Gulf Power

March 8, 2019

Ms. Cindy Mulkey
Program Administrator
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 5500
Tallahassee, FL 32399-2400
Phone: 850-717-9000

Ms. Mulkey:

Gulf Power Company owns and operates the Plant Smith, an electric generating facility located at 4300 CR 2300, Panama City 32409, Bay County, Florida.

Gulf Power Company and Bay County have partnered to provide reclaimed water to Plant Smith. To support the project, the Plant Smith Unit 3 Conditions of Certification require modification and the certified site boundary needs to be expanded to support the various project components, including the well pump station and filtration/treatment system.

This petition for modification of the Conditions of Certification is being submitted to the Florida Department of Environmental Protection to support the above referenced project. The petition describes the reason for modification, changes to the site layout, and anticipated environmental impacts of the reclaimed water project and proposed changes or additions to the Conditions of Certification as a result of the project.

Sincerely,

Mike Markey,
Environmental Services Director

Enclosed:

- Copy of Check Number: 5000000688
- Conditions of Certification Modification Package

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TALLAHASSEE FL 32315-3070

Gulf Power Company

Paul Cutler

Gulf Power Company (1600 001532)
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REPORT

Site Certification Petition for Modification

Lansing Smith Plant Unit 3

Submitted to:

Siting Coordination Office (SCO)
2600 Blair Stone Road, MS 5500
Tallahassee, FL 32399-2400

Submitted by:

Golder Associates Inc.
5402 Beaumont Center Blvd, Suite 108, Tampa, Florida, USA 33634

On behalf of:

Gulf Power Company
One Energy Place, Pensacola, FL 32520

+1 813 287-1717

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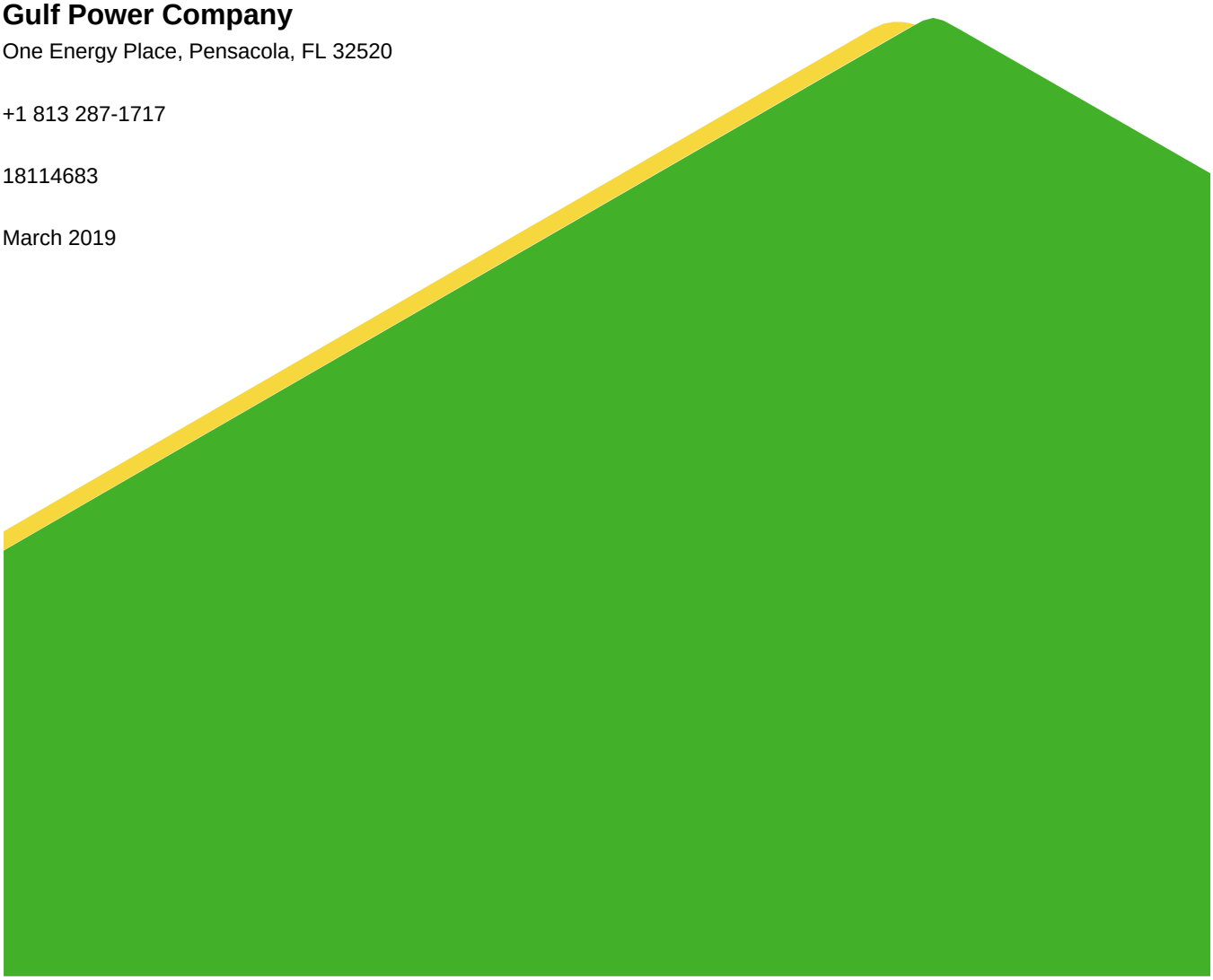
March 2019



Service List

:*CC by email*

Michael Weiss, Esquire
Department of Environmental Protection
Office of General Counsel
3900 Commonwealth Blvd., M.S. 35
Tallahassee, Florida 32399-3000
Michael.Weiss@dep.state.fl.us
SCO@dep.state.fl.us
Tanya.McHale@FloridaDEP.gov

Kimberly Menchion, Esquire
Jasmin Raffington
Department of Transportation
605 Suwannee Street, MS 58
Tallahassee, Florida 32399-0458
kimberly.menchion@dot.state.fl.us
jasmin.raffington@dot.state.fl.us

Lee Eng Tan, Esquire
Florida Public Service Commission
Office of General Counsel
2450 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850
LTan@psc.state.fl.us

Carlos A. Rey, Esquire
Assistant General Counsel
Florida Department of State
Office of General Counsel
R.A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250
carlos.rey@dos.myflorida.com
Robin.Jackson@DOS.MyFlorida.com

Brooke Lewis, Esquire
Hopping Green & Sams, P.A.
P.O Box 6526
Tallahassee, Florida 32317
brookel@hgslaw.com

Jon Morris, Esquire
Scott Rogers
Assistant General Counsel
Department of Economic Opportunity
107 East Madison Street
Tallahassee, Florida 32399-4128
Jon.Morris@deo.myflorida.com
Scott.Rogers@deo.myflorida.com

Andrew Grayson, Esquire
Florida Fish & Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, Florida 32399-1600
andrew.grayson@myfwc.com
FWCConservationPlanningServices@myfwc.com
Jason.hight@MyFWC.com

Breck Brannen, Esquire
General Counsel
Northwest Florida Water Management District
215 South Monroe Street – Suite 200
Tallahassee, Florida 32301
breck@penningtonlaw.com
Selina.potter@nwfwmd.com

Don Banks, County Attorney
Bay County
840 West 11th Street
Panama City, Florida 32401
dbanks@baycountyfl.gov
icrelling@baycountyfl.gov

Executive Summary

Gulf Power Company owns and operates the Lansing Smith Plant (Plant Smith). Plant Smith Unit 3 was certified under the Florida Power Plant Siting Act (PA 99-40) in August 2000. The certification authorizes the operation of Plant Smith Unit 3, a 574 megawatt (MW) natural gas-fired combined cycle unit, located within the existing Plant Smith property boundary. The Unit 3 steam condenser cooling system uses a closed-loop cooling tower to provide cooling water to the steam condenser and cooling system.

Gulf Power Company and Bay County have been working together to provide reclaimed water to Plant Smith. Under the partnership, the Bay County North Bay wastewater treatment plant and Deer Point Lake pump station will provide 3 to 5 million gallons a day of reclaimed water for cooling water supply to Plant Smith Unit 3. The water supply will be used for cooling tower makeup and the blowdown will be discharged into the facility's underground injection control (UIC) system. This beneficial reuse project will reduce Gulf Power's reliance on surface water and improve water quality in the Bay County area. The project is anticipated to be a catalyst for other wastewater utilities in the area to promote the re-use of reclaimed water.

Plant Smith currently has three industrial injection wells and a temporary injection well pump station which began service in 2016. Gulf Power is proposing to replace the temporary injection well with a permanent pump station and treatment system designed for the treatment and disposal of the Plant Smith Unit 3 cooling tower blowdown to support the reclaimed water project. The Plant Smith Unit 3 Conditions of Certification require modification and the certified site boundary needs to be expanded to support the various project components, including the well pump station and filtration/treatment system.

This petition for modification of the Conditions of Certification pursuant to 403.516(1)(c), F.S., 62-17.211(1)(b)(1), F.A.C. and Condition A.XXIII of the Conditions of Certification is being submitted to the Florida Department of Environmental Protection (FDEP) to support the above referenced project and to incorporate existing ERP permits located within the expanded site area into the Conditions.

ACRONYMS

ACOE	Army Corps of Engineers
CSV	Conservation
CSVH	Conservation Habitation
DA-1	Drainage Area 1
DA-2	Drainage Area 2
DHR	Florida Division of Historic Resources
FDEP	Florida Department of Environmental Protection
ft	foot/feet
IND	Industrial
LDR	Land Development Regulations
MW	megawatts
MGD	million gallons per day
PDA-1	Pre-development Drainage Area 1
PDA-2	Pre-development Drainage Area 2

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DRAWINGS

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APPENDICES

A. Applicable Environmental Permits

A-1. FDEP Environmental Resource Permit 03-0320483-001-EI

A-2. FDEP Environmental Resource Permit No: 0320483-004-EI/03

B. ERP Stormwater Report and Permit Application

C. Division of Historical Resources Due Diligence Review

1.0 INTRODUCTION

Gulf Power Company owns and operates the Lansing Smith Plant (Plant Smith), an electric generating facility located at 4300 CR 2300, Panama City 32409, Bay County, Florida, within Section 36, Township 2S, and Range 15W (See Figures 1 and 2). Units 1 and 2 were in operation from 1965 to 2016 and Unit 3 has been in operation since 2002.

Plant Smith Unit 3 was certified under the Florida Power Plant Siting Act (PA 99-40) in August 2000. The certification authorizes the operation of Smith Unit 3, a 574 megawatt (MW) natural gas-fired combined cycle unit, located within the existing Smith Plant property boundary.

Gulf Power Company and Bay County have been working together to provide reclaimed water to Plant Smith. To support the project, the Plant Smith Unit 3 Conditions of Certification require modification and the certified site boundary needs to be expanded to support the various project components, including the well pump station and filtration/treatment system.

This petition for modification of the Conditions of Certification pursuant to 403.516(1)(c), F.S., 62-17.211(1)(b)(1), F.A.C. and Condition A.XXIII of the Conditions of Certification is being submitted to the Florida Department of Environmental Protection (FDEP) to support the above referenced project. The petition describes the reason for modification, changes to the site layout, and anticipated environmental impacts of the reclaimed water project and proposed changes or additions to the Conditions of Certification as a result of the project.

2.0 PROJECT DESCRIPTION

Plant Smith Unit 3 consist of two combustion turbines (CTs), two Heat Recovery Steam Generators (HRSGs), and one steam turbine (ST) which operates as a combined cycle plant to produce 519 MW when operating at full load, and a maximum generating capacity of 574 MW. The Unit 3 steam condenser cooling system uses a closed-loop cooling tower to provide cooling water to the steam condenser and cooling system. Cooling tower make-up water is withdrawn from the discharge canal or will be provided by Bay County.

The Bay County North Bay wastewater treatment plant and Deer Point Lake pump station will provide 3 to 5 million gallons a day of reclaimed water for cooling water supply to Plant Smith Unit 3. The water supply will be used for cooling tower makeup and the blowdown will be discharged into the facility underground injection control (UIC) system. Plant Smith Unit 3 currently has three (3) industrial injection wells and a temporary injection well pump station located in the northeast corner of the site which began service in 2016. The wells and temporary pump station which was permitted under ERP 03-0320483-001-EI (issued November 2013) began service in 2016. A gravel access road constructed to connect the main developed portion of the Plant Smith injection well site to Smith Unit 3 has been authorized via Permit ERP-0320483-04-EI/03 (issued December 2017).

Gulf Power is proposing to replace the temporary injection well pump station with a permanent pump station and treatment system. A permanent injection well pump station is being designed for the disposal of the Plant Smith Unit 3 cooling tower blowdown in order to support the Bay County reclaimed water project. The treatment system will provide filtration and pH adjustment of the cooling tower blowdown prior to disposal into the injection wells. The temporary construction staging, and stockpile area is located within the existing certified site area (see Figure 3). Gulf Power proposes to expand the site boundary to the north and east to accommodate the pump station and treatment system (see Figure 4).

This Petition for Modification also includes a request to incorporate the following permits and applicable permit conditions into the Plant Smith Unit 3 Conditions of Certification to support the reclaimed water supply project:

- FDEP Environmental Resource Permit 03-0320483-001-EI (issued November 2013) which authorized the construction and operation of 4 deep injection well sites and their associated monitoring wells and pumping stations. Stormwater treatment for the project is provided by a wet detention pond (see Appendix A-1).
- FDEP Environmental Resource Permit No: 0320483-004-EI/03 (issued December 2017) which authorized the construction of the gravel access road to connect the main development portion of the plant to the IW-4 site. Stormwater treatment for the 0.7-acre road drainage basin is provided by a wet detention pond (see Appendix A-2).

Additionally, the petition includes information to address the design of the construction staging area, the wet detention stormwater pond system associated with the proposed injection well pump station and treatment system and the associated wetland impacts (3.17 permanent and secondary acres). The system has been designed to meet the FDEP (and Army Corps of Engineers) and Bay County Land Development Regulations, Chapter 24 Drainage/Stormwater Management.

The petition for modification includes documentation to address environmental impacts, archaeology and culture resource impacts and confirms concurrency with the Bay County Land Development Code.

3.0 ENVIRONMENTAL CHARACTERIZATION AND IMPACTS

3.1 Land Use and Zoning

3.1.1 Location and Vicinity

Plant Smith Unit 3 is located in an unincorporated portion of Bay County. The closest incorporated municipality to the plant is Lynn Haven, which is about 3.5 miles southeast of the site. Downtown Panama City is located about 8.3 miles south southeast of the site. The plant is located adjacent to Alligator Bayou which is situated along the north shore of North Bay. The plant and site are accessed by Bay County Road 2300.

Land surrounding the plant is presently undeveloped. The closest development is residential use located about 1.4 miles northeast of the plant.

3.1.2 Comprehensive Plan

The Bay County Comprehensive Plan governs future land use and long-range planning for the site and adjacent areas. The Future Land Use classification of Plant Smith Unit 3 and existing certified site boundary is Industrial (IND) (Figure 5). Land immediately adjacent to the plant and existing certified site boundary is classified as Conservation (CSV). Allowable uses for IND under the Comprehensive Plan include:

- Industrial parks, commerce parks, multi-use "flex parks", commercial, office, conservation, public/institutional, renewable energy facilities, and other similar uses as may be described in the Land Development Regulations.

The existing Plant Smith Unit 3 falls under the public utility definition. Public utility is defined in Bay County Land Development Regulations (LDR's) as "A regulated utility provider with a franchise for providing to the public a utility service deemed necessary for the public health, safety and welfare. Public utilities are a listed allowable use in the public/institutional future land use category which is identified in the allowable uses in the IND future land use designation."

The land encompassed by the expansion of the certified site boundary is classified as Conservation (CSV). Allowable uses under the Comprehensive Plan include:

- Agricultural, Recreation, Public/Institutional, Residential, Planned Unit Development, Optional Sector Plans, dock, piers, seawalls, etc., public utilities, and other similar uses.

The direct reference to public utilities as an allowed use in the CSV classification suggests that the expanded infrastructure at Plant Smith Unit 3 can occur in the area depicted for the expansion of the certified site boundary.

3.1.3 Zoning

Land development in Bay County is governed by the Bay County LDR's. The zoning designation of Plant Smith Unit 3 within the existing certified site boundary is Industrial (IND-2) (Figure 6). Land immediately adjacent to the site and located within the modified certified site boundary is designated Conservation Habitation (CSVH). Public utilities are an allowable use in the IND-2 (LDR, Section 803.1 and 804.1) and CSVH (Section 705.1) zoning districts.

Bay County has development standards that the project will need to comply with. In addition, there are specific regulatory standards related to development in the CSVH Conservation Habitation Zoning District (LDR, Section 707.5. and 707.6.). The LDR specifically states the following pertaining to the property located within CSVH district:

- 707.5. Development will be under-taken so as to avoid activities that would destroy wetlands or the natural functions of wetlands except for activities authorized by permits issued by federal or state authorities.
- 707.6. No building or structure can be located closer than thirty (30) feet (ft) from any DEP wetland jurisdiction line, mean high water line, or ordinary high-water line except for piers, docks, or similar structures and an attendant ten (10) ft wide cleared path through the wetland for purposes of providing access to such structure, or wetland crossings required to connect dry, upland parcels. Established lawns in existence on the effective date of this Code may continue to be maintained."

3.2 Physical Environment

The permanent pump station and treatment system is proposed northeast of the existing Plant Smith Unit 3 in an area that is mostly undeveloped wetlands. The site is very flat with elevation ranging from 8.5 to 12 ft. The area north of the project contains the existing temporary injection well pump station and injection wells.

Topography

The site is very flat with elevations ranging from 8.5 to 12 ft. Existing drainage patterns are to the southeast. Most of the wetland area is at elevation 10 ft with the existing developed area about elevation 11 (ERP Stormwater Report, CH2M, 2018) (Figure 7).

Floodplain

The designated FEMA floodplain for the site is Zone A. Zone A is within the designated 100-year floodplain but does not have a base flood elevation determined. The designated floodplain is a relatively large area that connects to adjoining wetlands and land at similar elevations (ERP Stormwater Report, CH2M, 2018) (Figure 8).

Soils

A geotechnical investigation was conducted by Universal Engineering Sciences to determine the bearing capacity and soil characteristics underlying the proposed structures and ponds. Subsurface conditions within 10.5 ft of surface consists of very loose to dense sand (SP), slightly silty sand (SP-SM), slightly clayey sand (SP-SC),

clayey sand (SC) and wood. Groundwater was observed between 0 and 1.2 ft below existing grade (ERP Stormwater Report, CH2M, 2018) (Figure 9).

3.3 Ecology

The Plant Smith site has an historic ecology of hydric pine flatwoods landscape (State of Florida FLUCC code 625, St. Andrews Bay watershed, Class II waters). The Plant Smith land area has a geographic and hydrologic connection through wetlands, surface waters and uplands with North Bay which influences West Bay, St. Andrews Bay, and Gulf of Mexico. This historical community is forest with sparse to moderate canopy of slash pine. The understory is grasses, wire grass, forbs, and saw palmetto.

This area is currently dominated by Silviculture slash pine, wax myrtle, water oak, Titi, and myrtle leaf holly. The existing land use and land cover within one mile of the project area are depicted on Figure 10. The existing vegetation and land use within one mile of the project area are depicted on Figure 11.

Due to silviculture activities, historical ditches, and drainage, the historic hydrogeology of the area has been altered. The total disturbed area for the project is 8.69 acres, which includes 2.04 acres of permanent wetland impacts, 1.13 acres of secondary impacts and 6.65 acres of upland impacts (See DWG C-03, CH2M, 2018 – Appendix B). The combined permanent and secondary wetland impact of the project is 3.17 acres (See DWGs C-06 and C-07, CH2M, 2018 - Appendix B).

Wildlife which may utilize the area include raccoons, squirrel, white tail deer, frogs, snakes, crayfish, and song birds. Silviculture and fire suppression of the area has degraded wildlife usage. Additionally, power plant activities also restrict and limit wildlife access, due to active work disturbance, access roads, and perimeter fencing.

Construction of the proposed project will result in the unavoidable loss of 2.04 acres of wetlands. To compensate for the loss of the wetlands, Gulf Power will is proposing to purchase 1.36 Wet Prairie /Hydric Pine Flatwoods mitigation credits from Breakfast Point Mitigation Bank, Panama City Beach, FL.

3.3.1 Threatened and Endangered Species

State and Federal listed species were not identified within this assessment area. Below are species that are active within this portion of Northwest Florida.

1) Bald Eagle (*Haliaeetus leucocephalu)* have been seen within this area but are not known to nest within Plant Smith boundary. A visual inspection was completed for active or inactive nest sites. No Bald Eagle nest sites were located.

2) Red Cockaded woodpecker *(Leuconotopicus borealis)* has not been identified within Plant Smith boundary. The current forest pine DBH size is not large enough to accommodate pine tree nest cavities for RCW.

3) Indigo Snake *(Drymarchon couperi)* and Gopher Tortoise *(Gopherus polyphemusare)* are not known to inhabit the assessment area. This area doesn't contain a sufficient amount of upland habitat to support them. No Gopher Tortoise burrows have been identified with Plant Smith boundary.

3.4 Air Impacts

On January 28, 2019, Gulf Power submitted an application for the authorization to install upgrades and make modifications to the Smith Unit 3 combustion turbines and on March 1, 2019, the draft construction permit was issued by FDEP.

3.5 Water Use and Wastewater Discharge

Plant Smith Unit 3 uses a closed-loop cooling tower to provide cooling water to the steam condenser and cooling system. Up to 7.2 million gallons per day (MGD) of water, depending on load or other factors can be withdrawn from the discharge canal (via Units 1 and 2 intake structure) for cooling tower make-up. Plant Smith Unit 3 currently has authorization and monitoring requirements under the FDEP NPDES Industrial Wastewater permit FL0002267 to utilize reclaimed water as the primary make-up water source for the recirculation cooling water system.

3.6 Stormwater

Pre-development Drainage Area 1 (PDA-1) in the northeast corner of the site is 2.95 acres and discharges to the existing wet detention stormwater pond through overland sheet flow and a shallow swale. The area is currently developed and contains an injection well, temporary pump station and other improvements surround by a gravel surface (FDEP Permit No. 03-0320483-001). The existing pond will be reshaped to accommodate the proposed project. Pre-development Drainage Area 2 (PDA-2) in the southwest portion of the site is 1.79 acres. PDA-2 is a wooded wetland and discharges to the south through sheet flow. The combined pre-development drainage area from the site is 4.74 acres.

The proposed site's runoff will drain to the improved existing pond (Pond 1) and the proposed wet detention stormwater pond (Pond 2) through overland sheet flow and side swales. The grading and layout of the 2.95-acre post development Drainage Area 1 (DA-1) is designed with a reduction of wooded area to the north for expanding Pond 1 and to the south to locate a drainage swale. Runoff from DA-1 drains to either Pond 1 directly by overland sheet flow or to a side swale that is hydraulically connected to Pond 1. Post-development Drainage Area 2 (DA-2) is 1.79 acres and will replace the wooded wetland area with the treatment filter system, above-ground tanks, two 18-inch equalization pipes under a new gravel road, and a new wet detention stormwater pond (Pond 2).

A third drainage area, DA-3, provides stormwater management for the temporary construction staging area and temporary sediment basin. The area (1.6 acres) will be located within a cleared area within the existing Unit 3 boundary. The temporary sediment basin will receive runoff from the staging area which will be raised approximately 2 feet to keep the area dry during construction.

The improvements to the existing pond (Pond 1), the proposed pond (Pond 2) and the construction staging area and temporary sediment basin are designed to meet the FDEP, Northwest Florida Water Management District and Bay County water quality and post-development peak discharge rates (See Drawings C-1 through C-17, CH2M - Appendix B).

3.7 Traffic

Construction traffic from the project will be minimal. Construction and operation of the proposed project is not anticipated to impact offsite traffic volumes or flows in the area.

3.8 Cultural and Archaeological Resources

The Florida Department of State – Florida Division of Historic Resources (DHR) has provided a letter of concurrence pertaining to Plant Smith Unit 3. On April 7, 1999, a letter of concurrence was issued stating that no significant archaeological or historical sites were recorded or likely to be present within the project area identified during the certification of Plant Smith Unit 3 (DHR Project File No. 991458). On January 24, 2019, Gulf Power requested (and received on January 25, 2019) concurrence from DHR that the proposed project would not have impacts on cultural resources (See Figure 13 and Appendix C).

4.0 CONDITIONS OF CERTIFICATION

The current Conditions of Certification were last modified August 2015. The incorporation of the ERP Permits 03-0320483-001-EI and Permit 0320483-004-EI/03 and the construction and operation of the proposed project will require revisions to the existing Conditions of Certification as noted below:

1.0 SECTION A: GENERAL CONDITIONS

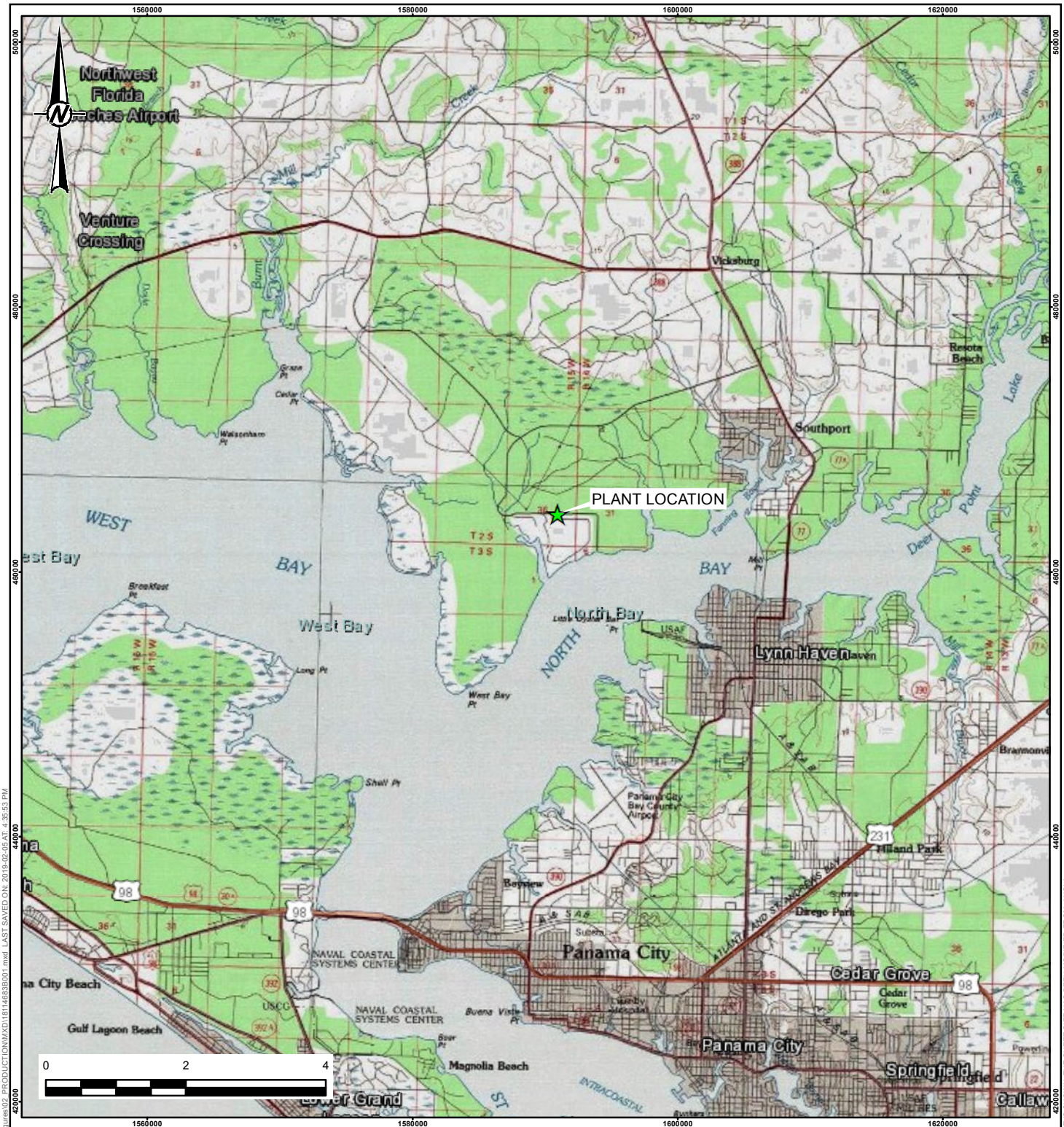
SCOPE

Pursuant to the Florida Electrical Power Plant Siting Act (PPSA), Sections 403.501-518, Florida Statutes (F.S.) this certification is issued to Gulf Power Company (GPC) as owner/operator and Licensee of Lansing Smith Unit 3. Subject to the requirements contained in these Conditions of Certification (Conditions) GPC will operate a nominal 631 ~~574~~ megawatt (MW) nameplate facility consisting of two nominal ~~170~~ 214 MW nameplate gas-fired stationary combustion turbine-electrical generators with duct-fired heat recovery steam generators (HRSGs), a steam turbine with 203 MW nameplate and associated facilities. This Unit is located on an ~~50~~ ~~-~~87-acre parcel within the Lansing Smith Electric generating Plant site which is located in Bay County, Florida. UTM coordinates are: Zone 16; 625.03 km East; 3349.08 km North. The Department does not intend, solely by the incorporation of these General Conditions, to require the retrofitting of existing certified facilities.

