DRAINAGE REPORT

FOR

TALICHET PHASE 2
SINGLE FAMILY SUBDIVISION

SUBMITTED TO:
ST JOHN'S RIVER WATER MANAGEMENT DISTRICT
TOWN OF HOWEY IN THE HILLS

August 2021

GERMANA ENGINEERING AND ASSOCIATES, LLC

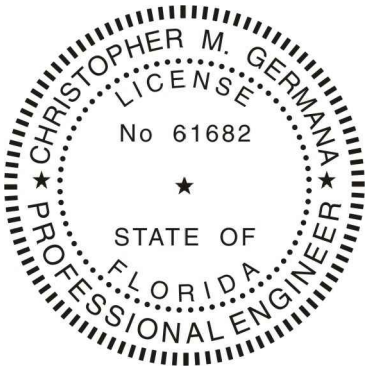
1120 West Minneola Avenue
Clermont, Florida, 34711
352-242-9329
Certificate of Authorization No. 29279

THIS IS TO CERTIFY THAT THE ENCLOSED ENGINEERING CALCULATIONS WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION

This item has been digitally signed and sealed by Christopher M. Germana, 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.

Digitally signed by Christopher M Germana
Date: 2021.08.30 10:55:18 -04'00'



Christopher M. Germana, PE
Florida Professional Engineer # 61672
Eng. Firm Certificate of Authorization No 29279

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1.0 PROJECT SUMMARY

The proposed Talichet Phase 2 Subdivision site is located on a 10.05-acre property, located off of Avila Place within the Town of Howey In The Hills, in Lake County, Florida. The project site is bordered by Vacant land to the west/south-west, wetlands to the east/south-east, and Talichet Phase 1 to the north.

The existing site is currently undeveloped. The proposed development consists of a 21 lot subdivision and associated utilities, grading, stormwater ponds, pipes, and inlets. The stormwater will outfall from the proposed pond into the wetlands to the east.

2.0 EXISTING CONDITIONS

2.1 EXISTING TOPOGRAPHY

Based on the topographic survey prepared by BESH HALFF dated 08/08/2021 the property varies in slope and topography and generally slopes to the wetlands to the east. Elevations of the property range from 94 at the top to 82 at the east property line.

2.2 EXISTING SOILS

The on-site soils were determined to be a mainly Candler sand with a small portion containing Tavares sand and Arents. This was determined from the USGS SCS Soil Survey and is included in Appendix A. Candler and Tavares sands are classified in the hydrological soil group A by the SCS Soil Survey.

2.3 EXISTING FLOOD ZONE

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Number 12069C0485E dated 12/18/2012 indicates the majority of the project area is located within Zone X (Areas determined to be outside the 0.2% annual chance floodplain) with the east side where the wetland is being in Zone AE with a BFE of 81.20' pursuant to LOMR 19-04-2449P effective 01-30-2020.

2.4 EXISTING WETLANDS

The proposed project site contains wetlands to the east. No wetland impacts are proposed and a 25' undisturbed wetland buffer is proposed.

2.5 EXISTING DRAINAGE

Analysis of the existing undeveloped site identified one (1) drainage basins. The basins were determined by a review of the existing conditions, the topographic survey provided by BESH HALFF dated 08/08/2021, and Lake County GIS 1-foot contour data. Basin Pre is approximately 6.33 acres with a time of concentration of 29 minutes and drains to the wetland to the east.

For time of concentration and curve number calculations, the methods described in TR-55 (Urban Hydrology for Small Watersheds) were utilized. The pre-development time of concentration and curve number calculations can be found in Appendix B. Basin Maps can be found in Appendix D.

3.0 PROPOSED DEVELOPMENT

3.1 PROJECT SCOPE

The proposed development consists of a 21 lot subdivision with associated roadways, sidewalks, associated utilities, and stormwater management system.

3.2 REQUIRED PERMITS

SJRWMD: Environmental Resource Permit (ERP)
Town of Howey In The Hills: Site Development Permit
Florida Department of Environmental Protection

3.3 STORMWATER MANAGEMENT

The proposed development consists of 3.21 acres of impervious coverage. 3.12 acres of this will be treated with the on-site dry pond while 0.09 acres of the roadway will be treated with the phase 1 constructed and permitted DRA B. Calculations are provided in section 3.6 of this report.

3.4 PROPOSED POND

The project consists of a dry pond on the east side of the property adjacent to the wetland buffer. The proposed dry detention pond is approximately 1.27 acres in area and is 3 feet deep. The dry pond takes runoff via MES and the pond discharges to the wetlands to the east. A stage storage table of the dry ponds and an overview of the flows and stages of the proposed dry ponds are included below.

POND STAGE STORAGE

ELEV (Ft)	AREA (Ac)	AREA (SF)	AVG AREA (SF)	AVG AREA (Ac)	VOLUME (CF)	VOL. SUM (CF)	VOLUME (Ac-Ft)
85	1.279	55715				144,900	3.326
84	1.164	50716	53,216	1.222	53,216	91,685	2.105
83	1.052	45817	48,267	1.108	48,267	43,418	0.997
82	0.942	41019	43,418	0.997	43,418		

REQUIRED WATER QUALITY
VOL = 0.63 AC-FT, ELEV = 82.63'

PROVIDED WATER QUALITY
VOL = 2.59 AC-FT, ELEV = 84.40'

POND FLOW ANALYSIS

				10-YEAR / 24-HOUR STORM			*25-YEAR / 24-HOUR STORM*		
BOTTOM OF POND	TOP OF POND	CONTROL STRUCTURE OUTFALL	WATER QUALITY STAGE	MAX STAGE	PEAK OUTFALL FLOW RATE	PEAK INFILTRATION RATE	MAX STAGE	PEAK OUTFALL FLOW RATE	PEAK INFILTRATION RATE
82'	85'	84.40'	82.63	83.56'	0.00 CFS	0.00 CFS	84.28'	0.00 CFS	0.00 CFS

3.5 POST-DEVELOPMENT BASINS

Analysis of the proposed post-development site identified the following drainage basins. For time of concentration and curve number calculations, the methods described in TR-55 (Urban Hydrology for Small Watersheds) were utilized. The post-development time of concentration and curve number calculations can be found in Appendix C. Basin Maps can be found in Appendix D.

Basin Post-W1

7.12 Acres / CN = 64.85 / ToC = 10 Minutes (Assumed)

Impervious area is captured in this basin and is routed to the proposed dry detention pond.

Basin Post-2

0.68 Acres / CN = 39.00 / ToC = 6 Minutes (Assumed)

Basin Post-W2 consists of uncaptured, pervious runoff.

3.6 WATER QUALITY (SJRWMD REQUIREMENT)

The proposed pond is designed to retain the required water quality pursuant to the SJRWMD requirement found in the Applicant's Handbook Vol. II, Section 5.2. See the table below for the water quality calculations.

Pursuant to the SJRWMD requirement found in the Applicant's Handbook Vol. II, Section 5.3, the proposed pond is designed to infiltrate the required water quality within 72 hours. See Appendix G for the ICPR Recovery Model Printouts.

POND WATER QUALITY CALCULATIONS

BASIN AREA: IMPERVIOUS AREA:	7.12 Ac 3.12 Ac	*NOTE: AREAS DERIVED FROM CONTRIBUTING BASINS, SEE CURVE NUMBER WORKSHEET FOR DETAILS*
½" OF BASIN RUNOFF:	0.30 Ac-Ft	*(½" OF RUNOFF OVER ENTIRE BASIN)*
1 ¼" OF IMPERVIOUS RUNOFF:	0.33 Ac-Ft	*(1 ¼" OF RUNOFF OVER THE IMPERVIOUS AREA)*
REQUIRED WATER QUALITY:	**0.63 Ac-Ft**	*(THE GREATER OF ½" OF BASIN RUNOFF OR 1 ¼" IMPERVIOUS RUNOFF PLUS AN ADDITIONAL ½" OF BASIN RUNOFF*

WATER QUALITY TREATED WITH PHASE 1 (ERP #18971-15)

Approximately 0.09 Acres of proposed impervious is proposed to be treated under the phase 1 permitted and constructed DRA B. Since the project will consume lot 61 of phase 1 for the entrance road to phase 2, the impervious area assumed for lot 61 will be utilized. The stormwater calculations for the phase 1 permit show that a 40% impervious assumption was made for the lot impervious. Lot 61 is 9,750 SF and therefore the impervious amount the phase 2 entrance road will send to the phase 1 DRA B is the allowed 3,900 SF and includes everything north of inlets N1 and N2 (approx. 100 feet of roadway and sidewalks).

3.7 WATER QUANTITY (SJRWMD REQUIREMENT)

According to the SJRWMD Applicant's Handbook Vol. II, Section 3.1, Water Quantity is required to be met for the 10-Year/24-Hour and 25-Year/24-Hour storm.

The proposed ponds are designed to have the peak rate of discharge for the post-development condition be less than the peak rate of discharge for the pre-development condition for the 10-year/24-hour and 25-year/24-hour storm pursuant to the SJRWMD requirement found in the Applicant's Handbook Vol. II, Section 3.2.1(b). See the table below for the pre-development and post-development peak discharge rates for each boundary.

