H_SJRWMD
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\25Y24H_R_SJRWMD.I32	

Execute: Yes	Restart: No	Patch: No
Alternative: No		
Max Delta Z(ft): 1.00		Delta Z Factor: 0.00500
Time Step Optimizer: 10.000		
Start Time(hrs): 0.000		End Time(hrs): 30.00
Min Calc Time(sec): 0.0250	Max	Calc Time(sec): 60.0000
Boundary Stages:		Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----

Pond 13
Existing Conditions (Duplicate Model)
Input Report

30.000 15.000

Group Run

BASE Yes

Name: 25Y2H R Hydrology Sim: 25Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\25Y2H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 4.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 5.000

Group Run

BASE Yes

Name: 25Y4H R Hydrology Sim: 25Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\25Y4H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 8.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 5.000

Group Run

BASE Yes

Name: 25Y72H R Hydrology Sim: 25Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\25Y72H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 80.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 60.000

Group Run

BASE Yes

Name: 25Y8H R Hydrology Sim: 25Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\25Y8H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Pond 13
Existing Conditions (Duplicate Model)
Input Report

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	End Time(hrs): 16.00
Start Time(hrs): 0.000	Max Calc Time(sec): 60.0000
Min Calc Time(sec): 0.0250	Boundary Flows:
Boundary Stages:	

Time(hrs)	Print Inc(min)
-----	-----
999.000	5.000
Group	Run
-----	-----
BASE	Yes

Name: 2Y1H_R	Hydrology Sim: 2Y1H	
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\2Y1H_R.I32		
Execute: No	Restart: No	Patch: No
Alternative: No		

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	End Time(hrs): 2.00
Start Time(hrs): 0.000	Max Calc Time(sec): 60.0000
Min Calc Time(sec): 0.0250	Boundary Flows:
Boundary Stages:	

Time(hrs)	Print Inc(min)
-----	-----
999.000	5.000
Group	Run
-----	-----
BASE	Yes

Name: 2Y24H_R	Hydrology Sim: 2Y24H	
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\2Y24H_R.I32		
Execute: No	Restart: No	Patch: No
Alternative: No		

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	End Time(hrs): 30.00
Start Time(hrs): 0.000	Max Calc Time(sec): 60.0000
Min Calc Time(sec): 0.0250	Boundary Flows:
Boundary Stages:	

Time(hrs)	Print Inc(min)
-----	-----
999.000	15.000
Group	Run
-----	-----
BASE	Yes

Name: 2Y2H_R	Hydrology Sim: 2Y2H	
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\2Y2H_R.I32		
Execute: No	Restart: No	Patch: No
Alternative: No		

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	End Time(hrs): 4.00
Start Time(hrs): 0.000	Max Calc Time(sec): 60.0000
Min Calc Time(sec): 0.0250	Boundary Flows:
Boundary Stages:	

Time(hrs)	Print Inc(min)
-----	-----
999.000	5.000

Pond 13
Existing Conditions (Duplicate Model)
Input Report

Group	Run
-----	-----
BASE	Yes

Name: 2Y4H_R Hydrology Sim: 2Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\2Y4H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 8.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
999.000	5.000

Group	Run
-----	-----
BASE	Yes

Name: 2Y72H_R Hydrology Sim: 2Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\2Y72H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 80.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
999.000	60.000

Group	Run
-----	-----
BASE	Yes

Name: 2Y8H_R Hydrology Sim: 2Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\2Y8H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 16.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
999.000	5.000

Group	Run
-----	-----
BASE	Yes

Name: 50Y1H_R Hydrology Sim: 50Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\50Y1H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500

Pond 13
Existing Conditions (Duplicate Model)
Input Report

Time Step Optimizer: 10.000
Start Time (hrs): 0.000
Min Calc Time (sec): 0.0250
Boundary Stages:
End Time (hrs): 2.00
Max Calc Time (sec): 60.0000
Boundary Flows:

Time (hrs) Print Inc (min)

999.000 5.000

Group Run

BASE Yes

Name: 50Y24H_R Hydrology Sim: 50Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\50Y24H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z (ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time (hrs): 0.000 End Time (hrs): 30.00
Min Calc Time (sec): 0.0250 Max Calc Time (sec): 60.0000
Boundary Stages: Boundary Flows:

Time (hrs) Print Inc (min)

999.000 15.000

Group Run

BASE Yes

Name: 50Y2H_R Hydrology Sim: 50Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\50Y2H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z (ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time (hrs): 0.000 End Time (hrs): 4.00
Min Calc Time (sec): 0.0250 Max Calc Time (sec): 60.0000
Boundary Stages: Boundary Flows:

Time (hrs) Print Inc (min)

999.000 5.000

Group Run

BASE Yes

Name: 50Y4H_R Hydrology Sim: 50Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\50Y4H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z (ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time (hrs): 0.000 End Time (hrs): 8.00
Min Calc Time (sec): 0.0250 Max Calc Time (sec): 60.0000
Boundary Stages: Boundary Flows:

Time (hrs) Print Inc (min)

999.000 5.000

Group Run

Pond 13
Existing Conditions (Duplicate Model)
Input Report

BASE Yes

Name: 50Y72H_R Hydrology Sim: 50Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\50Y72H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 80.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 60.000

Group Run

BASE Yes

Name: 50Y8H_R Hydrology Sim: 50Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\50Y8H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 16.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 5.000

Group Run

BASE Yes

Name: 5Y1H_R Hydrology Sim: 5Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\5Y1H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 2.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 5.000

Group Run

BASE Yes

Name: 5Y24H_R Hydrology Sim: 5Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\5Y24H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00

Pond 13
Existing Conditions (Duplicate Model)
Input Report

Min Calc Time(sec): 0.0250
Boundary Stages:

Max Calc Time(sec): 60.0000
Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000
Group	Run
BASE	Yes

Name: 5Y2H_R Hydrology Sim: 5Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\5Y2H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 4.00
Min Calc Time(sec): 0.0250	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	5.000
Group	Run
BASE	Yes

Name: 5Y4H_R Hydrology Sim: 5Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\5Y4H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 8.00
Min Calc Time(sec): 0.0250	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	5.000
Group	Run
BASE	Yes

Name: 5Y72H_R Hydrology Sim: 5Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\5Y72H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 80.00
Min Calc Time(sec): 0.0250	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	60.000
Group	Run
BASE	Yes

