ELEVEN MILE CREEK BASIN

DUE DILIGENCE REPORT

SEPTEMBER 2017

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1. INTRODUCTION

The Public Works Department of Escambia County is conducting an evaluation of potential locations for regional detention ponds within the Eleven Mile Creek basin in western Escambia County near Nine Mile Rd and Interstate 10. The Bristol Park and Ashbury Hills area has endured frequent inundation of roadways and homes from high flow events and suffered vast damage to private property as a result of historic flooding that occurred in April 2014. Previous stormwater master plan studies of the area have identified locations recommended for consideration of regional stormwater management facilities. More specifically the 1999 Eleven Mile Creek Stormwater Master Plan completed by CarlanKillam Consulting Group, Inc. proposed eleven pond sites that if constructed together could effectively attenuate flows to reduce flooding within this portion of the basin identified as Zone 1. Recommendations included retention volume and pond size requirements, sub-basins that could be routed through the proposed ponds, and general locations for the ponds. The purpose of this report is to review the previous study and prepare a due diligence report that will identify practical and useable properties that could be purchased by the County in pursuit of implementing the recommendations included in the original Eleven Mile Creek Stormwater Master Plan.

2. EXISTING CONDITIONS

Two areas of the Eleven Mile Creek basin have been considered for potential regional pond siting. Area 1 is bounded by Interstate 10 to the South, Muscogee Rd to the North, and St Hwy 29 to the East (see Figure 2.1). Though flooding is experienced in various locations throughout the basin, the most severe and destructive flooding has occurred in the Bristol Park area near the southern extent of Area 1 directly upstream of Interstate 10. During high flow events discharges from the headwaters of the basin flow through the system quickly and converge near CR 297A where capacity of the system becomes overwhelmed and the creek banks overtop. Area 2 is located South of Interstate 10 and 9 Mile Road, Northwest of the intersection of Hwy 90 and Klondike Road (see Figure 2.2). Area 2 identifies a potential location for a regional pond that could reduce local flooding issues, provide treatment for runoff not currently treated, and reduce tailwater conditions for upstream portions of Eleven Mile Creek. Previous studies of this basin completed by Carlan Consulting Group, Inc. in 1994 and CarlanKillam Consulting Group, Inc. in 1999 modelled the effects of adding regional detention to the system using Interconnected Channel and Pond Routing (ICPR) software. It was shown that strategic placement of ponds throughout the system could effectively reduce flooding currently experienced. Recommendations of these studies included conceptual volume requirements and general pond placement.

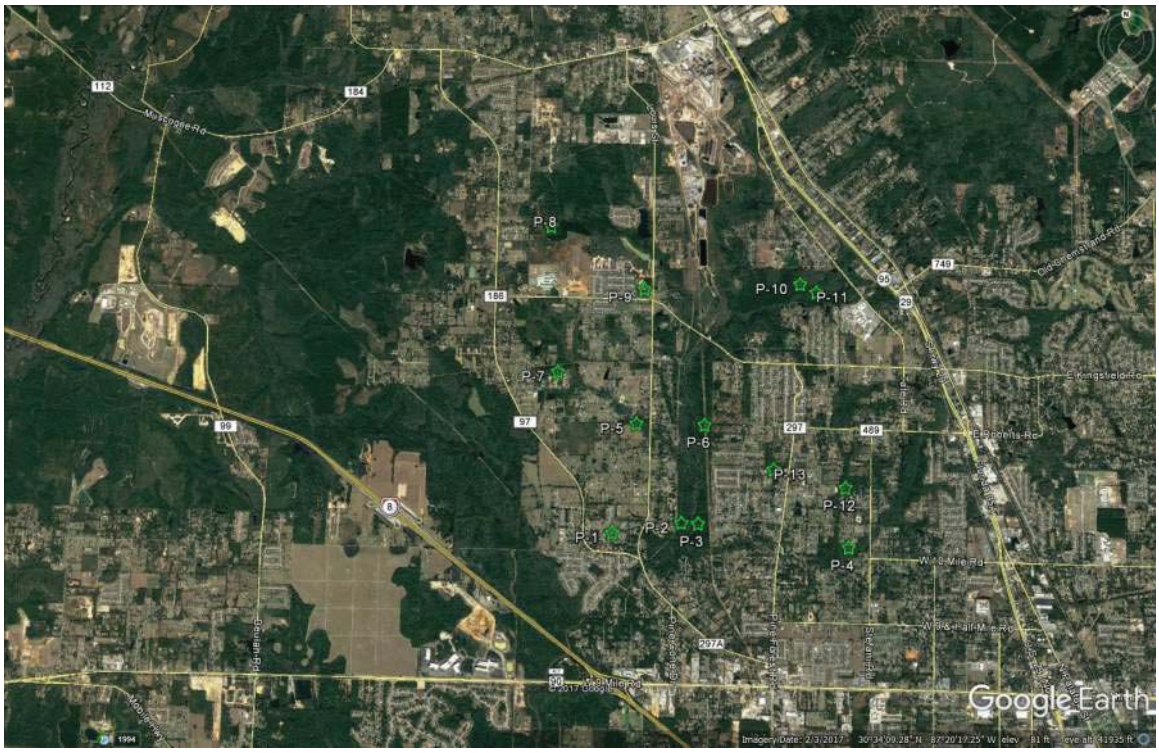

Figure 2.1 Eleven Mile Creek Basin with Proposed Pond Locations – Area 1

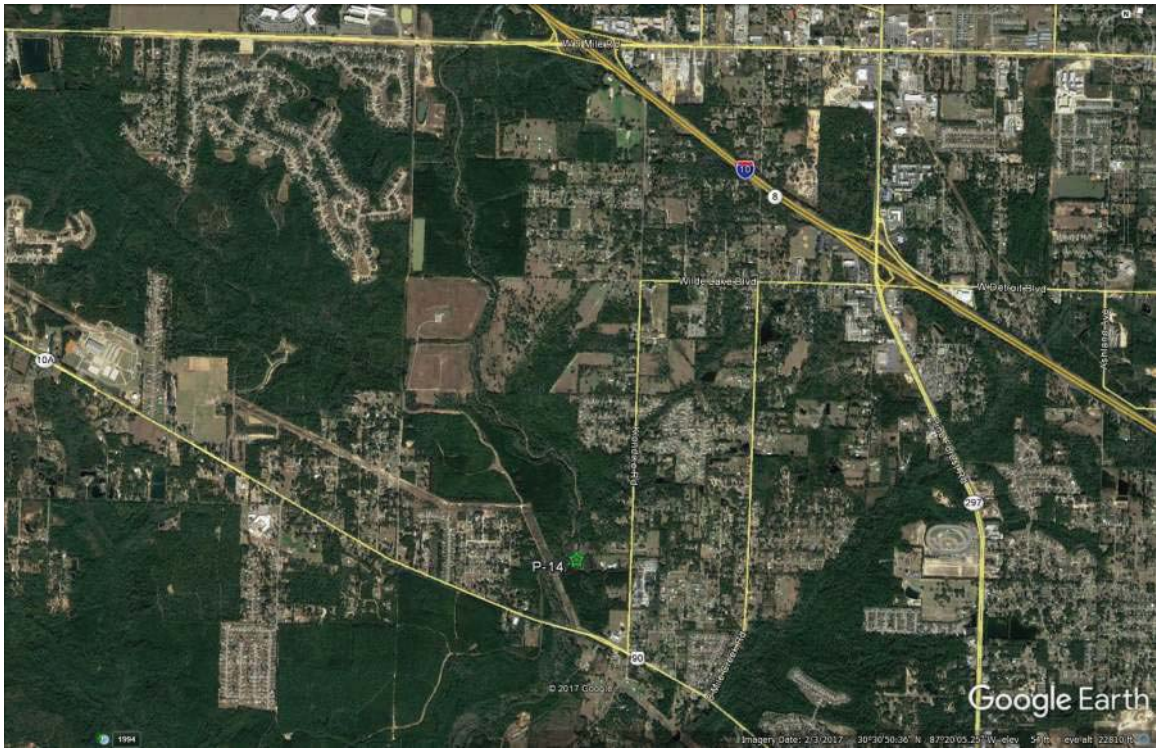

Figure 2.2 Eleven Mile Creek Basin with Proposed Pond Locations – Area 2

3. DESIGN CRITERIA

The intent of this study is not to fully design regional detention ponds for the Eleven Mile Creek basin, but to review previous studies while taking into consideration recent development in order to propose viable locations for regional detention. In addition to the Eleven Mile Creek Stormwater Master Plan, sources of reference shall include aerial photography, Escambia County GIS and National Wetland Inventory (NWI) wetland shapefiles, NRCS web soil survey data (see Appendix C), Escambia County GIS and LIDAR contour/elevation data, and the Escambia County Property Appraiser for approximate parcel geometry, location, size, value, and owner information. Targeted property acquisition shall be limited to open areas away from existing homes, structures, and utilities as much as possible and shall not impact wetlands. Based upon these constraints, as directed by Escambia County, achieving the respective pond volumes recommended in the stormwater master plan(s) was not considered mandatory. These areas will then be evaluated for usefulness regarding constraints from elevation differential, required tie back slopes, and the ability to effectively capture runoff. This analysis will consist of exhibits showing proposed pond locations and parcels affected, tabulated pond area and property acquisition requirements, and general notes detailing benefits and/or difficulties that each site presents.

4. DATA ANALYSIS

Data and figures from the 1994 and 1999 studies were reviewed, and previously proposed pond locations were evaluated for current availability of open land. A map showing general locations of proposed ponds from the 1999 report is included as Figure 4.1. These original locations were mapped with current aerials and Escambia County GIS watershed data to further refine potential placement of the ponds. Since 1999, areas corresponding to ponds P-1, P-7, and P-9 from Figure 4.1 have experienced substantial residential development; therefore, space for regional detention has become limited or unavailable. Where the remaining original locations were not fully developed, avoiding homes and wetlands severely constrained pond placement in some cases. Each pond site was re-evaluated with current information, and best available properties were considered for new pond location recommendations. Maps of new pond locations proposed for this study are included in Appendix A.

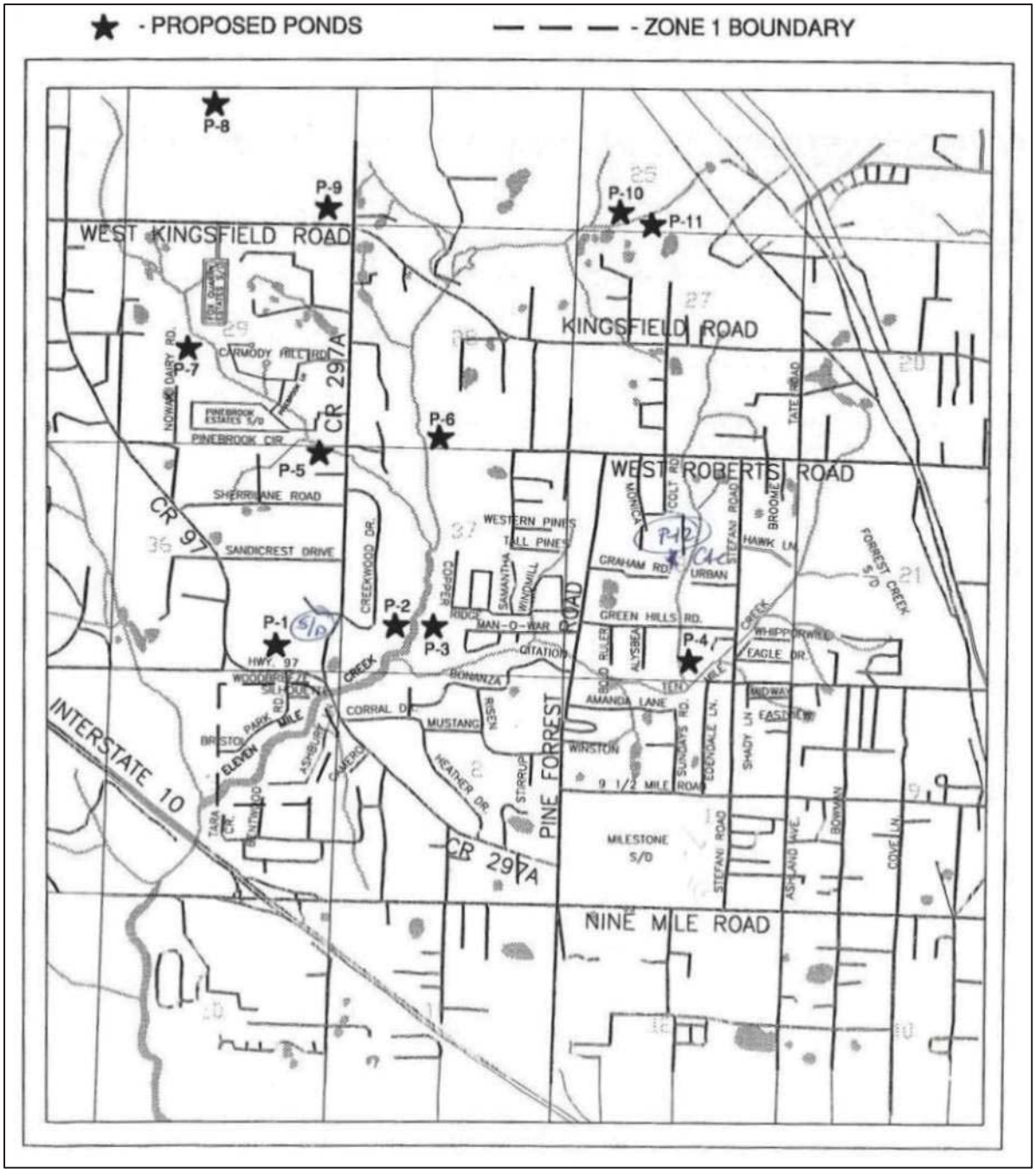

Figure 4.1 Proposed Ponds from 1999 Report

4.1. Location P-1

Areas near P-1 were considered in efforts to provide detention similar to the original P-1 pond. Four new pond locations have been proposed for the P-1 area; however, the aggregate area provided by these ponds does not match the 1999 P-1 pond. Size and position of these ponds within the sub-basin may not provide the capability to capture all discharges accounted for in the 1999 study. Pond P-1.1 has the most upstream location and may allow capture of ditch flows diverted from CR 97 as well as overland

flow. Pond P-1.2 lies downstream of P-1.1 and can capture limited area through overland flow. Pond P-1.3 is located near CR 97 South of P-1.1 and can capture some overland flow as well as ditched/piped flow directed from the CR 97 ditch, which can be attenuated and then routed back to the CR 97 ditch. P-1.3 volume will be determined by balancing critical berm elevation with footprint required to tie slopes back into existing terrain. Pond P-1.4 is located at the Northwest corner of the intersection of CR 97 and CR 297A. This pond could be used to attenuate flows directed from ditches along CR 97 and CR 297A. P-1.4 could also be merged with the existing Glenmoor Trail stormwater pond to expand its volume.

4.2. Location P-2

It appears that the area for the original P-2 pond has not developed since the early studies and is still available for use. However, the open area that does not impact structures or wetlands is on a downgrade and sees significant elevation differential. The pond shape will be governed by existing terrain in attempts to provide adequate storage volume while still allowing reasonable tie-in slopes. Considering this restrictive shaping and efforts to not impact houses or wetlands, collection of runoff from basins specified in the 1999 report will be hindered. A long, narrow pond located near Eleven Mile Creek would be required to capture all runoff from basins identified in the 1999 report, but existing terrain and wetlands will limit pond placement and not allow complete collection from all basins.

4.3. Location P-3

The 1999 report placed pond P-3 directly East of P-2 and Eleven Mile Creek in order to collect runoff from several basins stretching from Man O War Circle to West Roberts Rd. Collection of all basins would require a very long narrow pond; however, existing grades and apparent wetlands will not allow this strategy. Therefore, two new pond locations have been proposed to capture stormwater in the vicinity of the original 1999 basins. Newly proposed pond P-3.1 is located east of P-2 and encounters some of the same difficulties as P-2. Elevation change and apparent wetlands will require resizing of the pond to maximize useable volume and may require further breakdown into multiple ponds due to extensive wetlands in one location. The P-3.1 pond(s) should be capable of capturing a portion of the runoff from the southerly 1999 basins. Pond P-3.2, which is sited on County property, has been proposed for capture of runoff from the more northern 1999 basin. As proposed by the County, runoff could be captured along West Roberts Rd and ditched south to Pond P-3.2 for attenuation and potential discharge to Eleven Mile Creek.

4.4. Location P-4

The basin identified in 1999 for the P-4 site is relatively large for the area and connectivity currently available for pond siting. Avoiding structures and wetlands narrows usable property to a wooded area south of Cool Creek Rd. Siting pond P-4 (Option A) in this location would require a balance of elevation differential with berm tops in order to create storage and may require multiple ponds due to locations where available area narrows. Some storage could be created with P-4 (Option A), but this strategy will only be able to capture runoff within the original basin north of Ten Mile Creek and would not capture any runoff from the original basin south of Ten Mile Creek. In order to overcome this and provide more attenuation in the P-4 area, Escambia County has proposed pond P-4 (Option B), which involves acquiring a large parcel that provides access to both sides of Ten Mile Creek. Under P-4 (Option B) a dam would be built within the creek at a downstream location within the acquired property to

provide storage of runoff converging from the north and south sides of Ten Mile Creek, as well as runoff entering Ten Mile Creek upstream. This strategy could provide more storage and collect runoff from a larger portion of the original 1999 basin, but a detailed study would be required in order to analyze and identify any flooding potential upstream that could be caused by damming the creek and investigate the extent of potential wetland impact.

4.5. Location P-5

Pond location P-5 was originally identified in the 1999 report in the area southwest of the intersection of CR 297A and the tributary to Eleven Mile Creek located north of Sherrilane Drive. There is a large amount of open area available, but not 21 acres as specified in the 1999 report. The area proposed for P-5.1 is partially located at a high elevation within the basin and sees large elevation differential. Siting a pond here may require reducing the footprint of the proposed area or dividing it into multiple ponds to maximize storage and capture potential. This area also appears to not allow for capture of the entire 1999 basin due to apparent wetlands.

4.6. Location P-6

It appears that the area for the original P-6 pond has not developed since the early studies and is still available for use. However, the open area that does not impact structures, wetlands, an assumed pipeline easement, or an assumed power line easement is on a downgrade and sees significant elevation differential. The pond shape will be governed by existing terrain in attempts to provide adequate storage volume while still allowing reasonable tie-in slopes. Considering this restrictive shaping and efforts to not impact houses or wetlands, collection of runoff from basins specified in the 1999 report will be hindered. A long, narrow pond located near Eleven Mile Creek would be required to capture all runoff from basins identified in the 1999 report, but existing terrain, wetlands, and utility corridors will likely not allow this configuration. Dividing P-6 into multiple ponds could potentially maximize use of available open area depending on existing terrain.

