Drainage Calculations for
City of Clermont and SJRWMD

CLERMONT COMMERCE CENTER

(NE Corner of Hancock Road and Trade Ave., Clermont, FL)

Prepared by:

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October 9, 2018

Chad S Linn, P.E.
FL P.E. # 57524

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APPENDICES

1.0 SUMMARY

The subject site is approximately 9.4 acres. The site is located within Section 34, Township 22 South, Range 26 East within Lake County, Florida. More specifically, the property is located at the northeast corner of Hancock Road and Trade Avenue in Clermont, Florida, 34711. The site is currently undeveloped and is heavily wooded with Oak, Ash and Pine trees. The property slopes from the north, east, west and south property boundaries toward the lowest portion of the project site at the center.

The proposed project includes construction of two warehouse/office buildings, truck court, driveways, parking and stormwater retention ponds. More specifically, the area of the building along the south property line will be 63,000 square feet and the building to the north will be 44,400 square feet for a total floor area of 107,400 square feet. Stormwater runoff from the proposed improvements will be managed through two on-site dry retention ponds. The stormwater management system has been designed to address the pollution abatement criteria and the attenuation of the peak runoff. The design meets or exceeds the requirements of the St. Johns River Water Management District (SJRWMD), and the City of Clermont. The proposed basin summary table below defines the proposed development basins.

The retention ponds will be designed to retain 100% of the stormwater runoff for the 100-year 24-hour storm event; therefore, the pre-development condition was not analyzed. The post development condition was analyzed as two separate drainage basins which are described as the following:

Table 1: Post Development Basin Summary

BASIN NAME	A	B
BASIN AREA (AC)	15.47	17.56
IMPERVIOUS AREA (AC)	0.33	9.28*
% IMPERVIOUS	2	53
Tc (MIN.)	73	35
CN	34	69

*A portion of the impervious area was the semi-pervious stabilized and grassed emergency access road on the north side of the project site.

1.1 SOILS AND GROUNDWATER

A review of the information published by the United States Department of Agriculture, National Resources Conservation Service website indicates soil types within the project boundaries consist of Candler Fine Sand, 0 to 5 percent slopes (Hydrologic Group A Soil);

Candler Fine Sand, 5 to 12 percent slopes (Hydrologic Group A Soil); Lake Fine Sand 0 to 5 percent slopes (Hydrologic Group A Soil).

Professional Service Industries (PSI) completed fourteen standard penetration test borings at the location of the buildings to a depth of 25 feet below ground surface (bgs), three auger borings at the location of the ponds to a depth of 15 feet bgs, and five auger borings at the location of the parking and driveway to a depth of 7 feet bgs. Groundwater was not observed in any of the borings. The estimated normal seasonal high groundwater depth was estimated at 50 feet bgs. Please refer to the Updated Report Geotechnical Engineering Services report dated February 20, 2018, submitted under separate cover. In addition, please refer to the table within the Stormwater Management section of the aforementioned report for stormwater design parameters.

1.2 WETLANDS

No wetlands exist on site. Please refer to the Preliminary Environmental Assessment Report by Bio-Tech Consulting and dated February 1, 2018 submitted under separate cover.

1.3 EXISTING DRAINAGE

The project site contains a landlocked depressed area at the center of the property that collects stormwater runoff from the area within the project boundaries as well stormwater runoff from offsite areas north, south, east and west of the project site.

The offsite area to the east encompasses a portion of the Crothall Laundry Services Facility (building, parking and driveways). The Crothall Laundry Services Facility does not have a stormwater management pond to provide water quality and attenuation. The stormwater runoff from the south portion of the Crothall Laundry Services sheet flows to the west via overland flow to the landlocked depressed area at the center of the project site. The stormwater runoff from the north portion of the Crothall Laundry Services sheet flows to the west via overland flow to an existing 24-inch pipe to the landlocked depressed area at the center of the project site.

The offsite area north of the project site is undeveloped and vegetated with trees and brush. The stormwater runoff from the area north of the project site sheet flows overland to the south toward the landlocked depressed area at the center of the project site.

A portion of the Hancock Road right of way west and southwest of the project site generates stormwater runoff that flows along the east side of Hancock Road and eventually into the landlocked depressed area at the center of the project site.

The offsite area south of the project site is undeveloped and vegetated with trees and brush. The runoff from the area to the south of the project site sheet flows overland north towards an east-west roadside swale along the south side of Trade Avenue. The runoff is directed across Trade Avenue via an existing 30-inch pipe to the landlocked depressed area at the center of the project site.

2.0 PROPOSED DEVELOPMENT

The proposed project includes construction of one 44,400 sf warehouse building on the north side and one 63,000 sf building on the south side of the project site as well as a truck court, driveways, parking and two stormwater retention ponds. Offsite improvements include restriping a portion of Hancock Road, water main connection across (directional drill) Hancock Road and construction (directional drill) of approximately 1,800 linear feet of sanitary force main along the east side of Hancock Road to make connection with the lift station to the north.

Stormwater runoff from the proposed improvements will be managed through two on-site dry retention ponds. The stormwater management system has been designed to address the pollution abatement criteria and the attenuation of the peak runoff. The design meets or exceeds the requirements of the St. Johns River Water Management District (SJRWMD), and the City of Clermont.