Pond 13
Existing Conditions (Duplicate Model)
Input Report

Name: 5Y8H_R Hydrology Sim: 5Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\5Y8H_R.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 16.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	5.000
Group	Run
BASE	Yes

Name: MEANANNUAL_R Hydrology Sim: MEANANNUAL
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\MEANANNUAL_R.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
30.000	15.000
Group	Run
BASE	Yes

Name: MEANANNUAL_R_SJ Hydrology Sim: MEANANNUAL_SJRW
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Pre\MEANANNUAL_R_SJ.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
30.000	15.000
Group	Run
BASE	Yes

Pond 13
Existing Conditions (Duplicate Model)
Node Max Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
POND13_ult	BASE25Y24H_R_SJRWMD		14.88	58.11	59.00	0.0050	189280	12.33	125.95	14.88	15.25
POND13_ult	BASEMEANANNUAL_R_SJ		20.44	56.04	59.00	0.0050	149335	12.33	45.62	20.44	2.70

SJRWMD PERMIT #4-117-22514-10
 PERMITTED NODE MAXIMUM REPORT

Pst_Pond13_NMC_U

I-4 / SR 46 INTERCHANGE
 POND 13 (ULTIMATE I-4) POST-DEVELOPMENT CONDITION
 NODE MAXIMUM CONDITION REPORT
 JULY 14, 2011

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
BNDRY_ult	BASE	25YR24HR_R	12.00	50.80	0.00	0.0025	0	14.88	15.25	0.00	0.00
POND13_ult	BASE	25YR24HR_R	14.88	58.11	59.00	0.0050	189280	12.33	125.95	14.88	15.25
BNDRY_ult	BASE	MEANANNUL_R	12.00	50.80	0.00	0.0025	0	20.44	2.70	0.00	0.00
POND13_ult	BASE	MEANANNUL_R	20.44	56.04	59.00	0.0050	149335	12.33	45.62	20.44	2.70

**SJRWMD PERMIT #4-117-22514-10
PERMITTED MODELING RESULTS**



PROJECT I-4 and SR 46
SUBJECT Pond Calculations - Pond 13 Ultimate I-4

SHEET 4 OF 5
JOB NO.
DATE 6/2/2011
COMPUTED BY KTD
CHECKED BY PEM

Pond Routing (continued)

Summary of modeling results:

FDOT critical duration storms (with FDOT rainfall distributions)

Pond routed with both weirs functioning and with starting elevation at the first stage weir elevation

Storm Event		Pre-Discharge	Post-Discharge	Delta Q	Maximum Stage
2 yr	1 hr	0.83 cfs	0.79 cfs	0.04 cfs	54.81 ft
2 yr	2 hr	1.04 cfs	0.98 cfs	0.06 cfs	55.19 ft
2 yr	4 hr	1.23 cfs	1.13 cfs	0.10 cfs	55.54 ft
2 yr	8 hr	2.98 cfs	2.14 cfs	0.84 cfs	55.91 ft
2 yr	24 hr	4.87 cfs	3.81 cfs	1.06 cfs	56.27 ft
2 yr	72 hr	6.29 cfs	5.06 cfs	1.23 cfs	56.48 ft
5 yr	1 hr	1.04 cfs	0.98 cfs	0.06 cfs	55.19 ft
5 yr	2 hr	1.70 cfs	1.34 cfs	0.36 cfs	55.67 ft
5 yr	4 hr	5.31 cfs	3.46 cfs	1.85 cfs	56.20 ft
5 yr	8 hr	7.69 cfs	5.38 cfs	2.31 cfs	56.53 ft
5 yr	24 hr	9.45 cfs	7.72 cfs	1.73 cfs	56.88 ft
5 yr	72 hr	10.57 cfs	8.63 cfs	1.94 cfs	57.01 ft
10 yr	1 hr	1.15 cfs	1.07 cfs	0.08 cfs	55.41 ft
10 yr	2 hr	3.90 cfs	2.60 cfs	1.30 cfs	56.02 ft
10 yr	4 hr	8.44 cfs	5.35 cfs	3.09 cfs	56.53 ft
10 yr	8 hr	12.38 cfs	8.57 cfs	3.81 cfs	57.00 ft
10 yr	24 hr	13.13 cfs	10.83 cfs	2.30 cfs	57.31 ft
10 yr	72 hr	13.53 cfs	11.01 cfs	2.52 cfs	57.34 ft
25 yr	1 hr	2.47 cfs	1.71 cfs	0.76 cfs	55.80 ft
25 yr	2 hr	7.90 cfs	5.00 cfs	2.90 cfs	56.47 ft
25 yr	4 hr	14.59 cfs	9.21 cfs	5.38 cfs	57.10 ft
25 yr	8 hr	16.68 cfs	11.96 cfs	4.72 cfs	57.46 ft
25 yr	24 hr	16.44 cfs	13.52 cfs	2.92 cfs	57.71 ft
25 yr	72 hr	16.56 cfs	13.68 cfs	2.88 cfs	57.74 ft
50 yr	1 hr	4.49 cfs	2.81 cfs	1.68 cfs	56.07 ft
50 yr	2 hr	11.78 cfs	7.39 cfs	4.39 cfs	56.84 ft
50 yr	4 hr	17.50 cfs	12.27 cfs	5.23 cfs	57.50 ft
50 yr	8 hr	19.01 cfs	14.55 cfs	4.46 cfs	57.93 ft
50 yr	24 hr	18.33 cfs	15.27 cfs	3.06 cfs	58.11 ft
50 yr	72 hr	18.06 cfs	15.25 cfs	2.81 cfs	58.11 ft
100 yr	1 hr	7.33 cfs	4.41 cfs	2.92 cfs	56.37 ft
100 yr	2 hr	15.67 cfs	9.90 cfs	5.77 cfs	57.19 ft
100 yr	4 hr	19.47 cfs	14.44 cfs	5.03 cfs	57.91 ft
100 yr	8 hr	21.22 cfs	16.38 cfs	4.84 cfs	58.43 ft
100 yr	24 hr	20.69 cfs	17.04 cfs	3.65 cfs	58.65 ft
100 yr	72 hr	19.21 cfs	16.37 cfs	2.84 cfs	58.43 ft