4.7. Location P-7

Areas near location P-7 were considered in efforts to provide detention similar to the original P-7 pond. Three new pond locations have been proposed for the P-7 area; however, the aggregate area provided by these ponds does not match the 1999 P-7 pond. Size and position of these ponds within the sub-basin may not provide the capability to capture all discharges accounted for in the 1999 study. Pond P-7.1 has the most upstream location and may allow capture of overland flow from residential areas. Pond P-7.2 can capture area through overland flow and could potentially be merged with the existing stormwater pond for the Dunleith residential development to expand storage capabilities of the existing pond. Pond P-7.3 is located near the headwaters of a tributary to Eleven Mile Creek and could capture overland flow from residential areas. However, usable volume will be determined by balancing critical berm elevation with footprint required to tie slopes back into existing terrain. P-7.3 will also require acquisition of multiple properties and should be further investigated for proximity to potential wetlands.

4.8. Location P-8

The original location for P-8 proposed in the 1999 report lies in an open field north of Kingsfield Rd. It appears that existing terrain and the amount of space available should allow for adequate

configuration of a pond to meet detention requirements set forth in the 1999 report. P-8 is currently proposed along a property line to keep it within a single parcel, but satisfying basin capture set forth in the 1999 report may require impacting two parcels. The shape and location presented in this report is for reference only and could be altered during actual design of the pond.

4.9. Location P-9

Development of the Bentley Oaks subdivision since the 1999 report has severely limited open area available for regional detention in the original P-9 location. Additionally, recent developments immediately northwest of the intersection of CR297A and W Kingsfield Rd have occupied the remainder of this area. Therefore, placement of a pond near the original P-9 location is no longer a viable option.

4.10. Location P-10

Space for pond P-10 north of a tributary to Eleven Mile Creek is limited between wetlands and existing development. Though adequate acreage is available to match the pond size specified in the 1999 report, the area experiences significant elevation differential. The P-10 configuration presented in this report will likely require reshaping in order to integrate the pond into existing terrain and provide original design storage volume. However, avoidance of wetlands may hinder collection of runoff from basins identified in the 1999 report.

4.11. Location P-11

The 1999 report located pond P-11 south of the tributary to Eleven Mile Creek near P-10. Space for P-11 is limited between wetlands to the northwest and J.M Tate High School to the south. Though adequate acreage is available to match the pond size specified in the 1999 report, the area experiences significant elevation differential. The P-11 configuration presented in this report will likely require reshaping in order to integrate the pond into existing terrain and may not provide original design storage volume. Also the proposed location may limit collection of runoff from basins identified in the 1999 report due to conflicts with apparent wetlands.

4.12. Location P-12

Pond P-12 was not included in the 1999 report, but has been proposed by Escambia County for this study. It is located upstream of proposed options for P-4 and lies northwest of the intersection of Stefani Rd and Urban Dr. P-12 would require some balancing of existing terrain and required tie-backs to maximize storage volume, but could be used to collect overland flow from the north and south, as well as ditch flow from Stefani Rd.

4.13. Location P-13

Pond P-13 represents an existing County pond not included in the 1999 report. More commonly known as the Blue Pit, this pond is located South of West Roberts Road and will be expanded as part of an Escambia County stormwater improvement project in design at the time of this report. The project aims to relieve flooding near the intersection of West Roberts Road and Crockett Drive by installing additional conveyance features to route runoff South along an existing easement to the Blue Pit. All property for the project is currently County owned and will be utilized to expand the pond to attenuate

flows from its contributing basin. The engineer's opinion of probable cost at the time of this report is approximately $750,000.

4.14. Location P-14

Pond P-14 was not included in the 1999 report, but has been proposed by Escambia County for this study. It is located Northwest of the intersection of Hwy 90 and Klondike Rd. The area has experienced flooding issues previously and generates runoff that currently enters Eleven Mile Creek untreated. Previous reports recommend improving the cross drain structure under Klondike Road which currently routes stormwater to the proposed pond site. Therefore, additional improvements in this location are proposed to include upgrading the cross drain and installing a conveyance system within a proposed easement. This could allow pond P-14 to provide treatment of its contributing basin, address local flooding issues, and reduce tailwater conditions for upstream areas. The site also provides potential opportunity for wetland restoration. Though not located in the main area of focus near Bristol Park and Ashbury Hills, a pond in this location could benefit all upstream areas through the reduction in tailwater it could provide.

5. IMPROVEMENTS PRIORITIZATION

Recommendations and prioritization from the 1999 report were considered along with the new proposed pond locations and input from the County in order to develop a pond siting matrix for this study. This list should be considered as a recommendation based on available data and would need to be re-evaluated further in the design phase of the entire regional detention effort. This study has identified potential locations for regional detention ponds and provides a summary of parcels that would be affected.

The 1999 report indicated that construction of all proposed ponds would be required to effectively attenuate 100 yr flows and reduce flooding within the basin. While construction of individual ponds would presumably benefit isolated areas within the system, all ponds proposed in this study should be pursued as a holistic approach to address flooding within the basin. Prioritization of individual ponds to be constructed over time could consider several factors, including property acquisition, basin development, constructability, the amount of infrastructure required to route stormwater to/from the pond, and the permitting effort required. Table 5.1 considers these factors and assigns a score from 1-5 for each, with 5 being the most favorable and 1 being the least favorable. The total scores for each pond were compared to generate a basic ranking of proposed pond sites considering the given parameters. Priority rankings 1-5 confirm considerations that Escambia County has already given to some sites. Pond P-13 is currently owned by the County, and improvements are included in an existing County project in design at the time of this report. Pond P-12 is located west of Stefani Rd on a single large tract of semi-open land. Property acquisition discussions already held between the County and the property owner indicate that the owner is willing to negotiate sale of the property. The property owner for Pond P-14 has been contacted by the County and has expressed cooperation for the sale of a portion of the property to be developed into a regional pond. Pond P-1.4 is located at the most downstream location of the P-1 basin and can potentially be tied into the existing stormwater pond for the Glenmoor Trail subdivision. Considering preliminary information, P-1.4 may provide multiple benefits if only one P-1 pond can be constructed; however, all P-1 ponds should be considered. The parcel identified for Pond P-3.2 is County owned, and the County is already considering design. These first five proposed sites are viable options that the County is already considering for providing regional detention within the Eleven Mile Creek Basin.

Further prioritization could be developed considering additional parameters such as availability of funds and the ability to group pond sites with other projects. The ranking provided in Table 5.1 is an initial prioritization which should be constantly re-evaluated as changes occur within the basin and County.

Table 5.1 Pond Siting Matrix

Pond	Ease of Acquisition	Basin Development Level	Site Grading/ Constructability	Infrastructure Required	Ease of Permitting	TOTAL SCORE	PRIORITY RANK
P-13	5	4	5	2	5	21	1
P-12	4	3	4	4	4	19	2
P-14	4	3	5	4	3	19	3
P-1.4	3	4	4	4	4	19	4
P-3.2	5	4	1	4	4	18	5
P-11	4	4	2	4	3	17	6
P-7.2	2	3	4	4	4	17	7
P-7.3	2	3	3	4	4	16	8
P-8	4	1	4	2	4	15	9
P-4b	4	3	4	3	1	15	10
P-4a	3	3	4	3	2	15	11
P-1.2	3	3	3	2	4	15	12
P-7.1	2	2	4	3	4	15	13
P-3.1	3	4	2	2	3	14	14
P-5.1	3	2	3	3	3	14	15
P-2	3	3	2	3	3	14	16
P-1.1	2	3	3	2	4	14	17
P-1.3	2	3	2	3	4	14	18
P-10	2	4	3	2	3	14	19
P-6	3	2	3	2	2	12	20

*Each criteria is scored 1-5, with 5 being most favorable and 1 being least favorable. Prioritization ranking is based on highest total score having highest priority.

To provide further information for the proposed pond sites, Table 5.2 lists each proposed pond, required parcel area, details on parcels affected, wetland impact potential, flood zone considerations, and cost opinion data. The values for affected parcels were referenced from the Escambia County Property Appraiser website and represent the land values only since proposed ponds were sited away from structures. A per acre value was calculated to estimate the property acquisition cost when only partial parcels where required. Also, when acquisition affected multiple parcels a weighted per acre land value was calculated and multiplied by the total parcel area required to estimate the property acquisition cost. It should be noted that these property acquisition estimates only consider land values from the property appraiser website and do not include any other fees associated with property acquisition, such as appraisal costs, legal fees, etc. An opinion of probable cost for construction including design costs was also prepared and included in Appendix B. These figures are based on conceptual design requirements and should be re-evaluated in the actual design phase of the respective ponds. Table 5.2 provides a total cost to include land acquisition and project costs for each proposed pond.

Table 5.2 Pond Site Information

Pond Site Alternative	Pond Size Required (acres)	Total Parcel Area Required (acres)	Parcel ID's for Affected Parcels	Land Value from Property Appraiser	Total Parcel Area (Acres)	Land Value Per Acre	Weighted Land Value Per Acre	Estimated Value for Total Parcel Area Required	FEMA Flood Zone	Wetland Impacts	Adjacent to Creek	Number of Parcels Affected	Opinion of Probable Cost	Total Cost
P-1.1	7.5	9.6	361N314201000005	$66,593.00	9.95	$6,692.76	$16,450.44	$157,924.26	X	No	No	4	$2,441,470.87	$2,599,395.13
			361N311200001011	$69,920.00	2.30	$30,400.00								
			361N311200000011	$69,920.00	2.30	$30,400.00								
			361N311200001006	$71,744.00	2.36	$30,400.00								
P-1.2	1.9	2.7	361N314202000004	$45,054.00	3.56	$12,655.62	$12,655.62	$34,296.72	X	No	No	1	$613,527.24	$647,823.96
P-1.3	2.8	4.0	361N314301000002	$41,420.00	2.14	$19,355.14	$20,187.50	$80,750.00	X	No	No	3	$1,026,155.88	$1,106,905.88
			361N314201000006	$57,000.00	3.00	$19,000.00								
			361N314301000000	$35,625.00	1.50	$23,750.00								
P-1.4	1.6	2.4	361N314401000003	$33,067.00	1.82	$18,168.68	$19,835.02	$47,604.06	X	No	No	2	$475,969.75	$523,573.81
			031S311101000004	$9,975.00	0.35	$28,500.00								
P-2	9.0	10.0	281N311101000000	$28,678.00	520.48	$55.10	$55.10	$550.99	AE, X	No	Yes	1	$2,281,880.77	$2,282,431.76
P-3.1	6.0	6.0	281N311101000000	$28,678.00	520.48	$55.10	$55.10	$330.59	AE, X	No	Yes	1	$2,341,905.28	$2,342,235.87
P-3.2	7.9	9.9	COUNTY OWNED	N/A	N/A	N/A	N/A	N/A	X	No	No	1	$1,991,988.65	$1,991,988.65
P-4 (Option A)	2.7	4.4	381N313401000000	$90,817.00	27.19	$3,340.09	$4,659.96	$20,503.81	X	No	Yes	3	$712,717.66	$733,221.47
			381N314304000000	$40,262.00	5.54	$7,267.51								
			381N314302000000	$42,085.00	4.43	$9,500.00								
P-4 (Option B)	12.4	15.0	381N313401000000	$90,817.00	27.19	$3,340.09	$3,340.09	$50,101.32	X	Yes	Yes	1	$4,260,229.49	$4,310,330.81
P-5.1	13.7	29.1	361N311100000000	$13,593.00	27.10	$501.59	$8,560.66	$249,115.07	X	No	Yes	6	$3,689,644.30	$3,938,759.37
			361N311100000004	$72,048.00	2.37	$30,400.00								
			361N311100001004	$72,048.00	2.37	$30,400.00								
			361N311200002024	$72,048.00	2.37	$30,400.00								
			361N311200001024	$37,696.00	1.25	$30,156.80								
			361N311200000024	$90,488.00	6.35	$14,250.08								
P-6	20.0	20.0	281N311101000000	$28,678.00	520.48	$55.10	$55.10	$1,101.98	AE, X	No	Yes	1	$4,820,165.16	$4,821,267.14
P-7.1	3.8	5.0	291N312301000004	$45,814.00	6.43	$7,125.04	$538.90	$2,694.50	X	No	No	3	$938,768.10	$941,462.60
			291N312103000000	$13,581.00	86.08	$157.77								
			291N314500100003	$2.00	17.71	$0.11								
P-7.2	3.1	4.0	291N313201000000	$48,957.00	8.18	$5,984.96	$6,937.34	$27,749.38	X	No	No	2	$787,510.94	$815,260.32
			291N313201000010	$28,880.00	3.04	$9,500.00								
P-7.3	8.9	10.9	291N314500100003	$2.00	17.71	$0.11	$6,411.15	$69,881.55	X	No	No	10	$2,142,563.83	$2,212,445.38
			291N314101000000	$1.00	0.82	$1.22								
			291N314400000035	$49,305.00	1.73	$28,500.00								
			291N314400000036	$29,925.00	1.75	$17,100.00								
			291N314500120002	$21,375.00	0.67	$31,902.99								
			291N314101000000	$1.00	0.82	$1.22								
			291N314400000037	$30,951.00	1.81	$17,100.00								
			291N314500110002	$21,375.00	0.38	$56,250.00								
			291N314400000038	$31,635.00	1.85	$17,100.00								
			291N313400000000	$0.00	1.25	$0.00								
P-8	11.0	11.0	231N312001000000	$912,000.00	320.00	$2,850.00	$2,850.00	$31,350.00	X	No	No	1	$2,666,276.48	$2,697,626.48
P-10	9.0	9.0	251N311102000000	$157,938.00	95.00	$1,662.51	$1,662.51	$14,962.55	A, X	No	Yes	1	$2,167,017.80	$2,181,980.35
P-11	9.0	9.0	251N311102000000	$157,938.00	95.00	$1,662.51	$1,662.51	$14,962.55	A, X	No	Yes	1	$2,151,247.04	$2,166,209.59
P-12	11.8	14.4	381N311300000000	$109,136.00	14.36	$7,600.00	$7,600.00	$109,136.00	X	No	Yes	1	$2,857,771.00	$2,966,907.00
P-13	4.4	4.4	COUNTY OWNED	N/A	N/A	N/A	N/A	N/A	X	No	No	N/A	$750,000.00	$750,000.00
P-14	11.5	11.5	221S311101000001	$53,542.00	14.80	$3,617.70	$2,979.95	$34,269.41	AE, X	No	Yes	2	$2,151,829.10	$2,186,098.51
			221S311100000000	$16,606.00	8.74	$1,900.00								
							TOTALS	**$947,284.75**					**$41,268,639.34**	**$42,215,924.09**

6. CONCLUSIONS AND RECOMMENDATIONS

This report has reviewed multiple resources in efforts to confirm pond siting locations identified in the 1999 Eleven Mile Creek Stormwater report or propose new locations if land use has changed since the initial report. Original pond locations were compared to aerial imagery to evaluate extents of new development in relation to the pond locations. Also, aerial imagery was used to estimate open area available for pond construction that would have minimal impact on existing structures and wetlands. The original P-9 location has become developed to the extent that a pond in this location is no longer feasible. Most other 1999 proposed locations still provide valid area for regional detention, but development within locations P-1 and P-7 prompted the need for new proposed pond locations within the vicinity of the original areas. The constraint of avoiding existing structures and wetlands limited available pond area in some locations, resulting in multiple ponds in some cases or regional detention acreages smaller than originally proposed in the 1999 report. A prioritization matrix has been provided, but regional detention efforts should aim to achieve complete build out of all ponds meeting design requirements identified in

the 1999 report to provide attenuation of the 100 yr flows within the basin. Availability of funds and the potential of securing necessary properties for pond siting will likely govern the selection and construction of ponds proposed in the 1999 report and re-evaluated in this study.

APPENDIX A

PROPOSED POND LOCATION MAPS

User Name: MIT75150
Time Stamp: Sep 26, 2017 - 8:58:11AM
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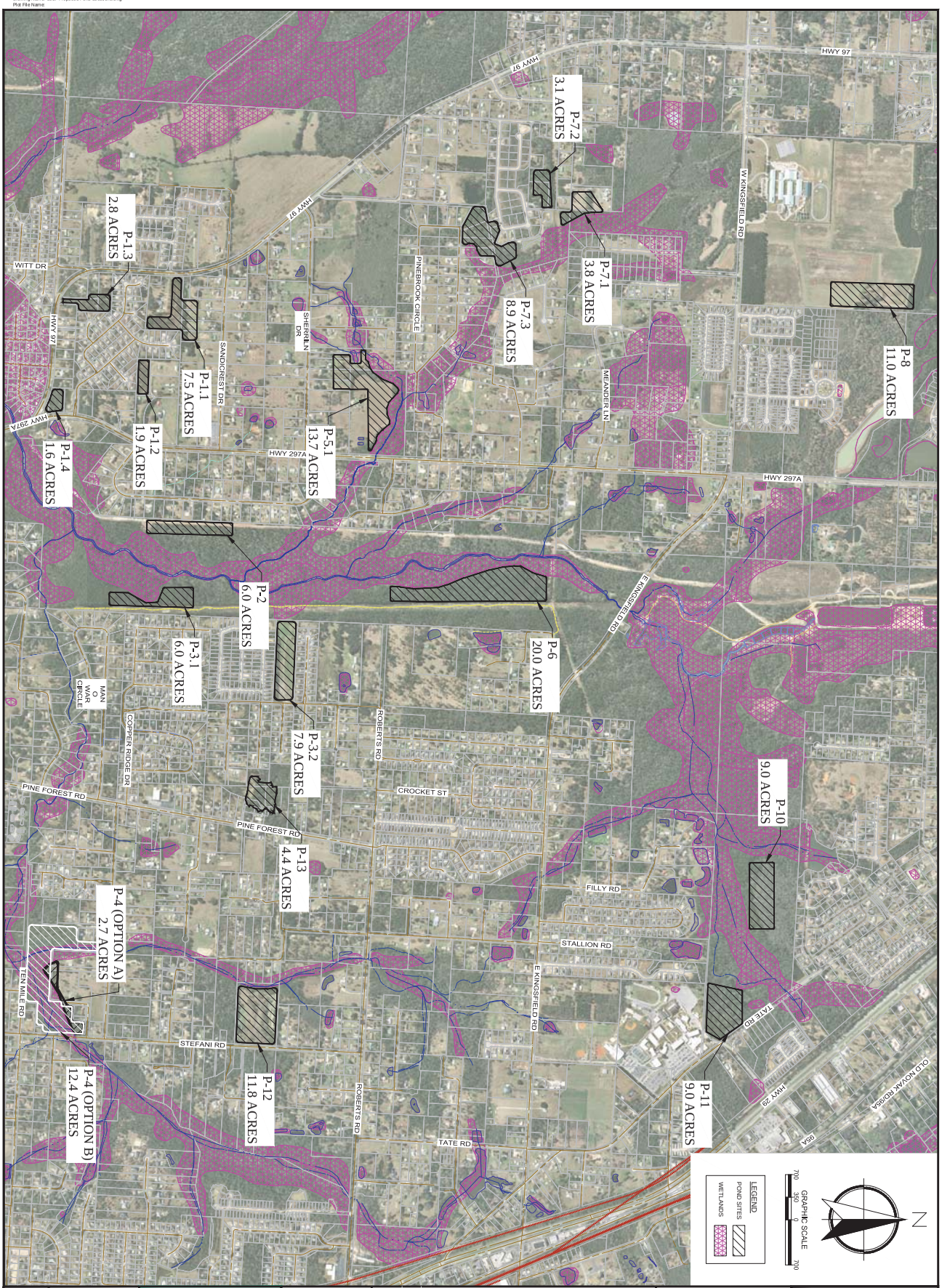

