Lake Hills Shopping Center

Stormwater Report

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS

Prepared by:

Madden, Moorhead, & Stokes, LLC
431 E. Horatio Avenue, Suite 260
Maitland, FL 32751

December 2024

This item has been electronically signed and sealed by Benjamin S. Beckham, P.E. using a digital signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by Benjamin S Beckham
Date: 2025.01.10 14:46:50 -05'00'

Benjamin S. Beckham, P.E. #79452
Certificate of Authorization No. CA-0007723

Documents included herein which have been prepared by professionals other than Madden, Moorhead, and Stokes, LLC. are not covered under the above registered engineer's signature and seal

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Introduction

The proposed project, Lake Hills Shopping Center, is within the municipality of Howey in the Hills, Florida. The project is located near the intersection of C.R. 48 and S.R. 19. The development will consist of supporting infrastructure for a Publix Supermarket with retail shopping, access roads from C.R. 48 and S.R. 19 to the Publix. Also, four outparcels will be mass graded for future development.

Computations within this report shall consider full build out of the Publix and outparcels. The analysis provided in this report is in compliance with the stormwater management requirements of the St. John's River Water Management District (SJRWMD) and the City of Howey in the Hills.

Existing Conditions

The site is undeveloped and the drains north to a land locked depressional area designated Zone AE (Elev. 84.1). The site is a retired orange grove. Soils are well drained and seasonal high groundwater levels are approximately 5'-10' below surface elevations. Elevations range from 140 to 81.

Approximately 10.6 acres drains north to a depressional area just offsite, and the remaining 7.8 acres drains offsite to an adjacent property and a small area in the western portion of the site drains towards C.R. 48.

Proposed Conditions

The proposed project is part Lake Hills Main Blvd master drainage system located just north of the site. See Appendix B for the Master Drainage Report.

The proposed drainage infrastructure will serve the Publix parking lot, the access roads to Publix, and Outparcels B, C and D. Outparcel A drainage will be collected and routed through the drainage system of Lake Hill Main Blvd. The entire +/- 19 acre development will outfall to Pond 1 of the adjacent master drainage system.

Calculations within this report are for the secondary storm system only. Nutrient loading calculations have been accounted for in the master system.

Within basin Post-1 the master stormwater calculations has allotted for 15.72 acres of impervious from the Lake Hills Shopping Center and outparcels (see Appendix B). The proposed impervious from the Publix development is 14.00 acres (see Land Use Table 1).

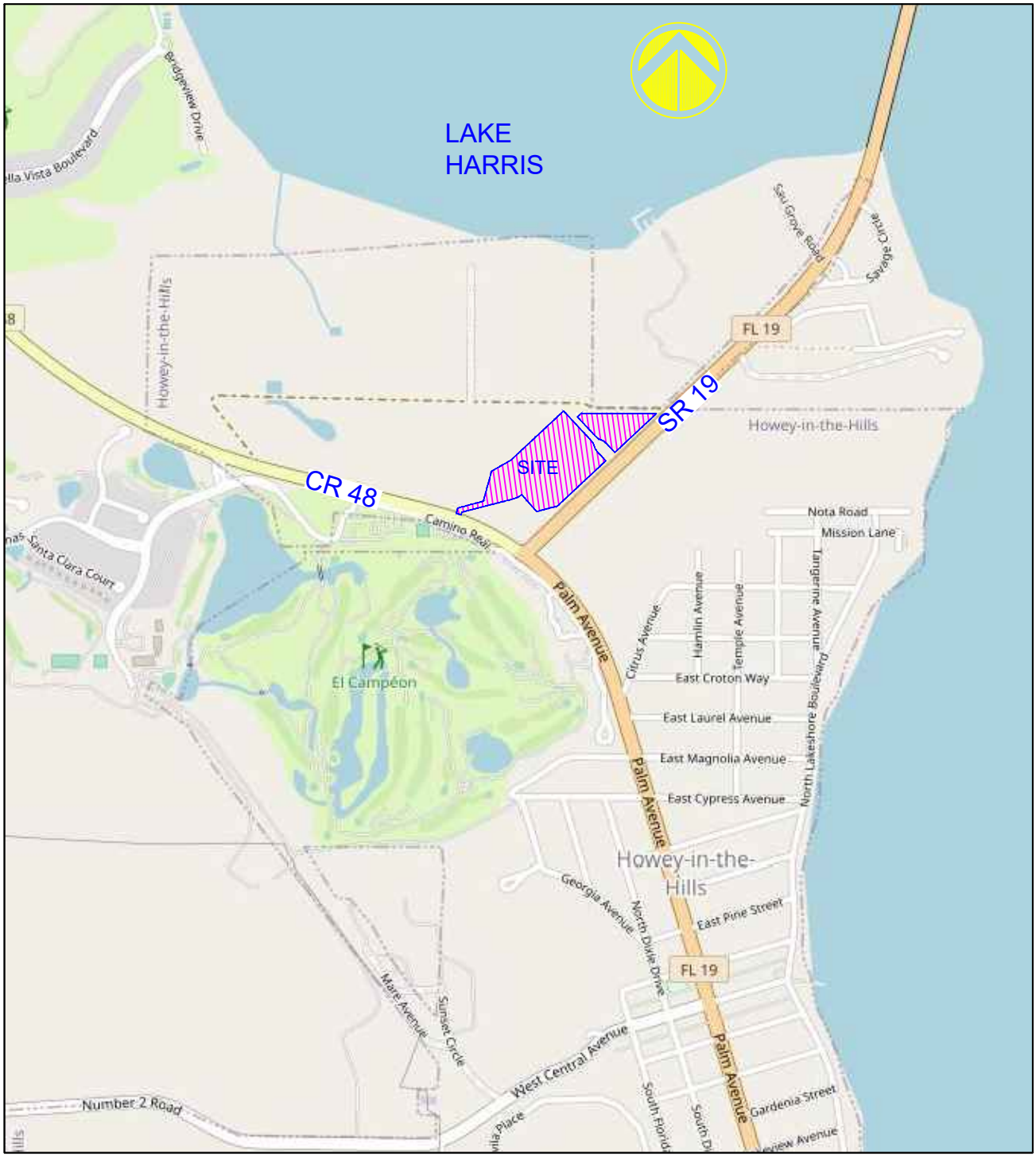
The StormCAD calculations consider the 10yr storm frequency as the primary IDF curve. The PD1 tailwater elevation 82.52 was obtained from the master stormwater report in Appendix B.

Lake Hills Publix Property

Area = 18.89
(includes access road from CR48)

Land Use Table 1	Area (Ac.)	Percent of Site
Pavement (parking, access roads, aprons)	5.80	30.70%
Sidewalks	0.41	2.17%
Buildings	1.41	7.46%
Outparcel A (80% Impervious)	2.86	15.14%
Outparcel B (80% Impervious)	0.78	4.13%
Outparcel C (80% Impervious)	0.87	4.61%
Outparcel D (80% Impervious)	1.87	9.90%
Open Space	4.89	25.89%
Total	14.00	

EXHIBITS



MADDEN
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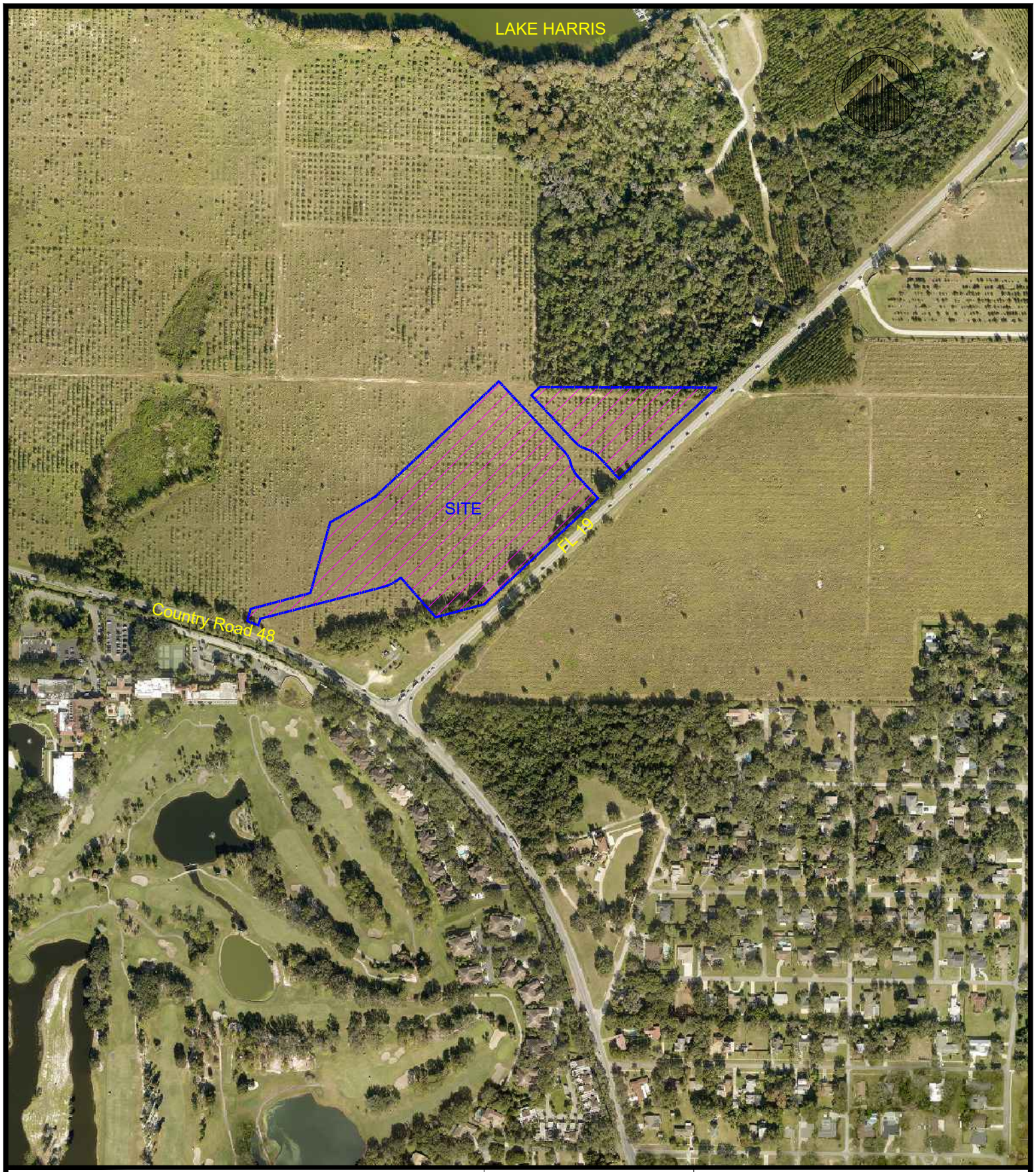
CIVIL ENGINEERS
431 E. HORATIO AVE., STE. 260, MAITLAND, FL 32751 * (407) 629-8330
CERTIFICATE OF AUTHORIZATION NO. CA-0007723

JOB NO.	22041
	SEC. 23, TWP. 20S, RANGE 25E
DRAWN BY:	NC
APPROVED BY:	BSB
DATE:	03/29/2024
SCALE:	1" = 2000'

Lake Hills Shopping Center

LOCATION MAP

OpenStreetMap.org



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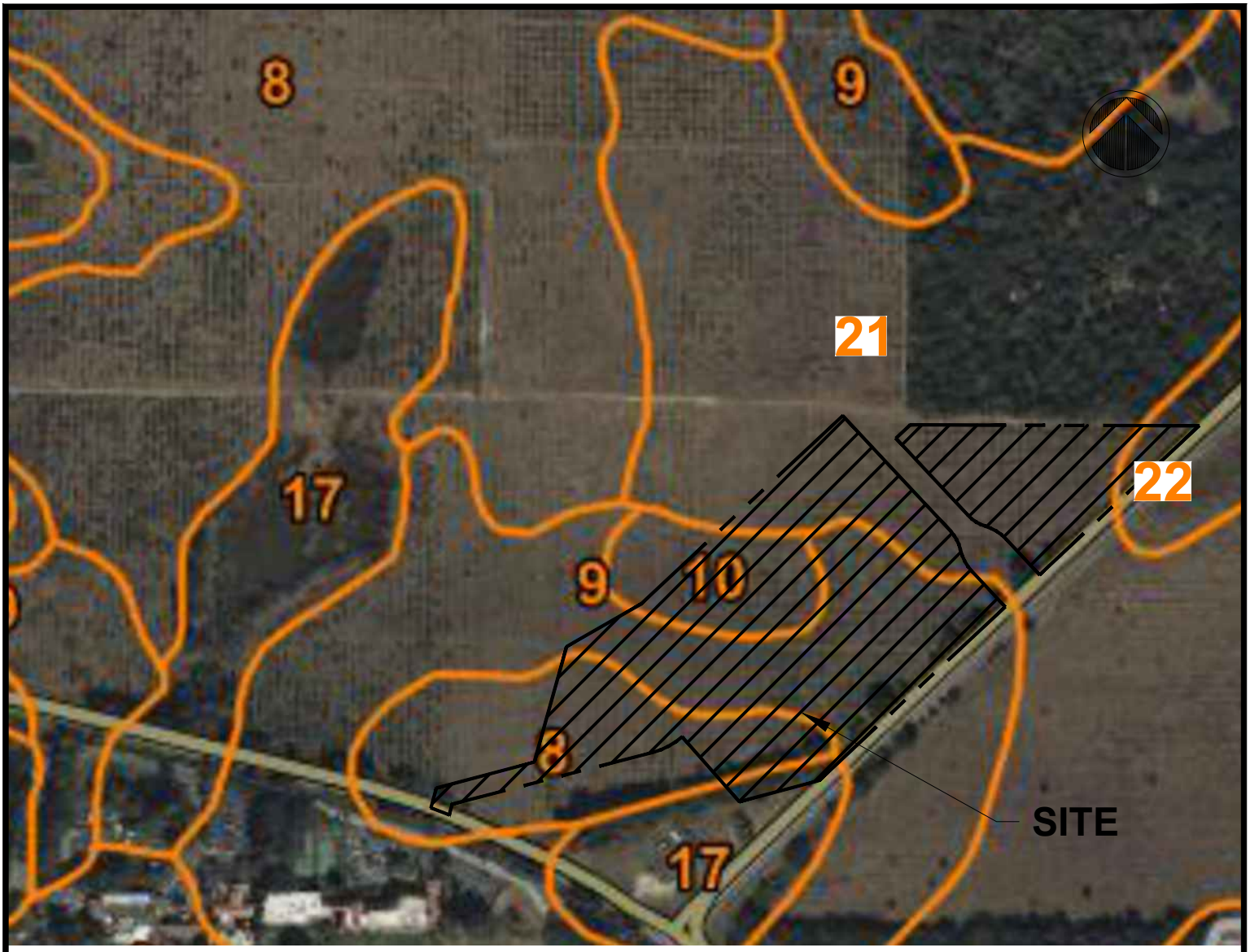
SCALE:	1" = 800'

Lake Hills Shopping Center

Town of Howey-In-The-Hills, FL

AERIAL MAP

SOURCE: fdot.dot.state.fl.us



SOILS LEGEND		
SOIL NUMBER	SOIL NAME	HYDROLOGIC GROUP
8	CANDLER SANDS (0%–5% SLOPE)	A
9	CANDLER SANDS (5%–12% SLOPE)	A
10	CANDLER SANDS (12%–40% SLOPE)	A
17	ARENTS	B
21	LAKE SANDS (0%–5% SLOPE)	A
22	LAKE SANDS (5%–12% SLOPE)	A

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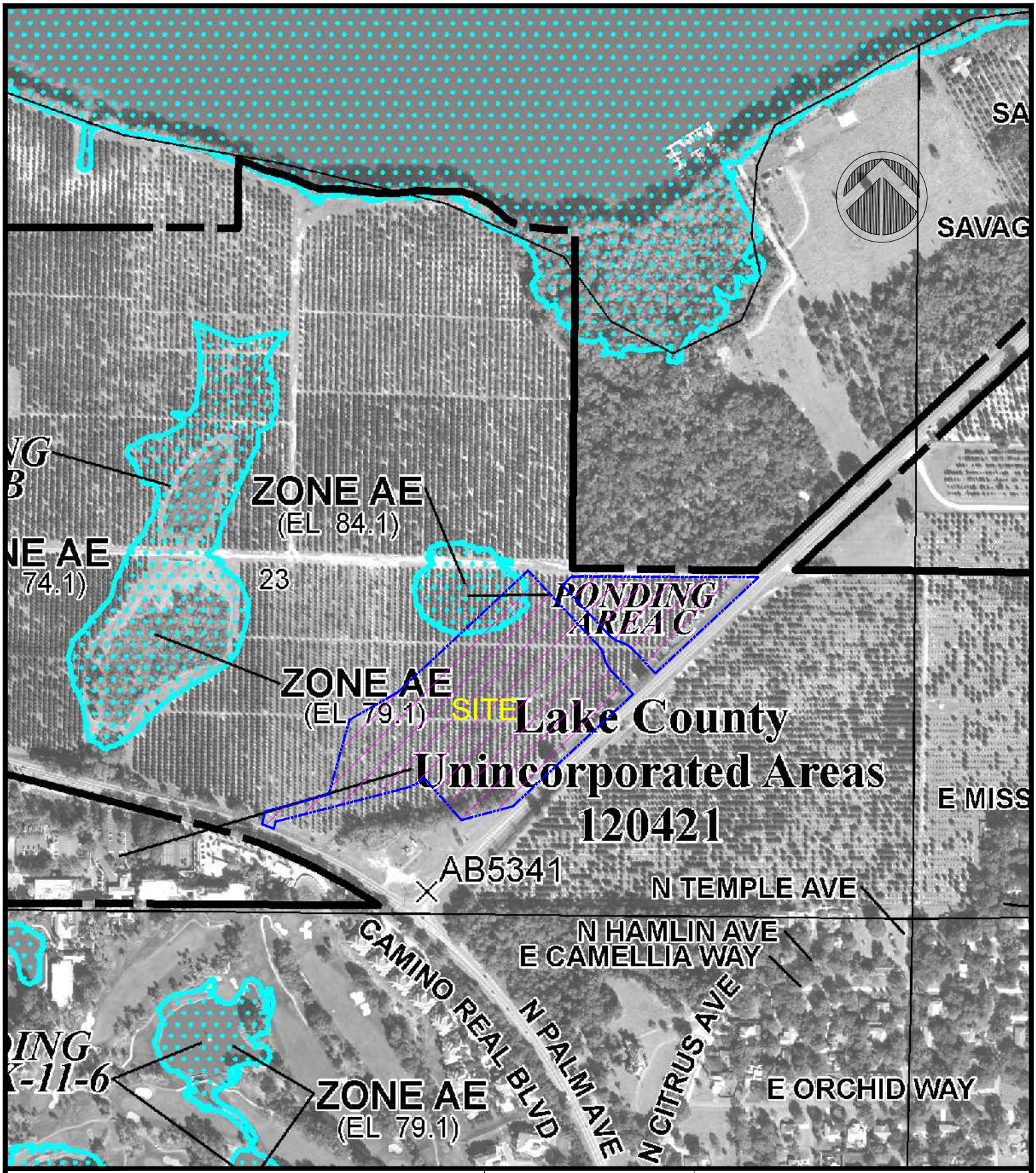
JOB NO.	22041
SEC. 23, TWP. 20S, RANGE 25E	
DRAWN BY:	KS
APPROVED BY:	BEN
DATE:	03/29/2023
Scale:	1" = 400'

LAKE HILLS SHOPPING CENTER

SOILS MAP

USDA Web Soil Survey



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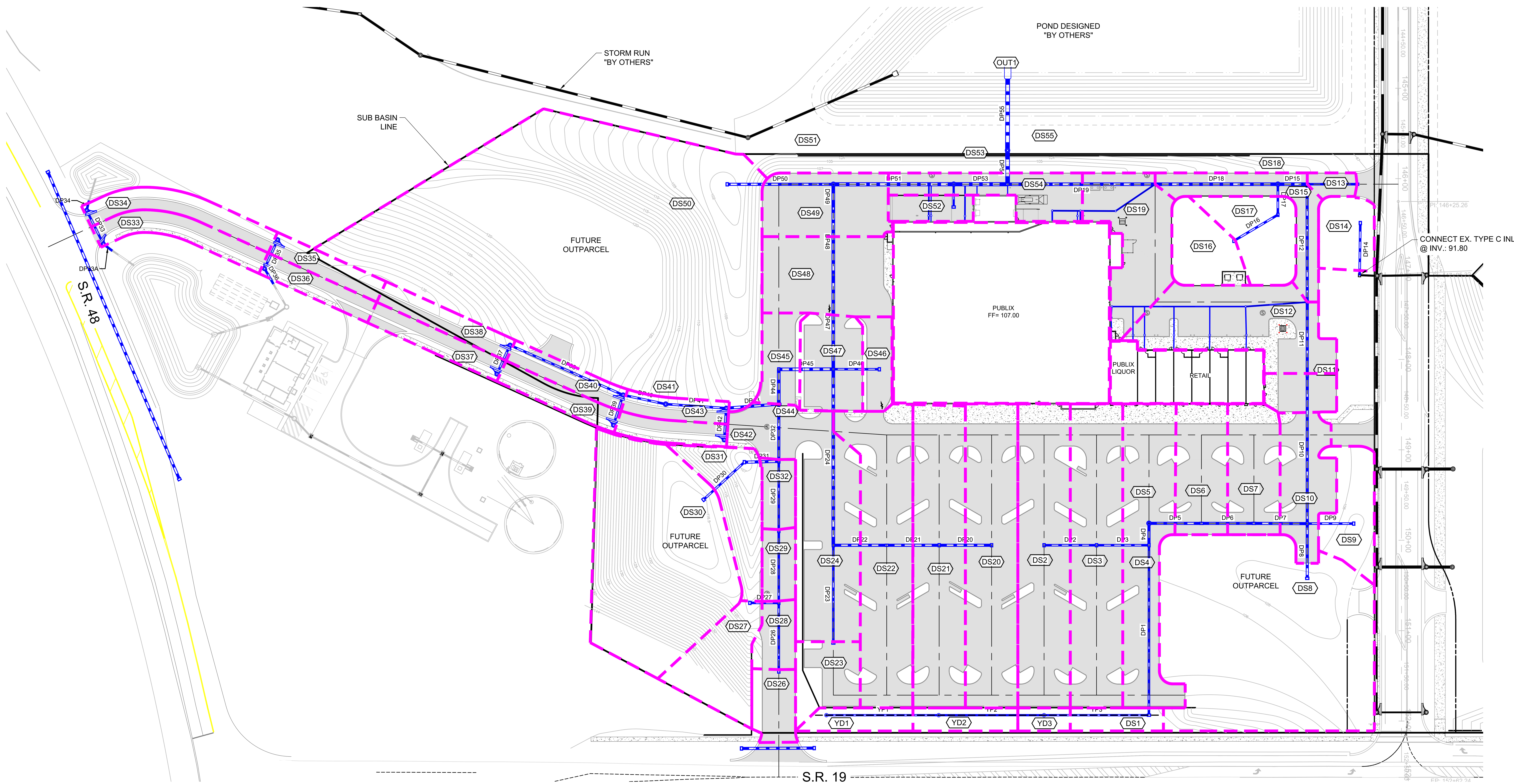
JOB NO.	22041
SEC. 23, TWP. 20S, RANGE 25E	
DRAWN BY:	NC
APPROVED BY:	BSB
DATE:	03/27/2024
SCALE:	1" = 500'

LAKE HILLS SHOPPING CENTER
FIRM
LAKE COUNTY, FLORIDA
MAP #12069C0485E
DATED: DEC. 18, 2012

DATUMS:
HORIZONTAL (LOCATION): NAD83
VERTICAL (ELEVATION): NAVD1988

Appendix A
StormCAD



SCALE: 1"=60'

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431 E. Horatio Avenue
Suite 260
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(407) 629-8330
CA# 0007723

STORMCAD SUB-BASINS
FOR
LAKE HILLS SHOPPING CENTER
TOWN OF HOWEY IN THE HILLS
FLORIDA

WINDCREST DEVELOPMENT GROUP, INC.
605 E. ROBINSON ST. SUITE 340
ORLANDO, FL 32801
407-219-3540

	DATE	REVISIONS
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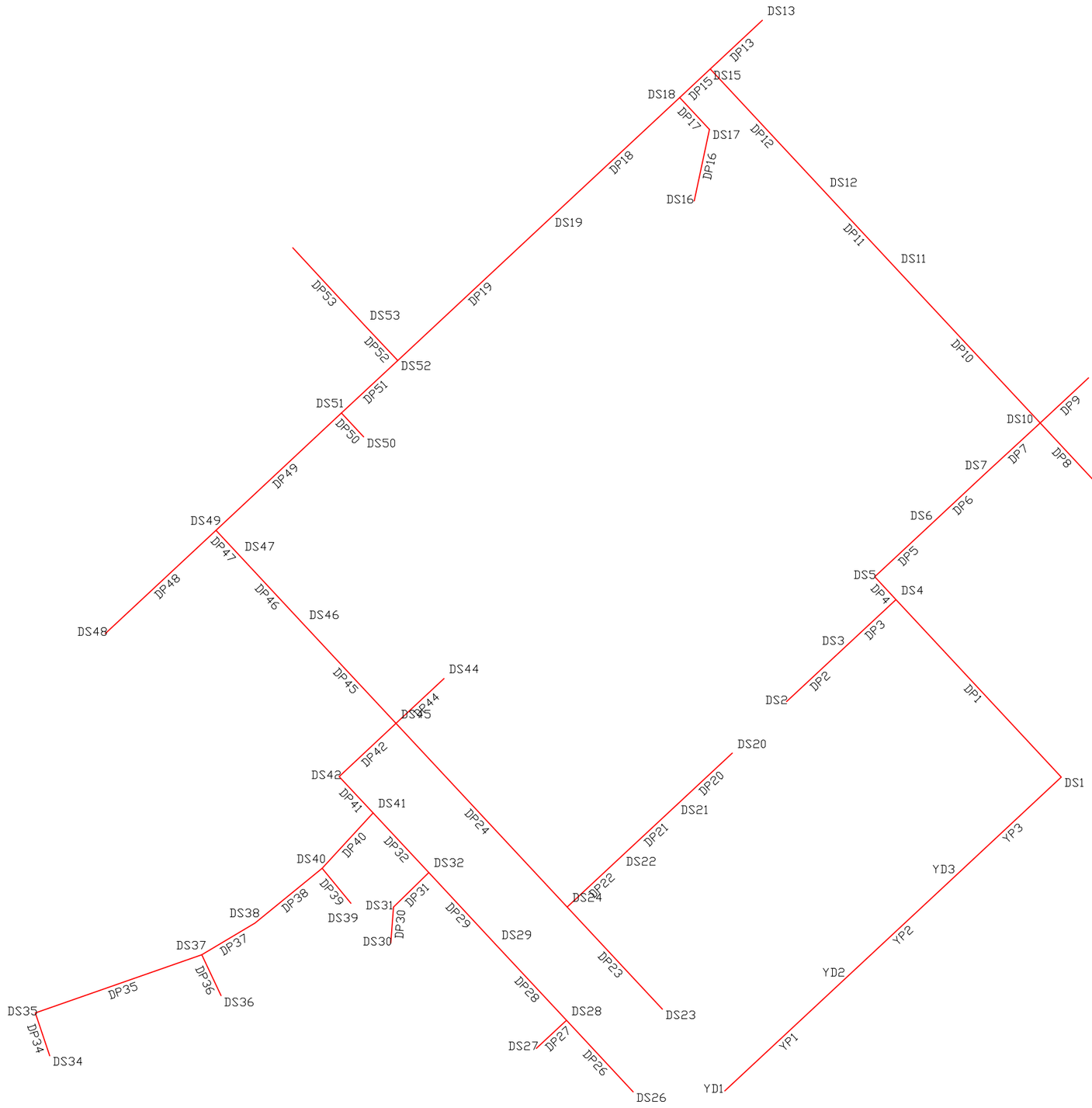
ENGINEER OF RECORD