POST

ICPR MODEL

Pond 13
Post-Development Conditions
Node Diagram

Nodes

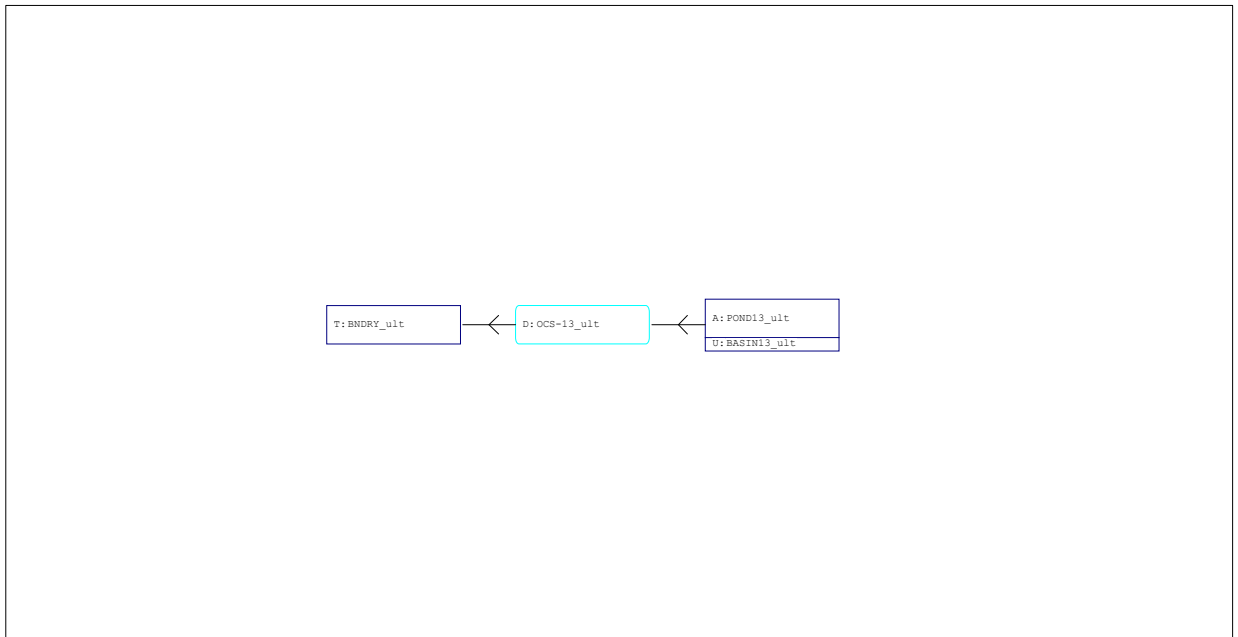
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins

O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links

P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



Pond 13
Post-Development Conditions
Input Report

=====
Basins
=====

```

Name: BASIN13_ult      Node: POND13_ult      Status: Onsite
Group: BASE           Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323      Peaking Factor: 323.0
Rainfall File: Flmod       Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.600  Time of Conc(min): 34.00
Area(ac): 37.460         Time Shift(hrs): 0.00
Curve Number: 86.20      Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
    
```

NOTE: Includes 8.19 acres of impervious from ultimate.

=====
Nodes
=====

```

Name: BNDRY_ult      Base Flow(cfs): 0.000      Init Stage(ft): 49.000
Group: BASE         Type: Time/Stage          Warn Stage(ft): 0.000
    
```

Time(hrs)	Stage(ft)
0.00	49.000
12.00	50.800
24.00	49.000

```

Name: POND13_ult      Base Flow(cfs): 0.000      Init Stage(ft): 54.120
Group: BASE         Type: Stage/Area          Warn Stage(ft): 59.000
    
```

Stage(ft)	Area(ac)
54.120	2.5000
56.500	2.8700
57.000	3.0200
58.000	3.3200
59.000	3.6500
60.000	4.3400