2.1 REQUIRED PERMITS AND REVIEWS

- City of Clermont, Florida
- Lake County, Florida
- St. Johns Water Management District (SJRWMD) Permit

2.2 STORMWATER MANAGEMENT

Stormwater runoff from the basins will be collected within the dry retention ponds located within the south and east portions of the property. The storm water management system is designed to meet or exceed all requirements of City of Apopka and the SJRWMD.

2.2.1 BASIN

Basin A includes an offsite area to the south of Trade Avenue as well as proposed dry retention Pond A located adjacent to Trade Avenue along the south side of the project site. The runoff from the basin flows from south to north towards a roadside swale along the south side of Trade Avenue. The runoff collects in the swale and

runs east and west towards a an existing 30-inch pipe. The stormwater runoff from the south side of Trade Avenue is conveyed to the proposed onsite dry retention Pond A located along the north side of Trade Avenue via the existing 30-inch pipe. A post-development drainage map is provided in Appendix A.

Basin B encompasses most of the post developed onsite basin as well as offsite areas east of the site (Crothall Laundry Services), offsite areas west and southwest of the site (east portion of Hancock Road ROW), as well as offsite areas to the north. The runoff from the southwest and west portion (offsite) of Basin B will sheet flow from the southwest and west along the Hancock Road ROW into a proposed inlet along the Hancock Road ROW adjacent the west central project boundary, and the stormwater will be conveyed via onsite secondary stormwater pipes to proposed Pond B located adjacent to the east property boundary. The runoff from the north portion (offsite) of Basin B will sheet flow from the north to the south and into proposed inlets onsite and the stormwater will be conveyed via secondary stormwater pipes to proposed Pond B. A portion (south portion) of the Crothall Laundry Services property on the east side of Basin B will sheet flow from west to east into proposed Pond B. A portion (north portion) of the Crothall Laundry Services property on the east side of Basin B is conveyed to proposed Pond B via an existing 24-inch storm pipe. The onsite portion of Basin B will sheet flow to the secondary system of inlets and pipes and be routed to proposed Pond B. A post-development drainage map is provided in Appendix A.

2.2.2 CN CALCULATIONS

The USDA National Resources Conservation Service indicates the in-situ soils, which will be retained on site for fill are classified within Hydrologic Group A. The curve number for the pervious areas of the post development drainage basin were based on in-situ soils designated as Hydrologic Group A. The calculations are provided in Appendix B.

2.2.3 TIME OF CONCENTRATION

The post development time of concentration was calculated for the proposed post development drainage basins. The resulting time of concentration is provided in Appendix B.

2.2.4 TAILWATER CONDITION

The onsite stormwater will be retained onsite via the dry retention ponds; therefore, a tailwater condition was not required for the analysis of the stormwater management system.

2.3 POLLUTION ABATEMENT VOLUME (PAV)

Dry retention ponds are utilized for the Best Management Practice (BMP) to reduce the discharge of pollutants associated with stormwater runoff. The following are the PAV (Treatment Volume) requirements:

The PAV requirements for on-line dry retention pond are as follows:

The greater of:

½" of runoff over the basin (on-line)
or
1- ¼" of runoff over the impervious area (on-line)
plus
½" over entire site (on-line).

All PAV is provided within the dry retention ponds. The supporting required and provided PAV calculations are included within Appendix C.

2.4 PROPOSED DEVELOPMENT RUNOFF

The runoff from Basin A will sheet flow from the south to the north towards a swale along the south side of Trade Avenue and across Trade Avenue via an existing 30-inch stormwater pipe into proposed Pond A located along the south side of the project site adjacent to Trade Avenue. The stormwater is treated via percolation through the permeable soils into the shallow ground aquifer. The stormwater analysis for the post development was completed using Ponds (Ver. 3.2). Please refer to Appendix D for an input report, hydrographs, and routing report.

The runoff from the west portion (offsite) of Basin B will sheet flow from the southwest and west along the Hancock Road ROW into a proposed inlet along the Hancock Road ROW adjacent the west central project boundary and the stormwater will be conveyed via secondary stormwater pipes to proposed Pond B located adjacent to the east property boundary. The runoff from the north portion (offsite) of Basin B will sheet flow from the north to the south and into proposed inlets onsite and the stormwater will be conveyed via

secondary stormwater pipes to proposed Pond B. The runoff from the east portion (offsite) of Basin B will sheet flow into proposed Pond B. A portion (north portion) of the Crothall Laundry Services property on the east side of Basin B is conveyed to proposed Pond B via an existing 24-inch storm pipe. The onsite portion of Basin B will sheet flow to the secondary system of inlets and pipes and be routed to proposed Pond B.

The stormwater collected within proposed Pond A and Pond B is treated via percolation through the permeable soils into the shallow ground aquifer. The stormwater analysis for the post development was completed using Ponds (Ver. 3.2). Please refer to Appendix D for an input report, hydrographs, and routing report.

No stormwater discharge is proposed from the proposed dry retention ponds.

2.5 PAV RECOVERY

SJRWMD requires that the PAV be recovered within 3 days (72 hours). PSI performed permeability tests within some of the borings completed onsite.

PSI recommended an estimated horizontal saturated hydraulic conductivity of surficial aquifer of 45 ft/day and an estimated vertical unsaturated hydraulic conductivity of surficial aquifer of 30 ft/day within their report. According to the PSI report, a factor of safety was not applied to the above referenced values.

A horizontal saturated hydraulic conductivity of surficial aquifer of 22.5 ft/day was used for the drawdown analysis of the proposed ponds, which incorporated a factor of safety of 2 (vertical unsaturated hydraulic conductivity of surficial aquifer was not used). Please refer to the Updated Geotechnical Engineering Services report by PSI submitted under separate cover. Recovery time at 72 hours was determined by using Ponds (Ver. 3.2). Please see supporting recovery analysis in Appendix D.