JOB #	22041
DATE:	08/06/24
DATUM:	NAVD 88
DESIGNED BY:	KGS
DRAWN BY:	JAS
APPROVED BY:	BSB

EXHIBIT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Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	82.018	0.01	12.92	0.20	0.00	10.80	10.0	71.8	2.9	31.25	138.2	5.97	36	3.66	80.00	83.00	82.52	84.81	84.88	98.00	DP53
2	1	37.412	1.09	12.91	0.90	0.98	10.80	10.0	71.8	2.9	31.26	83.53	8.98	36	1.34	89.00	89.50	90.27	91.31	98.00	105.25	DP52
3	2	59.647	0.01	7.18	0.20	0.00	6.07	10.0	20.3	5.7	34.38	59.17	7.97	36	0.67	93.00	93.40	94.64	95.30	105.25	106.06	DP51
4	3	133.076	0.01	7.11	0.20	0.00	6.01	10.0	19.9	5.7	34.34	59.42	7.26	36	0.68	93.40	94.30	95.30	96.20	106.06	106.36	DP49
5	4	26.778	0.22	4.76	0.90	0.20	3.90	10.0	19.8	5.7	22.34	24.28	5.61	30	0.30	96.23	96.31	98.12	98.20	106.36	106.11	DP47
6	5	73.344	0.27	4.54	0.50	0.14	3.70	10.0	19.6	5.8	21.31	24.33	4.76	30	0.30	96.31	96.53	98.49	98.63	106.11	105.97	DP46
7	6	104.372	0.17	4.27	0.90	0.15	3.57	10.0	19.3	5.8	20.69	24.21	4.45	30	0.30	96.53	96.84	98.85	99.02	105.97	105.92	DP45
8	7	60.294	0.10	2.04	0.90	0.09	1.77	10.0	18.9	5.8	10.37	24.28	4.74	30	0.30	99.15	99.33	100.29	100.47	105.92	107.01	DP42
9	8	38.463	0.01	1.94	0.20	0.00	1.68	10.0	18.6	5.9	9.91	24.82	3.70	30	0.31	99.33	99.45	100.72	100.74	107.01	107.75	DP41
10	9	58.317	0.07	0.49	0.80	0.06	0.39	10.0	17.5	6.0	2.33	16.04	2.21	24	0.43	99.45	99.70	100.93	100.23	107.75	109.13	DP40
11	10	67.120	0.01	0.35	0.20	0.00	0.27	10.0	16.5	6.2	1.69	23.93	5.60	18	4.42	103.90	106.87	104.17	107.36	109.13	114.50	DP38
12	11	48.123	0.08	0.34	0.80	0.06	0.27	10.0	15.7	6.3	1.71	23.93	3.41	18	4.43	106.87	109.00	107.36	109.49	114.50	118.50	DP37
13	12	136.573	0.09	0.18	0.80	0.07	0.14	10.0	11.9	7.0	1.00	24.04	4.82	18	4.47	113.90	120.00	114.11	120.37	118.50	129.75	DP35
14	13	35.032	0.09	0.09	0.80	0.07	0.07	10.0	10.0	7.4	0.53	8.60	2.58	18	0.57	122.80	123.00	123.05	123.27	129.75	129.75	DP34
15	2	163.083	0.27	4.64	0.90	0.24	3.75	10.0	71.2	2.9	10.91	38.90	4.04	30	0.77	89.50	90.75	91.31	91.85	105.25	104.76	DP19
16	15	135.704	0.01	4.37	0.20	0.00	3.51	10.0	70.7	2.9	10.26	26.97	5.01	30	0.37	90.75	91.25	91.85	92.32	104.76	100.57	DP18
17	16	32.348	0.17	4.05	0.90	0.15	3.44	10.0	70.5	2.9	10.08	39.06	5.06	30	0.77	91.25	91.50	92.32	92.56	100.57	99.50	DP15
18	17	130.000	0.36	3.85	0.90	0.32	3.26	10.0	70.2	2.9	9.58	13.42	4.64	24	0.30	93.36	93.75	94.61	95.00	99.50	104.48	DP12
19	18	80.963	0.08	3.49	0.90	0.07	2.94	10.0	70.0	2.9	8.65	13.34	4.52	24	0.30	96.75	96.99	97.92	98.16	104.48	105.89	DP11
20	19	164.030	0.19	3.41	0.90	0.17	2.87	10.0	69.5	3.0	8.47	13.53	4.11	24	0.30	96.99	97.49	98.35	98.65	105.89	105.09	DP10
21	20	59.001	0.19	1.96	0.90	0.17	1.56	10.0	69.2	3.0	4.63	13.15	2.04	24	0.29	97.49	97.66	98.93	98.94	105.09	105.09	DP7
22	21	58.000	0.19	1.77	0.90	0.17	1.39	10.0	68.9	3.0	4.13	13.65	2.02	24	0.31	97.66	97.84	98.99	99.00	105.09	105.09	DP6

Project File: PublixStormCAD.stm

Number of lines: 52

Run Date: 1/2/2025

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
23	22	58.000	0.01	1.58	0.20	0.00	1.22	10.0	68.5	3.0	3.64	13.27	2.01	24	0.29	97.84	98.01	99.05	99.06	105.09	105.09	DP5
24	23	24.204	0.39	1.57	0.90	0.35	1.22	10.0	68.4	3.0	3.64	13.18	2.13	24	0.29	98.01	98.08	99.11	99.12	105.09	104.85	DP4
25	24	187.929	0.07	0.28	0.20	0.01	0.06	10.0	54.2	3.5	0.19	15.77	1.01	18	1.92	98.08	101.69	99.18	101.85	104.85	113.50	DP1
26	25	115.968	0.07	0.21	0.20	0.01	0.04	10.0	46.2	3.8	0.16	13.78	2.80	15	3.88	109.00	113.50	109.09	113.65	113.50	118.65	YP3
27	26	116.476	0.07	0.14	0.20	0.01	0.03	10.0	34.5	4.4	0.12	11.95	1.58	15	2.92	113.50	116.90	113.65	117.04	118.65	121.40	YP2
28	27	124.163	0.07	0.07	0.20	0.01	0.01	10.0	10.0	7.4	0.10	8.42	1.55	15	1.45	116.90	118.70	117.04	118.82	121.40	123.20	YP1
29	9	63.295	0.07	1.44	0.90	0.06	1.30	10.0	15.6	6.3	8.18	21.78	5.76	24	0.79	100.75	101.25	101.60	102.27	107.75	107.53	DP32
30	29	76.940	0.07	0.42	0.90	0.06	0.38	10.0	14.7	6.4	2.44	26.74	6.59	18	5.52	103.00	107.25	103.31	107.84	107.53	112.13	DP29
31	30	79.542	0.07	0.35	0.90	0.06	0.32	10.0	13.7	6.6	2.09	21.15	3.42	18	3.46	107.25	110.00	107.84	110.54	112.13	117.81	DP28
32	31	75.874	0.09	0.09	0.90	0.08	0.08	10.0	10.0	7.4	0.60	26.12	4.32	18	5.27	113.00	117.00	113.16	117.29	117.81	123.23	DP26
33	12	35.001	0.08	0.08	0.80	0.06	0.06	10.0	10.0	7.4	0.47	8.60	2.50	18	0.57	112.80	113.00	113.04	113.25	118.50	118.49	DP36
34	31	31.962	0.19	0.19	0.90	0.17	0.17	10.0	10.0	7.4	1.27	14.23	2.65	18	1.56	110.00	110.50	110.54	110.92	117.81	118.00	DP27
35	10	35.117	0.07	0.07	0.80	0.06	0.06	10.0	10.0	7.4	0.41	6.07	1.96	18	0.28	103.90	104.00	104.17	104.27	109.13	109.12	DP39
36	29	38.085	0.18	0.95	0.90	0.16	0.86	10.0	10.2	7.4	6.30	19.85	4.30	24	0.66	101.25	101.50	102.27	102.39	107.53	106.50	DP31
37	36	28.000	0.77	0.77	0.90	0.69	0.69	10.0	10.0	7.4	5.13	13.60	4.77	18	1.43	101.50	101.90	102.39	102.77	106.50	116.50	DP30
38	7	50.874	0.08	0.08	0.50	0.04	0.04	10.0	10.0	7.4	0.30	7.97	2.13	18	0.49	100.75	101.00	100.95	101.20	105.92	105.68	DP44
39	24	58.000	0.45	0.90	0.90	0.41	0.81	10.0	10.6	7.3	5.89	4.95	3.33	18	0.19	100.02	100.13	101.52	101.63	104.85	104.85	DP3
40	39	58.000	0.45	0.45	0.90	0.41	0.41	10.0	10.0	7.4	3.00	5.17	1.70	18	0.21	100.13	100.25	101.73	101.75	104.85	104.85	DP2
41	7	194.701	0.49	1.98	0.90	0.44	1.60	10.0	13.7	6.6	10.63	24.46	4.79	30	0.30	98.14	98.73	99.31	99.87	105.92	104.85	DP24
42	41	59.000	0.47	1.36	0.90	0.42	1.04	10.0	12.5	6.9	7.16	13.15	3.12	24	0.29	98.73	98.90	100.17	100.21	104.85	104.85	DP22
43	42	58.000	0.44	0.89	0.90	0.40	0.62	10.0	11.8	7.0	4.34	13.65	1.97	24	0.31	98.90	99.08	100.31	100.33	104.85	104.85	DP21
44	43	58.000	0.45	0.45	0.50	0.23	0.23	10.0	10.0	7.4	1.67	13.27	0.85	24	0.29	99.08	99.25	100.37	100.37	104.85	104.85	DP20

Project File: PublixStormCAD.stm

Number of lines: 52

Run Date: 1/2/2025

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
45	41	108.169	0.13	0.13	0.90	0.12	0.12	10.0	10.0	7.4	0.87	25.11	1.65	18	4.87	98.73	104.00	100.17	104.35	104.85	109.18	DP23
46	3	25.237	0.06	0.06	0.90	0.05	0.05	10.0	10.0	7.4	0.40	6.23	2.60	15	0.79	98.00	98.20	98.21	98.45	106.06	102.75	DP50
47	20	60.544	1.10	1.10	0.90	0.99	0.99	10.0	10.0	7.4	7.34	16.06	3.97	24	0.43	97.49	97.75	98.93	98.71	105.09	104.50	DP8
48	20	51.348	0.16	0.16	0.90	0.14	0.14	10.0	10.0	7.4	1.07	8.10	1.79	18	0.51	97.49	97.75	98.93	98.14	105.09	104.50	DP9
49	16	33.836	0.17	0.31	0.20	0.03	0.06	10.0	18.0	6.0	0.37	9.78	2.44	18	0.74	96.00	96.25	96.20	96.47	100.57	100.75	DP17
50	4	117.359	2.34	2.34	0.90	2.11	2.11	10.0	10.0	7.4	15.60	14.30	4.97	24	0.34	95.60	96.00	97.60	98.08	106.36	101.50	DP48
51	17	55.335	0.03	0.03	0.90	0.03	0.03	10.0	10.0	7.4	0.20	10.81	1.03	18	0.90	91.50	92.00	92.56	92.16	99.50	96.95	DP13
52	49	56.500	0.14	0.14	0.20	0.03	0.03	10.0	10.0	7.4	0.21	27.28	1.59	18	5.75	96.25	99.50	96.47	99.67	100.75	104.25	DP16

Project File: PublixStormCAD.stm | Number of lines: 52 | Run Date: 1/2/2025

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

Appendix B
Lake Hills Main Blvd. & Mass Grading Stormwater Report

Stormwater Report

FOR

Lake Hills Main Blvd & Mass Grading

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS

Prepared by:

Madden, Moorhead, & Stokes, LLC.
431 E. Horatio Avenue, Suite 260
Maitland, FL 32751

November, 2024

David A. Stokes, P.E. #66527
Certificate of Authorization No. EB-0007723

Documents included herein which have been prepared by professionals other than Madden, Moorhead, and Stokes, Inc. are not covered under the above registered engineer's signature and seal

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Appendices

Introduction

The proposed project, Lake Hills Mass Infrastructure, is in Howey-In-The-Hills, Florida. The project is located northwest of the CR48 and SR19 intersection. The development consists of a spine road to future development. The analysis provided in this report supports that the proposed project follows the stormwater management requirements of the SJRWMD and Howey-In-The-Hills, FL.

Existing Conditions

The undeveloped site is +/- 210 acres with grazing grassland of good condition. The site has a combination soils. There are 6 pre-development basins. Basin Pre-1 is the north side of the site adjacent to Lake Harris. Basin Pre-2 is the western corner that goes to an onsite wetland W-3. Basin Pre-3 is a portion of CR48 that goes to an onsite wetland W-4. Basin Pre-4 in along the southern property boundary and goes to onsite wetland W-4. Basin Pre-5 goes to the onsite wetlands W-5/6. Basin Pre-6 goes to an onsite depression. Please see Appendices B through F for the predevelopment stormwater analysis.

Proposed Conditions

The proposed development consists of ten drainage basins. Pond 1 is a 100yr/24hr retention pond that will service a portion of our onsite drainage and offsite area. Pond 2 and Pond 3 are interconnected wet ponds that outfall into Pond 10. Pond 4 and Pond 10 are interconnected wet ponds and outfall into Lake Harris. Pond 5 is a dry pond that has an outfall to Pond 10. Pond 7 is a wet pond that outfalls to Lake Harris. Pond 8 is a wet pond that outfalls to Lake Harris. Pond 9 is a wet pond that outfalls to Lake Harris. Pond 12 is a wet pond that outfalls to Lake Harris. All ponds are designed in accordance with the town of Howey-In-The-Hills and SJRWMD standards. Refer to Appendices G through K for the post development stormwater analysis. A summary of post stormwater analysis is presented in Appendix A.

Stormwater Management Criteria

Attenuation:

SJRWMD:

The post development maximum rate of discharge cannot exceed the predevelopment maximum rate for the 25yr/24hr storm event and Mean/24hr storm event.

Pollution Abatement Volume:

Dry Pond:

In accordance with SJRWMD design criteria, the pollution abatement volume criteria is 1.25 inches times impervious area in addition to 0.5 inches over the total area.

Wet Pond:

In accordance with SJRWMD design criteria, the pollution abatement volume criteria is 2.5” over the impervious areas or 1” over the entire area, whichever is greater.

Wet Pond Drawdown:

SJRWMD:

No more than half the treatment volume should be discharged in the first 24-30 hours after the storm event.

Permanent Pool Volume:

SJRWMD:

The permanent pool shall be sized to provide at least a 14-day average residence time

during the wet season (June - October). As an option to maintaining a littoral zone an additional 50% of the appropriate permanent pool volume is required.

Nutrient Analysis

The ultimate receiving water body for this project is Lake Harris. Lake Harris is impaired for nutrients. Please see Appendix M for Pre/Post Nutrient Analysis.

100-Year Floodplain

Flood plain information was obtained from the Flood Insurance Rate Map (FIRM); map #12069C0485E effective date December 18, 2012. The property lies within Flood Zone 'X' – and is not located within the 100 year flood hazard area with a portion of the property lying within Flood Zone 'A' & 'AE' and is in a special flood hazard area subject to inundation by the 1% annual chance flood.

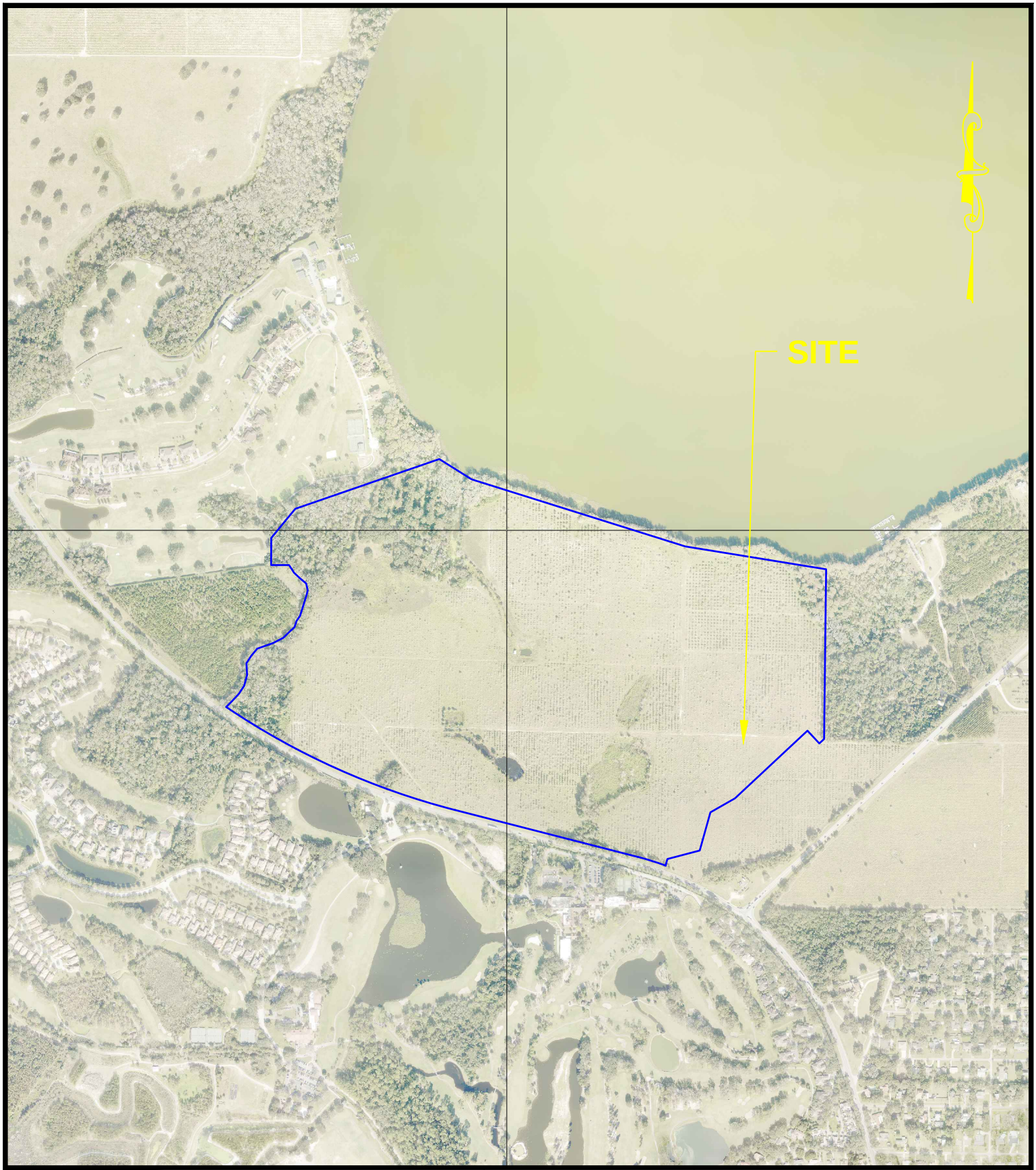
Tailwater Discussion

The tailwater is Lake Harris along the north property boundary. The tailwater elevation used for this analysis was 63.32, which is near the existing wetland line.

Secondary Drainage System

The secondary drainage system was modeled with the Storm Sewers program. The secondary drainage calculations are in Appendix N.

EXHIBITS



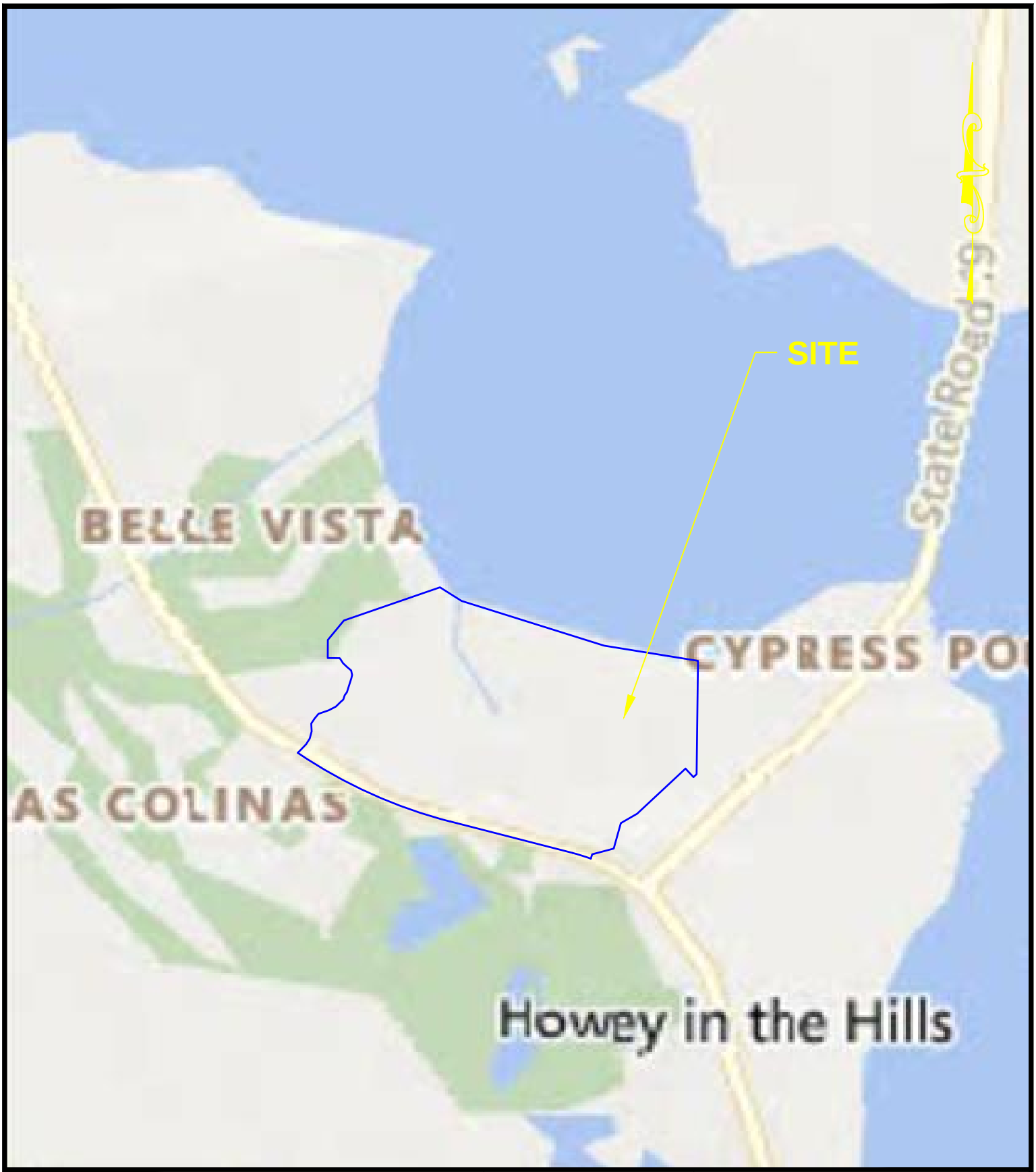
MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. HORATIO AVE., STE. 260, MAITLAND, FL 32751 * (407) 629-8330

JOB NO.	23019
SEC. 22, TWP. 20, RANGE 25	
DRAWN BY:	KAC
APPROVED BY:	DAS
DATE:	11/06/2024
Scale:	1" = 1000'

LAKE HILLS

AERIAL MAP

GOOGLE MAPS



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JOB NO.	23019
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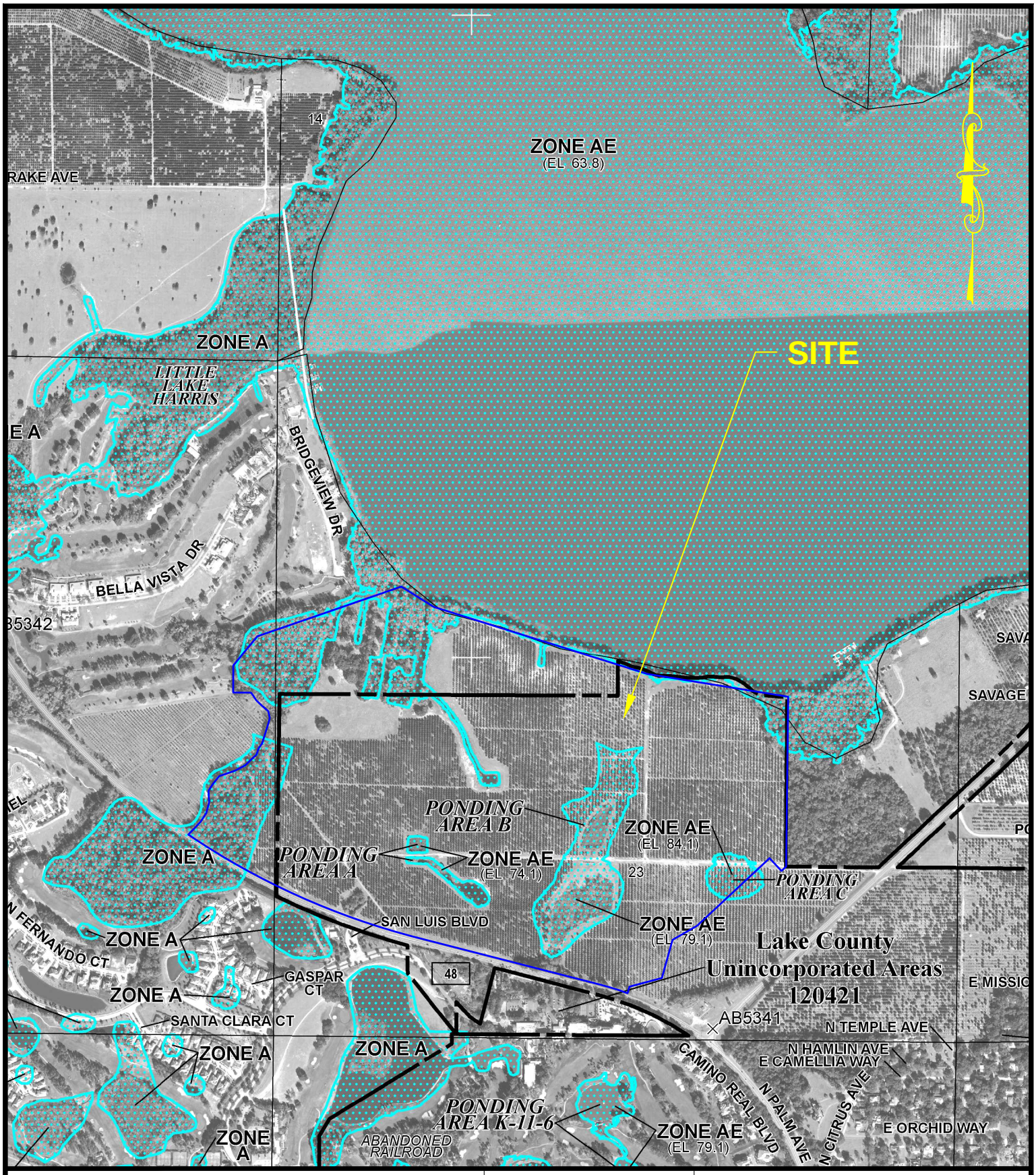
DRAWN BY:	KAC
APPROVED BY:	DAS
DATE:	11/06/2024
Scale:	1" = 1500'

LAKE HILLS

LOCATION MAP

GOOGLE MAPS



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APPROVED BY:	DAS
DATE:	11/06/2024
Scale:	1" = 1000'

LAKE HILLS

FLOOD INSURANCE RATE MAP
LAKE COUNTY, FLORIDA
MAP #12069C0485E
EFFECTIVE DATE DEC. 18, 2012

Appendix A
Summary Sheet

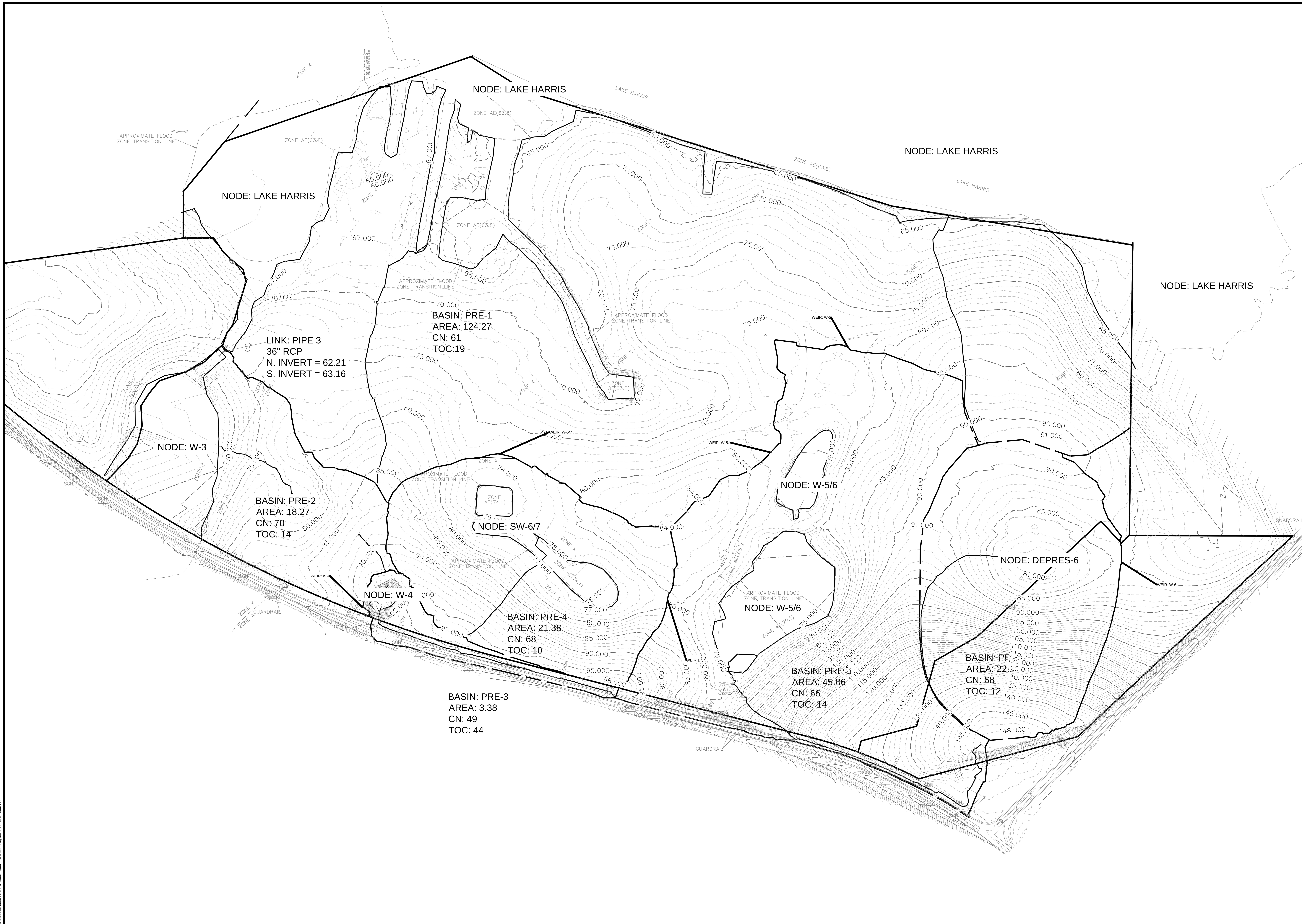
Pre vs. Post Development Discharge

Node	Storm Event	Pre-Development Discharge (cfs)	Post-Development Discharge (cfs)	Pre/Post Difference (cfs)
Lake Harris	25yr/24hr	333.54	235.04	+98.5
Lake Harris	Mean/24hr	93.63	9.72	+83.91

Post-Development Pond Stages

Pond	**Mean Annual Stage (ft)**	**10yr/24hr Stage(ft)**	**25yr/24hr Stage (ft)**	**100yr/24hr Stage(ft)**	**Top of Pond (ft)**
PD1	91.14	82.52	83.84	86.17	90.00
PD2	75.70	76.01	76.56	77.91	78.00
PD3	75.70	75.99	76.42	77.59	78.00
PD4	67.48	67.73	68.17	68.94	69.00
PD5	80.21	80.53	80.94	81.87	83.00
PD7	67.29	67.66	68.32	69.9	70.00
PD8	67.14	67.44	67.78	68.14	69.00
PD9	67.24	67.70	68.13	69.04	71.00
PD10	67.47	67.72	68.12	68.69	69.00
PD12	66.53	66.87	67.34	68.52	70.00

Appendix B
Predevelopment Basin Map



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431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

SITE PLAN
FOR
23019-LAKE HILLS - STREET A
LAKE COUNTY FLORIDA

READER & PARTNERS, LLC
5850 TB LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
	DATE	REVISIONS

KATLYN ASHLEY CROWELL
LICENSE
NO. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Katlyn Ashley Crowell, PE on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

ENGINEER OF RECORD

JOB #	23019
DATE:	6/28/24
DATUM:	NAVD 88
DESIGNED BY:	XXXX
DRAWN BY:	XXXX
APPROVED BY:	XXXX

C004

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Appendix C
Predevelopment Hydrology Calculations

Lake Hills
Predevelopment Hydrology **Analyzed: 6/25/24**

Basin PRE-1	103.42 Ac.
Basin PRE-2	12.76 Ac.
Basin PRE-3	3.19 Ac.
Basin PRE-4	21.38 Ac.
Basin PRE-5	45.86 Ac.
Basin PRE-6	22.88 Ac.
Total Basin Area:	209.49 Ac.