=====
Drop Structures
=====

```

Name: OCS-13_ult      From Node: POND13_ult      Length(ft): 210.00
Group: BASE           To Node: BNDRY_ult        Count: 1

UPSTREAM      DOWNSTREAM      Friction Equation: Average Conveyance
Geometry: Circular      Circular      Solution Algorithm: Automatic
Span(in): 18.00      18.00      Flow: Both
Rise(in): 18.00      18.00      Entrance Loss Coef: 0.000
Invert(ft): 52.000      51.700      Exit Loss Coef: 0.000
Manning's N: 0.012000      0.012000      Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000      0.000      Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000      0.000      Solution Incs: 10
    
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 3 for Drop Structure OCS-13_ult ***

TABLE	
Count: 1	Bottom Clip(in): 0.000
Type: Vertical: Mavis	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Circular	Orifice Disc Coef: 0.600
Span(in): 6.00	Invert(ft): 54.120
Rise(in): 6.00	Control Elev(ft): 54.120

*** Weir 2 of 3 for Drop Structure OCS-13_ult ***

TABLE

Pond 13
 Post-Development Conditions
 Input Report

Count: 1 Bottom Clip(in): 0.000
 Type: Vertical: Mavis Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200
 Geometry: Rectangular Orifice Disc Coef: 0.600

 Span(in): 15.00 Invert(ft): 56.500
 Rise(in): 30.00 Control Elev(ft): 56.500

*** Weir 3 of 3 for Drop Structure OCS-13_ult ***

TABLE

Count: 1 Bottom Clip(in): 0.000
 Type: Horizontal Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200
 Geometry: Rectangular Orifice Disc Coef: 0.600

 Span(in): 37.00 Invert(ft): 59.000
 Rise(in): 49.00 Control Elev(ft): 59.000

=====
 === Hydrology Simulations =====
 =====

Name: 100Y1H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\100Y1H.R32

 Override Defaults: Yes
 Storm Duration(hrs): 1.00
 Rainfall File: Fdot-1
 Rainfall Amount(in): 4.50

Time(hrs)	Print Inc(min)
2.000	2.50

Name: 100Y24H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\100Y24H.R32

 Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Fdot-24
 Rainfall Amount(in): 10.60

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 100Y2H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\100Y2H.R32

 Override Defaults: Yes
 Storm Duration(hrs): 2.00
 Rainfall File: Fdot-2
 Rainfall Amount(in): 5.60

Time(hrs)	Print Inc(min)
4.000	2.50

Name: 100Y4H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\100Y4H.R32

 Override Defaults: Yes
 Storm Duration(hrs): 4.00
 Rainfall File: Fdot-4
 Rainfall Amount(in): 6.64

Time(hrs)	Print Inc(min)
8.000	2.50

Name: 100Y72H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\100Y72H.R32

 Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Fdot-72
 Rainfall Amount(in): 13.80

Time(hrs)	Print Inc(min)

Pond 13
Post-Development Conditions
Input Report

80.000 5.00

Name: 10Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\10Y8H.R32

Override Defaults: Yes
Storm Duration(hrs): 8.00
 Rainfall File: Fdot-8
Rainfall Amount(in): 7.84

Time(hrs)	Print Inc(min)
16.000	2.50

Name: 10Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\10Y1H.R32

Override Defaults: Yes
Storm Duration(hrs): 1.00
 Rainfall File: Fdot-1
Rainfall Amount(in): 3.20

Time(hrs)	Print Inc(min)
2.000	2.50

Name: 10Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\10Y24H.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
 Rainfall File: Fdot-24
Rainfall Amount(in): 7.50

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 10Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\10Y2H.R32

Override Defaults: Yes
Storm Duration(hrs): 2.00
 Rainfall File: Fdot-2
Rainfall Amount(in): 3.90

Time(hrs)	Print Inc(min)
4.000	5.00

Name: 10Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\10Y4H.R32

Override Defaults: Yes
Storm Duration(hrs): 4.00
 Rainfall File: Fdot-4
Rainfall Amount(in): 4.60

Time(hrs)	Print Inc(min)
8.000	2.50

Name: 10Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\10Y72H.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
 Rainfall File: Fdot-72
Rainfall Amount(in): 9.00

Time(hrs)	Print Inc(min)
80.000	5.00

Name: 10Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\10Y8H.R32

Override Defaults: Yes

Pond 13
Post-Development Conditions
Input Report

Storm Duration(hrs): 8.00
Rainfall File: Fdot-8
Rainfall Amount(in): 5.56

Time(hrs) Print Inc(min)

16.000 2.50

Name: 25Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\25Y1H.R32

Override Defaults: Yes
Storm Duration(hrs): 1.00
Rainfall File: Fdot-1
Rainfall Amount(in): 3.70

Time(hrs) Print Inc(min)

2.000 2.50

Name: 25Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\25Y24H.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Fdot-24
Rainfall Amount(in): 8.60

Time(hrs) Print Inc(min)

30.000 5.00

Name: 25Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\25Y2H.R32

Override Defaults: Yes
Storm Duration(hrs): 2.00
Rainfall File: Fdot-2
Rainfall Amount(in): 4.50

Time(hrs) Print Inc(min)

4.000 2.50

Name: 25Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\25Y4H.R32

Override Defaults: Yes
Storm Duration(hrs): 4.00
Rainfall File: Fdot-4
Rainfall Amount(in): 5.30

Time(hrs) Print Inc(min)

8.000 2.50

Name: 25Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\25Y72H.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Fdot-72
Rainfall Amount(in): 10.90

Time(hrs) Print Inc(min)

80.000 5.00

Name: 25Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\25Y8H.R32

Override Defaults: Yes
Storm Duration(hrs): 8.00
Rainfall File: Fdot-8
Rainfall Amount(in): 6.32

Time(hrs) Print Inc(min)

16.000 2.50

Pond 13
Post-Development Conditions
Input Report

```

-----
Name: 2Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\2Y1H.R32

Override Defaults: Yes
Storm Duration(hrs): 1.00
Rainfall File: Fdot-1
Rainfall Amount(in): 2.40

Time(hrs)      Print Inc(min)
-----
2.000          2.50

```

```

-----
Name: 2Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\2Y24H.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Fdot-24
Rainfall Amount(in): 4.75

Time(hrs)      Print Inc(min)
-----
30.000         5.00

```

```

-----
Name: 2Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\2Y2H.R32

Override Defaults: Yes
Storm Duration(hrs): 2.00
Rainfall File: Fdot-2
Rainfall Amount(in): 2.85

Time(hrs)      Print Inc(min)
-----
4.000          2.50

```

```

-----
Name: 2Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\2Y4H.R32

Override Defaults: Yes
Storm Duration(hrs): 4.00
Rainfall File: Fdot-4
Rainfall Amount(in): 3.30

Time(hrs)      Print Inc(min)
-----
8.000          2.50

```

```

-----
Name: 2Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\2Y72H.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Fdot-72
Rainfall Amount(in): 6.00

Time(hrs)      Print Inc(min)
-----
80.000         5.00

```

```

-----
Name: 2Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\2Y8H.R32

Override Defaults: Yes
Storm Duration(hrs): 8.00
Rainfall File: Fdot-8
Rainfall Amount(in): 4.00

Time(hrs)      Print Inc(min)
-----
16.000         2.50

```

```

-----
Name: 50Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\50Y1H.R32

Override Defaults: Yes
Storm Duration(hrs): 1.00

```

Pond 13
Post-Development Conditions
Input Report

Rainfall File: Fdot-1
Rainfall Amount(in): 4.00

Time(hrs)	Print Inc(min)
2.000	2.50

Name: 50Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\50Y24H.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Fdot-24
Rainfall Amount(in): 9.50

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 50Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\50Y2H.R32

Override Defaults: Yes
Storm Duration(hrs): 2.00
Rainfall File: Fdot-2
Rainfall Amount(in): 5.00

Time(hrs)	Print Inc(min)
4.000	2.50

Name: 50Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\50Y4H.R32

Override Defaults: Yes
Storm Duration(hrs): 4.00
Rainfall File: Fdot-4
Rainfall Amount(in): 6.00

Time(hrs)	Print Inc(min)
8.000	2.50

Name: 50Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\50Y72H.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Fdot-72
Rainfall Amount(in): 12.70

Time(hrs)	Print Inc(min)
80.000	5.00

Name: 50Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\50Y8H.R32

Override Defaults: Yes
Storm Duration(hrs): 8.00
Rainfall File: Fdot-8
Rainfall Amount(in): 7.20

Time(hrs)	Print Inc(min)
16.000	2.50

Name: 5Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\5Y1H.R32

Override Defaults: Yes
Storm Duration(hrs): 1.00
Rainfall File: Fdot-1
Rainfall Amount(in): 2.90

Time(hrs)	Print Inc(min)
2.000	2.50

Pond 13
Post-Development Conditions
Input Report

```

-----
Name: 5Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\5Y24H.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Fdot-24
Rainfall Amount(in): 6.25