EXHIBIT

SHEET NUMBER:

AREA 1

PROPOSED POND LOCATION MAP

SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

DATE	REV.	REVISION DESCRIPTION

ELEVEN MILE CREEK STORMWATER MANAGEMENT
ESCAMBIA COUNTY, FLORIDA

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User Name: MIT75150
Time Stamp: Sep 26, 2017 - 8:58:56AM
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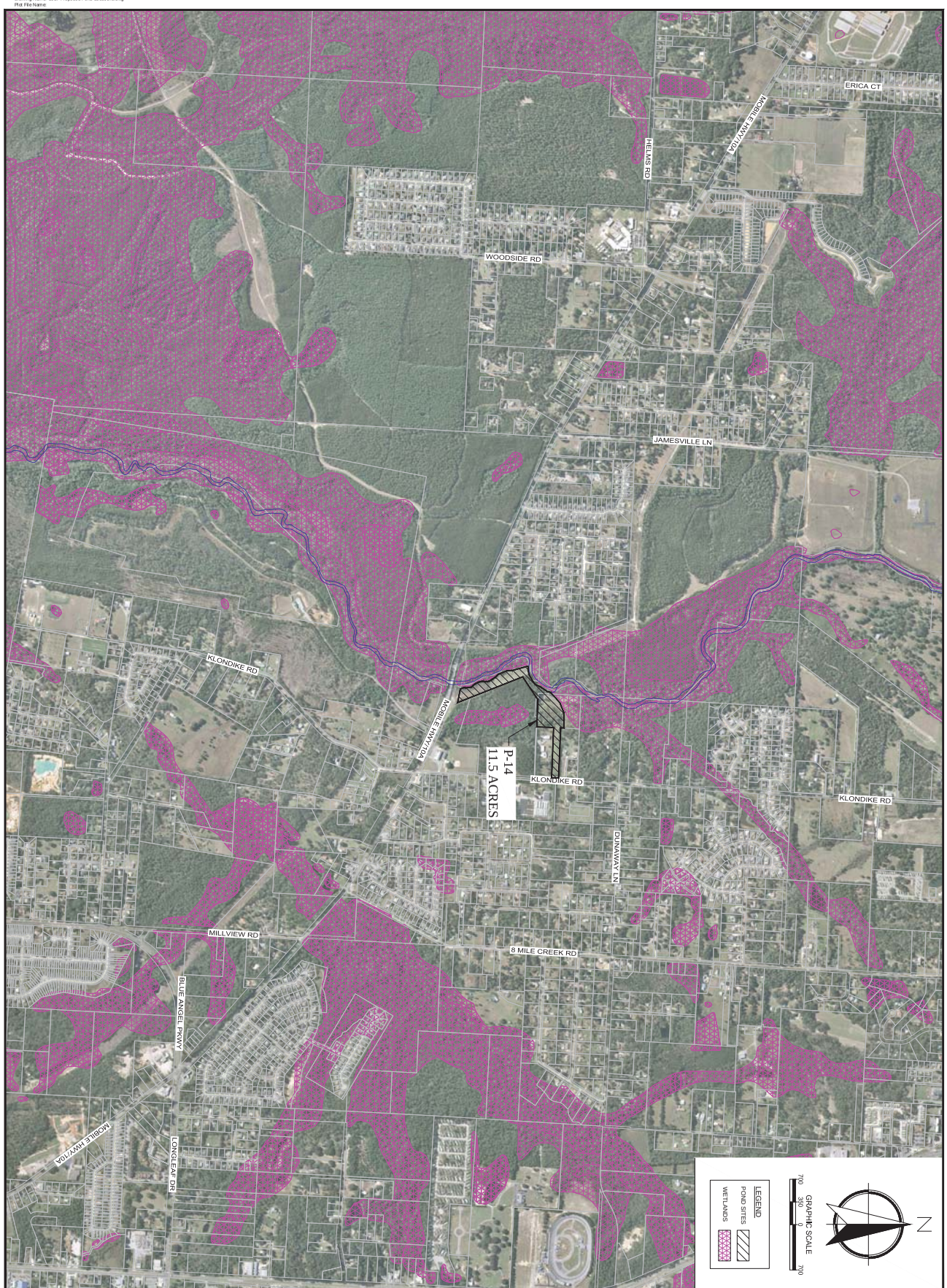

EXHIBIT
SHEET NUMBER:

AREA 2
PROPOSED POND LOCATION MAP
SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

DATE	REV.	REVISION DESCRIPTION

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Architects Engineers Surveyors
AA - C0000035 EB - 0000155 LB - 0006783

User Name: MITT5150
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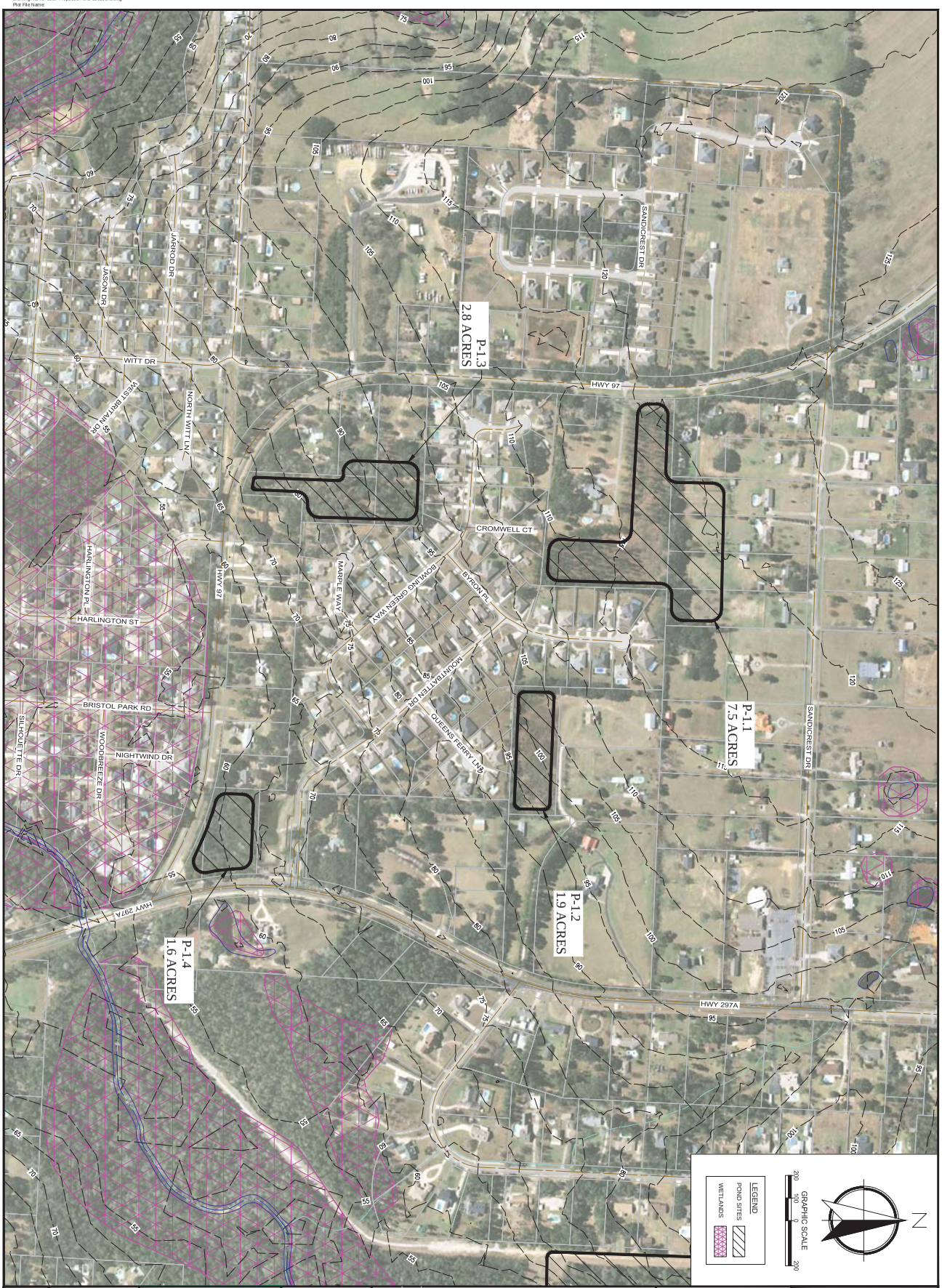

EXHIBIT

SHEET NUMBER:

SITE P-1

PROPOSED POND LOCATION MAP

SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

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AA - C0000035 EB - 0000155 LB - 0006783

User Name: MIT75150
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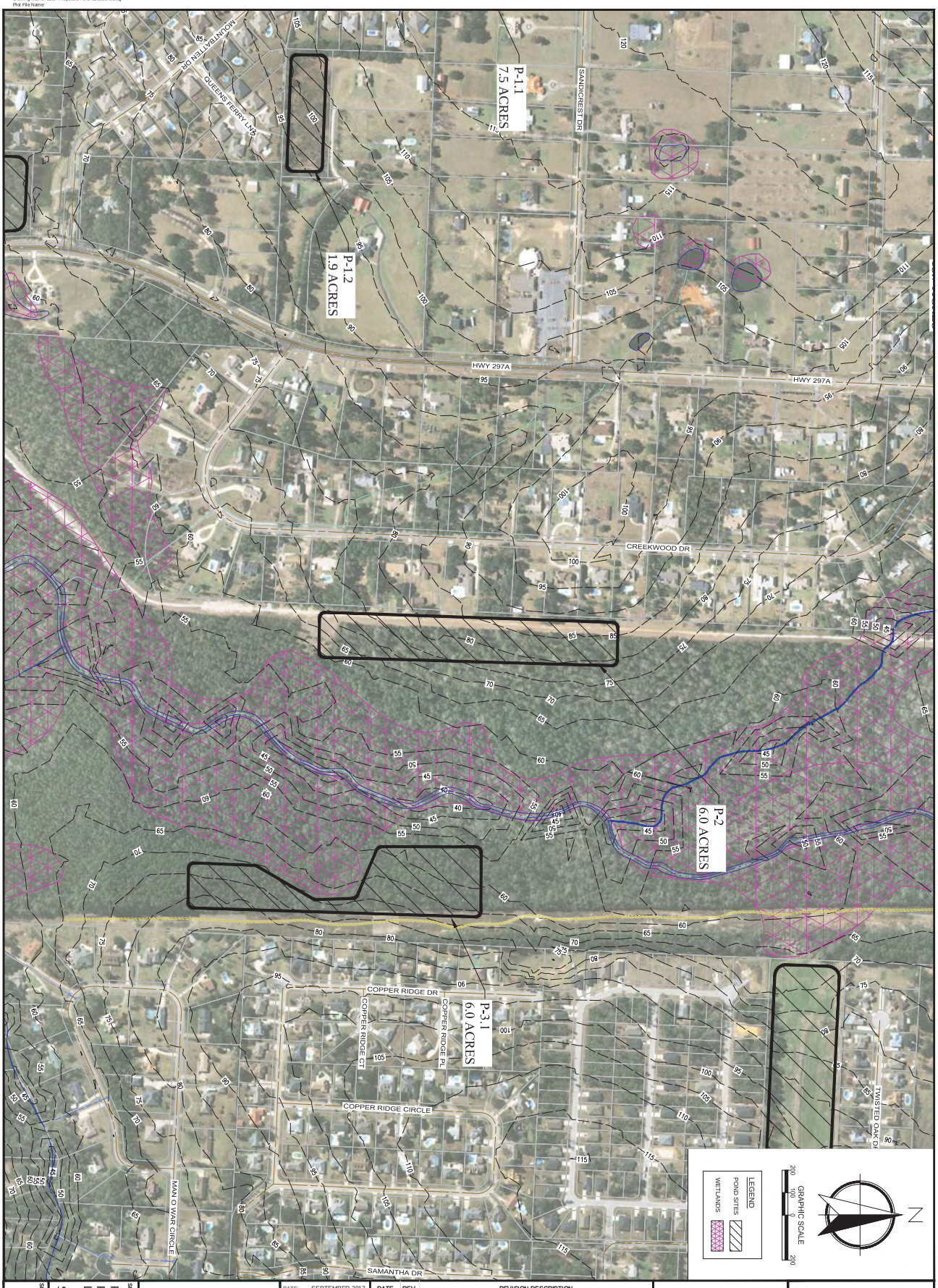

EXHIBIT

SHEET NUMBER:

SITE P-2
PROPOSED POND LOCATION MAP

SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

DATE	REV.	REVISION DESCRIPTION

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AA - C0000035 EB - 0000155 LB - 0006783

User Name: MITT5150
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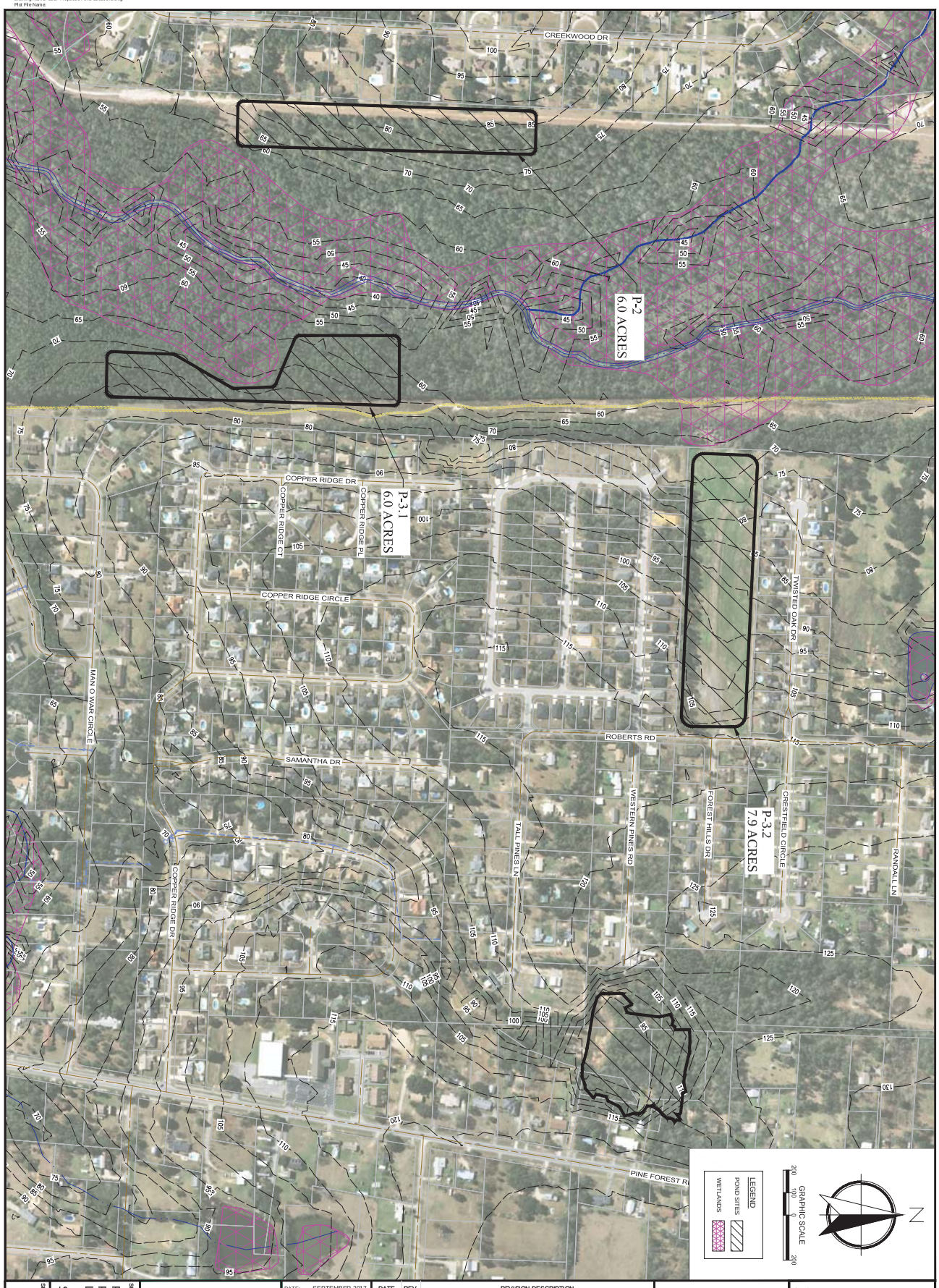

EXHIBIT

SHEET NUMBER:

SITE P-3
PROPOSED POND LOCATION MAP

SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

DATE	REV.	REVISION DESCRIPTION

ELEVEN MILE CREEK
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AA - C0000035 EB - 0000155 LB - 0006783