2.6 CONCLUSION

The design meets or exceeds all requirements of SJRWMD and City of Clermont. An input report and routing results are provided in Appendix D.

The post-development pond stages were determined using PONDS (Ver. 3.2). Please refer to Appendix D for the input report, and drainage analysis summary. A summary table is provided below:

Pond A	
Top of Bank Elevation (FT)	159.00
Mean Annual 24 Hour Storm Event Maximum Stage	152.00
25 Year 24 Hour Storm Event Maximum Stage	152.00
100 Year 24 Hour Storm Event Maximum Stage	154.41
72 Hour Drawdown - Did Pond Recover?	YES

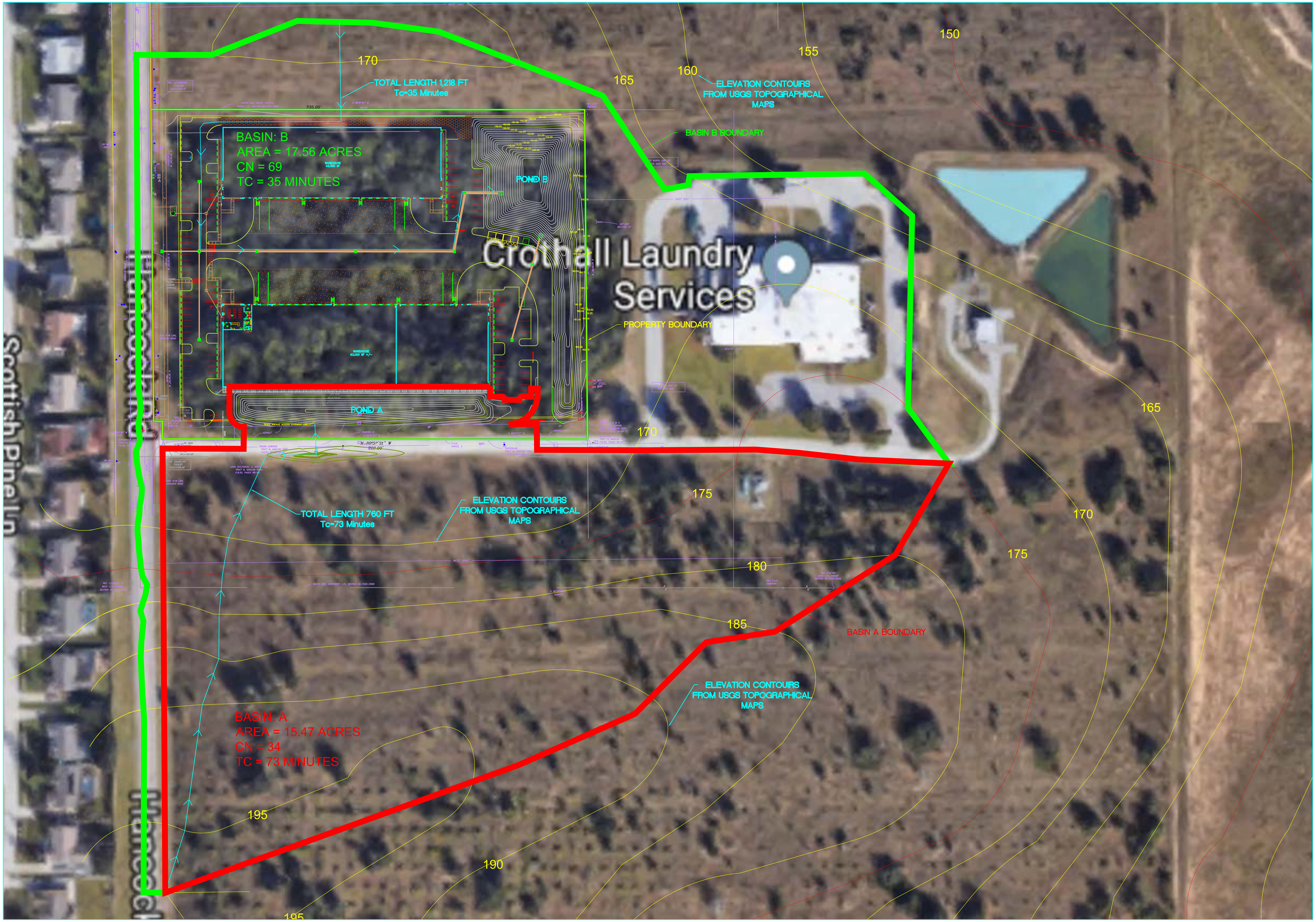
Pond B	
Top of Bank Elevation (FT)	159.00
Mean Annual 24 Hour Storm Event Maximum Stage	147.79
25 Year 24 Hour Storm Event Maximum Stage	156.33
100 Year 24 Hour Storm Event Maximum Stage	158.96
72 Hour Drawdown - Did Pond Recover?	YES

2.7 WETLAND IMPACTS/MITIGATION

No wetlands exist on site. Please refer to the Preliminary Environmental Assessment Report by Bio-Tech Consulting and dated February 1, 2018 submitted under separate cover.