Time(hrs)      Print Inc(min)
-----
30.000        5.00

```

```

-----
Name: 5Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\5Y2H.R32

Override Defaults: Yes
Storm Duration(hrs): 2.00
Rainfall File: Fdot-2
Rainfall Amount(in): 3.40

Time(hrs)      Print Inc(min)
-----
4.000         2.50

```

```

-----
Name: 5Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\5Y4H.R32

Override Defaults: Yes
Storm Duration(hrs): 4.00
Rainfall File: Fdot-4
Rainfall Amount(in): 4.00

Time(hrs)      Print Inc(min)
-----
8.000         2.50

```

```

-----
Name: 5Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\5Y72H.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Fdot-72
Rainfall Amount(in): 7.60

Time(hrs)      Print Inc(min)
-----
80.000        5.00

```

```

-----
Name: 5Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\5Y8H.R32

Override Defaults: Yes
Storm Duration(hrs): 8.00
Rainfall File: Fdot-8
Rainfall Amount(in): 4.72

Time(hrs)      Print Inc(min)
-----
16.000        2.50

```

```

-----
Name: SJRWMD_25Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\SJRWMD_25Y24H.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 8.60

Time(hrs)      Print Inc(min)
-----
30.000        5.00

```

```

-----
Name: SJRWMD_MEANANNU
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\SJRWMD_MEANANNU.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod

```

Pond 13
Post-Development Conditions
Input Report

Rainfall Amount(in): 4.50

Time(hrs)	Print Inc(min)
30.000	5.00

=====
==== Routing Simulations =====
=====

Name: 100Y1H_R Hydrology Sim: 100Y1H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\100Y1H_R.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 2.00
 Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	5.000

Group Run

 BASE Yes

Name: 100Y24H_R Hydrology Sim: 100Y24H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\100Y24H_R.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 30.00
 Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000

Group Run

 BASE Yes

Name: 100Y2H_R Hydrology Sim: 100Y2H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\100Y2H_R.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 4.00
 Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	5.000

Group Run

 BASE Yes

Name: 100Y4H_R Hydrology Sim: 100Y4H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\100Y4H_R.I32

Pond 13
Post-Development Conditions
Input Report

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 8.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 5.000

Group Run

BASE Yes

Name: 100Y72H_R Hydrology Sim: 100Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\100Y72H_R.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 80.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 60.000

Group Run

BASE Yes

Name: 100Y8H_R Hydrology Sim: 100Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\100Y8H_R.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 10.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 30.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 5.000

Group Run

BASE Yes

Name: 10Y1H_R Hydrology Sim: 10Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\10Y1H_R.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 2.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

Pond 13
Post-Development Conditions
Input Report

999.000 5.000

Group Run

BASE Yes

Name: 10Y24H_R Hydrology Sim: 10Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\10Y24H_R.I32
Execute: Yes Restart: No Patch: No
Alternative: No
Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

30.000 15.000

Group Run

BASE Yes

Name: 10Y2H_R Hydrology Sim: 10Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\10Y2H_R.I32
Execute: Yes Restart: No Patch: No
Alternative: No
Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 4.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 5.000

Group Run

BASE Yes

Name: 10Y4H_R Hydrology Sim: 10Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\10Y4H_R.I32
Execute: Yes Restart: No Patch: No
Alternative: No
Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 8.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 5.000

Group Run

BASE Yes

Name: 10Y72H_R Hydrology Sim: 10Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\10Y72H_R.I32
Execute: Yes Restart: No Patch: No
Alternative: No

Pond 13
Post-Development Conditions
Input Report

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 80.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 60.000

Group Run

BASE Yes

Name: 10Y8H_R Hydrology Sim: 10Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\10Y8H_R.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 16.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 5.000

Group Run

BASE Yes

Name: 25Y1H_R Hydrology Sim: 25Y1H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\25Y1H_R.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 2.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 5.000

Group Run

BASE Yes

Name: 25Y24H_R Hydrology Sim: 25Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\25Y24H_R.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

30.000 15.000

Pond 13
Post-Development Conditions
Input Report

Group	Run
-----	-----
BASE	Yes

Name: 25Y2H_R Hydrology Sim: 25Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\25Y2H_R.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 4.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
999.000	5.000

Group	Run
-----	-----
BASE	Yes

Name: 25Y4H_R Hydrology Sim: 25Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\25Y4H_R.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 8.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
999.000	5.000

Group	Run
-----	-----
BASE	Yes

Name: 25Y72H_R Hydrology Sim: 25Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\25Y72H_R.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 80.00
Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
999.000	60.000

Group	Run
-----	-----
BASE	Yes

Name: 25Y8H_R Hydrology Sim: 25Y8H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\25Y8H_R.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500

Pond 13
Post-Development Conditions
Input Report

Time Step Optimizer: 10.000
 Start Time (hrs): 0.000
 Min Calc Time (sec): 0.0250
 Boundary Stages:

End Time (hrs): 16.00
 Max Calc Time (sec): 60.0000
 Boundary Flows:

Time (hrs)	Print Inc (min)
999.000	5.000

Group	Run
BASE	Yes

Name: 2Y1H_R Hydrology Sim: 2Y1H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\2Y1H_R.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z (ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time (hrs): 0.000 End Time (hrs): 2.00
 Min Calc Time (sec): 0.0250 Max Calc Time (sec): 60.0000
 Boundary Stages: Boundary Flows:

Time (hrs)	Print Inc (min)
999.000	5.000

Group	Run
BASE	Yes

Name: 2Y24H_R Hydrology Sim: 2Y24H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\2Y24H_R.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z (ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time (hrs): 0.000 End Time (hrs): 30.00
 Min Calc Time (sec): 0.0250 Max Calc Time (sec): 60.0000
 Boundary Stages: Boundary Flows:

Time (hrs)	Print Inc (min)
999.000	15.000

Group	Run
BASE	Yes

Name: 2Y2H_R Hydrology Sim: 2Y2H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\2Y2H_R.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z (ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time (hrs): 0.000 End Time (hrs): 4.00
 Min Calc Time (sec): 0.0250 Max Calc Time (sec): 60.0000
 Boundary Stages: Boundary Flows:

Time (hrs)	Print Inc (min)
999.000	5.000

Group	Run

Pond 13
Post-Development Conditions
Input Report

BASE Yes

```

-----
      Name: 2Y4H_R           Hydrology Sim: 2Y4H
      Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\2Y4H_R.I32