User Name: MIT75150
Time Stamp: Sep 26, 2017 - 8:59:58AM
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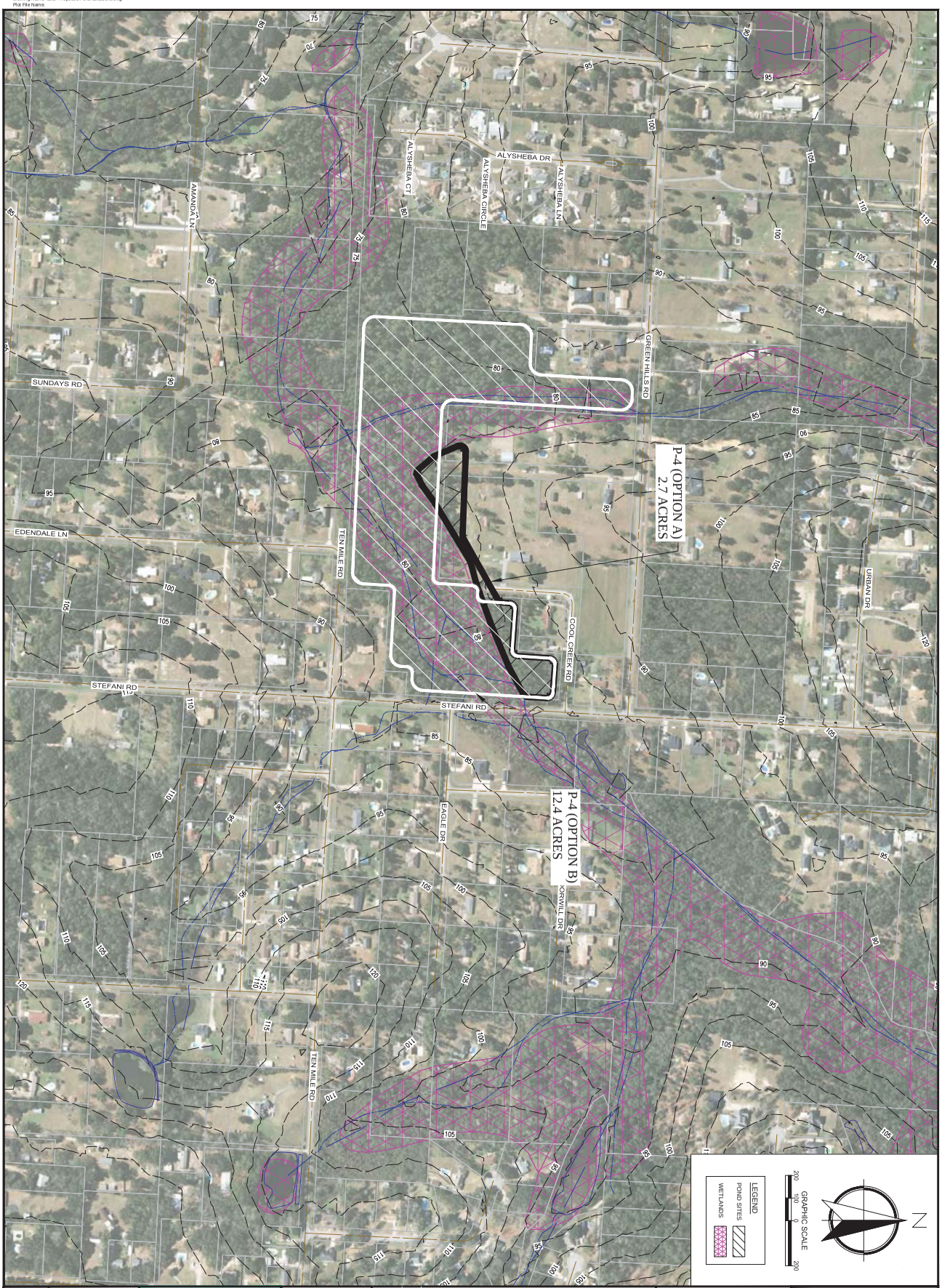

EXHIBIT
SHEET NUMBER:

SITE P-4
PROPOSED POND LOCATION MAP
SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

DATE	REV.	REVISION DESCRIPTION

ELEVEN MILE CREEK
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AA - C0000035 EB - 0000155 LB - 0006783

User Name: MIT75150
Time Stamp: Sep 26, 2017 - 9:00:13AM
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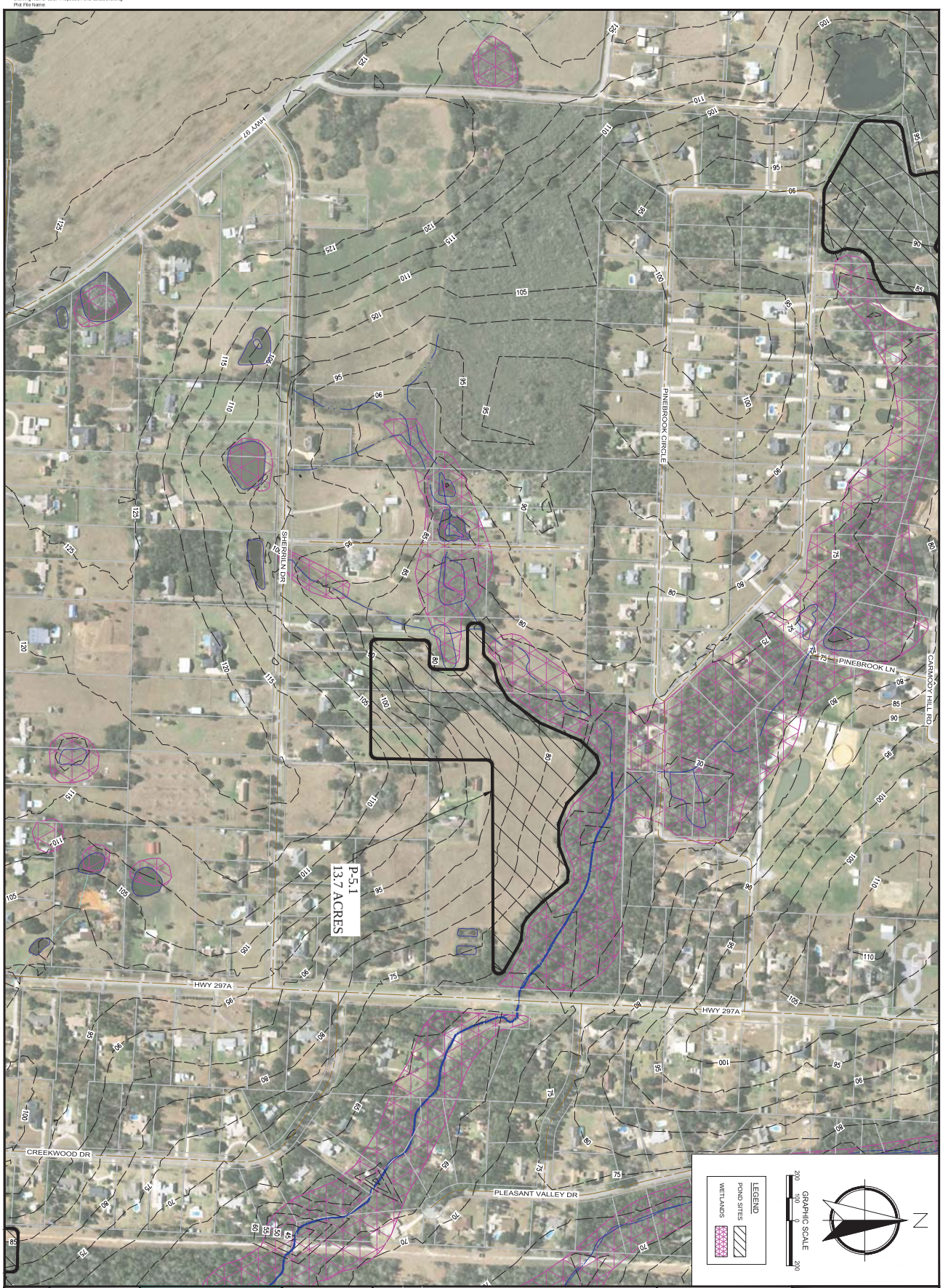

EXHIBIT
SHEET NUMBER:

SITE P-5
PROPOSED POND LOCATION MAP
SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

DATE	REV.	REVISION DESCRIPTION

ELEVEN MILE CREEK STORMWATER MANAGEMENT
ESCAMBIA COUNTY, FLORIDA

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AA - C0000035 EB - 0000155 LB - 0006783

User Name: MITT5150
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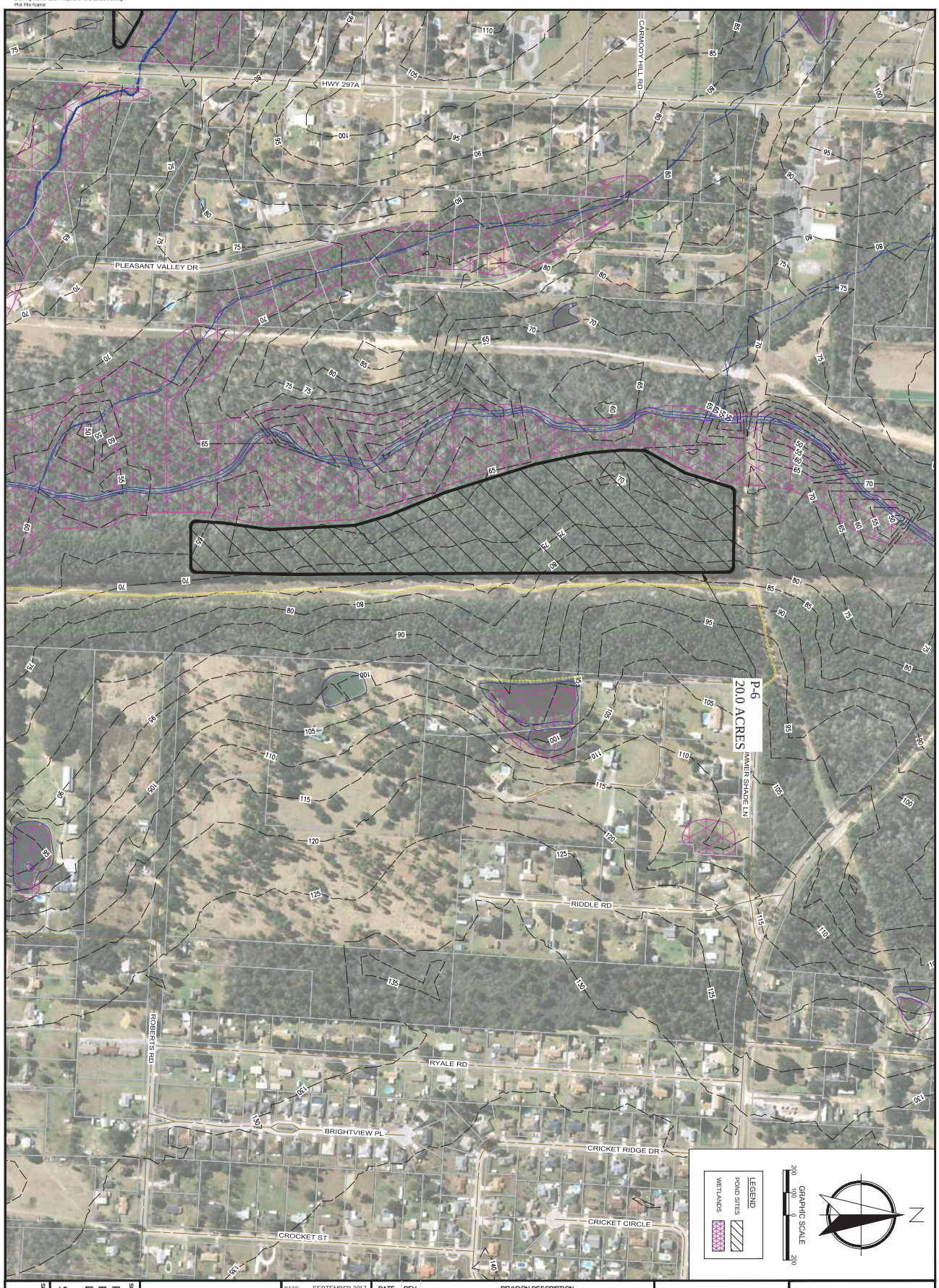

EXHIBIT
SHEET NUMBER:

SITE P-6
PROPOSED POND LOCATION MAP
SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

DATE	REV.	REVISION DESCRIPTION

ELEVEN MILE CREEK
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AA - C0000035 EB - 0000155 LB - 0006783

User Name: MIT75150
Time Stamp: Sep 26, 2017 - 9:00:42AM
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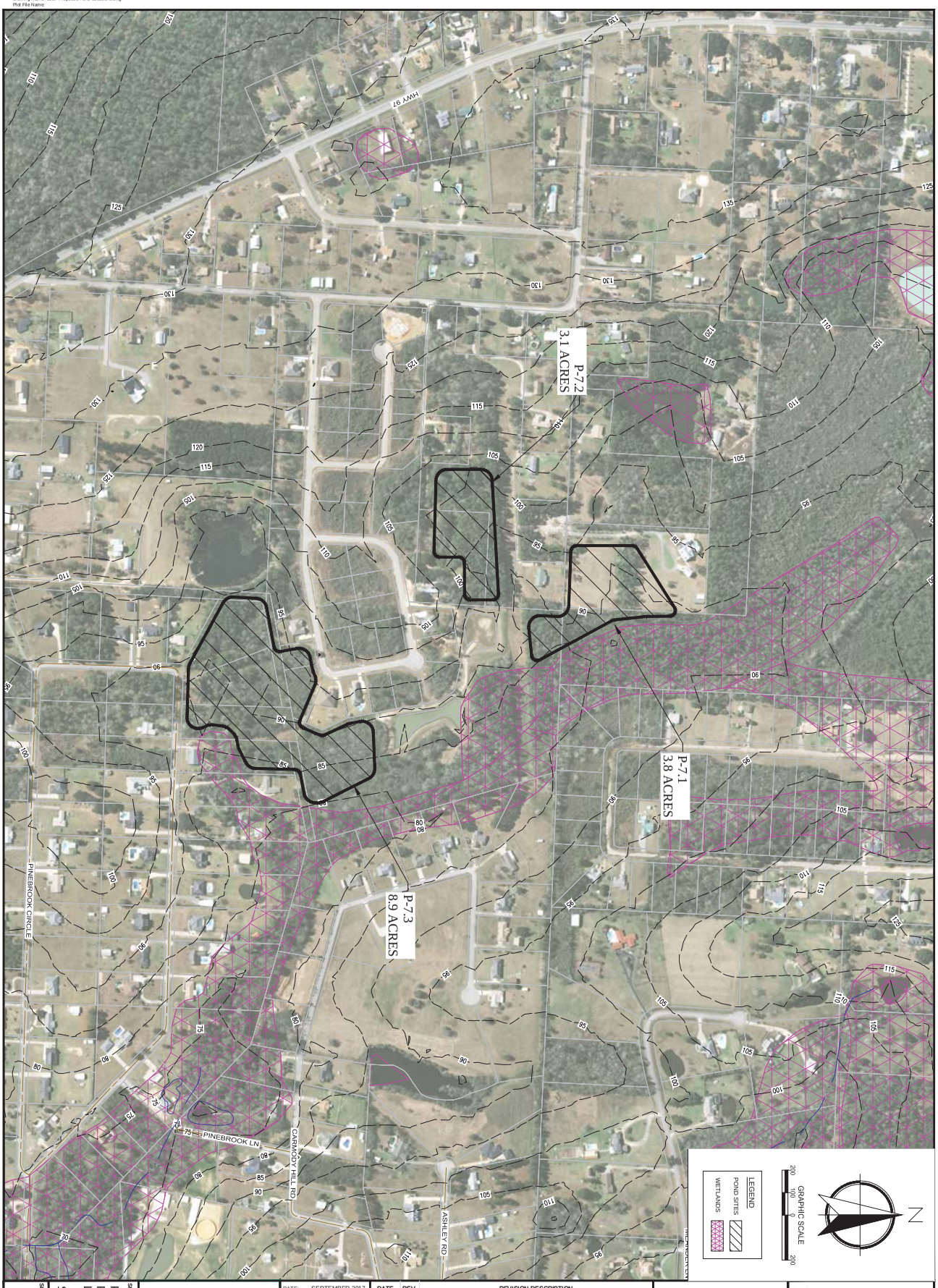

EXHIBIT

SHEET NUMBER:

SITE P-7

PROPOSED POND LOCATION MAP

SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

DATE	REV.	REVISION DESCRIPTION

ELEVEN MILE CREEK STORMWATER MANAGEMENT
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Architects Engineers Surveyors
AA - C0000035 EB - 0000155 LB - 0006783

User Name: MIT75150
Time Stamp: Sep 26, 2017 - 9:00:57 AM
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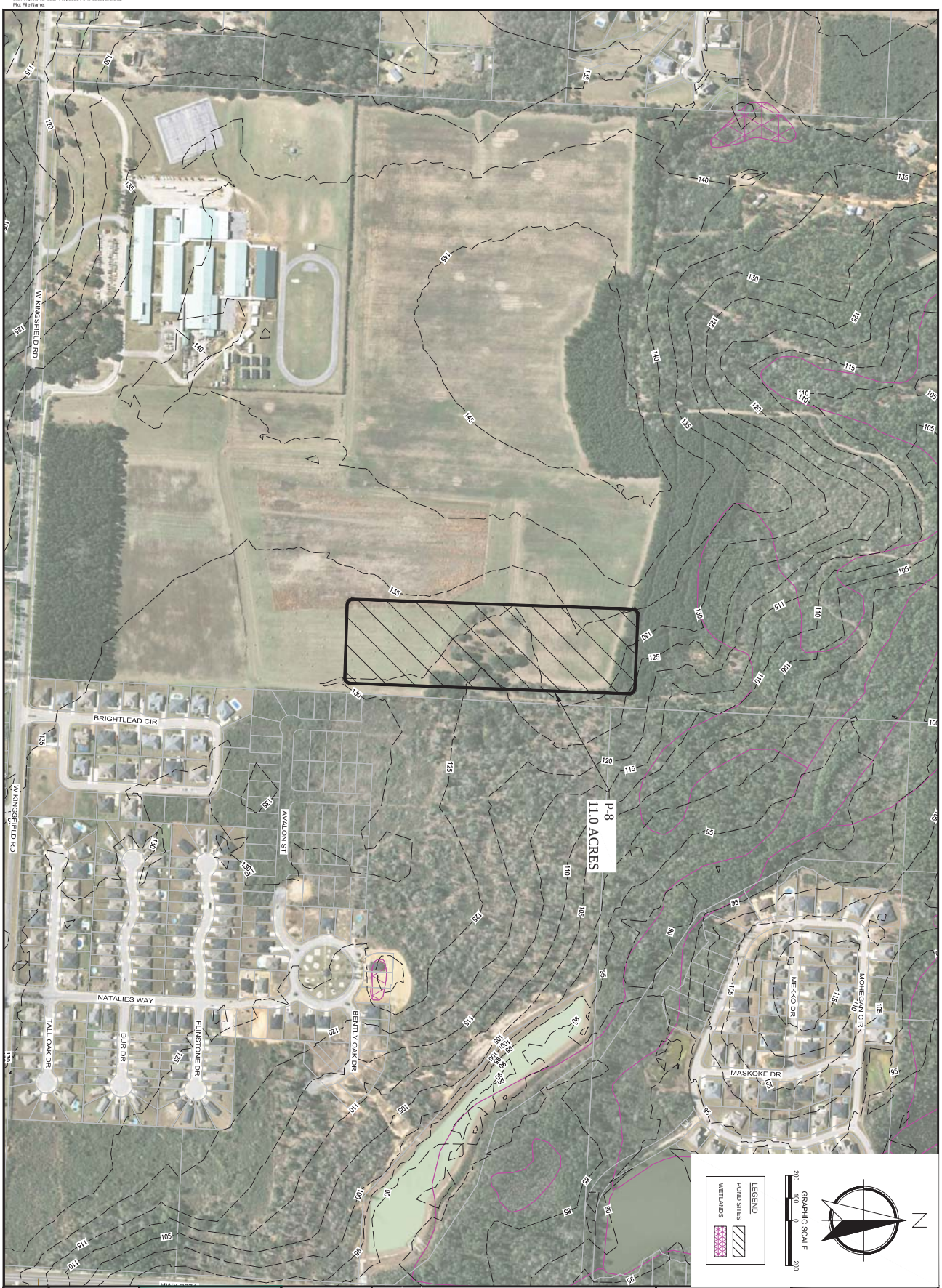

EXHIBIT

SHEET NUMBER:

SITE P-8

PROPOSED POND LOCATION MAP

SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

DATE	REV.	REVISION DESCRIPTION

ELEVEN MILE CREEK STORMWATER MANAGEMENT
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Architects Engineers Surveyors
AA - C0000035 EB - 0000155 LB - 0006783