The Certified Facility includes but is not limited to the following major associated facilities;

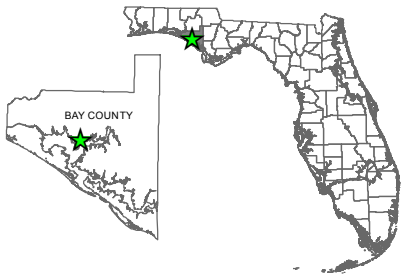
- Two 214 MW nameplate gas-fired stationary combustion turbines with HRSGs and steam turbine
- 2 - 121 foot stacks
- gas pipeline and heater
- 10 cell mechanical draft salt water cooling tower
- Water treatment and storage facilities
- Underground Injection Wells (TW-1, TW-2, IW-3 and IW-4)
- Filtration system and injection well pump station

FIGURES



LEGEND

★ Plant Location



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CLIENT
GULF POWER

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
GENERAL LOCATION MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-05
DESIGNED	JWT
PREPARED	JWT
REVIEWED	KP
APPROVED	MM

PROJECT NO.	CONTROL	REV.	FIGURE
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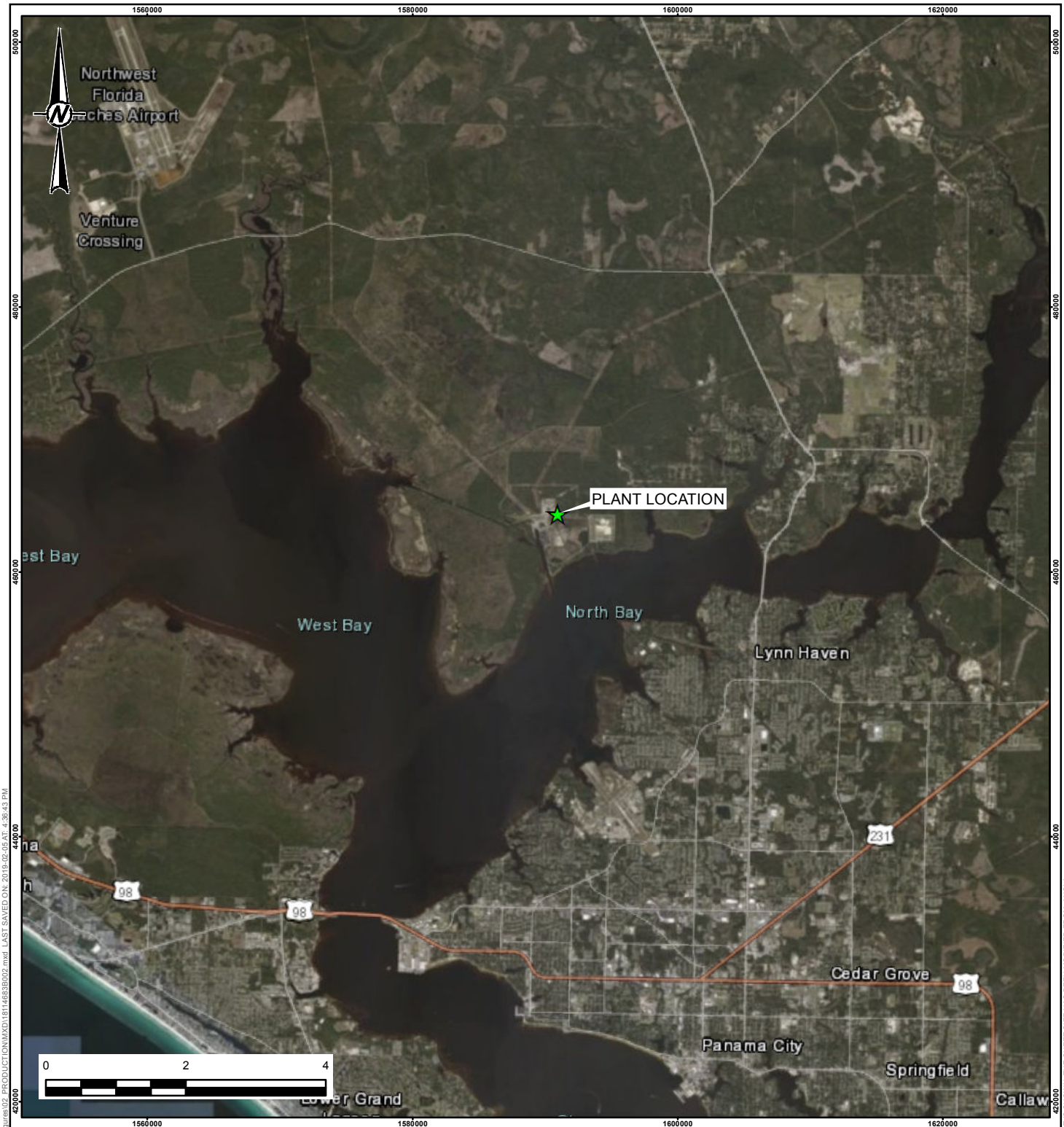
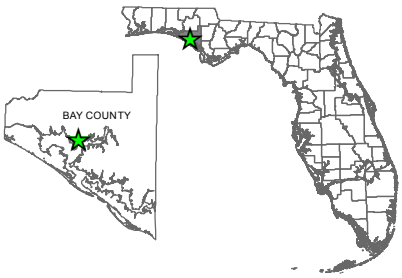


LEGEND

★ Plant Location



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CLIENT
GULF POWER

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
AERIAL LOCATION MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-05
DESIGNED	JWT
PREPARED	JWT
REVIEWED	KP
APPROVED	MM

PROJECT NO.	CONTROL	REV.	FIGURE
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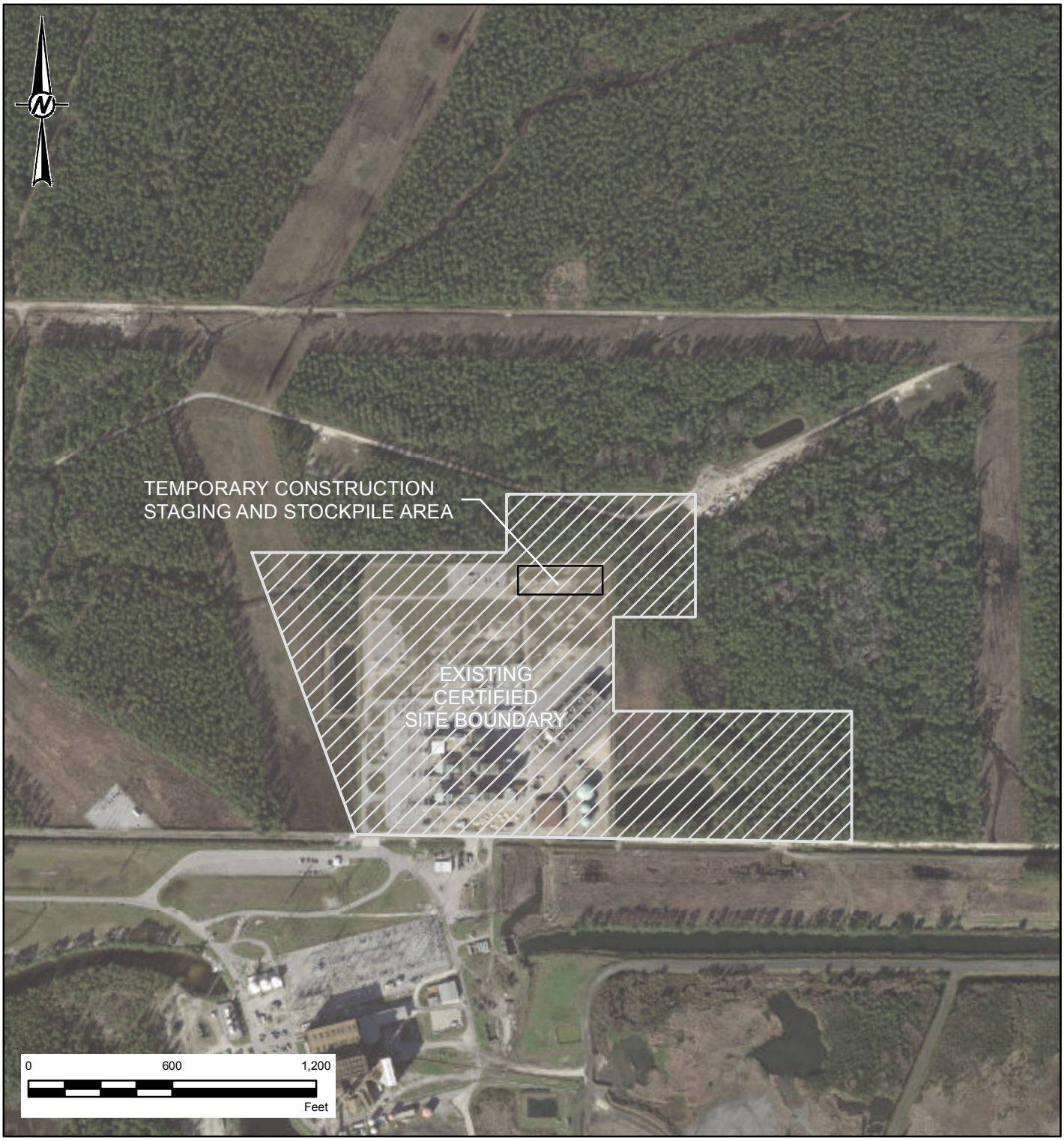


LEGEND

- Temporary Construction Staging Area
- Existing Certified Site Boundary

REFERENCE(S)

1. BASE IMAGERY: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

CLIENT
GULF POWER

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
CURRENT PLANT SMITH COC PROJECT BOUNDARY

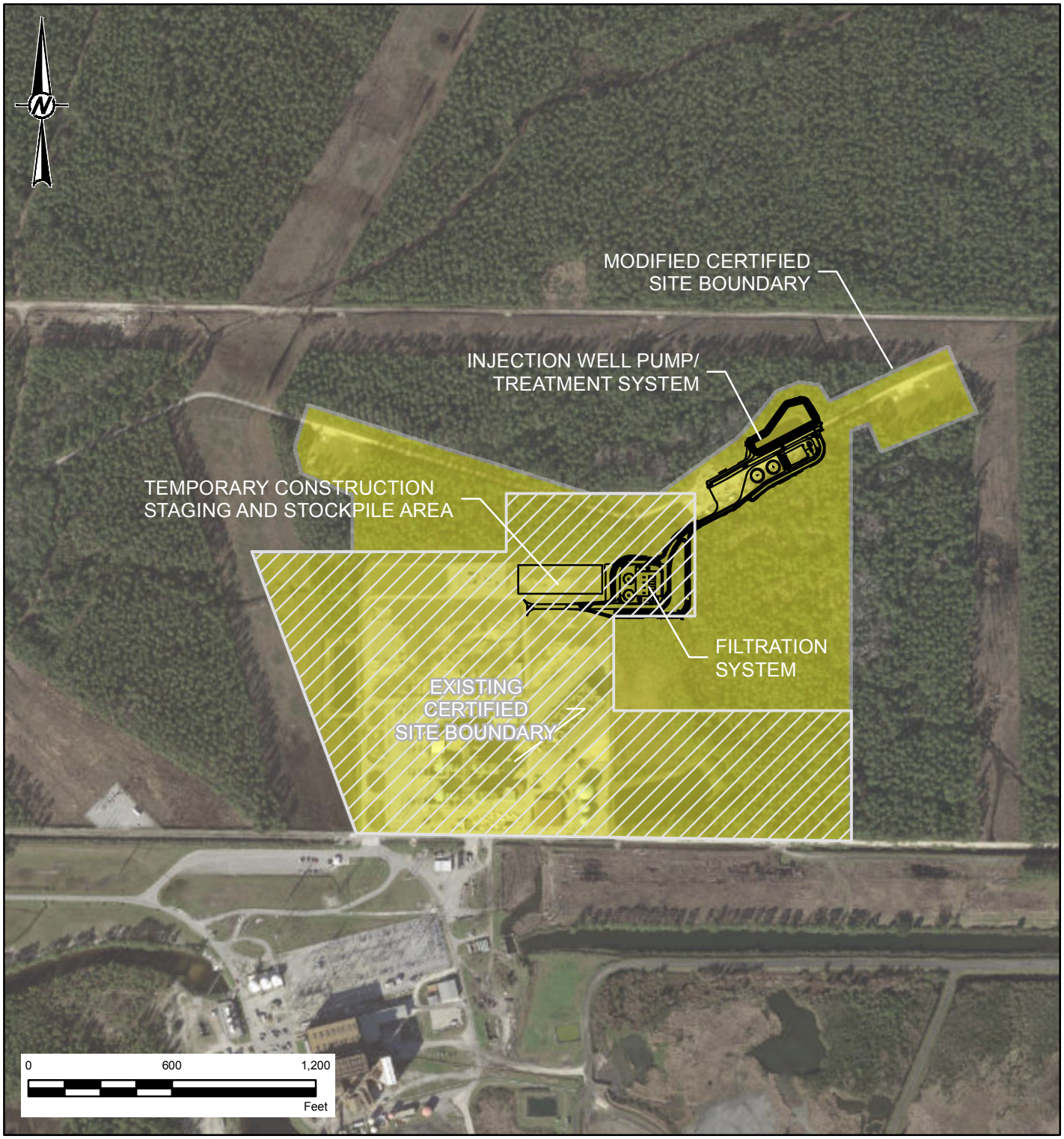
CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-28
DESIGNED	JWT
PREPARED	JWT
REVIEWED	KP
APPROVED	MM

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	18114683B003	0	3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

PATH: N:\Fla\2018\18-114683.Gulf Power\99_PROJECTS\18114683_COC_Mod\B_Petition_Figures\02_PRODUCTION\MXD\18114683B003.mxd LAST SAVED ON: 2019-02-28 AT: 12:19:20 PM



LEGEND

- Filtration System and Pump Station Site Plan
- Temporary Construction Staging Area
- Existing Certified Site Boundary
- Modified Certified Site Boundary

REFERENCE(S)

1. FILTRATION SYSTEM AND PUMP STATION SITE PLAN: CH2M, 10/2018
2. BASE IMAGERY: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

CLIENT
GULF POWER

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
PROPOSED PLANT SMITH COC PROJECT BOUNDARY

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-28
DESIGNED	JWT
PREPARED	JWT
REVIEWED	KP
APPROVED	MM

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	18114683B004	0	4

PATH: N:\File\2018\18-114683.Gulf Power\99_PROJECTS\18114683_COC_ModfB_Petition_Figures\02_PRODUCTION\MXD\18114683B004.mxd LAST SAVED ON: 2019-02-28 AT: 12:20:35 PM

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

LEGEND

- Existing Certified Site Boundary
- Modified Certified Site Boundary
- AG - Agricultural
- AGT - Agricultural Timberland
- CSV - Conservation
- IND - Industrial
- RES - Residential
- VC - Village Center
- WBPA - West Bay Preservation Area Sector Plan

REFERENCE(S)

1. FUTURE LAND USE: BAY COUNTY, 2018
2. BASE IMAGERY: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

CLIENT
GULF POWER

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
FUTURE LAND USE WITHIN 1 MILE OF PROJECT AREA

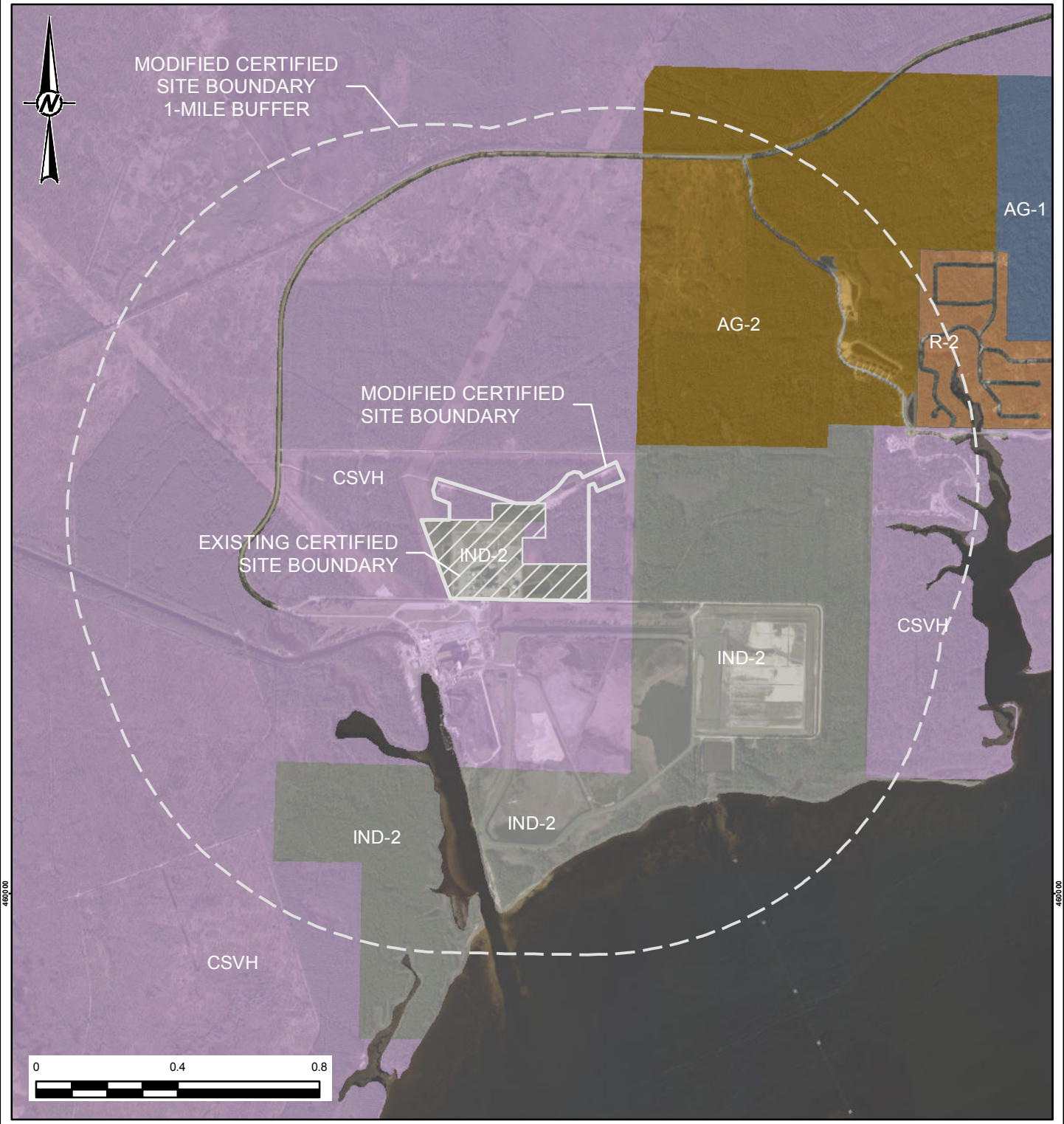
CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-28
DESIGNED	JWT
PREPARED	JWT
REVIEWED	KP
APPROVED	MM

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	18114683B006	0	5

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

PATH: N:\File\2018\18-14683.Gulf Power\99_PROJECTS\18114683_COC_ModfB_Petition_Figures\02_PRODUCTION\MXD\18114683B006.mxd LAST SAVED ON: 2019-02-28 AT: 12:22:47 PM



LEGEND

- Existing Certified Site Boundary
- Modified Certified Site Boundary
- AG-1 Agriculture
- AG-2 Agriculture/Timberland
- CSVH Conservation Habitation
- IND-2 Industrial
- R-2 - Duplex/Manufactured Housing

REFERENCE(S)

1. ZONING: BAY COUNTY, 2018
2. BASE IMAGERY: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

CLIENT
GULF POWER

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
ZONING WITHIN 1 MILE OF PROJECT AREA

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-28
DESIGNED	JWT
PREPARED	JWT
REVIEWED	KP
APPROVED	MM

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	18114683B005	0	6

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

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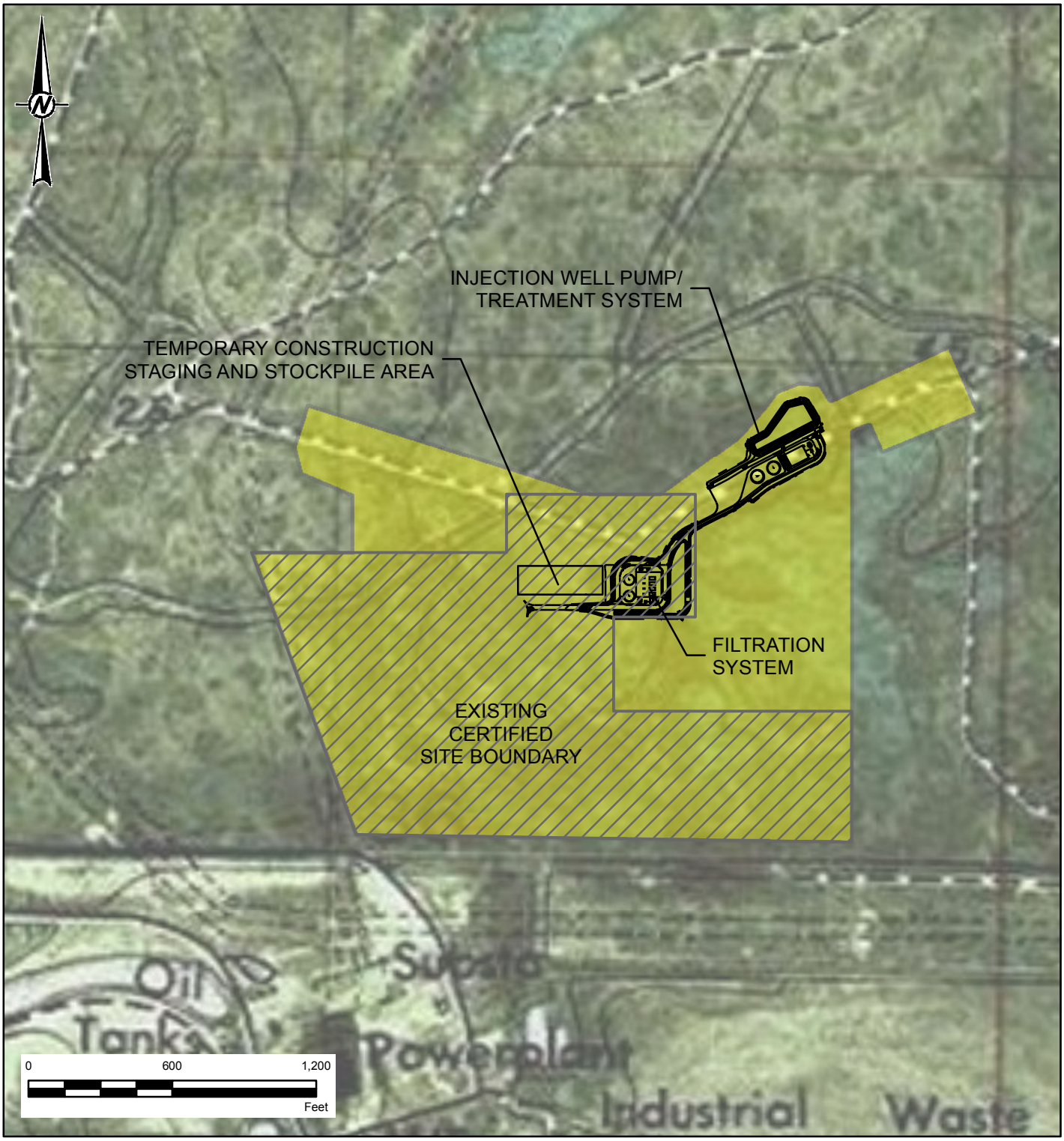

LEGEND

- Filtration System and Pump Station Site Plan
- Temporary Construction Staging Area
- Existing Certified Site Boundary
- Modified Certified Site Boundary

REFERENCE(S)

1. FILTRATION SYSTEM AND PUMP STATION SITE PLAN: CH2M, 10/2018
2. BASE IMAGERY: COPYRIGHT:© 2013 NATIONAL GEOGRAPHIC SOCIETY, I-CUBED

CLIENT
GULF POWER

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
TOPOGRAPHY MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-28
DESIGNED	JWT
PREPARED	JWT
REVIEWED	KP
APPROVED	MM

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	18114683B009	0	7

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
1 in
0

LEGEND

- Existing Certified Site Boundary
- Modified Certified Site Boundary
- Flood Hazard Area

REFERENCE(S)

1. FLOODPLAINS: FEMA, 2018
2. BASE IMAGERY: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

CLIENT
GULF POWER

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
FEMA FLOODPLAIN MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-28
DESIGNED	JWT
PREPARED	JWT
REVIEWED	KP
APPROVED	MM

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	18114683B010	0	8

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

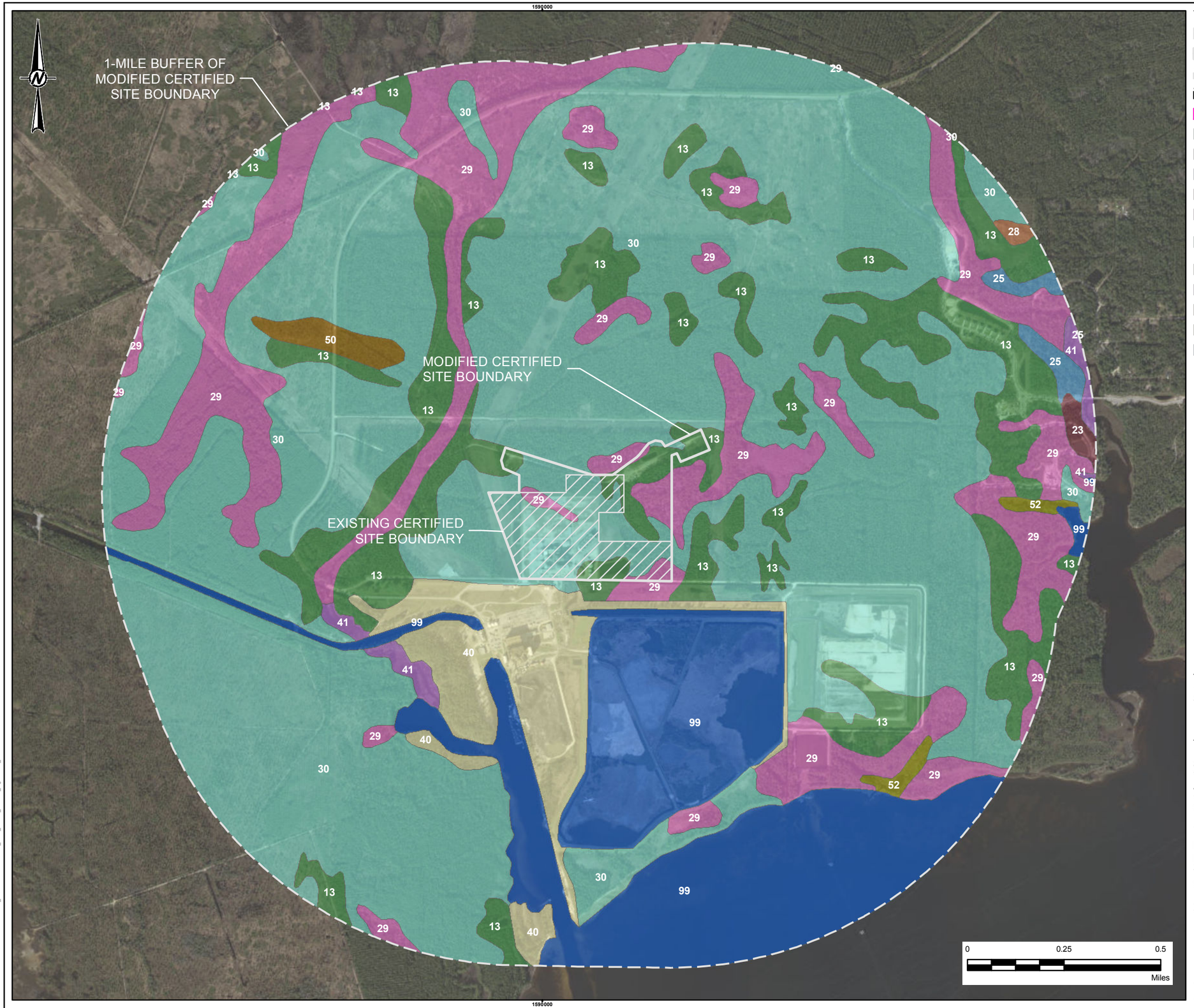
PATH: N:\File\2018\18-114683.Gulf Power\99_PROJECTS\18114683_COC_ModB_Petition_Figures\02_PRODUCTION\MXD\18114683B010.mxd LAST SAVED ON: 2019-02-28 AT: 12:26:21 PM

1590000

1-MILE BUFFER OF MODIFIED CERTIFIED SITE BOUNDARY

MODIFIED CERTIFIED SITE BOUNDARY

EXISTING CERTIFIED SITE BOUNDARY



1590000

LEGEND

- Existing Certified Site Boundary
- Modified Certified Site Boundary
- COC_boundary_proposed_buffer_1mi
- 1/2 Mile Buffer
- Plant Smith Boundary
- 13, Leon sand - 0 to 2 percent slopes
- 23, Chipley sand - 0 to 5 percent slopes
- 25, Hurricane sand - 0 to 2 percent slopes
- 28, Allanton sand
- 29, Rutlege sand - 0 to 2 percent slopes
- 30, Pottsburg-Pottsburg - wet - sand - 0 to 2 percent slopes
- 40, Arents - 0 to 5 percent slopes
- 41, Diregо muck
- 50, Pickney fine sand
- 52, Bayvi loamy sand
- 99, Water

NOTE(S)

1. USGS - UNITED STATES GEOLOGICAL SURVEY
2. NRSC - NATURAL RESOURCES CONSERVATION SERVICE

REFERENCE(S)

1. SOIL BOUNDARIES: USGS NRCS, 2003 (DOWNLOADED 2/6/2019)
2. IMAGERY: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

CLIENT
GULF POWER

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
SOILS MAP

CONSULTANT
GOLDER

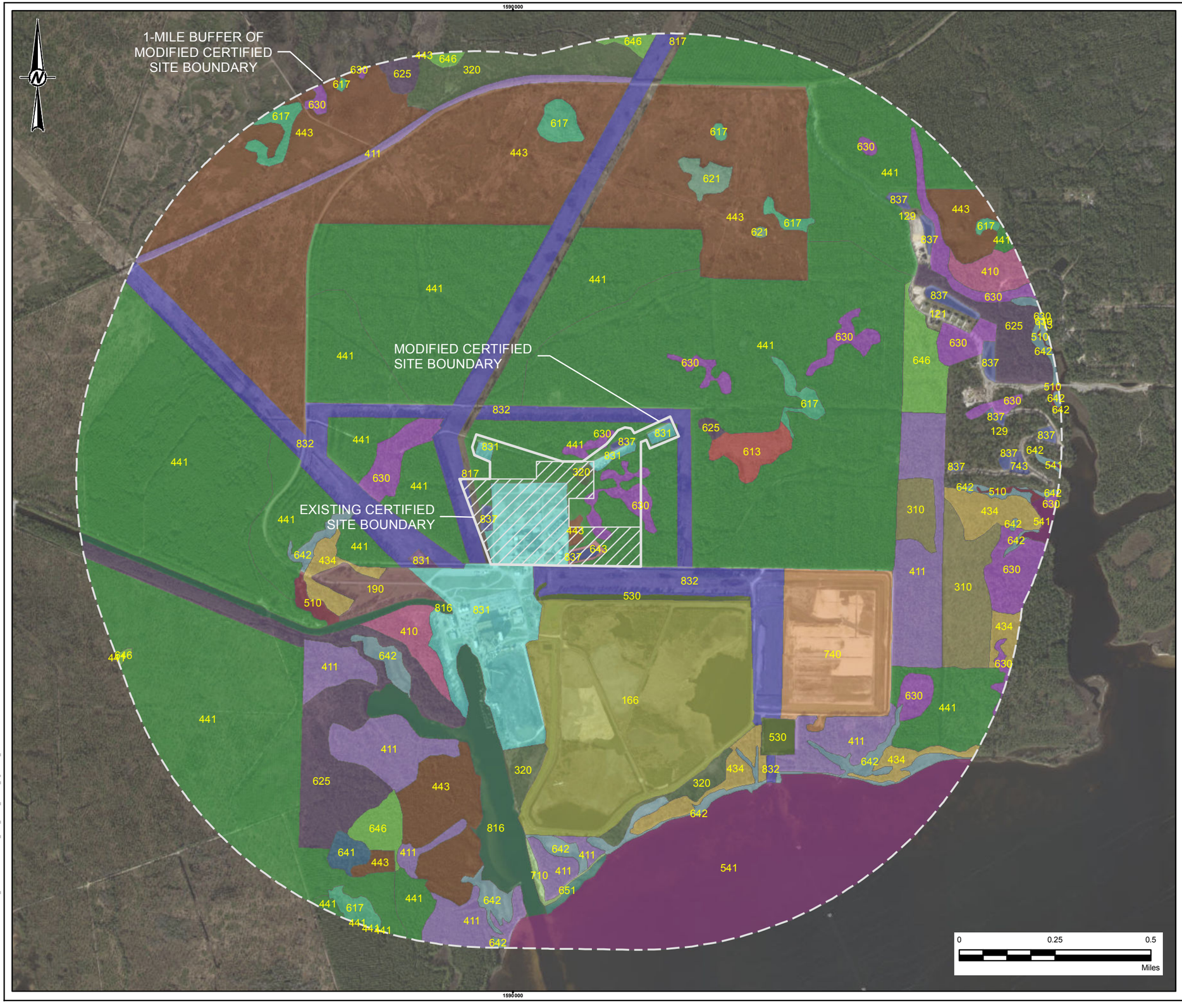
YYYY-MM-DD	2019-02-28
DESIGNED	JWT
PREPARED	JWT
REVIEWED	KP
APPROVED	MM

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	18114683B011	0	9

PATH: N:\File\2018\18-114683 Gulf Power\99_PROJECTS\18114683_COC_Mod\B_Petition_Figures\02_PRODUCTION\MXD\18114683B011.mxd LAST SAVED ON: 2019-02-28 AT: 12:27:01 PM

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

0 1 in



LEGEND

- Existing Certified Site Boundary
- Modified Certified Site Boundary
- 166, HOLDING PONDS
- 190, OPEN LAND (URBAN)
- 310, HERBACEOUS (DRY PRAIRIE)
- 320, SHRUB AND BRUSHLAND
- 410, UPLAND CONIFEROUS FORESTS
- 411, PINE FLATWOODS
- 434, UPLAND MIXED - CONIFEROUS / HARDWOOD
- 441, CONIFEROUS PLANTATIONS
- 443, FOREST REGENERATION AREAS
- 510, STREAMS AND WATERWAYS
- 530, RESERVOIRS
- 541, EMBAYMENTS OPENING DIRECTLY TO GULF OR OCEAN
- 613, GUM SWAMPS
- 617, MIXED WETLAND HARDWOODS
- 621, CYPRESS
- 625, HYDRIC PINE FLATWOODS
- 630, WETLAND FORESTED MIXED
- 641, FRESHWATER MARSHES
- 642, SALTWATER MARSHES
- 643, WET PRAIRIES
- 646, MIXED SCRUB-SHRUB WETLAND
- 651, TIDAL FLATS
- 710, BEACHES OTHER THAN SWIMMING BEACHES
- 740, DISTURBED LANDS
- 743, SPOIL AREAS
- 816, CANALS AND LOCKS
- 831, ELECTRIC POWER FACILITIES
- 831, ELECTRIC POWER SUB STATIONS
- 832, ELECTRICAL POWER TRANSMISSION LINES
- 837, SURFACE WATER COLLECTION FEATURES