CURVE NUMBER CALCULATION:

Basin PRE-1

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Pasture, grassland, or range	A	49	60.09	2944.4
Woods	A/D	79	14.16	1118.6
Woods-grass combination	B	58	17.33	1005.1
Pasture, grassland, or range	B/D	80	11.84	947.2
TOTAL AREA			103.42	6015.4
			CN =	**58**

Basin PRE-2

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Pasture, grassland, or range	A	49	5.46	267.54
Pasture, grassland, or range	A/D	80	7.13	570.4
Woods	A/D	79	0.17	13.43
TOTAL AREA			12.76	851.4
			CN =	**67**

Basin PRE-3

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Pasture, grassland, or range	A	49	3.19	156.31
TOTAL AREA			3.19	156.3
			CN =	**49**

Basin PRE-4

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Pasture, grassland, or range	A	68	14.05	955.4
Pasture, grassland, or range	B	61	5.2	317.2
TOTAL AREA			19.25	1272.6
			CN =	**66**

Basin PRE-5

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Pasture, grassland, or range	A	68	34.53	2348.04
Pasture, grassland, or range	B	61	5.44	331.84
TOTAL AREA			39.97	2679.9
			CN =	**67**

Basin PRE-6 **Total**

Lake Hills
Predevelopment Hydrology **Analyzed: 6/25/24**

Land Use/Vegetation	Hydric Group	CN	Area (Ac.)	CN * Area
Pasture, grassland, or range	A	68	22.88	1555.84
TOTAL AREA			22.88	1555.8
			CN =	**68**

Segment	PRE-1	PRE-2	PRE-3	PRE-4	PRE-5	PRE-6
Total flow length, ft.	1276	1021	1255	651	1890	1270
Sheet Flow						
Manning's n	0.13	0.13	0.13	0.13	0.13	0.13
Flow length, ft.	100	100	100	100	100	100
2 yr/24 hour rainfall, in.	4.5	4.5	4.5	4.5	4.5	4.5
Start elevation, ft.	87	92	96	96.05	148	148
End elevation, ft.	86	90.4	95.96	93.15	134.5	145.7
Slope, ft/ft	0.01000	0.01600	0.00040	0.02900	0.13500	0.02300
T_t, hour	0.16	0.13	0.59	0.11	0.06	0.12
Shallow Concentrated Flow						
Flow length, ft.	1176	921	1155	551	1790	1170
Start elevation, ft.	86	90.4	95.96	93.15	134.5	145.7
End elevation, ft.	65	68	74	75	75	81
Slope, ft/ft	0.01786	0.02432	0.01901	0.03294	0.03324	0.05530
Average velocity, ft/s	2.2	2.45	2.2	2.9	2.9	3.8
T_t, hour	0.148	0.104	0.146	0.053	0.171	0.086
Time of concentration, hr.	0.31	0.24	0.73	0.16	0.23	0.20
Time of concentration, min.	18.6	14.3	44.0	9.5	13.7	12.1
Time of Concentration For Calculations (min.):	**19**	**14**	**44**	**10**	**14**	**12**

Lake Hills
Predevelopment Hydrology **Analyzed: 6/25/24**

Basin Lake Harris	18.80	Ac.
Basin W-3	5.50	Ac.
Basin W-4	0.19	Ac.
Basin S/W 6-7	2.13	Ac.
Basin W-5/6	5.89	Ac.
Total Basin Area:	32.51	Ac.

CURVE NUMBER CALCULATION:

Basin Lake Harris

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Wetlands	N/A	98	18.80	1842.4
TOTAL AREA			18.80	1842.4
			CN =	**98**

Basin W-3

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Wetlands	N/A	98	5.5	539
TOTAL AREA			5.50	539.0
			CN =	**98**

Basin W-4

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Wetlands	N/A	98	0.19	18.62
TOTAL AREA			0.19	18.6
			CN =	**98**

Basin S/W 6-7

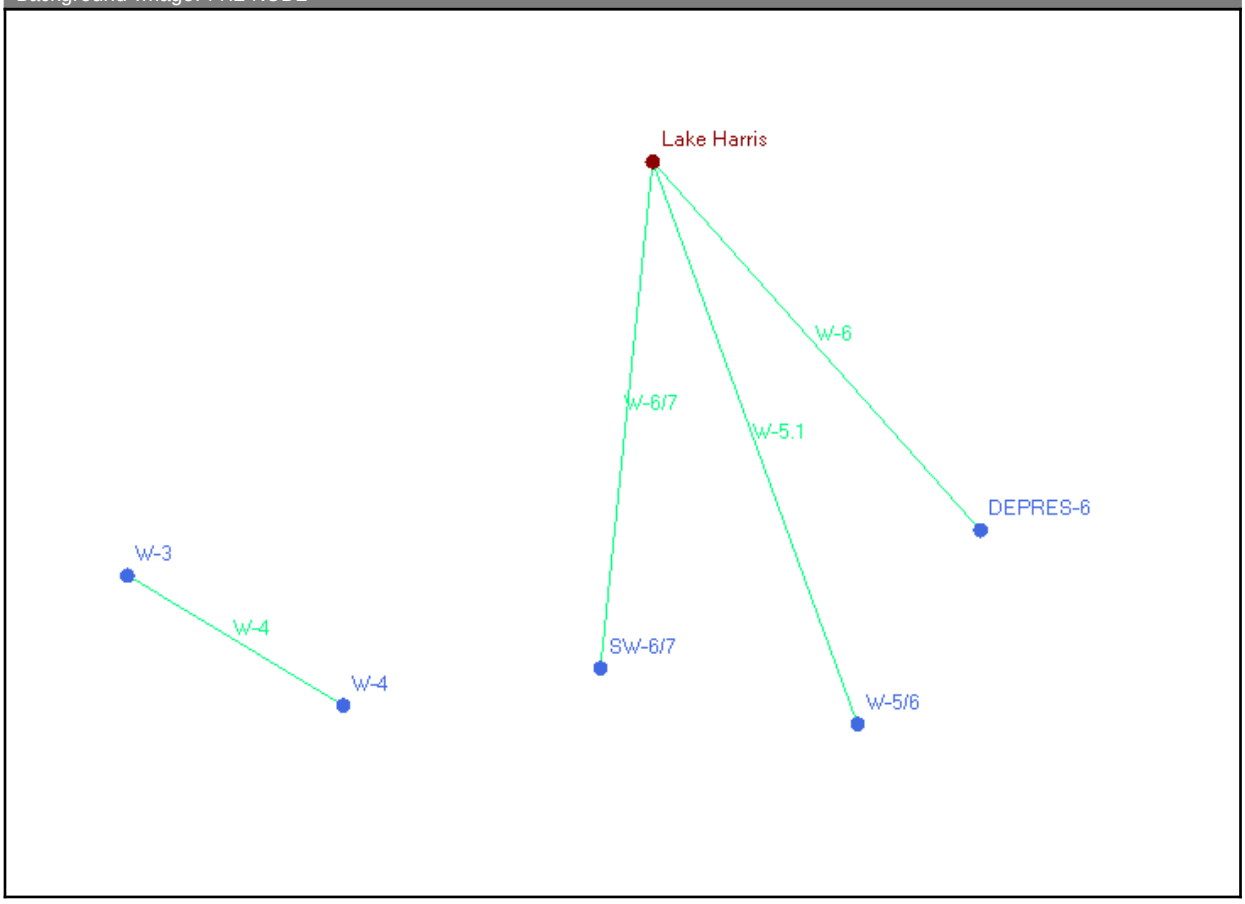
Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Wetlands	N/A	98	2.13	208.74
TOTAL AREA			2.13	208.7
			CN =	**98**

Basin W-5/6

Land Use/Vegetation	Hydric Group	CN	Total Area (Ac.)	CN * Area
Wetlands	N/A	98	5.89	577.22
TOTAL AREA			5.89	577.2
			CN =	**98**

Appendix D
Predevelopment ICPR Node Diagram

Background Image: PRE NODE



Appendix E
Predevelopment ICPR Input Data

Simple Basin: Pre-1

Scenario:	PREDEVELOPMENT
Node:	Lake Harris
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	19.0000 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	124.2700 ac
Curve Number:	61.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Pre-2

Scenario:	PREDEVELOPMENT
Node:	W-3
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.0000 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	18.2700 ac
Curve Number:	70.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Pre-3

Scenario:	PREDEVELOPMENT
Node:	W-4
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	44.0000 min
Max Allowable Q:	99999.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	3.3800 ac
Curve Number:	49.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Pre-4

Scenario:	PREDEVELOPMENT
Node:	SW-6/7
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	21.3800 ac
Curve Number:	68.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Pre-5

Scenario:	PREDEVELOPMENT
Node:	W-5/6
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.0000 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	45.8600 ac
Curve Number:	66.0
% Impervious:	0.00
% DCIA:	0.00

% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Pre-6

Scenario: PREDEVELOPMENT
Node: DEPRES-6
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 12.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 22.8800 ac
Curve Number: 68.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Node: DEPRES-6

Scenario: PREDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 81.00 ft
Warning Stage: 85.00 ft

Stage [ft]	Area [ac]	Area [ft2]
81.00	0.4300	18731
82.00	1.0200	44431
83.00	1.6600	72310
84.00	2.6900	117176
85.00	3.7600	163786

Comment:

Node: Lake Harris

Scenario: PREDEVELOPMENT

Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 63.80 ft
Warning Stage: 64.80 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	63.80
0	0	0	12.0000	63.80
0	0	0	24.0000	63.80
0	0	0	36.0000	63.80

Comment:

Node: SW-6/7

Scenario: PREDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 75.00 ft
Warning Stage: 77.00 ft

Stage [ft]	Area [ac]	Area [ft2]
75.00	0.5300	23087
76.00	2.1800	94961
77.00	4.3800	190793

Comment:

Node: W-3

Scenario: PREDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 66.00 ft
Warning Stage: 71.00 ft

Stage [ft]	Area [ac]	Area [ft2]
66.00	0.0100	436
67.00	0.0300	1307
68.00	0.7600	33106
69.00	2.3200	101059
70.00	4.0300	175547
71.00	5.7700	251341

Comment:

Node: W-4

Scenario: PREDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 75.00 ft
Warning Stage: 90.00 ft

Stage [ft]	Area [ac]	Area [ft2]
75.00	0.0200	871
76.00	0.0700	3049
77.00	0.1000	4356
78.00	0.1300	5663
79.00	0.1600	6970
80.00	0.1900	8276
81.00	0.2500	10890
82.00	0.2600	11326
85.00	0.3400	14810
87.00	0.3900	16988
88.00	0.4200	18295
89.00	0.4500	19602
90.00	0.4900	21344

Comment:

Node: W-5/6

Scenario: PREDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 75.00 ft
Warning Stage: 79.00 ft

Stage [ft]	Area [ac]	Area [ft2]
75.00	5.1700	225205
76.00	6.7400	293594
77.00	7.8500	341946
78.00	10.3000	448668
79.00	14.2300	619859

Comment:

Weir Link: W-4

Scenario: PREDEVELOPMENT
From Node: W-4
To Node: W-3
Link Count: 1

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Trapezoidal
Invert:	90.00 ft
Control Elevation:	90.00 ft
Max Depth:	9999.00 ft
Extrapolation Method:	Normal Projection
Bottom Width:	55.23 ft
Left Slope:	5.000 (h:v)
Right Slope:	5.000 (h:v)

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: W-5

Scenario:	PREDEVELOPMENT
From Node:	W-5/6
To Node:	Lake Harris
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	78.10 ft
Control Elevation:	78.10 ft
Cross Section:	W-5

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: W-5.1

Scenario:	PREDEVELOPMENT
From Node:	W-5/6
To Node:	Lake Harris
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	78.00 ft
Control Elevation:	78.00 ft
Cross Section:	W-5.1

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: W-6

Scenario:	PREDEVELOPMENT	**Bottom Clip**	
From Node:	DEPRES-6	Default:	0.00 ft
To Node:	Lake Harris	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	85.00 ft	**Discharge Coefficients**	
Control Elevation:	85.00 ft	Weir Default:	2.800
Cross Section:	W-6	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W-6/7

Scenario:	PREDEVELOPMENT	**Bottom Clip**	
From Node:	SW-6/7	Default:	0.00 ft
To Node:	Lake Harris	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	76.10 ft	**Discharge Coefficients**	
Control Elevation:	76.10 ft	Weir Default:	2.800
Cross Section:	W-6/7	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Simulation: 100YR-24HR

Scenario:	PREDEVELOPMENT
Run Date/Time:	6/28/2024 8:44:44 AM
Program Version:	ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

Hydrology [sec]	Surface Hydraulics

		[sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~SCSII-24
Rainfall Amount: 10.40 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 10YR-24HR

Scenario: PREDEVELOPMENT
Run Date/Time: 6/28/2024 8:45:35 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain: Global

		Opt:	
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	6.03 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 25YR-24HR

Scenario: PREDEVELOPMENT
Run Date/Time: 6/28/2024 8:46:22 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources		Lookup Tables	
Rainfall Folder:		Boundary Stage Set:	
		Extern Hydrograph Set:	
Unit Hydrograph Folder:		Curve Number Set:	
		Green-Ampt Set:	
		Vertical Layers Set:	
		Impervious Set:	

Tolerances & Options			
Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	7.54 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 25YR-96HR

Scenario:	PREDEVELOPMENT
Run Date/Time:	6/28/2024 8:47:10 AM
Program Version:	ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	100.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~SCSII-24
Rainfall Amount: 10.60 in
Storm Duration: 96.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: MEAN

Scenario: PREDEVELOPMENT

Run Date/Time: 6/28/2024 8:49:42 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: Global

Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	4.18 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Appendix F
Predevelopment ICPR Node Min/Max Report

Node Max Conditions [PREDEVELOPMENT]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
DEPRES-6	100YR-24HR	85.00	85.20	0.0010	128.91	9.11	163786
Lake Harris	100YR-24HR	64.80	63.80	0.0000	595.17	0.00	0
SW-6/7	100YR-24HR	77.00	76.49	0.0006	132.31	115.04	141493
W-3	100YR-24HR	71.00	71.23	0.0010	110.43	0.00	251341
W-4	100YR-24HR	90.00	82.40	0.0010	4.69	0.00	11791
W-5/6	100YR-24HR	79.00	78.07	0.0008	250.68	6.12	461043
DEPRES-6	10YR-24HR	85.00	84.28	0.0010	53.46	0.00	130256
Lake Harris	10YR-24HR	64.80	63.80	0.0000	190.80	0.00	0
SW-6/7	10YR-24HR	77.00	76.25	0.0006	56.52	26.16	119140
W-3	10YR-24HR	71.00	70.08	0.0010	52.63	0.00	181889
W-4	10YR-24HR	90.00	78.96	0.0010	1.25	0.00	6920
W-5/6	10YR-24HR	79.00	76.77	0.0006	109.75	0.00	330687
DEPRES-6	25YR-24HR	85.00	84.97	0.0010	78.65	0.00	162207
Lake Harris	25YR-24HR	64.80	63.80	0.0000	333.54	0.00	0
SW-6/7	25YR-24HR	77.00	76.35	0.0006	81.78	56.35	128195
W-3	25YR-24HR	71.00	70.51	0.0010	72.08	0.00	214469
W-4	25YR-24HR	90.00	80.27	0.0010	2.26	0.00	8979
W-5/6	25YR-24HR	79.00	77.35	0.0006	156.76	0.00	379364
DEPRES-6	MEAN	85.00	83.25	0.0010	25.46	0.00	83605
Lake Harris	MEAN	64.80	63.80	0.0000	93.63	0.00	0
SW-6/7	MEAN	77.00	76.14	0.0007	28.34	2.44	108000
W-3	MEAN	71.00	69.47	0.0010	30.38	0.00	136435
W-4	MEAN	90.00	77.28	0.0010	0.67	0.00	4728
W-5/6	MEAN	79.00	76.04	0.0005	56.99	0.00	295582

Appendix G
Postdevelopment Basin Map

H:\Data\23MMS0190 Lake Hills PD\Stormwater\POST Basin.dwg October 15, 2024 2:11 PM

MADDEN
MOORHEAD & STOKES, LLC
CIVIL ENGINEERS
431 E. Horatio Avenue
Suite 260
Maitland, Florida 32751
(407) 629-8330
CA# 0007723

POSTDEVELOPMENT BASIN MAP
FOR
LAKE HILLS MASS INFRASTRUCTURE
LAKE COUNTY FLORIDA

READERS & PARTNERS, LLC
5850 TB LEE BOULEVARD, SUITE 200
ORLANDO, FL 32822
(407) 856-4899

	DATE	REVISIONS
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

KATLYN ASHLEY CROWELL
LICENSE
NO. PE95331
STATE OF FLORIDA
PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Katlyn Ashley Crowell, PE on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

ENGINEER OF RECORD

JOB #	23019
DATE:	10/15/24
DATUM:	NAVD 88
DESIGNED BY:	KAC
DRAWN BY:	JSK
APPROVED BY:	KAC

POST-1

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Appendix H
Postdevelopment Hydrology Calculations

Project:	**Lake Hills**
Basin:	**Post-1**
Pond:	**Pond-1**
Basin Area:	**27.25 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
7.93	Proposed Pavement/Sidewalk (Commercial)	98
2.81	Proposed Pavement/Sidewalk (Residential)	98
0.92	Impervious Lot (Residential)	98
6.38	Outparcels (80% Impervious)	98
1.41	Impervious Lot (Commercial)	98
5.85	Pervious/Landscape (HSG-A)	39
1.94	Pond Surface Area	100
Composite CN		85

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		2.271 AF
1.25" over impervious area + 0.5" over basin area		3.162 AF
	Design WQ	3.162 AF
100Y/24H Volume		21.950 AF
Controlling Volume:		21.950 AF
Stage at Control Elevation:		86.56 FT
Proposed Weir Elevation:		N/A

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
90.00	3.81	3.724	34.030
89.00	3.64	3.553	30.306
88.00	3.47	3.384	26.753
87.00	3.30	3.217	23.369
86.00	3.13	3.054	20.152
85.00	2.97	2.893	17.098
84.00	2.81	2.736	14.205
83.00	2.66	2.583	11.469
82.00	2.51	2.435	8.886
81.00	2.36	2.290	6.451
80.00	2.22	2.149	4.161
79.00	2.08	2.012	2.012
78.00	1.94	0.000	0.000

Project:	**Lake Hills**		
Basin:	**Post-2**		
Pond:	**Pond-2**		
Basin Area:	**20.50 ac**		

Land Use Table:

Area (ac)	*Land Use*	*CN*
1.85	Proposed Pavement/Sidewalk	98
6.65	Impervious Lot	98
10.78	Pervious/Landscape (HSG-A)	39
1.23	Wet Pond Water Surface	100
Composite CN		67

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		1.708 AF
2.5" over impervious		1.769 AF
	Design WQ	1.769 AF
Treatment Volume Elevation		75.35 FT
Proposed Weir Elevation:		See Pond 2 and Pond 3 Calcs

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
78.00	1.69	1.631	5.819
77.00	1.57	1.512	4.189
76.00	1.45	1.395	2.677
75.00	1.34	1.282	1.282
74.00	1.23	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
74.00	1.23	1.171	5.036
73.00	1.12	1.063	3.865
72.00	1.01	0.985	2.802
71.00	0.96	1.817	1.817
69.00	0.86	0.000	0.000
		0.000	0.000
			0.000

Permanent Pool Volume Calculation

Compound C Value*	0.53
Wet Season Rainfall	32.00 IN
PPV Required	2.65 AF
PPV Provided	5.04 AF

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	4.1 FT

Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	28 DAYS

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Project:	**Lake Hills**
Basin:	**Post-3**
Pond:	**Pond-3**
Basin Area:	**13.23 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
1.55	Proposed Pavement/Sidewalk	98
5.99	Impervious Lot	98
4.98	Pervious/Landscape (HSG-A)	39
0.71	Wet Pond Water Surface	100
Composite CN		76

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		1.103 AF
2.5" over impervious		1.571 AF
	Design WQ	1.571 AF
Treatment Volume Elevation:		75.93 FT
Proposed Weir Elevation:		See Pond 2 and Pond 3 Calcs

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
78.00	1.15	1.089	3.692
77.00	1.03	0.975	2.603
76.00	0.92	0.866	1.628
75.00	0.81	0.762	0.762
74.00	0.71	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
74.00	0.71	0.663	2.601
73.00	0.61	0.569	1.938
72.00	0.52	0.500	1.369
71.00	0.48	0.869	0.869
69.00	0.39	0.000	0.000

Permanent Pool Volume Calculation

Compound C Value*	0.65
Wet Season Rainfall	32.00 IN
PPV Required	2.10 AF
PPV Provided	2.60 AF

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	3.7 FT

Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	18 DAYS

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Project:	**Lake Hills**		
Pond:	**Pond-2 and Pond-3**		
Basin Area:	**33.73 ac**		
SJRWMD Water Quality Presumptive Criteria:			
1" over the basin area:			2.811 AF
2.5" over impervious			3.340 AF
		Design WQ	3.340 AF
Treatment Volume Elevation:			75.57 FT
Proposed Weir Elevation:			75.60 FT

Pond 2 Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
78.00	1.69	1.631	5.819
77.00	1.57	1.512	4.189
76.00	1.45	1.395	2.677
75.00	1.34	1.282	1.282
74.00	1.23	0.000	0.000

Pond 3 Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
78.00	1.15	1.089	3.692
77.00	1.03	0.975	2.603
76.00	0.92	0.866	1.628
75.00	0.81	0.762	0.762
74.00	0.71	0.000	0.000

Pond 2/3 Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
78.00	2.84	2.720	9.511
77.00	2.60	2.486	6.791
76.00	2.37	2.261	4.305
75.00	2.15	2.044	2.044
74.00	1.94	0.000	0.000

Project:	**Lake Hills**
Basin:	**Post-4**
Pond:	**Pond-4**
Basin Area:	**9.49 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
1.19	Proposed Pavement/Sidewalk	98
4.09	Impervious Lot	98
3.92	Pervious/Landscape (HSG-A)	39
0.29	Wet Pond Water Surface	100
Composite CN		74

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		0.790 AF
2.5" over impervious		1.099 AF
	Design WQ	1.099 AF
Treatment Volume Elevation:		67.55 FT
Proposed Weir Elevation:		See Pond 4 and Pond 10 Calcs

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
69.00	0.56	0.520	1.668
68.00	0.48	0.448	1.148
67.00	0.41	0.381	0.700
66.00	0.35	0.319	0.319
65.00	0.29	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
65.00	0.29	0.261	1.145
64.00	0.23	0.209	0.884
63.00	0.18	0.173	0.675
62.00	0.16	0.502	0.502
58.00	0.09	0.000	0.000

Permanent Pool Volume Calculation

Compound C Value*	0.62
Wet Season Rainfall	32.00 IN
PPV Required	1.43 AF
PPV Provided	See Pond 4 and Pond 10 Calcs

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	See Pond 4 and Pond 10 Calcs

Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	See Pond 4 and Pond 10 Calcs

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Project:	**Lake Hills**
Basin:	**Post-10**
Pond:	**Pond-10**
Basin Area:	**11.84 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
4.45	Proposed Pavement/Sidewalk	98
2.70	Impervious Lot	98
4.03	Pervious/Landscape (HSG-A)	39
0.65	Wet Pond Water Surface	100
Composite CN		78

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		0.986 AF
2.5" over impervious		1.490 AF
	Design WQ	1.490 AF
Treatment Volume Elevation:		67.55 FT
Proposed Weir Elevation:		See Pond 4 and Pond 10 Calcs

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
69.00	0.93	0.896	3.152
68.00	0.86	0.822	2.256
67.00	0.79	0.751	1.434
66.00	0.72	0.683	0.683
65.00	0.65	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
65.00	0.65	0.619	3.476
64.00	0.59	0.558	2.857
63.00	0.53	0.514	2.299
62.00	0.50	1.785	1.785
58.00	0.39	0.000	0.000

Permanent Pool Volume Calculation

Compound C Value*	0.68
Wet Season Rainfall	32.00 IN
PPV Required	1.96 AF
PPV Provided	See Pond 4 and Pond 10 Calcs

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	See Pond 4 and Pond 10 Calcs

Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	See Pond 4 and Pond 10 Calcs

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Project:	**Lake Hills**		
Pond:	**Pond 4 & Pond-10**		
Basin Area:	**21.32 ac**		
SJRWMD Water Quality Presumptive Criteria:			
1" over the basin area:			1.777 AF
2.5" over impervious			2.589 AF
		Design WQ	2.589 AF
Treatment Volume Elevation:			67.36 FT
Proposed Weir Elevation:			67.40 FT
Pond 4 Stage/Storage Table:			
Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
69.00	0.56	0.520	1.668
68.00	0.48	0.448	1.148
67.00	0.41	0.381	0.700
66.00	0.35	0.319	0.319
65.0 NWL	0.29	0.261	1.145
64.00	0.23	0.209	0.884
63.00	0.18	0.173	0.675
62.00	0.16	0.502	0.502
58.00	0.09	0.000	0.000
Pond 10 Stage/Storage Table:			
Stage (FT)	Area (AC)	Δ Vol. (AF)	Σ Vol. (AF)
69.00	0.93	0.896	3.152
68.00	0.86	0.822	2.256
67.00	0.79	0.751	1.434
66.00	0.72	0.683	0.683
65.0 NWL	0.65	0.619	3.476
64.00	0.59	0.558	2.857
63.00	0.53	0.514	2.299
62.00	0.50	1.785	1.785
58.00	0.39	0.000	0.000
Pond 10 Stage/Storage Table:			
Stage (FT)	Area (AC)	Δ Vol. (AF)	Σ Vol. (AF)
69.00	1.49	1.42	4.82
68.00	1.34	1.27	3.40
67.00	1.20	1.13	2.13
66.00	1.06	1.00	1.00
65.0 NWL	0.94	0.88	4.62
64.00	0.82	0.77	3.74
63.00	0.71	0.69	2.97
62.00	0.66	2.29	2.29
58.00	0.48	0.000	0.00
Permanent Pool Volume Calculation			
Compound C Value*			0.65
Wet Season Rainfall			32.00 IN
PPV Required			3.39 AF
PPV Provided			4.62 AF
Mean Depth Calculation			
Mean Depth (between 2-8 feet, ok)			4.9 FT
Residence Time Calculation			
Required Residence Time			14.0 DAYS
Provided Residence Time			20 DAYS
*C value is 0.95 times impervious plus 0.15 times pervious over the entire area			

Project:	**Lake Hills**
Basin:	**Post-5**
Pond:	**Pond-5**
Basin Area:	**33.01 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
3.41	Proposed Pavement/Sidewalk	98
12.54	Impervious Lot	98
13.26	Pervious/Landscape (HSG-A)	39
3.80	Pond Surface Area	100
Composite CN		75

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		2.750 AF
1.25" over impervious area + 0.5" over basin area		3.037 AF
	Design WQ	3.037 AF
Stage at Control Elevation:		79.78 FT
Proposed Weir Elevation:		80.00 FT

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
83.00	4.58	4.477	16.730
82.00	4.38	4.279	12.253
81.00	4.18	4.084	7.974
80.00	3.99	3.891	3.891
79.00	3.80	0.000	0.000