User Name: MIT75150
Time Stamp: Sep 26, 2017 - 9:01:18AM
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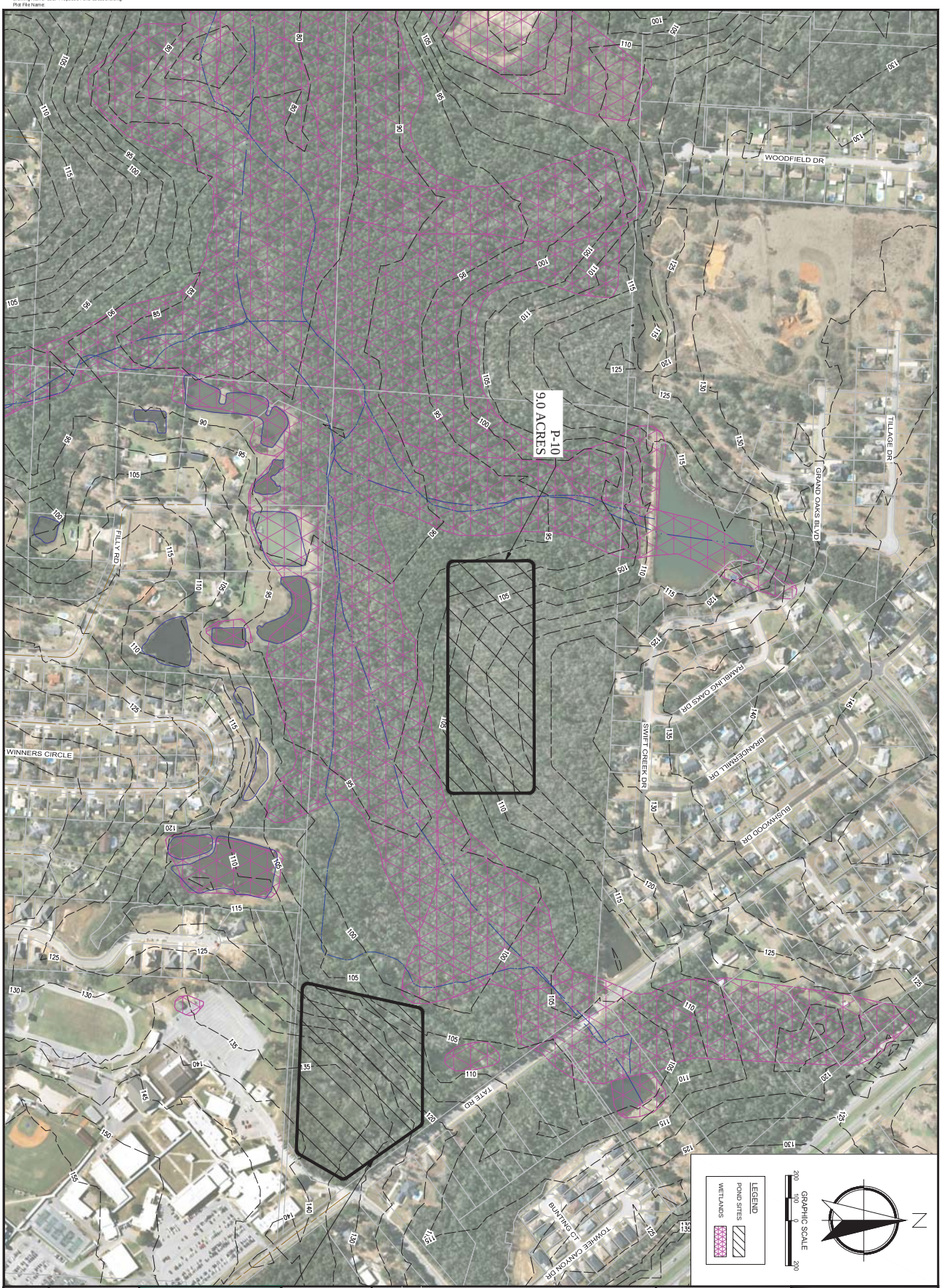

EXHIBIT
SHEET NUMBER:

SITE P-10
PROPOSED POND LOCATION MAP
SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

DATE	REV.	REVISION DESCRIPTION

ELEVEN MILE CREEK STORMWATER MANAGEMENT
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Architects Engineers Surveyors
AA - C0000035 EB - 0000155 LB - 0006783

User Name: MIT75150
Time Stamp: Sep 26, 2017 - 9:01:34AM
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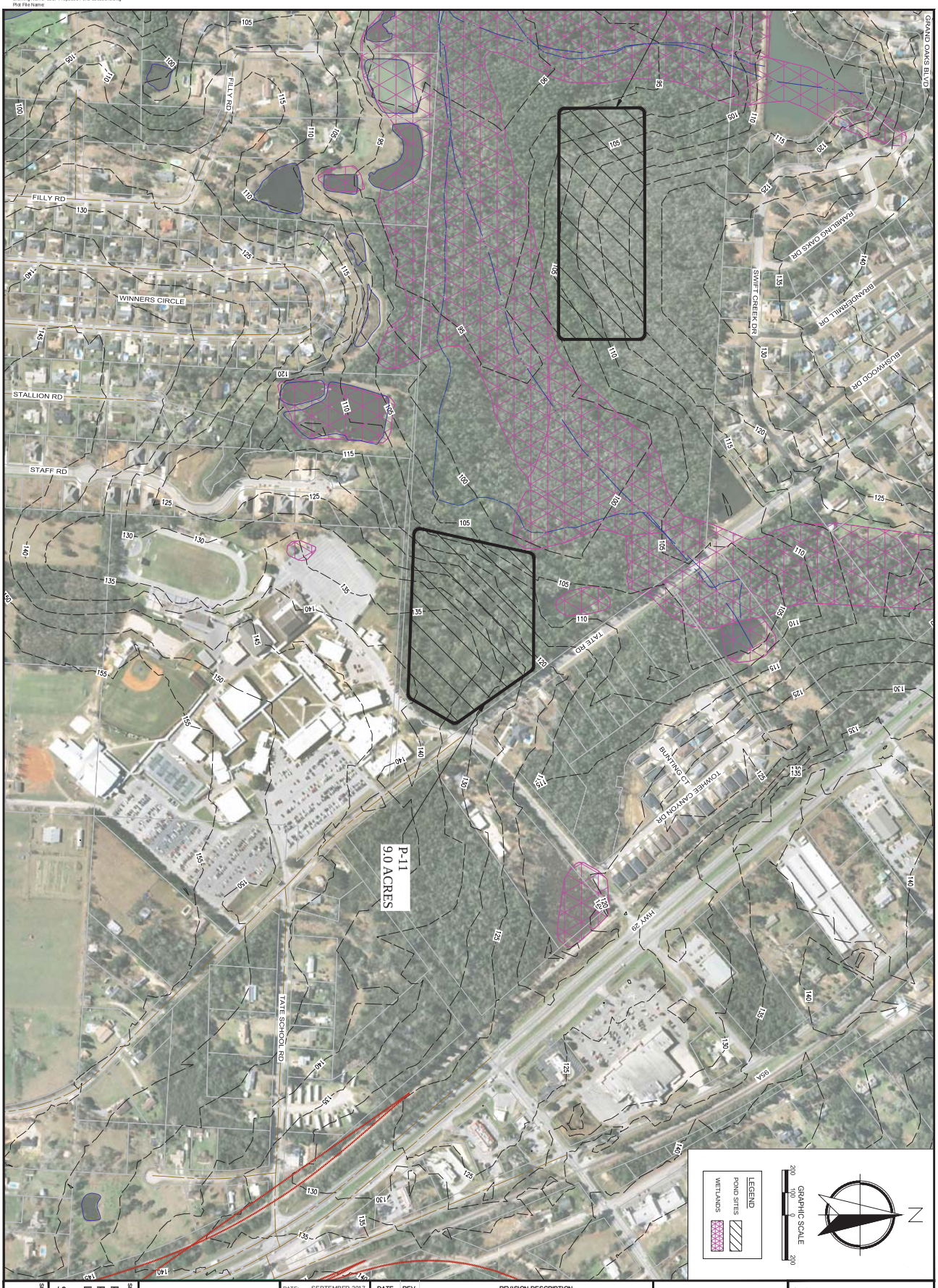

EXHIBIT

SHEET NUMBER:

SITE P-11

PROPOSED POND LOCATION MAP

SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

DATE	REV.	REVISION DESCRIPTION

ELEVEN MILE CREEK STORMWATER MANAGEMENT
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Architects Engineers Surveyors
AA - C0000035 EB - 0000155 LB - 0006783

User Name: MIT75150
Time Stamp: Sep 26, 2017 - 9:01:48AM
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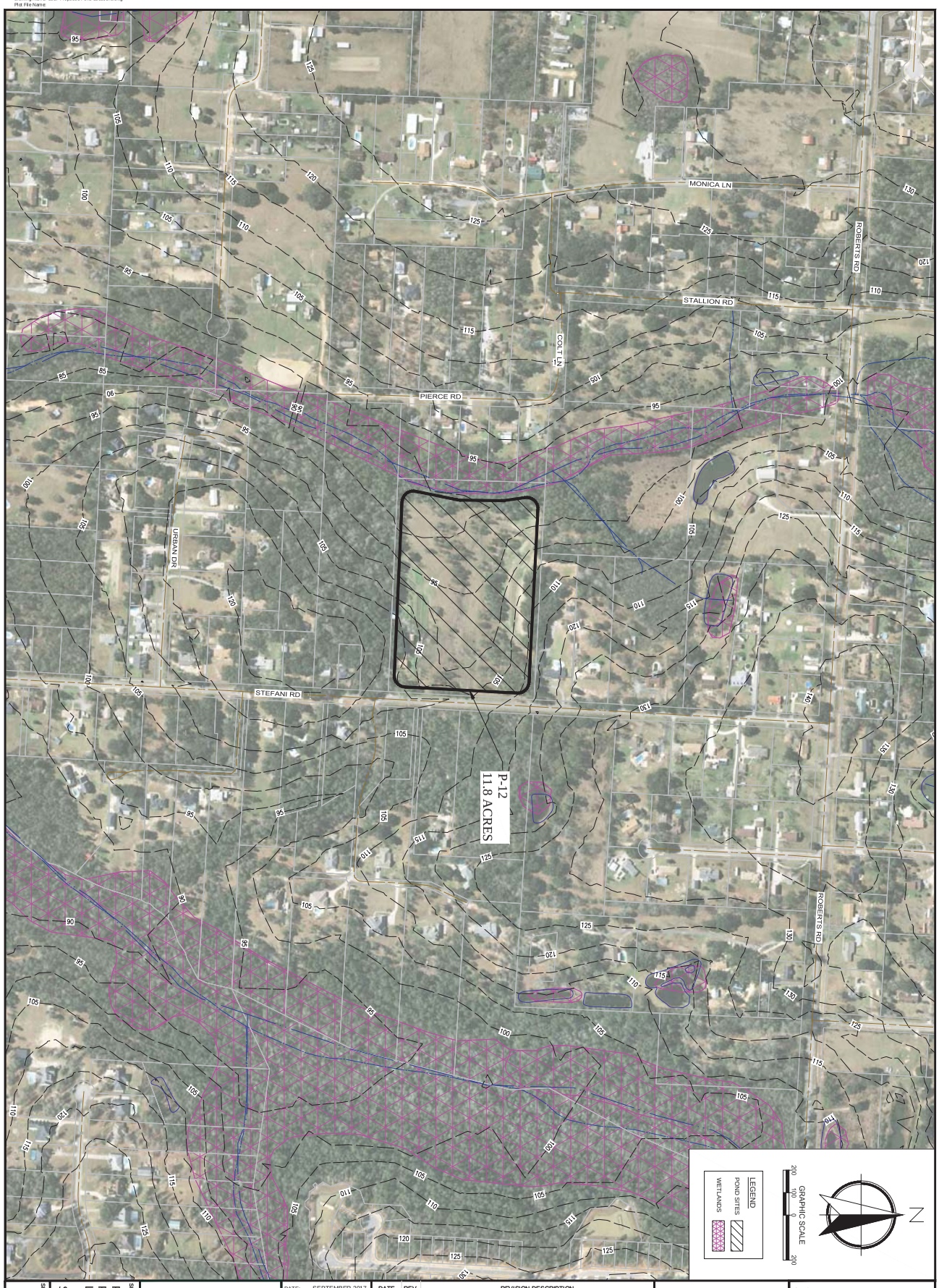

EXHIBIT
SHEET NUMBER:

SITE P-12
PROPOSED POND LOCATION MAP
SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

DATE	REV.	REVISION DESCRIPTION

ELEVEN MILE CREEK STORMWATER MANAGEMENT
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AA - C0000035 EB - 0000155 LB - 0006783

User Name: MIT75150
Time Stamp: Sep 26, 2017 - 9:02:01AM
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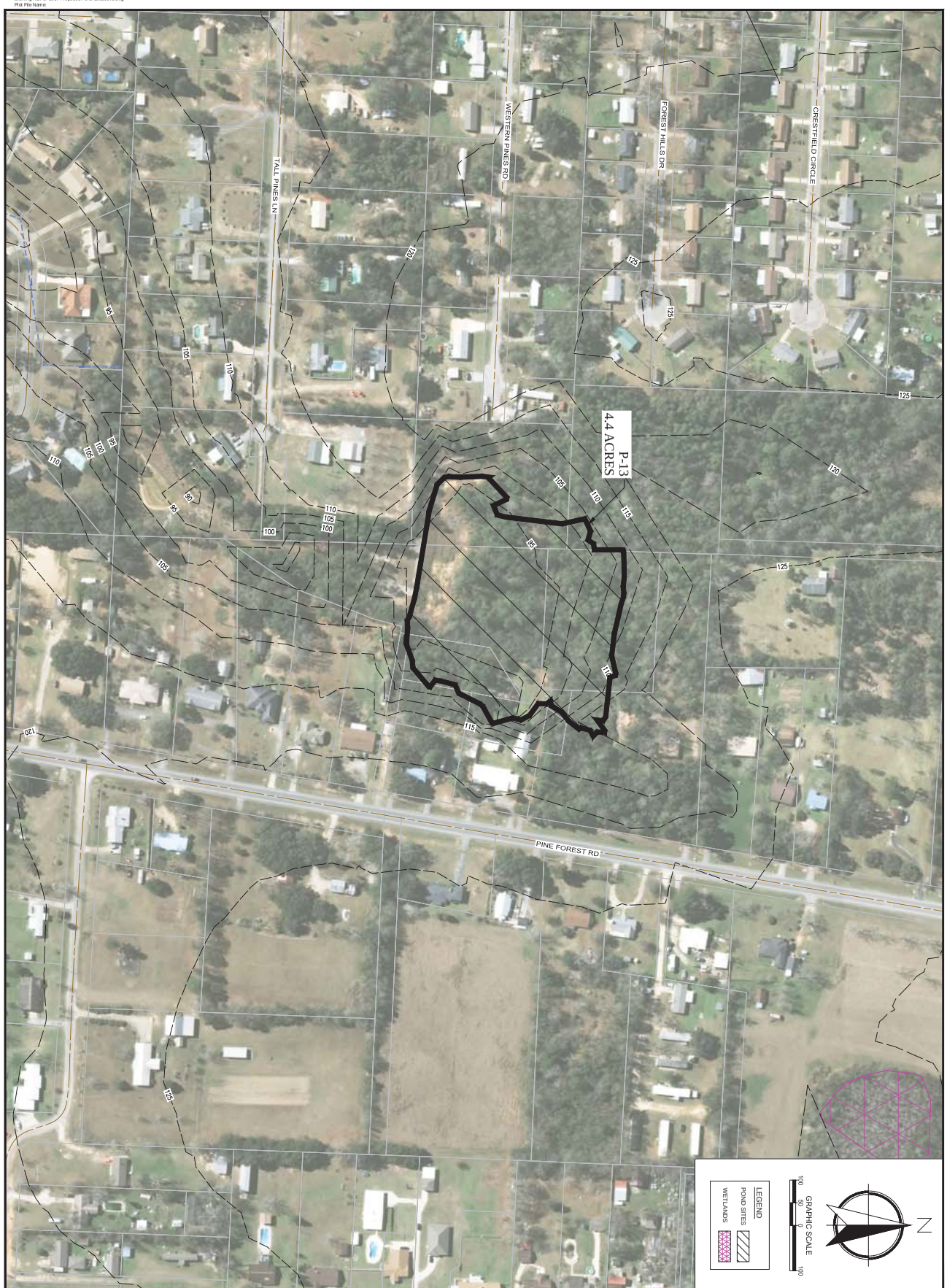

EXHIBIT

SHEET NUMBER:

SITE P-13
PROPOSED POND LOCATION MAP

SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

DATE	REV.	REVISION DESCRIPTION

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Architects Engineers Surveyors
AA - C0000035 EB - 0000155 LB - 0006783

User Name: MITT5150
Time Stamp: Sep 26, 2017 - 9:02:37 AM
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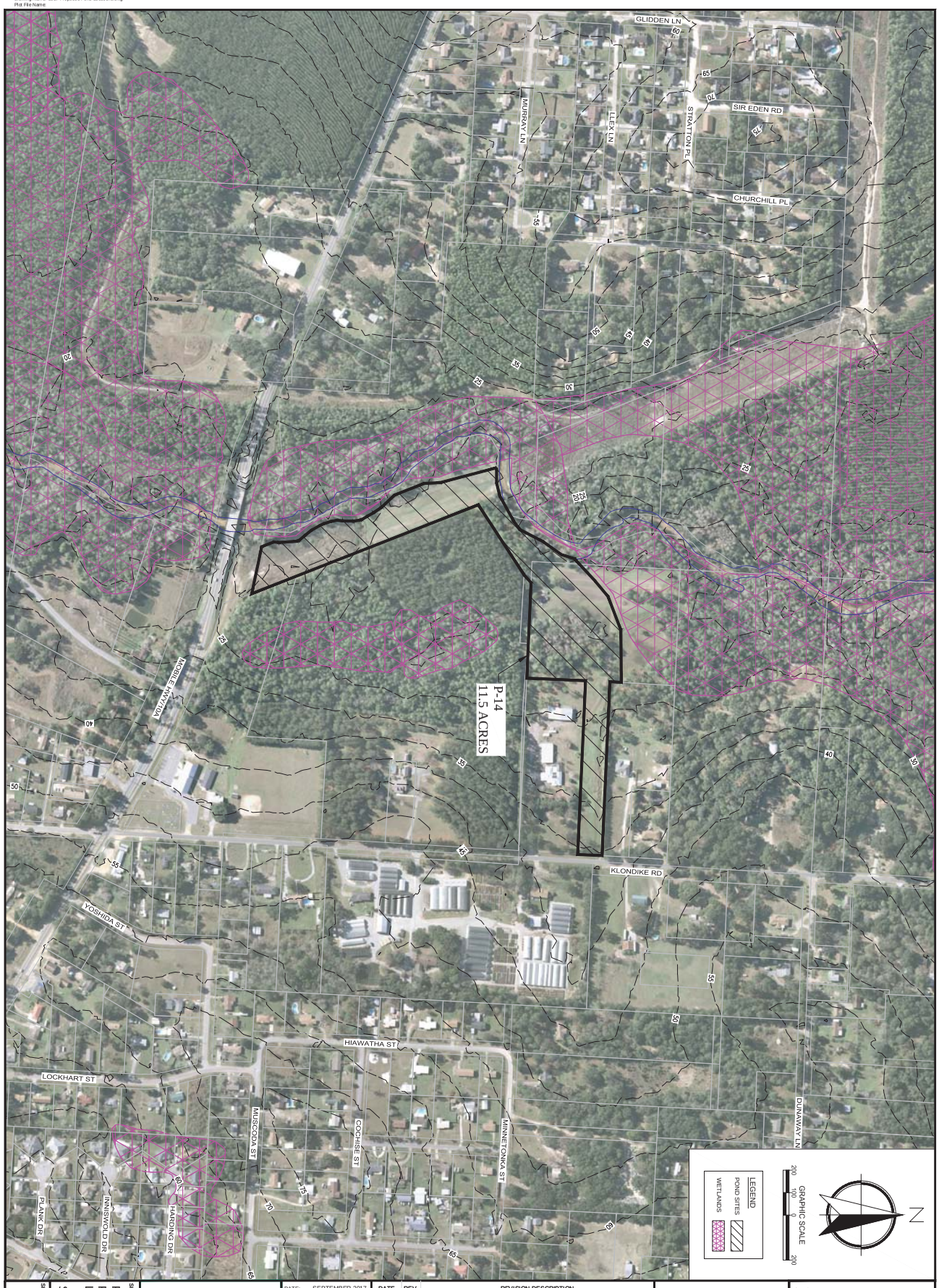