REFERENCE(S)

1. LAND USE BOUNDARIES: NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT, 2016
2. IMAGERY: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

CLIENT
GULF POWER

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
EXISTING LAND USE / LAND COVER WITHIN 1 MILE OF PROJECT AREA

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-28
DESIGNED	JWT
PREPARED	JWT
REVIEWED	KP
APPROVED	MM

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	18114683B007	0	10

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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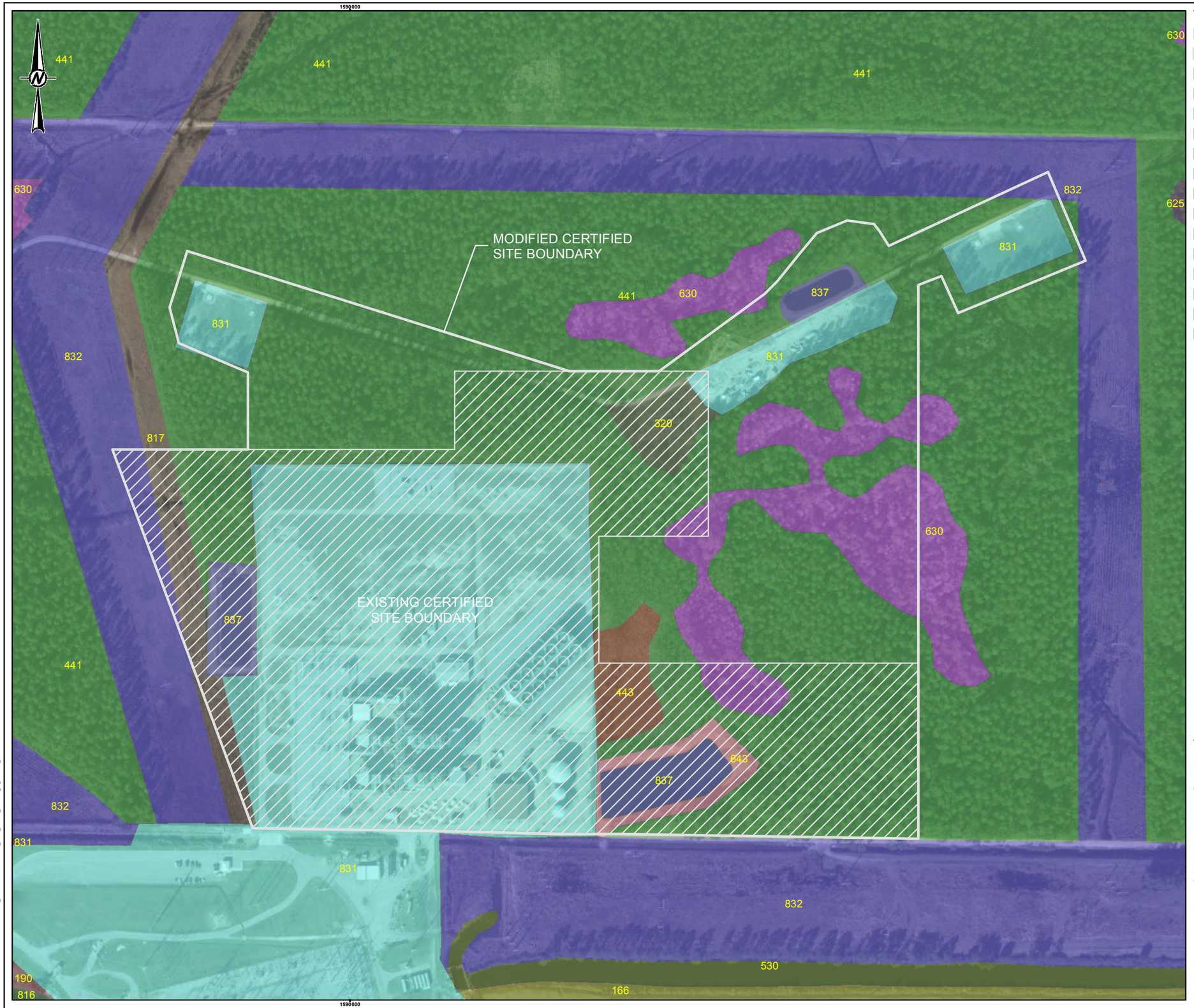

LEGEND

- Existing Certified Site Boundary
- Modified Certified Site Boundary
- 166, HOLDING PONDS
- 190, OPEN LAND (URBAN)
- 320, SHRUB AND BRUSHLAND
- 441, CONIFEROUS PLANTATIONS
- 443, FOREST REGENERATION AREAS
- 530, RESERVOIRS
- 625, HYDRIC PINE FLATWOODS
- 630, WETLAND FORESTED MIXED
- 643, WET PRAIRIES
- 816, CANALS AND LOCKS
- 831, ELECTRIC POWER FACILITIES
- 831, ELECTRIC POWER SUB STATIONS
- 832, ELECTRICAL POWER TRANSMISSION LINES
- 837, SURFACE WATER COLLECTION FEATURES

0 300 600
Feet

REFERENCE(S)
1. LAND USE BOUNDARIES: NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT, 2016
2. IMAGERY: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

CLIENT
GULF POWER

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
VEGETATION/LAND USE OF PROJECT AREA

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-28
DESIGNED	JWT
PREPARED	JWT
REVIEWED	KP
APPROVED	MM

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	18114683B008	0	11

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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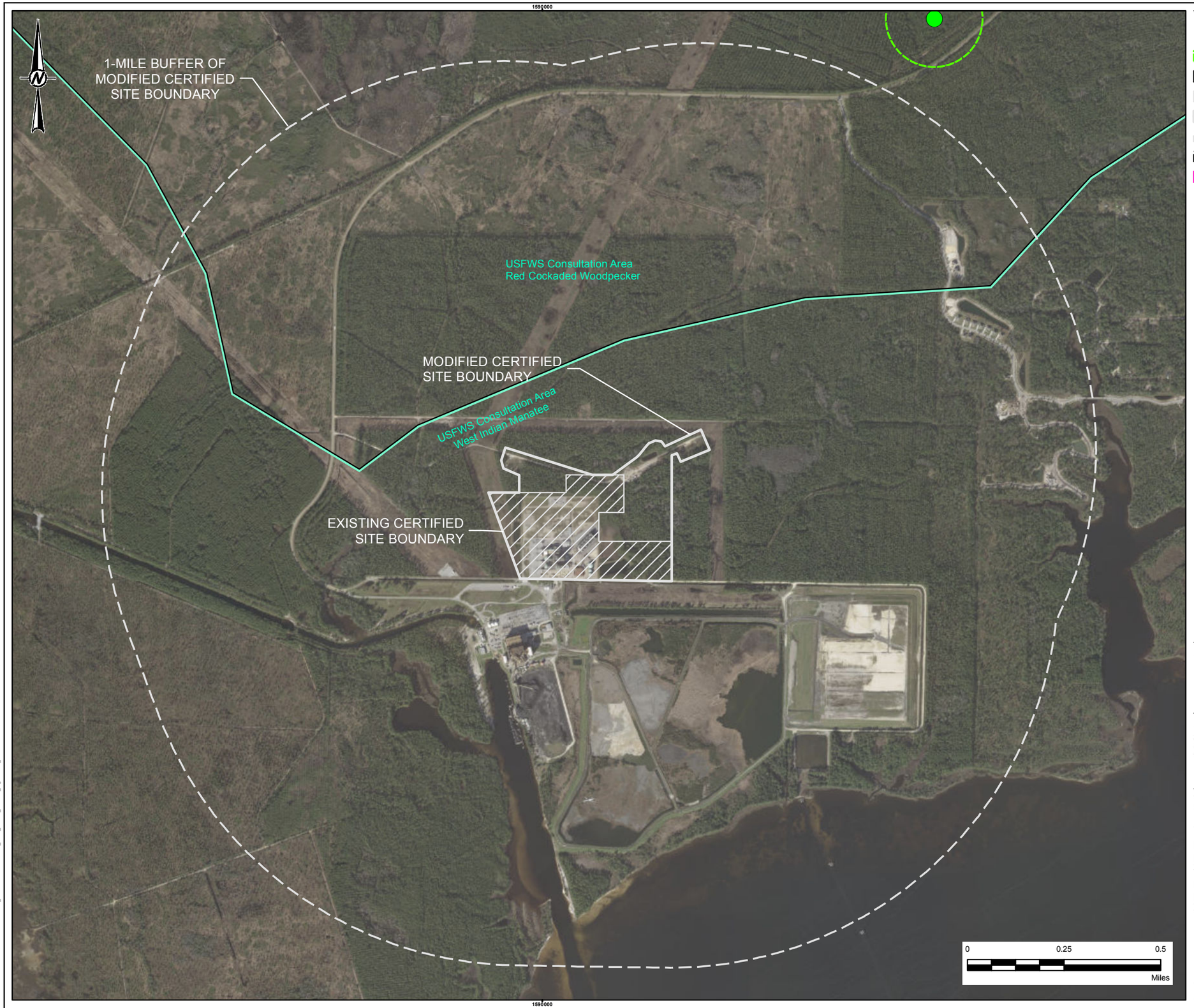


LEGEND

- Eagle Nest Observation
- Eagle Nest Observation 660ft Buffer
- USFWS Consultation Area
- Existing Certified Site Boundary
- Modified Certified Site Boundary
- COC_boundary_proposed_buffer_1mi
- 1/2 Mile Buffer
- Plant Smith Boundary

NOTE(S)

1. THE RED COCKADED WOODPECKER CONSULTRATION AREA IS COMPLETELY WITHIN THE MAP VIEW AND EXTENDS TO COVER A MAJORITY OF THE SOUTHERN PORTIONS OF THE FLOIDA PANHANDEL.

REFERENCE(S)

1. CONSULTATION AREA BOUNDARY: UNITED STATES FISH AND WILDLIFE SERVICE, 2018
2. EAGLE NEST OBSERVATION: FLORIDA FISH AND WILDLIFE COMMISSION, 2018
3. IMAGERY: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

CLIENT
GULF POWER

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
LISTED AND OBSERVED SPECIES WITHIN 1 MILES OF PROJECT AREA

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-28
DESIGNED	JWT
PREPARED	JWT
REVIEWED	KP
APPROVED	MM

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	18114683B012	0	12

PATH: N:\Fle\2018\18-114683 Gulf Power\99_PROJECTS\18114683_COC_ModB_Petition_Figures\02_PRODUCTION\MXD\18114683B012.mxd LAST SAVED ON: 2019-02-28 AT: 12:27:45 PM
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

1590000

1-MILE BUFFER OF MODIFIED CERTIFIED SITE BOUNDARY

Survey No. 6295

Survey No. 13311

Survey No. 13311

MODIFIED CERTIFIED SITE BOUNDARY

EXISTING CERTIFIED SITE BOUNDARY

Newman Bayou 2

Newman Bayou 1

Survey No. 12216

Survey No. 12216

Survey No. 13311

ALLIGATOR BAYOU

0 0.25 0.5 Miles

1590000

LEGEND

- Ineligible for NRHP
- Not Evaluated by SHPO
- Bay County Cultural Resource Survey Areas
- Existing Certified Site Boundary
- Modified Certified Site Boundary

REFERENCE(S)

1. CULTURAL RESOURCES: FLORIDA DEPARTMENT OF STATE DIVISION OF HISTORICAL RESOURCES, 2018
2. IMAGERY: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

CLIENT
GULF POWER

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
CULTURAL RESOURCES WITHIN 1 MILE OF PROJECT AREA

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-28
DESIGNED	JWT
PREPARED	JWT
REVIEWED	KP
APPROVED	MM

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	18114683B013	0	13

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

PATH: N:\File\2018\18-114683 Gulf Power\99_PROJECTS\18114683_COC_ModB_Petition_Figures\02_PRODUCTION\MXD\18114683B013.mxd LAST SAVED ON: 2019-02-28 AT: 12:28:23 PM

DRAWINGS

FILTRATION SYSTEM AND INJECTION WELL PUMP STATION

90% DESIGN - NOT FOR CONSTRUCTION

Gulf Power®

PREPARED FOR

GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

VOLUME 2 OF 2
DRAWINGS

Anthony Marcus Malone, State of Florida, Professional Engineer, License No. 67406.
This item has been electronically signed and sealed by Anthony Marcus Malone, PE on 2/22/2019 using a Digital Signature.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.
CH2M HILL ENGINEERS, INC. FL COA: 25861

For information regarding
this project contact:

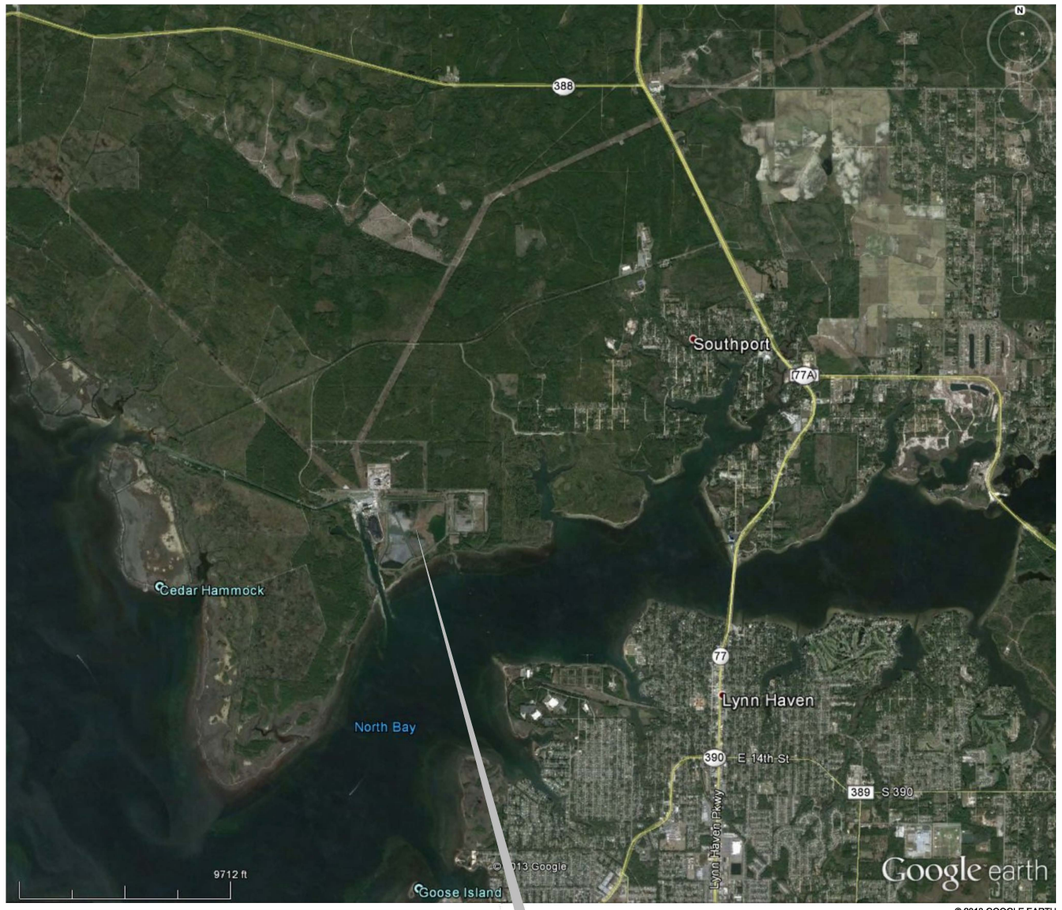
MIKE STICKLEY, P.E.
2112 ELEVENTH AVENUE SOUTH
SUITE 320
BIRMINGHAM, ALABAMA 35205
205-209-3013

ch2m SM
CH2M HILL ENGINEERS, INC.
643 SW 4TH AVE, SUITE 400, GAINESVILLE, FL 32601
FL COA: 25861

Project No. 474927

FEBRUARY 2019

PTS-001-G-000_474927.dgn



© 2013 GOOGLE EARTH

LOCATION MAP
NTS

N

PLANT SMITH
6804 BAY COUNTY ROAD 2300
PANAMA CITY, FL 32409

DRAWING INDEX

SHT NO	DWG NO	TITLE
GENERAL		
		COVER
1	G-01	DRAWING INDEX, LOCATION MAP
2	G-02	CIVIL NOTES AND LEGENDS
3	G-03	ARCHITECTURAL LEGEND AND GENERAL NOTES
4	G-04	STRUCTURAL NOTES
5	G-05	STRUCTURAL NOTES
6	G-06	PROCESS MECHANICAL LEGEND
7	G-07	HVAC AND PLUMBING LEGEND
8	G-08	ELECTRICAL LEGEND 1
9	G-09	ELECTRICAL LEGEND 2
10	G-10	ELECTRICAL LEGEND 3
11	G-11	ELECTRICAL NOTES
12	G-12	INSTRUMENTATION AND CONTROL LEGEND 1
13	G-13	INSTRUMENTATION AND CONTROL LEGEND 2
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15	C-02	FILTRATION SYSTEM AND PUMP STATION SITE PLAN
16	C-03	WETLAND IMPACTS
17	C-04	EROSION CONTROL AND DEMOLITION PLAN 1
18	C-05	EROSION CONTROL AND DEMOLITION PLAN 2
19	C-06	GRADING AND LAYOUT PLAN 1
20	C-07	GRADING AND LAYOUT PLAN 2
21	C-08	YARD PIPING PLAN 1
22	C-09	YARD PIPING PLAN 2
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24	C-11	STORMWATER DETAILS AND SECTIONS
25	C-12	FILTER BACKWASH PIPE PLAN AND PROFILE
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34	S-06	FILTER FEED WATER TANK 2 SECTION
35	S-07	FILTRATION BACKWASH TANK PAD PLAN
36	S-08	FILTRATION BACKWASH TANK PAD SECTIONS
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38	S-10	FEED TANK 1 ROOF PLAN
39	S-11	FEED TANK 1 SECTION
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42	S-14	FEED TANK 2 ROOF PLAN
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44	S-16	FEED TANK 2 DETAILS
45	S-17	PUMP STATION FOUNDATION PLAN
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47	S-19	PUMP STATION SECTION
48	S-20	PUMP STATION SECTION
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52	A-03	PUMP STATION ELEVATIONS
53	A-04	PUMP STATION SECTIONS
54	A-05	PUMP STATION SCHEDULES
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57	M-03	PUMP STATION HCI DOSING SYSTEM SECTIONS
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62	H-02	PUMP STATION SECTIONS
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75	N-04	P&ID FILTRATION SYSTEM TO PUMP STATION
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78	N-07	P&ID PUMP STATION HCL
79	N-08	P&ID PUMP STATION GENERATOR
80	N-09	NETWORK BLOCK DIAGRAM

DRAWING INDEX

SHT NO	DWG NO	TITLE
DEMOLITION		
81	D-01	SITE PLAN TEMPORARY SYSTEM
82	D-02	RECEIVING FACILITY PLAN
83	D-03	RECLAIMED FILTRATION AND HOLDING FACILITY PLAN
84	D-04	RECLAIMED FILTRATION AND HOLDING FACILITY SECTIONS AND ISOMETRIC
85	D-05	RECLAIMED FILTRATION AND HOLDING FACILITY PLAN
86	D-06	ONE LINE DIAGRAM AND CONTROL BUILDING PLAN EXISTING ELECTRICAL BUILDING
87	D-07	PANEL SCHEDULE AND CONTROL DIAGRAM EXISTING ELECTRICAL BUILDING
88	D-08	OVERALL ELECTRICAL SITE PLAN
89	REF	MONITORING WELL 1 ANNULAR MONITORING SYSTEM 1
90	REF	SITE PIPING
91	REF	STANDARD DETAILS
STANDARD DETAILS		
92	SD-01	CIVIL STANDARD DETAILS
93	SD-02	STRUCTURAL STANDARD DETAILS
94	SD-03	STRUCTURAL STANDARD DETAILS
95	SD-04	STRUCTURAL STANDARD DETAILS
96	SD-05	STRUCTURAL STANDARD DETAILS
97	SD-06	STRUCTURAL STANDARD DETAILS
98	SD-07	ARCHITECTURAL STANDARD DETAILS
99	SD-08	ARCHITECTURAL STANDARD DETAILS
100	SD-09	ARCHITECTURAL STANDARD DETAILS
101	SD-10	PLUMBING STANDARD DETAILS
102	SD-11	PLUMBING STANDARD DETAILS

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CH2M HILL ENGINEERS, INC. FL COA: 25861

NO.	DATE	DSGN	DR	CHK	APVD	BY	APVD
		M STICKLEY	KL DIAZ				

REVISION

25 West Cedar Street, Suite 350
Pensacola, Florida
United States, 32502-5975
Tel: +1(850)438-2740

FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

GENERAL

DRAWING INDEX, LOCATION MAP

NTS
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	G-01
SHEET	of

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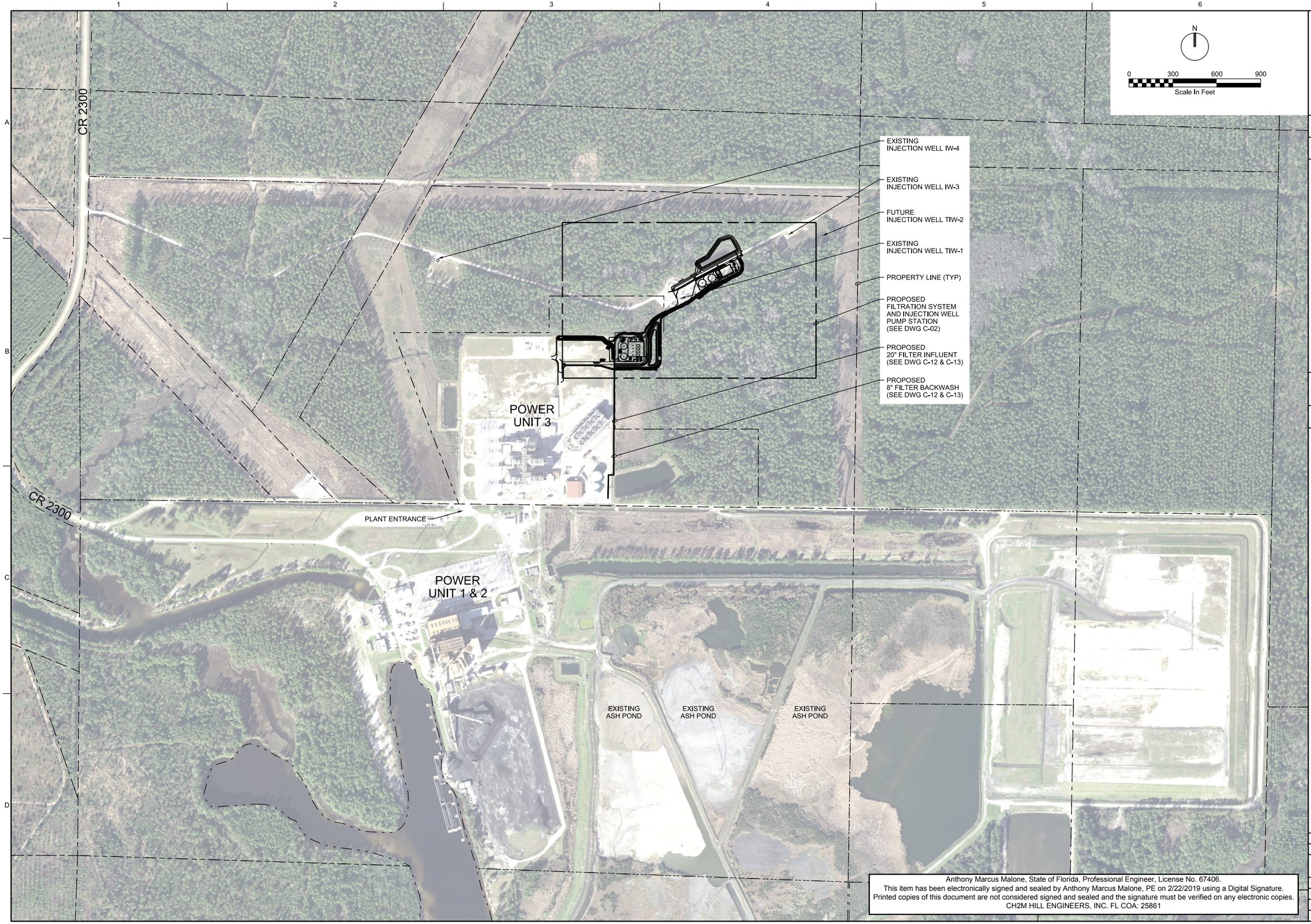

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REVISION BY APVD

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FILTRATION SYSTEM AND
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GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
OVERALL
SITE PLAN

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DATE	FEBRUARY 2019
PROJ	474927
DWG	C-01
SHEET	of

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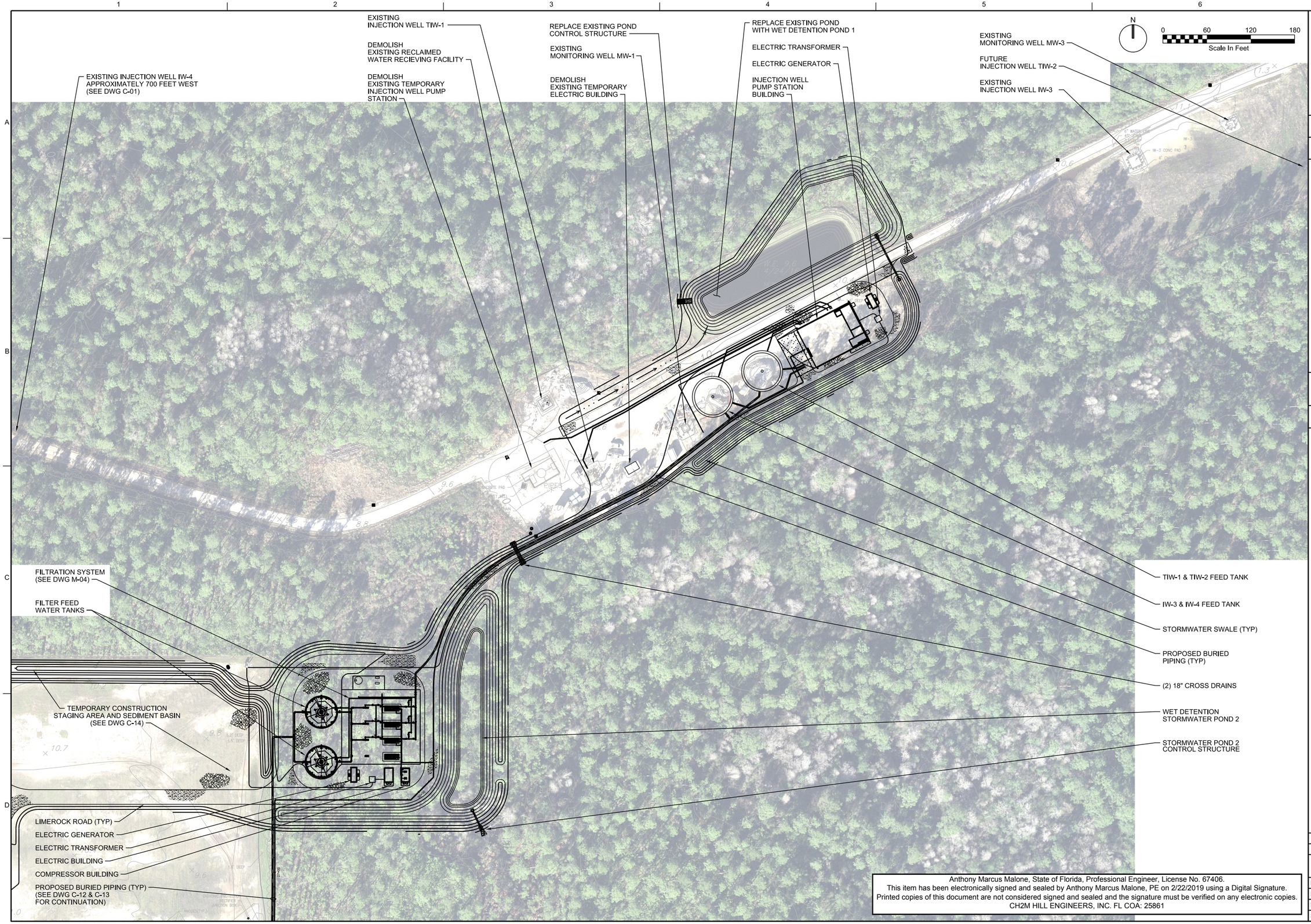

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FILTRATION SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL

FILTRATION SYSTEM AND PUMP STATION SITE PLAN

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DATE	FEBRUARY 2019
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DWG	C-02
SHEET	of

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IMPACT SUMMARY

1. TOTAL PROJECT AREA = 8.69 AC
   (LIMITS OF DISTURBANCE)
2. WETLAND IMPACT AREA = 2.04 AC
3. 25 FT SECONDARY WETLAND IMPACT = 1.13 AC
4. TOTAL WETLAND & SECONDARY IMPACT AREA = 3.17 AC
5. UPLAND IMPACT AREA = 6.65 AC

* WETLANDS DELINEATION WAS PERFORMED BY JEFF COLE OF GULF POWER COMPANY.

EROSION CONTROL NOTES

1. CLEAR AND GRUB PATH FOR SILT FENCE INSTALLATION.
2. INSTALL SILT FENCE.
3. PREPARE TEMPORARY CONSTRUCTION STAGING AREA AND ASSOCIATED TEMPORARY SEDIMENT BASIN.
4. PARTIALLY EXCAVATE WET DETENTION STORMWATER POND AND SWALE TO SERVE AS TEMPORARY SEDIMENT BASIN.
5. ADD FILL AND GRADE PER PLAN. TEMPORARILY SEED AND MULCH DISTURBED AREAS DURING CONSTRUCTION.
6. CONSTRUCT IMPROVEMENTS PER THE PLANS.
7. BAHIA SOD AND SEED DISTURBED AREAS PER THE PLANS.