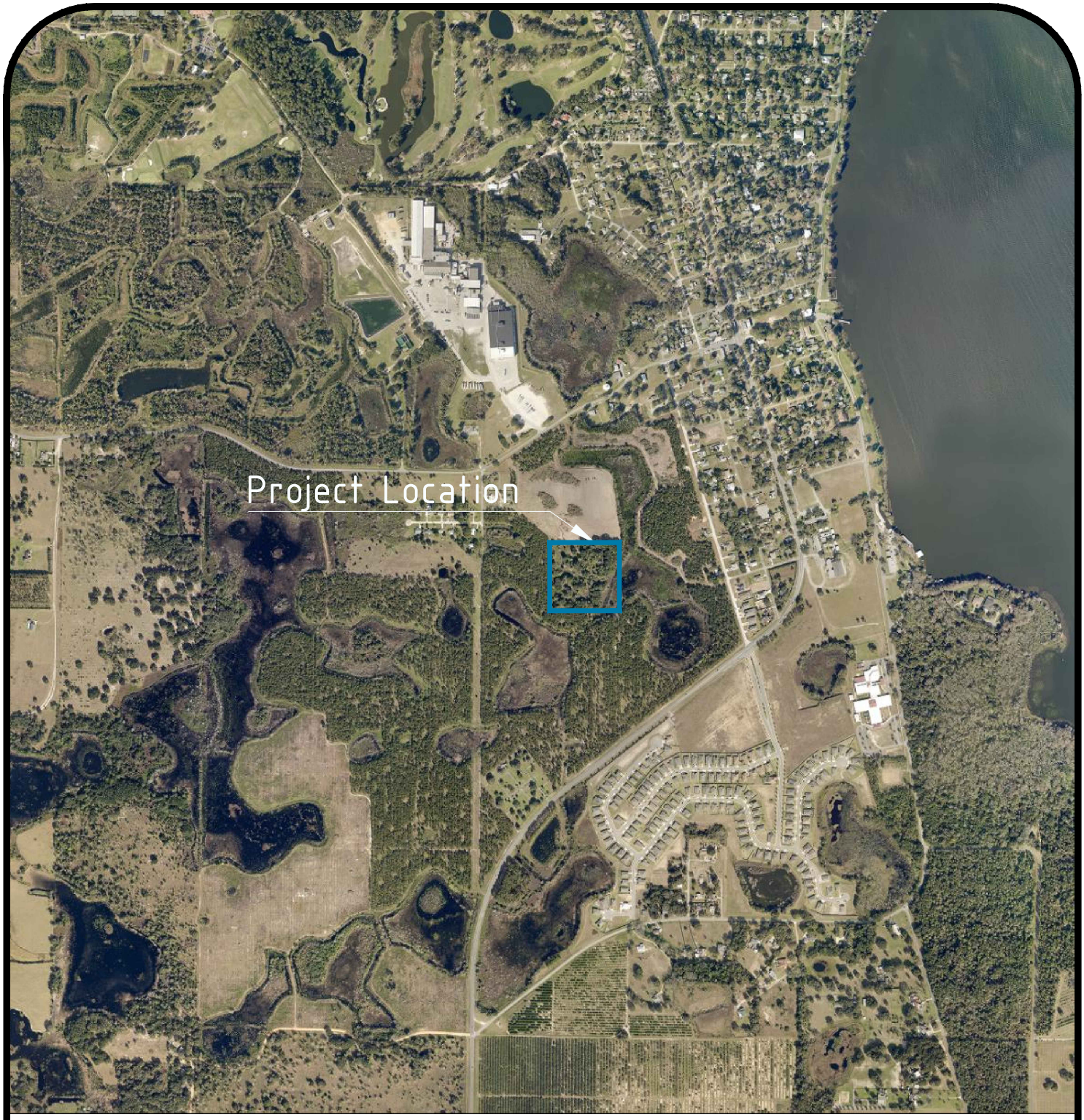
BOUNDARY FLOW ANALYSIS

		10-YEAR / 24-HOUR STORM		*25-YEAR / 24-HOUR STORM*	
BOUNDARY	DISCHARGE DIRECTION	PRE-DEV FLOW	POST-DEV FLOW	PRE-DEV FLOW	POST-DEV FLOW
WETLAND	EAST	0.95 CFS	0.18 CFS	2.83 CFS	0.56 CFS

Appendix A

Vicinity Maps

Aerial Map
Location Map
USGS SCS Soil Map
USGS Quad Map
FEMA Flood Map



Aerial Map

NTS

Talichet Phase 2 Subdivision
Avila Place
Howey In The Hills, Florida 34737

Section 35, Township 20 South, Range 25 East

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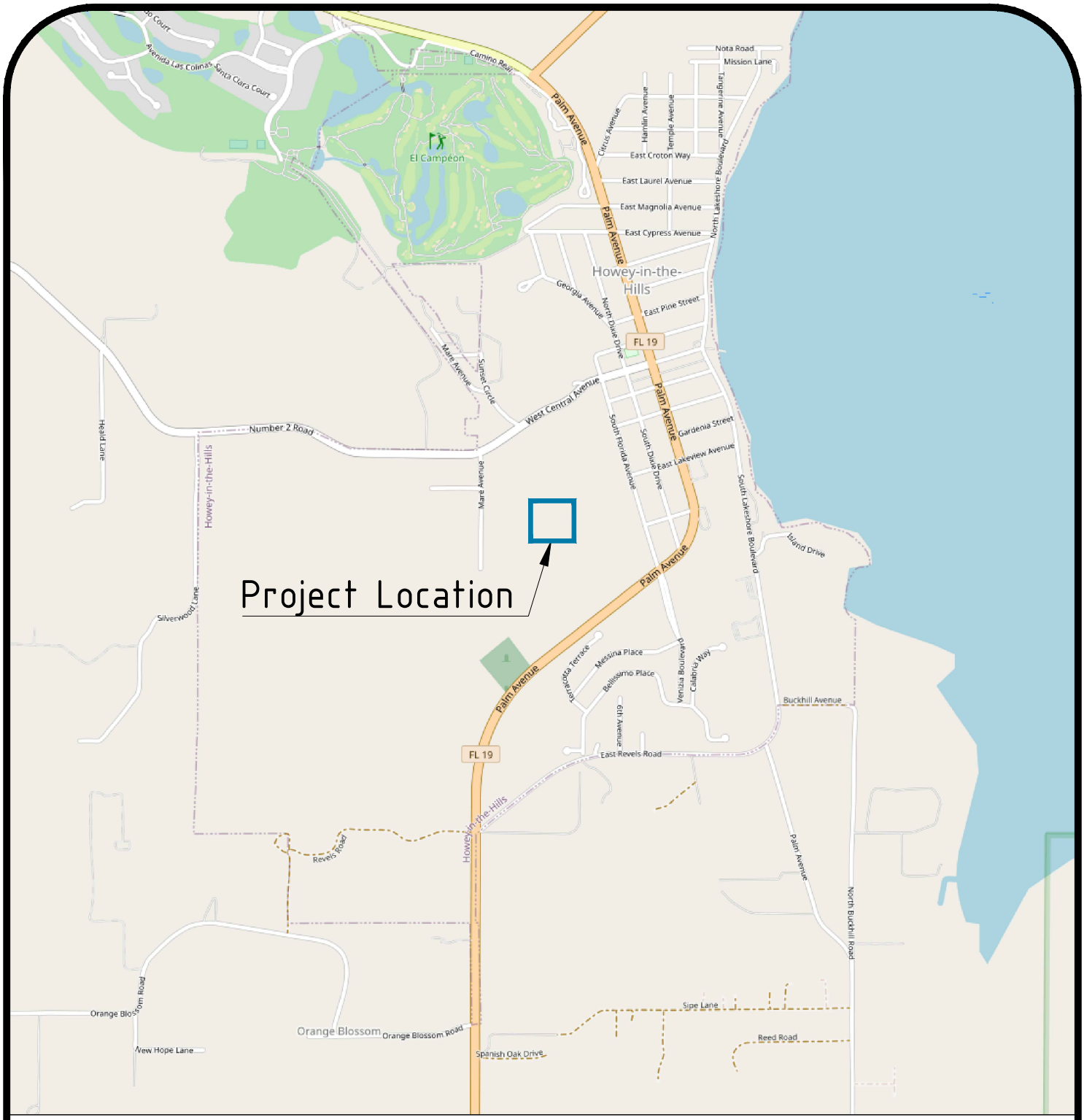
CA # 29279



Location Map

NTS

Talichet Phase 2 Subdivision
Avila Place
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Section 35, Township 20 South, Range 25 East

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Soil Name	Slope	#
Candler Sand	0-5% Slope	8
Tavares Sand	0-5% Slope	3.5
Arents		17
Water		99

Soil Map

NTS

Talichet Phase 2 Subdivision
Avila Place
Howey In The Hills, Florida 34737

Section 35, Township 20 South, Range 25 East

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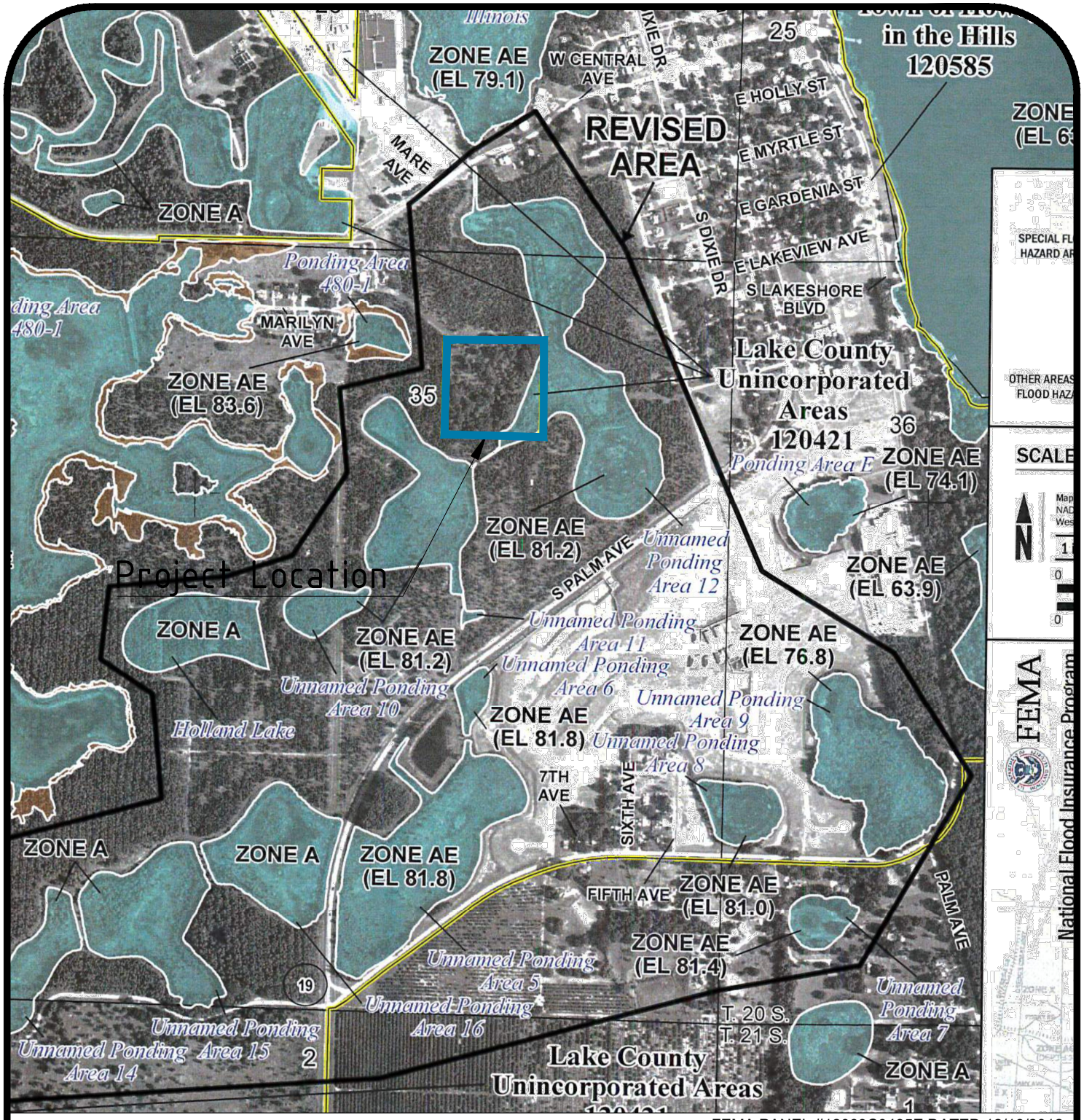

Legend

- Zone A/AE (Special Flood Hazard Areas)
- Zone X (Areas determined to be outside the 0.2% annual chance floodplain.)