EXHIBIT

SHEET NUMBER:

SITE P-14

PROPOSED POND LOCATION MAP

SHEET TITLE:

THIS DRAWING IS NOT FOR CONSTRUCTION

DATE:	SEPTEMBER 2017
DESIGNED BY:	T. MITCHELL
DRAWN BY:	T. MITCHELL
PROJECT ENGINEER	S. WHITE
PROJECT MANAGER:	S. WHITE
M.M. PROJECT NUMBER:	354048

DATE	REV.	REVISION DESCRIPTION

ELEVEN MILE CREEK STORMWATER MANAGEMENT
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APPENDIX B

OPINIONS OF PROBABLE COST

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P-1.1

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 83,002.60	$ 83,002.60
	Demolition	1	LS	$ 15,000.00	$ 15,000.00
	Clearing and Grubbing	10	AC	$ 12,857.10	$ 124,713.87
	Sodding	38,300	SY	$ 3.08	$ 117,964.00
	Seeding	8,456	SY	$ 0.98	$ 8,286.88
	Excavation Regular	143,851	CY	$ 5.96	$ 857,351.96
	24" Class III RCP	4,600	LF	$ 75.71	$ 348,266.00
	24" U-type Endwall with Baffle (2)	1	EA	$ 2,300.00	$ 2,300.00
	FDOT Type D Ditch Bottom Inlet	1	EA	$ 4,815.21	$ 4,815.21
	Manhole FDOT 4' Dia. Type P Bottom, <10'	15	EA	$ 5,740.80	$ 86,112.00
	Cut and Patch Asphalt Roadway (3)	25	SY	$ 80.24	$ 2,006.00
	Silt Fence	8,200	LF	$ 3.16	$ 25,912.00
	6' Chain Link Fence	3,600	LF	$ 18.19	$ 65,484.00
	12" Double Swing Gate	1	EA	$ 1,840.00	$ 1,840.00
				Construction Costs Subtotal Costs:	**$ 1,743,054.52**
				Survey	**$ 25,000.00**
				Geotech	**$ 10,000.00**
				Design	**$ 90,000.00**
				Permitting	**$ 10,000.00**
				Total Project Cost	**$ 1,878,054.52**
				30% Contingency	**$ 563,416.35**
				Total Estimated Costs:	**$ 2,441,470.87**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from FDOT Statewide 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

3 Unit cost taken from Escambia County Pricing Agreement FY17

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MOTT MACDONALD

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P-1.2

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 19,497.33	$ 19,497.33
	Demolition	1	LS	$ 15,000.00	$ 15,000.00
	Clearing and Grubbing	3	AC	$ 12,857.10	$ 35,357.03
	Sodding	9,725	SY	$ 3.08	$ 29,953.00
	Seeding	3,276	SY	$ 0.98	$ 3,210.48
	Excavation Regular	31,853	CY	$ 5.96	$ 189,843.88
	24" Class III RCP	734	LF	$ 75.71	$ 55,571.14
	24" MES	1	EA	$ 1,671.06	$ 1,671.06
	FDOT Type D Ditch Bottom Inlet	1	EA	$ 4,815.21	$ 4,815.21
	Manhole FDOT 4' Dia. Type P Bottom, <10'	3	EA	$ 5,740.80	$ 17,222.40
	Silt Fence	2,300	LF	$ 3.16	$ 7,268.00
	6' Chain Link Fence	1,550	LF	$ 18.19	$ 28,194.50
	12" Double Swing Gate	1	EA	$ 1,840.00	$ 1,840.00
				Construction Costs Subtotal Costs:	**$ 409,444.03**
				Survey	**$ 7,500.00**
				Geotech	**$ 5,000.00**
				Design	**$ 45,000.00**
				Permitting	**$ 5,000.00**
				Total Project Cost	**$ 471,944.03**
				30% Contingency	**$ 141,583.21**
				Total Estimated Costs:	**$ 613,527.24**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MOTT MACDONALD

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P-1.3

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 33,778.60	$ 33,778.60
	Clearing and Grubbing	4	AC	$ 12,857.10	$ 51,428.40
	Sodding	14,582	SY	$ 3.08	$ 44,912.56
	Seeding	4,780	SY	$ 0.98	$ 4,684.40
	Excavation Regular	48,510	CY	$ 5.96	$ 289,119.60
	24" Class III RCP	2,250	LF	$ 75.71	$ 170,347.50
	24" U-type Endwall with Baffle (2)	1	EA	$ 2,300.00	$ 2,300.00
	FDOT Type D Ditch Bottom Inlet	1	EA	$ 4,815.21	$ 4,815.21
	Manhole FDOT 4' Dia. Type P Bottom, <10'	8	EA	$ 5,740.80	$ 45,926.40
	Cut and Patch Asphalt Roadway (3)	25	SY	$ 80.24	$ 2,006.00
	Silt Fence	4,600	LF	$ 3.16	$ 14,536.00
	6' Chain Link Fence	2,400	LF	$ 18.19	$ 43,656.00
	12" Double Swing Gate	1	EA	$ 1,840.00	$ 1,840.00
				Construction Costs Subtotal Costs:	**$ 709,350.67**
				Survey	**$ 10,000.00**
				Geotech	**$ 5,000.00**
				Design	**$ 60,000.00**
				Permitting	**$ 5,000.00**
				Total Project Cost	**$ 789,350.67**
				30% Contingency	**$ 236,805.20**
				Total Estimated Costs:	**$ 1,026,155.88**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from FDOT Statewide 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

3 Unit cost taken from Escambia County Pricing Agreement FY17

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P-1.4

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 15,053.84	$ 15,053.84
	Demolition	1	LS	$ 5,000.00	$ 5,000.00
	Clearing and Grubbing	2	AC	$ 12,857.10	$ 30,857.04
	Sodding	10,500	SY	$ 3.08	$ 32,340.00
	Seeding	1,125	SY	$ 0.98	$ 1,102.50
	Excavation Regular	36,195	CY	$ 5.96	$ 215,722.20
	Silt Fence	900	LF	$ 3.16	$ 2,844.00
	6' Chain Link Fence	900	LF	$ 18.19	$ 16,371.00
	12" Double Swing Gate	1	EA	$ 1,840.00	$ 1,840.00
				Construction Costs Subtotal Costs:	**$ 321,130.58**
				Survey	**$ 6,000.00**
				Geotech	**$ 5,000.00**
				Design	**$ 30,000.00**
				Permitting	**$ 4,000.00**
				Total Project Cost	**$ 366,130.58**
				30% Contingency	**$ 109,839.17**
				Total Estimated Costs:	**$ 475,969.75**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P-2

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 75,728.23	$ 75,728.23
	Clearing and Grubbing	10	AC	$ 12,857.10	$ 124,713.87
	Sodding	43,560	SY	$ 3.08	$ 134,164.80
	Seeding	5,600	SY	$ 0.98	$ 5,488.00
	Excavation Regular	145,000	CY	$ 5.96	$ 864,200.00
	Embankment	30,000	CY	$ 7.00	$ 210,000.00
	24" Class III RCP	600	LF	$ 75.71	$ 45,426.00
	24" U-type Endwall with Baffle (2)	1	EA	$ 2,300.00	$ 2,300.00
	Discharge Structure	1	EA	$ 50,000.00	$ 50,000.00
	Silt Fence	2,300	LF	$ 3.16	$ 7,268.00
	6' Chain Link Fence	3,600	LF	$ 18.19	$ 65,484.00
	12" Double Swing Gate	3	EA	$ 1,840.00	$ 5,520.00
				Construction Costs Subtotal Costs:	**$ 1,590,292.90**
				Survey	**$ 25,000.00**
				Geotech	**$ 15,000.00**
				Design	**$ 100,000.00**
				Permitting	**$ 25,000.00**
				Total Project Cost	**$ 1,755,292.90**
				30% Contingency	**$ 526,587.87**
				Total Estimated Costs:	**$ 2,281,880.77**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from FDOT Statewide 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P-3.1

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 77,926.93	$ 77,926.93
	Clearing and Grubbing	10	AC	$ 12,857.10	$ 124,713.87
	Sodding	43,560	SY	$ 3.08	$ 134,164.80
	Seeding	5,600	SY	$ 0.98	$ 5,488.00
	Excavation Regular	145,000	CY	$ 5.96	$ 864,200.00
	Embankment	30,000	CY	$ 7.00	$ 210,000.00
	24" Class III RCP	400	LF	$ 75.71	$ 30,284.00
	24" U-type Endwall with Baffle (2)	1	EA	$ 2,300.00	$ 2,300.00
	Discharge Structure	2	EA	$ 50,000.00	$ 100,000.00
	Silt Fence	2,300	LF	$ 3.16	$ 7,268.00
	6' Chain Link Fence	4,000	LF	$ 18.19	$ 72,760.00
	12" Double Swing Gate	4	EA	$ 1,840.00	$ 7,360.00
				Construction Costs Subtotal Costs:	**$ 1,636,465.60**
				Survey	**$ 25,000.00**
				Geotech	**$ 15,000.00**
				Design	**$ 100,000.00**
				Permitting	**$ 25,000.00**
				Total Project Cost	**$ 1,801,465.60**
				30% Contingency	**$ 540,439.68**
				Total Estimated Costs:	**$ 2,341,905.28**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from FDOT Statewide 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MOTT MACDONALD

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P-3.2

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 65,657.09	$ 65,657.09
	Demolition	1	LS	$ 15,000.00	$ 15,000.00
	Clearing and Grubbing	10	AC	$ 12,857.10	$ 124,713.87
	Sodding	39,000	SY	$ 3.08	$ 120,120.00
	Seeding	5,600	SY	$ 0.98	$ 5,488.00
	Excavation Regular	145,000	CY	$ 5.96	$ 864,200.00
	Embankment	7,500	CY	$ 7.00	$ 52,500.00
	24" Class III RCP	200	LF	$ 75.71	$ 15,142.00
	24" U-type Endwall with Baffle (2)	1	EA	$ 2,300.00	$ 2,300.00
	Discharge Structure	1	EA	$ 50,000.00	$ 50,000.00
	Silt Fence	2,300	LF	$ 3.16	$ 7,268.00
	6' Chain Link Fence	3,000	LF	$ 18.19	$ 54,570.00
	12" Double Swing Gate	1	EA	$ 1,840.00	$ 1,840.00
				Construction Costs Subtotal Costs:	**$ 1,378,798.96**
				Survey	**$ 20,000.00**
				Geotech	**$ 8,500.00**
				Design	**$ 100,000.00**
				Permitting	**$ 25,000.00**
				Total Project Cost	**$ 1,532,298.96**
				30% Contingency	**$ 459,689.69**
				Total Estimated Costs:	**$ 1,991,988.65**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from FDOT Statewide 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P-4A

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 21,535.45	$ 21,535.45
	Demolition	1	LS	$ 15,000.00	$ 15,000.00
	Clearing and Grubbing	3	AC	$ 12,857.10	$ 38,571.30
	Sodding	9,680	SY	$ 3.08	$ 29,814.40
	Seeding	5,600	SY	$ 0.98	$ 5,488.00
	Excavation Regular	40,000	CY	$ 5.96	$ 238,400.00
	Embankment	2,500	CY	$ 7.00	$ 17,500.00
	24" Class III RCP	200	LF	$ 75.71	$ 15,142.00
	24" U-type Endwall with Baffle (2)	1	EA	$ 2,300.00	$ 2,300.00
	FDOT Type D Ditch Bottom Inlet	1	EA	$ 4,815.21	$ 4,815.21
	Silt Fence	2,300	LF	$ 3.16	$ 7,268.00
	6' Chain Link Fence	3,000	LF	$ 18.19	$ 54,570.00
	12" Double Swing Gate	1	EA	$ 1,840.00	$ 1,840.00
				Construction Costs Subtotal Costs:	**$ 452,244.36**
				Survey	**$ 7,500.00**
				Geotech	**$ 3,500.00**
				Design	**$ 75,000.00**
				Permitting	**$ 10,000.00**
				Total Project Cost	**$ 548,244.36**
				30% Contingency	**$ 164,473.31**
				Total Estimated Costs:	**$ 712,717.66**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from FDOT Statewide 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P-4B

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 45,171.41	$ 45,171.41
	Clearing and Grubbing	2	AC	$ 12,857.10	$ 25,714.20
	Sodding	1,500	SY	$ 3.08	$ 4,620.00
	Tied Concrete Block Material (2)	5,600	SY	$ 116.76	$ 653,856.00
	Embankment	6,000	CY	$ 7.00	$ 42,000.00
	36" Class III RCP	600	LF	$ 101.85	$ 61,110.00
	36" MES (1:4)	12	EA	$ 2,800.00	$ 33,600.00
	Emergency Spillway	1	EA	$ 80,000.00	$ 80,000.00
	Silt Fence	800	LF	$ 3.16	$ 2,528.00
	Wetland Impact Mitigation property	600	AC	$ 3,500.00	$ 2,100,000.00
				Construction Costs Subtotal Costs:	**$ 3,048,599.61**
				Survey	**$ 35,000.00**
				Geotech	**$ 8,500.00**
				Design	**$ 150,000.00**
				Permitting	**$ 35,000.00**
				Total Project Cost	**$ 3,277,099.61**
				30% Contingency	**$ 983,129.88**
				Total Estimated Costs:	**$ 4,260,229.49**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from Escambia County Pricing Agreement FY17

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P-5.1

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 124,437.52	$ 124,437.52
	Demolition	1	LS	$ 15,000.00	$ 15,000.00
	Clearing and Grubbing	14	AC	$ 12,857.10	$ 179,999.40
	Sodding	63,000	SY	$ 3.08	$ 194,040.00
	Seeding	9,500	SY	$ 0.98	$ 9,310.00
	Excavation Regular	300,000	CY	$ 5.96	$ 1,788,000.00
	Embankment	20,000	CY	$ 7.00	$ 140,000.00
	24" Class III RCP	200	LF	$ 75.71	$ 15,142.00
	24" U-type Endwall with Baffle (2)	1	EA	$ 2,300.00	$ 2,300.00
	Discharge Structure	1	EA	$ 50,000.00	$ 50,000.00
	Silt Fence	2,400	LF	$ 3.16	$ 7,584.00
	6' Chain Link Fence	4,500	LF	$ 18.19	$ 81,855.00
	12" Double Swing Gate	3	EA	$ 1,840.00	$ 5,520.00
				Construction Costs Subtotal Costs:	**$ 2,613,187.92**
				Survey	**$ 35,000.00**
				Geotech	**$ 15,000.00**
				Design	**$ 150,000.00**
				Permitting	**$ 25,000.00**
				Total Project Cost	**$ 2,838,187.92**
				30% Contingency	**$ 851,456.38**
				Total Estimated Costs:	**$ 3,689,644.30**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from FDOT Statewide 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MOTT MACDONALD

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P6

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 160,460.16	$ 160,460.16
	Demolition	1	LS	$ 15,000.00	$ 15,000.00
	Clearing and Grubbing	21	AC	$ 12,857.10	$ 269,999.10
	Sodding	99,842	SY	$ 3.08	$ 307,512.44
	Seeding	2,000	SY	$ 0.98	$ 1,960.00
	Excavation Regular	336,919	CY	$ 5.96	$ 2,008,037.24
	Embankment	73,822	CY	$ 7.00	$ 516,754.00
	24" Class III RCP	1,000	LF	$ 75.71	$ 75,710.00
	24" U-type Endwall with Baffle (2)	2	EA	$ 2,300.00	$ 4,600.00
	FDOT Type D Ditch Bottom Inlet	2	EA	$ 4,815.21	$ 9,630.42
	Silt Fence	3,200	LF	$ 3.16	$ 10,112.00
	6' Chain Link Fence	5,600	LF	$ 18.19	$ 101,864.00
	12" Double Swing Gate	2	EA	$ 1,840.00	$ 3,680.00
				Construction Costs Subtotal Costs:	**$ 3,485,319.36**
				Survey	**$ 52,500.00**
				Geotech	**$ 25,000.00**
				Design	**$ 120,000.00**
				Permitting	**$ 25,000.00**
				Total Project Cost	**$ 3,707,819.36**
				30% Contingency	**$ 1,112,345.81**
				Total Estimated Costs:	**$ 4,820,165.16**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from FDOT Statewide 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P7.1

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 30,768.06	$ 30,768.06
	Clearing and Grubbing	5	AC	$ 12,857.10	$ 64,285.50
	Demolition	1	LS	$ 5,000.00	$ 5,000.00
	Sodding	19,608	SY	$ 3.08	$ 60,392.64
	Seeding	4,592	SY	$ 0.98	$ 4,499.96
	Excavation Regular	70,082	CY	$ 5.96	$ 417,686.93
	24" Class III RCP	100	LF	$ 75.71	$ 7,571.00
	24" U-type Endwall with Baffle (2)	1	EA	$ 2,300.00	$ 2,300.00
	FDOT Type D Ditch Bottom Inlet	1	EA	$ 4,815.21	$ 4,815.21
	Silt Fence	2,200	LF	$ 3.16	$ 6,952.00
	6' Chain Link Fence	2,200	LF	$ 18.19	$ 40,018.00
	12" Double Swing Gate	1	EA	$ 1,840.00	$ 1,840.00
				Construction Costs Subtotal Costs:	**$ 646,129.31**
				Survey	**$ 12,500.00**
				Geotech	**$ 6,000.00**
				Design	**$ 50,000.00**
				Permitting	**$ 7,500.00**
				Total Project Cost	**$ 722,129.31**
				30% Contingency	**$ 216,638.79**
				Total Estimated Costs:	**$ 938,768.10**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from FDOT Statewide 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P7.2