QUANTITIES

1. CUT VOLUME = 4,571 CY
2. FILL VOLUME = 11,540 CY *
3. NET FILL = 6,969 CY
4. LIMEROCK AND GRAVEL AREAS = 1.40 AC
5. PADS, TANKS AND STRUCTURES = 0.64 AC
6. PONDS AND SWALE AREAS = 1.55 AC

* FILL NOT INCLUDED FOR TEMPORARY / CONSTRUCTION STAGING AREA

EXISTING INJECTION WELL TIW-1
DEMOLISH EXISTING RECLAIMED WATER RECIEVING FACILITY
DEMOLISH EXISTING TEMPORARY INJECTION WELL PUMP STATION
EXISTING MONITORING WELL MW-1
DEMOLISH EXISTING TEMPORARY ELECTRIC BUILDING
INJECTION WELL FEED TANKS
REPLACE EXISTING POND WITH WET DETENTION POND 1
INJECTION WELL PUMP STATION BUILDING
EXISTING MONITORING WELL MW-3
EXISTING INJECTION WELL IW-3
25' WETLAND SETBACK
ASSUMED WETLAND LIMITS BASED ON AERIAL IMAGE AND SITE VISIT
PROPOSED LIMITS OF DISTURBANCE FOR CONSTRUCTION (UPLAND & WETLANDS) AREA = 8.65 ACRES
SILT FENCE (TYP)
TEMPORARY SEDIMENT BASIN (SEE DWG C-14)
TEMPORARY CONSTRUCTION STAGING AREA (SEE DWG C-14)
PROPOSED LIMEROCK ROAD TO CONNECT TO EXISTING LIMEROCK ROAD
WETLAND IMPACT AREA = 2.04 AC (SEE DWG C-13 FOR CONTINUATION)
EXISTING BURIED PIPING (TYP)
PROPOSED BURIED PIPING (TYP)
25 FT SECONDARY WETLAND IMPACTS AREAS = 1.13 ACRES
WETLAND LIMITS FROM ONSITE DELINEATION (TYP)
WET DETENTION STORMWATER POND 2
FILTRATION SYSTEM
FILTER FEED WATER TANKS

N
0 60 120 180
Scale In Feet

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LEGEND

- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER

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25 West Cedar Street, Suite 350
Pensacola, Florida
United States, 32502-5975
Tel: +1(850)438-2740

FILTRATION SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
WETLAND IMPACTS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
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DWG	C-03
SHEET	of

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N

0 30 60 90
Scale In Feet

NOTES

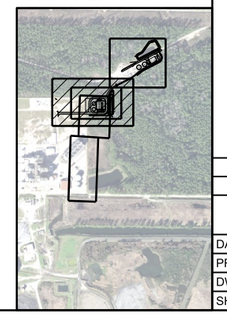
1. SEE DWG C-03, WETLAND IMPACTS, FOR SUMMARY OF WORK WITHIN THE WETLANDS, UPLANDS AND BUFFERS.
2. THE SILT FENCE WITHIN THE WETLAND SHALL BE INSTALLED BY CLEARING AND GRUBBING A 10' MAXIMUM STRIP PRIOR TO ANY OTHER CLEARING WORK WITHIN THE WETLANDS. SILT FENCE SHALL BE PLACED AT THE EDGE OF THE CLEARING LIMITS.
3. THE PROPOSED STORMWATER WET DETENTION POND SHALL BE CONSTRUCTED AFTER CLEARING AND GRUBBING. IT SHALL SERVE AS THE SEDIMENT BASIN DURING CONSTRUCTION AND FILL PLACEMENT. STAGE CONSTRUCTION OF THE POND TOP WITH FILL PLACEMENT FOR POSITIVE FLOW INTO THE POND.
4. TEMPORARILY SEED AND MULCH DISTURBED AREAS IF THOSE AREAS WILL REMAIN UNIMPROVED WITH A FINAL SURFACE TREATMENT FOR MORE THAN 7 DAYS.

LEGEND

- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER

DEMOLISH EXISTING RECLAIMED WATER RECEIVING FACILITY
DEMOLISH EXISTING INJECTION WELL PUMP STATION
PROVIDE BREAK IN SILT FENCE FOR EXISTING DRIVE
MATCH LINE SEE DWG C-05
DEMOLISH EXISTING FENCE
WETLAND LIMITS (TYP)
(2) 18" CROSS DRAINS
25' SECONDARY WETLAND IMPACTS (TYP)
WETLAND IMPACTS (TYP)
SILT FENCE (SEE NOTE 2) 3125-165
WET DETENTION POND 2 TO BE USED AS SEDIMENT TRAP (SEE NOTE 3 AND DWG C-06)
PROPOSED FILTRATION FACILITY (SEE DWG C-06)
POND CONTROL STRUCTURE (SEE NOTE 3 AND DWG C-06)
25' WETLAND BUFFER (TYP)
OVERFLOW WEIR (SEE DWG C-14)
SKIMMER (SEE DWG C-14)
TEMPORARY SEDIMENT BASIN (SEE DWG C-14)
TEMPORARY CONSTUCTION STAGING AREA (SEE DWG C-14)
EXISTING BURIED PIPING (TYP)
PROPOSED BURIED PIPING (TYP)
DEMO EXISTING FENCE
TEMPORARY SEED & MULCH DURING CONSTRUCTION (TYP)
LIMITS OF CLEARING (TYP)
SEE DWG C-12 & C-13 FOR SILT FENCE CONTINUATION FOR YARD PIPE INSTALLATION
28+00
29+00
30+00

KEY PLAN



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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
EROSION CONTROL AND DEMOLITION PLAN 1

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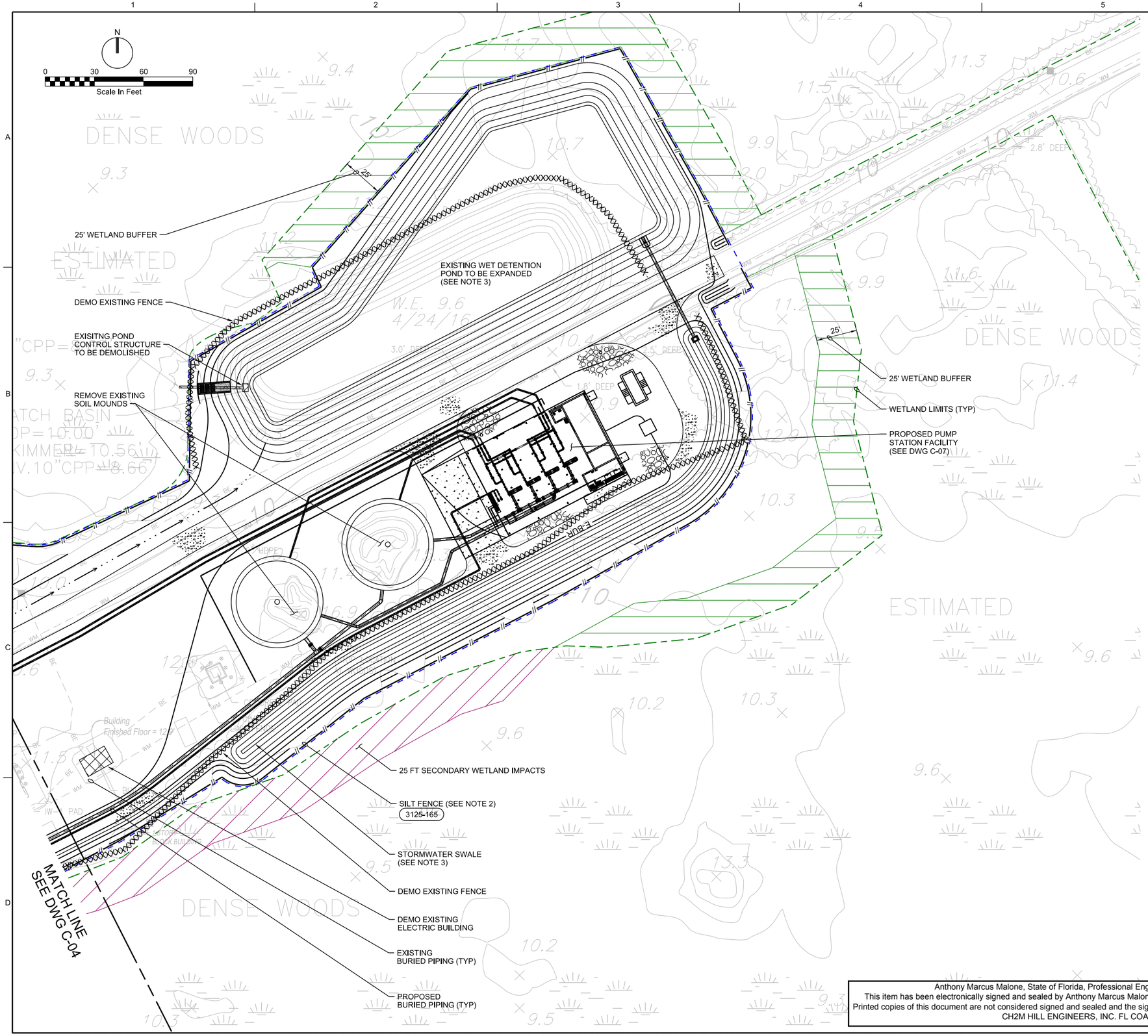
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-04
SHEET	of



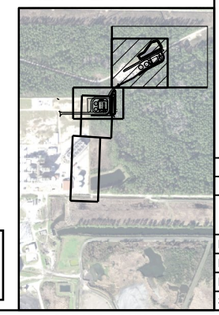
NOTES

1. SEE DWG C-03, WETLAND IMPACTS, FOR SUMMARY OF WORK WITHIN THE WETLANDS, UPLANDS AND BUFFERS.
2. THE SILT FENCE SHALL BE INSTALLED PRIOR TO ANY OTHER CLEARING WORK WITHIN THE UPLOADS OR WETLANDS. SILT FENCE SHALL BE PLACED AT THE EDGE OF THE CLEARING LIMITS.
3. THE PROPOSED STORMWATER SWALE ON THE SOUTH SIDE OF THE EXISTING ROAD SHALL BE USED AS A TEMPORARY SEDIMENT BASIN. STAGE CONSTRUCTION OF THE SWALE WITH FILL PLACEMENT FOR POSITIVE FLOW INTO THE SWALE. THE EXISTING WET DETENTION POND SHALL BE EXPANDED AND RECEIVE DISCHARGE FROM THE PROPOSED STORMWATER SWALE.
4. TEMPORARILY SEED AND MULCH DISTURBED AREAS IF THOSE AREAS WILL REMAIN UNIMPROVED WITH A FINAL SURFACE TREATMENT FOR MORE THAN 7 DAYS.

LEGEND

- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER

KEY PLAN



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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
EROSION CONTROL AND DEMOLITION PLAN 2

90% DESIGN - NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-05
SHEET	of

SHEET KEY NOTES

1. FILTER FEED WATER TANK 1, TOC = 13.67
2. FILTER FEED WATER TANK 1, TOC = 13.67
3. FILTRATION SYSTEM PAD, HP TOC = 14.00
4. FILTRATION BACKWASH TANK PAD, HP TOC = 13.85
5. ELECTRIC GENERATOR PAD, TOC = 13.50
6. ELECTRIC TRANSFORMER PAD, TOC = 13.00
7. ELECTRIC GENERATOR BUILDING, FF = 13.00
8. COMPRESSOR BUILDING FF = 13.00

STORMWATER POND 2 SUMMARY

1. DRAINAGE AREA: 1.79 ACRES
2. PERMANENT POOL EL: 9.5
3. WATER QUALITY VOL & EL: 6,498 CF @ 9.89
4. 25-YR, 24-HR DESIGN EL: 11.08
5. 25-YR, 24-HR DESIGN EL: 6.14 CFS
6. PRE-DEV 2-YR, 24-HR DESIGN RATE: 6.39 CFS
7. 100-YR, 24-HR DESIGN EL: 11.26

N

0 20 40 60
Scale In Feet

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MITERED END SECTION, MULTIPLE FDOT INDEX 430-021 (TYP)

(2) 34' - 18" STM-HDPE @ 0.59%

TAPER LIMEROCK DRIVE FROM 20' WIDE TO 10' WIDE
3215-270

SOD NON-GRAVEL AND LIMEROCK AREAS (TYP)

MATCH LINE SEE DWG C-07

GRAVEL SURFACE BETWEEN LIMROCK ROADS AND FACILITIES (TYP)
3215-260

EXISTING BURIED PIPING (TYP)

TEMPORARY SEDIMENT BASIN (SEE DWG C-14)

TEMPORARY CONSTRUCTION STAGING AREA (SEE DWG C-14)

20' COMPACTED LIMEROCK ROAD
3215-270

2:1 SLOPE

4:1 SLOPE

20' SODDED SPILLWAY
2 / C-11

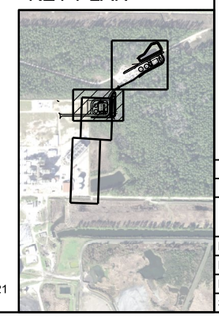
WET STORMWATER DETENTION POND 2
TOP = 12.0
BOTTOM = 5.0
WATER EL = 9.5

29'-12" STM-HDPE @ 1.03%

MITERED END SECTION FDOT INDEX 430-021
INV = 8.90

1 / C-11 POND CONTROL STRUCTURE

KEY PLAN



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PANAMA CITY, FLORIDA

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GRADING AND LAYOUT PLAN 1

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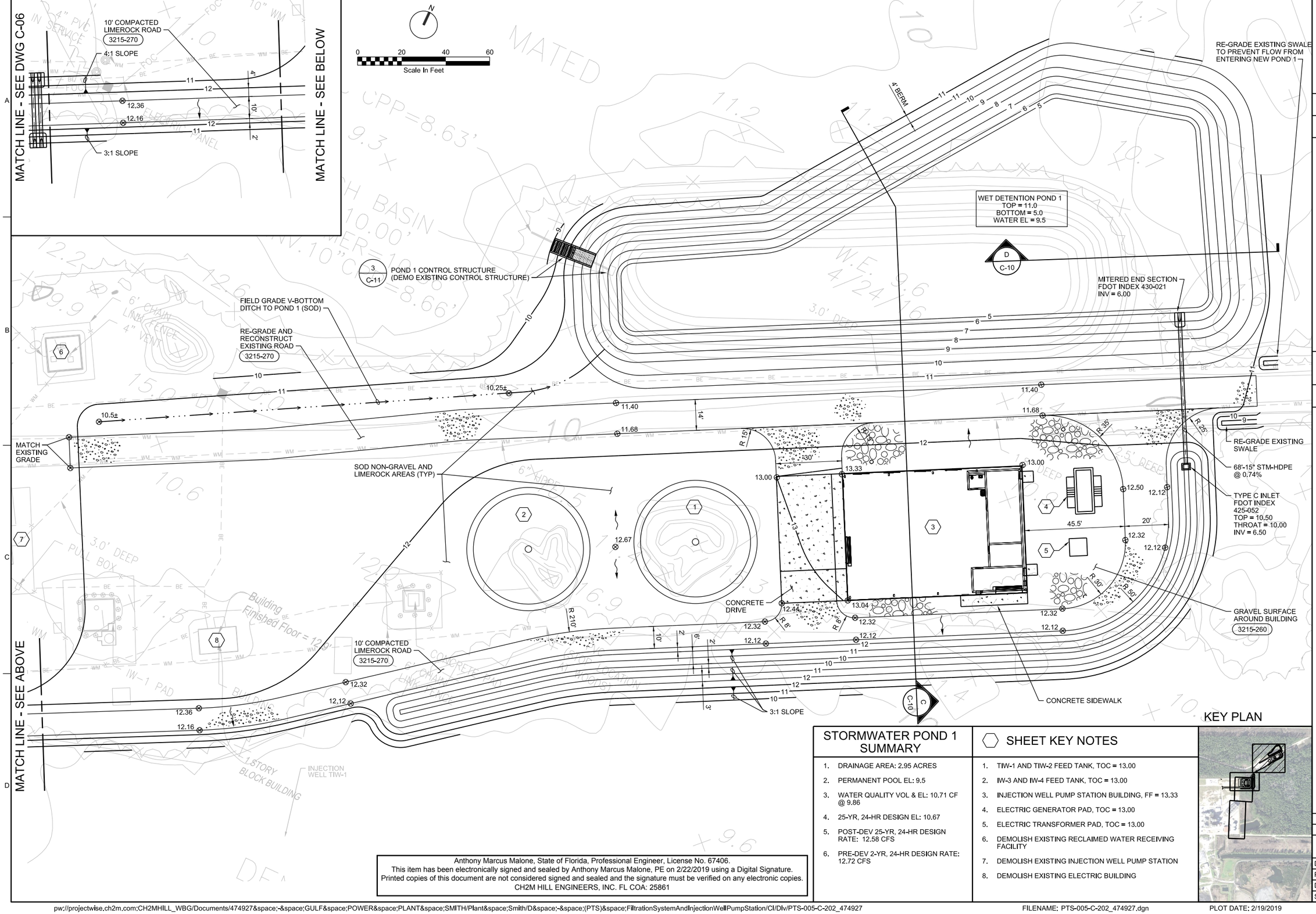

KEY PLAN

STORMWATER POND 1 SUMMARY

1. DRAINAGE AREA: 2.95 ACRES
2. PERMANENT POOL EL: 9.5
3. WATER QUALITY VOL & EL: 10.71 CF @ 9.86
4. 25-YR, 24-HR DESIGN EL: 10.67
5. POST-DEV 25-YR, 24-HR DESIGN RATE: 12.58 CFS
6. PRE-DEV 2-YR, 24-HR DESIGN RATE: 12.72 CFS

SHEET KEY NOTES

1. TIW-1 AND TIW-2 FEED TANK, TOC = 13.00
2. IW-3 AND IW-4 FEED TANK, TOC = 13.00
3. INJECTION WELL PUMP STATION BUILDING, FF = 13.33
4. ELECTRIC GENERATOR PAD, TOC = 13.00
5. ELECTRIC TRANSFORMER PAD, TOC = 13.00
6. DEMOLISH EXISTING RECLAIMED WATER RECEIVING FACILITY
7. DEMOLISH EXISTING INJECTION WELL PUMP STATION
8. DEMOLISH EXISTING ELECTRIC BUILDING

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FILTRATION SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
GRADING AND LAYOUT PLAN 2

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DATE	FEBRUARY 2019
PROJ	474927
DWG	C-07
SHEET	of

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SHEET KEY NOTES

1. FILTER FEED WATER TANK 1, TOC = 13.67
2. FILTER FEED WATER TANK 1, TOC = 13.67
3. FILTRATION SYSTEM PAD, HP TOC = 14.00
4. FILTRATION BACKWASH TANK PAD, HP TOC = 13.85
5. ELECTRIC GENERATOR PAD, TOC = 13.50
6. ELECTRIC TRANSFORMER PAD, TOC = 13.00
7. ELECTRIC GENERATOR BUILDING, FF = 13.00
8. COMPRESSOR BUILDING FF = 13.00

N

0 20 40 60
Scale In Feet

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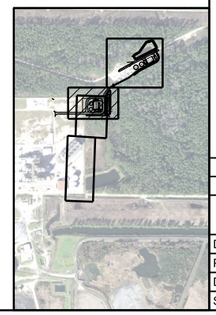
8" HDPE
3" HDPE
MATCH LINE SEE DWG C-09
E-BUR
20" FE-HDPE (TO INJECTION WELL PUMP STATION)
SEE DWG M-04 FOR CONTINUATION
8" BWR-HDPE
SEE DWG M-04 FOR CONTINUATION
(1) 8" TEE - HDPE
(2) 8" V-504 (BUTTERFLY)
3" WATER STUB OUT
EXISTING POWER POLE
20" STEEL PIPE
PULL BOX
0.5' DEEP
ELECTRIC SERVICE DROP FOR BURIED SERVICE
0.7' DEEP
5.2' DEEP
1.5' DEEP
EXISTING BURIED PIPING (TYP)
20" FI-HDPE (SEE DWG C-12 & 13)
8" BWR-HDPE (SEE DWG C-12 & 13)

KEY PLAN



NO.	DATE	DSGN
A	A MALONE	DR C CHILDRESS

REVISION CHK APVD BY APVD

A MALONE

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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

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CIVIL
YARD PIPING PLAN 1

90% DESIGN - NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-08
SHEET	of

MATCH LINE - SEE BELOW

N

0 20 40 60
Scale In Feet

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CH2M HILL ENGINEERS, INC. FL COA: 25861

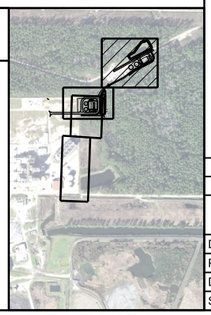
10" WM
IW-1 PAD
4" PVC SERVICE
ELECTRIC PANEL
20" FE-HDPE
8" BWR-HDPE
BURIED ELECTRIC CONDUIT
EXISTING BURIED PIPING (TYP)
E-BUR
MATCH LINE SEE DWG C-08

8" IWR-FG (RETURN TO FEED TANKS)
STUB FOR FUTURE EXTENSION TO TIW-2 AND TIW-3
3.0' DEEP
2.5' DEEP
1.8' DEEP
EXISTING 8" IW-FG TO TIW-4
CONNECT TO EXISTING 8" IW-FG
8" IW-FG (TO TIW-4)
8" IW-FG (TO TIW-1)
6' CHAIN LINK FENCE
4" VENT
24" PIPE
WATER LINE 1.0' DEEP
EXISTING 4" WM - PVC
REMOVE EXISTING PIPING AND CONNECT TO INJECTION WELL TIW-1
3.0' DEEP PULL BOX
CHAIN LINK FENCE
20" HDPE
E-BUR
SEE DWG M-01 FOR CONTINUATION (TYP)
16" FE-HDPE
8" BW-HDPE
(2) 20" V-504 (BUTTERFLY)
(1) 20" TEE - HDPE
20" FE-HDPE
8" BW-HDPE
BURIED ELECTRIC CONDUIT
CONNECT TO EXISTING 4" POTABLE WATER AND EXTEND 2" W1-HDPE TO BUILDING
MATCH LINE - SEE ABOVE

SHEET KEY NOTES

1. TIW-1 AND TIW-2 FEED TANK, TOC = 13.00
2. IW-3 AND IW-4 FEED TANK, TOC = 13.00
3. INJECTION WELL PUMP STATION BUILDING, FF = 13.33
4. ELECTRIC GENERATOR PAD, TOC = 13.00
5. ELECTRIC TRANSFORMER PAD, TOC = 13.00
6. DEMOLISH EXISTING RECLAIMED WATER RECEIVING FACILITY
7. DEMOLISH EXISTING INJECTION WELL PUMP STATION
8. DEMOLISH EXISTING ELECTRIC BUILDING

KEY PLAN



NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
	A MALONE	A MALONE	C CHILDRESS	APVD		A MALONE	

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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
YARD PIPING PLAN 2

VERIFY SCALE
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0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-09
SHEET	of

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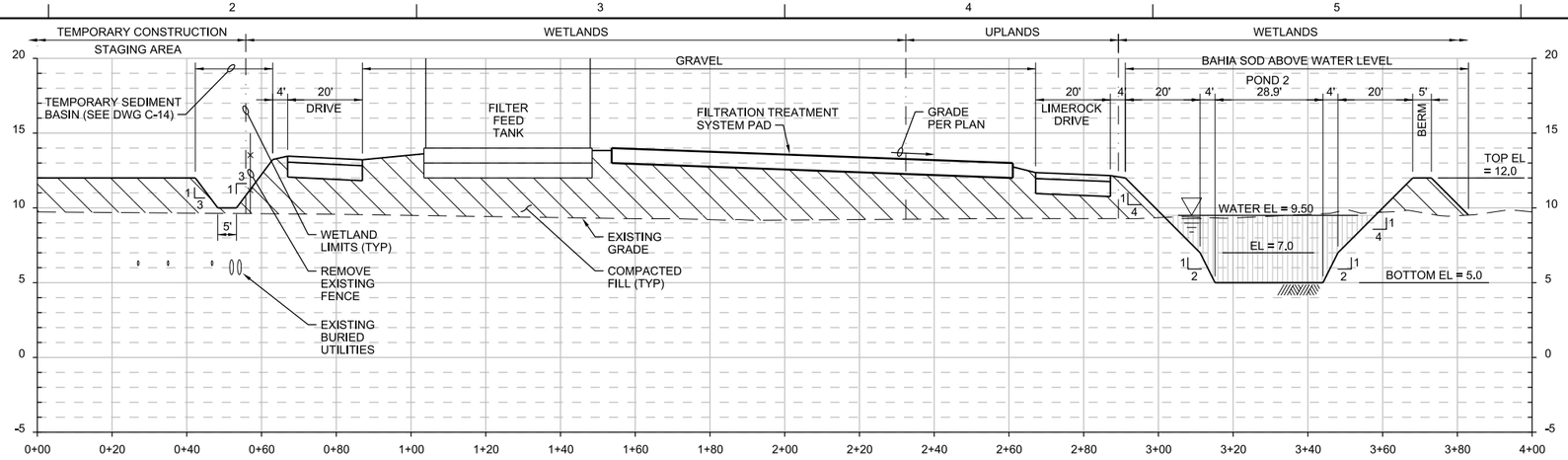
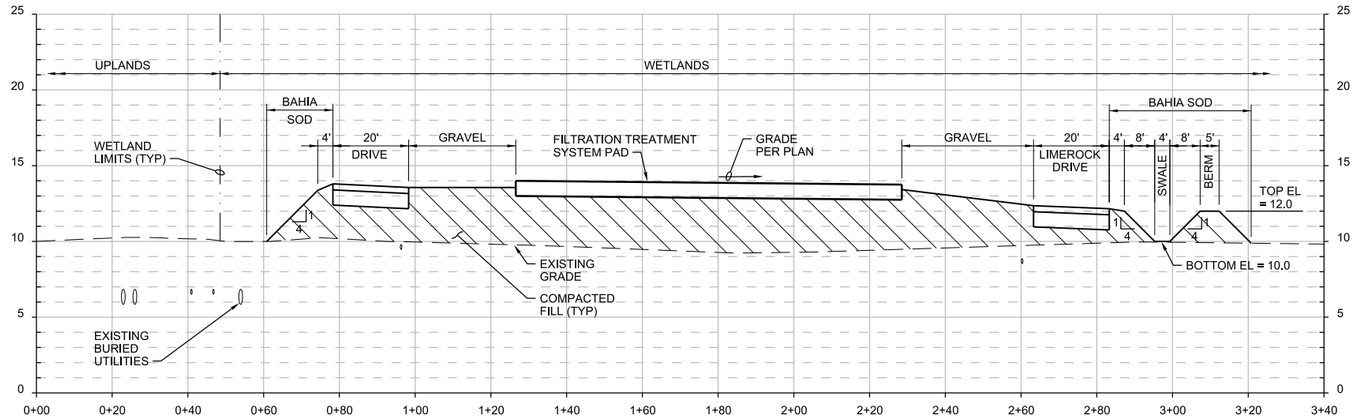
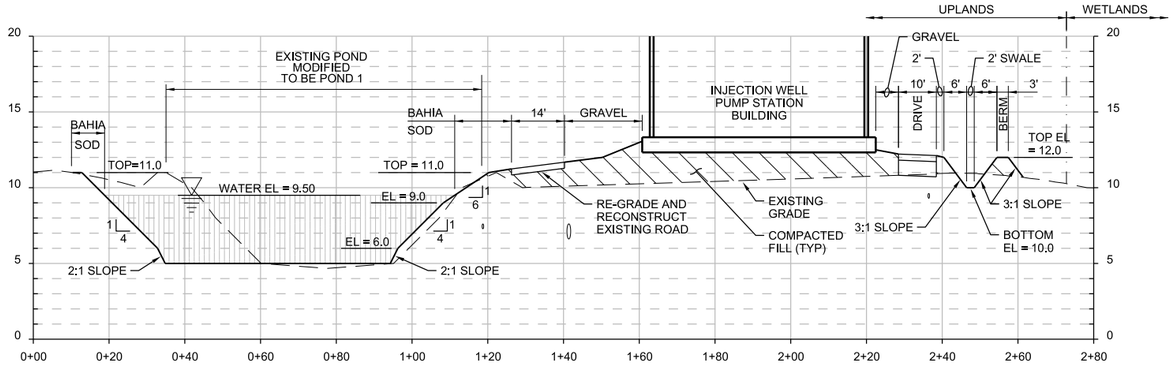


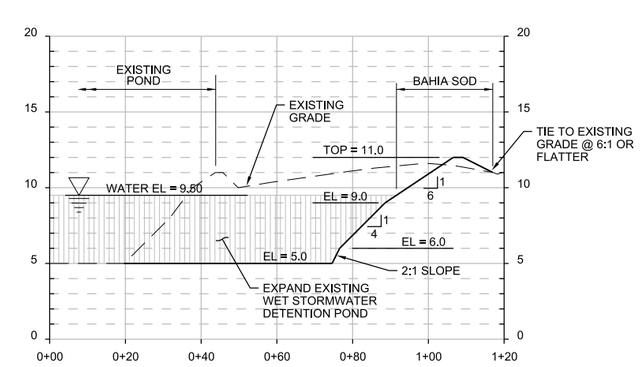
A SECTION
SCALE: 1" = 20' HORIZ
1" = 5' VERT
C-06



B SECTION
SCALE: 1" = 20' HORIZ
1" = 5' VERT
C-06



C SECTION
SCALE: 1" = 20' HORIZ
1" = 5' VERT
C-07



D SECTION
SCALE: 1" = 20' HORIZ
1" = 5' VERT
C-07

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DSGN	A MALONE	A MALONE	C CHILDRESS			A MALONE	

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FILTRATION SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

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CIVIL
SITE SECTIONS

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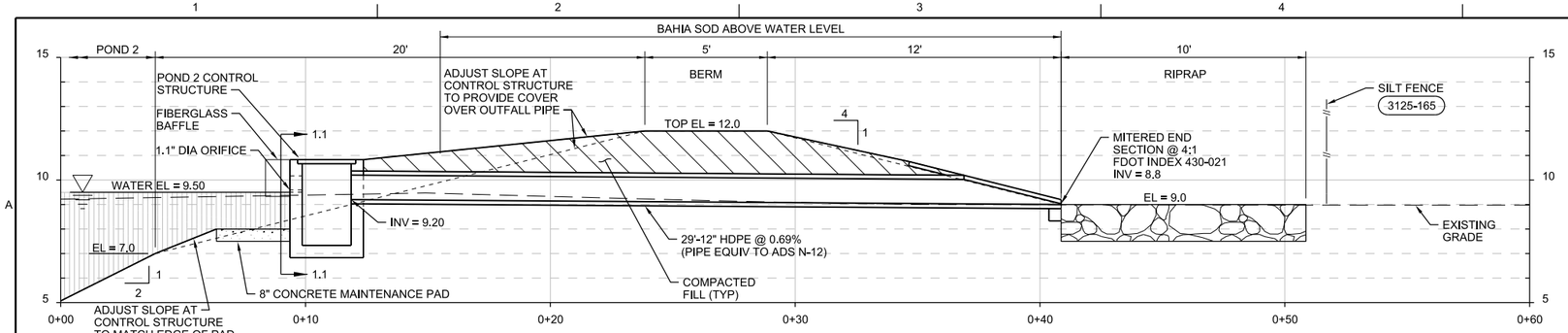
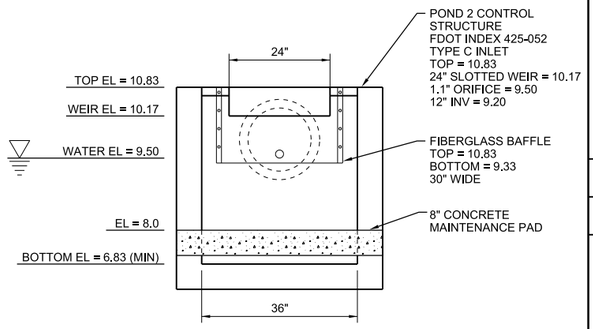
0 1"

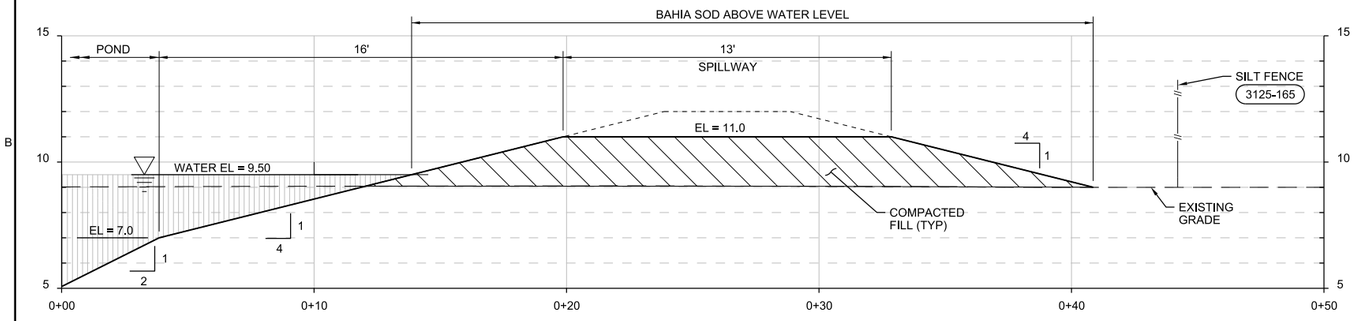
DATE	FEBRUARY 2019
PROJ	474927
DWG	C-10
SHEET	of