FEMA PANEL #12069C0485E DATED 12/18/2012
LOMR SHOWN EFFECTIVE 01-30-202

Flood Map

NTS

Talichet Phase 2 Subdivision
Avila Place
Howey In The Hills, Florida 34737

Section 35, Township 20 South, Range 25 East

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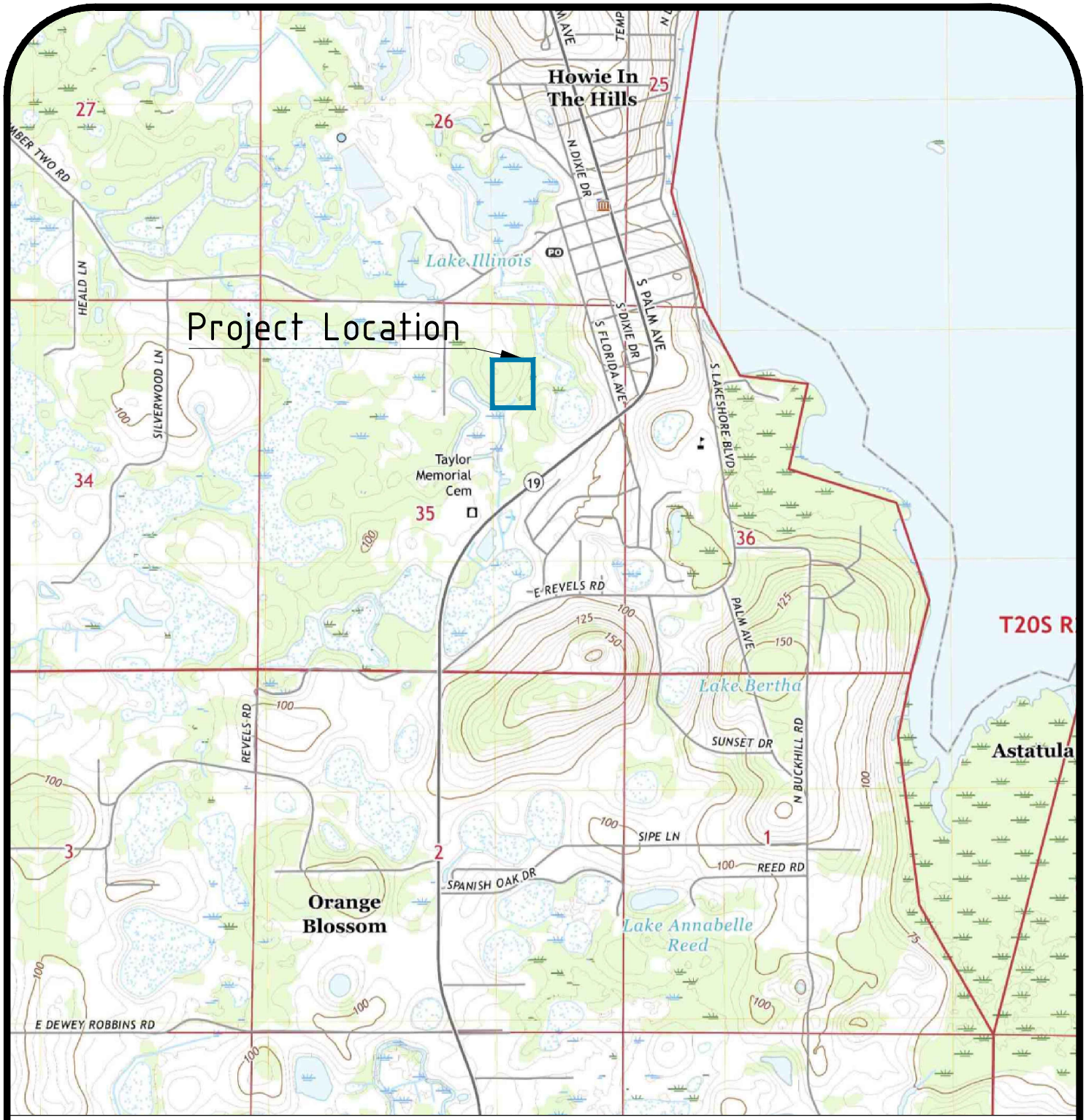

Quad Map

NTS

Talichet Phase 2 Subdivision
Avila Place
Howey In The Hills, Florida 34737

Section 35, Township 20 South, Range 25 East

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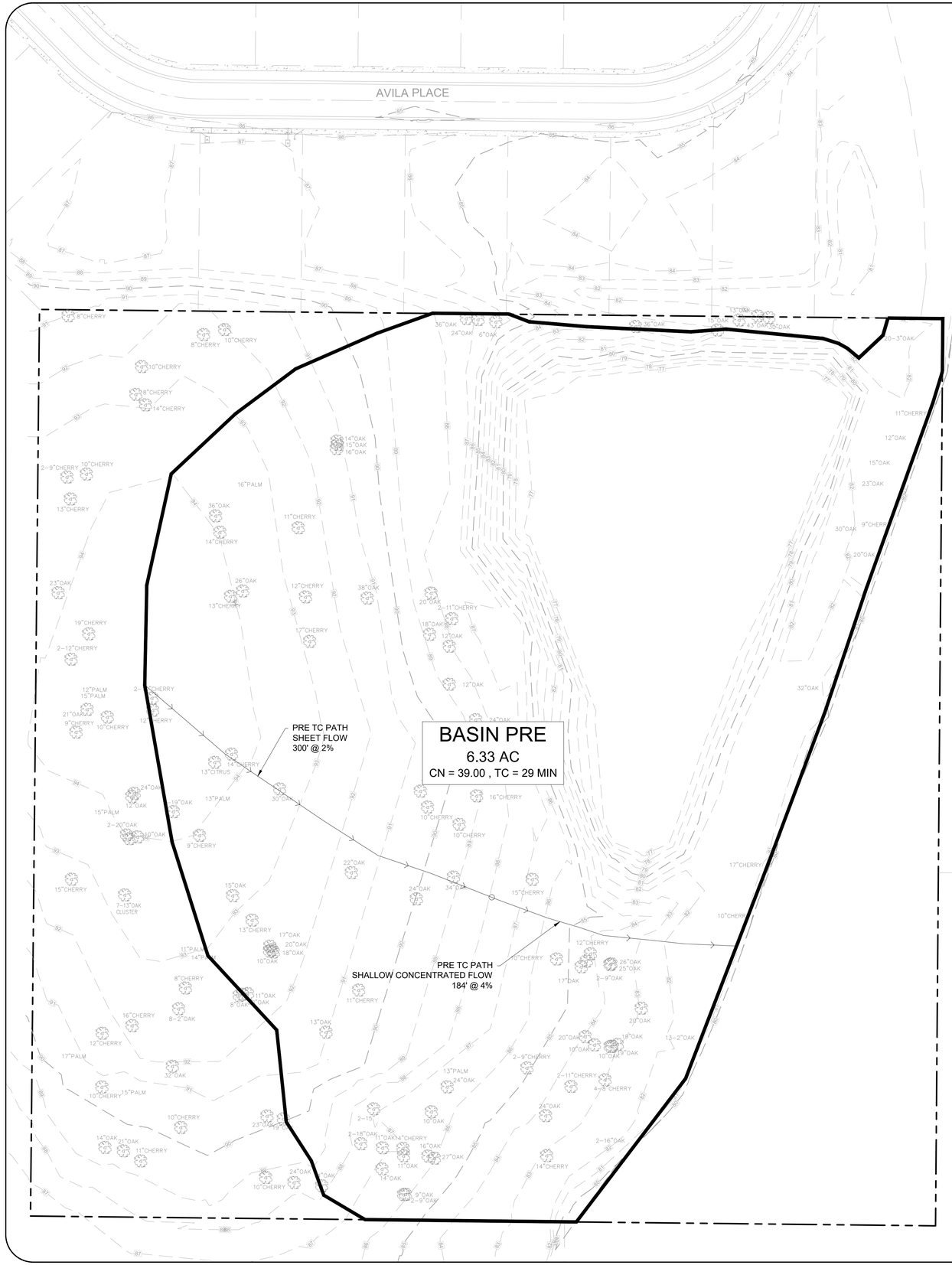
Appendix B

Pre/Post Drainage Analysis

Pre-Development Basin Map
Pre-Development Time of Concentration

Post-Development Basin Map
Post-2 Time of Concentration
Post-1 Curve Number

Pre/Post ICPR Node Diagram
Pre/Post ICPR Routings



N

40' 20' 0 40' 80' 120'

SCALE IN FEET

LEGEND

- PROJECT PROPERTY LINE
- EXTERIOR PARCEL LINE
- TIME OF CONCENTRATION PATH

CHRISTOPHER M. GERMANA, P.E.
FLORIDA PROFESSIONAL ENGINEER # 61682
FIRM CERTIFICATE OF AUTHORIZATION # 29279

No.	REVISIONS	DATE

PRE-DEVELOPMENT BASIN MAP

TALICHET PHASE 2

SUBDIVISION

HOWEY IN THE HILLS, FLORIDA

PROJECT # GE0082021

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CERTIFICATE OF AUTHORIZATION NUMBER: 29279

SCALE: 1" = 40'

DATE: 08-25-2021

SHEET

PRE

Basin Pre ToC

Worksheet 3: Time of Concentration (T_c) or travel time (T_t)

Project	By	Date
Talichet Phase 2	DTM	08-18-2021
Location	**Checked**	**Date**
Howey In The Hills, Florida		

Check one: ☐ Present ☐ Developed

Check one: ☐ T_c ☐ T_t through subarea

Notes: Space for as many as two segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to Tc only)

	Segment ID		
1. Surface description (table 3-1)	1		
2. Manning's roughness coefficient, n (table 3-1)	Dense Grass		
3. Flow length, L (total L † 300 ft) ft	0.24		
4. Two-year 24-hour rainfall, P_2 in	300		
5. Land slope, s ft/ft	4.75		
	0.020		
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ s^{0.4}}$ Compute T_t hr	0.47	+	= 0.47