APPENDIX A

POST DRAINAGE BASIN MAP



No. | REVISIONS | DATE | BY

DESIGN ENGINEER: CHAD S. LINN, P.E.
FLORIDA REGISTRATION NUMBER: 57524
SEAL

SCALE AS NOTED
DESIGNED BY EPL
DRAWN BY EPL
CHECKED BY CSL

POST DRAINAGE BASIN MAP

CLERMONT COMMERCE CENTER
HANCOCK ROAD
CLERMONT FLORIDA

LAKE COUNTY FLORIDA

DATE 10/9/18

PROJECT NO. 2600-16-200

SHEET NUMBER EX-1

Drawing name: Z:\Projects\2600-MCDCO\17-300-Clermont- BTS\Exhibits\Post Development Drainage Basin Map Revised.dwg Post Development Drainage Basin Map Oct 10, 2018 10:54am by: d_hur

APPENDIX B

POST
CURVE NUMBER AND TIME OF CONCENTRATION CALCULATIONS

CURVE NUMBER

CURVE NUMBER WORKSHEET
SITE POST-DEVELOPMENT

Basin Name = A

Basin Area = 15.471 acres

AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Poor	68.0	0.0
	A	Fair	49.0	0.0
0.919	A	Good	39.0	35.8
		Brush (Brush-Weed-Grass)		
	A	Poor	48.0	0.0
	A	Fair	35.0	0.0
	A	Good	30.0	0.0
		Woods/Grass (Orchard or Tree Farm)		
	A	Poor	57.0	0.0
	A	Fair	43.0	0.0
14.222	A	Good	32.0	455.1
		Woods		
	A	Poor	45.0	0.0
	A	Fair	36.0	0.0
	A	Good	30.0	0.0
	A,B,C,D	Semi-Impervious (Gravel)	78.0	0.0
0.330	A,B,C,D	Impervious (Pavement, Concrete, Roofs)	98.0	32.3

WEIGHTED CURVE NUMBER = 34

WEIGHTED CURVE NUMBER = SUM (CN*AREA) / TOTAL AREA

CURVE NUMBER WORKSHEET
SITE POST-DEVELOPMENT

Basin Name = B

Basin Area = 17.561 acres

AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Poor	68.0	0.0
	A	Fair	49.0	0.0
5.205	A	Good	39.0	203.0
		Brush (Brush-Weed-Grass)		
	A	Poor	48.0	0.0
	A	Fair	35.0	0.0
	A	Good	30.0	0.0
		Woods/Grass (Orchard or Tree Farm)		
	A	Poor	57.0	0.0
	A	Fair	43.0	0.0
2.365	A	Good	32.0	75.7
		Woods		
	A	Poor	45.0	0.0
	A	Fair	36.0	0.0
0.707	A	Good	30.0	21.2
0.134	A,B,C,D	Semi-Impervious (Gravel)	78.0	10.5
9.150	A,B,C,D	Impervious (Pavement, Concrete, Roofs)	98.0	896.7

WEIGHTED CURVE NUMBER = 69

WEIGHTED CURVE NUMBER = SUM (CN*AREA) / TOTAL AREA

TIME OF CONCENTRATION

BASIN A

CALCULATE POST-DEVELOPMENT Tc NUMBER

OVERLAND FLOW < 300 ft.

	L=	300	FT
	N=	0.8	
	S=	0.005	
Intensity	IN1=	3.5	IN/HR
	IN2=	4	IN/HR
	IN3=	5	IN/HR

SHALLOW CONC. FLOW > 300 ft.

L=	460	FT
V=	1.9	FT/SEC

SHALLOW CONC. FLOW > 300 ft.

L=	0	FT
V=	2	FT/SEC

T_c = T_o overland flow + T_s shallow conc. flow

$T_o = .93 * (L^{.6} * N^{.6}) / (IN^{.4} * S^{.3})$

T_{o1} =	74.01	MIN
T_{o2} =	70.16	MIN
T_{o3} =	64.17	MIN
T_o avg. =	69.45	

$T_s = L/V$

T_s = 4.04

$T_c = T_o + T_s$

T_c = 73.48 => USE 73 MIN

USE 73 MIN

BASIN B

CALCULATE POST-DEVELOPMENT Tc NUMBER

OVERLAND FLOW < 300 ft.

	L=	170	FT
	N=	0.8	
	S=	0.032	
Intensity	IN1=	3.5	IN/HR
	IN2=	4	IN/HR
	IN3=	5	IN/HR

SHALLOW CONC. FLOW > 300 ft.

L=	203	FT
V=	1.75	FT/SEC

SHALLOW CONC. FLOW > 300 ft.

L=	130	FT
V=	1.5	FT/SEC

PIPE FLOW

L=	715	FT
V=	4	FT/SEC

T_c = T_o overland flow + T_s shallow conc. flow

$T_o = .93 * (L^{.6} * N^{.6}) / (IN^{.4} * S^{.3})$

T_{o1} =	30.16	MIN
T_{o2} =	28.59	MIN
T_{o3} =	26.15	MIN
T_o avg. =	28.30	
$T_s = L/V$		
T_s =	3.38	
T_p =	2.98	

$T_c = T_o + T_s + T_p$

T_c =	34.66	=>	USE	35	MIN
			USE	**35**	**MIN**

APPENDIX C

REQUIRED TREATMENT VOLUME AND PROVIDED TREATMENT VOLUME CALCULATIONS

REQUIRED TREATMENT VOLUME CALCULATONS
BASIN A

10/9/2018

Determine the required Pollution Abatement Volume (PAV) for water quality treatment for the proposed Post Basin for SJRWMD and City of New Smyrna Beach criteria.