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 25,989.41	$ 25,989.41
	Clearing and Grubbing	4	AC	$ 12,857.10	$ 51,428.40
	Demolition	1	LS	$ 5,000.00	$ 5,000.00
	Sodding	16,507	SY	$ 3.08	$ 50,841.56
	Seeding	3,000	SY	$ 0.98	$ 2,940.00
	Excavation Regular	57,868	CY	$ 5.96	$ 344,895.07
	24" Class III RCP	100	LF	$ 75.71	$ 7,571.00
	24" U-type Endwall with Baffle (2)	1	EA	$ 2,300.00	$ 2,300.00
	FDOT Type D Ditch Bottom Inlet	1	EA	$ 4,815.21	$ 4,815.21
	Silt Fence	2,000	LF	$ 3.16	$ 6,320.00
	6' Chain Link Fence	2,300	LF	$ 18.19	$ 41,837.00
	12" Double Swing Gate	1	EA	$ 1,840.00	$ 1,840.00
				Construction Costs Subtotal Costs:	**$ 545,777.65**
				Survey	**$ 10,000.00**
				Geotech	**$ 5,000.00**
				Design	**$ 40,000.00**
				Permitting	**$ 5,000.00**
				Total Project Cost	**$ 605,777.65**
				30% Contingency	**$ 181,733.29**
				Total Estimated Costs:	**$ 787,510.94**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from FDOT Statewide 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P7.3

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 72,053.62	$ 72,053.62
	Clearing and Grubbing	11	AC	$ 12,857.10	$ 141,428.10
	Sodding	44,632	SY	$ 3.08	$ 137,466.25
	Seeding	8,608	SY	$ 0.98	$ 8,435.84
	Excavation Regular	177,000	CY	$ 5.96	$ 1,054,920.00
	24" Class III RCP	200	LF	$ 75.71	$ 15,142.00
	24" U-type Endwall with Baffle (2)	1	EA	$ 2,300.00	$ 2,300.00
	FDOT Type D Ditch Bottom Inlet	1	EA	$ 4,815.21	$ 4,815.21
	Silt Fence	3,500	LF	$ 3.16	$ 11,060.00
	6' Chain Link Fence	3,500	LF	$ 18.19	$ 63,665.00
	12" Double Swing Gate	1	EA	$ 1,840.00	$ 1,840.00
				Construction Costs Subtotal Costs:	**$ 1,513,126.02**
				Survey	**$ 27,500.00**
				Geotech	**$ 12,000.00**
				Design	**$ 83,500.00**
				Permitting	**$ 12,000.00**
				Total Project Cost	**$ 1,648,126.02**
				30% Contingency	**$ 494,437.81**
				Total Estimated Costs:	**$ 2,142,563.83**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from FDOT Statewide 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P8

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 91,237.22	$ 91,237.22
	Clearing and Grubbing	12	AC	$ 12,857.10	$ 154,285.20
	Sodding	55,259	SY	$ 3.08	$ 170,197.10
	Seeding	2,821	SY	$ 0.98	$ 2,764.58
	Excavation Regular	228,008	CY	$ 5.96	$ 1,358,926.49
	24" Class III RCP	100	LF	$ 75.71	$ 7,571.00
	24" U-type Endwall with Baffle (2)	1	EA	$ 2,300.00	$ 2,300.00
	Discharge Structure	1	LS	$ 50,000.00	$ 50,000.00
	Silt Fence	3,600	LF	$ 3.16	$ 11,376.00
	6' Chain Link Fence	3,600	LF	$ 18.19	$ 65,484.00
	12" Double Swing Gate	1	EA	$ 1,840.00	$ 1,840.00
				Construction Costs Subtotal Costs:	**$ 1,915,981.59**
				Survey	**$ 30,000.00**
				Geotech	**$ 12,000.00**
				Design	**$ 81,000.00**
				Permitting	**$ 12,000.00**
				Total Project Cost	**$ 2,050,981.59**
				30% Contingency	**$ 615,294.48**
				Total Estimated Costs:	**$ 2,666,276.07**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from FDOT Statewide 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P10

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 74,139.85	$ 74,139.85
	Clearing and Grubbing	10	AC	$ 12,857.10	$ 124,713.87
	Sodding	45,206	SY	$ 3.08	$ 139,234.48
	Seeding	3,194	SY	$ 0.98	$ 3,130.12
	Excavation Regular	185,379	CY	$ 5.96	$ 1,104,858.24
	24" Class III RCP	500	LF	$ 75.71	$ 37,855.00
	24" U-type Endwall with Baffle (2)	1	EA	$ 2,300.00	$ 2,300.00
	FDOT Type D Ditch Bottom Inlet	1	EA	$ 4,815.21	$ 4,815.21
	Silt Fence	3,000	LF	$ 3.16	$ 9,480.00
	6' Chain Link Fence	3,000	LF	$ 18.19	$ 54,570.00
	12" Double Swing Gate	1	EA	$ 1,840.00	$ 1,840.00
				Construction Costs Subtotal Costs:	**$ 1,556,936.77**
				Survey	**$ 25,000.00**
				Geotech	**$ 10,000.00**
				Design	**$ 65,000.00**
				Permitting	**$ 10,000.00**
				Total Project Cost	**$ 1,666,936.77**
				30% Contingency	**$ 500,081.03**
				Total Estimated Costs:	**$ 2,167,017.80**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from FDOT Statewide 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P11

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 73,562.16	$ 73,562.16
	Clearing and Grubbing	10	AC	$ 12,857.10	$ 124,713.87
	Sodding	45,000	SY	$ 3.08	$ 138,600.00
	Seeding	3,400	SY	$ 0.98	$ 3,332.00
	Excavation Regular	189,311	CY	$ 5.96	$ 1,128,291.18
	24" Class III RCP	100	LF	$ 75.71	$ 7,571.00
	24" U-type Endwall with Baffle (2)	1	EA	$ 2,300.00	$ 2,300.00
	FDOT Type D Ditch Bottom Inlet	1	EA	$ 4,815.21	$ 4,815.21
	Silt Fence	2,800	LF	$ 3.16	$ 8,848.00
	6' Chain Link Fence	2,800	LF	$ 18.19	$ 50,932.00
	12" Double Swing Gate	1	EA	$ 1,840.00	$ 1,840.00
				Construction Costs Subtotal Costs:	**$ 1,544,805.42**
				Survey	**$ 25,000.00**
				Geotech	**$ 10,000.00**
				Design	**$ 65,000.00**
				Permitting	**$ 10,000.00**
				Total Project Cost	**$ 1,654,805.42**
				30% Contingency	**$ 496,441.63**
				Total Estimated Costs:	**$ 2,151,247.04**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from FDOT Statewide 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

Eleven Mile Creek Regional Pond Property Acquisition Plan
Opinion of Probable Construction Costs
September 2017

MM Project No. 354058

Basis: Property Acquisition Plan Concept - Pond P14

Item No.	Description	Quantity	Unit	Unit Price	Amount
	Mobilization @ 5%	1	EA	$ 73,107.29	$ 73,107.29
	Demolition	1	LS	$ 10,000.00	$ 10,000.00
	Clearing and Grubbing	11	AC	$ 12,857.10	$ 141,428.10
	Sodding	50,000	SY	$ 3.08	$ 154,000.00
	Seeding	5,000	SY	$ 0.98	$ 4,900.00
	Excavation Regular	150,000	CY	$ 5.96	$ 894,000.00
	36" Class III RCP	160	LF	$ 101.85	$ 16,296.00
	Concrete Endwall	18	CY	$ 1,427.42	$ 25,693.56
	Riprap, Rubble	300	TN	$ 136.93	$ 41,079.00
	72" U-type Endwall with Baffle	1	EA	$ 15,000.00	$ 15,000.00
	Discharge Structure	1	EA	$ 50,000.00	$ 50,000.00
	Cut and Patch Asphalt Roadway (2)	80	SY	$ 80.24	$ 6,419.20
	Silt Fence	6,500	LF	$ 3.16	$ 20,540.00
	6' Chain Link Fence	5,000	LF	$ 18.19	$ 90,950.00
	12" Double Swing Gate	1	EA	$ 1,840.00	$ 1,840.00
				Construction Costs Subtotal Costs:	**$ 1,545,253.15**
				Survey	**$ 25,000.00**
				Geotech	**$ 10,000.00**
				Design	**$ 65,000.00**
				Permitting	**$ 10,000.00**
				Total Project Cost	**$ 1,655,253.15**
				30% Contingency	**$ 496,575.95**
				Total Estimated Costs:	**$ 2,151,829.10**

Notes:

1 Unit costs taken from FDOT Area 1 - 12 Month Floating Item Average Unit Cost from 2016/08/01 to 2017/07/31

2 Unit cost taken from Escambia County Pricing Agreement FY17

APPENDIX C

NRCS WEB SOIL SURVEY REPORTS

United States Department of Agriculture

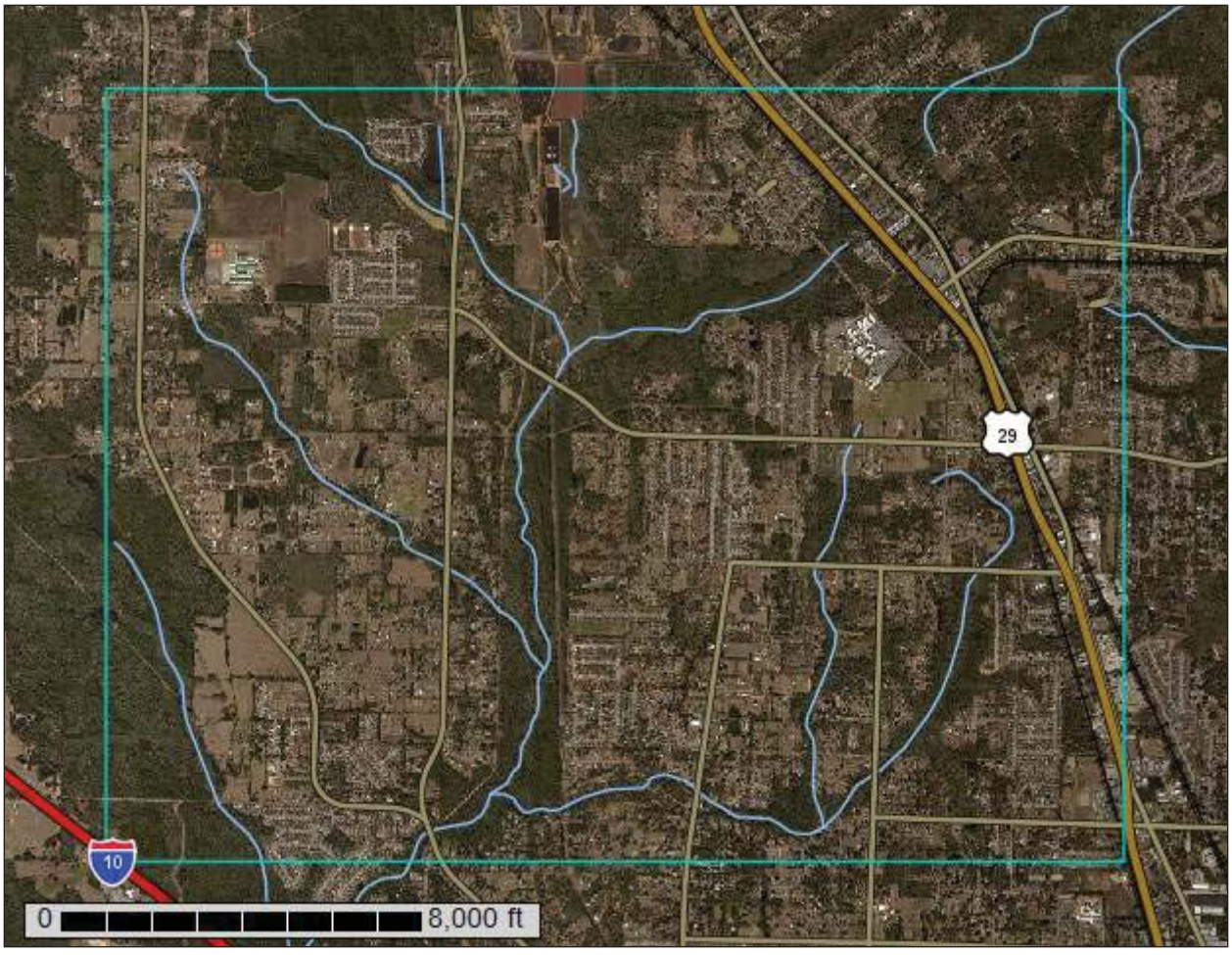
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Escambia County, Florida

Eleven Mile Creek



October 26, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

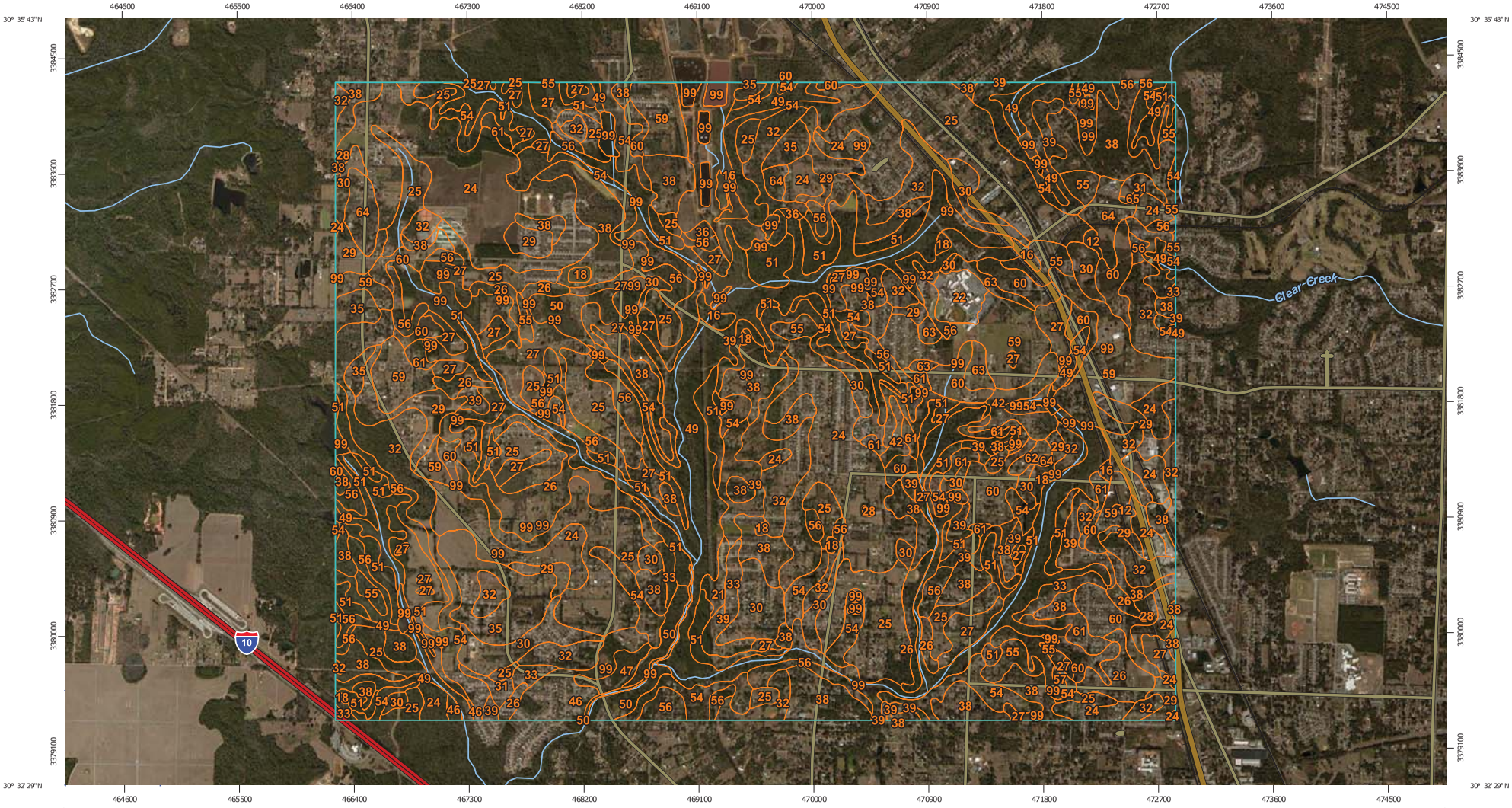
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:29,100 if printed on B landscape (17" x 11") sheet.