Shallow concentrated flow

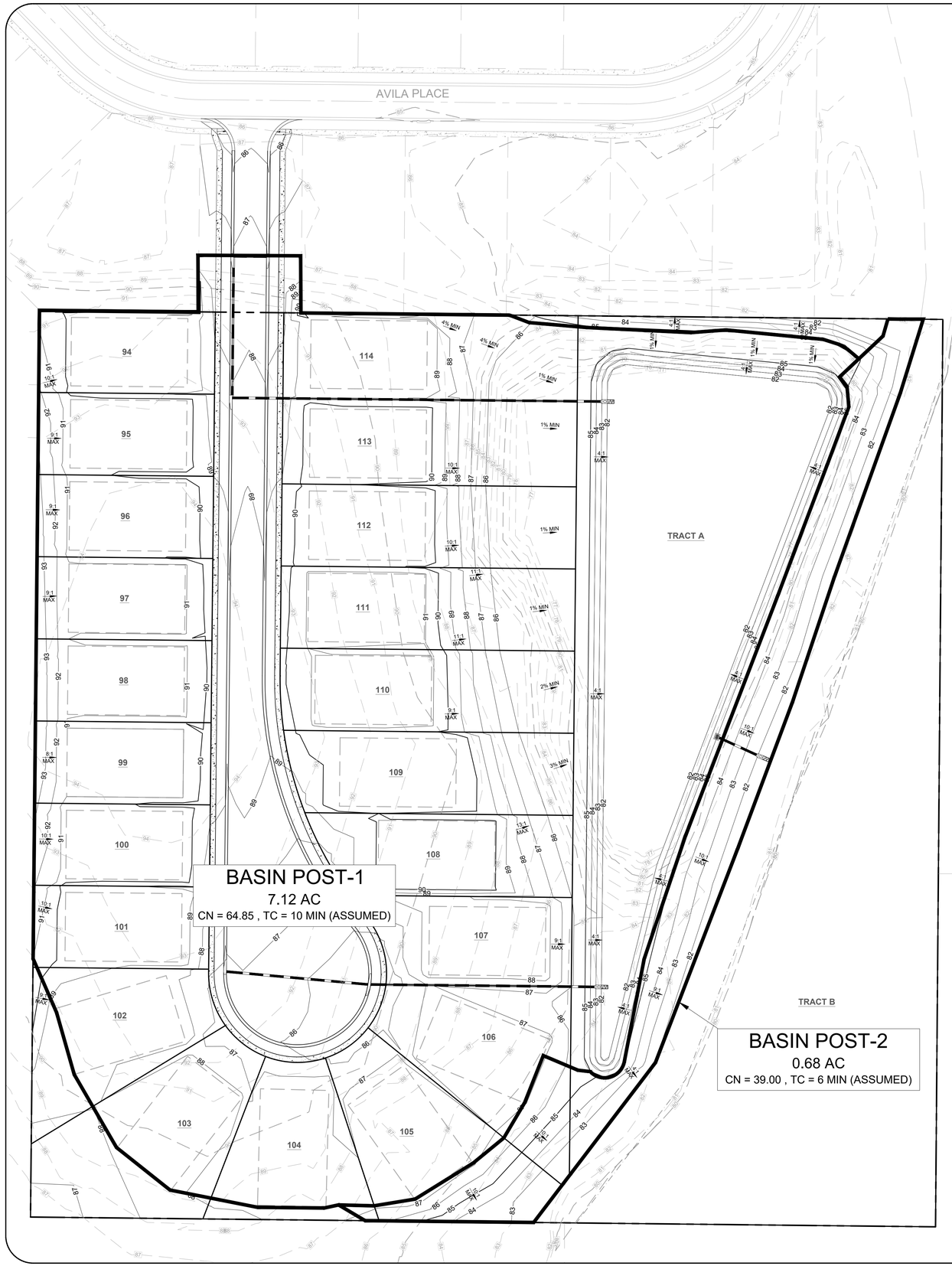
	Segment ID		
7. Surface description (paved or unpaved)			
8. Flow length, L ft	unpaved		
9. Watercourse slope, s ft/ft	184		
10. Average velocity, V (figure 3-1) ft/s	0.04		
	3.20		
11. $T_t = \frac{L}{3600\ V}$ Compute T_t hr	0.02	+	= 0.02

Channel flow

	Segment ID		
12. Cross sectional flow area, a ft^2			
13. Wetted perimeter, p_w ft			
14. Hydraulic radius, $r = \frac{a}{p_w}$ Compute r ft			
15 Channel slope, s ft/ft			
16. Manning's roughness coefficient, n			
17. $V = \frac{1.49\ r^{2/3}\ s^{1/2}}{n}$ Compute V ft/s			
18. ~~Flow~~ length, L ft			
19. $T_t = \frac{L}{3600\ V}$ Compute T_t hr		+	=

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) Hr 0.49

= 29.17 MIN. ,USE 29 MIN.



N

40' 20' 0 40' 80' 120'

SCALE IN FEET

LEGEND

- PROJECT PROPERTY LINE
- EXTERIOR PARCEL LINE
- PROPOSED CONCRETE
- TIME OF CONCENTRATION PATH

CHRISTOPHER M. GERMANA, P.E.
FLORIDA PROFESSIONAL ENGINEER # 61682
FIRM CERTIFICATE OF AUTHORIZATION # 29279

No.	REVISIONS	DATE

POST-DEVELOPMENT BASIN MAP

TALICHET PHASE 2
SUBDIVISION

HOWEY IN THE HILLS, FLORIDA

PROJECT # GE0082021

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WWW.GERMANAENGINEERING.COM
CERTIFICATE OF AUTHORIZATION NUMBER: 29279

SCALE: 1" = 50'

DATE: 08-25-2021

SHEET
POST

Basin Post-1 CN

Worksheet 2: Runoff curve number and runoff

Project	By	Date
Talichet Phase 2	DTM	08-18-2021
Location Howey In The Hills, Florida	**Checked**	**Date**

Check one: ☐ Present ☐ Developed

1. Runoff curve number

Soil name and hydrologic group (appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Figure 2-3	CN 1/ Figure 2-4	Area ☐ acres ☐ mi² ☐ %	Product of CN x area
	Impervious (21 Lots @ 5,000 SF/Lot)	98			2.41	236.18
	Impervious (Right of Way)	98			0.71	69.58
Candler/Tavares Sand (Type A)	Open Space	39			4.00	156.00
	Totals ➡				7.12	461.76

1/ Use only one CN source per line

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{461.76}{7.12} =$ _____ ; **Use CN** ➡ 64.85

2. Runoff

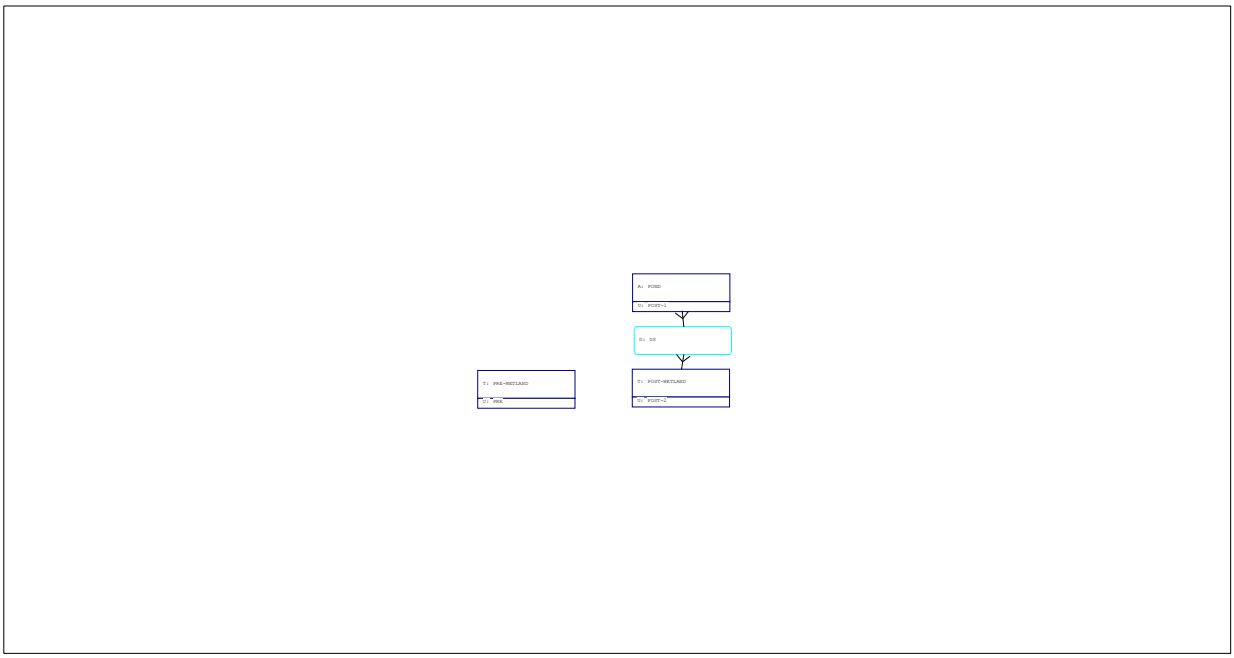
	Storm #1	Storm #2	Storm #3
Frequency ..... yr			
Rainfall, P (24-hour) ..... in			
Runoff, Q ..... in			

(Use P and CN with table 2-1, figure 2-1, or equations 2-3 and 2-4)

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

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

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



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

Name: POST-1 Node: POND Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 7.120 Time Shift(hrs): 0.00
Curve Number: 64.85 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: POST-2 Node: POST-WETLAND Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 6.00
Area(ac): 0.680 Time Shift(hrs): 0.00
Curve Number: 39.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PRE Node: PRE-WETLAND Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 29.00
Area(ac): 6.330 Time Shift(hrs): 0.00
Curve Number: 39.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

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

Name: POND Base Flow(cfs): 0.000 Init Stage(ft): 82.000
Group: BASE Warn Stage(ft): 84.500
Type: Stage/Area

Stage(ft)	Area(ac)
82.000	0.9420
83.000	1.0520
84.000	1.1640
85.000	1.2790

Name: POST-WETLAND Base Flow(cfs): 0.000 Init Stage(ft): 81.200
Group: BASE Warn Stage(ft): 81.200
Type: Time/Stage

BFE of 81.2 used as tailwater

Time(hrs)	Stage(ft)
0.00	81.200
24.00	81.200

Name: PRE-WETLAND Base Flow(cfs): 0.000 Init Stage(ft): 81.200
Group: BASE Warn Stage(ft): 81.200
Type: Time/Stage