Project:	**Lake Hills**
Basin:	**Post-7**
Pond:	**Pond-7**
Basin Area:	**35.50 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
4.43	Proposed Pavement/Sidewalk	98
13.50	Impervious Lot	98
16.03	Pervious/Landscape (HSG-A)	39
1.55	Wet Pond Water Surface	100
Composite CN		71

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		2.958 AF
2.5" over impervious		3.735 AF
	Design WQ	3.735 AF
Treatment Volume Elevation:		67.22 FT
Proposed Weir Elevation:		68.00 FT

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
70.00	2.26	2.187	9.470
69.00	2.11	2.036	7.283
68.00	1.96	1.888	5.247
67.00	1.81	1.746	3.359
66.00	1.68	1.612	1.612
65.00	1.55	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
65.00	1.55	1.483	6.478
64.00	1.42	1.359	4.995
63.00	1.30	1.269	3.636
62.00	1.24	2.367	2.367
60.00	1.13	0.000	0.000

Permanent Pool Volume Calculation

Compound C Value*	0.59
Wet Season Rainfall	32.00 IN
PPV Required	5.10 AF
PPV Provided	6.48 AF

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	4.2 FT

Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	19 DAYS

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Project:	**Lake Hills**
Basin:	**Post-8**
Pond:	**Pond-8**
Basin Area:	**16.24 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
1.86	Proposed Pavement/Sidewalk	98
7.78	Impervious Lot	98
6.09	Pervious/Landscape (HSG-A)	39
0.51	Wet Pond Water Surface	100
Composite CN		76

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		1.354 AF
2.5" over impervious		2.008 AF
	Design WQ	2.008 AF
Treatment Volume Elevation:		67.10 FT
Proposed Weir Elevation:		67.10 FT

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
69.00	0.97	0.918	3.662
68.00	0.87	0.822	2.744
67.00	0.77	0.728	1.923
66.00	0.68	0.639	1.194
65.00	0.60	0.555	0.555
64.00	0.51	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
64.00	0.51	0.476	2.664
63.00	0.44	0.402	2.188
62.00	0.37	0.349	1.786
61.00	0.33	1.437	1.437
55.00	0.15	0.000	0.000
		0.000	0.000
			0.000

Permanent Pool Volume Calculation

Compound C Value*	0.65
Wet Season Rainfall	32.00 IN
PPV Required	2.58 AF
PPV Provided	2.66 AF

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	5.2 FT

Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	15 DAYS

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Project:	**Lake Hills**
Basin:	**Post-9**
Pond:	**Pond-9**
Basin Area:	**9.58 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
4.30	Future Community Recreation Park	98
0.30	Proposed Pavement/Sidewalk	98
0.78	Impervious Lot	98
3.64	Pervious/Landscape (HSG-A)	39
0.56	Wet Pond Water Surface	100
Composite CN		76

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		0.799 AF
2.5" over impervious		0.897 AF
	Design WQ	0.897 AF
Treatment Volume Elevation:		66.96 FT
Proposed Weir Elevation:		67.00 FT

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
71.00	0.98	0.935	4.191
70.00	0.89	0.855	3.256
69.00	0.82	0.778	2.401
68.00	0.74	0.703	1.623
67.00	0.67	0.631	0.920
66.00	0.60	0.289	0.289
65.50	0.56	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
65.50	0.56	0.529	2.334
64.50	0.50	0.465	1.805
63.50	0.43	0.213	1.341
63.00	0.42	1.127	1.127
60.00	0.33	0.000	0.000
		0.000	0.000
			0.000

Permanent Pool Volume Calculation

Compound C Value*	0.54
Wet Season Rainfall	32.00 IN
PPV Required	1.26 AF
PPV Provided	2.33 AF

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	4.2 FT

Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	28 DAYS

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Project:	**Lake Hills**
Basin:	**Post-12**
Pond:	**Pond-12**
Basin Area:	**15.36 ac**

Land Use Table:

Area (ac)	*Land Use*	*CN*
2.16	Proposed Pavement/Sidewalk	98
6.94	Impervious Lot	98
5.38	Pervious/Landscape (HSG-A)	39
0.88	Wet Pond Water Surface	100
Composite CN		77

SJRWMD Water Quality Presumptive Criteria:

1" over the basin area:		1.280 AF
2.5" over impervious		1.896 AF
	Design WQ	1.896 AF
Treatment Volume Elevation:		66.42 FT
Proposed Weir Elevation:		66.45 FT

Stage/Storage Table:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
70.00	1.57	1.496	6.619
69.00	1.43	1.358	5.123
68.00	1.29	1.226	3.765
67.00	1.16	1.102	2.539
66.00	1.04	0.986	1.437
65.00	0.93	0.451	0.451
64.50	0.88	0.000	0.000

Permanent Pool Volume:

Stage (FT)	*Area (AC)*	*Δ Vol. (AF)*	*Σ Vol. (AF)*
64.50	0.88	0.825	3.666
63.50	0.77	0.727	2.841
62.50	0.68	0.970	2.113
61.00	0.61	1.143	1.143
59.00	0.53	0.000	0.000
		0.000	0.000
			0.000

Permanent Pool Volume Calculation

Compound C Value*	0.67
Wet Season Rainfall	32.00 IN
PPV Required	2.51 AF
PPV Provided	3.67 AF

Mean Depth Calculation

Mean Depth (between 2-8 feet, ok)	4.2 FT

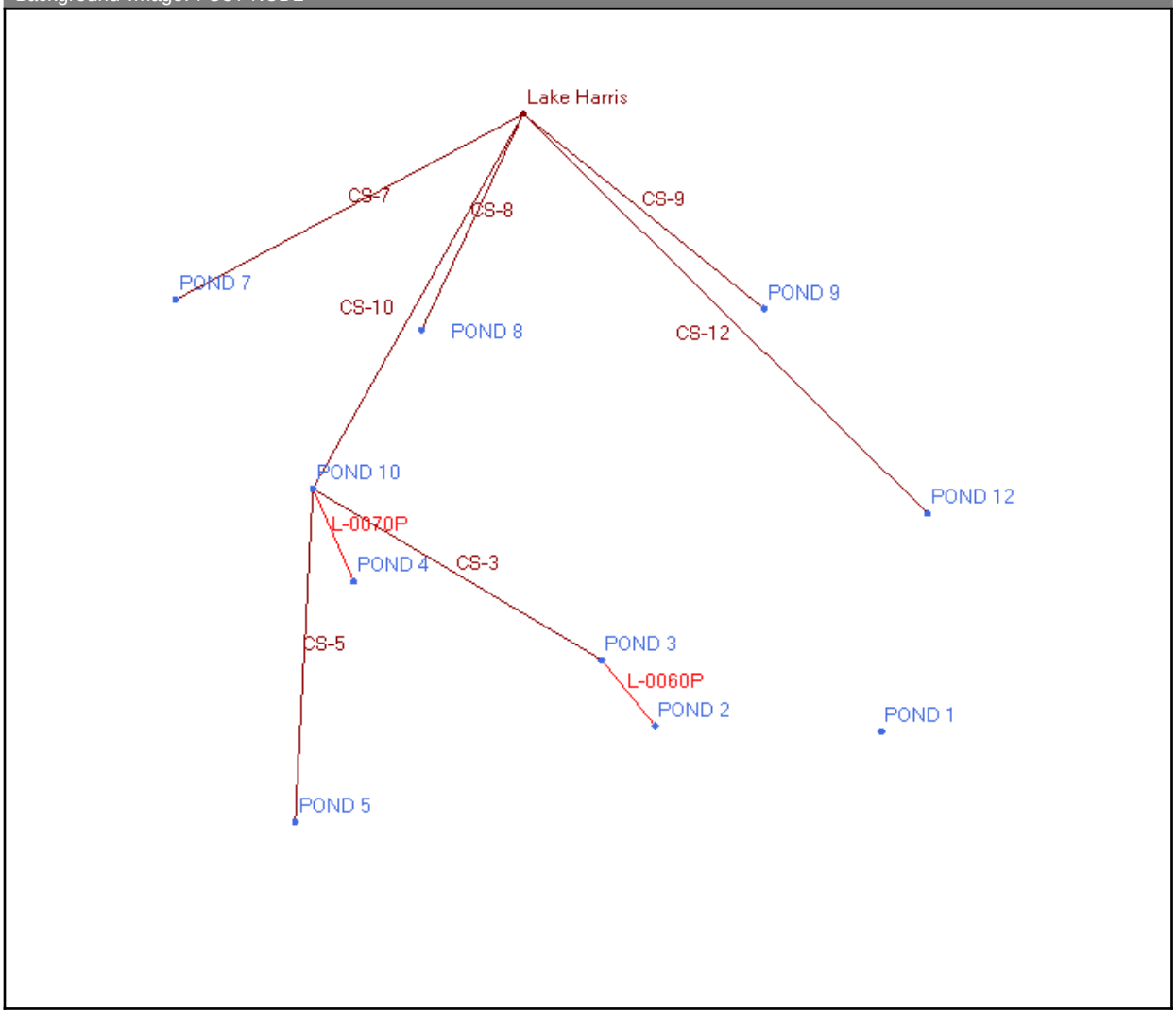
Residence Time Calculation

Required Residence Time	14.0 DAYS
Provided Residence Time	22 DAYS

*C value is 0.95 times impervious plus 0.15 times pervious over the entire area.

Appendix I
Postdevelopment ICPR Node Diagram

Background Image: POST NODE



Appendix J
Postdevelopment ICPR Input Data

Simple Basin: Post 1

Scenario:	POSTDEVELOPMENT
Node:	POND 1
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	27.2500 ac
Curve Number:	85.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 10

Scenario:	POSTDEVELOPMENT
Node:	POND 10
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	11.8700 ac
Curve Number:	78.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 12

Scenario:	POSTDEVELOPMENT
Node:	POND 12
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	15.3600 ac
Curve Number:	77.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 2

Scenario:	POSTDEVELOPMENT
Node:	POND 2
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	20.5000 ac
Curve Number:	67.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 3

Scenario:	POSTDEVELOPMENT
Node:	POND 3
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	13.2300 ac
Curve Number:	76.0
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 4

Scenario:	POSTDEVELOPMENT
Node:	POND 4
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	9.4900 ac
Curve Number:	74.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 5

Scenario:	POSTDEVELOPMENT
Node:	POND 5
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	33.0100 ac
Curve Number:	75.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 7

Scenario:	POSTDEVELOPMENT
Node:	POND 7
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	35.5000 ac
Curve Number:	71.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 8

Scenario:	POSTDEVELOPMENT
Node:	POND 8
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	16.2400 ac
Curve Number:	76.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Post 9

Scenario:	POSTDEVELOPMENT
Node:	POND 9
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	9999.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	9.5800 ac
Curve Number:	76.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Public Park

Scenario:	POSTDEVELOPMENT
Node:	POND 1
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	99999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH484
Peaking Factor:	484.0
Area:	4.0000 ac
Curve Number:	49.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Node: Lake Harris

Scenario:	POSTDEVELOPMENT
Type:	Time/Stage
Base Flow:	0.00 cfs
Initial Stage:	63.32 ft
Warning Stage:	64.32 ft
Boundary Stage:	

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	63.32
0	0	0	12.0000	63.32
0	0	0	24.0000	63.32
0	0	0	36.0000	63.32

Comment:

Node: POND 1

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 78.00 ft
Warning Stage: 90.00 ft

Stage [ft]	Area [ac]	Area [ft2]
90.00	3.8100	165964
89.00	3.6400	158558
88.00	3.4700	151153
87.00	3.3000	143748
86.00	3.1300	136343
85.00	2.9700	129373
84.00	2.8100	122404
83.00	2.6600	115870
82.00	2.5100	109336
81.00	2.3600	102802
80.00	2.2200	96703
79.00	2.0800	90605
78.00	1.9400	84506

Comment:

Node: POND 10

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 65.00 ft
Warning Stage: 69.00 ft

Stage [ft]	Area [ac]	Area [ft2]
69.00	0.9300	40511
68.00	0.8600	37462
67.00	0.7900	34412
66.00	0.7200	31363
65.00	0.6500	28314

Comment:

Node: POND 12

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 64.50 ft
Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
70.00	1.5700	68389
69.00	1.4300	62291
68.00	1.2900	56192
67.00	1.1600	50530
66.00	1.0400	45302
65.00	0.9300	40511
64.50	0.8800	38333

Comment:

Node: POND 2

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 74.00 ft
Warning Stage: 78.00 ft

Stage [ft]	Area [ac]	Area [ft2]
78.00	1.6900	73616
77.00	1.5700	68389
76.00	1.4500	63162
75.00	1.3400	58370
74.00	1.2300	53579

Comment:

Node: POND 3

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 74.00 ft
Warning Stage: 78.00 ft

Stage [ft]	Area [ac]	Area [ft2]
78.00	1.1500	50094
77.00	1.0300	44867
76.00	0.9200	40075

Stage [ft]	Area [ac]	Area [ft2]
75.00	0.8100	35284
74.00	0.7100	30928

Comment:

Node: POND 4

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 65.00 ft
Warning Stage: 69.00 ft

Stage [ft]	Area [ac]	Area [ft2]
69.00	0.5600	24394
68.00	0.4800	20909
67.00	0.4100	17860
66.00	0.3500	15246
65.00	0.2900	12632

Comment:

Node: POND 5

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 79.00 ft
Warning Stage: 83.00 ft

Stage [ft]	Area [ac]	Area [ft2]
83.00	4.5800	199505
82.00	4.3800	190793
81.00	4.1800	182081
80.00	3.9900	173804
79.00	3.8000	165528

Comment:

Node: POND 7

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 65.00 ft
Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
70.00	2.2600	98446
69.00	2.1100	91912
68.00	1.9600	85378
67.00	1.8100	78844
66.00	1.6800	73181
65.00	1.5500	67518

Comment:

Node: POND 8

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 64.00 ft
Warning Stage: 69.00 ft

Stage [ft]	Area [ac]	Area [ft2]
69.00	0.9700	42253
68.00	0.8700	37897
67.00	0.7700	33541
66.00	0.6800	29621
65.00	0.6000	26136
64.00	0.5100	22216

Comment:

Node: POND 9

Scenario: POSTDEVELOPMENT
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 65.50 ft
Warning Stage: 71.00 ft

Stage [ft]	Area [ac]	Area [ft2]
71.00	0.9800	42689
70.00	0.8900	38768
69.00	0.8200	35719
68.00	0.7400	32234
67.00	0.6700	29185
66.00	0.6000	26136
65.50	0.5600	24394

Comment:

Drop Structure Link: CS-10		Upstream Pipe		Downstream Pipe	
Scenario:	POSTDEVELOPMENT	Invert:	63.50 ft	Invert:	63.30 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 10	Geometry: Circular		Geometry: Circular	
To Node:	Lake Harris	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	2	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	2	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	62.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Broad Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	64.50 ft	Ref Node:	
Control Elevation:	65.00 ft	Discharge Coefficients	
Max Depth:	0.33 ft	Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 1-4" Orifice

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	67.40 ft		

Control Elevation:	67.40 ft
Max Depth:	3.38 ft
Max Width:	8.69 ft
Fillet:	0.00 ft

Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: Type H Inlet

Drop Structure Comment:

Drop Structure Link: CS-12		Upstream Pipe		Downstream Pipe	
Scenario:	POSTDEVELOPMENT	Invert:	64.05 ft	Invert:	63.91 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 12	Geometry: Circular		Geometry: Circular	
To Node:	Lake Harris	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	59.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component	
Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Circular
Invert:	64.00 ft
Control Elevation:	64.50 ft
Max Depth:	0.31 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: 1- 3.75" Orifice

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	**Top Clip**	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	66.45 ft	Ref Node:	
Control Elevation:	66.45 ft	**Discharge Coefficients**	
Max Depth:	2.33 ft	Weir Default:	3.200
Max Width:	3.01 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment: Type C Inlet

Drop Structure Comment:

Drop Structure Link: CS-3		Upstream Pipe		Downstream Pipe	
Scenario:	POSTDEVELOPMENT	Invert:	71.00 ft	Invert:	61.00 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 3	Geometry: Circular		Geometry: Circular	
To Node:	POND 10	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	**Bottom Clip**			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	**Top Clip**			
Length:	1463.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	**Top Clip**	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	73.50 ft	Ref Node:	
Control Elevation:	74.00 ft		

Max Depth:	0.42 ft

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: 1- 5" orifice

Weir Component

Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	75.60 ft
Control Elevation:	75.60 ft
Max Depth:	3.33 ft
Max Width:	4.44 ft
Fillet:	0.00 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: Type E Inlet

Drop Structure Comment:

Drop Structure Link: CS-5		Upstream Pipe		Downstream Pipe	
Scenario:	POSTDEVELOPMENT	Invert:	77.00 ft	Invert:	61.00 ft
		Manning's N:	0.0130	Manning's N:	0.0130
From Node:	POND 5	Geometry: Circular		Geometry: Circular	
To Node:	POND 10	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	1000.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component

Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	81.50 ft
Control Elevation:	81.50 ft
Max Depth:	2.33 ft
Max Width:	3.01 ft
Fillet:	0.00 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: Type C Inlet

Weir Component

Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	80.00 ft
Control Elevation:	80.00 ft
Max Depth:	1.50 ft
Max Width:	4.50 ft
Fillet:	0.00 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: 18" x 54" Weir

Drop Structure Comment:

Drop Structure Link: CS-7		Upstream Pipe		Downstream Pipe	
Scenario:	POSTDEVELOPMENT	Invert:	65.80 ft	Invert:	65.00 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 7	Geometry: Circular		Geometry: Circular	
To Node:	Lake Harris	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	2	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	347.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	

Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component

Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Circular
Invert:	64.50 ft
Control Elevation:	65.00 ft
Max Depth:	0.50 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: 1- 6" Orifice

Weir Component

Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	68.90 ft
Control Elevation:	68.90 ft
Max Depth:	3.38 ft
Max Width:	8.69 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: Type H Inlet

Weir Component

Weir:	3
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	67.20 ft
Control Elevation:	67.20 ft
Max Depth:	1.50 ft
Max Width:	14.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200

Fillet:	0.00 ft		
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Drop Structure Link: CS-8		Upstream Pipe		Downstream Pipe	
Scenario:	POSTDEVELOPMENT	Invert:	64.15 ft	Invert:	64.00 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 8	Geometry: Circular		Geometry: Circular	
To Node:	Lake Harris	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Link Count:	2	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	2	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	57.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Broad Crested Vertical	Top Clip	
Geometry Type:	Circular	Default:	0.00 ft
Invert:	63.50 ft	Op Table:	
Control Elevation:	64.00 ft	Ref Node:	
Max Depth:	0.23 ft	Discharge Coefficients	
		Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 1- 2.75" Orifice

Weir Component			
Weir:	2	Bottom Clip	
Weir Count:	1	Default:	0.00 ft

Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	67.50 ft
Control Elevation:	67.50 ft
Max Depth:	3.38 ft
Max Width:	8.69 ft
Fillet:	0.00 ft

Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: Type H Inlet

Weir Component

Weir:	3
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Rectangular
Invert:	67.10 ft
Control Elevation:	67.10 ft
Max Depth:	0.40 ft
Max Width:	14.00 ft
Fillet:	0.00 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: 4.8" x 14' Weir

Drop Structure Comment:

Drop Structure Link: CS-9		Upstream Pipe		Downstream Pipe	
Scenario:	POSTDEVELOPMENT	Invert:	65.40 ft	Invert:	65.25 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 9	Geometry: Circular		Geometry: Circular	
To Node:	Lake Harris	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	57.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000

Bend Loss Coef: 0.00
Bend Location: 0.00 dec
Energy Switch: Energy

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	**Top Clip**	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	65.00 ft	Ref Node:	
Control Elevation:	65.50 ft	**Discharge Coefficients**	
Max Depth:	0.23 ft	Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: 1- 2.75" orifice

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	**Top Clip**	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	67.55 ft	Ref Node:	
Control Elevation:	67.55 ft	**Discharge Coefficients**	
Max Depth:	2.33 ft	Weir Default:	3.200
Max Width:	3.01 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment: Type C Inlet

Weir Component		Bottom Clip	
Weir:	3	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	**Top Clip**	
Weir Type:	Broad Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	67.00 ft	Ref Node:	
Control Elevation:	67.00 ft	**Discharge Coefficients**	
Max Depth:	0.50 ft	Weir Default:	3.200
Max Width:	2.50 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600

Orifice Table:

Weir Comment: 6"x30" Weir

Drop Structure Comment:

Pipe Link: L-0060P		Upstream		Downstream	
Scenario:	POSTDEVELOPMENT	Invert:	71.00 ft	Invert:	71.00 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 2	Geometry: Circular		Geometry: Circular	
To Node:	POND 3	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	200.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: L-0070P		Upstream		Downstream	
Scenario:	POSTDEVELOPMENT	Invert:	60.00 ft	Invert:	60.00 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	POND 4	Geometry: Circular		Geometry: Circular	
To Node:	POND 10	Max Depth:	4.00 ft	Max Depth:	4.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	194.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Simulation: 100YR-24HR

Scenario: POSTDEVELOPMENT

Run Date/Time: 11/6/2024 11:20:45 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: Global

Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	10.40 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 10YR-24HR

Scenario: POSTDEVELOPMENT
Run Date/Time: 11/6/2024 11:23:14 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Lookup Tables

Boundary Stage Set:

		Extern Hydrograph Set:	
Unit Hydrograph Folder:		Curve Number Set:	
		Green-Ampt Set:	
		Vertical Layers Set:	
		Impervious Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	6.03 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 25YR-24HR

Scenario:	POSTDEVELOPMENT
Run Date/Time:	11/6/2024 11:24:47 AM
Program Version:	ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources		Lookup Tables	
Rainfall Folder:		Boundary Stage Set:	
		Extern Hydrograph Set:	
Unit Hydrograph Folder:		Curve Number Set:	
		Green-Ampt Set:	
		Vertical Layers Set:	
		Impervious Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	7.54 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: MEAN

Scenario: POSTDEVELOPMENT
Run Date/Time: 11/6/2024 11:26:06 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~SCSII-24
Rainfall Amount: 4.50 in

Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: RECOVERY

Scenario: POSTDEVELOPMENT
Run Date/Time: 11/6/2024 11:03:50 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	120.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:

Folder:			
		Green-Ampt Set:	
		Vertical Layers Set:	
		Impervious Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	7.54 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Appendix K
Postdevelopment ICPR Node Min/Max Report

Node Max Conditions [POSTDEVELOPMENT]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Lake Harris	100YR-24HR	64.32	63.32	0.0000	461.75	0.00	0
POND 1	100YR-24HR	90.00	86.17	0.0010	278.24	0.00	137600
POND 10	100YR-24HR	69.00	68.69	0.0008	221.43	203.92	39587
POND 12	100YR-24HR	70.00	68.52	-0.0010	134.24	38.40	59380
POND 2	100YR-24HR	78.00	77.90	-0.0010	151.53	32.74	73074
POND 3	100YR-24HR	78.00	77.58	-0.0009	128.25	55.65	47900
POND 4	100YR-24HR	69.00	68.94	-0.0010	79.40	55.73	24198
POND 5	100YR-24HR	83.00	81.87	-0.0010	280.40	26.19	189659
POND 7	100YR-24HR	70.00	69.90	-0.0010	282.80	74.98	97765
POND 8	100YR-24HR	69.00	68.14	0.0010	139.97	129.85	38524
POND 9	100YR-24HR	71.00	69.04	-0.0010	82.57	34.72	35856
Lake Harris	10YR-24HR	64.32	63.32	0.0000	73.99	0.00	0
POND 1	10YR-24HR	90.00	82.52	0.0010	141.66	0.00	112749
POND 10	10YR-24HR	69.00	67.73	-0.0008	58.83	30.16	36635
POND 12	10YR-24HR	70.00	66.87	0.0008	64.49	9.62	49830
POND 2	10YR-24HR	78.00	76.01	0.0008	72.09	7.24	63198
POND 3	10YR-24HR	78.00	75.99	-0.0007	54.07	12.87	40014
POND 4	10YR-24HR	69.00	67.73	-0.0010	36.64	8.69	20097
POND 5	10YR-24HR	83.00	80.53	-0.0006	131.19	5.49	178158
POND 7	10YR-24HR	70.00	67.66	0.0010	124.92	14.79	83153
POND 8	10YR-24HR	69.00	67.44	0.0010	66.37	18.13	35444
POND 9	10YR-24HR	71.00	67.70	-0.0009	39.15	6.23	31317
Lake Harris	25YR-24HR	64.32	63.32	0.0000	235.74	0.00	0
POND 1	25YR-24HR	90.00	83.84	0.0010	188.57	0.00	121356
POND 10	25YR-24HR	69.00	68.13	0.0008	104.43	96.80	37853
POND 12	25YR-24HR	70.00	67.34	-0.0008	88.44	28.22	52446
POND 2	25YR-24HR	78.00	76.55	-0.0008	101.95	20.19	66036
POND 3	25YR-24HR	78.00	76.41	-0.0008	74.61	37.41	42054
POND 4	25YR-24HR	69.00	68.17	-0.0009	51.22	25.61	21523
POND 5	25YR-24HR	83.00	80.94	-0.0008	182.19	13.04	181551
POND 7	25YR-24HR	70.00	68.32	-0.0010	178.31	42.00	87482
POND 8	25YR-24HR	69.00	67.78	0.0010	91.58	61.19	36949
POND 9	25YR-24HR	71.00	68.13	-0.0010	54.03	19.97	32671
Lake Harris	MEAN	64.32	63.32	0.0000	9.49	0.00	0
POND 1	MEAN	90.00	81.14	0.0010	95.05	0.00	103688
POND 10	MEAN	69.00	67.48	0.0009	37.73	4.49	35870
POND 12	MEAN	70.00	66.53	0.0007	40.88	1.28	48070
POND 2	MEAN	78.00	75.68	0.0007	43.08	1.11	61632
POND 3	MEAN	78.00	75.68	0.0007	33.91	8.29	38534
POND 4	MEAN	69.00	67.48	0.0009	22.49	4.46	19321
POND 5	MEAN	83.00	80.21	0.0005	81.39	1.40	175556
POND 7	MEAN	70.00	67.28	0.0009	74.14	1.93	80650
POND 8	MEAN	69.00	67.14	0.0010	41.63	1.37	34149
POND 9	MEAN	71.00	67.24	-0.0007	24.56	1.16	29908
Lake Harris	RECOVERY	64.32	63.32	0.0000	235.74	0.00	0
POND 1	RECOVERY	90.00	83.84	0.0010	188.57	0.00	121356

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
POND 10	RECOVERY	69.00	68.13	0.0008	104.43	96.80	37853
POND 12	RECOVERY	70.00	67.34	-0.0008	88.44	28.22	52446
POND 2	RECOVERY	78.00	76.55	-0.0009	101.95	20.19	66036
POND 3	RECOVERY	78.00	76.41	0.0007	74.61	37.41	42054
POND 4	RECOVERY	69.00	68.17	0.0008	51.22	25.61	21523
POND 5	RECOVERY	83.00	80.94	0.0006	182.19	13.04	181551
POND 7	RECOVERY	70.00	68.32	-0.0010	178.31	41.99	87482
POND 8	RECOVERY	69.00	67.78	0.0010	91.58	61.19	36949
POND 9	RECOVERY	71.00	68.13	-0.0008	54.03	19.97	32671

Appendix L
Postdevelopment ICPR 25yr/24hr Node Time Series Report

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 3	0.0000	74.00
RECOVERY	POND 3	0.2511	74.00
RECOVERY	POND 3	0.5050	74.00
RECOVERY	POND 3	0.7527	74.00
RECOVERY	POND 3	1.0027	74.00
RECOVERY	POND 3	1.2527	74.00
RECOVERY	POND 3	1.5027	74.00
RECOVERY	POND 3	1.7527	74.00
RECOVERY	POND 3	2.0027	74.00
RECOVERY	POND 3	2.2527	74.00
RECOVERY	POND 3	2.5027	74.00
RECOVERY	POND 3	2.7527	74.00
RECOVERY	POND 3	3.0027	74.00
RECOVERY	POND 3	3.2527	74.00
RECOVERY	POND 3	3.5027	74.00
RECOVERY	POND 3	3.7527	74.00
RECOVERY	POND 3	4.0027	74.00
RECOVERY	POND 3	4.2527	74.00
RECOVERY	POND 3	4.5027	74.00
RECOVERY	POND 3	4.7527	74.00
RECOVERY	POND 3	5.0027	74.00
RECOVERY	POND 3	5.2527	74.00
RECOVERY	POND 3	5.5027	74.00
RECOVERY	POND 3	5.7527	74.00
RECOVERY	POND 3	6.0027	74.00
RECOVERY	POND 3	6.2527	74.00
RECOVERY	POND 3	6.5027	74.00
RECOVERY	POND 3	6.7527	74.00
RECOVERY	POND 3	7.0027	74.00
RECOVERY	POND 3	7.2527	74.00
RECOVERY	POND 3	7.5027	74.00
RECOVERY	POND 3	7.7527	74.01
RECOVERY	POND 3	8.0027	74.01
RECOVERY	POND 3	8.2527	74.01
RECOVERY	POND 3	8.5027	74.02
RECOVERY	POND 3	8.7527	74.02
RECOVERY	POND 3	9.0027	74.03
RECOVERY	POND 3	9.2530	74.04
RECOVERY	POND 3	9.5031	74.05
RECOVERY	POND 3	9.7520	74.06
RECOVERY	POND 3	10.0029	74.08
RECOVERY	POND 3	10.2516	74.09