CRITERIA: The stormwater management system is required to store a minimum volume equal to the first one-half inch of runoff from the developed site or 1.25 inches time the percentage of impervious area plus one-half inch over entire site for online storage only, which ever is greater.

Site Post Basin – Online Storage

1. Compute the first half inch of runoff from the developed site (Va): Basin = 15.471 AC

Va = 0.5 inch * developed site
Va = 0.5 inch * (1 foot / 12 inches) = 15.471 ac
Va = 0.6446 ac-ft
= 28080 ft^3 for the first half inch of runoff

Vb = 0.5 * developed site
Vb = 0.5 * (1 foot / 12 inches) = 15.471 ac
Vb = 0.6446 ac-ft
= 28080 ft^3

Total Va + Vb = 0.6446 + 0.6446 = 1.2893 ac-ft
= 56160 ft^3 (Required retention storage)

2. Compute 1.25 inches times the percentage of impervious (Vb): Impervious = 0.33 AC

Vc = 1.25 * total impervious
Vc = 1.25 * (1 foot / 12 inches) * 0.33
Vc = 0.0344 ac-ft
= 1497 ft^3 for the first half inch of runoff

Vb = 0.5 * developed site
Vb = 0.5 * (1 foot / 12 inches) = 15.471 ac
Vb = 0.6446 ac-ft
= 28080 ft^3

Total Vc + Vb = 0.0344 + 0.6446 = 0.6790 ac-ft
= 29577 ft^3 (Required retention storage)

Since the 1.29 ac-ft, for one half inch over the site area is > 0.68 ac-ft for 1.25 inches times the impervious area, the required pollution abatement volume is 1.29 ac-ft

REQUIRED TREATMENT VOLUME CALCULATONS
BASIN B

10/9/2018

Determine the required Pollution Abatement Volume (PAV) for water quality treatment for the proposed Post Basin for SJRWMD and City of New Smyrna Beach criteria.

CRITERIA: The stormwater management system is required to store a minimum volume equal to the first one-half inch of runoff from the developed site or 1.25 inches time the percentage of impervious area plus one-half inch over entire site for online storage only, which ever is greater.

Site Post Basin – Online Storage

1. Compute the first half inch of runoff from the developed site (Va): Basin = 17.561 AC

Va = 0.5 inch * developed site
Va = 0.5 inch * (1 foot / 12 inches) = 17.561 ac
Va = 0.7317 ac-ft for the first half inch of runoff
= 31873 ft^3

Vb = 0.5 * developed site
Vb = 0.5 * (1 foot / 12 inches) = 17.561 ac
Vb = 0.7317 ac-ft
= 31873 ft^3

Total Va + Vb = 0.7317 + 0.7317 = 1.4634 ac-ft
= 63746 ft^3 (Required retention storage)

2. Compute 1.25 inches times the percentage of impervious (Vb): Impervious = 9.284 AC

Vc = 1.25 * total impervious
Vc = 1.25 * (1 foot / 12 inches) * 9.284
Vc = 0.9671 ac-ft for the first half inch of runoff
= 42126 ft^3

Vb = 0.5 * developed site
Vb = 0.5 * (1 foot / 12 inches) = 17.561 ac
Vb = 0.7317 ac-ft
= 31873 ft^3

Total Vc + Vb = 0.9671 + 0.7317 = 1.6988 ac-ft
= 73999 ft^3 (Required retention storage)

Since the 1.70 , ac-ft for 1.25 inch times impervious area is > 1.46 ac-ft for one-half inches over the developed site, the required pollution abatement volume is 1.70 ac-ft

PROVIDED POLLUTION ABATEMENT VOLUME CALCULATIONS

PROPOSED DRY POND A						
Stage	Area (sq.-ft.)	Area (ac.)	Volume (cu.-ft.)	Volume (ac-ft.)	Sum Volume (cu.-ft.)	Sum Volume (ac-ft)
152.00	528	0.01	-	-	-	-
153.00	2328	0.05	1428.00	0.03	1428.00	0.03
154.00	4821	0.11	3574.50	0.08	5002.50	0.11
155.00	7250	0.17	6035.50	0.14	11038.00	0.25
156.00	9696	0.22	8473.00	0.19	19511.00	0.45
157.00	12217	0.28	10956.50	0.25	30467.50	0.70
158.00	14813	0.34	13515.00	0.31	43982.50	1.01
158.78	16892	0.39	12364.95	0.28	56347.45	1.29
159.00	17479	0.40	3780.81	0.09	60128.26	1.38

Therefore **0.70** ac-ft of PAV will
be provided in the pond system within the basin at elevation 158.78