N

Meters
0 400 800 1600 2400

Feet
0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Escambia County, Florida
Survey Area Data: Version 12, Sep 28, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 31, 2015—Mar 7, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Escambia County, Florida (FL033)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
12	Croatan muck, depressional	6.7	0.1%
16	Arents-Urban land complex	109.4	1.3%
18	Pits	25.1	0.3%
21	Lakeland sand, 8 to 12 percent slopes	14.5	0.2%
22	Urban land	34.5	0.4%
24	Poarch sandy loam, 0 to 2 percent slopes	780.0	9.6%
25	Poarch sandy loam, 2 to 5 percent slopes	848.6	10.5%
26	Poarch sandy loam, 5 to 8 percent slopes	229.4	2.8%
27	Escambia fine sandy loam, 0 to 2 percent slopes	361.2	4.5%
28	Grady loam	4.1	0.1%
29	Perdido sandy loam, 0 to 2 percent slopes	185.5	2.3%
30	Perdido sandy loam, 2 to 5 percent slopes	224.3	2.8%
31	Perdido sandy loam, 5 to 8 percent slopes	20.9	0.3%
32	Troup sand, 0 to 5 percent slopes	536.5	6.6%
33	Troup sand, 5 to 8 percent slopes	56.4	0.7%
35	Lucy loamy sand, 0 to 2 percent slopes	153.1	1.9%
36	Lucy loamy sand, 2 to 5 percent slopes	7.5	0.1%
38	Bonifay loamy sand, 0 to 5 percent slopes	711.5	8.8%
39	Bonifay loamy sand, 5 to 8 percent slopes	172.0	2.1%
42	Malbis sandy loam, 2 to 5 percent slopes	52.3	0.6%
46	Garcon-Bigbee-Yemassee complex, 0 to 5 percent slopes, occasionally flooded	72.8	0.9%
47	Hurricane and Albany soils, 0 to 5 percent slopes, occasionally flooded	20.5	0.3%
49	Dorovan muck and Fluvaquents, frequently flooded	824.0	10.2%

Escambia County, Florida (FL033)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
50	Bigbee-Garcon-Fluvaquents complex, flooded	89.5	1.1%
51	Pelham loamy sand, 0 to 2 percent slopes	517.8	6.4%
54	Troup-Poarch complex, 8 to 12 percent slopes	656.4	8.1%
55	Troup-Poarch complex, 2 to 5 percent slopes	98.1	1.2%
56	Troup-Poarch complex, 5 to 8 percent slopes	322.0	4.0%
57	Cowarts-Troup complex, 12 to 18 percent slopes	3.0	0.0%
59	Notcher fine sandy loam, 0 to 2 percent slopes	380.6	4.7%
60	Notcher fine sandy loam, 2 to 5 percent slopes	254.2	3.1%
61	Notcher fine sandy loam, 5 to 8 percent slopes	79.5	1.0%
62	Bama fine sandy loam, 0 to 2 percent slopes	9.8	0.1%
63	Bama fine sandy loam, 2 to 5 percent slopes	38.2	0.5%
64	Red Bay fine sandy loam, 0 to 2 percent slopes	79.7	1.0%
65	Red Bay fine sandy loam, 2 to 5 percent slopes	2.8	0.0%
99	Water	124.4	1.5%
Totals for Area of Interest		**8,106.6**	**100.0%**

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group (Eleven Mile Creek Basin)

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

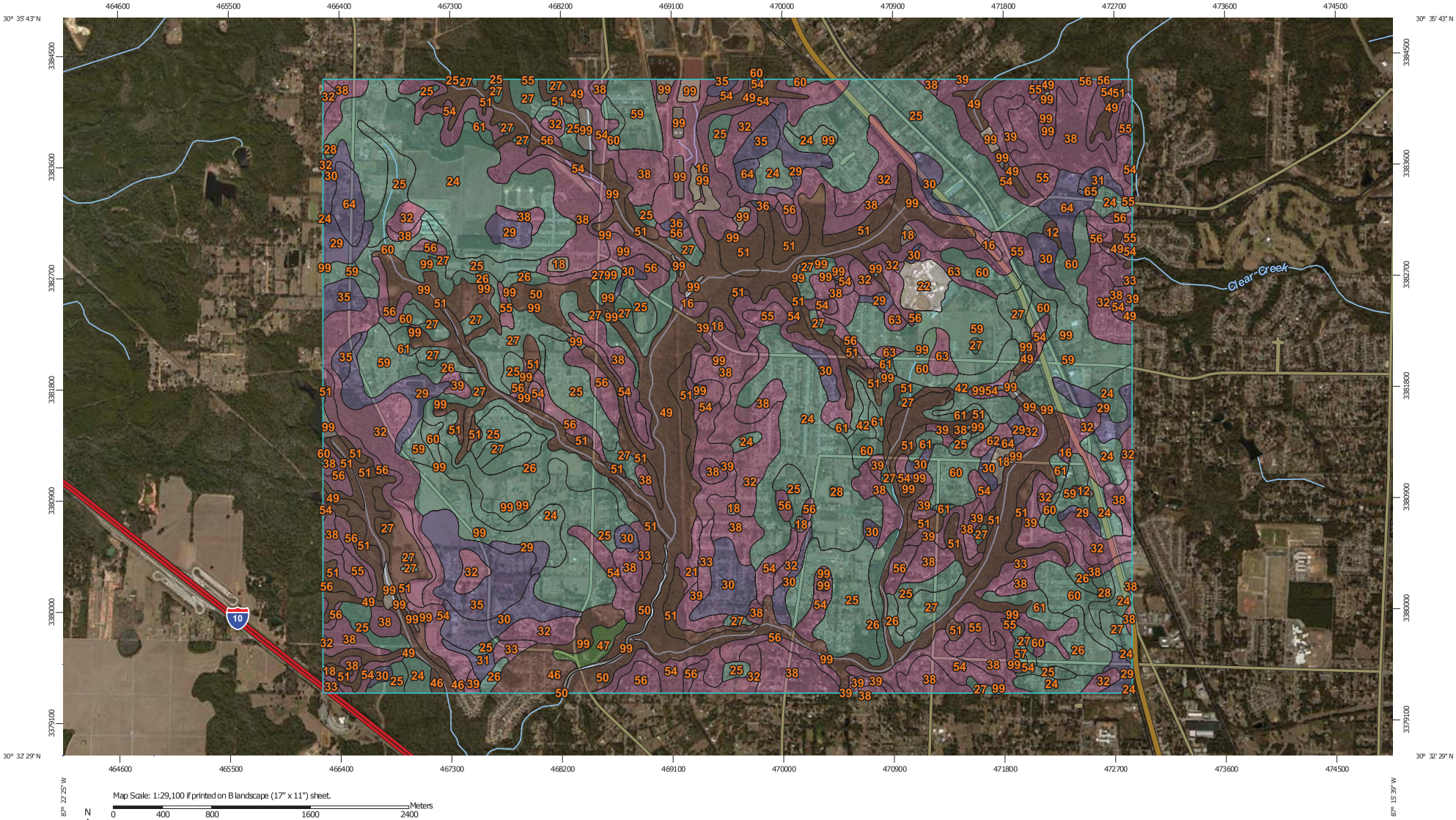
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group (Eleven Mile Creek Basin)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Escambia County, Florida
Survey Area Data: Version 12, Sep 28, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 31, 2015—Mar 7, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group (Eleven Mile Creek Basin)

Hydrologic Soil Group— Summary by Map Unit — Escambia County, Florida (FL033)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
12	Croatan muck, depressional	B/D	6.7	0.1%
16	Arents-Urban land complex	A	109.4	1.3%
18	Pits		25.1	0.3%
21	Lakeland sand, 8 to 12 percent slopes	A	14.5	0.2%
22	Urban land		34.5	0.4%
24	Poarch sandy loam, 0 to 2 percent slopes	C	780.0	9.6%
25	Poarch sandy loam, 2 to 5 percent slopes	C	848.6	10.5%
26	Poarch sandy loam, 5 to 8 percent slopes	C	229.4	2.8%
27	Escambia fine sandy loam, 0 to 2 percent slopes	C	361.2	4.5%
28	Grady loam	C/D	4.1	0.1%
29	Perdido sandy loam, 0 to 2 percent slopes	B	185.5	2.3%
30	Perdido sandy loam, 2 to 5 percent slopes	B	224.3	2.8%
31	Perdido sandy loam, 5 to 8 percent slopes	B	20.9	0.3%
32	Troup sand, 0 to 5 percent slopes	A	536.5	6.6%
33	Troup sand, 5 to 8 percent slopes	A	56.4	0.7%
35	Lucy loamy sand, 0 to 2 percent slopes	B	153.1	1.9%
36	Lucy loamy sand, 2 to 5 percent slopes	B	7.5	0.1%
38	Bonifay loamy sand, 0 to 5 percent slopes	A	711.5	8.8%
39	Bonifay loamy sand, 5 to 8 percent slopes	A	172.0	2.1%
42	Malbis sandy loam, 2 to 5 percent slopes	C	52.3	0.6%
46	Garcon-Bigbee-Yemassee complex, 0 to 5 percent slopes, occasionally flooded	B/D	72.8	0.9%
47	Hurricane and Albany soils, 0 to 5 percent slopes, occasionally flooded	A/D	20.5	0.3%

Hydrologic Soil Group— Summary by Map Unit — Escambia County, Florida (FL033)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
49	Dorovan muck and Fluvaquents, frequently flooded	B/D	824.0	10.2%
50	Bigbee-Garcon-Fluvaquents complex, flooded	B/D	89.5	1.1%
51	Pelham loamy sand, 0 to 2 percent slopes	B/D	517.8	6.4%
54	Troup-Poarch complex, 8 to 12 percent slopes	A	656.4	8.1%
55	Troup-Poarch complex, 2 to 5 percent slopes	A	98.1	1.2%
56	Troup-Poarch complex, 5 to 8 percent slopes	A	322.0	4.0%
57	Cowarts-Troup complex, 12 to 18 percent slopes	C	3.0	0.0%
59	Notcher fine sandy loam, 0 to 2 percent slopes	C	380.6	4.7%
60	Notcher fine sandy loam, 2 to 5 percent slopes	C	254.2	3.1%
61	Notcher fine sandy loam, 5 to 8 percent slopes	C	79.5	1.0%
62	Bama fine sandy loam, 0 to 2 percent slopes	A	9.8	0.1%
63	Bama fine sandy loam, 2 to 5 percent slopes	A	38.2	0.5%
64	Red Bay fine sandy loam, 0 to 2 percent slopes	B	79.7	1.0%
65	Red Bay fine sandy loam, 2 to 5 percent slopes	B	2.8	0.0%
99	Water		124.4	1.5%
Totals for Area of Interest			**8,106.6**	**100.0%**

Rating Options—Hydrologic Soil Group (Eleven Mile Creek Basin)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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United States Department of Agriculture

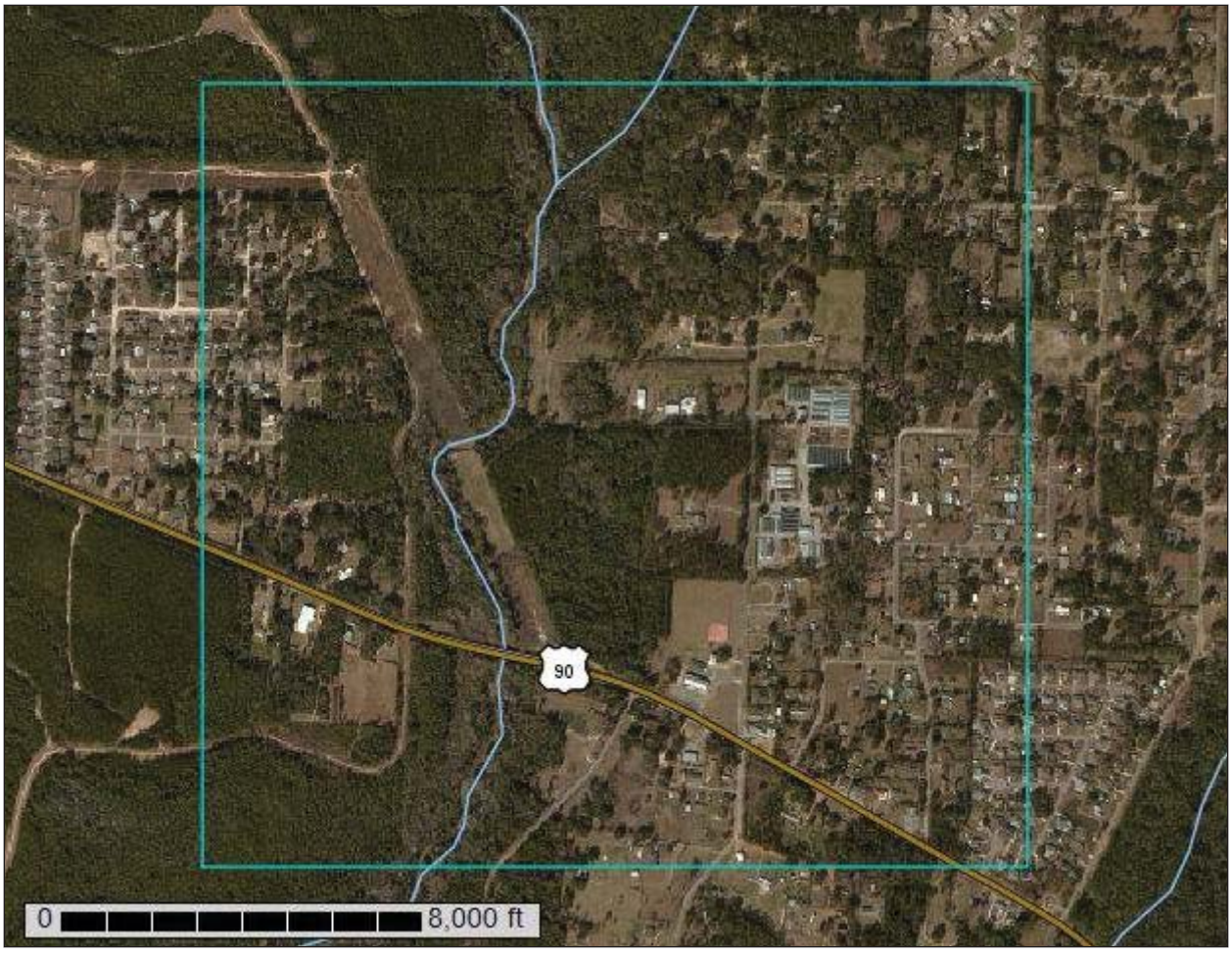
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Escambia County, Florida

Eleven Mile Creek



September 12, 2017

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:11,800 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Escambia County, Florida
Survey Area Data: Version 14, Sep 23, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 31, 2015—Mar 7, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Escambia County, Florida (FL033)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
21	Lakeland sand, 8 to 12 percent slopes	0.6	0.1%
25	Poarch sandy loam, 2 to 5 percent slopes	138.6	27.4%
33	Troup sand, 5 to 8 percent slopes	13.2	2.6%
36	Lucy loamy sand, 2 to 5 percent slopes	1.5	0.3%
38	Bonifay loamy sand, 0 to 5 percent slopes	97.2	19.2%
39	Bonifay loamy sand, 5 to 8 percent slopes	14.5	2.9%
43	Albany sand, 0 to 5 percent slopes	11.3	2.2%
46	Garcon-Bigbee-Yemassee complex, 0 to 5 percent slopes, occasionally flooded	107.9	21.4%
48	Pelham-Yemassee complex, occasionally flooded	9.9	2.0%
49	Dorovan muck and Fluvaquents, frequently flooded	14.2	2.8%
50	Bigbee-Garcon-Fluvaquents complex, flooded	45.5	9.0%
51	Pelham loamy sand, 0 to 2 percent slopes	15.6	3.1%
54	Troup-Poarch complex, 8 to 12 percent slopes	26.7	5.3%
99	Water	8.3	1.6%
Totals for Area of Interest		**505.2**	**100.0%**

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

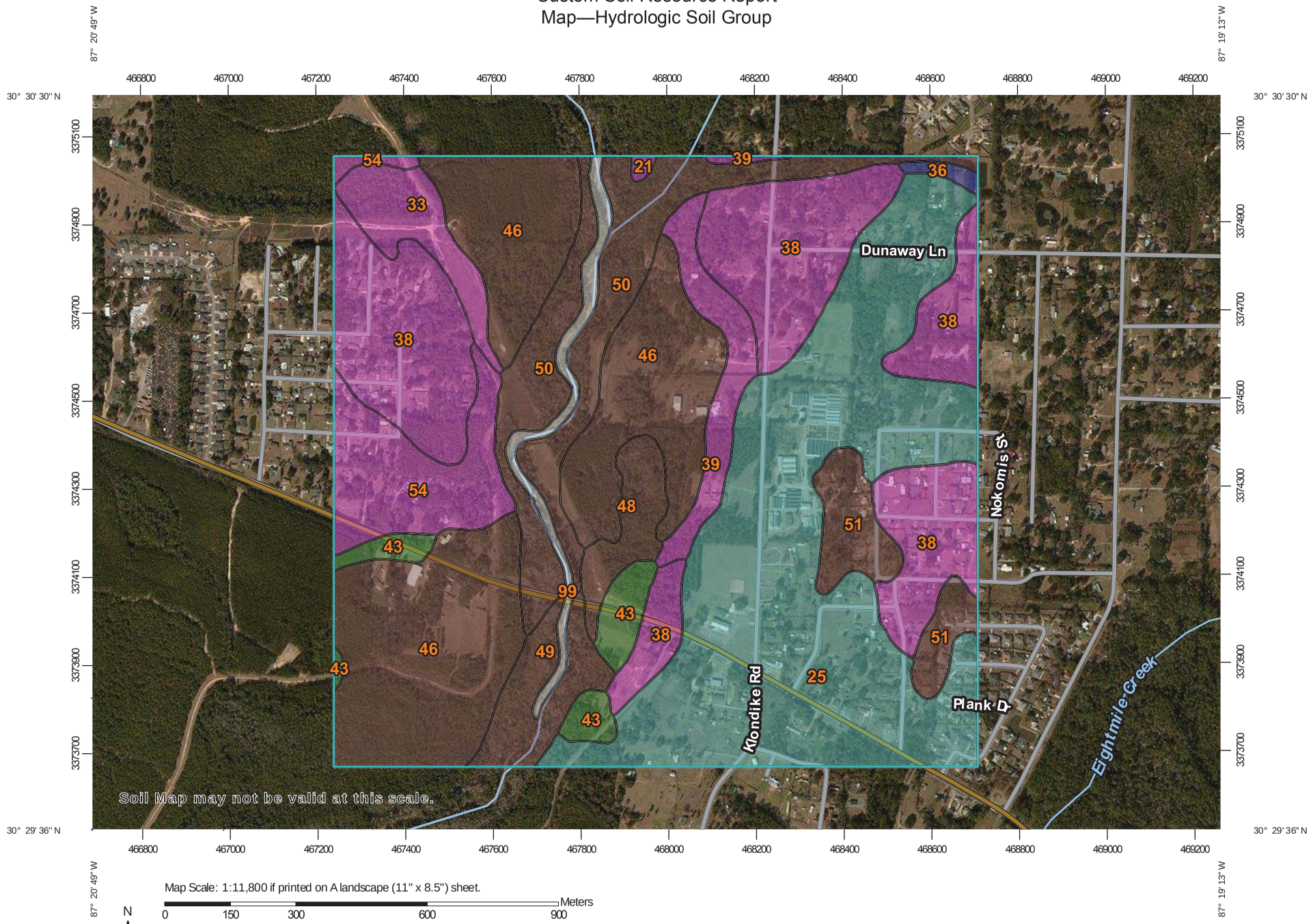
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



Map Scale: 1:11,800 if printed on A landscape (11" x 8.5") sheet.

N

0 150 300 600 900 Meters

0 500 1000 2000 3000 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Escambia County, Florida
Survey Area Data: Version 14, Sep 23, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

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Table—Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Escambia County, Florida (FL033)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
21	Lakeland sand, 8 to 12 percent slopes	A	0.6	0.1%
25	Poarch sandy loam, 2 to 5 percent slopes	C	138.6	27.4%
33	Troup sand, 5 to 8 percent slopes	A	13.2	2.6%
36	Lucy loamy sand, 2 to 5 percent slopes	B	1.5	0.3%
38	Bonifay loamy sand, 0 to 5 percent slopes	A	97.2	19.2%
39	Bonifay loamy sand, 5 to 8 percent slopes	A	14.5	2.9%
43	Albany sand, 0 to 5 percent slopes	A/D	11.3	2.2%
46	Garcon-Bigbee-Yemassee complex, 0 to 5 percent slopes, occasionally flooded	B/D	107.9	21.4%
48	Pelham-Yemassee complex, occasionally flooded	B/D	9.9	2.0%
49	Dorovan muck and Fluvaquents, frequently flooded	B/D	14.2	2.8%
50	Bigbee-Garcon-Fluvaquents complex, flooded	B/D	45.5	9.0%
51	Pelham loamy sand, 0 to 2 percent slopes	B/D	15.6	3.1%
54	Troup-Poarch complex, 8 to 12 percent slopes	A	26.7	5.3%
99	Water		8.3	1.6%
Totals for Area of Interest			**505.2**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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