      Execute: Yes           Restart: No           Patch: No
      Alternative: No

      Max Delta Z(ft): 1.00           Delta Z Factor: 0.00500
      Time Step Optimizer: 10.000
      Start Time(hrs): 0.000           End Time(hrs): 8.00
      Min Calc Time(sec): 0.0250       Max Calc Time(sec): 60.0000
      Boundary Stages:                 Boundary Flows:
  
```

```

Time(hrs)      Print Inc(min)
-----
999.000        5.000

Group          Run
-----
BASE           Yes
  
```

```

-----
      Name: 2Y72H_R          Hydrology Sim: 2Y72H
      Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\2Y72H_R.I32

      Execute: Yes           Restart: No           Patch: No
      Alternative: No

      Max Delta Z(ft): 1.00           Delta Z Factor: 0.00500
      Time Step Optimizer: 10.000
      Start Time(hrs): 0.000           End Time(hrs): 80.00
      Min Calc Time(sec): 0.0250       Max Calc Time(sec): 60.0000
      Boundary Stages:                 Boundary Flows:
  
```

```

Time(hrs)      Print Inc(min)
-----
999.000        60.000

Group          Run
-----
BASE           Yes
  
```

```

-----
      Name: 2Y8H_R           Hydrology Sim: 2Y8H
      Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\2Y8H_R.I32

      Execute: Yes           Restart: No           Patch: No
      Alternative: No

      Max Delta Z(ft): 1.00           Delta Z Factor: 0.00500
      Time Step Optimizer: 10.000
      Start Time(hrs): 0.000           End Time(hrs): 16.00
      Min Calc Time(sec): 0.0250       Max Calc Time(sec): 60.0000
      Boundary Stages:                 Boundary Flows:
  
```

```

Time(hrs)      Print Inc(min)
-----
999.000        5.000

Group          Run
-----
BASE           Yes
  
```

```

-----
      Name: 50Y1H_R          Hydrology Sim: 50Y1H
      Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\50Y1H_R.I32

      Execute: Yes           Restart: No           Patch: No
      Alternative: No

      Max Delta Z(ft): 1.00           Delta Z Factor: 0.00500
      Time Step Optimizer: 10.000
      Start Time(hrs): 0.000           End Time(hrs): 2.00
  
```

Pond 13
Post-Development Conditions
Input Report

Min Calc Time(sec): 0.0250
Boundary Stages:

Max Calc Time(sec): 60.0000
Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	5.000
Group	Run
BASE	Yes

Name: 50Y24H_R Hydrology Sim: 50Y24H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\50Y24H_R.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 30.00
Min Calc Time(sec): 0.0250	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000
Group	Run
BASE	Yes

Name: 50Y2H_R Hydrology Sim: 50Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\50Y2H_R.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 4.00
Min Calc Time(sec): 0.0250	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	5.000
Group	Run
BASE	Yes

Name: 50Y4H_R Hydrology Sim: 50Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\50Y4H_R.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 8.00
Min Calc Time(sec): 0.0250	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	5.000
Group	Run
BASE	Yes

Pond 13
Post-Development Conditions
Input Report

 Name: 50Y72H_R Hydrology Sim: 50Y72H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\50Y72H_R.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 80.00
 Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	60.000

Group	Run
BASE	Yes

 Name: 50Y8H_R Hydrology Sim: 50Y8H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\50Y8H_R.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 16.00
 Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	5.000

Group	Run
BASE	Yes

 Name: 5Y1H_R Hydrology Sim: 5Y1H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\5Y1H_R.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 2.00
 Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	5.000

Group	Run
BASE	Yes

 Name: 5Y24H_R Hydrology Sim: 5Y24H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\5Y24H_R.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 30.00
 Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Pond 13
Post-Development Conditions
Input Report

```

Time(hrs)      Print Inc(min)
-----
999.000      15.000

Group          Run
-----
BASE          Yes

```

```

-----
Name: 5Y2H_R      Hydrology Sim: 5Y2H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\5Y2H_R.I32

Execute: Yes      Restart: No      Patch: No
Alternative: No

Max Delta Z(ft): 1.00      Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000      End Time(hrs): 4.00
Min Calc Time(sec): 0.0250  Max Calc Time(sec): 60.0000
Boundary Stages:      Boundary Flows:

```

```

Time(hrs)      Print Inc(min)
-----
999.000      5.000

Group          Run
-----
BASE          Yes

```

```

-----
Name: 5Y4H_R      Hydrology Sim: 5Y4H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\5Y4H_R.I32

Execute: Yes      Restart: No      Patch: No
Alternative: No

Max Delta Z(ft): 1.00      Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000      End Time(hrs): 8.00
Min Calc Time(sec): 0.0250  Max Calc Time(sec): 60.0000
Boundary Stages:      Boundary Flows:

```

```

Time(hrs)      Print Inc(min)
-----
999.000      5.000

Group          Run
-----
BASE          Yes

```

```

-----
Name: 5Y72H_R      Hydrology Sim: 5Y72H
Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\5Y72H_R.I32

Execute: Yes      Restart: No      Patch: No
Alternative: No

Max Delta Z(ft): 1.00      Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000      End Time(hrs): 80.00
Min Calc Time(sec): 0.0250  Max Calc Time(sec): 60.0000
Boundary Stages:      Boundary Flows:

```