PROVIDED POLLUTION ABATEMENT VOLUME CALCULATIONS

PROPOSED DRY POND B						
Stage	Area (sq.-ft.)	Area (ac.)	Volume (cu.-ft.)	Volume (ac-ft.)	Sum Volume (cu.-ft.)	Sum Volume (ac-ft)
141.00	2252	0.05	-	-	-	-
142.00	2943	0.07	2597.50	0.06	2597.50	0.06
143.00	3713	0.09	3328.00	0.08	5925.50	0.14
144.00	4562	0.10	4137.50	0.09	10063.00	0.23
145.00	5527	0.13	5044.50	0.12	15107.50	0.35
146.00	6583	0.15	6055.00	0.14	21162.50	0.49
147.00	7741	0.18	7162.00	0.16	28324.50	0.65
148.00	8989	0.21	8365.00	0.19	36689.50	0.84
149.00	10374	0.24	9681.50	0.22	46371.00	1.06
150.00	11763	0.27	11068.50	0.25	57439.50	1.32
151.00	13227	0.30	12495.00	0.29	69934.50	1.61
151.31	13763	0.32	4183.45	0.10	74117.95	1.70
152.00	14957	0.34	9908.40	0.23	84026.35	1.93
153.00	16705	0.38	15831.00	0.36	99857.35	2.29
154.00	18563	0.43	17634.00	0.40	117491.35	2.70
155.00	20599	0.47	19581.00	0.45	137072.35	3.15
156.00	23869	0.55	22234.00	0.51	159306.35	3.66
157.00	27356	0.63	25612.50	0.59	184918.85	4.25
158.00	30960	0.71	29158.00	0.67	214076.85	4.91
159.00	34536	0.79	32748.00	0.75	246824.85	5.67

Therefore **1.70** ac-ft of PAV will
be provided in the pond system within the basin at elevation 151.31

POND A
PONDS / ICPR Program
Equivalent Pond Dimensions

Input Data

PONDS INPUT DATA	
Pond Stage Height (h) in feet	7
Volume of Pond (V) in cubic feet	60,129
Effective Perimeter (P) in linear feet	892
Equivalent Length of Pond (L) in feet	426
Equivalent Width of Pond (W) in feet	20

POND B
PONDS / ICPR Program
Equivalent Pond Dimensions

Input Data

PONDS INPUT DATA	
Pond Stage Height (h) in feet	18
Volume of Pond (V) in cubic feet	246,825
Effective Perimeter (P) in linear feet	1196
Equivalent Length of Pond (L) in feet	574
Equivalent Width of Pond (W) in feet	24

APPENDIX D

POST DEVELOPMENT DRAINAGE CALCULATIONS AND 72 HOUR RECOVERY CALCULATIONS

POND A

PONDS Version 3.2.0274
Retention Pond Recovery - Refined Method
Copyright 2012
Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	CLERMONT COMMERCE CENTER
Simulation Description:	MEAN ANNUAL 25YR-24HR 100YR-24HR 72 HOUR DRAWDOWN
Project Number:	2600-17-300
Engineer :	ERIC LAGASSEY
Supervising Engineer:	CHAD LINN
Date:	10-09-2018

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	137.00
Water Table Elevation, [WT] (ft datum):	137.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	22.50
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	426.0
Equivalent Pond Width, [W] (ft):	20.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
152.00	528.0
153.00	2328.0
154.00	4821.0
155.00	7250.0
156.00	9696.0
157.00	12217.0
158.00	14813.0
159.00	17479.0

Scenario Input Data

Scenario 2 :: BASIN A 25YR24HR STORM W/INFILTRATION

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1

Basin Area (acres)	15.471
Time Of Concentration (minutes)	73.0
DCIA (%)	2.4
Curve Number	34
Design Rainfall Depth (inches)	8.6
Design Rainfall Duration (hours)	24.0
Shape Factor	UHG 484
Rainfall Distribution	SCS Type II Florida Modified

Initial ground water level (ft datum) 137.50 (default)

Time After Storm Event (days)
30.000

Scenario 3 :: BASIN A 100YR24HR STORM W/INFILTRATION

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1

Basin Area (acres)	15.471
Time Of Concentration (minutes)	73.0
DCIA (%)	2.4
Curve Number	34
Design Rainfall Depth (inches)	10.6
Design Rainfall Duration (hours)	24.0
Shape Factor	UHG 484
Rainfall Distribution	SCS Type II Florida Modified

Initial ground water level (ft datum) 137.50 (default)

Time After Storm Event (days)
30.000

Scenario Input Data (cont'd.)

Scenario 6 :: BASIN A MEAN ANNUAL 24HR STORM W/INFILTRATION

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1

Basin Area (acres)	15.471
Time Of Concentration (minutes)	73.0
DCIA (%)	2.4
Curve Number	34
Design Rainfall Depth (inches)	4.2
Design Rainfall Duration (hours)	24.0
Shape Factor	UHG 484
Rainfall Distribution	SCS Type II Florida Modified

Initial ground water level (ft datum) 137.50 (default)

Time After Storm Event (days)
30.000

Summary of Results :: *Scenario 2 :: BASIN A 25YR24HR STORM W/INFILTRATION*

	Time (hours)	Stage (ft datum)	Rate (ft^3/s)	Volume (ft^3)
Stage				
Minimum	748.065	140.69		
Maximum	0.000	152.00		
Inflow				
Rate - Maximum - Positive	12.978		4.1990	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	27.902			61853.5
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	748.065			61853.5
Infiltration				
Rate - Maximum - Positive	12.978		4.1204	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	27.902			61853.5
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	748.065			61853.5
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	748.065			0.0
Discharge Structure 1 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	N.A.	N.A.		N.A.
72 Hour Stage and Infiltration Volume	N.A.	N.A.		N.A.

Summary of Results :: *Scenario 3 :: BASIN A 100YR24HR STORM W/INFILTRATION*

	Time (hours)	Stage (ft datum)	Rate (ft^3/s)	Volume (ft^3)
Stage				
Minimum	748.065	141.71		
Maximum	16.060	154.41		
Inflow				
Rate - Maximum - Positive	12.816		8.6707	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	27.902			108676.1
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	748.065			108676.1
Infiltration				
Rate - Maximum - Positive	12.816		8.4892	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	27.902			108676.1
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	748.065			108676.1
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	748.065			0.0
Discharge Structure 1 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	N.A.	N.A.		N.A.
72 Hour Stage and Infiltration Volume	N.A.	N.A.		N.A.