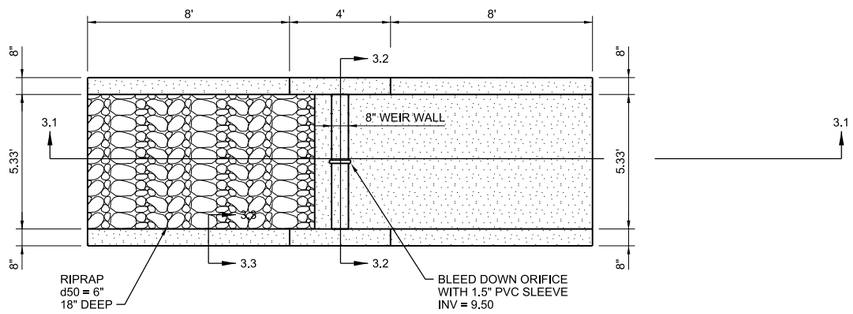
1 DETAIL - POND 2 CONTROL STRUCTURE
SCALE" 1" = 3'
C-06



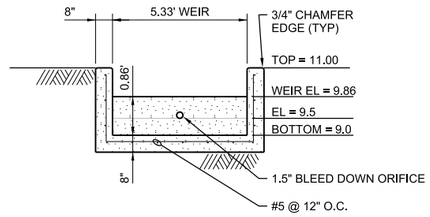
SECTION 1.1
NTS



2 DETAIL - POND 2 SODDED SPILLWAY
SCALE" 1" = 3'
C-06



PLAN VIEW



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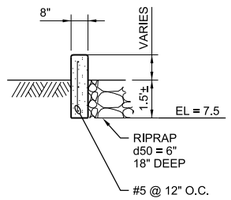
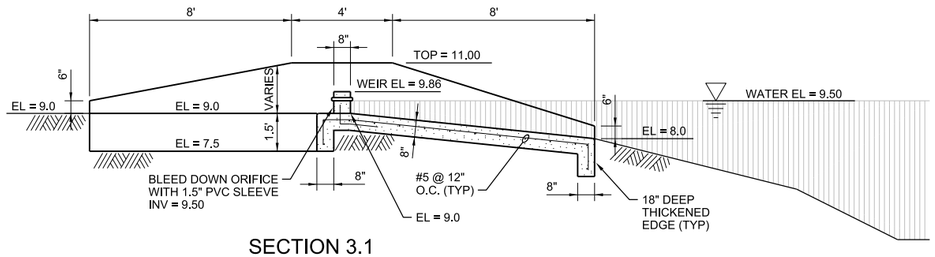


SECTION 3.3



SECTION 3.1

3 DETAIL - POND 1 CONTROL STRUCTURE
SCALE" 1" = 3'
C-06

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COA: 25861

NO.	DESCRIPTION	DATE	DSGN	DR	CHK	APVD
	REVISION	A MALONE	C CHILDRESS			A MALONE

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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
STORMWATER DETAILS AND SECTIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-11
SHEET	of

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UNIT 3

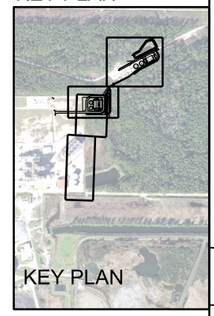
N

0 30 60 90
Scale In Feet

EXISTING BURIED PIPING (TYP)

MATCH LINE - STA 25+20

KEY PLAN



STORMWATER POND

WETLANDS BOUNDARY (TYP)

LIMITS OF DISTURBANCE (TYP)

WETLANDS IMPACT (TYP)

25' SECONDARY WETLANDS IMPACT (TYP)

8" BW - HDPE TO CONNECT TO FUTURE 8" BW-HDPE BY OTHERS

20" FI-HDPE TO CONNECT TO EXISTING ABOVE GRADE PIPING (SURVEY NEEDED AND CONECTION METHOD TO BE DETERMINED)

(1) 8" BW-HDPE
(1) 20" FI-HDPE
(MATCH INVERTS)

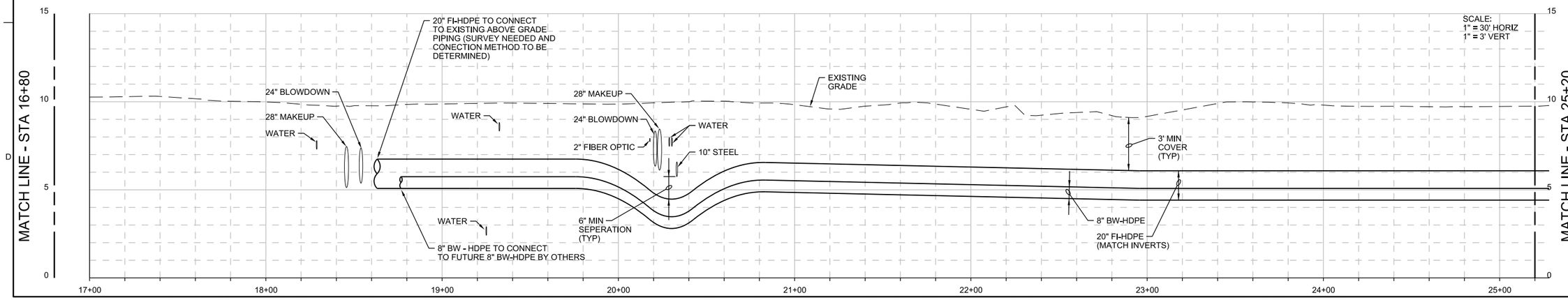
REMOVE EXISTING FENCE

CLEAR AND GRUB 10' BEYOND CENTERLINE OF PROPOSED 8" BW-HDPE

SILT FENCE AT EDGE OF CLEARING
3125-165

LEGEND

- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER



NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
		A MALONE	C CHILDRESS		APVD	A MALONE	

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GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
FILTER BACKWASH PIPE PLAN AND PROFILE

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
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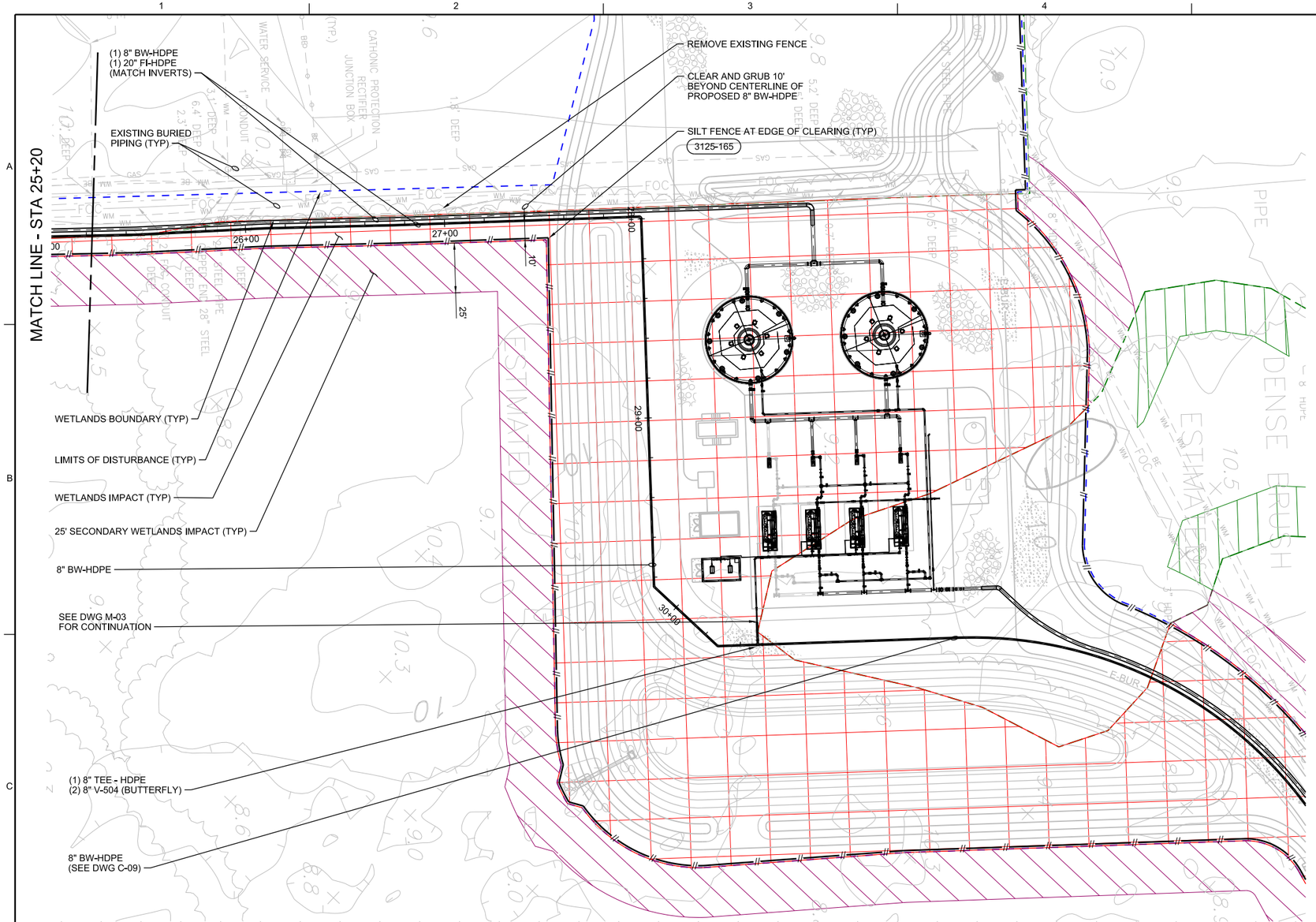
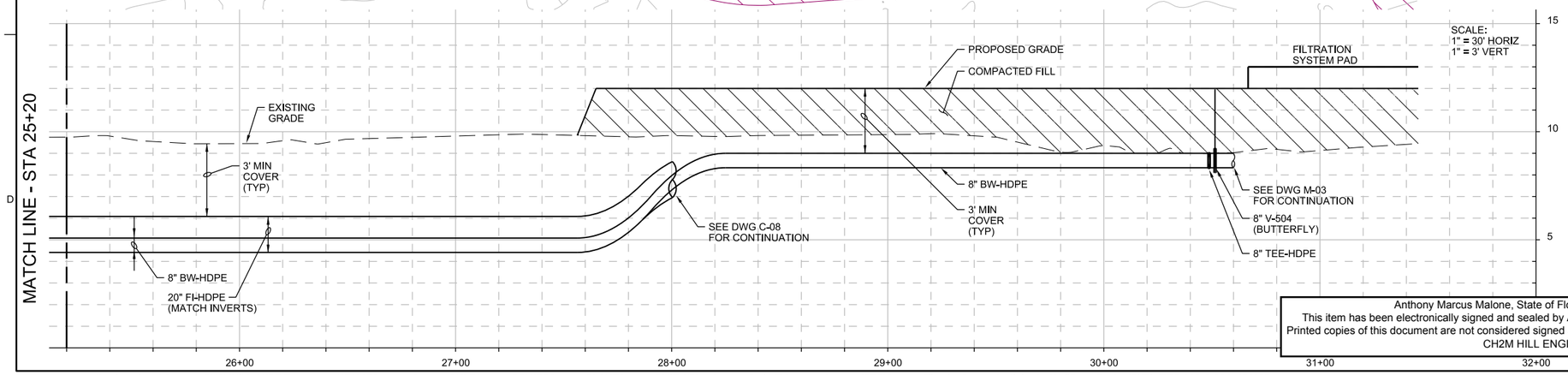
DWG	C-12
SHEET	of





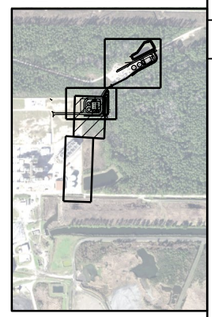
N

0 30 60 90
Scale In Feet

LEGEND

- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER

KEY PLAN



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FILTRATION SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL

FILTER BACKWASH PIPE PLAN AND PROFILE

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SHEET	of

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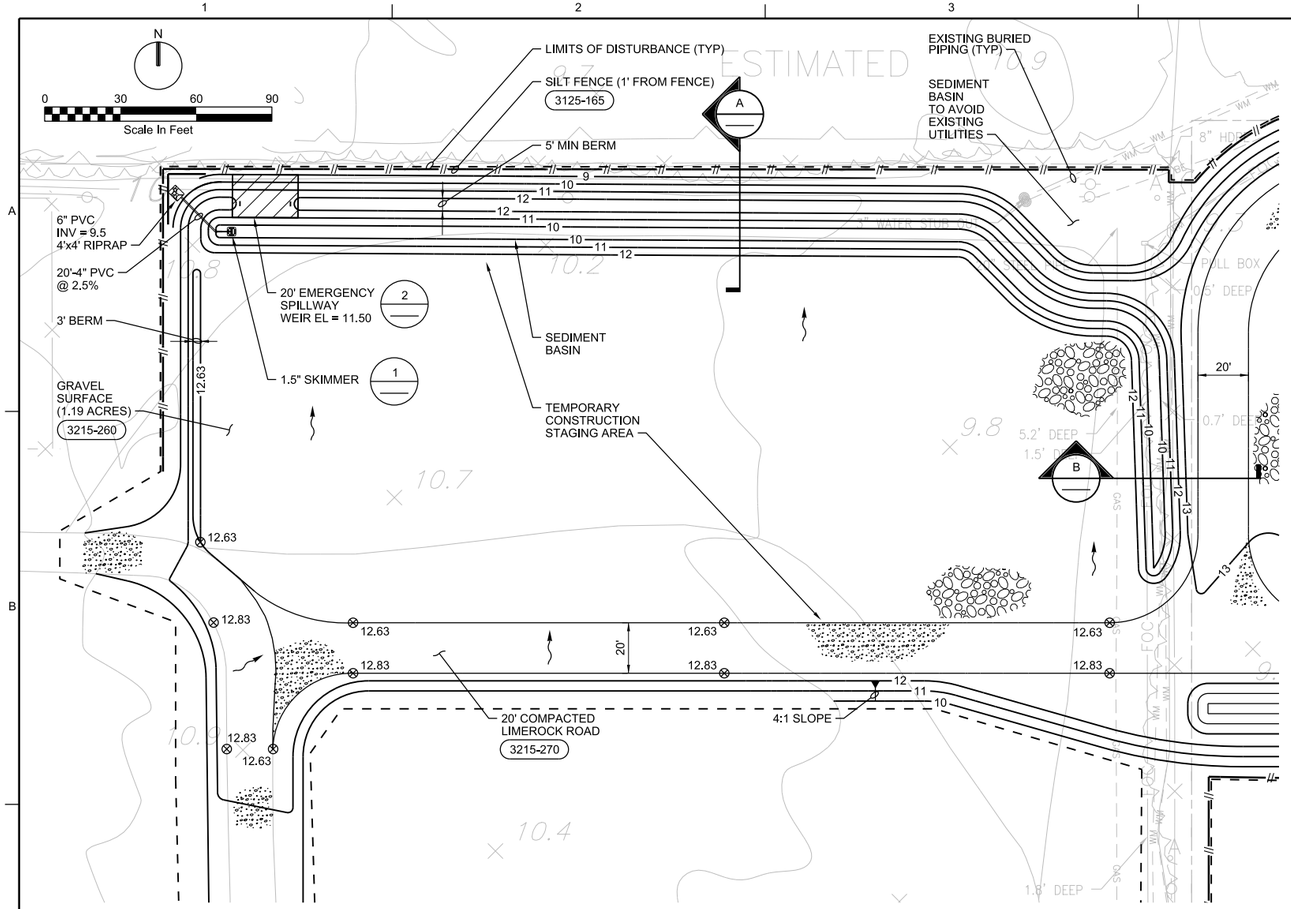
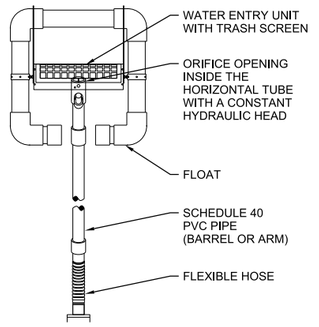
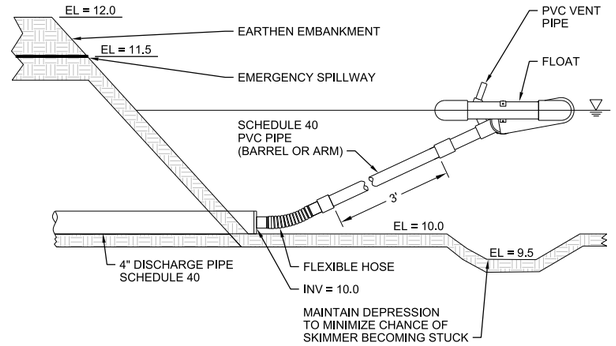


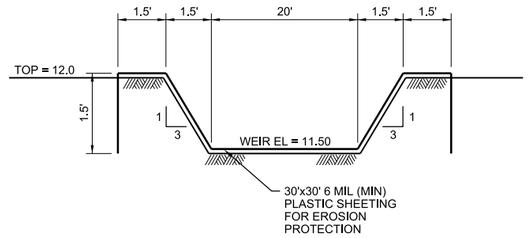




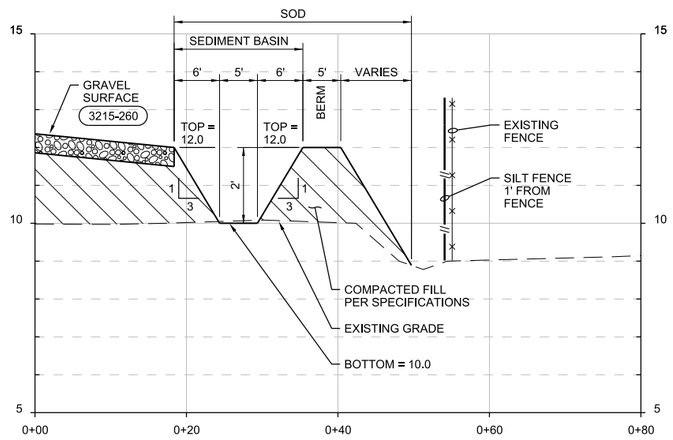
NOTES:

1. SKIMMER SHALL BE EQUIVALENT TO THE 1.5" DIA SKIMMER BY FAIRCLOTH SKIMMER (www.fairclothskimmer.com).

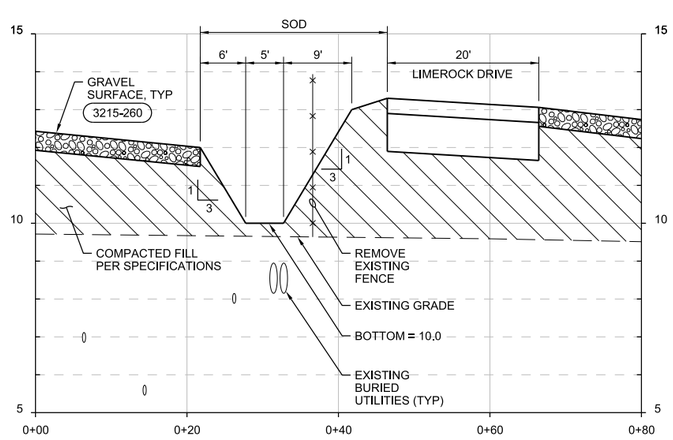
1 DETAIL - SKIMMER 1.5" DIA
NTS



2 DETAIL - EMERGENCY SPILLWAY
NTS



A SECTION - SEDIMENT BASIN
SCALE: 1" = 10' HORIZ
1" = 2' VERT



B SECTION - SEDIMENT BASIN
SCALE: 1" = 10' HORIZ
1" = 2' VERT

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		A MALONE	C CHILDRESS				A MALONE	

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FILTRATION SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
TEMPORARY
CONSTRUCTION AREA PLAN

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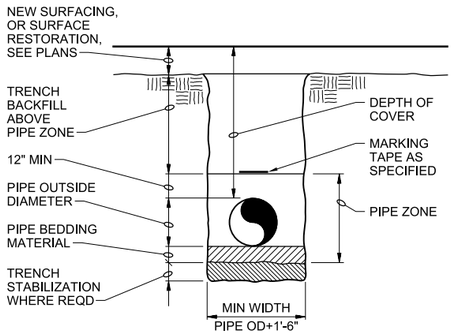
0 1"

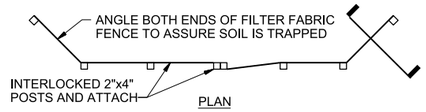
DATE	FEBRUARY 2019
PROJ	474927
DWG	C-14
SHEET	of

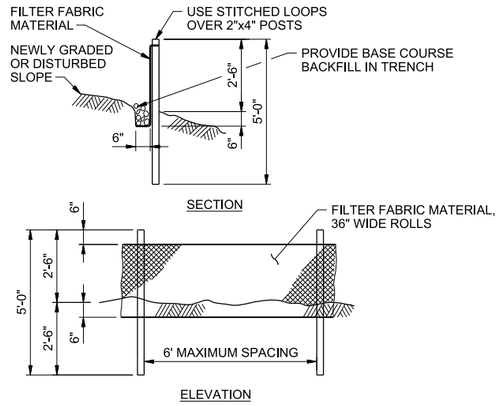


TYPICAL TRENCH

NTS

3123-110





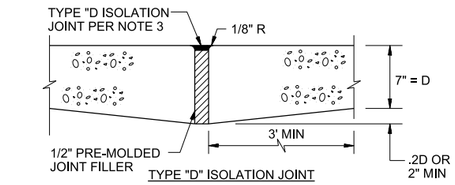
NOTES:

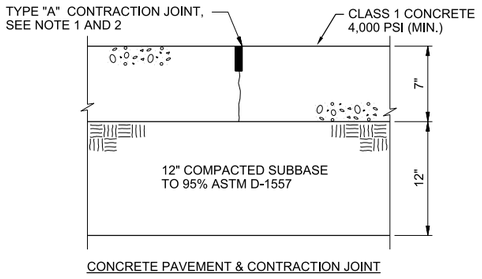
1. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
2. 2"x4" DOUGLAS FIR OR STEEL FENCE POSTS.
3. STITCHED LOOPS TO BE INSTALLED DOWNHILL SIDE OF SLOPE.
4. COMPACT ALL AREAS OF FILTER FABRIC TRENCH.

SILT FENCE

NTS

3125-165





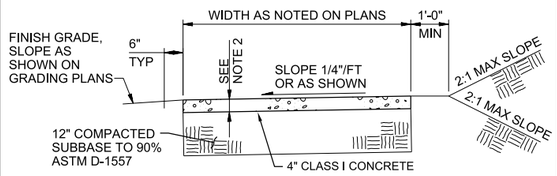
NOTES:

1. CONTRACTION JOINT SHALL BE MADE, CLEANED WITH COMPRESSED AIR, AND FILLED WITH SEALANT AS SPECIFIED. JOINT TO BE 1/4" TO 1/8" IN DEPTH.
2. CONCRETE JOINT SPACING: AS SHOWN OR MAXIMUM 15'x 15'.
3. INSTALL 1/2" PREMOLDED JOINT FILLER FULL DEPTH WHERE CONCRETE PAVEMENT ABUTS CONCRETE CURB, BUILDING OR ANY RIGID STRUCTURE.
4. THICKENED EDGES SHALL BE PLACED ADJACENT TO PAVEMENT AND ALONG PERIMETER.

CONCRETE DRIVE

NTS

3213-240



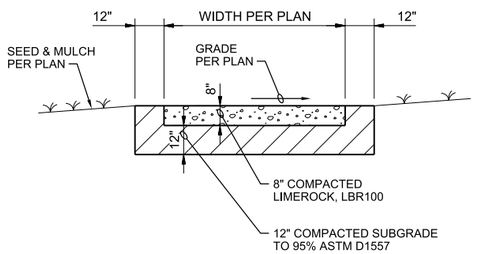
NOTES:

1. INSTALL 1/2" PREMOLDED JOINT FILLER BETWEEN THE SIDEWALK AND ALL STRUCTURES, CONCRETE PAVEMENT, AND CURBS.
2. CONTRACTION JOINTS SHALL BE INSTALLED EVERY 5' (MAX).

CONCRETE SIDEWALK

NTS

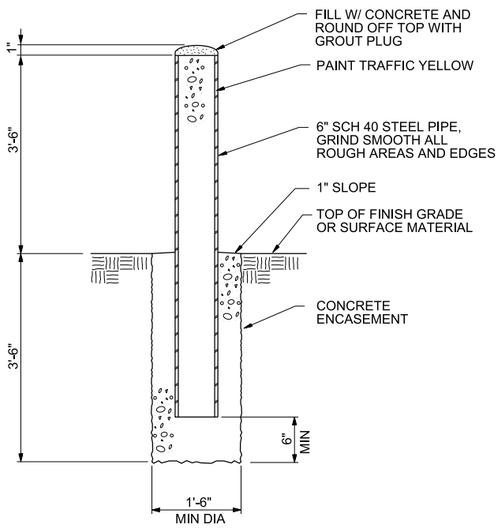
3213-220



LIMEROCK ROAD

NTS

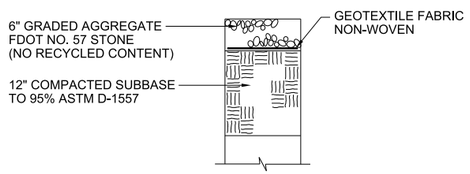
3215-270



BOLLARD

NTS

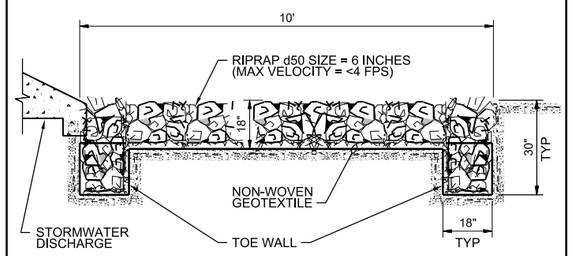
3305-954



GRAVEL SURFACE

NTS

3215-260



RIPRAP OULET PROTECTION

NTS

3220-100

Anthony Marcus Malone, State of Florida, Professional Engineer, License No. 67406.
This item has been electronically signed and sealed by Anthony Marcus Malone, PE on 2/22/2019 using a Digital Signature.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.
CH2M HILL ENGINEERS, INC. FL COA: 25861

NO.	DATE	DSGN	DR	CHK	APVD
			C CHILDRESS		A MALONE

REVISION

BY APVD

A MALONE

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REUSE OF DOCUMENTS:

25 West Cedar Street, Suite 350
Pensacola, Florida
United States 32502-5975
Tel: +1(850)438-2740

FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
DETAILS

90% DESIGN - NOT FOR CONSTRUCTION

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-15
SHEET	of

APPENDICES

APPENDIX A

Applicable Environmental Permits

APPENDIX A-1

FDEP Environmental Resource Permit 03-0320483-001-EI

Gulf Power

March 28, 2018

Ms. Kim Allen
Florida Department of Environmental Protection
160 Government Street, Suite 308
Pensacola, Florida 32502

RE: Gulf Power Company – Plant Smith, Southport, Bay County,
ERP 03-0320483-001-EI permit time extension request

Dear Ms. Allen,

Gulf Power is requesting a five-year time extension for the current Plant Smith Deep Well Injection Site ERP 03-0320483-001-EI. The permit will expire on November 12, 2018. Construction is still ongoing on site and is not scheduled to be completed within 2018. All specific conditions and general conditions of the permit will be met and maintained.

If you have any further questions, please contact Jeff Cole at (850) 872-3347 or Jefcole@southernco.com .

Sincerely,

Richard M. Markey
Environmental Affairs Director

Cc. Ashley Jansen- Gulf Power Environmental Affairs
Jeff Cole- Gulf Power Environmental Affairs
Alan McLane- Gulf Power Plant Smith
Valerie Morrow- Gulf Power Environmental Affairs

Florida Department of Environmental Protection

Northwest District
160 W. Government Street, Suite 308
Pensacola, Florida 32502-5740

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

May 3, 2018

Gulf Power Company
c/o Richard M. Markey, Environmental Affairs Director
1 Energy Place
Pensacola, FL 32520
RMMarkey@southernco.com

Re: File No. 0320483-005-EM, Extension of File No. 03-0320483-001-EI

Dear Mr. Markey:

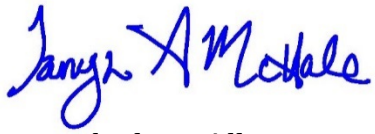
The Department has evaluated your request to extend the expiration date for this permit. We may extend your permit for a maximum period of five years from the date of receipt of all governmental authorizations for this project. Your permit is hereby extended until November 12, 2023**.** Should you be unable to complete your project by that date, you should contact the Department.

Please attach this letter to your permit. This letter does not change any of the permit conditions or relieve you of obtaining any necessary authorization from other state, federal or local agencies. Please call if you need further assistance.

This letter constitutes final agency action unless a person substantially affected by this action requests an administrative hearing pursuant to Section 120.57, Florida Statutes. The petition must be filed within fourteen (21) days from receipt of this letter. The petition must comply with the requirements of Florida Administrative Code Rule 28-5.201 and be filed pursuant to Rule 62-103.155(1) in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. Petitions which are not filed in accordance with the above provisions will not be accepted by the Department. The hearing process is designed to formulate agency action. Accordingly, the Department's final action as a result of a hearing may be different from the position taken by it in this stage. Therefore, any person who may wish to contest the Department's ultimate permitting decision must petition for a hearing within the twenty-one day period described above. Failure to file a request for hearing within this time period shall constitute a waiver of any right such person may have to request a hearing under Section 120.57, Florida Statutes.

If you have any questions regarding this matter, please contact Diana Athnos at the letterhead address, at (850) 595-0557, or at diana.athnos@floridadep.gov.

EXECUTION AND CLERKING
Executed in Orlando, Florida.
STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION



For Kimberly R. Allen
Permitting Program Administrator

Attachment:
Copy of Permit 03-320483-001-EI, 34 Pages

CERTIFICATE OF SERVICE
The undersigned duly designated deputy clerk hereby certifies that this document and all attachments were sent on the filing date below to the following listed persons:

Jeff Cole, Gulf Power, jefcole@southernco.com
Tanya McHale, DEP, tanya.mchale@floridadep.gov
Diana Athnos, DEP, diana.athnos@floridadep.gov

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to Section 120.52, F. S., with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk May 3, 2018 **Date**

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

470 HARRISON AVENUE
PANAMA CITY, FLORIDA 32401

RICK SCOTT
GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

Permittee/Authorized Entity:
Gulf Power Company
c/o Richard M. Markey
1 Energy Place
Pensacola, Florida, 32520
1-850-444-6573
RMMarkey@southernco.com

Deep Well Injection Site for Plant Lansing Smith

Environmental Resource Permit
State-owned Submerged Lands Authorization – Not Applicable

U.S. Army Corps of Engineers Authorization –
Separate Corps Authorization Required

County: Bay
Permit No.: 03-0320483-001-EI

Permit Issuance Date: November 12, 2013
Permit Construction Phase Expiration Date: November 12, 2018

Environmental Resource Permit

Permittee: Gulf Power Company
Permit No: 03-0320483-001-EI

PROJECT LOCATION

The activities authorized by this permit are located at 4300 County Road 2300 (Parcel numbers 26636-010-000 and 26636-020-000) in Panama City, Florida, 32409, in Section 36, Township 2S, Range 15W in Bay County, at 30º16'33"/85º41'54" Lat/Long.

PROJECT DESCRIPTION

The permittee is authorized to construct and maintain a 6-acre project consisting of 4 deep injection well sites with their associated monitoring wells and pumping stations. Stormwater treatment for the project will be provided by a wet detention pond with appropriate plantings in the littoral zone. This wet detention pond will be located on the TIW 1 & 2 Site and will provide compensatory treatment for the other well sites. This project is located within the landward extent of West Bay, a Class II Shellfish Conditionally Approved Waterbody. Authorized activities are depicted on the attached exhibits.

To offset unavoidable impacts that will occur from these authorized activities, the permittee shall purchase 0.20 Wet Prairie/Flatwoods credits from the Breakfast Point mitigation bank.

AUTHORIZATIONS

Deep Well Injection Site for Plant Lansing Smith

Environmental Resource Permit

The Department has determined that the activity qualifies for an Environmental Resource Permit. Therefore, the Environmental Resource Permit is hereby granted, pursuant to Part IV of Chapter 373, Florida Statutes (F.S.), and Chapter 62-346, Florida Administrative Code (F.A.C.).

Sovereignty Submerged Lands Authorization

As staff to the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), the Department has determined the activity is not on submerged lands owned by the State of Florida. Therefore, your project is not subject to the requirements of Chapter 253, F.S., or Rule 18-21 F.A.C.