```

Time(hrs)      Print Inc(min)
-----
999.000      60.000

Group          Run
-----
BASE          Yes

```

Pond 13
 Post-Development Conditions
 Input Report

Name: 5Y8H_R Hydrology Sim: 5Y8H
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\5Y8H_R.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 16.00
 Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

 999.000 5.000

Group Run

 BASE Yes

Name: SJRWMD_25Y24H Hydrology Sim: 25Y24H SJRWMD
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\SJRWMD_25Y24H.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 30.00
 Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

 30.000 15.000

Group Run

 BASE Yes

Name: SJRWMD_MEANANNU Hydrology Sim: MEANANNUAL_SJRW
 Filename: T:\PROJECTS\FDOT_D5\Wekiva Line and Grade\Drainage\Calculations\Pond 13\ICPR\Post\SJRWMD_MEANANNU.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 30.00
 Min Calc Time(sec): 0.0250 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

 30.000 15.000

Group Run

 BASE Yes

Pond 13
Post-Development Conditions
Node Max Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
POND13_ult	BASE	100Y1H_R	2.00	57.16	59.00	0.0050	133590	0.92	122.04	2.00	3.70
POND13_ult	BASE	100Y24H_R	17.28	59.00	59.00	0.0050	158986	12.08	35.69	17.28	16.17
POND13_ult	BASE	100Y2H_R	3.03	58.09	59.00	0.0050	145860	1.08	112.72	3.03	9.74
POND13_ult	BASE	100Y4H_R	4.42	58.73	59.00	0.0050	155051	2.63	90.20	4.42	14.71
POND13_ult	BASE	100Y72H_R	61.66	58.81	59.00	0.0050	156244	59.92	25.39	61.66	15.20
POND13_ult	BASE	100Y8H_R	6.83	59.02	59.00	0.0050	159684	4.13	95.48	6.83	16.34
POND13_ult	BASE	10Y1H_R	2.00	56.05	59.00	0.0050	121962	0.92	75.48	2.00	1.22
POND13_ult	BASE	10Y24H_R	19.53	58.06	59.00	0.0050	145506	12.08	24.06	19.53	9.57
POND13_ult	BASE	10Y2H_R	3.46	56.82	59.00	0.0050	129157	1.08	68.43	3.46	2.19
POND13_ult	BASE	10Y4H_R	4.78	57.35	59.00	0.0050	136142	2.63	57.05	4.78	4.77
POND13_ult	BASE	10Y72H_R	64.06	58.02	59.00	0.0048	144876	59.91	16.24	64.06	9.25
POND13_ult	BASE	10Y8H_R	7.67	57.80	59.00	0.0050	141954	4.12	62.87	7.67	7.65
POND13_ult	BASE	25Y1H_R	2.00	56.49	59.00	0.0050	124923	0.92	93.15	2.00	1.37
POND13_ult	BASE	25Y24H_R	19.27	58.39	59.00	0.0050	150263	12.08	28.20	19.27	12.06
POND13_ult	BASE	25Y2H_R	3.25	57.30	59.00	0.0050	135414	1.08	83.88	3.25	4.45
POND13_ult	BASE	25Y4H_R	4.60	57.85	59.00	0.0050	142667	2.62	68.40	4.60	8.04
POND13_ult	BASE	25Y72H_R	61.84	58.35	59.00	0.0050	149632	59.92	19.87	61.84	11.72
POND13_ult	BASE	25Y8H_R	7.33	58.21	59.00	0.0050	147702	4.13	73.75	7.33	10.69
POND13_ult	BASE	2Y1H_R	2.00	55.36	59.00	0.0050	117318	0.92	48.29	2.00	0.94
POND13_ult	BASE	2Y24H_R	22.33	57.04	59.00	0.0050	132111	12.08	13.62	22.33	3.14
POND13_ult	BASE	2Y2H_R	3.55	55.86	59.00	0.0050	120660	1.12	42.57	3.55	1.15
POND13_ult	BASE	2Y4H_R	5.18	56.26	59.00	0.0050	123416	2.67	36.33	5.18	1.30
POND13_ult	BASE	2Y72H_R	64.61	57.19	59.00	0.0043	134024	59.93	10.44	64.61	3.88
POND13_ult	BASE	2Y8H_R	8.52	56.81	59.00	0.0050	129097	4.17	40.73	8.52	2.17
POND13_ult	BASE	50Y1H_R	2.00	56.75	59.00	0.0050	128231	0.92	103.92	2.00	1.94
POND13_ult	BASE	50Y24H_R	17.76	58.65	59.00	0.0050	153945	12.08	31.58	17.76	14.09
POND13_ult	BASE	50Y2H_R	3.14	57.67	59.00	0.0050	140252	1.08	96.92	3.14	6.75
POND13_ult	BASE	50Y4H_R	4.49	58.32	59.00	0.0050	149201	2.62	79.78	4.49	11.48
POND13_ult	BASE	50Y72H_R	61.63	58.64	59.00	0.0050	153777	59.92	23.30	61.63	13.99
POND13_ult	BASE	50Y8H_R	7.01	58.68	59.00	0.0050	154354	4.12	86.34	7.01	14.32
POND13_ult	BASE	5Y1H_R	2.00	55.79	59.00	0.0050	120195	0.92	65.09	2.00	1.13
POND13_ult	BASE	5Y24H_R	21.14	57.65	59.00	0.0050	140080	12.09	19.32	21.14	6.66
POND13_ult	BASE	5Y2H_R	3.58	56.37	59.00	0.0050	124125	1.13	55.93	3.58	1.34
POND13_ult	BASE	5Y4H_R	5.00	56.89	59.00	0.0050	130058	2.67	47.43	5.00	2.46
POND13_ult	BASE	5Y72H_R	64.25	57.72	59.00	0.0047	140950	59.91	13.54	64.25	7.11
POND13_ult	BASE	5Y8H_R	8.22	57.31	59.00	0.0050	135539	4.17	50.91	8.22	4.51

Appendix J

I-4 North Basin Calculations Open Basin

I-4 North Pre-Development Basin Summary

Project:	Wekiva Parkway	Condition:	Pre Development
Location:	Seminole	Date:	3/2/2016
		Prepared:	NEG
		Checked:	AKC

I-4 North Basin Summary				
Sub-Basin	Total Area (ac)	Roadway (ac)	Pervious (ac)	Water (ac)
4I	50.09	23.11	26.98	0
4I Offsite	3.40	2.72	0.68	0
Pond 4I	11.49	0.00	3.59	7.90
TOTAL	64.98	25.83	31.25	7.90

Notes:

1. Pre-development characteristics taken from Basin 4 post-development SJRWMD Permit No. 22514-11

I-4 North Post-Development Basin Summary

Project:	Wekiva Parkway	Condition:	Post Development
Location:	Seminole	Date:	3/2/2016
		Prepared:	NEG
		Checked:	AKC

I-4 NORTH BASIN				
Sub-Basin	Total Area (ac)	Roadway (ac)	Pervious (ac)	Water (ac)
4I	47.22	25.19	22.03	0
4I Offsite	3.40	2.72	0.68	0
Pond 4I	11.49	0.00	3.59	7.90
TOTAL	62.11	27.91	26.30	7.90

Notes:

1. Proposed I-4 North Basin is smaller than the existing basin. However, the proposed impervious area increased by 2.08 AC.

Water Quality and Volume Summary

Project:	Wekiva Parkway - Section 8	Condition:	Post-Development	
Location:	Seminole	Date:	3/2/2016	Date: 3/10/2016
Basin:	I-4 North	Prepared:	NEG	Checked: AKC

1. Calculate Water Quality Volume per SJRWMD requirements 40C-42 FAC

Provide the greater of one (1) inch of runoff from the entire basin area or 2.5 inches of runoff from the impervious area.

A. Total Drainage Area to Pond 4I = 62.11 ac

B. Total Drainage Area for Treatment = 62.11 ac

Total Impervious Area = 27.91 ac

* does not include pond area

Total Pond Area = 7.90 ac

Total Pervious Area = 26.30

C. Treatment Calculations

1" x Drainage Area = 5.18 ac-ft

2.5" x Imp. Area = 5.81 ac-ft, GOVERNS

Water Quality Volume Req'd.= 5.81 ac-ft

Storage Provided in Pond 4I @ EL. 22.64 = 6.72 ac-ft

Water Quality Summary

Project: Wekiva Parkway - Section 8
Location: Seminole

Date: 3/2/2016
Prepared: NEG
Checked: AKC

POND 4I - WATER QUALITY VOLUME	
Permitted	5.42 ac-ft
Required	5.81 ac-ft
Provided	6.72 ac-ft

Notes:

1. Provided treatment is greater than required treatment therefore, Pond 4I meets treatment volume criteria. No additional modeling needed.
2. Permitted and Provided treatment volumes taken from SJRWMD Permit No. 22514-11.

**SJRWMD PERMIT #4-117-22514-11
PERMITTED TREATMENT VOLUME**

Proposed Land Uses

TO LOCKHART-SMITH CANAL

BASIN SR46E (Measure in CADD - Discharge to Node Outfall)

Tc = 15 min (Minimum time of concentration)

existing impervious - roadway, sidewalk	1.82 ac	CN = 98	c = 0.95	
proposed impervious - roadway, sidewalk	0.12 ac	CN = 98	c = 0.95	
grass - fair	3.47 ac	CN = 84	c = 0.20	(type D soils)
grass - good (pond)	0.00 ac	CN = 39	c = 0.20	(type A soils)
water (pond)	0.00 ac	CN = 100	c = 1.00	
	5.41 ac	CN = 89.02		

BASIN 4I (Measure in CADD - Discharge to Node Outfall)

Tc = 46 min (See attached URS permitted calculations)

proposed impervious - roadway, sidewalk	23.11 ac	CN = 98	c = 0.95	
grass - fair	2.59 ac	CN = 84	c = 0.20	(type D soils)
grass - fair	16.18 ac	CN = 79	c = 0.20	(type C soils)
grass - fair	8.21 ac	CN = 49	c = 0.20	(type A soils)
grass - good (pond)	0.00 ac	CN = 39	c = 0.20	(type A soils)
water (pond)	0.00 ac	CN = 100	c = 1.00	
	50.09 ac	CN = 83.11		

BASIN 4I OFFSITE (Taken directly from URS Drainage Report SJRWMD # 4-117-22514-3 - Discharge to Pond 1 and ultimate to Outfall)

Tc = 15 min (See attached URS permitted calculations)

proposed impervious - roadway, sidewalk	2.72 ac	CN = 98	c = 0.95	
grass - fair	0.68 ac	CN = 79	c = 0.20	(type C soils)
grass - fair	0.00 ac	CN = 49	c = 0.20	(type A soils)
grass - good (pond)	0.00 ac	CN = 39	c = 0.20	(type A soils)
water (pond)	0.00 ac	CN = 100	c = 1.00	
	3.40 ac	CN = 94.20		

BASIN POND 4I (Taken directly from URS Drainage Report SJRWMD # 4-117-22514-3)

Tc = 15 min (See attached URS permitted calculations)

proposed impervious - roadway, sidewalk	0.00 ac	CN = 98	c = 0.95	
grass - fair	3.59 ac	CN = 79	c = 0.20	(type C soils)
grass - fair	0.00 ac	CN = 49	c = 0.20	(type A soils)
grass - good (pond)	0.00 ac	CN = 39	c = 0.20	(type A soils)
water (pond)	7.90 ac	CN = 100	c = 1.00	
	11.49 ac	CN = 93.44		

Treatment Volume Required (Basin 1 and Basin 1A combined)

Traditional wet detention criteria

Larger of one inch over the basin area or two and a half inches over the impervious area

1" * (1' / 12") * 64.98 ac = 5.42 ac-ft

2.5" * (1'/12") * 25.83 ac = 5.38 ac-ft

Treatment Volume = 5.42 ac-ft

**SJRWMD PERMIT #4-117-22514-11
PERMITTED POND STORAGE**

Permanent Pool Volume

Drainage Area, DA = 25.83 ac (sum of Basin 1 and Basin 1A)
 Runoff Coefficient, c = 0.60 (sum of Basin 1 and Basin 1A)
 Length of wet season, WS = 153 days
 Rainfall depth, R = 32.0 inches From Figure 29-1 SJRWMD Applicant's Handbook
 There will not be a littoral zone. Therefore minimum residence time, RT = 21 days

Average Flow Rate, FR = [(DA)(c)(R)] / (WS)(12 in/1 ft) = 0.27 ac-ft/day

Permanent Pool Volume, PPV = (RT) (FR) = 21 days * 0.27 ac-ft/day

Required Permanent Pool Volume = 5.63 ac-ft

SJRWMD permitted (no. 4-117-22514-3) Exist Pond4I Stage/Storage Relationship

Stage (ft)	Area (ft ²)	Area (ac)	Volume (ac-ft)	
15.90	272250	6.25	0.00	
21.80	344124	7.90	41.74	Permanent Pool Volume > Required Permanent Pool Volume
21.80	344124	7.90	0.00	
22.64	353272	8.11	6.72	
25.10	379843	8.72	27.20	

PROVIDED TREATMENT VOLUME

At 5.9 feet deep the permanent pool is less than the maximum allowable permanent pool depth of 12 feet.

Treatment Volume = 5.42 ac-ft
 Therefore, weir should be placed at elevation = 22.48 ft
 For modeling, weir was placed at elevation = 22.64 ft as established by URS and permitted by SJRWMD no 4-117-22514-3

Permanent pool volume = 41.74 ac-ft
 Mean permanent pool depth = 5.28 ft Average depth is between allowable limits of 2 and 8 feet.