BFE of 81.2 used as tailwater

Time(hrs)	Stage(ft)
0.00	81.200
24.00	81.200

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

Name: DS From Node: POND Length(ft): 34.00
Group: BASE To Node: POST-WETLAND Count: 1

```
              UPSTREAM       DOWNSTREAM                Friction Equation: Automatic
     Geometry: Circular       Circular                Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                              Flow: Both
     Rise(in): 18.00          18.00                Entrance Loss Coef: 0.000
   Invert(ft): 81.400         81.200                    Exit Loss Coef: 1.000
  Manning's N: 0.012000       0.012000                Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                    Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                      Solution Incs: 10

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

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



*** Weir 1 of 1 for Drop Structure DS ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                   Weir Disc Coef: 3.200
               Geometry: Rectangular          Orifice Disc Coef: 0.600

               Span(in): 36.00                       Invert(ft): 84.400
               Rise(in): 24.00                Control Elev(ft): 84.400


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

         Name: 1024
     Filename: J:\GermanaAdmin\ADMIN\2021\0082021 - Talichet Ph2\ICPR\1024.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 6.50

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

------------------------------------------------------------------------------------------------------
         Name: 2524
     Filename: J:\GermanaAdmin\ADMIN\2021\0082021 - Talichet Ph2\ICPR\2524.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 8.30

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

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

         Name: 1024               Hydrology Sim: 1024
     Filename: J:\GermanaAdmin\ADMIN\2021\0082021 - Talichet Ph2\ICPR\1024.I32

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

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


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

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


------------------------------------------------------------------------------------------------------
         Name: 2524               Hydrology Sim: 2524
     Filename: J:\GermanaAdmin\ADMIN\2021\0082021 - Talichet Ph2\ICPR\2524.I32

      Execute: Yes         Restart: No           Patch: No
```

Alternative: No

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

Time(hrs)	Print Inc(min)
999.000	15.000

Group	Run
BASE	Yes

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
1024	POST-1	BASE	12.04	14.90	2.708	69991
1024	POST-2	BASE	12.27	0.18	0.598	1477
1024	PRE	BASE	12.50	0.96	0.598	13733
2524	POST-1	BASE	12.04	22.96	4.122	106547
2524	POST-2	BASE	12.04	0.60	1.286	3174
2524	PRE	BASE	12.44	2.83	1.285	29520

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
POND	BASE	1024	24.00	83.56	84.50	0.0050	48545	12.08	14.31	0.00	0.00
POST-WETLAND	BASE	1024	0.00	81.20	81.20	0.0000	0	12.25	0.18	0.00	0.00
PRE-WETLAND	BASE	1024	0.00	81.20	81.20	0.0000	0	12.50	0.95	0.00	0.00
POND	BASE	2524	24.01	84.28	84.50	0.0050	52118	12.00	22.02	0.00	0.00
POST-WETLAND	BASE	2524	0.00	81.20	81.20	0.0000	0	12.00	0.56	0.00	0.00
PRE-WETLAND	BASE	2524	0.00	81.20	81.20	0.0000	0	12.42	2.83	0.00	0.00

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
DS	BASE	1024	0.00	0.00	0.000	24.00	83.56	0.00	81.20
DS	BASE	2524	0.00	0.00	0.000	24.01	84.28	0.00	81.20

Appendix C

Recovery Analysis

Infiltration Ring Exhibit

Recovery ICPR Routings

N

100' 50' 0 100' 200' 300'

SCALE IN FEET

LEGEND

- PROJECT PROPERTY LINE
- EXTERIOR PARCEL LINE
- PROPOSED CONCRETE

CHRISTOPHER M. GERMANA, P.E.
FLORIDA PROFESSIONAL ENGINEER # 61682
FIRM CERTIFICATE OF AUTHORIZATION # 29279

No.	REVISIONS	DATE

INFILTRATION RING EXHIBIT

TALICHET PHASE 2 SUBDIVISION

HOWEY IN THE HILLS, FLORIDA

PROJECT # GE0082021

GERMANA ENGINEERING
AND ASSOCIATES, LLC
1120 WEST MINNEOLA AVENUE
CLERMONT, FLA 34711
(352) 242-8329
WWW.GERMANAENGINEERING.COM
CERTIFICATE OF AUTHORIZATION NUMBER: 29279

SCALE: 1" = 100'

DATE: 08-25-2021

SHEET

RING

```
================================================================================
==== Basins ====================================================================
================================================================================

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

       Unit Hydrograph:                        Peaking Factor: 0.0
         Rainfall File:                  Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000              Time of Conc(min): 0.00
            Area(ac): 0.000                 Time Shift(hrs): 0.00
        Curve Number: 0.00              Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00



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

     Name: GW                 Base Flow(cfs): 0.000          Init Stage(ft): 79.000
    Group: BASE                                             Warn Stage(ft): 79.000
     Type: Time/Stage


     Time(hrs)       Stage(ft)
-------------- ---------------
          0.00          79.000
         24.00          79.000

--------------------------------------------------------------------------------
     Name: POND               Base Flow(cfs): 0.000          Init Stage(ft): 84.400
    Group: BASE                                             Warn Stage(ft): 83.000
     Type: Stage/Area



     Stage(ft)        Area(ac)
-------------- ---------------
         82.000          0.9420
         83.000          1.0520
         84.000          1.1640
         85.000          1.2790

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

             Name:                             Group: BASE
     Encroachment: No


   Station(ft)   Elevation(ft)     Manning's N
-------------- --------------- ---------------

================================================================================
==== Percolation Links =========================================================
================================================================================

        Name: INFIL              From Node: POND                    Flow: Both
       Group: BASE                 To Node: GW                     Count: 1

        Surface Area Option: Use 1st Point in Stage/Area Table
  Vertical Flow Termination: Horizontal Flow Algorithm
      Aquifer Base Elev(ft): 78.500                      Perimeter 1(ft): 740.000
       Water Table Elev(ft): 79.000                      Perimeter 2(ft): 892.000
Ann Recharge Rate(in/year): 0.000                        Perimeter 3(ft): 897.000
Horiz Conductivity(ft/day): 18.000                  Distance 1 to 2(ft): 50.000
 Vert Conductivity(ft/day): 3.500                   Distance 2 to 3(ft): 220.000
   Effective Porosity(dec): 0.200                      Num Cells 1 to 2: 10
          Suction Head(in): 4.170                      Num Cells 2 to 3: 25
       Layer Thickness(ft): 0.000



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

        Name:
    Filename:

     Override Defaults: Yes
   Storm Duration(hrs): 0.00
         Rainfall File:
```

Rainfall Amount(in): 0.00

Time(hrs)	Print Inc(min)
30.000	5.00

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

Name: Recov Hydrology Sim:
Filename: J:\GermanaAdmin\ADMIN\2021\0082021 - Talichet Ph2\ICPR\Recove.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 72.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000