Federal Authorization

A copy of this permit has been sent to the U.S. Army Corps of Engineers (USACE). The USACE may require a separate permit. Failure to obtain any required federal permits prior to construction could subject you to enforcement action by that agency.

Coastal Zone Management

This permit also constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act.

Water Quality Certification

This permit also constitutes a water quality certification under Section 401 of the Clean Water Act, 33 U.S.C. 1341.

Other Authorizations
You are advised that authorizations or permits for this project may be required by other federal, state or local entities including but not limited to local governments or homeowners' associations. This permit does not relieve you from the requirements to obtain all other required permits or authorizations.

The activity described may be conducted only in accordance with the terms, conditions and attachments contained in this document. Issuance and granting of the permit and authorizations herein do not infer, nor guarantee, nor imply that future permits, authorizations, or modifications will be granted by the Department.

PERMIT CONDITIONS
The activities described herein must be conducted in accordance with:

- **The Specific Conditions**
- **The General Conditions**
- **The limits, conditions and locations of work shown in the attached drawings**
- **The term limits of this authorization**

You are advised to read and understand these conditions and drawings prior to commencing the authorized activities, and to ensure the work is conducted in conformance with all the terms, conditions, and drawings. If you are utilizing a contractor, the contractor also should read and understand these conditions and drawings prior to commencing the authorized activities. Failure to comply with these conditions, including any mitigation requirements, shall constitute grounds for revocation of this permit and appropriate enforcement action by the Department.

Operation of the facility is not authorized except when determined to be in conformance with all applicable rules and this permit/certification/authorization, as specifically described above.

SPECIFIC CONDITIONS:

PRIOR TO CONSTRUCTION

1. For emergencies involving a serious threat to the public health, safety, welfare, or environment, the emergency telephone contact number is **800-320-0519** (State Warning Point). The Department telephone number for reporting nonthreatening problems or system malfunctions is (850) 872-4375, day or night.

2. The construction phase expires at 11:59 p.m. on the date indicated on the cover page of this permit, unless an application for extension is received and approved pursuant to Rule 62-346.120, F.A.C.

3. The mailing address for submittal of forms for the "Construction Commencement Notice", "As-Built Certification …", "Request for Conversion of Stormwater Management Permit Construction Phase to Operation and Maintenance Phase", or other correspondence is FDEP, SLERP, 470 Harrison Avenue, Panama City, Florida, 32401. Electronic forms and correspondence may be submitted to epost_nwdpcbo@dep.state.fl.us.

CONSTRUCTION ACTIVITIES

4. If any construction dewatering is required, which results in an offsite discharge of groundwater, the permittee and/or the contractor shall ensure that the requirements of pertinent portions of Chapter 62-621, F.A.C. are met. Please contact Bill Armstrong, P.E., at (850) 595-0554, for more information.

5. The structures/work authorized by this permit shall not be placed/conducted on any property, other than that owned by the permittee, without the prior written approval of that property owner.

6. There shall be no storage or stockpiling of tools, materials (i.e., lumber, pilings, debris) within wetlands or elsewhere within waters of the state unless specifically approved in the permit. All cleared vegetation, excess lumber, scrap wood, trash, garbage and any other type of debris shall be removed from wetlands/waters of the state within 14 days of completion of the work authorized in this permit.

7. If the approved permit drawings conflict with the specific conditions, then the specific conditions shall prevail.

8. Grass seed and mulch or sod shall be installed and maintained on all exposed slopes and disturbed soil areas within 48 hours of completing final grade, and at any other time as necessary, to prevent erosion, sedimentation or turbid discharges into waters of the state and/or adjacent wetlands. A vegetative cover that stabilizes and prevents erosion of the fill material shall be established within 60 days of sodding or seeding. Upon establishment of a substantial vegetative cover, all turbidity barriers/erosion control devices shall be removed.

9. All wetland areas or water bodies which are adjacent to the specific limits of construction authorized by this permit shall be protected from erosion, sedimentation, siltation, scouring, excess turbidity or dewatering.

MITIGATION

10. To offset impacts to 0.30 acre of Silviculture/Wet Pine Flatwood wetlands, the permittee shall purchase 0.20 Wet Prairie/Flatwoods credits from the Breakfast Point mitigation bank. FDEP must have documentation that 0.20 Wet Prairie/Flatwoods wetland credits have been purchased and deducted from the credit ledger of the Breakfast Point mitigation bank for FDEP Permit No. 03-0320483-001-EI. Please send copy of receipt of credit ledger to FDEP SLERP at 470 Harrison Avenue Panama City, FL 32401 and /or via email to epost_nwdpcbo@dep.state.fl.us.

OPERATION AND MAINTENANCE

11. The 'Gulf Power Plant Smith Stormwater Maintenance Plan', as approved and enclosed with this permit, shall be implemented.

12. The littoral zone shall be constructed according to the following criteria:

a) The littoral zone shall be gently sloped (6:1 Horizontal: Vertical or flatter).
b) The littoral zone shall be planted with aquatic and wetland vegetation suitable for the specific anticipated hydroperiod of the pond.
c) Within 24 months of completion of the system, the littoral zone shall consist of 80% coverage with suitable aquatic and wetland vegetation.
d) The littoral zones shall be stabilized by either mulching or other means to ensure the stability of the native plants and soils.

13. The littoral zone shall be inspected to ensure that the 80% coverage of suitable aquatic and wetland vegetation within 24 months of system completion criteria is met. If necessary, additional planting shall be conducted to meet success criteria.

14. The littoral zone shall be inspected to ensure that the native plants and soils have stabilized. Measures shall be taken immediately to re-establish or stabilize the littoral zone if failure is observed.

15. If utilizing wetland topsoil as an alternative to planting portions of the littoral zone, the wetland topsoil shall be at least four inches in depth.

16. If utilizing wetland topsoil as an alternative to planting portions of the littoral zone, the portion of the littoral zone within 25 feet of the inlet and outlet structures shall be planted with suitable aquatic and wetland vegetation.

GENERAL CONDITIONS

1. All activities authorized by this permit shall be implemented as set forth in the plans, specifications and performance criteria approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity may constitute grounds for revocation or enforcement action by the Department, unless a modification has been applied for and approved in accordance with Rule 62-346.100, F.A.C.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications, shall be kept at the work site of the permitted activity during the construction phase. The complete permit shall be available for review at the work site upon request by the Department staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit. A weather-resistant sign, measuring at

least 8 1/2 inches by 11 inches, and including the permit number (in lettering that is easily visible from the access road) shall be placed on the property facing the road.

3. Activities approved by this permit shall be conducted in a manner that does not cause violations of state water quality standards.

4. Immediately prior to, during construction, and for the period of time after construction to allow for stabilization of all disturbed areas, the permittee shall implement and maintain erosion and sediment control best management practices, such as silt fences, erosion control blankets, mulch, sediment traps, polyacrylamide (PAM), temporary grass seed, permanent sod, and floating turbidity screens to retain sediment on-site and to prevent violations of state water quality standards. These devices shall be installed, used, and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work, and shall remain in place at all locations until construction is completed and soils are permanently stabilized. All best management practices shall be in accordance with the guidelines and specifications described in the State of Florida Erosion and Sediment Control Designer and Reviewer Manual (Florida Department of Transportation and Florida Department of Environmental Protection, 2007), unless a project-specific erosion and sediment control plan is approved as part of the permit. If project-specific conditions require additional measures during any phase of construction or operation to prevent erosion or control sediments beyond those specified in the approved erosion and sediment control plan, the permittee shall implement additional best management practices as necessary, in accordance with the guidelines and specifications in the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual*, Prepared for Florida Department of Transportation & Florida Department of Environmental Protection by HydroDynamics Incorporated in cooperation with Stormwater Management Academy, June 2007. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources as soon as practicable. Once project construction has been deemed complete, including the re-stabilization of all side slopes, embankments, and other disturbed areas, and before conversion of the permit to the operation and maintenance phase, all silt screens and fences, temporary baffles, and other materials that are no longer required for erosion and sediment control shall be removed.

5. Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than seven days after the construction activity in that portion of the site has temporarily or permanently ceased.

6. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the Department a fully executed Form 62-346.900(3), "Construction Commencement Notice," incorporated by reference herein, indicating the expected start and completion dates. Information on how a copy of this form may be obtained is contained in Rule 62-346.900, F.A.C.

7. Within 30 days after completion of construction of the whole system, or independent portion of the system, the permittee shall notify the Department that construction has been completed and the

system is ready for inspection by submitting one of the following forms to the Department office that issued the permit:

a. For systems other than those that serve an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex, Form 62-346.900(4), "As-Built Certification by a Registered Professional." If the registered professional has certified that the system has been built substantially in compliance with the plans and specifications in the permit, and that such system is ready for inspection, the permittee shall also submit Form 62-346.900(6), "Request for Conversion of Environmental Resource Individual Permit Construction Phase to Operation and Maintenance Phase." The system shall not be used and operated for its permitted purpose until the Department has approved the request to authorize the operation phase, in accordance with Rule 62-346.095, F.A.C. The "As-Built Certification" shall be for the purpose of determining if the work was completed in substantial compliance with permitted plans and specifications. The certification shall include as-built drawings in the form of the permitted drawings that clearly show any substantial deviations made during construction. The plans must be clearly labeled as "as-built" or "record" drawings.

b. For systems that serve an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex, Form 62-346.900(5), "Construction Completion and Inspection Certification for a System Serving an Individual, Private Single-Family Dwelling Unit."

8. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of the facility, or the site infrastructure located within the area served by that portion or phase of the system.

9. The permittee shall remain liable for compliance with the operation and maintenance of the system in accordance with the terms and conditions of the permit for the life of the system, unless such permit is transferred to an acceptable responsible entity in accordance with Rules 62-346.095 and 62-346.130, F.A.C. Once transfer of the permit has been approved by the Department, the transferee shall be liable for compliance with all the terms and conditions of the operation and maintenance phase of the permit for the life of the system.

10. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the Department in writing of the changes prior to implementation so that the Department can determine whether a permit modification is appropriate.

11. This permit does not convey to the permittee or create in the permittee any property right or any interest in real property, nor does it authorize any entrance upon or activities on property that is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in this permit or Chapter 62-346, F.A.C. Permittees having the right to exercise the power of eminent domain or who had a contract to purchase the property subject to this permit shall not commence any work under this permit until the permittee has provided the Department with proof of transfer of ownership of the property in the name of the permittee. If such transfer of ownership does not occur, the permittee shall surrender this permit, and the permit shall be null and void.

12. Pursuant to Section 373.422, F.S., prior to conducting any activities on sovereign submerged lands, the permittee must receive all necessary approvals and authorizations under Chapters 253 and

258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.

13. The permittee shall hold and save the Department harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any system authorized by the permit.

14. The permittee shall notify the Department in writing at least 30 days prior to any sale, conveyance, or other transfer of ownership or control of a permitted system or the real property on which the permitted system is located. Where ownership of the land subject to the permit was demonstrated through a long-term lease, the lessee must have transferred ownership and control of the permitted system to the current landowner or new lessee, effective prior to or on the date of expiration of the lease. All transfers of ownership or transfers of a permit are subject to the requirements of Rules 62-346.095 and 62-346.130, F.A.C.

15. Upon reasonable notice to the permittee, Department staff with proper identification shall have permission to enter, inspect, sample and test the system to ensure conformity with the plans and specifications authorized in the permit.

16. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the Department.

17. The permittee shall immediately notify the Department in writing of any previously submitted information that is later discovered to be inaccurate.

18. The issuance of this permit does not relieve the permittee from the responsibility to obtain any other required federal, state, and local authorizations.

19. The permittee is advised that, pursuant to Section 556.105, F.S., excavating contractors are required to provide certain information concerning the excavation that may affect underground facilities through the one-call notification system not less than two, nor more than five, business days before beginning any excavation.

NOTICE OF RIGHTS

This action is final and effective on the date filed with the Clerk of the Department unless a petition for an administrative hearing is timely filed under Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. On the filing of a timely and sufficient petition, this action will not be final and effective until further order of the Department. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice.

Petition for Administrative Hearing

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. Pursuant to Rule 28-106.201, F.A.C., a petition for an administrative hearing must contain the following information:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;

(f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and

(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

The petition must be filed (received by the Clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000. Also, a copy of the petition shall be mailed to the applicant at the address indicated above at the time of filing.

Time Period for Filing a Petition

In accordance with subsection 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant must be filed within 21 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S. must be filed within 21 days of publication of the notice or within 21 days of receipt of the written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who has asked the Department for notice of agency action may file a petition within 21 days of receipt of such notice, regardless of the date of publication. The failure to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

Extension of Time

Under subsection 62-110.106(4), F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department

at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, before the applicable deadline for filing a petition for an administrative hearing. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

Mediation
Mediation is not available in this proceeding.

FLAWAC Review
The applicant, or any party within the meaning of Section 373.114(1)(a) or 373.4275, F.S., may also seek appellate review of this order before the Land and Water Adjudicatory Commission under Section 373.114(1) or 373.4275, F.S. Requests for review before the Land and Water Adjudicatory Commission must be filed with the Secretary of the Commission and served on the Department within 20 days from the date when the order is filed with the Clerk of the Department.

Judicial Review
Any party to this action has the right to seek judicial review pursuant to Section 120.68, F.S., by filing a Notice of Appeal pursuant to Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this action is filed with the Clerk of the Department.

If you have any questions about this document, please contact Chris Shortt at (850) 767-0043 or via email at christopher.shortt@dep.state.fl.us .

Executed in Bay County, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

_____for
Clifford D. Wilson III, P.E.
Assistant District Director, Northwest
FL Dept. of Environmental Protection

Attachments:
Exhibit 1: Wetland Impact Drawings, 12 pages
Exhibit 2: Construction Drawings and Design Specs., 9 pages
Exhibit 3: Stormwater Maintenance Plan, 2 pages

Copies of 62-346.900 forms can be obtained at:
http://www.dep.state.fl.us/water/wetlands/erp/forms.htm

Copies furnished to:

Mr. Dale Long, P.E., LEED AP, Senior Project Manager, Fabre Engineering & Surveying (dale.long@fabreinc.com)
Ms. Lea Crandall, DEP Office of General Counsel (lea.crandall@dep.state.fl.us)
Ms. Sue Maxwell, U.S. Army Corps of Engineers (susanna.r.maxwell@usace.army.mil)
File

CERTIFICATE OF SERVICE

The undersigned hereby certifies that this permit, including all copies, were mailed and/or emailed before the close of business on __November 12, 2013_____, to the above listed persons.

FILING AND ACKNOWLEDGMENT

FILED, on this date, under Section 120.52(7) of the Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

_Linda S. Hamilton_____November 12, 2013__
Clerk Date

Prepared By: Chris Shortt

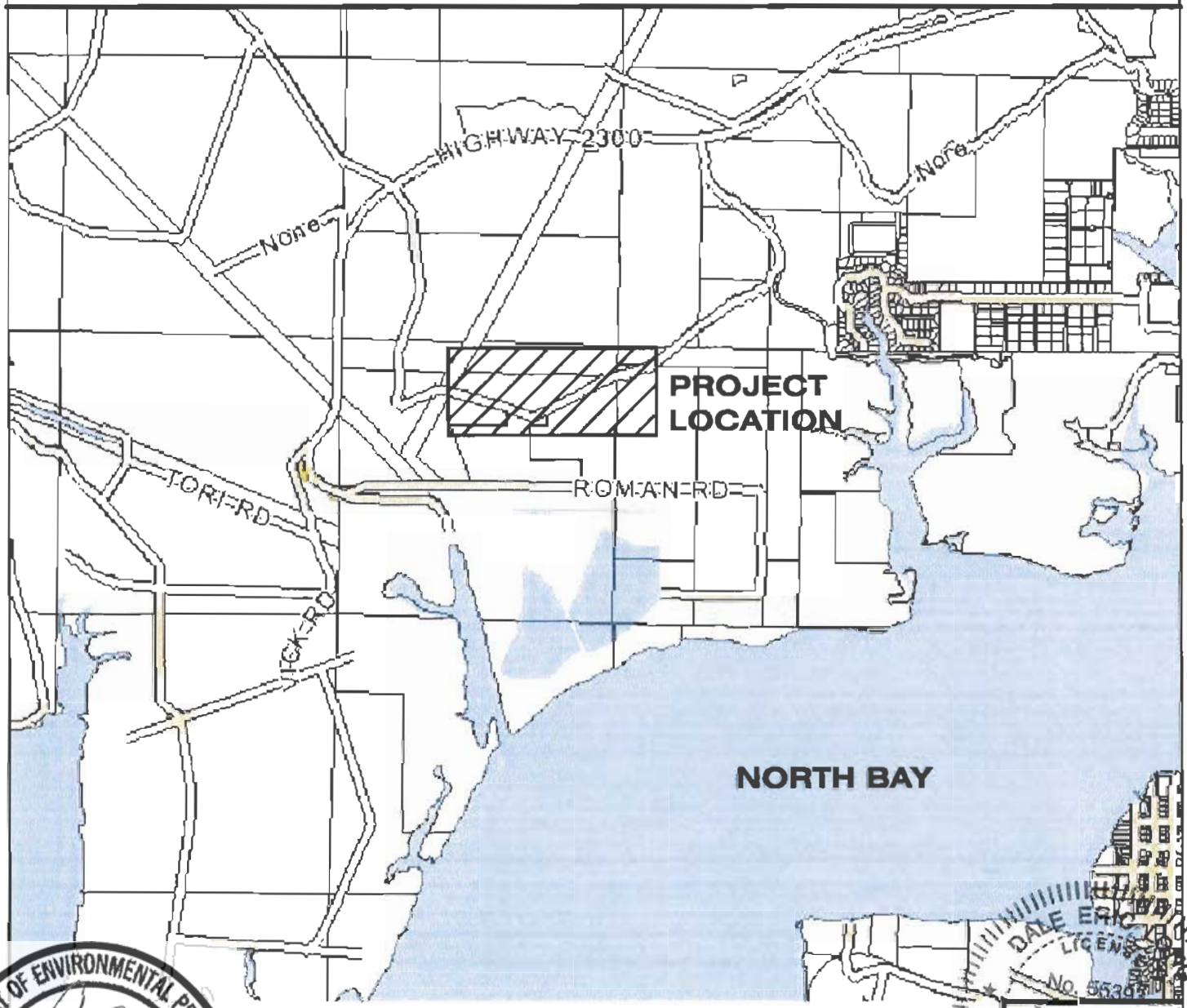
23 pages attached

EXHIBIT 1

FABRE ENGINEERING INC
ENGINEERS • PLANNERS • SURVEYORS
119 GREGORY SQUARE • PENSACOLA, FLORIDA 32502-4915 TEL:(850)433-6438 FAX:(850)434-7842
L.B. NO. 0006679 E.B. NO. 0007215

N

NOT TO SCALE



DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
03-0320483-001-EI
November 12, 2013
Page 1 of 12
STATE OF FLORIDA

DALE E. LOVOI LICENSE NO. 55393 STATE OF FLORIDA PROFESSIONAL ENGINEER

Dale E. Lovoi, P.E.
STATE OF FLORIDA
Valid Only With Embossed Seal
Florida Certificate No. 55393
Sheet 1 of 12

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SEE ABOVE	DRAWN BY: DLM	DATE: 08/07/13
0052-00.000	CHECKED BY: DEL	

VICINITY MAP

EXHIBIT 1

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119 GREGORY SQUARE ♦ PENSACOLA, FLORIDA 32502-4915 ♦ TEL:(850)433-6438 ♦ FAX:(850)434-7842
L.B. NO. 0006679 E.B. NO. 0007215

WETLAND IMPACT SUMMARY

	AREA (SF)	AREA (AC)	CUT (CY)	FILL (CY)
TIW-1 & 2				
TEMPORARY IMPACTS =	9,789	0.22		
PERMANENT IMPACTS =	~~2,458~~	0.06	41	57
TIW-3				
TEMPORARY IMPACTS =	61,250	1.41		
PERMANENT IMPACTS =	4,326	0.10	361	383
TIW-4				
TEMPORARY IMPACTS =	15,049	0.35		
PERMANENT IMPACTS =	1,324	0.03	98	123
TIW-5				
TEMPORARY IMPACTS =	40,000	0.92		
PERMANENT IMPACTS =	5,183	0.12	424	446
TOTALS				
TEMPORARY IMPACTS =	**126,088**	**2.89**		
PERMANENT IMPACTS =	~~**13,291**~~	**0.31**	**924**	**1,009**

LEGEND

- EXISTING CONCRETE
- EXISTING GRAVEL
- EXISTING WETLANDS
- PROPOSED STORM DRAIN WITH MITERED END SECTION
- DITCH BLOCKS (SILT FENCING & HAYBALES) — HB, HB
- SILT FENCING — # # # # # #
- RIP-RAP
- JURISDICTIONAL LINE
- PROPOSED STRUCTURE/ CONCRETE PAD
- PROPOSED GRAVEL

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
03-0320483-001-EI
November 12, 2013
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STATE OF FLORIDA

DALE ERIC LONG
LICENSE
No. 55393
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Dale E. Long, P.E.
Valid Only With Embossed Seal
Florida Engineer #55393
Sheet 2 of 12

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JOB NUMBER: 130052-00-000	CHECKED BY: DEL	REV. 09-13-13	

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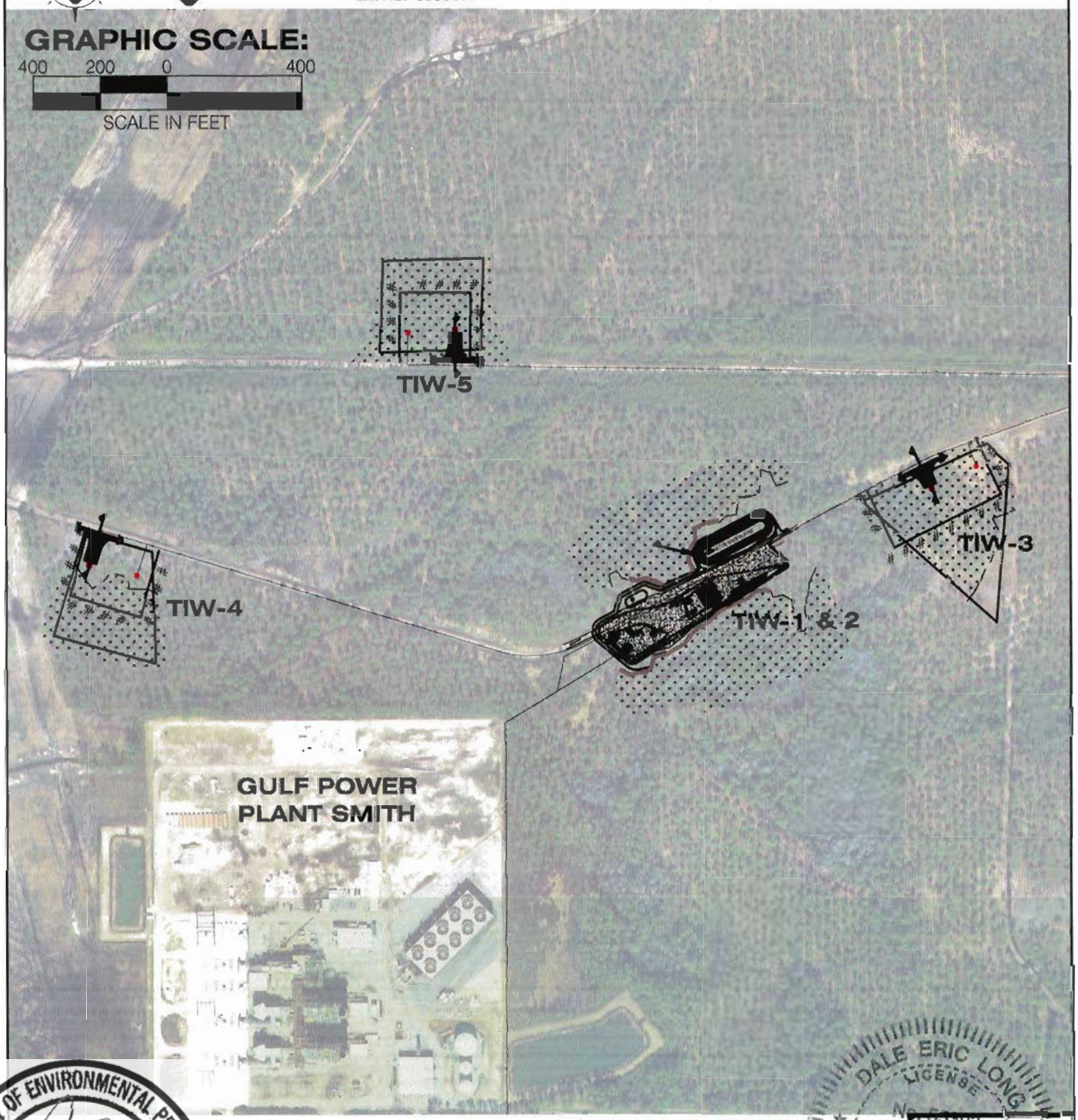
ENGINEERS • PLANNERS • SURVEYORS
119 GREGORY SQUARE • PENSACOLA, FLORIDA 32502-4915 TEL:(850)433-6438 FAX:(850)434-7842
L.B. NO. 0006679 E.B. NO. 0007215



DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
STATE OF FLORIDA
03-0320483-001-EI
November 12, 2013
Page 3 of 12

DALE ERIC LONG
LICENSE
No. 65393
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Dale E. Long, P.E.
Valid Only With Engineer's Seal
Florida Engineer #65393
Sheet 3 of 12

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SEE ABOVE	DRAWN BY: DLM	DATE: 08/07/13	**OVERALL SITE PLAN**
30052-00-000	CHECKED BY: DEL		

EXHIBIT 1

FABRE ENGINEERING INC.
ENGINEERS ♦ PLANNERS ♦ SURVEYORS
119 GREGORY SQUARE ♦ PENSACOLA, FLORIDA 32502-4915 TEL:(850)433-6438 FAX:(850)434-7842
L.B. NO. 0006679 E.B. NO. 0007215

GRAPHIC SCALE:

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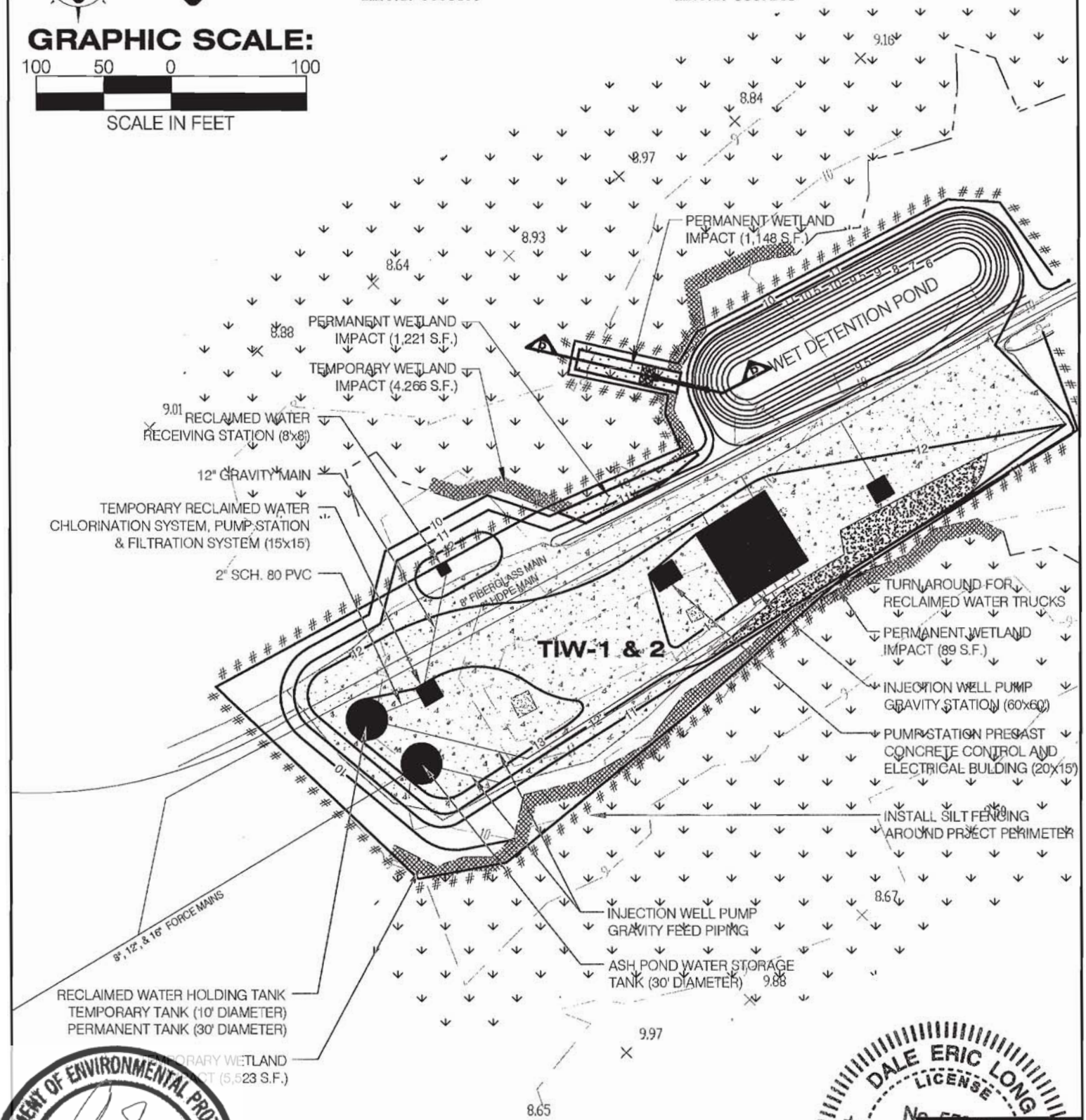
SCALE IN FEET



DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
STATE OF FLORIDA
03-0320483-001-EI
November 12, 2013
Page 4 of 12

DALE ERIC LONG
LICENSE
No. 55393
PROFESSIONAL ENGINEER
STATE OF FLORIDA
Dale E. Long, P.E.
Valid Only With Embossed Seal
Florida Engineer #55393
Sheet 4 of 12

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SCALE: AS SHOWN SEE ABOVE	DRAWN BY: DLM	DATE: 08/07/13	**TIW-1 & 2**
JOB NUMBER: 130052-00-000	CHECKED BY: DEL	REV. 09-13-13	

EXHIBIT 1

FABRE ENGINEERING INC.
ENGINEERS • PLANNERS • SURVEYORS
119 GREGORY SQUARE • PENSACOLA, FLORIDA 32502-4915 TEL:(850)433-6438 FAX:(850)434-7842
L.B. NO. 0006679 E.B. NO. 0007215

N

GRAPHIC SCALE:

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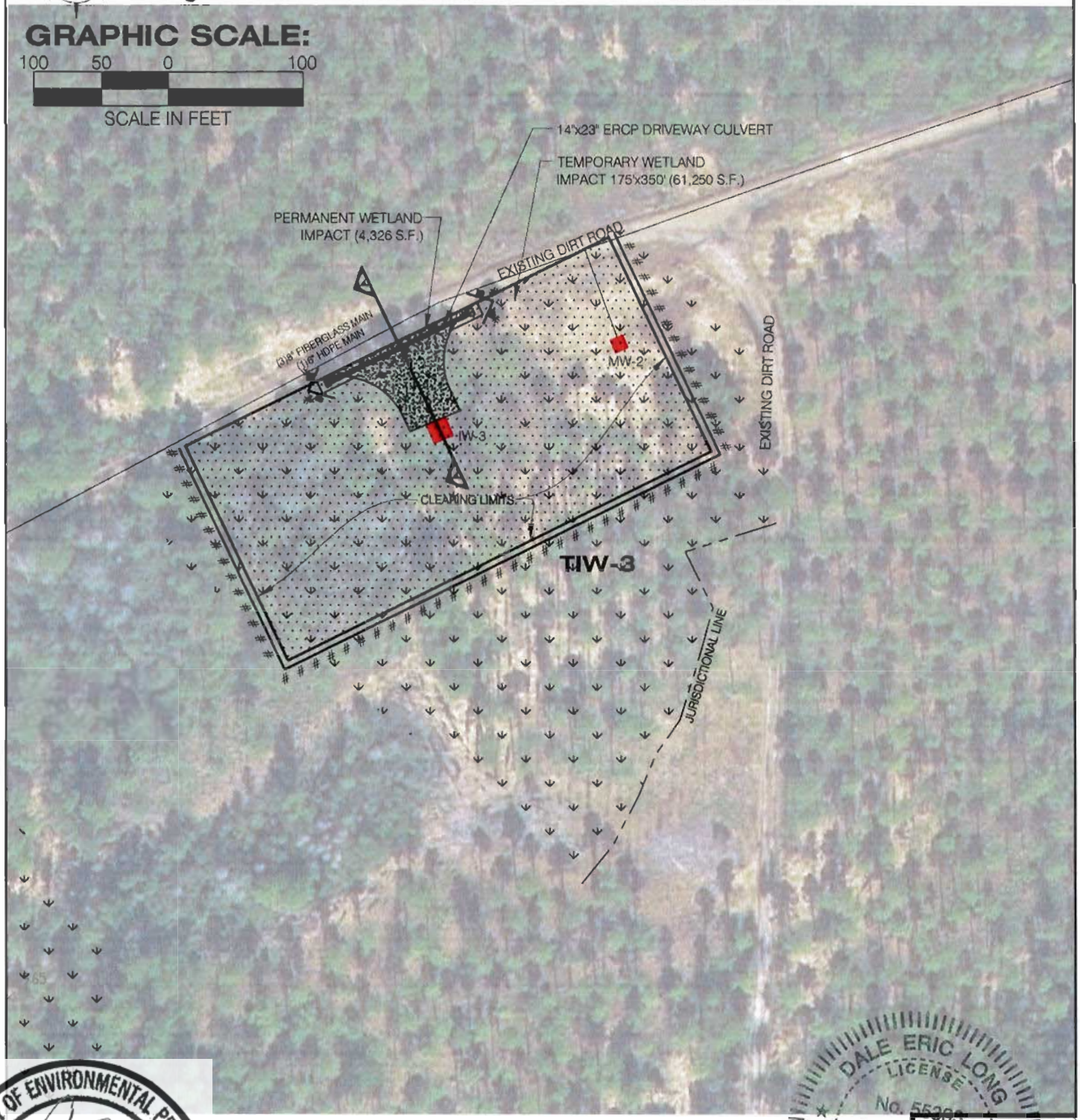
SCALE IN FEET



DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
STATE OF FLORIDA
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Page 5 of 12

DALE ERIC LONG
LICENSE
No. 55393
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Dale E. Long, P.E.
Valid Only With Embossed Seal
11/11/13
Florida Engineer #55393
Sheet 5 of 12

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SEE ABOVE	DRAWN BY: DLM	DATE: 08/07/13	**TIW-3**
30052-000	CHECKED BY: DEL		

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L.B. NO. 0006679 E.B. NO. 0007215

N

GRAPHIC SCALE:
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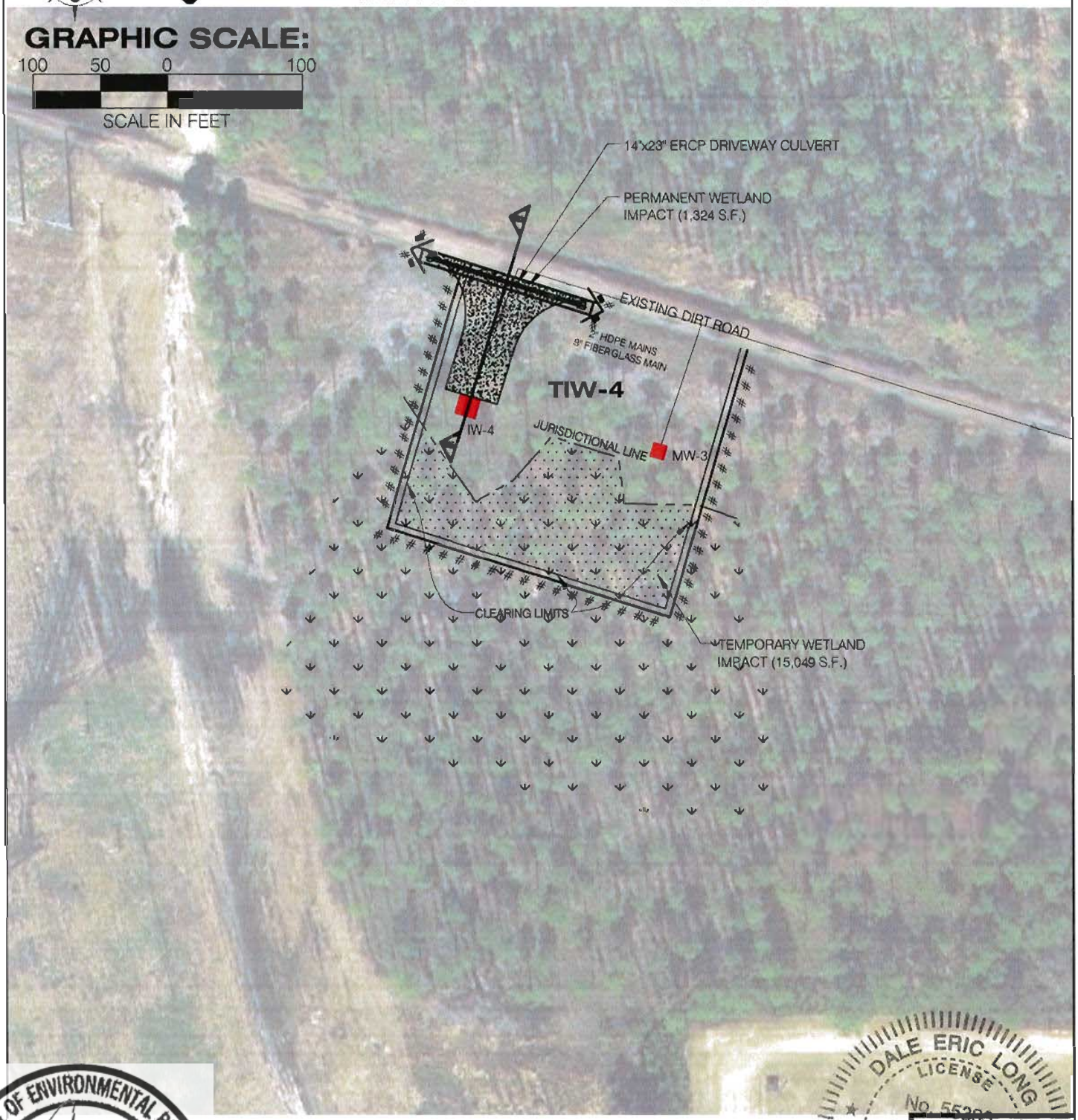
SCALE IN FEET



DALE ERIC LONG LICENSE No. 55393 STATE OF FLORIDA PROFESSIONAL ENGINEER

Dale E. Long, P.E.
Valid Only With Embossed Seal
Florida Engineer #55393
Sheet 6 of 12

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
03-0320483-001-EI
November 12, 2013
Page 6 of 12
STATE OF FLORIDA

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SEE ABOVE	DRAWN BY: DLM	DATE: 08/07/13	TIW-4
00052-00-000	CHECKED BY: DEL		

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FABRE ENGINEERING INC.
ENGINEERS • PLANNERS • SURVEYORS
119 GREGORY SQUARE • PENSACOLA, FLORIDA 32502-4915 TEL:(850)433-6438 FAX:(850)434-7842
L.B. NO. 0006679 E.B. NO. 0007215

N

GRAPHIC SCALE:

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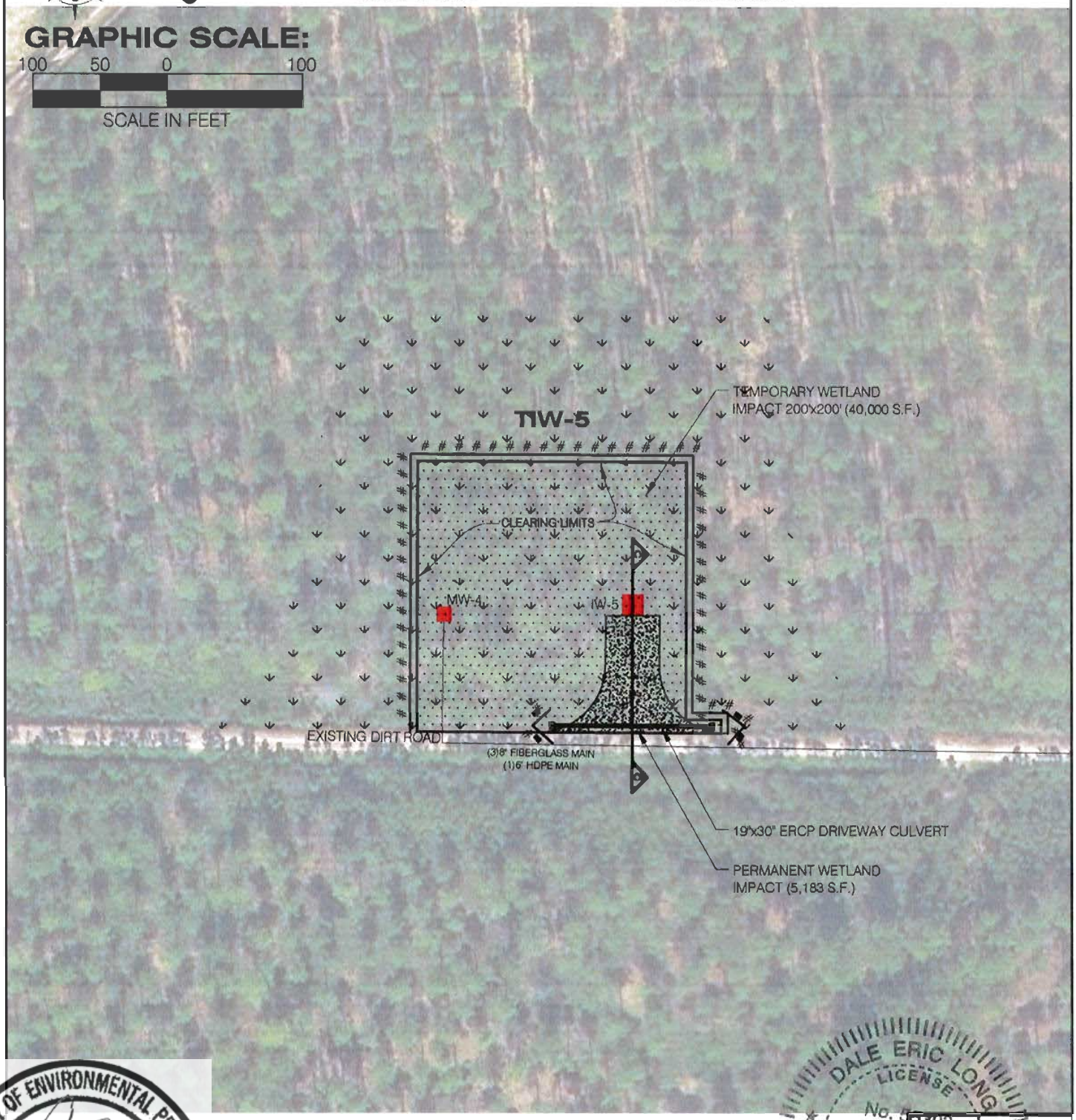
SCALE IN FEET



DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
03-0320483-001-EI
November 12, 2013
Page 7 of 12
STATE OF FLORIDA

DALE ERIC LONG
LICENSE
No. 55393
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Dale E. Long, P.E.
Valid Only With Raised Seal
11/12/13
Florida Engineer #55393
Sheet 7 of 12

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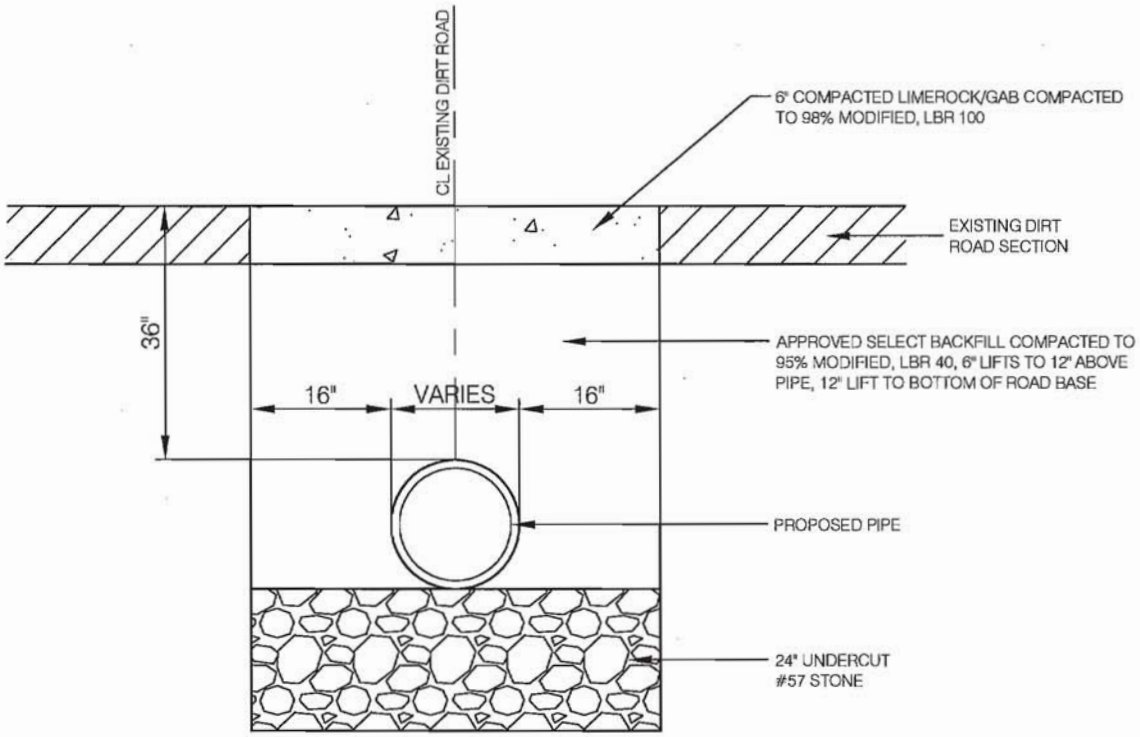
SEE NOTE(S)	SEE ABOVE	DRAWN BY: DLM	DATE: 08/07/13
PROJECT NO.	0052-00-000	CHECKED BY: DEL	

TIW-5

EXHIBIT 1

FABRE ENGINEERING INC.
ENGINEERS ♦ PLANNERS ♦ SURVEYORS
119 GREGORY SQUARE ♦ PENSACOLA, FLORIDA 32502-4915 TEL:(850)433-6438 FAX:(850)434-7842
L.B. NO. 0006679 E.B. NO. 0007215



TYPICAL PIPE INSTALLATION CROSS SECTION

NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
STATE OF FLORIDA
03-0320483-001-EI
November 12, 2013
Page 8 of 12

DALE ERIC LONG
LICENSE
No. 55393
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Dale E. Long, P.E.
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11/14/13
Florida Engineer #55393
Sheet 8 of 12

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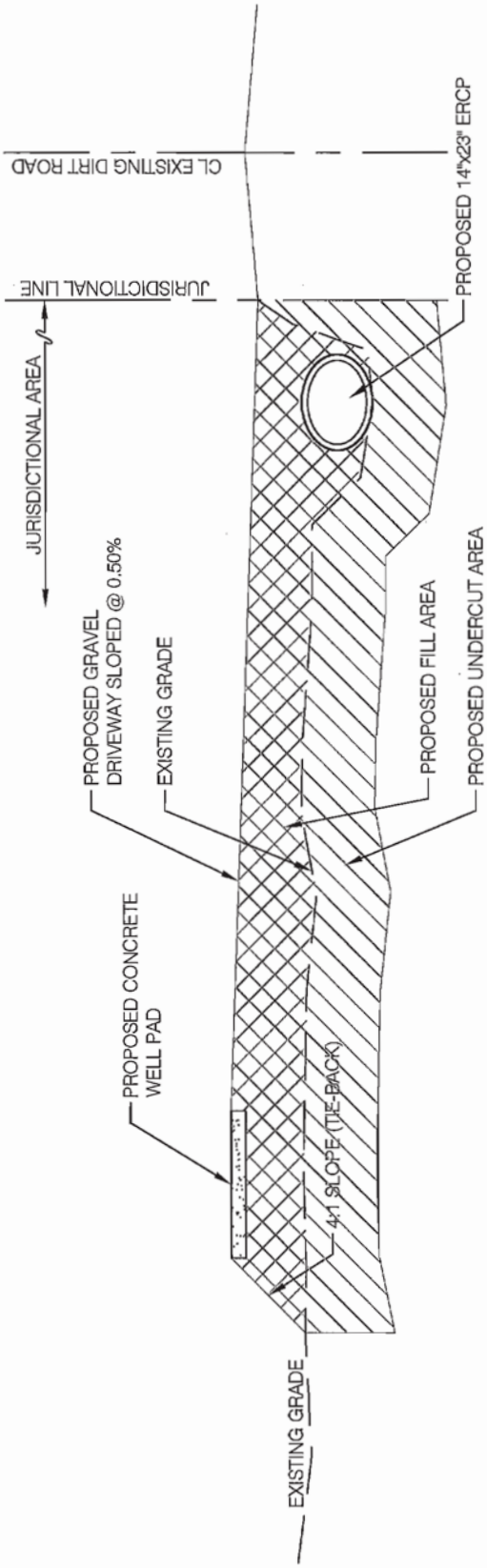
SCALE: AS SHOWN	SEE ABOVE	DRAWN BY: DLM	DATE: 08/07/13
JOB NUMBER:	130052-00-000	CHECKED BY: DEL	

CROSS SECTION

EXHIBIT 1

FABRE ENGINEERING INC.
ENGINEERS ♦ PLANNERS ♦ SURVEYORS
119 GREGORY SQUARE ♦ PENSACOLA, FLORIDA 32502-4915 TEL:(850)433-6438 FAX:(850)434-7842
L.B. NO. 0006679 E.B. NO. 0007215



TIW-3
CROSS SECTION A-A
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
STATE OF FLORIDA
03-0320483-001-EI
November 12, 2013
Page 9 of 12

DALE ERIC LONG
LICENSE
No. 55393
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Dale E. Long, P.E.
Valid Only With Embossed Seal
Florida Engineer No. 55393
Sheet 9 of 12

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JOB NUMBER: 130052-00-000	CHECKED BY: DEL		

EXHIBIT 1

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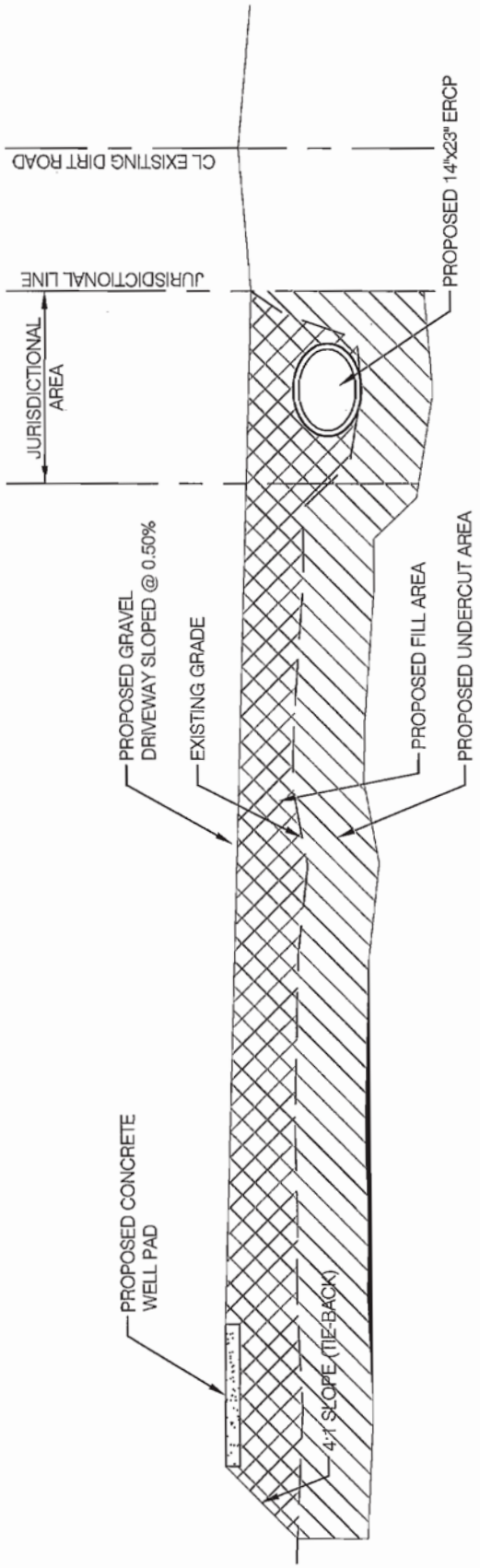
ENGINEERS ♦ PLANNERS ♦ SURVEYORS
119 GREGORY SQUARE ♦ PENSACOLA, FLORIDA 32502-4915 TEL:(850)433-6438 FAX:(850)434-7842
L.B. NO. 0006679 E.B. NO. 0007215



TIW-4
CROSS SECTION B-B
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
03-0320483-001-EI
November 12, 2013
Page 10 of 12
STATE OF FLORIDA

DALE ERIC LONG
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No. 55393
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Dale E. Long, P.E.
Valid Only With Enclosures
Florida Engineer #55393
Sheet 10 of 12

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JOB NUMBER: 130052-00-000	CHECKED BY: DEL		

EXHIBIT 1

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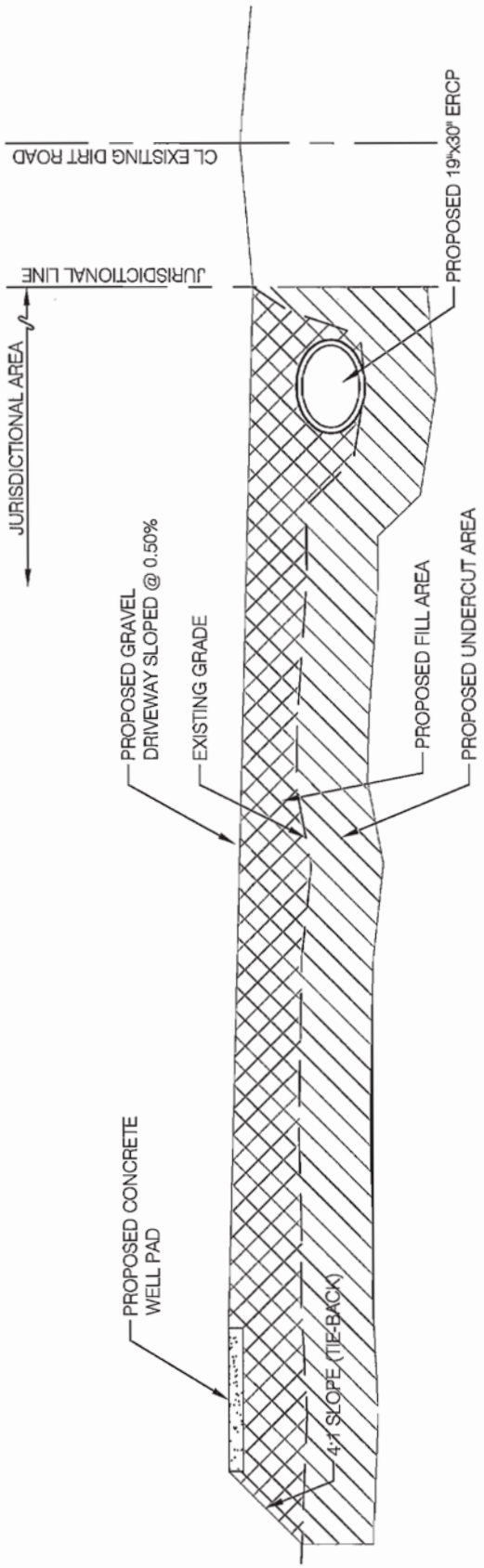

TIW-5
CROSS SECTION C-C
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
STATE OF FLORIDA
03-0320483-001-EI
November 12, 2013
Page 11 of 12

DALE ERIC LONG
LICENSE
No. 55393
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Dale E. Long, P.E.
Valid Only With Embossed Seal
Florida Engineer #55393
Sheet 11 of 12

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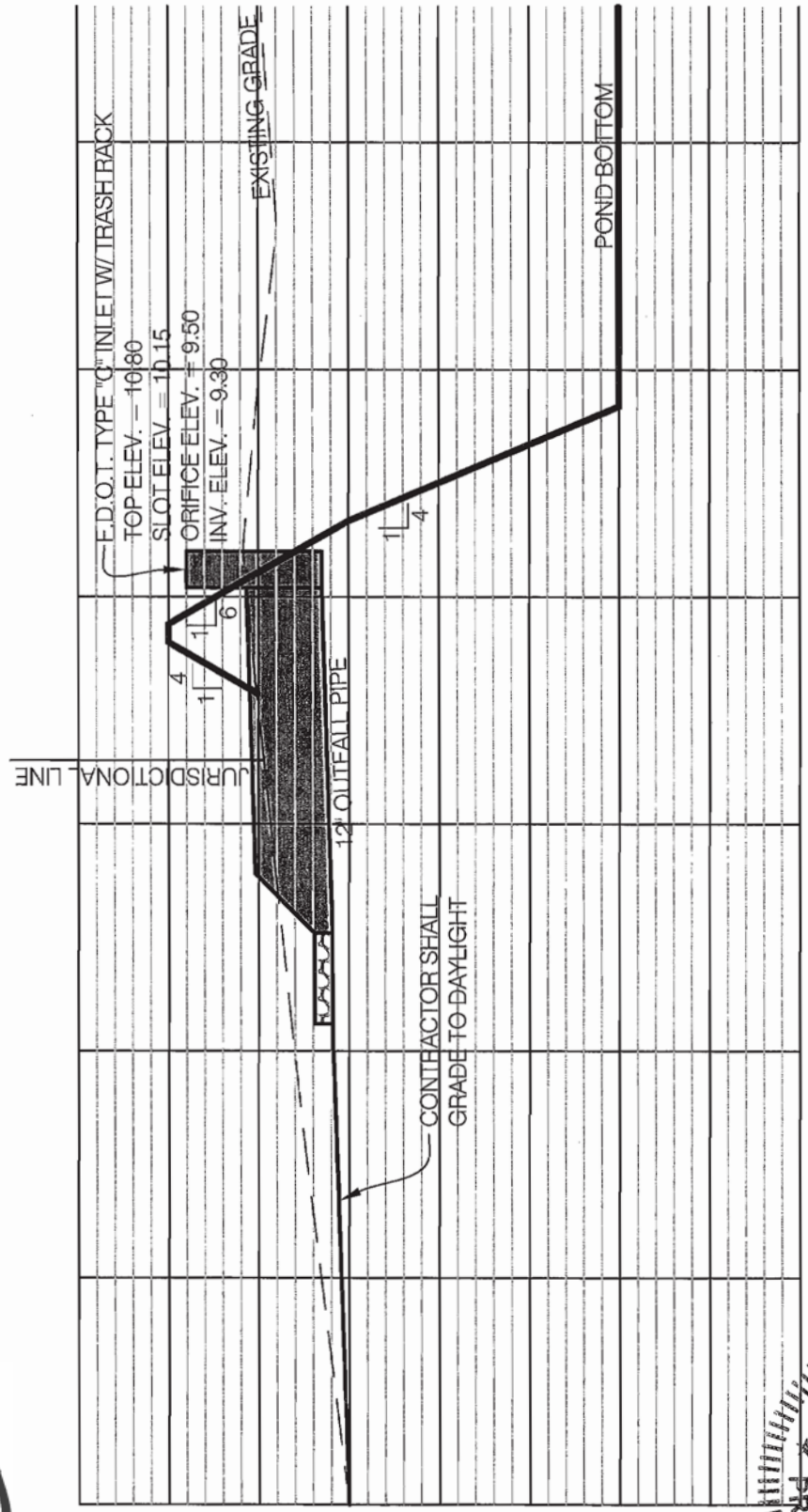
SCALE: AS NOTED	SEE ABOVE	DRAWN BY: DLM	DATE: 08/07/13
JOB NUMBER:	130052-00-000	CHECKED BY: DEL	

CROSS SECTION C-C

EXHIBIT 1

FABRE ENGINEERING INC.
ENGINEERS ♦ PLANNERS ♦ SURVEYORS
119 GREGORY SQUARE ♦ PENSACOLA, FLORIDA 32502-4915 TEL:(850)433-6438 FAX:(850)434-7842
L.B. NO. 0006679 E.B. NO. 0007215



TIW-1 & 2 SECTION D-D

SCALE : 1"=20'(H)
1=2'(V)

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
STATE OF FLORIDA
03-0320483-001-EI
November 12, 2013
Page 12 of 12

DALE ERIC LONG
LICENSE
No. 55393
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Dale E. Long, P.E.
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Florida Engineer #55393
Sheet 12 of 12

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SCALE: AS NOTED	SEE ABOVE	DRAWN BY: DLM	DATE: 08/07/13
JOB NUMBER: 130052-00-000		CHECKED BY: DEL	

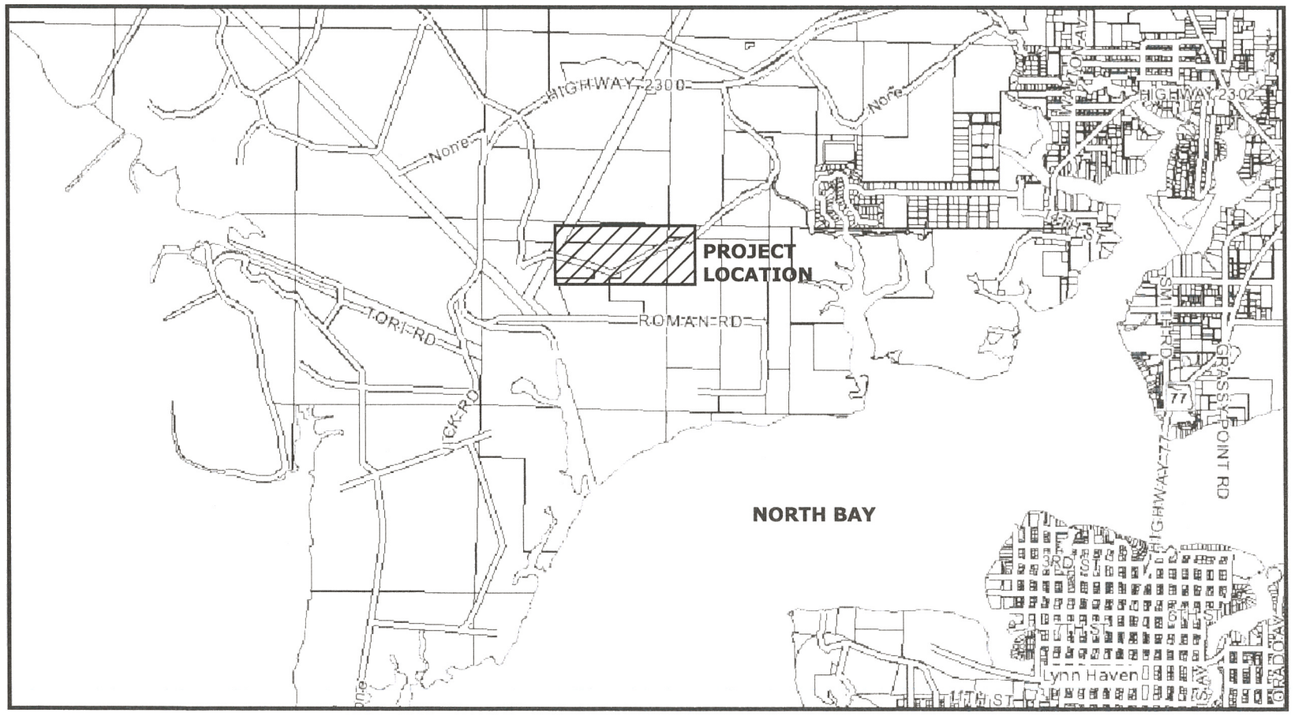
OUTFALL SECTION

EXHIBIT 2

DEPARTMENT OF ENVIRONMENTAL PROTECTION
FLORIDA
RECEIVED
November 4, 2013 LSH

PLANT LANSING SMITH DEEP WELL INJECTION SITE FOR GULF POWER COMPANY

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
03-0320483-001-EI
November 12, 2013
Page 1 of 9
STATE OF FLORIDA



VICINITY MAP
(NOT TO SCALE)

SITE INFORMATION:

SITE ADDRESS: 4300 COUNTY ROAD 2300
PARCEL ID: 36-2S-15-26636-020-000
36-2S-15-26636-010-000

DEVELOPER:

GULF POWER COMPANY
ONE ENERGY PLACE
PENSACOLA, FLORIDA 32520-0093
CONTACT: MR. RICHARD M. MARKEY
PHONE# (850)444-6573

ENGINEER:

FABRE ENGINEERING, INC.
119 GREGORY SQUARE
PENSACOLA, FLORIDA 32502-4915
CONTACT: MR. DALE E. LONG, P.E., LEED A.P.
PHONE# (850) 433-6438
FAX# (850) 434-7842

SHEET INDEX

GENERAL	DESCRIPTION
G-001	COVER SHEET, SHEET INDEX & VICINITY MAP
CIVIL	
C-001	GENERAL NOTES & LEGEND
C-002	NPDES, EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
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DETAILS	
D-101	PROJECT DETAILS

DALE ERIC LONG
LICENSE
No. 56393
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

FABRE ENGINEERING INC.
ENGINEERS • PLANNERS • SURVEYORS
119 GREGORY SQUARE PENSACOLA, FLORIDA 32502-4915 PH: 850-433-6438 FX: 850-434-7842
L.B. NO. 00006 E.B. NO. 00072-5

COVER SHEET
SHEET INDEX & VICINITY MAP

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Released for Construction By: DEL Date: 10/29/13
As-Built "Record Drawing" By: Date:

PLANT LANSING SMITH
DEEP WELL INJECTION SITE
FOR
GULF POWER COMPANY
BAY COUNTY, FLORIDA

Revisions:

Designed By: DEL
Drawn By: DLM
Checked By: DEL
Date: AUGUST 7, 2013
Job Number: 130052
File Name: SEE LEFT
Sheet: G-001

J:\2013\130052 Gulf Power - Plant Smith\DWG\00 G-001 Title Sheet.dwg, 10/29/2013 2:21:33 PM, KIP 3000 Series.pc3

EXHIBIT 2

GENERAL NOTES:

1. THE OWNER INTENDS THAT THE CONTRACT DOCUMENTS WILL PROVIDE A COMPLETE AND FULLY FUNCTIONAL PROJECT. WHERE LABOR AND MATERIAL MAY BE REQUIRED TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL PROJECT BUT IS NOT FULLY SPECIFIED, DETAILED, OR SHOWN AS A CONSTRUCTION ITEM, THE CONTRACTOR SHALL PROVIDE THE REQUIRED MATERIAL OR LABOR TO MEET THE INTENT OF THE CONTRACT DOCUMENTS. THIS REQUIREMENT MAY ONLY BE CONSTRUED AS A REQUIREMENT TO COMPLETE OR MAKE FUNCTIONAL CONSTRUCTION ITEMS SHOWN IN OR ON THE CONTRACT DOCUMENTS.