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 3	10.5014	74.12
RECOVERY	POND 3	10.7521	74.15
RECOVERY	POND 3	11.0016	74.20
RECOVERY	POND 3	11.2513	74.26
RECOVERY	POND 3	11.5006	74.34
RECOVERY	POND 3	11.7503	74.55
RECOVERY	POND 3	12.0000	75.34
RECOVERY	POND 3	12.2500	76.36
RECOVERY	POND 3	12.5007	76.39
RECOVERY	POND 3	12.7509	76.31
RECOVERY	POND 3	13.0001	76.24
RECOVERY	POND 3	13.2509	76.17
RECOVERY	POND 3	13.5016	76.11
RECOVERY	POND 3	13.7509	76.06
RECOVERY	POND 3	14.0002	76.01
RECOVERY	POND 3	14.2533	75.97
RECOVERY	POND 3	14.5013	75.94
RECOVERY	POND 3	14.7535	75.91
RECOVERY	POND 3	15.0007	75.88
RECOVERY	POND 3	15.2537	75.87
RECOVERY	POND 3	15.5014	75.85
RECOVERY	POND 3	15.7550	75.84
RECOVERY	POND 3	16.0034	75.82
RECOVERY	POND 3	16.2509	75.82
RECOVERY	POND 3	16.5035	75.81
RECOVERY	POND 3	16.7526	75.80
RECOVERY	POND 3	17.0034	75.80
RECOVERY	POND 3	17.2540	75.79
RECOVERY	POND 3	17.5042	75.78
RECOVERY	POND 3	17.7529	75.78
RECOVERY	POND 3	18.0046	75.77
RECOVERY	POND 3	18.2504	75.77
RECOVERY	POND 3	18.5004	75.76
RECOVERY	POND 3	18.7504	75.75
RECOVERY	POND 3	19.0004	75.75
RECOVERY	POND 3	19.2504	75.75
RECOVERY	POND 3	19.5004	75.75
RECOVERY	POND 3	19.7504	75.74
RECOVERY	POND 3	20.0004	75.74
RECOVERY	POND 3	20.2504	75.73
RECOVERY	POND 3	20.5004	75.73
RECOVERY	POND 3	20.7504	75.72

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 3	21.0004	75.72
RECOVERY	POND 3	21.2504	75.72
RECOVERY	POND 3	21.5004	75.72
RECOVERY	POND 3	21.7504	75.71
RECOVERY	POND 3	22.0004	75.71
RECOVERY	POND 3	22.2504	75.71
RECOVERY	POND 3	22.5004	75.71
RECOVERY	POND 3	22.7504	75.71
RECOVERY	POND 3	23.0004	75.71
RECOVERY	POND 3	23.2504	75.71
RECOVERY	POND 3	23.5004	75.71
RECOVERY	POND 3	23.7504	75.71
RECOVERY	POND 3	24.0004	75.71
RECOVERY	POND 3	24.2504	75.70
RECOVERY	POND 3	24.5004	75.68
RECOVERY	POND 3	24.7504	75.66
RECOVERY	POND 3	25.0004	75.65
RECOVERY	POND 3	25.2504	75.64
RECOVERY	POND 3	25.5004	75.63
RECOVERY	POND 3	25.7504	75.62
RECOVERY	POND 3	26.0004	75.61
RECOVERY	POND 3	26.2504	75.60
RECOVERY	POND 3	26.5004	75.59
RECOVERY	POND 3	26.7504	75.59
RECOVERY	POND 3	27.0004	75.58
RECOVERY	POND 3	27.2504	75.57
RECOVERY	POND 3	27.5004	75.56
RECOVERY	POND 3	27.7504	75.56
RECOVERY	POND 3	28.0004	75.55
RECOVERY	POND 3	28.2504	75.54
RECOVERY	POND 3	28.5004	75.53
RECOVERY	POND 3	28.7504	75.53
RECOVERY	POND 3	29.0004	75.52
RECOVERY	POND 3	29.2504	75.51
RECOVERY	POND 3	29.5004	75.50
RECOVERY	POND 3	29.7504	75.50
RECOVERY	POND 3	30.0004	75.49
RECOVERY	POND 3	30.2504	75.48
RECOVERY	POND 3	30.5004	75.47
RECOVERY	POND 3	30.7504	75.47
RECOVERY	POND 3	31.0004	75.46
RECOVERY	POND 3	31.2504	75.45

START DRAWDOWN ANALYSIS

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 3	31.5004	75.44
RECOVERY	POND 3	31.7504	75.44
RECOVERY	POND 3	32.0004	75.43
RECOVERY	POND 3	32.2504	75.42
RECOVERY	POND 3	32.5004	75.41
RECOVERY	POND 3	32.7504	75.41
RECOVERY	POND 3	33.0004	75.40
RECOVERY	POND 3	33.2504	75.39
RECOVERY	POND 3	33.5004	75.39
RECOVERY	POND 3	33.7504	75.38
RECOVERY	POND 3	34.0004	75.37
RECOVERY	POND 3	34.2504	75.36
RECOVERY	POND 3	34.5004	75.36
RECOVERY	POND 3	34.7504	75.35
RECOVERY	POND 3	35.0004	75.34
RECOVERY	POND 3	35.2504	75.34
RECOVERY	POND 3	35.5004	75.33
RECOVERY	POND 3	35.7504	75.32
RECOVERY	POND 3	36.0004	75.31
RECOVERY	POND 3	36.2504	75.31
RECOVERY	POND 3	36.5004	75.30
RECOVERY	POND 3	36.7504	75.29
RECOVERY	POND 3	37.0004	75.29
RECOVERY	POND 3	37.2504	75.28
RECOVERY	POND 3	37.5004	75.27
RECOVERY	POND 3	37.7504	75.26
RECOVERY	POND 3	38.0004	75.26
RECOVERY	POND 3	38.2504	75.25
RECOVERY	POND 3	38.5004	75.24
RECOVERY	POND 3	38.7504	75.24
RECOVERY	POND 3	39.0004	75.23
RECOVERY	POND 3	39.2504	75.22
RECOVERY	POND 3	39.5004	75.22
RECOVERY	POND 3	39.7504	75.21
RECOVERY	POND 3	40.0004	75.20
RECOVERY	POND 3	40.2504	75.20
RECOVERY	POND 3	40.5004	75.19
RECOVERY	POND 3	40.7504	75.18
RECOVERY	POND 3	41.0004	75.17
RECOVERY	POND 3	41.2504	75.17
RECOVERY	POND 3	41.5004	75.16
RECOVERY	POND 3	41.7504	75.15

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 3	42.0004	75.15
RECOVERY	POND 3	42.2504	75.14
RECOVERY	POND 3	42.5004	75.13
RECOVERY	POND 3	42.7504	75.13
RECOVERY	POND 3	43.0004	75.12
RECOVERY	POND 3	43.2504	75.11
RECOVERY	POND 3	43.5004	75.11
RECOVERY	POND 3	43.7504	75.10
RECOVERY	POND 3	44.0004	75.09
RECOVERY	POND 3	44.2504	75.09
RECOVERY	POND 3	44.5004	75.08
RECOVERY	POND 3	44.7504	75.07
RECOVERY	POND 3	45.0004	75.07
RECOVERY	POND 3	45.2504	75.06
RECOVERY	POND 3	45.5004	75.05
RECOVERY	POND 3	45.7504	75.05
RECOVERY	POND 3	46.0004	75.04
RECOVERY	POND 3	46.2504	75.03
RECOVERY	POND 3	46.5004	75.03
RECOVERY	POND 3	46.7504	75.02
RECOVERY	POND 3	47.0004	75.02
RECOVERY	POND 3	47.2504	75.01
RECOVERY	POND 3	47.5004	75.00
RECOVERY	POND 3	47.7504	75.00
RECOVERY	POND 3	48.0004	74.99
RECOVERY	POND 3	48.2504	74.98
RECOVERY	POND 3	48.5004	74.98
RECOVERY	POND 3	48.7504	74.97
RECOVERY	POND 3	49.0004	74.96
RECOVERY	POND 3	49.2504	74.96
RECOVERY	POND 3	49.5004	74.95
RECOVERY	POND 3	49.7504	74.95
RECOVERY	POND 3	50.0004	74.94
RECOVERY	POND 3	50.2504	74.93
RECOVERY	POND 3	50.5004	74.93
RECOVERY	POND 3	50.7504	74.92
RECOVERY	POND 3	51.0004	74.91
RECOVERY	POND 3	51.2504	74.91
RECOVERY	POND 3	51.5004	74.90
RECOVERY	POND 3	51.7504	74.90
RECOVERY	POND 3	52.0004	74.89
RECOVERY	POND 3	52.2504	74.88

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 3	52.5004	74.88
RECOVERY	POND 3	52.7504	74.87
RECOVERY	POND 3	53.0004	74.87
RECOVERY	POND 3	53.2504	74.86
RECOVERY	POND 3	53.5004	74.85
RECOVERY	POND 3	53.7504	74.85
RECOVERY	POND 3	54.0004	74.84
RECOVERY	POND 3	54.2504	74.84
RECOVERY	POND 3	54.5004	74.83
RECOVERY	POND 3	54.7504	74.82
RECOVERY	POND 3	55.0004	74.82
RECOVERY	POND 3	55.2504	74.81
RECOVERY	POND 3	55.5004	74.81
RECOVERY	POND 3	55.7504	74.80
RECOVERY	POND 3	56.0004	74.79
RECOVERY	POND 3	56.2504	74.79
RECOVERY	POND 3	56.5004	74.78
RECOVERY	POND 3	56.7504	74.78
RECOVERY	POND 3	57.0004	74.77
RECOVERY	POND 3	57.2504	74.77
RECOVERY	POND 3	57.5004	74.76
RECOVERY	POND 3	57.7504	74.75
RECOVERY	POND 3	58.0004	74.75
RECOVERY	POND 3	58.2504	74.74
RECOVERY	POND 3	58.5004	74.74
RECOVERY	POND 3	58.7504	74.73
RECOVERY	POND 3	59.0004	74.73
RECOVERY	POND 3	59.2504	74.72
RECOVERY	POND 3	59.5004	74.71
RECOVERY	POND 3	59.7504	74.71
RECOVERY	POND 3	60.0004	74.70
RECOVERY	POND 3	60.2504	74.70
RECOVERY	POND 3	60.5004	74.69
RECOVERY	POND 3	60.7504	74.69
RECOVERY	POND 3	61.0004	74.68
RECOVERY	POND 3	61.2504	74.68
RECOVERY	POND 3	61.5004	74.67
RECOVERY	POND 3	61.7504	74.67
RECOVERY	POND 3	62.0004	74.66
RECOVERY	POND 3	62.2504	74.65
RECOVERY	POND 3	62.5004	74.65
RECOVERY	POND 3	62.7504	74.64

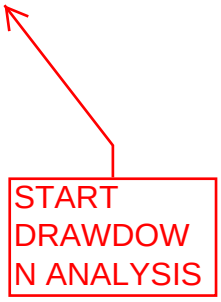
END DRAWDOWN ANALYSIS

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 3	63.0004	74.64
RECOVERY	POND 3	63.2504	74.63
RECOVERY	POND 3	63.5004	74.63
RECOVERY	POND 3	63.7504	74.62
RECOVERY	POND 3	64.0004	74.62
RECOVERY	POND 3	64.2504	74.61
RECOVERY	POND 3	64.5004	74.61
RECOVERY	POND 3	64.7504	74.60
RECOVERY	POND 3	65.0004	74.60
RECOVERY	POND 3	65.2504	74.59
RECOVERY	POND 3	65.5004	74.59
RECOVERY	POND 3	65.7504	74.58
RECOVERY	POND 3	66.0004	74.58
RECOVERY	POND 3	66.2504	74.57
RECOVERY	POND 3	66.5004	74.57
RECOVERY	POND 3	66.7504	74.56
RECOVERY	POND 3	67.0004	74.56
RECOVERY	POND 3	67.2504	74.55
RECOVERY	POND 3	67.5004	74.55
RECOVERY	POND 3	67.7504	74.54
RECOVERY	POND 3	68.0004	74.54
RECOVERY	POND 3	68.2504	74.53
RECOVERY	POND 3	68.5004	74.53
RECOVERY	POND 3	68.7504	74.52
RECOVERY	POND 3	69.0004	74.52
RECOVERY	POND 3	69.2504	74.51
RECOVERY	POND 3	69.5004	74.51
RECOVERY	POND 3	69.7504	74.50
RECOVERY	POND 3	70.0004	74.50
RECOVERY	POND 3	70.2504	74.49
RECOVERY	POND 3	70.5004	74.49
RECOVERY	POND 3	70.7504	74.48
RECOVERY	POND 3	71.0004	74.48
RECOVERY	POND 3	71.2504	74.47
RECOVERY	POND 3	71.5004	74.47
RECOVERY	POND 3	71.7504	74.46
RECOVERY	POND 3	72.0004	74.46
RECOVERY	POND 3	72.2504	74.46
RECOVERY	POND 3	72.5004	74.45
RECOVERY	POND 3	72.7504	74.45
RECOVERY	POND 3	73.0004	74.44
RECOVERY	POND 3	73.2504	74.44

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 7	0.0000	65.00
RECOVERY	POND 7	0.2511	65.00
RECOVERY	POND 7	0.5050	65.00
RECOVERY	POND 7	0.7527	65.00
RECOVERY	POND 7	1.0027	65.00
RECOVERY	POND 7	1.2527	65.00
RECOVERY	POND 7	1.5027	65.00
RECOVERY	POND 7	1.7527	65.00
RECOVERY	POND 7	2.0027	65.00
RECOVERY	POND 7	2.2527	65.00
RECOVERY	POND 7	2.5027	65.00
RECOVERY	POND 7	2.7527	65.00
RECOVERY	POND 7	3.0027	65.00
RECOVERY	POND 7	3.2527	65.00
RECOVERY	POND 7	3.5027	65.00
RECOVERY	POND 7	3.7527	65.00
RECOVERY	POND 7	4.0027	65.00
RECOVERY	POND 7	4.2527	65.00
RECOVERY	POND 7	4.5027	65.00
RECOVERY	POND 7	4.7527	65.00
RECOVERY	POND 7	5.0027	65.00
RECOVERY	POND 7	5.2527	65.00
RECOVERY	POND 7	5.5027	65.00
RECOVERY	POND 7	5.7527	65.00
RECOVERY	POND 7	6.0027	65.00
RECOVERY	POND 7	6.2527	65.00
RECOVERY	POND 7	6.5027	65.00
RECOVERY	POND 7	6.7527	65.00
RECOVERY	POND 7	7.0027	65.00
RECOVERY	POND 7	7.2527	65.00
RECOVERY	POND 7	7.5027	65.00
RECOVERY	POND 7	7.7527	65.00
RECOVERY	POND 7	8.0027	65.00
RECOVERY	POND 7	8.2527	65.00
RECOVERY	POND 7	8.5027	65.01
RECOVERY	POND 7	8.7527	65.02
RECOVERY	POND 7	9.0027	65.03
RECOVERY	POND 7	9.2530	65.04
RECOVERY	POND 7	9.5031	65.06
RECOVERY	POND 7	9.7520	65.08
RECOVERY	POND 7	10.0029	65.10
RECOVERY	POND 7	10.2516	65.13

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 7	10.5014	65.17
RECOVERY	POND 7	10.7521	65.21
RECOVERY	POND 7	11.0016	65.28
RECOVERY	POND 7	11.2513	65.37
RECOVERY	POND 7	11.5006	65.48
RECOVERY	POND 7	11.7503	65.77
RECOVERY	POND 7	12.0000	66.80
RECOVERY	POND 7	12.2500	68.21
RECOVERY	POND 7	12.5007	68.30
RECOVERY	POND 7	12.7509	68.15
RECOVERY	POND 7	13.0001	68.00
RECOVERY	POND 7	13.2509	67.87
RECOVERY	POND 7	13.5016	67.77
RECOVERY	POND 7	13.7509	67.69
RECOVERY	POND 7	14.0002	67.64
RECOVERY	POND 7	14.2533	67.59
RECOVERY	POND 7	14.5013	67.55
RECOVERY	POND 7	14.7535	67.52
RECOVERY	POND 7	15.0007	67.50
RECOVERY	POND 7	15.2537	67.48
RECOVERY	POND 7	15.5014	67.47
RECOVERY	POND 7	15.7550	67.45
RECOVERY	POND 7	16.0034	67.44
RECOVERY	POND 7	16.2509	67.43
RECOVERY	POND 7	16.5035	67.43
RECOVERY	POND 7	16.7526	67.42
RECOVERY	POND 7	17.0034	67.41
RECOVERY	POND 7	17.2540	67.41
RECOVERY	POND 7	17.5042	67.40
RECOVERY	POND 7	17.7529	67.40
RECOVERY	POND 7	18.0046	67.39
RECOVERY	POND 7	18.2504	67.38
RECOVERY	POND 7	18.5004	67.37
RECOVERY	POND 7	18.7504	67.37
RECOVERY	POND 7	19.0004	67.36
RECOVERY	POND 7	19.2504	67.36
RECOVERY	POND 7	19.5004	67.36
RECOVERY	POND 7	19.7504	67.36
RECOVERY	POND 7	20.0004	67.35
RECOVERY	POND 7	20.2504	67.35
RECOVERY	POND 7	20.5004	67.34
RECOVERY	POND 7	20.7504	67.33

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 7	21.0004	67.33
RECOVERY	POND 7	21.2504	67.33
RECOVERY	POND 7	21.5004	67.33
RECOVERY	POND 7	21.7504	67.32
RECOVERY	POND 7	22.0004	67.32
RECOVERY	POND 7	22.2504	67.32
RECOVERY	POND 7	22.5004	67.32
RECOVERY	POND 7	22.7504	67.32
RECOVERY	POND 7	23.0004	67.32
RECOVERY	POND 7	23.2504	67.32
RECOVERY	POND 7	23.5004	67.32
RECOVERY	POND 7	23.7504	67.32
RECOVERY	POND 7	24.0004	67.31
RECOVERY	POND 7	24.2504	67.30
RECOVERY	POND 7	24.5004	67.28
RECOVERY	POND 7	24.7504	67.26
RECOVERY	POND 7	25.0004	67.24
RECOVERY	POND 7	25.2504	67.23
RECOVERY	POND 7	25.5004	67.22
RECOVERY	POND 7	25.7504	67.20
RECOVERY	POND 7	26.0004	67.19
RECOVERY	POND 7	26.2504	67.18
RECOVERY	POND 7	26.5004	67.17
RECOVERY	POND 7	26.7504	67.16
RECOVERY	POND 7	27.0004	67.15
RECOVERY	POND 7	27.2504	67.14
RECOVERY	POND 7	27.5004	67.13
RECOVERY	POND 7	27.7504	67.12
RECOVERY	POND 7	28.0004	67.10
RECOVERY	POND 7	28.2504	67.09
RECOVERY	POND 7	28.5004	67.08
RECOVERY	POND 7	28.7504	67.07
RECOVERY	POND 7	29.0004	67.06
RECOVERY	POND 7	29.2504	67.05
RECOVERY	POND 7	29.5004	67.04
RECOVERY	POND 7	29.7504	67.03
RECOVERY	POND 7	30.0004	67.02
RECOVERY	POND 7	30.2504	67.01
RECOVERY	POND 7	30.5004	67.00
RECOVERY	POND 7	30.7504	66.99
RECOVERY	POND 7	31.0004	66.98
RECOVERY	POND 7	31.2504	66.97



Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 7	31.5004	66.96
RECOVERY	POND 7	31.7504	66.95
RECOVERY	POND 7	32.0004	66.94
RECOVERY	POND 7	32.2504	66.93
RECOVERY	POND 7	32.5004	66.92
RECOVERY	POND 7	32.7504	66.91
RECOVERY	POND 7	33.0004	66.90
RECOVERY	POND 7	33.2504	66.89
RECOVERY	POND 7	33.5004	66.88
RECOVERY	POND 7	33.7504	66.87
RECOVERY	POND 7	34.0004	66.86
RECOVERY	POND 7	34.2504	66.85
RECOVERY	POND 7	34.5004	66.84
RECOVERY	POND 7	34.7504	66.83
RECOVERY	POND 7	35.0004	66.82
RECOVERY	POND 7	35.2504	66.81
RECOVERY	POND 7	35.5004	66.80
RECOVERY	POND 7	35.7504	66.79
RECOVERY	POND 7	36.0004	66.78
RECOVERY	POND 7	36.2504	66.77
RECOVERY	POND 7	36.5004	66.76
RECOVERY	POND 7	36.7504	66.75
RECOVERY	POND 7	37.0004	66.75
RECOVERY	POND 7	37.2504	66.74
RECOVERY	POND 7	37.5004	66.73
RECOVERY	POND 7	37.7504	66.72
RECOVERY	POND 7	38.0004	66.71
RECOVERY	POND 7	38.2504	66.70
RECOVERY	POND 7	38.5004	66.69
RECOVERY	POND 7	38.7504	66.68
RECOVERY	POND 7	39.0004	66.67
RECOVERY	POND 7	39.2504	66.67
RECOVERY	POND 7	39.5004	66.66
RECOVERY	POND 7	39.7504	66.65
RECOVERY	POND 7	40.0004	66.64
RECOVERY	POND 7	40.2504	66.63
RECOVERY	POND 7	40.5004	66.62
RECOVERY	POND 7	40.7504	66.61
RECOVERY	POND 7	41.0004	66.61
RECOVERY	POND 7	41.2504	66.60
RECOVERY	POND 7	41.5004	66.59
RECOVERY	POND 7	41.7504	66.58

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 7	42.0004	66.57
RECOVERY	POND 7	42.2504	66.56
RECOVERY	POND 7	42.5004	66.56
RECOVERY	POND 7	42.7504	66.55
RECOVERY	POND 7	43.0004	66.54
RECOVERY	POND 7	43.2504	66.53
RECOVERY	POND 7	43.5004	66.53
RECOVERY	POND 7	43.7504	66.52
RECOVERY	POND 7	44.0004	66.51
RECOVERY	POND 7	44.2504	66.50
RECOVERY	POND 7	44.5004	66.49
RECOVERY	POND 7	44.7504	66.49
RECOVERY	POND 7	45.0004	66.48
RECOVERY	POND 7	45.2504	66.47
RECOVERY	POND 7	45.5004	66.46
RECOVERY	POND 7	45.7504	66.46
RECOVERY	POND 7	46.0004	66.45
RECOVERY	POND 7	46.2504	66.44
RECOVERY	POND 7	46.5004	66.44
RECOVERY	POND 7	46.7504	66.43
RECOVERY	POND 7	47.0004	66.42
RECOVERY	POND 7	47.2504	66.41
RECOVERY	POND 7	47.5004	66.41
RECOVERY	POND 7	47.7504	66.40
RECOVERY	POND 7	48.0004	66.39
RECOVERY	POND 7	48.2504	66.39
RECOVERY	POND 7	48.5004	66.38
RECOVERY	POND 7	48.7504	66.37
RECOVERY	POND 7	49.0004	66.37
RECOVERY	POND 7	49.2504	66.36
RECOVERY	POND 7	49.5004	66.35
RECOVERY	POND 7	49.7504	66.35
RECOVERY	POND 7	50.0004	66.34
RECOVERY	POND 7	50.2504	66.33
RECOVERY	POND 7	50.5004	66.33
RECOVERY	POND 7	50.7504	66.32
RECOVERY	POND 7	51.0004	66.31
RECOVERY	POND 7	51.2504	66.31
RECOVERY	POND 7	51.5004	66.30
RECOVERY	POND 7	51.7504	66.30
RECOVERY	POND 7	52.0004	66.29
RECOVERY	POND 7	52.2504	66.28

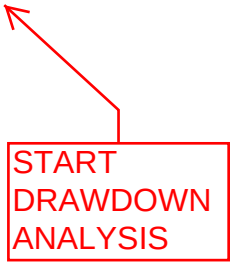
Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 7	52.5004	66.28
RECOVERY	POND 7	52.7504	66.27
RECOVERY	POND 7	53.0004	66.27
RECOVERY	POND 7	53.2504	66.26
RECOVERY	POND 7	53.5004	66.25
RECOVERY	POND 7	53.7504	66.25
RECOVERY	POND 7	54.0004	66.24
RECOVERY	POND 7	54.2504	66.24
RECOVERY	POND 7	54.5004	66.23
RECOVERY	POND 7	54.7504	66.23
RECOVERY	POND 7	55.0004	66.22
RECOVERY	POND 7	55.2504	66.22
RECOVERY	POND 7	55.5004	66.21
RECOVERY	POND 7	55.7504	66.20
RECOVERY	POND 7	56.0004	66.20
RECOVERY	POND 7	56.2504	66.19
RECOVERY	POND 7	56.5004	66.19
RECOVERY	POND 7	56.7504	66.18
RECOVERY	POND 7	57.0004	66.18
RECOVERY	POND 7	57.2504	66.17
RECOVERY	POND 7	57.5004	66.17
RECOVERY	POND 7	57.7504	66.16
RECOVERY	POND 7	58.0004	66.16
RECOVERY	POND 7	58.2504	66.16
RECOVERY	POND 7	58.5004	66.15
RECOVERY	POND 7	58.7504	66.15
RECOVERY	POND 7	59.0004	66.14
RECOVERY	POND 7	59.2504	66.14
RECOVERY	POND 7	59.5004	66.13
RECOVERY	POND 7	59.7504	66.13
RECOVERY	POND 7	60.0004	66.12
RECOVERY	POND 7	60.2504	66.12
RECOVERY	POND 7	60.5004	66.11
RECOVERY	POND 7	60.7504	66.11
RECOVERY	POND 7	61.0004	66.11
RECOVERY	POND 7	61.2504	66.10
RECOVERY	POND 7	61.5004	66.10
RECOVERY	POND 7	61.7504	66.09
RECOVERY	POND 7	62.0004	66.09
RECOVERY	POND 7	62.2504	66.09
RECOVERY	POND 7	62.5004	66.08
RECOVERY	POND 7	62.7504	66.08

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 7	63.0004	66.07
RECOVERY	POND 7	63.2504	66.07
RECOVERY	POND 7	63.5004	66.07
RECOVERY	POND 7	63.7504	66.06
RECOVERY	POND 7	64.0004	66.06
RECOVERY	POND 7	64.2504	66.06
RECOVERY	POND 7	64.5004	66.05
RECOVERY	POND 7	64.7504	66.05
RECOVERY	POND 7	65.0004	66.05
RECOVERY	POND 7	65.2504	66.04
RECOVERY	POND 7	65.5004	66.04
RECOVERY	POND 7	65.7504	66.04
RECOVERY	POND 7	66.0004	66.03
RECOVERY	POND 7	66.2504	66.03
RECOVERY	POND 7	66.5004	66.03
RECOVERY	POND 7	66.7504	66.02
RECOVERY	POND 7	67.0004	66.02
RECOVERY	POND 7	67.2504	66.02
RECOVERY	POND 7	67.5004	66.01
RECOVERY	POND 7	67.7504	66.01
RECOVERY	POND 7	68.0004	66.01
RECOVERY	POND 7	68.2504	66.01
RECOVERY	POND 7	68.5004	66.00
RECOVERY	POND 7	68.7504	66.00
RECOVERY	POND 7	69.0004	66.00
RECOVERY	POND 7	69.2504	65.99
RECOVERY	POND 7	69.5004	65.99
RECOVERY	POND 7	69.7504	65.99
RECOVERY	POND 7	70.0004	65.99
RECOVERY	POND 7	70.2504	65.98
RECOVERY	POND 7	70.5004	65.98
RECOVERY	POND 7	70.7504	65.98
RECOVERY	POND 7	71.0004	65.98
RECOVERY	POND 7	71.2504	65.97
RECOVERY	POND 7	71.5004	65.97
RECOVERY	POND 7	71.7504	65.97
RECOVERY	POND 7	72.0004	65.97
RECOVERY	POND 7	72.2504	65.97
RECOVERY	POND 7	72.5004	65.96
RECOVERY	POND 7	72.7504	65.96
RECOVERY	POND 7	73.0004	65.96
RECOVERY	POND 7	73.2504	65.96

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 8	0.0000	64.00
RECOVERY	POND 8	0.2511	64.00
RECOVERY	POND 8	0.5050	64.00
RECOVERY	POND 8	0.7527	64.00
RECOVERY	POND 8	1.0027	64.00
RECOVERY	POND 8	1.2527	64.00
RECOVERY	POND 8	1.5027	64.00
RECOVERY	POND 8	1.7527	64.00
RECOVERY	POND 8	2.0027	64.00
RECOVERY	POND 8	2.2527	64.00
RECOVERY	POND 8	2.5027	64.00
RECOVERY	POND 8	2.7527	64.00
RECOVERY	POND 8	3.0027	64.00
RECOVERY	POND 8	3.2527	64.00
RECOVERY	POND 8	3.5027	64.00
RECOVERY	POND 8	3.7527	64.00
RECOVERY	POND 8	4.0027	64.00
RECOVERY	POND 8	4.2527	64.00
RECOVERY	POND 8	4.5027	64.00
RECOVERY	POND 8	4.7527	64.00
RECOVERY	POND 8	5.0027	64.00
RECOVERY	POND 8	5.2527	64.00
RECOVERY	POND 8	5.5027	64.00
RECOVERY	POND 8	5.7527	64.00
RECOVERY	POND 8	6.0027	64.00
RECOVERY	POND 8	6.2527	64.00
RECOVERY	POND 8	6.5027	64.00
RECOVERY	POND 8	6.7527	64.00
RECOVERY	POND 8	7.0027	64.01
RECOVERY	POND 8	7.2527	64.01
RECOVERY	POND 8	7.5027	64.02
RECOVERY	POND 8	7.7527	64.03
RECOVERY	POND 8	8.0027	64.05
RECOVERY	POND 8	8.2527	64.06
RECOVERY	POND 8	8.5027	64.08
RECOVERY	POND 8	8.7527	64.11
RECOVERY	POND 8	9.0027	64.14
RECOVERY	POND 8	9.2530	64.17
RECOVERY	POND 8	9.5031	64.21
RECOVERY	POND 8	9.7520	64.25
RECOVERY	POND 8	10.0029	64.30
RECOVERY	POND 8	10.2516	64.36