Group	Run
BASE	Yes

Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
Recov	POND	BASE	0.00	84.40	83.00	52708	0.00	0.00	0.00	0.00
Recov	POND	BASE	0.26	84.37	83.00	52569	0.00	1.26	0.00	0.01
Recov	POND	BASE	0.50	84.35	83.00	52481	0.00	0.89	0.00	0.03
Recov	POND	BASE	0.77	84.34	83.00	52410	0.00	0.68	0.00	0.05
Recov	POND	BASE	1.02	84.33	83.00	52357	0.00	0.56	0.00	0.06
Recov	POND	BASE	1.27	84.32	83.00	52313	0.00	0.49	0.00	0.08
Recov	POND	BASE	1.52	84.31	83.00	52273	0.00	0.44	0.00	0.09
Recov	POND	BASE	1.77	84.31	83.00	52237	0.00	0.40	0.00	0.09
Recov	POND	BASE	2.02	84.30	83.00	52204	0.00	0.37	0.00	0.10
Recov	POND	BASE	2.27	84.29	83.00	52173	0.00	0.34	0.00	0.11
Recov	POND	BASE	2.52	84.29	83.00	52145	0.00	0.32	0.00	0.12
Recov	POND	BASE	2.77	84.28	83.00	52117	0.00	0.30	0.00	0.12
Recov	POND	BASE	3.02	84.28	83.00	52092	0.00	0.29	0.00	0.13
Recov	POND	BASE	3.27	84.27	83.00	52067	0.00	0.28	0.00	0.13
Recov	POND	BASE	3.52	84.27	83.00	52044	0.00	0.27	0.00	0.14
Recov	POND	BASE	3.77	84.26	83.00	52021	0.00	0.26	0.00	0.15
Recov	POND	BASE	4.02	84.26	83.00	51999	0.00	0.25	0.00	0.15
Recov	POND	BASE	4.27	84.25	83.00	51978	0.00	0.24	0.00	0.16
Recov	POND	BASE	4.52	84.25	83.00	51958	0.00	0.23	0.00	0.16
Recov	POND	BASE	4.77	84.25	83.00	51938	0.00	0.22	0.00	0.17
Recov	POND	BASE	5.02	84.24	83.00	51919	0.00	0.22	0.00	0.17
Recov	POND	BASE	5.27	84.24	83.00	51900	0.00	0.21	0.00	0.17
Recov	POND	BASE	5.52	84.24	83.00	51882	0.00	0.21	0.00	0.18
Recov	POND	BASE	5.77	84.23	83.00	51865	0.00	0.20	0.00	0.18
Recov	POND	BASE	6.02	84.23	83.00	51847	0.00	0.20	0.00	0.19
Recov	POND	BASE	6.27	84.22	83.00	51830	0.00	0.19	0.00	0.19
Recov	POND	BASE	6.52	84.22	83.00	51814	0.00	0.19	0.00	0.19
Recov	POND	BASE	6.77	84.22	83.00	51798	0.00	0.18	0.00	0.20
Recov	POND	BASE	7.02	84.22	83.00	51782	0.00	0.18	0.00	0.20
Recov	POND	BASE	7.27	84.21	83.00	51766	0.00	0.18	0.00	0.21
Recov	POND	BASE	7.52	84.21	83.00	51751	0.00	0.17	0.00	0.21
Recov	POND	BASE	7.77	84.21	83.00	51736	0.00	0.17	0.00	0.21
Recov	POND	BASE	8.02	84.20	83.00	51721	0.00	0.17	0.00	0.22
Recov	POND	BASE	8.27	84.20	83.00	51707	0.00	0.16	0.00	0.22
Recov	POND	BASE	8.52	84.20	83.00	51692	0.00	0.16	0.00	0.22
Recov	POND	BASE	8.77	84.19	83.00	51678	0.00	0.16	0.00	0.23
Recov	POND	BASE	9.02	84.19	83.00	51665	0.00	0.16	0.00	0.23
Recov	POND	BASE	9.27	84.19	83.00	51651	0.00	0.15	0.00	0.23
Recov	POND	BASE	9.52	84.19	83.00	51638	0.00	0.15	0.00	0.24
Recov	POND	BASE	9.77	84.18	83.00	51624	0.00	0.15	0.00	0.24
Recov	POND	BASE	10.02	84.18	83.00	51611	0.00	0.15	0.00	0.24
Recov	POND	BASE	10.27	84.18	83.00	51598	0.00	0.15	0.00	0.25
Recov	POND	BASE	10.52	84.18	83.00	51586	0.00	0.14	0.00	0.25
Recov	POND	BASE	10.77	84.17	83.00	51573	0.00	0.14	0.00	0.25
Recov	POND	BASE	11.02	84.17	83.00	51561	0.00	0.14	0.00	0.25
Recov	POND	BASE	11.27	84.17	83.00	51549	0.00	0.14	0.00	0.26
Recov	POND	BASE	11.52	84.17	83.00	51536	0.00	0.14	0.00	0.26
Recov	POND	BASE	11.77	84.16	83.00	51525	0.00	0.14	0.00	0.26
Recov	POND	BASE	12.02	84.16	83.00	51513	0.00	0.13	0.00	0.27
Recov	POND	BASE	12.27	84.16	83.00	51501	0.00	0.13	0.00	0.27
Recov	POND	BASE	12.52	84.16	83.00	51490	0.00	0.13	0.00	0.27
Recov	POND	BASE	12.77	84.15	83.00	51478	0.00	0.13	0.00	0.27
Recov	POND	BASE	13.02	84.15	83.00	51467	0.00	0.13	0.00	0.28
Recov	POND	BASE	13.27	84.15	83.00	51456	0.00	0.13	0.00	0.28
Recov	POND	BASE	13.52	84.15	83.00	51445	0.00	0.13	0.00	0.28
Recov	POND	BASE	13.77	84.15	83.00	51434	0.00	0.12	0.00	0.28
Recov	POND	BASE	14.02	84.14	83.00	51423	0.00	0.12	0.00	0.29
Recov	POND	BASE	14.27	84.14	83.00	51412	0.00	0.12	0.00	0.29
Recov	POND	BASE	14.52	84.14	83.00	51401	0.00	0.12	0.00	0.29
Recov	POND	BASE	14.77	84.14	83.00	51391	0.00	0.12	0.00	0.29
Recov	POND	BASE	15.02	84.14	83.00	51380	0.00	0.12	0.00	0.30
Recov	POND	BASE	15.27	84.13	83.00	51370	0.00	0.12	0.00	0.30
Recov	POND	BASE	15.52	84.13	83.00	51360	0.00	0.12	0.00	0.30
Recov	POND	BASE	15.77	84.13	83.00	51349	0.00	0.12	0.00	0.30
Recov	POND	BASE	16.02	84.13	83.00	51339	0.00	0.11	0.00	0.31
Recov	POND	BASE	16.27	84.12	83.00	51329	0.00	0.11	0.00	0.31
Recov	POND	BASE	16.52	84.12	83.00	51319	0.00	0.11	0.00	0.31
Recov	POND	BASE	16.77	84.12	83.00	51310	0.00	0.11	0.00	0.31
Recov	POND	BASE	17.02	84.12	83.00	51300	0.00	0.11	0.00	0.32
Recov	POND	BASE	17.27	84.12	83.00	51290	0.00	0.11	0.00	0.32
Recov	POND	BASE	17.52	84.12	83.00	51280	0.00	0.11	0.00	0.32
Recov	POND	BASE	17.77	84.11	83.00	51271	0.00	0.11	0.00	0.32
Recov	POND	BASE	18.02	84.11	83.00	51261	0.00	0.11	0.00	0.33
Recov	POND	BASE	18.27	84.11	83.00	51252	0.00	0.11	0.00	0.33
Recov	POND	BASE	18.52	84.11	83.00	51243	0.00	0.11	0.00	0.33
Recov	POND	BASE	18.77	84.11	83.00	51233	0.00	0.10	0.00	0.33
Recov	POND	BASE	19.02	84.10	83.00	51224	0.00	0.10	0.00	0.33
Recov	POND	BASE	19.27	84.10	83.00	51215	0.00	0.10	0.00	0.34
Recov	POND	BASE	19.52	84.10	83.00	51206	0.00	0.10	0.00	0.34
Recov	POND	BASE	19.77	84.10	83.00	51197	0.00	0.10	0.00	0.34
Recov	POND	BASE	20.02	84.10	83.00	51188	0.00	0.10	0.00	0.34
Recov	POND	BASE	20.27	84.09	83.00	51179	0.00	0.10	0.00	0.34
Recov	POND	BASE	20.52	84.09	83.00	51170	0.00	0.10	0.00	0.35
Recov	POND	BASE	20.77	84.09	83.00	51161	0.00	0.10	0.00	0.35
Recov	POND	BASE	21.02	84.09	83.00	51153	0.00	0.10	0.00	0.35
Recov	POND	BASE	21.27	84.09	83.00	51144	0.00	0.10	0.00	0.35
Recov	POND	BASE	21.52	84.09	83.00	51135	0.00	0.10	0.00	0.35