Summary of Results :: *Scenario 6 :: BASIN A MEAN ANNUAL 24HR STORM W/INFILTRATION*

	Time (hours)	Stage (ft datum)	Rate (ft^3/s)	Volume (ft^3)
Stage				
Minimum	748.065	139.09		
Maximum	0.000	152.00		
Inflow				
Rate - Maximum - Positive	12.653		0.5213	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	27.902			5626.6
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	748.065			5626.6
Infiltration				
Rate - Maximum - Positive	12.653		0.5118	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	27.902			5626.6
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	748.065			5626.6
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	748.065			0.0
Discharge Structure 1 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	N.A.	N.A.		N.A.
72 Hour Stage and Infiltration Volume	N.A.	N.A.		N.A.

Scenario Input Data

Scenario 4 :: 72 Hour Drawdown

Hydrograph Type: Slug Load
Modflow Routing: Routed with infiltration

Treatment Volume (ft^3) 56160

Initial ground water level (ft datum) 137.50 (default)

Time After Storm Event (days)	Time After Storm Event (days)
0.100	2.000
0.250	2.500
0.500	3.000
1.000	3.500
1.500	4.000

Summary of Results :: *Scenario 4 :: 72 Hour Drawdown*

	Time (hours)	Stage (ft datum)	Rate (ft^3/s)	Volume (ft^3)
Stage				
Minimum	96.000	142.38		
Maximum	0.002	158.77		
Inflow				
Rate - Maximum - Positive	0.002		9360.0000	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	0.002			56160.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			56160.0
Infiltration				
Rate - Maximum - Positive	2.400		3.3742	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	6.000			56160.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			56160.0
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			0.0
Discharge Structure 1 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	36.000	144.78		56160.0
72 Hour Stage and Infiltration Volume	72.000	142.99		56160.0

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Detailed Results :: *Scenario 4 :: 72 Hour Drawdown*

Elapsed Time	Instantaneous Inflow Rate	Outside Recharge	Stage Elevation	Infiltration Rate	Combined Instantaneous Discharge	Cumulative Inflow	Cumulative Infiltration	Combined Cumulative	
0.00	9360.0000	0.00000	152.00000	2.63958	0	0.000	0.00000	0	N.A.
0.00	9360.0000	0.00000	158.76790	2.64274	0	56160.000	15.84696	0	S
2.40	0.0000	0.00000	155.34320	3.37418	0	56160.000	42489.41000	0	S
6.00	0.0000	0.00000	151.62430	0.65927	0	56160.000	56160.00000	0	S
12.00	0.0000	0.00000	148.41900	0.00000	0	56160.000	56160.00000	0	S
24.00	0.0000	0.00000	146.03870	0.00000	0	56160.000	56160.00000	0	S
36.00	0.0000	0.00000	144.77600	0.00000	0	56160.000	56160.00000	0	S
48.00	0.0000	0.00000	143.97510	0.00000	0	56160.000	56160.00000	0	S
60.00	0.0000	0.00000	143.41090	0.00000	0	56160.000	56160.00000	0	S
72.00	0.0000	0.00000	142.98580	0.00000	0	56160.000	56160.00000	0	S
84.00	0.0000	0.00000	142.64990	0.00000	0	56160.000	56160.00000	0	S
96.00	0.0000	0.00000	142.37540	----	----	56160.000	56160.00000	0	N.A.

POND B

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Project Data

Project Name:	CLERMONT COMMERCE CENTER
Simulation Description:	MEAN ANNUAL 25YR-24HR 100YR-24HR 72 HOUR DRAWDOWN
Project Number:	2600-17-300
Engineer :	ERIC LAGASSEY
Supervising Engineer:	CHAD LINN
Date:	10-09-2018

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	137.00
Water Table Elevation, [WT] (ft datum):	137.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	22.50
Fillable Porosity, [n] (%):	25.00

Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (ft):	574.0
Equivalent Pond Width, [W] (ft):	24.0

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
141.00	2252.0
142.00	2943.0
143.00	3713.0
144.00	4562.0
145.00	5527.0
146.00	6583.0
147.00	7741.0
148.00	8989.0
149.00	10374.0
150.00	11763.0
151.00	13227.0
152.00	14957.0
153.00	16705.0
154.00	18563.0
155.00	20599.0
156.00	23869.0

Stage vs Area Data (cont'd.)

Stage (ft datum)	Area (ft^2)
157.00	27356.0
158.00	30960.0
159.00	34536.0

Scenario Input Data

Scenario 2 :: 25YR24HR STORM W/INFILTRATION

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1

Basin Area (acres)	17.561
Time Of Concentration (minutes)	35.0
DCIA (%)	4.5
Curve Number	69
Design Rainfall Depth (inches)	8.6
Design Rainfall Duration (hours)	24.0
Shape Factor	UHG 484
Rainfall Distribution	SCS Type II Florida Modified

Initial ground water level (ft datum) 137.50 (default)

Time After Storm Event (days)
30.000

Scenario 3 :: 100YR24HR STORM W/INFILTRATION

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1

Basin Area (acres)	17.561
Time Of Concentration (minutes)	35.0
DCIA (%)	4.5
Curve Number	69
Design Rainfall Depth (inches)	10.6
Design Rainfall Duration (hours)	24.0
Shape Factor	UHG 484
Rainfall Distribution	SCS Type II Florida Modified

Initial ground water level (ft datum) 137.50 (default)

Time After Storm Event (days)
30.000

Scenario Input Data (cont'd.)