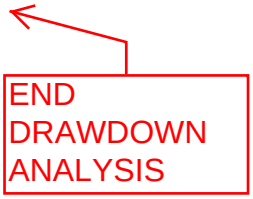
Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 8	10.5014	64.42
RECOVERY	POND 8	10.7521	64.50
RECOVERY	POND 8	11.0016	64.62
RECOVERY	POND 8	11.2513	64.76
RECOVERY	POND 8	11.5006	64.93
RECOVERY	POND 8	11.7503	65.36
RECOVERY	POND 8	12.0000	66.74
RECOVERY	POND 8	12.2500	67.74
RECOVERY	POND 8	12.5007	67.48
RECOVERY	POND 8	12.7509	67.37
RECOVERY	POND 8	13.0001	67.32
RECOVERY	POND 8	13.2509	67.28
RECOVERY	POND 8	13.5016	67.26
RECOVERY	POND 8	13.7509	67.24
RECOVERY	POND 8	14.0002	67.23
RECOVERY	POND 8	14.2533	67.22
RECOVERY	POND 8	14.5013	67.21
RECOVERY	POND 8	14.7535	67.20
RECOVERY	POND 8	15.0007	67.19
RECOVERY	POND 8	15.2537	67.19
RECOVERY	POND 8	15.5014	67.19
RECOVERY	POND 8	15.7550	67.18
RECOVERY	POND 8	16.0034	67.18
RECOVERY	POND 8	16.2509	67.18
RECOVERY	POND 8	16.5035	67.18
RECOVERY	POND 8	16.7526	67.18
RECOVERY	POND 8	17.0034	67.17
RECOVERY	POND 8	17.2540	67.17
RECOVERY	POND 8	17.5042	67.17
RECOVERY	POND 8	17.7529	67.17
RECOVERY	POND 8	18.0046	67.16
RECOVERY	POND 8	18.2504	67.16
RECOVERY	POND 8	18.5004	67.16
RECOVERY	POND 8	18.7504	67.15
RECOVERY	POND 8	19.0004	67.15
RECOVERY	POND 8	19.2504	67.15
RECOVERY	POND 8	19.5004	67.15
RECOVERY	POND 8	19.7504	67.15
RECOVERY	POND 8	20.0004	67.15
RECOVERY	POND 8	20.2504	67.15
RECOVERY	POND 8	20.5004	67.14
RECOVERY	POND 8	20.7504	67.14

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 8	21.0004	67.14
RECOVERY	POND 8	21.2504	67.14
RECOVERY	POND 8	21.5004	67.14
RECOVERY	POND 8	21.7504	67.14
RECOVERY	POND 8	22.0004	67.14
RECOVERY	POND 8	22.2504	67.14
RECOVERY	POND 8	22.5004	67.14
RECOVERY	POND 8	22.7504	67.14
RECOVERY	POND 8	23.0004	67.14
RECOVERY	POND 8	23.2504	67.14
RECOVERY	POND 8	23.5004	67.14
RECOVERY	POND 8	23.7504	67.14
RECOVERY	POND 8	24.0004	67.14
RECOVERY	POND 8	24.2504	67.12
RECOVERY	POND 8	24.5004	67.10
RECOVERY	POND 8	24.7504	67.09
RECOVERY	POND 8	25.0004	67.07
RECOVERY	POND 8	25.2504	67.05
RECOVERY	POND 8	25.5004	67.03
RECOVERY	POND 8	25.7504	67.02
RECOVERY	POND 8	26.0004	67.00
RECOVERY	POND 8	26.2504	66.98
RECOVERY	POND 8	26.5004	66.96
RECOVERY	POND 8	26.7504	66.95
RECOVERY	POND 8	27.0004	66.93
RECOVERY	POND 8	27.2504	66.91
RECOVERY	POND 8	27.5004	66.89
RECOVERY	POND 8	27.7504	66.88
RECOVERY	POND 8	28.0004	66.86
RECOVERY	POND 8	28.2504	66.84
RECOVERY	POND 8	28.5004	66.82
RECOVERY	POND 8	28.7504	66.81
RECOVERY	POND 8	29.0004	66.79
RECOVERY	POND 8	29.2504	66.77
RECOVERY	POND 8	29.5004	66.75
RECOVERY	POND 8	29.7504	66.74
RECOVERY	POND 8	30.0004	66.72
RECOVERY	POND 8	30.2504	66.70
RECOVERY	POND 8	30.5004	66.69
RECOVERY	POND 8	30.7504	66.67
RECOVERY	POND 8	31.0004	66.65
RECOVERY	POND 8	31.2504	66.63



Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 8	31.5004	66.62
RECOVERY	POND 8	31.7504	66.60
RECOVERY	POND 8	32.0004	66.58
RECOVERY	POND 8	32.2504	66.57
RECOVERY	POND 8	32.5004	66.55
RECOVERY	POND 8	32.7504	66.53
RECOVERY	POND 8	33.0004	66.52
RECOVERY	POND 8	33.2504	66.50
RECOVERY	POND 8	33.5004	66.48
RECOVERY	POND 8	33.7504	66.46
RECOVERY	POND 8	34.0004	66.45
RECOVERY	POND 8	34.2504	66.43
RECOVERY	POND 8	34.5004	66.41
RECOVERY	POND 8	34.7504	66.40
RECOVERY	POND 8	35.0004	66.38
RECOVERY	POND 8	35.2504	66.36
RECOVERY	POND 8	35.5004	66.35
RECOVERY	POND 8	35.7504	66.33
RECOVERY	POND 8	36.0004	66.31
RECOVERY	POND 8	36.2504	66.30
RECOVERY	POND 8	36.5004	66.28
RECOVERY	POND 8	36.7504	66.26
RECOVERY	POND 8	37.0004	66.25
RECOVERY	POND 8	37.2504	66.23
RECOVERY	POND 8	37.5004	66.22
RECOVERY	POND 8	37.7504	66.20
RECOVERY	POND 8	38.0004	66.18
RECOVERY	POND 8	38.2504	66.17
RECOVERY	POND 8	38.5004	66.15
RECOVERY	POND 8	38.7504	66.13
RECOVERY	POND 8	39.0004	66.12
RECOVERY	POND 8	39.2504	66.10
RECOVERY	POND 8	39.5004	66.09
RECOVERY	POND 8	39.7504	66.07
RECOVERY	POND 8	40.0004	66.05
RECOVERY	POND 8	40.2504	66.04
RECOVERY	POND 8	40.5004	66.02
RECOVERY	POND 8	40.7504	66.01
RECOVERY	POND 8	41.0004	65.99
RECOVERY	POND 8	41.2504	65.97
RECOVERY	POND 8	41.5004	65.96
RECOVERY	POND 8	41.7504	65.94

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 8	42.0004	65.93
RECOVERY	POND 8	42.2504	65.91
RECOVERY	POND 8	42.5004	65.90
RECOVERY	POND 8	42.7504	65.88
RECOVERY	POND 8	43.0004	65.86
RECOVERY	POND 8	43.2504	65.85
RECOVERY	POND 8	43.5004	65.83
RECOVERY	POND 8	43.7504	65.82
RECOVERY	POND 8	44.0004	65.80
RECOVERY	POND 8	44.2504	65.79
RECOVERY	POND 8	44.5004	65.77
RECOVERY	POND 8	44.7504	65.76
RECOVERY	POND 8	45.0004	65.74
RECOVERY	POND 8	45.2504	65.73
RECOVERY	POND 8	45.5004	65.71
RECOVERY	POND 8	45.7504	65.70
RECOVERY	POND 8	46.0004	65.68
RECOVERY	POND 8	46.2504	65.67
RECOVERY	POND 8	46.5004	65.65
RECOVERY	POND 8	46.7504	65.64
RECOVERY	POND 8	47.0004	65.62
RECOVERY	POND 8	47.2504	65.61
RECOVERY	POND 8	47.5004	65.59
RECOVERY	POND 8	47.7504	65.58
RECOVERY	POND 8	48.0004	65.56
RECOVERY	POND 8	48.2504	65.55
RECOVERY	POND 8	48.5004	65.54
RECOVERY	POND 8	48.7504	65.52
RECOVERY	POND 8	49.0004	65.51
RECOVERY	POND 8	49.2504	65.49
RECOVERY	POND 8	49.5004	65.48
RECOVERY	POND 8	49.7504	65.46
RECOVERY	POND 8	50.0004	65.45
RECOVERY	POND 8	50.2504	65.44
RECOVERY	POND 8	50.5004	65.42
RECOVERY	POND 8	50.7504	65.41
RECOVERY	POND 8	51.0004	65.40
RECOVERY	POND 8	51.2504	65.38
RECOVERY	POND 8	51.5004	65.37
RECOVERY	POND 8	51.7504	65.35
RECOVERY	POND 8	52.0004	65.34
RECOVERY	POND 8	52.2504	65.33

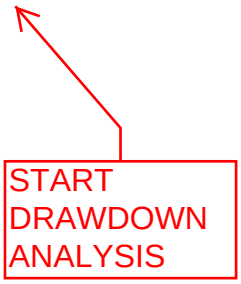


Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 8	52.5004	65.31
RECOVERY	POND 8	52.7504	65.30
RECOVERY	POND 8	53.0004	65.29
RECOVERY	POND 8	53.2504	65.27
RECOVERY	POND 8	53.5004	65.26
RECOVERY	POND 8	53.7504	65.25
RECOVERY	POND 8	54.0004	65.23
RECOVERY	POND 8	54.2504	65.22
RECOVERY	POND 8	54.5004	65.21
RECOVERY	POND 8	54.7504	65.19
RECOVERY	POND 8	55.0004	65.18
RECOVERY	POND 8	55.2504	65.17
RECOVERY	POND 8	55.5004	65.16
RECOVERY	POND 8	55.7504	65.14
RECOVERY	POND 8	56.0004	65.13
RECOVERY	POND 8	56.2504	65.12
RECOVERY	POND 8	56.5004	65.11
RECOVERY	POND 8	56.7504	65.09
RECOVERY	POND 8	57.0004	65.08
RECOVERY	POND 8	57.2504	65.07
RECOVERY	POND 8	57.5004	65.06
RECOVERY	POND 8	57.7504	65.05
RECOVERY	POND 8	58.0004	65.03
RECOVERY	POND 8	58.2504	65.02
RECOVERY	POND 8	58.5004	65.01
RECOVERY	POND 8	58.7504	65.00
RECOVERY	POND 8	59.0004	64.99
RECOVERY	POND 8	59.2504	64.97
RECOVERY	POND 8	59.5004	64.96
RECOVERY	POND 8	59.7504	64.95
RECOVERY	POND 8	60.0004	64.94
RECOVERY	POND 8	60.2504	64.93
RECOVERY	POND 8	60.5004	64.92
RECOVERY	POND 8	60.7504	64.91
RECOVERY	POND 8	61.0004	64.89
RECOVERY	POND 8	61.2504	64.88
RECOVERY	POND 8	61.5004	64.87
RECOVERY	POND 8	61.7504	64.86
RECOVERY	POND 8	62.0004	64.85
RECOVERY	POND 8	62.2504	64.84
RECOVERY	POND 8	62.5004	64.83
RECOVERY	POND 8	62.7504	64.82

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 9	0.0000	65.50
RECOVERY	POND 9	0.2511	65.50
RECOVERY	POND 9	0.5050	65.50
RECOVERY	POND 9	0.7527	65.50
RECOVERY	POND 9	1.0027	65.50
RECOVERY	POND 9	1.2527	65.50
RECOVERY	POND 9	1.5027	65.50
RECOVERY	POND 9	1.7527	65.50
RECOVERY	POND 9	2.0027	65.50
RECOVERY	POND 9	2.2527	65.50
RECOVERY	POND 9	2.5027	65.50
RECOVERY	POND 9	2.7527	65.50
RECOVERY	POND 9	3.0027	65.50
RECOVERY	POND 9	3.2527	65.50
RECOVERY	POND 9	3.5027	65.50
RECOVERY	POND 9	3.7527	65.50
RECOVERY	POND 9	4.0027	65.50
RECOVERY	POND 9	4.2527	65.50
RECOVERY	POND 9	4.5027	65.50
RECOVERY	POND 9	4.7527	65.50
RECOVERY	POND 9	5.0027	65.50
RECOVERY	POND 9	5.2527	65.50
RECOVERY	POND 9	5.5027	65.50
RECOVERY	POND 9	5.7527	65.50
RECOVERY	POND 9	6.0027	65.50
RECOVERY	POND 9	6.2527	65.50
RECOVERY	POND 9	6.5027	65.50
RECOVERY	POND 9	6.7527	65.50
RECOVERY	POND 9	7.0027	65.50
RECOVERY	POND 9	7.2527	65.51
RECOVERY	POND 9	7.5027	65.51
RECOVERY	POND 9	7.7527	65.52
RECOVERY	POND 9	8.0027	65.52
RECOVERY	POND 9	8.2527	65.53
RECOVERY	POND 9	8.5027	65.54
RECOVERY	POND 9	8.7527	65.55
RECOVERY	POND 9	9.0027	65.57
RECOVERY	POND 9	9.2530	65.58
RECOVERY	POND 9	9.5031	65.60
RECOVERY	POND 9	9.7520	65.62
RECOVERY	POND 9	10.0029	65.65
RECOVERY	POND 9	10.2516	65.68

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 9	10.5014	65.72
RECOVERY	POND 9	10.7521	65.76
RECOVERY	POND 9	11.0016	65.83
RECOVERY	POND 9	11.2513	65.91
RECOVERY	POND 9	11.5006	66.01
RECOVERY	POND 9	11.7503	66.27
RECOVERY	POND 9	12.0000	67.13
RECOVERY	POND 9	12.2500	68.11
RECOVERY	POND 9	12.5007	68.01
RECOVERY	POND 9	12.7509	67.85
RECOVERY	POND 9	13.0001	67.75
RECOVERY	POND 9	13.2509	67.69
RECOVERY	POND 9	13.5016	67.64
RECOVERY	POND 9	13.7509	67.60
RECOVERY	POND 9	14.0002	67.57
RECOVERY	POND 9	14.2533	67.54
RECOVERY	POND 9	14.5013	67.51
RECOVERY	POND 9	14.7535	67.48
RECOVERY	POND 9	15.0007	67.45
RECOVERY	POND 9	15.2537	67.43
RECOVERY	POND 9	15.5014	67.41
RECOVERY	POND 9	15.7550	67.39
RECOVERY	POND 9	16.0034	67.37
RECOVERY	POND 9	16.2509	67.36
RECOVERY	POND 9	16.5035	67.35
RECOVERY	POND 9	16.7526	67.34
RECOVERY	POND 9	17.0034	67.32
RECOVERY	POND 9	17.2540	67.31
RECOVERY	POND 9	17.5042	67.30
RECOVERY	POND 9	17.7529	67.30
RECOVERY	POND 9	18.0046	67.29
RECOVERY	POND 9	18.2504	67.28
RECOVERY	POND 9	18.5004	67.27
RECOVERY	POND 9	18.7504	67.26
RECOVERY	POND 9	19.0004	67.25
RECOVERY	POND 9	19.2504	67.25
RECOVERY	POND 9	19.5004	67.24
RECOVERY	POND 9	19.7504	67.24
RECOVERY	POND 9	20.0004	67.23
RECOVERY	POND 9	20.2504	67.22
RECOVERY	POND 9	20.5004	67.21
RECOVERY	POND 9	20.7504	67.21

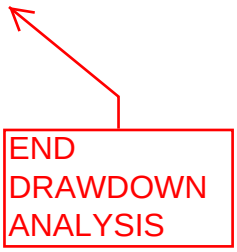
Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 9	21.0004	67.20
RECOVERY	POND 9	21.2504	67.20
RECOVERY	POND 9	21.5004	67.19
RECOVERY	POND 9	21.7504	67.19
RECOVERY	POND 9	22.0004	67.19
RECOVERY	POND 9	22.2504	67.18
RECOVERY	POND 9	22.5004	67.18
RECOVERY	POND 9	22.7504	67.18
RECOVERY	POND 9	23.0004	67.18
RECOVERY	POND 9	23.2504	67.18
RECOVERY	POND 9	23.5004	67.18
RECOVERY	POND 9	23.7504	67.17
RECOVERY	POND 9	24.0004	67.17
RECOVERY	POND 9	24.2504	67.16
RECOVERY	POND 9	24.5004	67.14
RECOVERY	POND 9	24.7504	67.12
RECOVERY	POND 9	25.0004	67.10
RECOVERY	POND 9	25.2504	67.09
RECOVERY	POND 9	25.5004	67.08
RECOVERY	POND 9	25.7504	67.07
RECOVERY	POND 9	26.0004	67.05
RECOVERY	POND 9	26.2504	67.04
RECOVERY	POND 9	26.5004	67.04
RECOVERY	POND 9	26.7504	67.03
RECOVERY	POND 9	27.0004	67.02
RECOVERY	POND 9	27.2504	67.01
RECOVERY	POND 9	27.5004	67.00
RECOVERY	POND 9	27.7504	67.00
RECOVERY	POND 9	28.0004	66.99
RECOVERY	POND 9	28.2504	66.98
RECOVERY	POND 9	28.5004	66.97
RECOVERY	POND 9	28.7504	66.97
RECOVERY	POND 9	29.0004	66.96
RECOVERY	POND 9	29.2504	66.95
RECOVERY	POND 9	29.5004	66.95
RECOVERY	POND 9	29.7504	66.94
RECOVERY	POND 9	30.0004	66.93
RECOVERY	POND 9	30.2504	66.92
RECOVERY	POND 9	30.5004	66.92
RECOVERY	POND 9	30.7504	66.91
RECOVERY	POND 9	31.0004	66.90
RECOVERY	POND 9	31.2504	66.90



Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 9	31.5004	66.89
RECOVERY	POND 9	31.7504	66.88
RECOVERY	POND 9	32.0004	66.87
RECOVERY	POND 9	32.2504	66.87
RECOVERY	POND 9	32.5004	66.86
RECOVERY	POND 9	32.7504	66.85
RECOVERY	POND 9	33.0004	66.85
RECOVERY	POND 9	33.2504	66.84
RECOVERY	POND 9	33.5004	66.83
RECOVERY	POND 9	33.7504	66.82
RECOVERY	POND 9	34.0004	66.82
RECOVERY	POND 9	34.2504	66.81
RECOVERY	POND 9	34.5004	66.80
RECOVERY	POND 9	34.7504	66.80
RECOVERY	POND 9	35.0004	66.79
RECOVERY	POND 9	35.2504	66.78
RECOVERY	POND 9	35.5004	66.78
RECOVERY	POND 9	35.7504	66.77
RECOVERY	POND 9	36.0004	66.76
RECOVERY	POND 9	36.2504	66.76
RECOVERY	POND 9	36.5004	66.75
RECOVERY	POND 9	36.7504	66.74
RECOVERY	POND 9	37.0004	66.74
RECOVERY	POND 9	37.2504	66.73
RECOVERY	POND 9	37.5004	66.72
RECOVERY	POND 9	37.7504	66.72
RECOVERY	POND 9	38.0004	66.71
RECOVERY	POND 9	38.2504	66.70
RECOVERY	POND 9	38.5004	66.70
RECOVERY	POND 9	38.7504	66.69
RECOVERY	POND 9	39.0004	66.68
RECOVERY	POND 9	39.2504	66.68
RECOVERY	POND 9	39.5004	66.67
RECOVERY	POND 9	39.7504	66.66
RECOVERY	POND 9	40.0004	66.66
RECOVERY	POND 9	40.2504	66.65
RECOVERY	POND 9	40.5004	66.64
RECOVERY	POND 9	40.7504	66.64
RECOVERY	POND 9	41.0004	66.63
RECOVERY	POND 9	41.2504	66.62
RECOVERY	POND 9	41.5004	66.62
RECOVERY	POND 9	41.7504	66.61

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 9	42.0004	66.60
RECOVERY	POND 9	42.2504	66.60
RECOVERY	POND 9	42.5004	66.59
RECOVERY	POND 9	42.7504	66.58
RECOVERY	POND 9	43.0004	66.58
RECOVERY	POND 9	43.2504	66.57
RECOVERY	POND 9	43.5004	66.56
RECOVERY	POND 9	43.7504	66.56
RECOVERY	POND 9	44.0004	66.55
RECOVERY	POND 9	44.2504	66.55
RECOVERY	POND 9	44.5004	66.54
RECOVERY	POND 9	44.7504	66.53
RECOVERY	POND 9	45.0004	66.53
RECOVERY	POND 9	45.2504	66.52
RECOVERY	POND 9	45.5004	66.51
RECOVERY	POND 9	45.7504	66.51
RECOVERY	POND 9	46.0004	66.50
RECOVERY	POND 9	46.2504	66.50
RECOVERY	POND 9	46.5004	66.49
RECOVERY	POND 9	46.7504	66.48
RECOVERY	POND 9	47.0004	66.48
RECOVERY	POND 9	47.2504	66.47
RECOVERY	POND 9	47.5004	66.46
RECOVERY	POND 9	47.7504	66.46
RECOVERY	POND 9	48.0004	66.45
RECOVERY	POND 9	48.2504	66.45
RECOVERY	POND 9	48.5004	66.44
RECOVERY	POND 9	48.7504	66.43
RECOVERY	POND 9	49.0004	66.43
RECOVERY	POND 9	49.2504	66.42
RECOVERY	POND 9	49.5004	66.42
RECOVERY	POND 9	49.7504	66.41
RECOVERY	POND 9	50.0004	66.40
RECOVERY	POND 9	50.2504	66.40
RECOVERY	POND 9	50.5004	66.39
RECOVERY	POND 9	50.7504	66.39
RECOVERY	POND 9	51.0004	66.38
RECOVERY	POND 9	51.2504	66.37
RECOVERY	POND 9	51.5004	66.37
RECOVERY	POND 9	51.7504	66.36
RECOVERY	POND 9	52.0004	66.36
RECOVERY	POND 9	52.2504	66.35

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 9	52.5004	66.34
RECOVERY	POND 9	52.7504	66.34
RECOVERY	POND 9	53.0004	66.33
RECOVERY	POND 9	53.2504	66.33
RECOVERY	POND 9	53.5004	66.32
RECOVERY	POND 9	53.7504	66.32
RECOVERY	POND 9	54.0004	66.31
RECOVERY	POND 9	54.2504	66.30
RECOVERY	POND 9	54.5004	66.30
RECOVERY	POND 9	54.7504	66.29
RECOVERY	POND 9	55.0004	66.29
RECOVERY	POND 9	55.2504	66.28
RECOVERY	POND 9	55.5004	66.28
RECOVERY	POND 9	55.7504	66.27
RECOVERY	POND 9	56.0004	66.27
RECOVERY	POND 9	56.2504	66.26
RECOVERY	POND 9	56.5004	66.25
RECOVERY	POND 9	56.7504	66.25
RECOVERY	POND 9	57.0004	66.24
RECOVERY	POND 9	57.2504	66.24
RECOVERY	POND 9	57.5004	66.23
RECOVERY	POND 9	57.7504	66.23
RECOVERY	POND 9	58.0004	66.22
RECOVERY	POND 9	58.2504	66.22
RECOVERY	POND 9	58.5004	66.21
RECOVERY	POND 9	58.7504	66.21
RECOVERY	POND 9	59.0004	66.20
RECOVERY	POND 9	59.2504	66.19
RECOVERY	POND 9	59.5004	66.19
RECOVERY	POND 9	59.7504	66.18
RECOVERY	POND 9	60.0004	66.18
RECOVERY	POND 9	60.2504	66.17
RECOVERY	POND 9	60.5004	66.17
RECOVERY	POND 9	60.7504	66.16
RECOVERY	POND 9	61.0004	66.16
RECOVERY	POND 9	61.2504	66.15
RECOVERY	POND 9	61.5004	66.15
RECOVERY	POND 9	61.7504	66.14
RECOVERY	POND 9	62.0004	66.14
RECOVERY	POND 9	62.2504	66.13
RECOVERY	POND 9	62.5004	66.13
RECOVERY	POND 9	62.7504	66.12



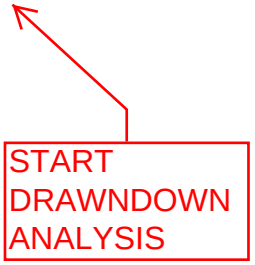
Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 9	63.0004	66.12
RECOVERY	POND 9	63.2504	66.11
RECOVERY	POND 9	63.5004	66.11
RECOVERY	POND 9	63.7504	66.10
RECOVERY	POND 9	64.0004	66.10
RECOVERY	POND 9	64.2504	66.09
RECOVERY	POND 9	64.5004	66.09
RECOVERY	POND 9	64.7504	66.08
RECOVERY	POND 9	65.0004	66.08
RECOVERY	POND 9	65.2504	66.07
RECOVERY	POND 9	65.5004	66.07
RECOVERY	POND 9	65.7504	66.06
RECOVERY	POND 9	66.0004	66.06
RECOVERY	POND 9	66.2504	66.05
RECOVERY	POND 9	66.5004	66.05
RECOVERY	POND 9	66.7504	66.04
RECOVERY	POND 9	67.0004	66.04
RECOVERY	POND 9	67.2504	66.03
RECOVERY	POND 9	67.5004	66.03
RECOVERY	POND 9	67.7504	66.02
RECOVERY	POND 9	68.0004	66.02
RECOVERY	POND 9	68.2504	66.01
RECOVERY	POND 9	68.5004	66.01
RECOVERY	POND 9	68.7504	66.01
RECOVERY	POND 9	69.0004	66.00
RECOVERY	POND 9	69.2504	66.00
RECOVERY	POND 9	69.5004	65.99
RECOVERY	POND 9	69.7504	65.99
RECOVERY	POND 9	70.0004	65.98
RECOVERY	POND 9	70.2504	65.98
RECOVERY	POND 9	70.5004	65.97
RECOVERY	POND 9	70.7504	65.97
RECOVERY	POND 9	71.0004	65.96
RECOVERY	POND 9	71.2504	65.96
RECOVERY	POND 9	71.5004	65.96
RECOVERY	POND 9	71.7504	65.95
RECOVERY	POND 9	72.0004	65.95
RECOVERY	POND 9	72.2504	65.94
RECOVERY	POND 9	72.5004	65.94
RECOVERY	POND 9	72.7504	65.93
RECOVERY	POND 9	73.0004	65.93
RECOVERY	POND 9	73.2504	65.93

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	0.0000	65.00
RECOVERY	POND 10	0.2511	65.00
RECOVERY	POND 10	0.5050	65.00
RECOVERY	POND 10	0.7527	65.00
RECOVERY	POND 10	1.0027	65.00
RECOVERY	POND 10	1.2527	65.00
RECOVERY	POND 10	1.5027	65.00
RECOVERY	POND 10	1.7527	65.00
RECOVERY	POND 10	2.0027	65.00
RECOVERY	POND 10	2.2527	65.00
RECOVERY	POND 10	2.5027	65.00
RECOVERY	POND 10	2.7527	65.00
RECOVERY	POND 10	3.0027	65.00
RECOVERY	POND 10	3.2527	65.00
RECOVERY	POND 10	3.5027	65.00
RECOVERY	POND 10	3.7527	65.00
RECOVERY	POND 10	4.0027	65.00
RECOVERY	POND 10	4.2527	65.00
RECOVERY	POND 10	4.5027	65.00
RECOVERY	POND 10	4.7527	65.00
RECOVERY	POND 10	5.0027	65.00
RECOVERY	POND 10	5.2527	65.00
RECOVERY	POND 10	5.5027	65.00
RECOVERY	POND 10	5.7527	65.00
RECOVERY	POND 10	6.0027	65.00
RECOVERY	POND 10	6.2527	65.00
RECOVERY	POND 10	6.5027	65.00
RECOVERY	POND 10	6.7527	65.00
RECOVERY	POND 10	7.0027	65.01
RECOVERY	POND 10	7.2527	65.01
RECOVERY	POND 10	7.5027	65.02
RECOVERY	POND 10	7.7527	65.02
RECOVERY	POND 10	8.0027	65.03
RECOVERY	POND 10	8.2527	65.04
RECOVERY	POND 10	8.5027	65.05
RECOVERY	POND 10	8.7527	65.07
RECOVERY	POND 10	9.0027	65.09
RECOVERY	POND 10	9.2530	65.11
RECOVERY	POND 10	9.5031	65.13
RECOVERY	POND 10	9.7520	65.16
RECOVERY	POND 10	10.0029	65.20
RECOVERY	POND 10	10.2516	65.23