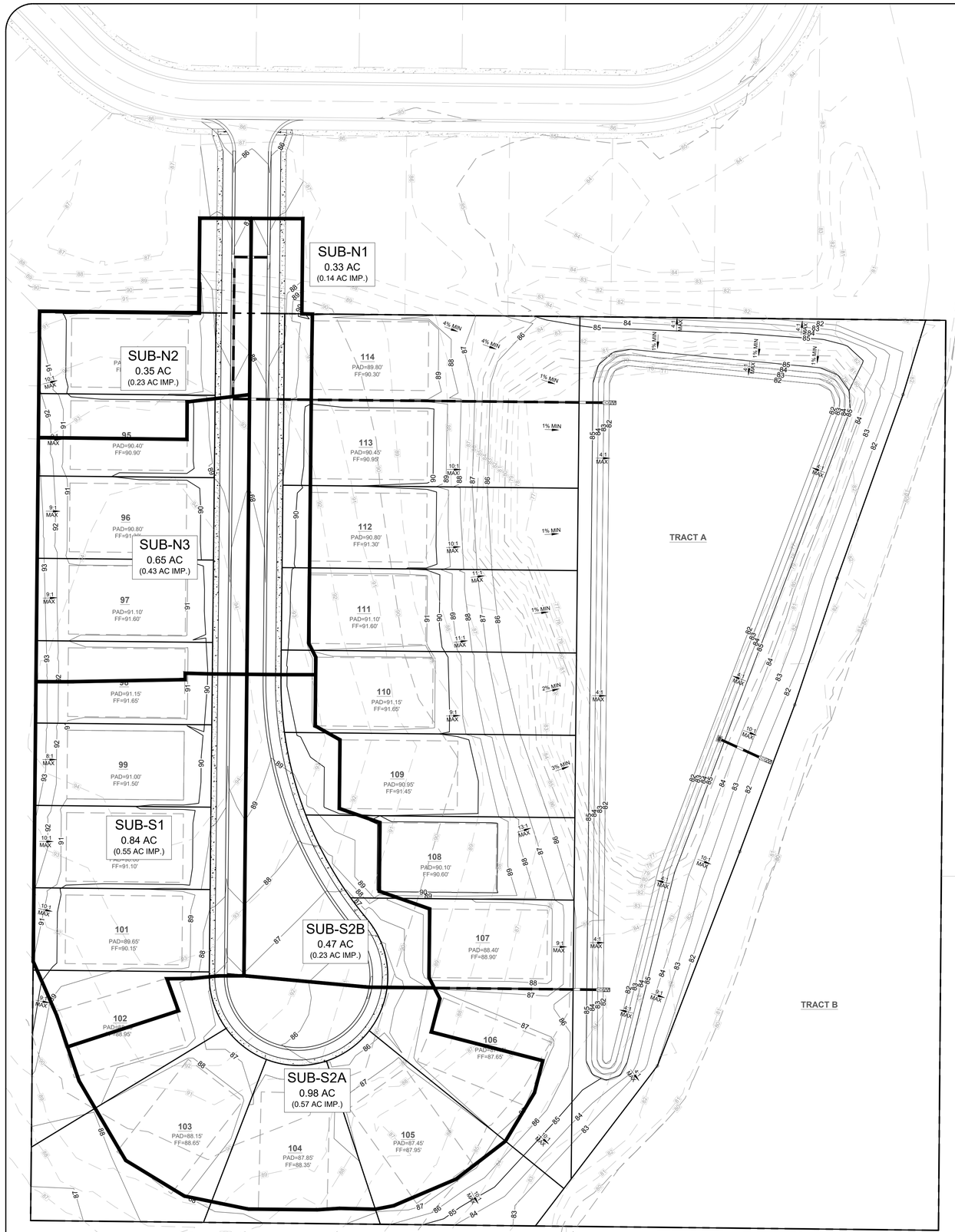
Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
Recov	POND	BASE	21.77	84.08	83.00	51127	0.00	0.10	0.00	0.36
Recov	POND	BASE	22.02	84.08	83.00	51118	0.00	0.10	0.00	0.36
Recov	POND	BASE	22.27	84.08	83.00	51110	0.00	0.10	0.00	0.36
Recov	POND	BASE	22.52	84.08	83.00	51102	0.00	0.09	0.00	0.36
Recov	POND	BASE	22.77	84.08	83.00	51093	0.00	0.09	0.00	0.36
Recov	POND	BASE	23.02	84.08	83.00	51085	0.00	0.09	0.00	0.37
Recov	POND	BASE	23.27	84.07	83.00	51077	0.00	0.09	0.00	0.37
Recov	POND	BASE	23.52	84.07	83.00	51068	0.00	0.09	0.00	0.37
Recov	POND	BASE	23.77	84.07	83.00	51060	0.00	0.09	0.00	0.37
Recov	POND	BASE	24.02	84.07	83.00	51052	0.00	0.09	0.00	0.37
Recov	POND	BASE	24.27	84.07	83.00	51044	0.00	0.09	0.00	0.38
Recov	POND	BASE	24.52	84.07	83.00	51036	0.00	0.09	0.00	0.38
Recov	POND	BASE	24.77	84.06	83.00	51028	0.00	0.09	0.00	0.38
Recov	POND	BASE	25.02	84.06	83.00	51020	0.00	0.09	0.00	0.38
Recov	POND	BASE	25.27	84.06	83.00	51012	0.00	0.09	0.00	0.38
Recov	POND	BASE	25.52	84.06	83.00	51004	0.00	0.09	0.00	0.39
Recov	POND	BASE	25.77	84.06	83.00	50997	0.00	0.09	0.00	0.39
Recov	POND	BASE	26.02	84.06	83.00	50989	0.00	0.09	0.00	0.39
Recov	POND	BASE	26.27	84.06	83.00	50981	0.00	0.09	0.00	0.39
Recov	POND	BASE	26.52	84.05	83.00	50973	0.00	0.09	0.00	0.39
Recov	POND	BASE	26.77	84.05	83.00	50966	0.00	0.09	0.00	0.39
Recov	POND	BASE	27.02	84.05	83.00	50958	0.00	0.09	0.00	0.40
Recov	POND	BASE	27.27	84.05	83.00	50951	0.00	0.09	0.00	0.40
Recov	POND	BASE	27.52	84.05	83.00	50943	0.00	0.08	0.00	0.40
Recov	POND	BASE	27.77	84.05	83.00	50936	0.00	0.08	0.00	0.40
Recov	POND	BASE	28.02	84.04	83.00	50928	0.00	0.08	0.00	0.40
Recov	POND	BASE	28.27	84.04	83.00	50921	0.00	0.08	0.00	0.40
Recov	POND	BASE	28.52	84.04	83.00	50913	0.00	0.08	0.00	0.41
Recov	POND	BASE	28.77	84.04	83.00	50906	0.00	0.08	0.00	0.41
Recov	POND	BASE	29.02	84.04	83.00	50899	0.00	0.08	0.00	0.41
Recov	POND	BASE	29.27	84.04	83.00	50891	0.00	0.08	0.00	0.41
Recov	POND	BASE	29.52	84.04	83.00	50884	0.00	0.08	0.00	0.41
Recov	POND	BASE	29.77	84.03	83.00	50877	0.00	0.08	0.00	0.42
Recov	POND	BASE	30.02	84.03	83.00	50870	0.00	0.08	0.00	0.42
Recov	POND	BASE	30.27	84.03	83.00	50862	0.00	0.08	0.00	0.42
Recov	POND	BASE	30.52	84.03	83.00	50855	0.00	0.08	0.00	0.42
Recov	POND	BASE	30.77	84.03	83.00	50848	0.00	0.08	0.00	0.42
Recov	POND	BASE	31.02	84.03	83.00	50841	0.00	0.08	0.00	0.42
Recov	POND	BASE	31.27	84.03	83.00	50834	0.00	0.08	0.00	0.43
Recov	POND	BASE	31.52	84.02	83.00	50827	0.00	0.08	0.00	0.43
Recov	POND	BASE	31.77	84.02	83.00	50820	0.00	0.08	0.00	0.43
Recov	POND	BASE	32.02	84.02	83.00	50813	0.00	0.08	0.00	0.43
Recov	POND	BASE	32.27	84.02	83.00	50806	0.00	0.08	0.00	0.43
Recov	POND	BASE	32.52	84.02	83.00	50799	0.00	0.08	0.00	0.43
Recov	POND	BASE	32.77	84.02	83.00	50792	0.00	0.08	0.00	0.43
Recov	POND	BASE	33.02	84.02	83.00	50786	0.00	0.08	0.00	0.44
Recov	POND	BASE	33.27	84.01	83.00	50779	0.00	0.08	0.00	0.44
Recov	POND	BASE	33.52	84.01	83.00	50772	0.00	0.08	0.00	0.44
Recov	POND	BASE	33.77	84.01	83.00	50765	0.00	0.08	0.00	0.44
Recov	POND	BASE	34.02	84.01	83.00	50759	0.00	0.08	0.00	0.44
Recov	POND	BASE	34.27	84.01	83.00	50752	0.00	0.08	0.00	0.44
Recov	POND	BASE	34.52	84.01	83.00	50745	0.00	0.07	0.00	0.45
Recov	POND	BASE	34.77	84.01	83.00	50739	0.00	0.07	0.00	0.45
Recov	POND	BASE	35.02	84.01	83.00	50732	0.00	0.07	0.00	0.45
Recov	POND	BASE	35.27	84.00	83.00	50725	0.00	0.07	0.00	0.45
Recov	POND	BASE	35.52	84.00	83.00	50719	0.00	0.07	0.00	0.45
Recov	POND	BASE	35.77	84.00	83.00	50712	0.00	0.07	0.00	0.45
Recov	POND	BASE	36.02	84.00	83.00	50706	0.00	0.07	0.00	0.45
Recov	POND	BASE	36.27	84.00	83.00	50699	0.00	0.07	0.00	0.46
Recov	POND	BASE	36.52	84.00	83.00	50693	0.00	0.07	0.00	0.46
Recov	POND	BASE	36.77	84.00	83.00	50687	0.00	0.07	0.00	0.46
Recov	POND	BASE	37.02	84.00	83.00	50681	0.00	0.07	0.00	0.46
Recov	POND	BASE	37.27	83.99	83.00	50674	0.00	0.07	0.00	0.46
Recov	POND	BASE	37.52	83.99	83.00	50668	0.00	0.07	0.00	0.46
Recov	POND	BASE	37.77	83.99	83.00	50662	0.00	0.07	0.00	0.47
Recov	POND	BASE	38.02	83.99	83.00	50656	0.00	0.07	0.00	0.47
Recov	POND	BASE	38.27	83.99	83.00	50650	0.00	0.07	0.00	0.47
Recov	POND	BASE	38.52	83.99	83.00	50644	0.00	0.07	0.00	0.47
Recov	POND	BASE	38.77	83.99	83.00	50637	0.00	0.07	0.00	0.47
Recov	POND	BASE	39.02	83.99	83.00	50631	0.00	0.07	0.00	0.47
Recov	POND	BASE	39.27	83.98	83.00	50625	0.00	0.07	0.00	0.47
Recov	POND	BASE	39.52	83.98	83.00	50619	0.00	0.07	0.00	0.48
Recov	POND	BASE	39.77	83.98	83.00	50613	0.00	0.07	0.00	0.48
Recov	POND	BASE	40.02	83.98	83.00	50607	0.00	0.07	0.00	0.48
Recov	POND	BASE	40.27	83.98	83.00	50601	0.00	0.07	0.00	0.48
Recov	POND	BASE	40.52	83.98	83.00	50595	0.00	0.07	0.00	0.48
Recov	POND	BASE	40.77	83.98	83.00	50589	0.00	0.07	0.00	0.48
Recov	POND	BASE	41.02	83.98	83.00	50583	0.00	0.07	0.00	0.48
Recov	POND	BASE	41.27	83.97	83.00	50578	0.00	0.07	0.00	0.49
Recov	POND	BASE	41.52	83.97	83.00	50572	0.00	0.07	0.00	0.49
Recov	POND	BASE	41.77	83.97	83.00	50566	0.00	0.07	0.00	0.49
Recov	POND	BASE	42.02	83.97	83.00	50560	0.00	0.07	0.00	0.49
Recov	POND	BASE	42.27	83.97	83.00	50554	0.00	0.07	0.00	0.49
Recov	POND	BASE	42.52	83.97	83.00	50548	0.00	0.07	0.00	0.49
Recov	POND	BASE	42.77	83.97	83.00	50543	0.00	0.07	0.00	0.49
Recov	POND	BASE	43.02	83.97	83.00	50537	0.00	0.07	0.00	0.50
Recov	POND	BASE	43.27	83.96	83.00	50531	0.00	0.07	0.00	0.50

Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
Recov	POND	BASE	43.52	83.96	83.00	50525	0.00	0.07	0.00	0.50
Recov	POND	BASE	43.77	83.96	83.00	50520	0.00	0.07	0.00	0.50
Recov	POND	BASE	44.02	83.96	83.00	50514	0.00	0.07	0.00	0.50
Recov	POND	BASE	44.27	83.96	83.00	50508	0.00	0.07	0.00	0.50
Recov	POND	BASE	44.52	83.96	83.00	50503	0.00	0.06	0.00	0.50
Recov	POND	BASE	44.77	83.96	83.00	50497	0.00	0.06	0.00	0.50
Recov	POND	BASE	45.02	83.96	83.00	50491	0.00	0.06	0.00	0.51
Recov	POND	BASE	45.27	83.96	83.00	50486	0.00	0.06	0.00	0.51
Recov	POND	BASE	45.52	83.95	83.00	50480	0.00	0.06	0.00	0.51
Recov	POND	BASE	45.77	83.95	83.00	50475	0.00	0.06	0.00	0.51
Recov	POND	BASE	46.02	83.95	83.00	50469	0.00	0.06	0.00	0.51
Recov	POND	BASE	46.27	83.95	83.00	50463	0.00	0.06	0.00	0.51
Recov	POND	BASE	46.52	83.95	83.00	50458	0.00	0.06	0.00	0.51
Recov	POND	BASE	46.77	83.95	83.00	50452	0.00	0.06	0.00	0.52
Recov	POND	BASE	47.02	83.95	83.00	50447	0.00	0.06	0.00	0.52
Recov	POND	BASE	47.27	83.95	83.00	50442	0.00	0.06	0.00	0.52
Recov	POND	BASE	47.52	83.95	83.00	50436	0.00	0.06	0.00	0.52
Recov	POND	BASE	47.77	83.94	83.00	50431	0.00	0.06	0.00	0.52
Recov	POND	BASE	48.02	83.94	83.00	50425	0.00	0.06	0.00	0.52
Recov	POND	BASE	48.27	83.94	83.00	50420	0.00	0.06	0.00	0.52
Recov	POND	BASE	48.52	83.94	83.00	50414	0.00	0.06	0.00	0.52
Recov	POND	BASE	48.77	83.94	83.00	50409	0.00	0.06	0.00	0.53
Recov	POND	BASE	49.02	83.94	83.00	50404	0.00	0.06	0.00	0.53
Recov	POND	BASE	49.27	83.94	83.00	50398	0.00	0.06	0.00	0.53
Recov	POND	BASE	49.52	83.94	83.00	50393	0.00	0.06	0.00	0.53
Recov	POND	BASE	49.77	83.94	83.00	50388	0.00	0.06	0.00	0.53
Recov	POND	BASE	50.02	83.93	83.00	50382	0.00	0.06	0.00	0.53
Recov	POND	BASE	50.27	83.93	83.00	50377	0.00	0.06	0.00	0.53
Recov	POND	BASE	50.52	83.93	83.00	50372	0.00	0.06	0.00	0.53
Recov	POND	BASE	50.77	83.93	83.00	50366	0.00	0.06	0.00	0.54
Recov	POND	BASE	51.02	83.93	83.00	50361	0.00	0.06	0.00	0.54
Recov	POND	BASE	51.27	83.93	83.00	50356	0.00	0.06	0.00	0.54
Recov	POND	BASE	51.52	83.93	83.00	50351	0.00	0.06	0.00	0.54
Recov	POND	BASE	51.77	83.93	83.00	50346	0.00	0.06	0.00	0.54
Recov	POND	BASE	52.02	83.93	83.00	50340	0.00	0.06	0.00	0.54
Recov	POND	BASE	52.27	83.92	83.00	50335	0.00	0.06	0.00	0.54
Recov	POND	BASE	52.52	83.92	83.00	50330	0.00	0.06	0.00	0.54
Recov	POND	BASE	52.77	83.92	83.00	50325	0.00	0.06	0.00	0.55
Recov	POND	BASE	53.02	83.92	83.00	50320	0.00	0.06	0.00	0.55
Recov	POND	BASE	53.27	83.92	83.00	50315	0.00	0.06	0.00	0.55
Recov	POND	BASE	53.52	83.92	83.00	50309	0.00	0.06	0.00	0.55
Recov	POND	BASE	53.77	83.92	83.00	50304	0.00	0.06	0.00	0.55
Recov	POND	BASE	54.02	83.92	83.00	50299	0.00	0.06	0.00	0.55
Recov	POND	BASE	54.27	83.92	83.00	50294	0.00	0.06	0.00	0.55
Recov	POND	BASE	54.52	83.92	83.00	50289	0.00	0.06	0.00	0.55
Recov	POND	BASE	54.77	83.91	83.00	50284	0.00	0.06	0.00	0.56
Recov	POND	BASE	55.02	83.91	83.00	50279	0.00	0.06	0.00	0.56
Recov	POND	BASE	55.27	83.91	83.00	50274	0.00	0.06	0.00	0.56
Recov	POND	BASE	55.52	83.91	83.00	50269	0.00	0.06	0.00	0.56
Recov	POND	BASE	55.77	83.91	83.00	50264	0.00	0.06	0.00	0.56
Recov	POND	BASE	56.02	83.91	83.00	50259	0.00	0.06	0.00	0.56
Recov	POND	BASE	56.27	83.91	83.00	50254	0.00	0.06	0.00	0.56
Recov	POND	BASE	56.52	83.91	83.00	50249	0.00	0.06	0.00	0.56
Recov	POND	BASE	56.77	83.91	83.00	50244	0.00	0.06	0.00	0.56
Recov	POND	BASE	57.02	83.90	83.00	50239	0.00	0.06	0.00	0.57
Recov	POND	BASE	57.27	83.90	83.00	50234	0.00	0.06	0.00	0.57
Recov	POND	BASE	57.52	83.90	83.00	50229	0.00	0.06	0.00	0.57
Recov	POND	BASE	57.77	83.90	83.00	50224	0.00	0.06	0.00	0.57
Recov	POND	BASE	58.02	83.90	83.00	50220	0.00	0.06	0.00	0.57
Recov	POND	BASE	58.27	83.90	83.00	50215	0.00	0.06	0.00	0.57
Recov	POND	BASE	58.52	83.90	83.00	50210	0.00	0.06	0.00	0.57
Recov	POND	BASE	58.77	83.90	83.00	50205	0.00	0.06	0.00	0.57
Recov	POND	BASE	59.02	83.90	83.00	50200	0.00	0.06	0.00	0.57
Recov	POND	BASE	59.27	83.90	83.00	50195	0.00	0.06	0.00	0.58
Recov	POND	BASE	59.52	83.89	83.00	50190	0.00	0.06	0.00	0.58
Recov	POND	BASE	59.77	83.89	83.00	50186	0.00	0.05	0.00	0.58
Recov	POND	BASE	60.02	83.89	83.00	50181	0.00	0.05	0.00	0.58
Recov	POND	BASE	60.27	83.89	83.00	50176	0.00	0.05	0.00	0.58
Recov	POND	BASE	60.52	83.89	83.00	50171	0.00	0.05	0.00	0.58
Recov	POND	BASE	60.77	83.89	83.00	50167	0.00	0.05	0.00	0.58
Recov	POND	BASE	61.02	83.89	83.00	50162	0.00	0.05	0.00	0.58
Recov	POND	BASE	61.27	83.89	83.00	50157	0.00	0.05	0.00	0.59
Recov	POND	BASE	61.52	83.89	83.00	50152	0.00	0.05	0.00	0.59
Recov	POND	BASE	61.77	83.89	83.00	50148	0.00	0.05	0.00	0.59
Recov	POND	BASE	62.02	83.89	83.00	50143	0.00	0.05	0.00	0.59
Recov	POND	BASE	62.27	83.88	83.00	50138	0.00	0.05	0.00	0.59
Recov	POND	BASE	62.52	83.88	83.00	50133	0.00	0.05	0.00	0.59
Recov	POND	BASE	62.77	83.88	83.00	50129	0.00	0.05	0.00	0.59
Recov	POND	BASE	63.02	83.88	83.00	50124	0.00	0.05	0.00	0.59
Recov	POND	BASE	63.27	83.88	83.00	50119	0.00	0.05	0.00	0.59
Recov	POND	BASE	63.52	83.88	83.00	50115	0.00	0.05	0.00	0.60
Recov	POND	BASE	63.77	83.88	83.00	50110	0.00	0.05	0.00	0.60
Recov	POND	BASE	64.02	83.88	83.00	50106	0.00	0.05	0.00	0.60
Recov	POND	BASE	64.27	83.88	83.00	50101	0.00	0.05	0.00	0.60
Recov	POND	BASE	64.52	83.88	83.00	50096	0.00	0.05	0.00	0.60
Recov	POND	BASE	64.77	83.87	83.00	50092	0.00	0.05	0.00	0.60
Recov	POND	BASE	65.02	83.87	83.00	50087	0.00	0.05	0.00	0.60

Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
Recov	POND	BASE	65.27	83.87	83.00	50082	0.00	0.05	0.00	0.60
Recov	POND	BASE	65.52	83.87	83.00	50078	0.00	0.05	0.00	0.60
Recov	POND	BASE	65.77	83.87	83.00	50073	0.00	0.05	0.00	0.60
Recov	POND	BASE	66.02	83.87	83.00	50069	0.00	0.05	0.00	0.61
Recov	POND	BASE	66.27	83.87	83.00	50064	0.00	0.05	0.00	0.61
Recov	POND	BASE	66.52	83.87	83.00	50060	0.00	0.05	0.00	0.61
Recov	POND	BASE	66.77	83.87	83.00	50055	0.00	0.05	0.00	0.61
Recov	POND	BASE	67.02	83.87	83.00	50051	0.00	0.05	0.00	0.61
Recov	POND	BASE	67.27	83.87	83.00	50046	0.00	0.05	0.00	0.61
Recov	POND	BASE	67.52	83.86	83.00	50042	0.00	0.05	0.00	0.61
Recov	POND	BASE	67.77	83.86	83.00	50037	0.00	0.05	0.00	0.61
Recov	POND	BASE	68.02	83.86	83.00	50033	0.00	0.05	0.00	0.61
Recov	POND	BASE	68.27	83.86	83.00	50028	0.00	0.05	0.00	0.62
Recov	POND	BASE	68.52	83.86	83.00	50024	0.00	0.05	0.00	0.62
Recov	POND	BASE	68.77	83.86	83.00	50019	0.00	0.05	0.00	0.62
Recov	POND	BASE	69.02	83.86	83.00	50015	0.00	0.05	0.00	0.62
Recov	POND	BASE	69.27	83.86	83.00	50010	0.00	0.05	0.00	0.62
Recov	POND	BASE	69.52	83.86	83.00	50006	0.00	0.05	0.00	0.62
Recov	POND	BASE	69.77	83.86	83.00	50002	0.00	0.05	0.00	0.62
Recov	POND	BASE	70.02	83.86	83.00	49997	0.00	0.05	0.00	0.62
Recov	POND	BASE	70.27	83.85	83.00	49993	0.00	0.05	0.00	0.62
Recov	POND	BASE	70.52	83.85	83.00	49988	0.00	0.05	0.00	0.62
Recov	POND	BASE	70.77	83.85	83.00	49984	0.00	0.05	0.00	0.63
Recov	POND	BASE	71.02	83.85	83.00	49980	0.00	0.05	0.00	0.63
Recov	POND	BASE	71.27	83.85	83.00	49975	0.00	0.05	0.00	0.63
Recov	POND	BASE	71.52	83.85	83.00	49971	0.00	0.05	0.00	0.63
Recov	POND	BASE	71.77	83.85	83.00	49967	0.00	0.05	0.00	0.63
Recov	POND	BASE	72.01	83.85	83.00	49963	0.00	0.05	0.00	0.63

Appendix D

Inlet Spread Calculations



N

40' 20' 0 40' 80' 120'

SCALE IN FEET

LEGEND

- PROJECT PROPERTY LINE
- EXTERIOR PARCEL LINE
- PROPOSED CONCRETE

	NORTH STORMWATER SYSTEM			SOUTH STORMWATER SYSTEM		
SUB-BASIN NAME	**N1**	**N2**	**N3**	**S1**	**S2A/S2B**	
TOTAL AREA	0.33 Ac	0.35 Ac	0.65 Ac	0.84 Ac	0.98 Ac	0.47 Ac
IMPERVIOUS AREA	0.14 Ac	0.23 Ac	0.43 Ac	0.55 Ac	0.57 Ac	0.23 Ac
ROADWAY SLOPE	1.00%	1.00%	1.00%	2.00%	2.00%	2.00%
PERVIOUS AREA	*0.19 Ac*	*0.12 Ac*	*0.22 Ac*	*0.29 Ac*	*0.41 Ac*	*0.24 Ac*
COEFFICIENT	*0.48*	*0.67*	*0.68*	*0.67*	*0.61*	*0.54*
TIME OF CONCENTRATION	*10 MIN.*	*10 MIN.*	*10 MIN.*	*10 MIN.*	*10 MIN.*	*10 MIN.*
RAINFALL INTENSITY (10-YR)	*4IN/HR*	*4IN/HR*	*4IN/HR*	*4IN/HR*	*4IN/HR*	*4IN/HR*
MANNINGS COEFFICIENT	*0.012*	*0.012*	*0.012*	*0.012*	*0.012*	*0.012*
ROADWAY CROSS SLOPE	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*
CALCULATED FLOW	**0.64 CFS**	**0.94 CFS**	**1.76 CFS**	**2.25 CFS**	**3.40 CFS**	
MAXIMUM FLOW	3.10 CFS	3.10 CFS	3.10 CFS	3.10 CFS	7.50 CFS	
CALCULATED SPREAD	**5.47'**	**6.33'**	**7.99'**	**7.71'**	**7.89'**	**5.70'**
MAXIMUM SPREAD	8.00'	8.00'	8.00'	8.00'	8.00'	8.00'

CHRISTOPHER M. GERMANA, P.E.
FLORIDA PROFESSIONAL ENGINEER # 61682
FIRM CERTIFICATE OF AUTHORIZATION # 29279

No.	REVISIONS	DATE

INLET SPREAD CALCULATIONS

TALICHET PHASE 2
SUBDIVISION

HOWEY IN THE HILLS, FLORIDA

PROJECT # GE00822021

GERMANA ENGINEERING
AND ASSOCIATES, LLC
1120 WEST MINNEOLA AVENUE
CLERMONT, FL 34711
(352) 242-8329
WWW.GERMANAENGINEERING.COM
CERTIFICATE OF AUTHORIZATION NUMBER: 29279

SCALE: 1" = 40'

DATE: 08-25-2021

SHEET

SPREAD