Scenario 6 :: MEAN ANNUAL STORM W/INFILTRATION

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1

Basin Area (acres)	17.561
Time Of Concentration (minutes)	35.0
DCIA (%)	4.5
Curve Number	69
Design Rainfall Depth (inches)	4.2
Design Rainfall Duration (hours)	24.0
Shape Factor	UHG 484
Rainfall Distribution	SCS Type II Florida Modified

Initial ground water level (ft datum) 137.50 (default)

Time After Storm Event (days)
30.000

Summary of Results :: *Scenario 2 :: 25YR24HR STORM W/INFILTRATION*

	Time (hours)	Stage (ft datum)	Rate (ft^3/s)	Volume (ft^3)
Stage				
Minimum	5.911	139.83		
Maximum	18.822	156.33		
Inflow				
Rate - Maximum - Positive	12.211		48.1616	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	25.900			320239.8
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	745.978			320239.8
Infiltration				
Rate - Maximum - Positive	12.367		7.1541	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	745.978			308691.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	745.978			308691.0
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	745.978			0.0
Discharge Structure 1 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	N.A.	N.A.		N.A.
72 Hour Stage and Infiltration Volume	N.A.	N.A.		N.A.

Summary of Results :: *Scenario 3 :: 100YR24HR STORM W/INFILTRATION*

	Time (hours)	Stage (ft datum)	Rate (ft^3/s)	Volume (ft^3)
Stage				
Minimum	4.822	139.90		
Maximum	20.300	158.96		
Inflow				
Rate - Maximum - Positive	12.211		65.3741	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	25.900			433584.7
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	745.978			433584.7
Infiltration				
Rate - Maximum - Positive	12.367		8.4917	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	745.978			413644.3
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	745.978			413644.3
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	745.978			0.0
Discharge Structure 1 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	N.A.	N.A.		N.A.
72 Hour Stage and Infiltration Volume	N.A.	N.A.		N.A.

Summary of Results :: *Scenario 6 :: MEAN ANNUAL STORM W/INFILTRATION*

	Time (hours)	Stage (ft datum)	Rate (ft^3/s)	Volume (ft^3)
Stage				
Minimum	8.322	139.60		
Maximum	16.256	147.79		
Inflow				
Rate - Maximum - Positive	12.211		13.4132	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	25.900			96551.1
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	745.978			96551.1
Infiltration				
Rate - Maximum - Positive	11.822		4.7664	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	745.978			96551.1
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	745.978			96551.1
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	745.978			0.0
Discharge Structure 1 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	N.A.	N.A.		N.A.
72 Hour Stage and Infiltration Volume	N.A.	N.A.		N.A.

Scenario Input Data

Scenario 4 :: 72 Hour Drawdown

Hydrograph Type: Slug Load
Modflow Routing: Routed with infiltration

Treatment Volume (ft^3) 73999

Initial ground water level (ft datum) 137.50 (default)

Time After Storm Event (days)	Time After Storm Event (days)
0.100	2.000
0.250	2.500
0.500	3.000
1.000	3.500
1.500	4.000

Summary of Results :: *Scenario 4 :: 72 Hour Drawdown*

	Time (hours)	Stage (ft datum)	Rate (ft^3/s)	Volume (ft^3)
Stage				
Minimum	0.000	141.00		
Maximum	0.002	151.30		
Inflow				
Rate - Maximum - Positive	0.002		12333.1700	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	0.002			73999.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			73999.0
Infiltration				
Rate - Maximum - Positive	2.400		2.4246	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	96.000			72585.4
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			72585.4
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			0.0
Discharge Structure 1 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	36.000	143.64		65505.3
72 Hour Stage and Infiltration Volume	72.000	142.12		71043.8

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Detailed Results :: *Scenario 4 :: 72 Hour Drawdown*

Elapsed Time	Instantaneous Inflow Rate	Outside Recharge	Stage Elevation	Infiltration Rate	Combined Instantaneous Discharge	Cumulative Inflow	Cumulative Infiltration	Combined Cumulative	
0.00	12333.1700	0.00000	141.00000	1.83066	0	0.000	0.00000	0	N.A.
0.00	12333.1700	0.00000	151.30060	1.83277	0	73999.000	10.99030	0	S
2.40	0.0000	0.00000	148.87410	2.42458	0	73999.000	28923.12000	0	S
6.00	0.0000	0.00000	147.41320	0.82318	0	73999.000	42369.41000	0	S
12.00	0.0000	0.00000	146.06090	0.37708	0	73999.000	52433.63000	0	S
24.00	0.0000	0.00000	144.59580	0.15129	0	73999.000	61046.81000	0	S
36.00	0.0000	0.00000	143.64420	0.08210	0	73999.000	65505.34000	0	S
48.00	0.0000	0.00000	142.98190	0.05031	0	73999.000	68140.64000	0	S
60.00	0.0000	0.00000	142.49450	0.03360	0	73999.000	69852.19000	0	S
72.00	0.0000	0.00000	142.11970	0.02390	0	73999.000	71043.83000	0	S
84.00	0.0000	0.00000	141.82100	0.01784	0	73999.000	71917.25000	0	S
96.00	0.0000	0.00000	141.57670	----	----	73999.000	72585.40000	0	N.A.