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	10.5014	65.28
RECOVERY	POND 10	10.7521	65.34
RECOVERY	POND 10	11.0016	65.43
RECOVERY	POND 10	11.2513	65.53
RECOVERY	POND 10	11.5006	65.67
RECOVERY	POND 10	11.7503	66.00
RECOVERY	POND 10	12.0000	67.09
RECOVERY	POND 10	12.2500	68.12
RECOVERY	POND 10	12.5007	68.01
RECOVERY	POND 10	12.7509	67.93
RECOVERY	POND 10	13.0001	67.88
RECOVERY	POND 10	13.2509	67.84
RECOVERY	POND 10	13.5016	67.81
RECOVERY	POND 10	13.7509	67.78
RECOVERY	POND 10	14.0002	67.75
RECOVERY	POND 10	14.2533	67.73
RECOVERY	POND 10	14.5013	67.71
RECOVERY	POND 10	14.7535	67.69
RECOVERY	POND 10	15.0007	67.68
RECOVERY	POND 10	15.2537	67.67
RECOVERY	POND 10	15.5014	67.66
RECOVERY	POND 10	15.7550	67.65
RECOVERY	POND 10	16.0034	67.64
RECOVERY	POND 10	16.2509	67.63
RECOVERY	POND 10	16.5035	67.63
RECOVERY	POND 10	16.7526	67.62
RECOVERY	POND 10	17.0034	67.61
RECOVERY	POND 10	17.2540	67.61
RECOVERY	POND 10	17.5042	67.60
RECOVERY	POND 10	17.7529	67.60
RECOVERY	POND 10	18.0046	67.59
RECOVERY	POND 10	18.2504	67.58
RECOVERY	POND 10	18.5004	67.58
RECOVERY	POND 10	18.7504	67.57
RECOVERY	POND 10	19.0004	67.57
RECOVERY	POND 10	19.2504	67.57
RECOVERY	POND 10	19.5004	67.56
RECOVERY	POND 10	19.7504	67.56
RECOVERY	POND 10	20.0004	67.56
RECOVERY	POND 10	20.2504	67.55
RECOVERY	POND 10	20.5004	67.55
RECOVERY	POND 10	20.7504	67.54

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	21.0004	67.54
RECOVERY	POND 10	21.2504	67.54
RECOVERY	POND 10	21.5004	67.54
RECOVERY	POND 10	21.7504	67.53
RECOVERY	POND 10	22.0004	67.53
RECOVERY	POND 10	22.2504	67.53
RECOVERY	POND 10	22.5004	67.53
RECOVERY	POND 10	22.7504	67.53
RECOVERY	POND 10	23.0004	67.53
RECOVERY	POND 10	23.2504	67.53
RECOVERY	POND 10	23.5004	67.52
RECOVERY	POND 10	23.7504	67.52
RECOVERY	POND 10	24.0004	67.52
RECOVERY	POND 10	24.2504	67.51
RECOVERY	POND 10	24.5004	67.50
RECOVERY	POND 10	24.7504	67.48
RECOVERY	POND 10	25.0004	67.48
RECOVERY	POND 10	25.2504	67.47
RECOVERY	POND 10	25.5004	67.46
RECOVERY	POND 10	25.7504	67.46
RECOVERY	POND 10	26.0004	67.45
RECOVERY	POND 10	26.2504	67.45
RECOVERY	POND 10	26.5004	67.45
RECOVERY	POND 10	26.7504	67.44
RECOVERY	POND 10	27.0004	67.44
RECOVERY	POND 10	27.2504	67.44
RECOVERY	POND 10	27.5004	67.43
RECOVERY	POND 10	27.7504	67.43
RECOVERY	POND 10	28.0004	67.43
RECOVERY	POND 10	28.2504	67.43
RECOVERY	POND 10	28.5004	67.42
RECOVERY	POND 10	28.7504	67.42
RECOVERY	POND 10	29.0004	67.42
RECOVERY	POND 10	29.2504	67.42
RECOVERY	POND 10	29.5004	67.42
RECOVERY	POND 10	29.7504	67.42
RECOVERY	POND 10	30.0004	67.41
RECOVERY	POND 10	30.2504	67.41
RECOVERY	POND 10	30.5004	67.41
RECOVERY	POND 10	30.7504	67.41
RECOVERY	POND 10	31.0004	67.41
RECOVERY	POND 10	31.2504	67.41

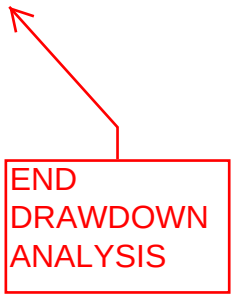
Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	31.5004	67.41
RECOVERY	POND 10	31.7504	67.40
RECOVERY	POND 10	32.0004	67.40
RECOVERY	POND 10	32.2504	67.40
RECOVERY	POND 10	32.5004	67.40
RECOVERY	POND 10	32.7504	67.40
RECOVERY	POND 10	33.0004	67.39
RECOVERY	POND 10	33.2504	67.39
RECOVERY	POND 10	33.5004	67.39
RECOVERY	POND 10	33.7504	67.38
RECOVERY	POND 10	34.0004	67.38
RECOVERY	POND 10	34.2504	67.37
RECOVERY	POND 10	34.5004	67.37
RECOVERY	POND 10	34.7504	67.36
RECOVERY	POND 10	35.0004	67.36
RECOVERY	POND 10	35.2504	67.35
RECOVERY	POND 10	35.5004	67.35
RECOVERY	POND 10	35.7504	67.34
RECOVERY	POND 10	36.0004	67.33
RECOVERY	POND 10	36.2504	67.33
RECOVERY	POND 10	36.5004	67.32
RECOVERY	POND 10	36.7504	67.31
RECOVERY	POND 10	37.0004	67.31
RECOVERY	POND 10	37.2504	67.30
RECOVERY	POND 10	37.5004	67.29
RECOVERY	POND 10	37.7504	67.28
RECOVERY	POND 10	38.0004	67.28
RECOVERY	POND 10	38.2504	67.27
RECOVERY	POND 10	38.5004	67.26
RECOVERY	POND 10	38.7504	67.25
RECOVERY	POND 10	39.0004	67.25
RECOVERY	POND 10	39.2504	67.24
RECOVERY	POND 10	39.5004	67.23
RECOVERY	POND 10	39.7504	67.22
RECOVERY	POND 10	40.0004	67.21
RECOVERY	POND 10	40.2504	67.20
RECOVERY	POND 10	40.5004	67.19
RECOVERY	POND 10	40.7504	67.19
RECOVERY	POND 10	41.0004	67.18
RECOVERY	POND 10	41.2504	67.17
RECOVERY	POND 10	41.5004	67.16
RECOVERY	POND 10	41.7504	67.15



Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	42.0004	67.14
RECOVERY	POND 10	42.2504	67.13
RECOVERY	POND 10	42.5004	67.12
RECOVERY	POND 10	42.7504	67.11
RECOVERY	POND 10	43.0004	67.10
RECOVERY	POND 10	43.2504	67.09
RECOVERY	POND 10	43.5004	67.08
RECOVERY	POND 10	43.7504	67.07
RECOVERY	POND 10	44.0004	67.07
RECOVERY	POND 10	44.2504	67.06
RECOVERY	POND 10	44.5004	67.05
RECOVERY	POND 10	44.7504	67.04
RECOVERY	POND 10	45.0004	67.03
RECOVERY	POND 10	45.2504	67.02
RECOVERY	POND 10	45.5004	67.01
RECOVERY	POND 10	45.7504	67.00
RECOVERY	POND 10	46.0004	66.99
RECOVERY	POND 10	46.2504	66.98
RECOVERY	POND 10	46.5004	66.97
RECOVERY	POND 10	46.7504	66.96
RECOVERY	POND 10	47.0004	66.95
RECOVERY	POND 10	47.2504	66.94
RECOVERY	POND 10	47.5004	66.93
RECOVERY	POND 10	47.7504	66.92
RECOVERY	POND 10	48.0004	66.91
RECOVERY	POND 10	48.2504	66.90
RECOVERY	POND 10	48.5004	66.89
RECOVERY	POND 10	48.7504	66.88
RECOVERY	POND 10	49.0004	66.87
RECOVERY	POND 10	49.2504	66.86
RECOVERY	POND 10	49.5004	66.85
RECOVERY	POND 10	49.7504	66.84
RECOVERY	POND 10	50.0004	66.83
RECOVERY	POND 10	50.2504	66.82
RECOVERY	POND 10	50.5004	66.81
RECOVERY	POND 10	50.7504	66.80
RECOVERY	POND 10	51.0004	66.79
RECOVERY	POND 10	51.2504	66.78
RECOVERY	POND 10	51.5004	66.77
RECOVERY	POND 10	51.7504	66.76
RECOVERY	POND 10	52.0004	66.75
RECOVERY	POND 10	52.2504	66.74

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	52.5004	66.73
RECOVERY	POND 10	52.7504	66.72
RECOVERY	POND 10	53.0004	66.71
RECOVERY	POND 10	53.2504	66.70
RECOVERY	POND 10	53.5004	66.69
RECOVERY	POND 10	53.7504	66.68
RECOVERY	POND 10	54.0004	66.67
RECOVERY	POND 10	54.2504	66.66
RECOVERY	POND 10	54.5004	66.65
RECOVERY	POND 10	54.7504	66.64
RECOVERY	POND 10	55.0004	66.63
RECOVERY	POND 10	55.2504	66.62
RECOVERY	POND 10	55.5004	66.61
RECOVERY	POND 10	55.7504	66.60
RECOVERY	POND 10	56.0004	66.59
RECOVERY	POND 10	56.2504	66.58
RECOVERY	POND 10	56.5004	66.57
RECOVERY	POND 10	56.7504	66.56
RECOVERY	POND 10	57.0004	66.55
RECOVERY	POND 10	57.2504	66.54
RECOVERY	POND 10	57.5004	66.53
RECOVERY	POND 10	57.7504	66.52
RECOVERY	POND 10	58.0004	66.51
RECOVERY	POND 10	58.2504	66.50
RECOVERY	POND 10	58.5004	66.49
RECOVERY	POND 10	58.7504	66.48
RECOVERY	POND 10	59.0004	66.47
RECOVERY	POND 10	59.2504	66.46
RECOVERY	POND 10	59.5004	66.45
RECOVERY	POND 10	59.7504	66.44
RECOVERY	POND 10	60.0004	66.43
RECOVERY	POND 10	60.2504	66.42
RECOVERY	POND 10	60.5004	66.41
RECOVERY	POND 10	60.7504	66.40
RECOVERY	POND 10	61.0004	66.39
RECOVERY	POND 10	61.2504	66.38
RECOVERY	POND 10	61.5004	66.37
RECOVERY	POND 10	61.7504	66.36
RECOVERY	POND 10	62.0004	66.35
RECOVERY	POND 10	62.2504	66.34
RECOVERY	POND 10	62.5004	66.34
RECOVERY	POND 10	62.7504	66.33

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	63.0004	66.32
RECOVERY	POND 10	63.2504	66.31
RECOVERY	POND 10	63.5004	66.30
RECOVERY	POND 10	63.7504	66.29
RECOVERY	POND 10	64.0004	66.28
RECOVERY	POND 10	64.2504	66.27
RECOVERY	POND 10	64.5004	66.26
RECOVERY	POND 10	64.7504	66.25
RECOVERY	POND 10	65.0004	66.24
RECOVERY	POND 10	65.2504	66.23
RECOVERY	POND 10	65.5004	66.23
RECOVERY	POND 10	65.7504	66.22
RECOVERY	POND 10	66.0004	66.21
RECOVERY	POND 10	66.2504	66.20
RECOVERY	POND 10	66.5004	66.19
RECOVERY	POND 10	66.7504	66.18
RECOVERY	POND 10	67.0004	66.17
RECOVERY	POND 10	67.2504	66.16
RECOVERY	POND 10	67.5004	66.15
RECOVERY	POND 10	67.7504	66.15
RECOVERY	POND 10	68.0004	66.14
RECOVERY	POND 10	68.2504	66.13
RECOVERY	POND 10	68.5004	66.12
RECOVERY	POND 10	68.7504	66.11
RECOVERY	POND 10	69.0004	66.10
RECOVERY	POND 10	69.2504	66.09
RECOVERY	POND 10	69.5004	66.08
RECOVERY	POND 10	69.7504	66.08
RECOVERY	POND 10	70.0004	66.07
RECOVERY	POND 10	70.2504	66.06
RECOVERY	POND 10	70.5004	66.05
RECOVERY	POND 10	70.7504	66.04
RECOVERY	POND 10	71.0004	66.03
RECOVERY	POND 10	71.2504	66.03
RECOVERY	POND 10	71.5004	66.02
RECOVERY	POND 10	71.7504	66.01
RECOVERY	POND 10	72.0004	66.00
RECOVERY	POND 10	72.2504	65.99
RECOVERY	POND 10	72.5004	65.98
RECOVERY	POND 10	72.7504	65.98
RECOVERY	POND 10	73.0004	65.97
RECOVERY	POND 10	73.2504	65.96



Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 10	73.5004	65.95
RECOVERY	POND 10	73.7504	65.94
RECOVERY	POND 10	74.0004	65.94
RECOVERY	POND 10	74.2504	65.93
RECOVERY	POND 10	74.5004	65.92
RECOVERY	POND 10	74.7504	65.91
RECOVERY	POND 10	75.0004	65.91
RECOVERY	POND 10	75.2504	65.90
RECOVERY	POND 10	75.5004	65.89
RECOVERY	POND 10	75.7504	65.88
RECOVERY	POND 10	76.0004	65.87
RECOVERY	POND 10	76.2504	65.87
RECOVERY	POND 10	76.5004	65.86
RECOVERY	POND 10	76.7504	65.85
RECOVERY	POND 10	77.0004	65.84
RECOVERY	POND 10	77.2504	65.84
RECOVERY	POND 10	77.5004	65.83
RECOVERY	POND 10	77.7504	65.82
RECOVERY	POND 10	78.0004	65.82
RECOVERY	POND 10	78.2504	65.81
RECOVERY	POND 10	78.5004	65.80
RECOVERY	POND 10	78.7504	65.79
RECOVERY	POND 10	79.0004	65.79
RECOVERY	POND 10	79.2504	65.78
RECOVERY	POND 10	79.5004	65.77
RECOVERY	POND 10	79.7504	65.77
RECOVERY	POND 10	80.0004	65.76
RECOVERY	POND 10	80.2504	65.75
RECOVERY	POND 10	80.5004	65.74
RECOVERY	POND 10	80.7504	65.74
RECOVERY	POND 10	81.0004	65.73
RECOVERY	POND 10	81.2504	65.72
RECOVERY	POND 10	81.5004	65.72
RECOVERY	POND 10	81.7504	65.71
RECOVERY	POND 10	82.0004	65.70
RECOVERY	POND 10	82.2504	65.70
RECOVERY	POND 10	82.5004	65.69
RECOVERY	POND 10	82.7504	65.68
RECOVERY	POND 10	83.0004	65.68
RECOVERY	POND 10	83.2504	65.67
RECOVERY	POND 10	83.5004	65.66
RECOVERY	POND 10	83.7504	65.66

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 12	0.0000	64.50
RECOVERY	POND 12	0.2511	64.50
RECOVERY	POND 12	0.5050	64.50
RECOVERY	POND 12	0.7527	64.50
RECOVERY	POND 12	1.0027	64.50
RECOVERY	POND 12	1.2527	64.50
RECOVERY	POND 12	1.5027	64.50
RECOVERY	POND 12	1.7527	64.50
RECOVERY	POND 12	2.0027	64.50
RECOVERY	POND 12	2.2527	64.50
RECOVERY	POND 12	2.5027	64.50
RECOVERY	POND 12	2.7527	64.50
RECOVERY	POND 12	3.0027	64.50
RECOVERY	POND 12	3.2527	64.50
RECOVERY	POND 12	3.5027	64.50
RECOVERY	POND 12	3.7527	64.50
RECOVERY	POND 12	4.0027	64.50
RECOVERY	POND 12	4.2527	64.50
RECOVERY	POND 12	4.5027	64.50
RECOVERY	POND 12	4.7527	64.50
RECOVERY	POND 12	5.0027	64.50
RECOVERY	POND 12	5.2527	64.50
RECOVERY	POND 12	5.5027	64.50
RECOVERY	POND 12	5.7527	64.50
RECOVERY	POND 12	6.0027	64.50
RECOVERY	POND 12	6.2527	64.50
RECOVERY	POND 12	6.5027	64.50
RECOVERY	POND 12	6.7527	64.50
RECOVERY	POND 12	7.0027	64.51
RECOVERY	POND 12	7.2527	64.51
RECOVERY	POND 12	7.5027	64.52
RECOVERY	POND 12	7.7527	64.52
RECOVERY	POND 12	8.0027	64.53
RECOVERY	POND 12	8.2527	64.54
RECOVERY	POND 12	8.5027	64.55
RECOVERY	POND 12	8.7527	64.56
RECOVERY	POND 12	9.0027	64.58
RECOVERY	POND 12	9.2530	64.60
RECOVERY	POND 12	9.5031	64.62
RECOVERY	POND 12	9.7520	64.64
RECOVERY	POND 12	10.0029	64.67
RECOVERY	POND 12	10.2516	64.71

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 12	10.5014	64.74
RECOVERY	POND 12	10.7521	64.79
RECOVERY	POND 12	11.0016	64.86
RECOVERY	POND 12	11.2513	64.95
RECOVERY	POND 12	11.5006	65.06
RECOVERY	POND 12	11.7503	65.33
RECOVERY	POND 12	12.0000	66.24
RECOVERY	POND 12	12.2500	67.31
RECOVERY	POND 12	12.5007	67.25
RECOVERY	POND 12	12.7509	67.09
RECOVERY	POND 12	13.0001	66.97
RECOVERY	POND 12	13.2509	66.89
RECOVERY	POND 12	13.5016	66.83
RECOVERY	POND 12	13.7509	66.78
RECOVERY	POND 12	14.0002	66.75
RECOVERY	POND 12	14.2533	66.72
RECOVERY	POND 12	14.5013	66.69
RECOVERY	POND 12	14.7535	66.67
RECOVERY	POND 12	15.0007	66.66
RECOVERY	POND 12	15.2537	66.65
RECOVERY	POND 12	15.5014	66.64
RECOVERY	POND 12	15.7550	66.62
RECOVERY	POND 12	16.0034	66.62
RECOVERY	POND 12	16.2509	66.61
RECOVERY	POND 12	16.5035	66.61
RECOVERY	POND 12	16.7526	66.60
RECOVERY	POND 12	17.0034	66.60
RECOVERY	POND 12	17.2540	66.59
RECOVERY	POND 12	17.5042	66.59
RECOVERY	POND 12	17.7529	66.59
RECOVERY	POND 12	18.0046	66.58
RECOVERY	POND 12	18.2504	66.58
RECOVERY	POND 12	18.5004	66.57
RECOVERY	POND 12	18.7504	66.57
RECOVERY	POND 12	19.0004	66.56
RECOVERY	POND 12	19.2504	66.56
RECOVERY	POND 12	19.5004	66.56
RECOVERY	POND 12	19.7504	66.56
RECOVERY	POND 12	20.0004	66.56
RECOVERY	POND 12	20.2504	66.55
RECOVERY	POND 12	20.5004	66.54
RECOVERY	POND 12	20.7504	66.54

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 12	21.0004	66.54
RECOVERY	POND 12	21.2504	66.54
RECOVERY	POND 12	21.5004	66.53
RECOVERY	POND 12	21.7504	66.53
RECOVERY	POND 12	22.0004	66.53
RECOVERY	POND 12	22.2504	66.53
RECOVERY	POND 12	22.5004	66.53
RECOVERY	POND 12	22.7504	66.53
RECOVERY	POND 12	23.0004	66.53
RECOVERY	POND 12	23.2504	66.53
RECOVERY	POND 12	23.5004	66.53
RECOVERY	POND 12	23.7504	66.53
RECOVERY	POND 12	24.0004	66.53
RECOVERY	POND 12	24.2504	66.52
RECOVERY	POND 12	24.5004	66.50
RECOVERY	POND 12	24.7504	66.48
RECOVERY	POND 12	25.0004	66.47
RECOVERY	POND 12	25.2504	66.46
RECOVERY	POND 12	25.5004	66.45
RECOVERY	POND 12	25.7504	66.44
RECOVERY	POND 12	26.0004	66.43
RECOVERY	POND 12	26.2504	66.42
RECOVERY	POND 12	26.5004	66.41
RECOVERY	POND 12	26.7504	66.40
RECOVERY	POND 12	27.0004	66.39
RECOVERY	POND 12	27.2504	66.38
RECOVERY	POND 12	27.5004	66.38
RECOVERY	POND 12	27.7504	66.37
RECOVERY	POND 12	28.0004	66.36
RECOVERY	POND 12	28.2504	66.35
RECOVERY	POND 12	28.5004	66.34
RECOVERY	POND 12	28.7504	66.33
RECOVERY	POND 12	29.0004	66.32
RECOVERY	POND 12	29.2504	66.31
RECOVERY	POND 12	29.5004	66.30
RECOVERY	POND 12	29.7504	66.29
RECOVERY	POND 12	30.0004	66.28
RECOVERY	POND 12	30.2504	66.27
RECOVERY	POND 12	30.5004	66.26
RECOVERY	POND 12	30.7504	66.25
RECOVERY	POND 12	31.0004	66.24
RECOVERY	POND 12	31.2504	66.23

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Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 12	31.5004	66.23
RECOVERY	POND 12	31.7504	66.22
RECOVERY	POND 12	32.0004	66.21
RECOVERY	POND 12	32.2504	66.20
RECOVERY	POND 12	32.5004	66.19
RECOVERY	POND 12	32.7504	66.18
RECOVERY	POND 12	33.0004	66.17
RECOVERY	POND 12	33.2504	66.16
RECOVERY	POND 12	33.5004	66.15
RECOVERY	POND 12	33.7504	66.14
RECOVERY	POND 12	34.0004	66.13
RECOVERY	POND 12	34.2504	66.12
RECOVERY	POND 12	34.5004	66.12
RECOVERY	POND 12	34.7504	66.11
RECOVERY	POND 12	35.0004	66.10
RECOVERY	POND 12	35.2504	66.09
RECOVERY	POND 12	35.5004	66.08
RECOVERY	POND 12	35.7504	66.07
RECOVERY	POND 12	36.0004	66.06
RECOVERY	POND 12	36.2504	66.05
RECOVERY	POND 12	36.5004	66.04
RECOVERY	POND 12	36.7504	66.03
RECOVERY	POND 12	37.0004	66.03
RECOVERY	POND 12	37.2504	66.02
RECOVERY	POND 12	37.5004	66.01
RECOVERY	POND 12	37.7504	66.00
RECOVERY	POND 12	38.0004	65.99
RECOVERY	POND 12	38.2504	65.98
RECOVERY	POND 12	38.5004	65.97
RECOVERY	POND 12	38.7504	65.96
RECOVERY	POND 12	39.0004	65.96
RECOVERY	POND 12	39.2504	65.95
RECOVERY	POND 12	39.5004	65.94
RECOVERY	POND 12	39.7504	65.93
RECOVERY	POND 12	40.0004	65.92
RECOVERY	POND 12	40.2504	65.91
RECOVERY	POND 12	40.5004	65.90
RECOVERY	POND 12	40.7504	65.89
RECOVERY	POND 12	41.0004	65.89
RECOVERY	POND 12	41.2504	65.88
RECOVERY	POND 12	41.5004	65.87
RECOVERY	POND 12	41.7504	65.86

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 12	42.0004	65.85
RECOVERY	POND 12	42.2504	65.84
RECOVERY	POND 12	42.5004	65.83
RECOVERY	POND 12	42.7504	65.83
RECOVERY	POND 12	43.0004	65.82
RECOVERY	POND 12	43.2504	65.81
RECOVERY	POND 12	43.5004	65.80
RECOVERY	POND 12	43.7504	65.79
RECOVERY	POND 12	44.0004	65.78
RECOVERY	POND 12	44.2504	65.78
RECOVERY	POND 12	44.5004	65.77
RECOVERY	POND 12	44.7504	65.76
RECOVERY	POND 12	45.0004	65.75
RECOVERY	POND 12	45.2504	65.74
RECOVERY	POND 12	45.5004	65.73
RECOVERY	POND 12	45.7504	65.73
RECOVERY	POND 12	46.0004	65.72
RECOVERY	POND 12	46.2504	65.71
RECOVERY	POND 12	46.5004	65.70
RECOVERY	POND 12	46.7504	65.69
RECOVERY	POND 12	47.0004	65.69
RECOVERY	POND 12	47.2504	65.68
RECOVERY	POND 12	47.5004	65.67
RECOVERY	POND 12	47.7504	65.66
RECOVERY	POND 12	48.0004	65.65
RECOVERY	POND 12	48.2504	65.64
RECOVERY	POND 12	48.5004	65.64
RECOVERY	POND 12	48.7504	65.63
RECOVERY	POND 12	49.0004	65.62
RECOVERY	POND 12	49.2504	65.61
RECOVERY	POND 12	49.5004	65.61
RECOVERY	POND 12	49.7504	65.60
RECOVERY	POND 12	50.0004	65.59
RECOVERY	POND 12	50.2504	65.58
RECOVERY	POND 12	50.5004	65.57
RECOVERY	POND 12	50.7504	65.57
RECOVERY	POND 12	51.0004	65.56
RECOVERY	POND 12	51.2504	65.55
RECOVERY	POND 12	51.5004	65.54
RECOVERY	POND 12	51.7504	65.53
RECOVERY	POND 12	52.0004	65.53
RECOVERY	POND 12	52.2504	65.52

Sim	Node Name	Relative Time [hrs]	Stage [ft]
RECOVERY	POND 12	52.5004	65.51
RECOVERY	POND 12	52.7504	65.50
RECOVERY	POND 12	53.0004	65.50
RECOVERY	POND 12	53.2504	65.49
RECOVERY	POND 12	53.5004	65.48
RECOVERY	POND 12	53.7504	65.47
RECOVERY	POND 12	54.0004	65.47
RECOVERY	POND 12	54.2504	65.46
RECOVERY	POND 12	54.5004	65.45
RECOVERY	POND 12	54.7504	65.44
RECOVERY	POND 12	55.0004	65.44
RECOVERY	POND 12	55.2504	65.43
RECOVERY	POND 12	55.5004	65.42
RECOVERY	POND 12	55.7504	65.41
RECOVERY	POND 12	56.0004	65.41
RECOVERY	POND 12	56.2504	65.40
RECOVERY	POND 12	56.5004	65.39
RECOVERY	POND 12	56.7504	65.38
RECOVERY	POND 12	57.0004	65.38
RECOVERY	POND 12	57.2504	65.37
RECOVERY	POND 12	57.5004	65.36
RECOVERY	POND 12	57.7504	65.36
RECOVERY	POND 12	58.0004	65.35
RECOVERY	POND 12	58.2504	65.34
RECOVERY	POND 12	58.5004	65.33
RECOVERY	POND 12	58.7504	65.33
RECOVERY	POND 12	59.0004	65.32
RECOVERY	POND 12	59.2504	65.31
RECOVERY	POND 12	59.5004	65.31
RECOVERY	POND 12	59.7504	65.30
RECOVERY	POND 12	60.0004	65.29
RECOVERY	POND 12	60.2504	65.29
RECOVERY	POND 12	60.5004	65.28
RECOVERY	POND 12	60.7504	65.27
RECOVERY	POND 12	61.0004	65.26
RECOVERY	POND 12	61.2504	65.26
RECOVERY	POND 12	61.5004	65.25
RECOVERY	POND 12	61.7504	65.24
RECOVERY	POND 12	62.0004	65.24
RECOVERY	POND 12	62.2504	65.23
RECOVERY	POND 12	62.5004	65.22
RECOVERY	POND 12	62.7504	65.22

Appendix M
Pre/Post Nutrient Analysis

NUTRIENT REMOVAL COMPARISSON		
	NITROGEN	PHOSPHORUS
	KG/YR	KG/YR
PRE	146.4	19.827
POST	0	0
NET REDUCTION	-146.4	-19.827

Complete Report (not including cost) Ver 4.3.5

Project: Lake Hills
Date: 11/6/2024 9:27:43 AM

Site and Catchment Information

Analysis: Net Improvement

Catchment Name	Pre-1	Pre-2	Pre-3	Pre-4	Pre-5	Pre-6	Impacted Wetlands
Rainfall Zone	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2
Annual Mean Rainfall	52.00	52.00	52.00	52.00	52.00	52.00	52.00

Pre-Condition Landuse Information

Landuse	Agricultural - General: TN=2.800 TP=0.487	Agricultural - General: TN=2.800 TP=0.487	Agricultural - General: TN=2.800 TP=0.487	Agricultural - General: TN=2.800 TP=0.487	Agricultural - General: TN=2.800 TP=0.487	Agricultural - General: TN=2.800 TP=0.487	Undeveloped - Wet Flatwoods: TN=1.213 TP=0.021
Area (acres)	103.42	12.76	3.19	19.25	39.97	22.88	6.08
Rational Coefficient (0-1)	0.03	0.05	0.01	0.05	0.05	0.05	0.91
Non DCIA Curve Number	58.00	67.00	49.00	66.00	67.00	68.00	100.00
DCIA Percent (0-100)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen EMC (mg/l)	2.800	2.800	2.800	2.800	2.800	2.800	1.213

Phosphorus EMC (mg/l)	0.487	0.487	0.487	0.487	0.487	0.487	0.021
Runoff Volume (ac-ft/yr)	12.011	2.654	0.194	3.754	8.314	5.056	24.063
Groundwater N (kg/yr)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Groundwater P (kg/yr)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nitrogen Loading (kg/yr)	41.465	9.163	0.668	12.959	28.702	17.457	35.990
Phosphorus Loading (kg/yr)	7.212	1.594	0.116	2.254	4.992	3.036	0.623

Summary Treatment Report Version: 4.3.5

Project: Lake Hills

Analysis Type: Net Improvement

Date:11/6/2024

BMP Types:

Catchment 1 - (Pre-1) None
Catchment 2 - (Pre-2) None
Catchment 3 - (Pre-3) None
Catchment 4 - (Pre-4) None
Catchment 5 - (Pre-5) None
Catchment 6 - (Pre-6) None
Catchment 7 - (Impacted Wetlands) None

Routing Summary

Catchment 1 Routed to Outlet
Catchment 2 Routed to Outlet
Catchment 3 Routed to Catchment 2
Catchment 4 Routed to Catchment 1
Catchment 5 Routed to Catchment 1
Catchment 6 Routed to Catchment 1
Catchment 7 Routed to Outlet

Based on % removal values to the nearest percent

Total nitrogen target removal met? **Yes**
Total phosphorus target removal met? **Yes**

Summary Report

Nitrogen

Surface Water Discharge

Total N pre load	146.4 kg/yr	
Total N post load	kg/yr	
Target N load reduction	%	
Target N discharge load	146.4 kg/yr	
Percent N load reduction	%	
Provided N discharge load	kg/yr	lb/yr
Provided N load removed	kg/yr	lb/yr

Phosphorus

Surface Water Discharge

Total P pre load	19.827 kg/yr	
Total P post load	kg/yr	
Target P load reduction	%	
Target P discharge load	19.827 kg/yr	
Percent P load reduction	%	

Provided P discharge load	kg/yr	lb/yr
Provided P load removed	kg/yr	lb/yr

Complete Report (not including cost) Ver 4.3.5

Project: Lake Hills-Post
Date: 11/6/2024 10:14:12 AM

Site and Catchment Information

Analysis: Net Improvement

Catchment Name	Post 1	Post 2	Post 3	Post 4	Post 5	Post 6	Post 7	Post 8	Post 9	Post 10	Post 12
Rainfall Zone	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2
Annual Mean Rainfall	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00

Post-Condition Landuse Information

Landuse	Low-Intensity Commercial: TN=1.13 TP=0.188	Low-Density Residential: TN=1.645 TP= 0.27	Low-Density Residential: TN=1.645 TP= 0.27	Low-Density Residential: TN=1.645 TP= 0.27	Low-Density Residential: TN=1.645 TP= 0.27	Low-Density Residential: TN=1.645 TP= 0.27	Low-Density Residential: TN=1.645 TP= 0.27	Low-Density Residential: TN=1.645 TP= 0.27	Low-Density Residential: TN=1.645 TP= 0.27	Low-Density Residential: TN=1.645 TP= 0.27	Low-Density Residential: TN=1.645 TP= 0.27
Area (acres)	27.25	20.50	13.23	7.92	33.01	0.00	35.50	16.24	9.58	11.84	15.36
Rational Coefficient (0-1)	0.58	0.19	0.26	0.25	0.22	0.00	0.23	0.26	0.15	0.40	0.27

Non DCIA Curve Number	54.00	60.00	68.00	65.00	67.00	29.90	63.00	68.00	69.00	70.00	69.00
DCIA Percent (0-100)	71.00	20.00	27.00	27.00	23.00	0.00	25.00	28.00	13.00	45.00	29.00
Wet Pond Area (ac)	1.94	1.23	0.00	0.29	3.80	0.00	1.55	0.51	0.56	0.65	0.88
Nitrogen EMC (mg/l)	1.130	1.645	1.645	1.645	1.645	1.645	1.645	1.645	1.645	1.645	1.645
Phosphorus EMC (mg/l)	0.188	0.270	0.270	0.270	0.270	0.270	0.270	0.270	0.270	0.270	0.270
Runoff Volume (ac-ft/yr)	63.678	15.532	14.665	8.239	28.242	0.000	33.896	17.954	5.961	19.202	17.142
Groundwater N (kg/yr)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Groundwater P (kg/yr)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nitrogen Loading (kg/yr)	88.722	31.503	29.745	16.712	57.282	0.000	68.750	36.416	12.092	38.947	34.770
Phosphorus Loading (kg/yr)	14.761	5.171	4.882	2.743	9.402	0.000	11.284	5.977	1.985	6.393	5.707

Summary Treatment Report Version: 4.3.5

Project: Lake Hills-Post

Analysis Type: Net Improvement

BMP Types:

Catchment 1 - (Post 1) Retention

Catchment 2 - (Post 2) Wet Detention

Catchment 3 - (Post 3) Wet Detention

Catchment 4 - (Post 4) Wet Detention

Catchment 5 - (Post 5) Retention

Catchment 6 - (Post 6) Wet Detention

Catchment 7 - (Post 7) Wet Detention

Catchment 8 - (Post 8) Wet Detention

Catchment 9 - (Post 9) Wet Detention

Catchment 10 - (Post 10) Wet Detention

Catchment 11 - (Post 12) Wet Detention

Based on % removal values to the nearest percent

Date:11/6/2024

Routing Summary

Catchment 1 Routed to Outlet
Catchment 2 Routed to Catchment 3
Catchment 3 Routed to Catchment 10
Catchment 4 Routed to Catchment 10
Catchment 5 Routed to Outlet
Catchment 6 Routed to Outlet
Catchment 7 Routed to Outlet
Catchment 8 Routed to Outlet
Catchment 9 Routed to Outlet
Catchment 10 Routed to Outlet
Catchment 11 Routed to Outlet

Total nitrogen target removal met? **No**

Total phosphorus target removal met? **No**

Summary Report

Nitrogen

Surface Water Discharge

Total N pre load	kg/yr	
Total N post load	414.94 kg/yr	
Target N load reduction	100 %	
Target N discharge load	kg/yr	
Percent N load reduction	99+ %	
Provided N discharge load	kg/yr	lb/yr
Provided N load removed	414.94 kg/yr	914.94 lb/yr

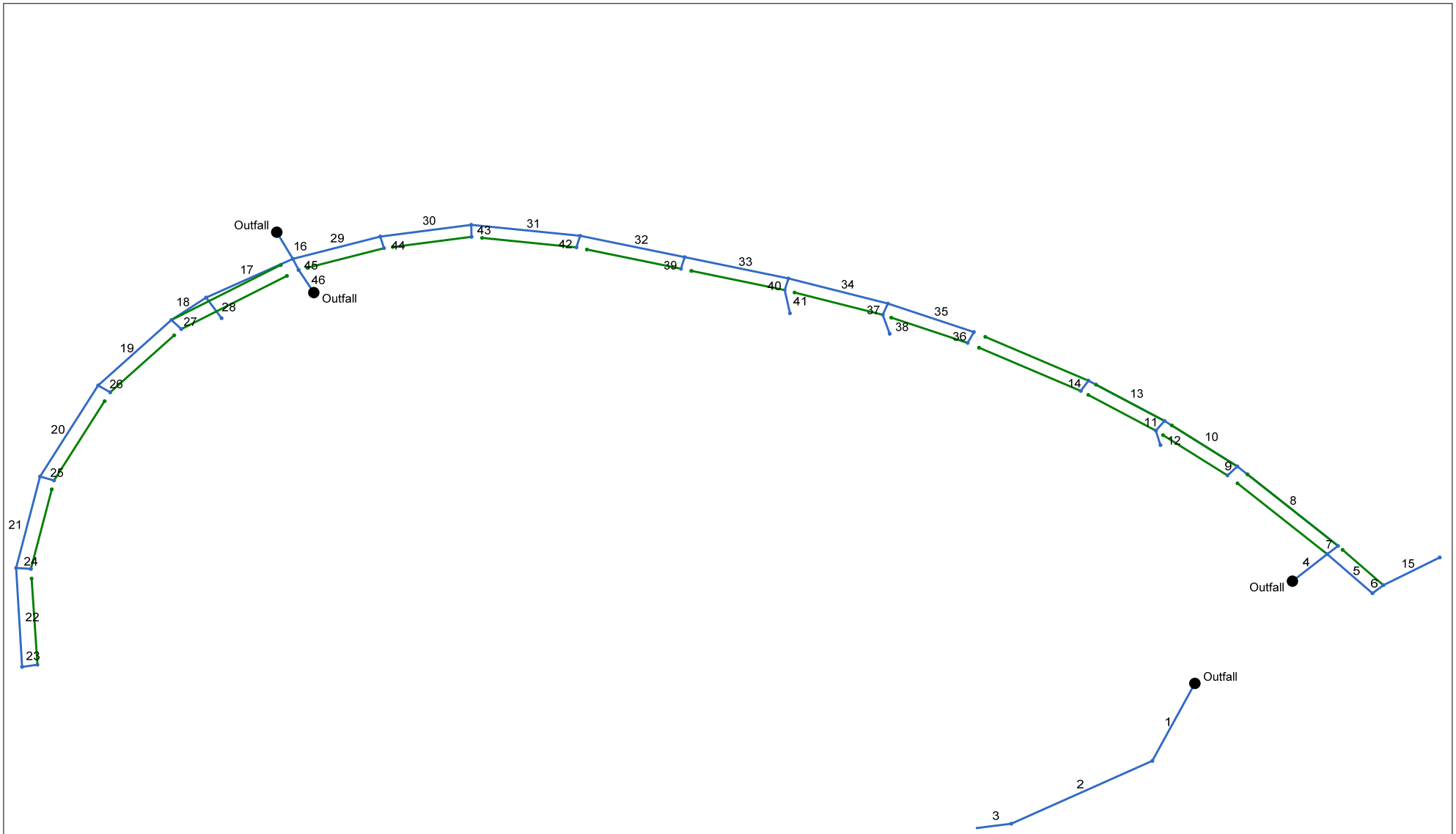
Phosphorus

Surface Water Discharge

Total P pre load	kg/yr	
Total P post load	68.304 kg/yr	
Target P load reduction	100 %	
Target P discharge load	kg/yr	
Percent P load reduction	99+ %	
Provided P discharge load	kg/yr	lb/yr
Provided P load removed	68.304 kg/yr	150.61 lb/yr

Appendix N
Secondary Drainage System Calculations (StormSewer)

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: STREET A STORM SEWER.stm	Number of lines: 46	Date: 11/6/2024

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	243.587	0.01	2.59	0.60	0.01	0.78	15.0	19.8	5.7	4.48	54.22	2.82	24	5.75	70.50	84.50	80.81	85.24	73.25	102.00	P-48
2	1	373.504	0.01	2.58	0.60	0.01	0.78	15.0	15.9	6.3	4.87	18.13	4.61	24	0.64	89.00	91.40	89.71	92.18	102.00	99.66	P-47
3	2	81.062	2.57	2.57	0.30	0.77	0.77	15.0	15.0	6.4	4.94	13.76	4.03	24	0.37	91.40	91.70	92.23	92.53	99.66	97.00	P-46
4	End	112.058	0.09	12.26	0.80	0.07	7.80	15.0	21.1	5.6	43.46	59.15	5.44	42	0.29	78.00	78.33	80.81	80.95	73.63	92.03	P-36
5	4	153.916	4.51	8.63	0.80	3.61	5.30	15.0	16.0	6.3	33.18	48.70	6.76	30	1.41	78.33	80.50	82.06	82.98	92.03	95.88	Pipe - (55)
6	5	34.510	0.12	4.12	0.80	0.10	1.70	15.0	15.8	6.3	10.65	12.18	3.39	24	0.29	80.50	80.60	84.05	84.13	95.88	95.88	Pipe - (54)
7	4	34.514	0.12	3.54	0.80	0.10	2.42	15.0	20.9	5.6	13.55	22.69	2.76	30	0.26	78.23	78.32	82.06	82.09	92.03	92.22	P-34
8	7	326.877	0.33	3.42	0.80	0.26	2.33	15.0	19.0	5.8	13.55	22.12	2.76	30	0.25	78.32	79.13	82.27	82.57	92.22	88.17	P-35
9	8	34.620	0.28	0.28	0.80	0.22	0.22	15.0	15.0	6.4	1.44	4.90	1.17	15	0.49	79.13	79.30	82.76	82.78	88.17	87.80	P-30
10	8	213.472	0.21	2.81	0.80	0.17	1.84	15.0	18.0	6.0	10.95	12.32	3.48	24	0.25	79.13	79.67	82.76	83.19	88.17	86.65	P-31
11	10	34.495	0.18	2.22	0.80	0.14	1.37	15.0	15.3	6.4	8.69	15.04	2.77	24	0.38	79.67	79.80	83.51	83.55	86.65	86.65	P-29
12	11	42.695	2.04	2.04	0.60	1.22	1.22	15.0	15.0	6.4	7.83	15.48	2.49	24	0.47	81.00	81.20	83.69	83.74	86.65	86.79	Pipe - (53)
13	10	210.910	0.21	0.38	0.80	0.17	0.30	15.0	15.8	6.3	1.91	3.51	1.56	15	0.25	79.67	80.20	83.51	83.66	86.65	85.56	P-37
14	13	34.482	0.17	0.17	0.80	0.14	0.14	15.0	15.0	6.4	0.87	3.37	0.71	15	0.23	80.20	80.28	83.72	83.73	85.56	85.56	P-28
15	6	153.000	4.00	4.00	0.40	1.60	1.60	15.0	15.0	6.4	10.25	11.56	3.26	24	0.26	80.60	81.00	84.22	84.53	95.88	86.00	
16	End	85.400	0.54	24.62	0.80	0.43	16.13	15.0	22.2	5.5	94.98	92.23	7.56	48	0.35	61.00	61.30	66.65	66.97	185.15	70.71	P-33
17	16	229.732	0.01	10.92	0.80	0.01	7.07	15.0	21.6	5.5	46.01	47.67	6.51	36	0.44	64.00	65.00	68.95	69.88	70.71	73.81	P-12 (1)
18	17	103.048	0.25	2.59	0.80	0.20	2.07	15.0	21.3	5.5	18.50	29.86	6.49	24	1.48	68.21	69.74	70.54	71.29	73.81	75.24	P-12
19	18	253.541	0.30	2.13	0.80	0.24	1.70	15.0	20.5	5.6	16.61	27.09	6.55	24	1.22	69.74	72.84	71.29	74.31	75.24	78.34	P-09
20	19	294.469	0.27	1.59	0.80	0.22	1.27	15.0	18.5	5.9	7.50	21.28	3.99	24	0.75	72.84	75.06	74.31	76.03	78.34	82.16	P-08
21	20	268.384	0.29	1.10	0.80	0.23	0.88	15.0	17.5	6.0	5.31	9.02	6.52	15	1.66	77.66	82.12	78.35	83.05	82.16	86.62	P-04
22	21	284.463	0.30	0.58	0.80	0.24	0.46	15.0	15.5	6.3	2.93	8.06	3.61	15	1.33	82.12	85.90	83.05	86.59	86.62	90.56	P-03
23	22	36.272	0.28	0.28	0.80	0.22	0.22	15.0	15.0	6.4	1.44	4.93	2.72	15	0.50	85.90	86.08	86.59	86.55	90.56	90.58	P-05

Project File: STREET A STORM SEWER.stm | Number of lines: 46 | Run Date: 11/6/2024

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
24	21	34.498	0.23	0.23	0.80	0.18	0.18	15.0	15.0	6.4	1.18	4.29	1.30	15	0.38	82.12	82.25	83.05	83.06	86.62	86.62	P-06
25	20	34.497	0.22	0.22	0.80	0.18	0.18	15.0	15.0	6.4	1.13	4.46	3.02	15	0.41	77.66	77.80	78.09	78.23	82.16	82.16	P-07
26	19	34.504	0.24	0.24	0.80	0.19	0.19	15.0	15.0	6.4	1.23	4.76	2.21	15	0.46	73.34	73.50	74.31	73.94	78.34	78.34	P-10
27	18	34.639	0.21	0.21	0.80	0.17	0.17	15.0	15.0	6.4	1.08	4.75	2.04	15	0.46	70.24	70.40	71.29	70.81	75.24	75.24	P-11
28	17	69.354	8.32	8.32	0.60	4.99	4.99	15.0	15.0	6.4	31.97	31.15	6.51	30	0.58	65.00	65.40	70.54	70.96	73.81	73.51	Pipe - (56)
29	16	212.535	0.21	12.72	0.80	0.17	8.28	15.0	20.7	5.6	46.54	70.93	4.84	42	0.42	63.50	64.40	68.95	69.34	70.71	71.45	P-14
30	29	213.684	0.26	12.26	0.80	0.21	7.91	15.0	20.1	5.7	45.01	59.52	6.37	36	0.68	64.80	66.25	69.88	70.71	71.45	72.85	P-17
31	30	254.569	0.25	11.79	0.80	0.20	7.54	15.0	19.4	5.8	43.52	63.24	6.16	36	0.77	66.75	68.70	71.66	72.58	72.85	74.77	P-16
32	31	250.003	0.25	11.33	0.80	0.20	7.17	15.0	18.7	5.9	42.04	57.80	5.95	36	0.64	68.70	70.30	73.47	74.31	74.77	76.68	P-15
33	32	248.636	0.24	10.87	0.80	0.19	6.80	15.0	18.0	6.0	40.52	62.32	5.73	36	0.74	70.30	72.15	75.14	75.92	76.68	78.28	P-24
34	33	241.497	0.22	5.69	0.80	0.18	3.60	15.0	17.1	6.1	21.92	36.72	4.47	30	0.68	72.30	73.95	76.69	77.27	78.28	79.55	P-23
35	34	215.445	0.30	0.55	0.80	0.24	0.44	15.0	15.6	6.3	2.78	6.82	2.50	15	0.95	75.05	77.10	77.74	78.06	79.55	81.73	P-22
36	35	34.491	0.25	0.25	0.80	0.20	0.20	15.0	15.0	6.4	1.28	4.13	1.14	15	0.35	77.10	77.22	78.24	78.25	81.73	81.72	P-27
37	34	34.506	0.18	4.92	0.80	0.14	2.99	15.0	15.2	6.4	19.06	29.29	3.88	30	0.43	73.85	74.00	77.74	77.80	79.55	79.55	P-26
38	37	56.456	4.74	4.74	0.60	2.84	2.84	15.0	15.0	6.4	18.22	24.64	5.80	24	1.19	74.00	74.67	78.03	78.40	79.55	80.17	Pipe - (52)
39	32	34.500	0.21	0.21	0.80	0.17	0.17	15.0	15.0	6.4	1.08	4.29	0.88	15	0.38	71.55	71.68	75.14	75.15	76.68	76.68	P-21
40	33	34.492	0.20	4.94	0.80	0.16	3.00	15.0	15.2	6.4	19.15	29.30	3.90	30	0.43	70.45	70.60	76.69	76.75	78.28	78.28	P-25
41	40	67.843	4.74	4.74	0.60	2.84	2.84	15.0	15.0	6.4	18.22	18.81	5.80	24	0.59	70.60	71.00	76.92	77.30	78.28	75.60	P-32
42	31	34.500	0.21	0.21	0.80	0.17	0.17	15.0	15.0	6.4	1.08	4.91	0.88	15	0.49	70.10	70.27	73.47	73.47	74.77	74.77	P-20
43	30	34.487	0.21	0.21	0.80	0.17	0.17	15.0	15.0	6.4	1.08	4.61	0.88	15	0.43	67.85	68.00	71.66	71.67	72.85	72.85	P-19
44	29	34.500	0.25	0.25	0.80	0.20	0.20	15.0	15.0	6.4	1.28	4.61	1.04	15	0.43	67.00	67.15	69.88	69.89	71.45	71.45	P-18
45	16	34.499	0.44	0.44	0.80	0.35	0.35	15.0	15.0	6.4	2.26	102.6	0.18	48	0.43	61.30	61.45	68.95	68.95	70.71	70.71	P-13

Project File: STREET A STORM SEWER.stm | Number of lines: 46 | Run Date: 11/6/2024

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

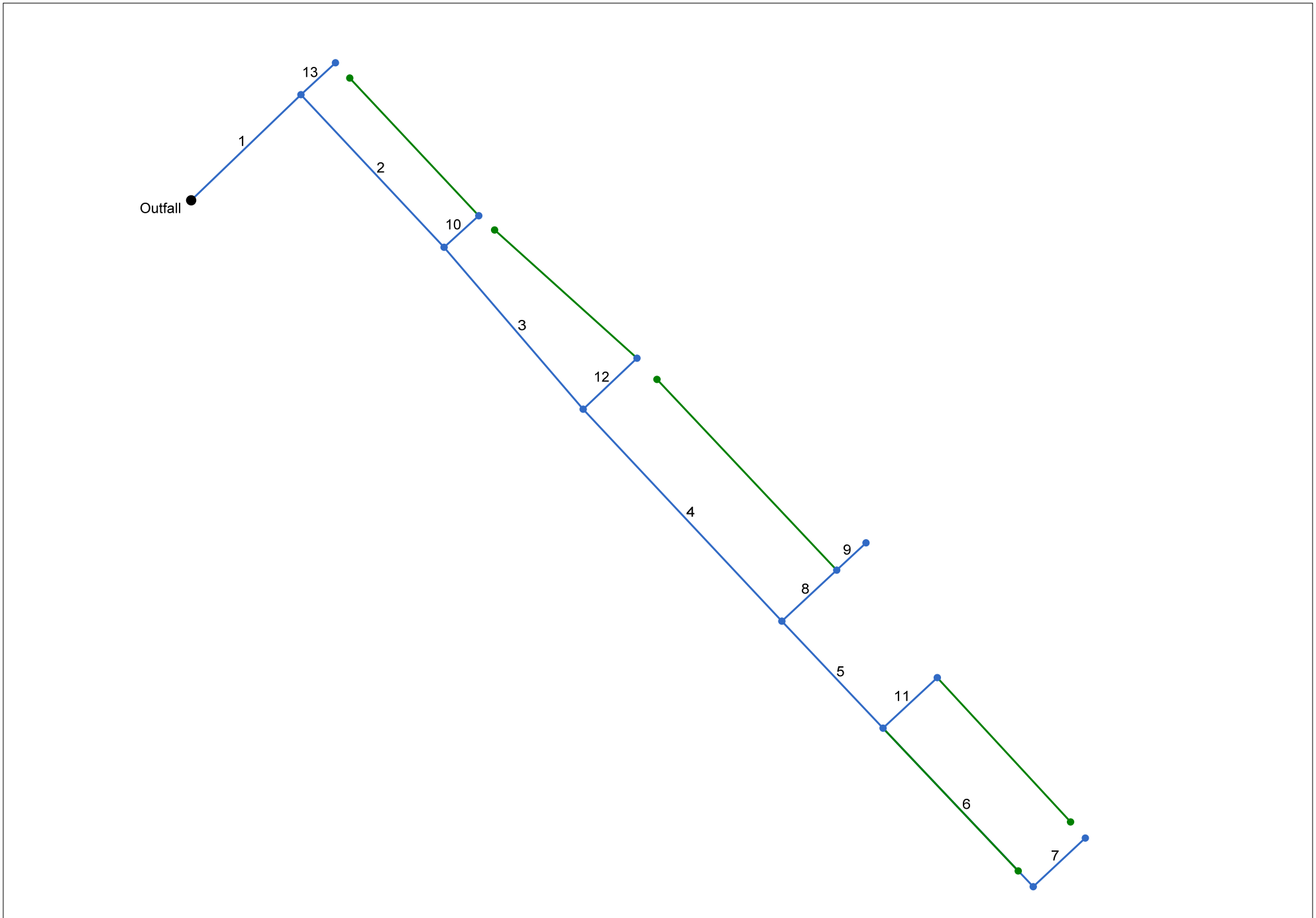
Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
46	End	73.813	0.44	0.44	0.80	0.35	0.35	15.0	15.0	6.4	2.25	91.58	0.18	48	0.41	61.00	61.30	66.65	66.65	244.82	70.71	Pipe - (51)

Project File: STREET A STORM SEWER.stm | Number of lines: 46 | Run Date: 11/6/2024

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: STREET A STORM SEWER-SR19.stm	Number of lines: 13	Date: 11/6/2024

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	112.058	0.09	0.00	0.80	0.07	0.00	15.0	0.0	0.0	0.00	0.00	3.24	36	1.99	72.00	74.23	76.46	76.49	73.63	92.03	P-36
2	1	153.916	0.10	0.00	0.80	0.08	0.00	15.0	0.0	0.0	0.00	0.00	10.03	30	3.92	78.23	84.27	79.07	85.78	92.03	95.03	P-54
3	2	157.001	0.15	0.00	0.80	0.12	0.00	15.0	0.0	0.0	0.00	0.00	6.24	30	2.84	84.27	88.73	85.78	90.21	95.03	99.91	DP63
4	3	213.731	0.04	0.00	0.80	0.03	0.00	15.0	0.0	0.0	0.00	0.00	5.42	30	0.35	88.73	89.48	90.34	91.09	99.91	104.74	DP59
5	4	108.377	0.04	0.00	0.80	0.03	0.00	15.0	0.0	0.0	0.00	0.00	3.74	18	0.62	97.68	98.35	98.19	98.89	104.74	104.72	DP56
6	5	160.641	0.13	0.00	0.80	0.10	0.00	15.0	0.0	0.0	0.00	0.00	2.92	18	0.30	98.35	98.83	98.95	99.43	104.72	104.19	Pipe - (58)
7	6	52.503	0.25	0.00	0.80	0.20	0.00	15.0	0.0	0.0	0.00	0.00	1.76	15	0.32	98.83	99.00	99.62	99.66	104.19	104.19	DP52
8	4	55.087	0.04	0.00	0.80	0.03	0.00	15.0	0.0	0.0	0.00	0.00	4.10	30	0.36	89.55	89.75	91.77	91.85	104.74	104.72	DP58
9	8	29.506	3.58	0.00	0.80	2.86	0.00	15.0	0.0	0.0	0.00	0.00	3.99	30	0.34	89.75	89.85	91.99	92.03	104.72	107.54	DP57
10	2	34.510	0.12	0.00	0.80	0.10	0.00	15.0	0.0	0.0	0.00	0.00	2.69	15	0.58	88.80	89.00	89.10	89.31	95.03	94.71	P-53
11	5	54.507	0.04	0.00	0.80	0.03	0.00	15.0	0.0	0.0	0.00	0.00	1.98	15	0.59	99.58	99.90	99.75	100.07	104.72	104.72	DP55
12	3	54.503	0.15	0.00	0.80	0.12	0.00	15.0	0.0	0.0	0.00	0.00	2.91	18	0.73	93.93	94.33	94.23	94.66	99.91	99.63	DP60
13	1	34.514	0.12	0.00	0.80	0.10	0.00	15.0	0.0	0.0	0.00	0.00	2.00	30	0.26	78.23	78.32	78.51	78.60	92.03	92.22	P-34

Project File: STREET A STORM SEWER-SR19.stm

Number of lines: 13

Run Date: 11/6/2024

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	112.058	0.09	4.85	0.80	0.07	3.88	15.0	42.7	4.0	15.35	32.74	2.29	36	0.21	78.00	78.23	80.81	80.85	73.63	92.03	P-36
2	1	153.916	0.10	4.64	0.80	0.08	3.71	15.0	42.1	4.0	14.80	48.36	4.39	30	1.39	78.33	80.47	80.98	81.77	92.03	95.03	P-54
3	2	157.001	0.15	4.42	0.80	0.12	3.53	15.0	41.5	4.0	14.21	69.12	8.38	30	2.84	84.27	88.73	85.04	90.00	95.03	99.91	DP63
4	3	213.731	0.04	4.12	0.80	0.03	3.29	15.0	40.6	4.1	13.39	24.29	5.07	30	0.35	88.73	89.48	90.06	90.80	99.91	104.74	DP59
5	4	108.377	0.04	0.46	0.80	0.03	0.37	15.0	36.8	4.3	1.58	29.75	3.12	30	0.53	92.78	93.35	93.17	93.76	104.74	104.72	DP56
6	5	160.641	0.13	0.38	0.80	0.10	0.30	15.0	15.8	6.3	1.91	5.74	2.92	18	0.30	98.35	98.83	98.95	99.43	104.72	104.19	Pipe - (58)
7	6	52.503	0.25	0.25	0.80	0.20	0.20	15.0	15.0	6.4	1.28	3.67	1.76	15	0.32	98.83	99.00	99.62	99.66	104.19	104.19	DP52
8	4	55.087	0.04	3.62	0.80	0.03	2.89	15.0	15.1	6.4	18.48	24.71	4.87	30	0.36	89.55	89.75	91.40	91.51	104.74	104.72	DP58
9	8	29.506	3.58	3.58	0.80	2.86	2.86	15.0	15.0	6.4	18.34	58.48	8.38	30	2.03	93.45	94.05	94.41	95.50	104.72	107.54	DP57
10	2	34.510	0.12	0.12	0.80	0.10	0.10	15.0	15.0	6.4	0.62	16.34	1.36	24	0.52	80.47	80.65	81.77	80.92	95.03	94.71	P-53
11	5	54.507	0.04	0.04	0.80	0.03	0.03	15.0	15.0	6.4	0.21	24.83	0.67	30	0.37	93.35	93.55	93.76	93.77	104.72	104.72	DP55
12	3	54.503	0.15	0.15	0.80	0.12	0.12	15.0	15.0	6.4	0.77	9.00	2.91	18	0.73	93.93	94.33	94.23	94.66	99.91	99.63	DP60
13	1	34.514	0.12	0.12	0.80	0.10	0.10	15.0	15.0	6.4	0.62	22.69	0.13	30	0.26	78.23	78.32	80.98	80.98	92.03	92.22	P-34

Project File: STREET A STORM SEWER-SR19.stm

Number of lines: 13

Run Date: 11/6/2024

NOTES:Intensity = 12.4956 + -1.6712(X) + -0.3490(X)^2 + 0.0502(X)^3 -- X = Ln(Tc)(min); Return period =Yrs. 10 ; c = cir e = ellip b = box