2. ALL FINAL CONSTRUCTION AND CONSTRUCTION WORK SHALL BE IN COMPLIANCE WITH ALL LOCAL, STATE AND FEDERAL BUILDING AND/OR CONSTRUCTION CODES, RULES OR REQUIREMENTS AS APPLICABLE.

3. ABOVE GROUND FEATURES SHOWN WHICH MAY AFFECT CONSTRUCTION WERE TAKEN FROM THE BEST AVAILABLE INFORMATION AND FIELD SURVEYS. THE OWNER DOES NOT GUARANTEE THAT ALL PHYSICAL FEATURES OR ABOVE GROUND OBSTRUCTIONS AFFECTING CONSTRUCTION ARE SHOWN. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF/HERSELF WITH THE EXISTING CONDITIONS PRIOR TO SUBMITTING HIS/HER BID. THERE SHALL BE NO ADJUSTMENT OF THE CONTRACT PRICE FOR VISIBLE FEATURES AFFECTING CONSTRUCTION.

4. THE CONTRACT DOCUMENTS, SPECIFICATIONS, AND GEOTECHNICAL INVESTIGATION REPORT FOR THIS PROJECT ARE AN INTEGRAL PART OF THE CONSTRUCTION. THE CONTRACTOR SHALL FULLY REVIEW AND FOLLOW ALL REQUIREMENTS OF THESE DOCUMENTS IN THE COMPLETION OF THE WORK. ALL CONSTRUCTION SHALL BE IN STRICT COMPLIANCE WITH THE CONTRACT DOCUMENTS UNLESS OTHERWISE APPROVED IN WRITING BY THE OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE.

5. ELEVATIONS ARE BASED ON BENCHMARK INFORMATION PROVIDED BY BUCHANAN AND HARPER, INC. BENCHMARKS ARE SHOWN ON THE DRAWINGS AND CONTRACTOR SHALL CHECK ELEVATIONS BETWEEN BENCHMARKS DURING CONSTRUCTION. ALL DIMENSIONS AND GRADES ON THESE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.

6. NO DEVIATIONS OR REVISIONS FROM THESE PLANS BY THE CONTRACTOR SHALL BE ALLOWED WITHOUT PRIOR APPROVAL FROM BOTH THE DESIGN ENGINEER, THE OWNER, AS WELL AS ANY OTHER APPLICABLE PERMITTING AGENCIES HAVING JURISDICTION.

7. THE LEGEND IS TYPICAL FOR ALL SHEETS. SOME ITEMS MAY NOT APPLY TO EACH SHEET.

8. CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO AREAS SHOWN ON THE PLANS. CONTRACTOR SHALL BE LIABLE FOR ALL DAMAGE TO AND RESTORATION OF ALL AREAS OUTSIDE OF DESIGNATED WORK AREAS, AT HIS EXPENSE.

9. THE FLORIDA DEPARTMENT OF TRANSPORTATION (F.D.O.T.) DOCUMENTS "ROADWAY AND TRAFFIC DESIGN STANDARDS" AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ARE CONSIDERED PART OF THE CONTRACT DOCUMENTS OF THIS PROJECT BY REFERENCE. WHERE F.D.O.T. INDEXES OR SPECIFICATIONS ARE REFERENCED IN THE CONSTRUCTION PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE APPROPRIATE F.D.O.T. DOCUMENT(S) UNLESS OTHERWISE INDICATED ON , OR MODIFIED BY, THE CONSTRUCTION PLANS.

10. THIS SET OF PLANS IS FOR THE CIVIL CONSTRUCTION PORTIONS OF THE PROJECT. THE CONTRACTOR SHALL REVIEW AND BE FAMILIAR WITH THE ENTIRE PLAN SET FOR BUILDING AND UTILITY INTERFACES.

11. IN THE EVENT THAT ANY STANDARDS OR SPECIFICATIONS AS DESCRIBED HEREIN ARE IN CONFLICT WITH EACH OTHER, OR THAT SHOWN IN THE PLANS, THE MORE STRINGENT CRITERIA WILL APPLY. CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY AND IN WRITING SHOULD THE MORE STRINGENT CRITERIA BE UNCLEAR FOR ENGINEER'S INTERPRETATION OF THE MORE STRINGENT CRITERIA TO BE USED.

12. THESE PLANS WERE BASED ON A REPORT OF SUBSURFACE EXPLORATION BY UNIVERSAL ENGINEERING SCIENCES PHONE: (850) 215-2060. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW A COPY OF THE REPORT(S) FROM THE GEOTECHNICAL ENGINEER, FAMILIARIZE THEMSELVES WITH THE CONDITIONS AS DESCRIBED IN THE REPORT(S), AND COMPLY WITH ALL RECOMMENDATIONS MADE IN THE REPORT(S) SPECIFICALLY FOR SOIL PREPARATION ON THE SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COPY OF ALL SUPPLEMENTAL REPORTS FOR THIS PROJECT FROM THE OWNER AND TO FOLLOW THE SUPPLEMENTAL REPORTS' RECOMMENDATIONS.

13. THE OWNER, OWNER'S REPRESENTATIVES AND INSPECTORS OF APPLICABLE GOVERNMENT AGENCIES HAVING JURISDICTION, SHALL AT ALL TIMES HAVE ACCESS TO THE WORK SITE WHEREVER AND WHENEVER IT IS IN PREPARATION OR PROGRESS. THE CONTRACTOR SHALL PROVIDE PROPER FACILITIES FOR SUCH ACCESS AND INSPECTIONS.

14. IT IS THE CONTRACTOR'S RESPONSIBILITY TO TAKE ALL REASONABLE AND PRUDENT PRECAUTIONS TO INSURE THAT ALL COMPLETED WORK, MATERIALS AND EQUIPMENT STORED ON SITE ARE SAFE AND SECURE FROM UNAUTHORIZED ACCESS OR USE. SUCH PRECAUTIONS MAY INCLUDE INSTALLATION OF SIGNS, FENCES, OR POSTING OF SECURITY GUARDS.

15. CONSTRUCTION NOTES ON THE PLANS AND STATIONING IDENTIFIED ARE NONSPECIFIC AND APPROXIMATE AND ARE INTENDED TO SHOW GENERAL INTENT OF THE WORK. THE CONTRACTOR SHALL SUPPLY ALL MATERIALS & LABOR TO PROVIDE A COMPLETE & FUNCTIONAL PROJECT AS IDENTIFIED ON THE PLANS.

16. THE CONTRACTOR SHALL COMPLY FULLY WITH ALL PERMIT REQUIREMENTS IMPOSED BY THE REGULATORY AUTHORITIES.

17. THE ENGINEER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS IN ADVANCE OF ALL TESTING RELATED TO CIVIL WORK.

18. GULF POWER ENVIRONMENTAL AFFAIRS SHALL BE RESPONSIBLE FOR SUBMITTING THE NOTICE OF COMMENCEMENT FOR THE ENVIRONMENTAL RESOURCE PERMIT.

19. ANY DAMAGE TO EXISTING ROAD DURING CONSTRUCTION WILL BE REPAIRED BY THE CONTRACTOR.

GROUND WATER DE-WATERING NOTES:

1. ALL DISCHARGE FROM ANY REQUIRED DE-WATERING OPERATIONS SHALL BE RESTRICTED AND MAINTAINED ON-SITE. PERCOLATION THROUGH TEMPORARY PONDS OR EVAPORATION ARE THE ONLY ALLOWABLE MEANS OF DISPOSAL. ALTERNATIVELY THE CONTRACTOR, AT HIS EXPENSE, MAY PROVIDE TESTING OF GROUNDWATER PER FDEP GUIDELINES AND ACQUIRE A FDEP DISCHARGE PERMIT IF REQUIRED.

RECORD DRAWING NOTES:

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR WILL OBTAIN A COPY OF THE MINIMUM REQUIREMENTS FOR AS-BUILT RECORD DRAWING ACCEPTANCE FOR THE AGENCY HAVING JURISDICTION (SUCH AS THE STATE), FAMILIARIZE THEMSELVES WITH THESE REQUIREMENTS, AND PRODUCE AS-BUILT RECORD DRAWINGS THAT SUBSTANTIALLY COMPLY WITH OR EXCEED THESE REQUIREMENTS, INCLUDING ANY REQUIRED ELECTRONIC DATA SUBMITTALS.

2. SUBMIT RED LINE DRAWINGS TO THE ENGINEER TWO WEEKS PRIOR TO FINAL INSPECTION OF THE WORK TO BE CERTIFIED.

3. CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS DURING CONSTRUCTION WHICH SHOW "AS-BUILT" CONDITIONS OF ALL WORK INCLUDING PIPING, DRAINAGE STRUCTURES, TOPOGRAPHY OF POND(S), OUTLET STRUCTURES, DIMENSIONS, ELEVATIONS, GRADING, ETC. RECORD DRAWINGS SHALL BE PROVIDED TO THE ENGINEER OF RECORD PRIOR TO REQUESTING FINAL INSPECTION.

4. THE ENGINEER RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO UNCOVER, RETEST AND/OR PERFORM ANY ACTION NECESSARY TO ENSURE THAT THE IMPROVEMENTS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS

5. THE CONTRACTOR WILL BE RESPONSIBLE TO PROVIDE SUFFICIENT AS-BUILT INFORMATION TO CONVEY THAT THE CONSTRUCTION HAS BEEN COMPLETED WITHIN ACCEPTABLE TOLERANCES TO THE APPROVED DESIGN AND SHALL INCLUDE BUT IS NOT LIMITED TO THE FOLLOWING:

STORM DRAINAGE

1. TOP ELEVATION OF EACH MANHOLE FRAME AND COVER/GRATE AS WELL AS ALL OTHER STRUCTURES (HEADWALLS, CONTROL STRUCTURES, ETC.)
2. INVERT OF EACH LINE ENTERING AND LEAVING EACH STRUCTURE, INCLUDING UNDERDRAIN PIPES.
3. INVERTS OF ALL MITRED END SECTIONS.
4. ACTUAL GRADE OF PIPE BETWEEN THE STRUCTURES.
5. INVERT ELEVATION AND TWO HORIZONTAL TIES FROM PERMANENT VISIBLE OBJECTS TO ALL STORM STUB-OUTS.
6. UNDERDRAINS.
7. POND CROSS SECTIONS.
8. POND OVERFLOW STRUCTURE ELEVATIONS.
9. SAND CHIMNEYS.

OTHER IMPROVEMENTS

1. BUILDING(S), SIDEWALKS, PAVEMENT, CURB & GUTTER.

PROJECT SAFETY NOTES:

1. SAFETY:
   - A. DURING THE CONSTRUCTION AND/OR MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS/HER PERSONNEL.
   - B. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA.
   - C. THE MINIMUM STANDARDS AS SET FORTH IN THE CURRENT EDITION OF "THE SATE OF FLORIDA, MANUAL ON TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS" SHALL BE FOLLOWED IN THE DESIGN, APPLICATION, INSTALLATION, MAINTENANCE AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES, WARNING DEVICES AND BARRIERS NECESSARY TO PROTECT THE PUBLIC AND CONSTRUCTION PERSONNEL FROM HAZARDS WITHIN THE PROJECT LIMITS.
   - D. ALL TRAFFIC CONTROL MARKINGS AND DEVICES SHALL CONFORM TO THE PROVISIONS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PREPARED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION.
   - E. ALL SUBSURFACE CONSTRUCTION SHALL COMPLY WITH THE "TRENCH SAFETY ACT". THE CONTRACTOR SHALL INSURE THAT THE METHOD OF TRENCH PROTECTION AND CONSTRUCTION IS IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS.
   - F. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.
2. THE CONTRACTOR SHALL BE SOLELY LIABLE FOR THE SAFETY OF THE WORK AND ANY AND ALL DAMAGES ARISING FROM THE CONSTRUCTION SHOWN ON THE CONSTRUCTION PLANS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ASSURING THAT THE CONSTRUCTION MATERIALS AND METHODS ARE COMPLIANT WITH ALL APPLICABLE LOCAL, STATE OR FEDERAL SAFETY CODES, RULES OR REQUIREMENTS.
3. THE CONTRACTOR SHALL COMPLY IN EVERY RESPECT WITH THE FEDERAL OCCUPATIONAL HEALTH AND SAFETY ACT OF 1970 AND ALL RULES AND REGULATIONS NOW OR HEREAFTER IN EFFECT UNDER SAID ACT, AND THE CONTRACTOR FURTHER AGREES TO COMPLY WITH ANY AND ALL APPLICABLE STATE LAWS AND REGULATION PERTAINING TO JOB SAFETY AND HEALTH.
4. THE CONTRACTOR SHALL PROTECT AND KEEP OWNER (INCLUDING THEIR AGENTS AND EMPLOYEES) FREE AND HARMLESS FROM ANY AND ALL LIABILITY, PUBLIC OR PRIVATE, PENALTIES, CONTRACTUAL OR OTHERWISE, LOSSES, DAMAGES, COSTS, ATTORNEY'S FEES, EXPENSES, CAUSES OF ACTION, CLAIMS OR JUDGEMENTS RESULTING FROM THE FEDERAL OCCUPATIONAL HEALTH AND SAFETY ACT OF 1970 AS AMENDED OR ANY RULE OR REGULATION PROMULGATED THEREUNDER OR OF ANY STATE LAWS OR REGULATIONS PERTAINING TO JOB SAFETY AND HEALTH ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE PERFORMANCE OF WORK OR WORK TO BE PERFORMED UNDER THIS CONTRACT, AND CONTRACTOR SHALL INDEMNIFY OWNER FROM ANY SUCH CLAIMS, PENALTIES, SUITS OR ACTIONS, PUBLIC OR PRIVATE, ADMINISTRATIVE OR JUDICIAL, INCLUDING ATTORNEY'S FEES PAID OR INCURRED BY OR ON BEHALF OF OWNER, JOINTLY OR SEVERALLY, AND/OR THEIR AGENTS AND EMPLOYEES. THE CONTRACTOR FURTHER AGREES, IN THE EVENT OF A CLAIMED VIOLATION OF ANY FEDERAL OR STATE SAFETY AND HEALTH LAW OR REGULATION ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE PERFORMANCE OF WORK OR WORK TO BE PERFORMED UNDER THIS CONTRACT, OWNER MAY IMMEDIATELY TAKE WHATEVER ACTION IS DEEMED NECESSARY BY OWNER TO REMEDY THE CLAIMED VIOLATION. ANY AND ALL COSTS OR EXPENSES PAID OR INCURRED BY OWNER IN TAKING SUCH ACTION SHALL BE BORNE BY CONTRACTOR, AND CONTRACTOR AGREES TO PROTECT, HOLD HARMLESS AND INDEMNIFY OWNER AGAINST ANY AND ALL SUCH COSTS OR EXPENSES.

DEPARTMENT OF ENVIRONMENTAL PROTECTION FLORIDA

RECEIVED
November 4, 2013 LSH

EXISTING LEGEND

- FIP FOUND IRON PIPE
- FIRC FOUND IRON ROD & CAP
- FIR FOUND IRON ROD
- LIGHT POLE
- WV WATER VALVE
- GV GAS VALVE
- DRAINAGE MANHOLE
- SANITARY MANHOLE
- TELEPHONE MANHOLE
- FIRE HYDRANT
- DP PER APPROVED DEVELOPMENT PLANS
- CO CLEAN OUT
- INV. INVERT
- OHU OVERHEAD UTILITY WIRES
- BFOC BURIED FIBER OPTIC LINE
- GAS BURIED GAS LINE
- BTL BURIED TELEPHONE LINE
- RCP REINFORCED CONCRETE PIPE
- DRAIN INLET
- WETLANDS FLAG
- GUY ANCHOR
- POWER POLE
- SOIL BORING
- FFE FINISH FLOOR ELEVATION
- WM WATER METER
- STREET SIGN
- MB MAIL BOX
- TPED TELEPHONE PEDESTAL
- 8.65 SPOT ELEVATION
- 18" R.C.P. STORM WATER DRAINAGE PIPE
- 2"G GAS LINES PER MARK-OUT W/SIZE
- 3"W WATER LINES W/SIZE
- SANITARY SEWER LINE
- OHU OVERHEAD UTILITY LINE
- 9 CONTOUR LINES
- BT BURIED TELEPHONE LINE
- WETLANDS
- CHAIN LINK FENCE
- (TYP) TYPICAL
- RCP REINFORCED CONCRETE PIPE
- TBM TEMPORARY BENCH MARK
- ELEV. ELEVATION
- INV. INVERT
- R/W RIGHT-OF-WAY
- EXISTING GRAVEL
- EXISTING CONCRETE
- EXISTING WETLANDS AREA

PROPOSED LEGEND

- HP - HIGH POINT
- LP - LOW POINT
- 162.85 - PROPOSED ELEVATION
- 44 - CONTOUR AND ELEVATION
- - SILTFENCING
- - FLOW ARROW
- - PROPOSED GRAVEL
- - PROPOSED CONCRETE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
03-0320483-001-EI
November 12, 2013
Page 2 of 9
STATE OF FLORIDA

DALE ERIC LONG
LICENSE
No. 55393
STATE OF FLORIDA
PROFESSIONAL ENGINEER
11/4/13

BUCHANAN ENGINEERING INC.
CONSULTING ENGINEERS • PLANNERS • SURVEYORS
1180 EAST PARK AVENUE, TALLAHASSEE, FLORIDA 32301 PH: 850-434-0438 FAX: 850-434-7842
L.B. NO. 0007275 L.B. NO. 0006

GENERAL NOTES & LEGEND

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Released for Construction By: DEL Date: 10/28/13

As-Built "Record Drawing" By: Date:

PLANT LANSING SMITH DEEP WELL INJECTION SITE
FOR
GULF POWER COMPANY
BAY COUNTY, FLORIDA

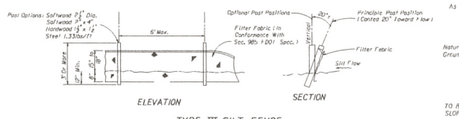
Revisions:

Drawn By: DLM
Checked By: DEL
Date: AUGUST 7, 2013
Job Number: 130052
File Name: SEE LEFT
Sheet: C-001

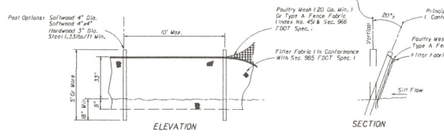
SHEET 01 OF 08

H:\2013\130052 Gulf Power - Plant Smith\DWG\01 C-001 Notes & Legend.dwg, 10/29/2013 2:22:43 PM, KIP 3000 Series.pc3

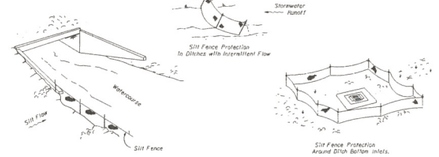
EXHIBIT 2



TYPE III SILT FENCE



TYPE IV SILT FENCE



SILT FENCE APPLICATIONS

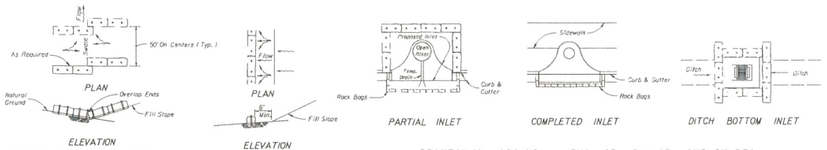
BARRIERS FOR FILL SLOPES

NOTES FOR SILT FENCES

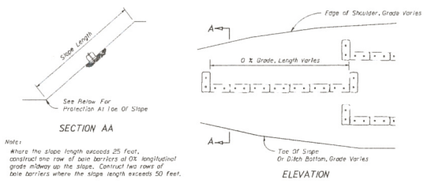
1. Type III Silt Fence to be used at most locations. Where used in ditches, the spacing for Type III Silt fence shall be in accordance with Chart I, Sheet 1.
2. Type IV Silt Fence to be used where large sediment loads are anticipated. Suggested use is where fill slope is 1:2 or steeper and length of slope exceeds 25 feet. Avoid use where the detained water may back into travel lanes or off the right of way.
3. Do not construct silt fences across permanent flowing watercourses. Silt fences are to be at upland locations and turbidity barriers used at permanent bodies of water.
4. Where used as slope protection, Silt Fence is to be constructed on 0% longitudinal grade to avoid channelizing runoff along the length of the fence.

NOTES FOR BAILED HAY OR STRAW BARRIERS

2. Hay bales shall be trenched 3" to 4" and anchored with 2 - 1" x 2" (or 1" dia.) x 4' wood stakes. Stakes of other materials or shape providing equivalent strength may be used if approved by the Engineer. Stakes other than wood shall be removed upon completion of the project.
3. Rails and posts shall be 2" x 4" wood. Other materials providing equivalent strength may be used if approved by the engineer.
4. Adjacent bales shall be butted firmly together. Unavoidable gaps shall be plugged with hay or straw to prevent silt from passing.
5. Where used in conjunction with silt fence, hay bales shall be placed on the upstream side of the fence.
6. Bales to be paid for under the contract unit price for Baled Hay or Straw, EA. The unit price shall include the cost of Filter fabric for Type I and II Barriers. Sand bags shall be paid for under the unit price for Sandbagging, CY. Rock bags to be paid for under the contract unit price for Rock Bags, EA.

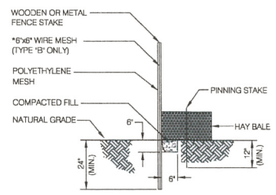


PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



FDOT EROSION CONTROL MEASURES

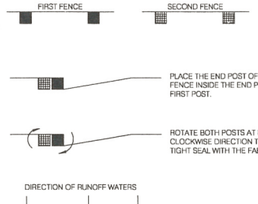
NO SCALE



* ALL SILT FENCING THAT PROTECTS JURISDICTIONAL WETLANDS MUST BE TYPE "B" SILT FENCING. ALL OTHER AREAS MUST USE POLYETHELENE MESH SILT FENCING.

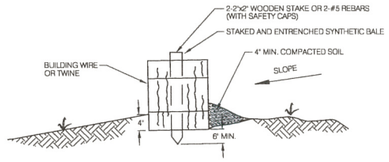
SILT FENCE DETAIL

NOT TO SCALE



BUTTING SILT FENCE DETAIL

NOT TO SCALE

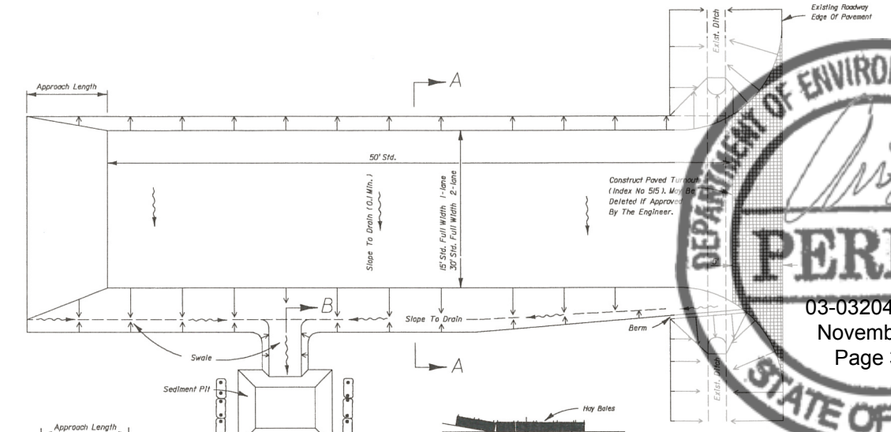


SYNTHETIC BALE BARRIER CONSTRUCTION

BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER. ALL BALES SHALL BE SECURELY ANCHORED BY AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER. CONTRACTOR SHALL WEDGE OR CHINK LOOSE STRAW BETWEEN BALES. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE AS PROMPTLY AS NEEDED. BALE BARRIERS SHALL BE REMOVED AFTER THEY HAVE SERVED THEIR USEFULNESS, BUT NOT BEFORE THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED. BALE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES.

SYNTHETIC HAY BALE DETAIL

NOT TO SCALE



GENERAL NOTES

1. A Soil Tracking Prevention Device (STPD) shall be constructed at locations designated by the engineer for points of egress from unstabilized areas of the project to public roads where offsite tracking of mud could occur. Traffic from unstabilized areas of the construction project shall be directed thru a STPD. Barriers, flagging, or other positive means shall be used as required to limit and direct vehicular egress across the STPD.
2. The Contractor may propose an alternative technique to minimize offsite tracking of sediment. The alternative must be reviewed and approved by the Engineer prior to its use.
3. All materials spilled, dropped, or tracked onto public roads (including the STPD aggregate and construction mat) shall be removed daily, or more frequently if so directed by the Engineer.
4. Aggregates shall be as described in Section 901 excluding 901-2.3. Aggregates shall be FDOT size #1. If this size is not available, the next available smaller size aggregate may be substituted with the approval of the Engineer. Sizes containing excessive small aggregate will track off the project and are unsuitable.
5. The sediment pit should provide a retention volume of 3600 cubic feet/acre of surface area draining to the pit. When the STPD is isolated from other drainage areas, the following pit volumes will satisfy this requirement:

   15' x 50' = 100 ft³ 30' x 50' = 200 ft³

   As an option to the sediment pit, the width of the swale bottom can be increased to obtain the volume. When the sediment pit or swale volume has been reduced to one half, it shall be cleaned. When a swale is used, hay bales or silt fence shall be placed along the entire length.
6. The swale ditch draining the STPD shall have a 0.2% minimum and a 1.0% maximum grade along the STPD and to the sediment pit.
7. Mitered end sections are not required when the sidedrain pipe satisfies the clear zone requirements.
8. The STPD shall be maintained in a condition that will allow it to perform its function. To prevent offsite tracking, the STPD shall be rinsed (daily when in use) to move accumulated mud downward thru the stone. Additional stabilization of the vehicular route leading to the STPD may be required to limit the mud tracked.
9. A STPD shall be paid for under the contract unit price for Soil Tracking Prevention Device, EA. The unit price shall constitute full compensation for construction, maintenance, replacement of materials, removal, and restoration of the area utilized for the STPD; including but not limited to excavation, grading, temporary pipe (including MES when required), filter fabric, aggregate, paved turnout (including asphalt and base construction), ditch stabilization, approach route stabilization, sediment removal and disposal, water, rinsing and cleaning of the STPD and cleaning of public roads, grassing and sod. Hay bales shall be paid for under the contract unit price for Hay or Straw Baled, EA. Silt fence shall be paid for under the contract unit price for Staked Silt Fence, LF.
10. The nominal size of a standard STPD is 15' x 50' unless otherwise shown in the plans. If the volume of entering and exiting vehicles warrant, a 30' width STPD may be used if approved by the Engineer. When a double width (30') STPD is used, the pay quantity shall be 2 for each location.

SOIL TRACKING PREVENTION DEVICE TYPE "A"

F.D.O.T. INDEX #106, SHEET 1 OF 1

NOT TO SCALE

NOTES:

1. CONTRACTOR SHALL ROUGH IN STORMWATER PONDS IMMEDIATELY FOLLOWING CLEARING, PRIOR TO ANY OTHER CONSTRUCTION ACTIVITIES.
2. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS AND ALL REGULATIONS CONTROLLING POLLUTION OF THE ENVIRONMENT.
3. CONTRACTOR SHALL EXECUTE ALL MEASURES NECESSARY TO LIMIT THE TRANSPORTATION OF SEDIMENTS OUTSIDE THE LIMITS OF THE PROJECT. THE EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION. THIS CONDITION MUST BE SATISFIED UNTIL PROJECT IS FULLY COMPLETED AND ACCEPTED. CONTRACTOR SHALL PROVIDE ROUTINE MAINTENANCE ON TEMPORARY EROSION CONTROL FEATURES AT HIS EXPENSE. PROVISION MUST BE MADE TO PRESERVE THE INTEGRITY AND CAPACITY OF CHECK WEIRS, SEDIMENT BASINS, SLOPE DRAINS, GRADING PATTERNS, ETC. CONTRACTOR SHALL PROVIDE HAY BALES, SILT BARRIERS, MURAFI FILTERS, TEMPORARY GRASSING, ETC., AS REQUIRED TO FULLY COMPLY WITH THE INTENT OF THIS SPECIFICATION. CONTRACTOR SHALL PROVIDE CONTINUOUS MONITORING OF EROSION AND SEDIMENT CONTROLS TAKEN AND SHALL DOCUMENT ALL CORRECTIVE MEASURES. A COPY OF THE APPROVED SWPPP SHALL BE KEPT ON SITE AT ALL TIMES FOR REVIEW BY OWNER'S REPRESENTATIVES AND BY NPDES INSPECTORS.
4. PROVIDE EFFECTIVE TEMPORARY AND PERMANENT EROSION CONTROL FOLLOWING THE REQUIREMENTS IN SECTION 104 OF THE STATE DEPARTMENT OF TRANSPORTATION STANDARDS SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
5. INLETS AND CATCH BASINS SHALL BE PROTECTED FROM SEDIMENTATION RESULTING FROM SURFACE RUNOFF UNTIL COMPLETION OF ALL CONSTRUCTION OPERATION THAT MAY CAUSE SEDIMENT RUNOFF. FILTER FABRIC SHALL BE PLACED AND MAINTAINED UNDER THE GRATE AND FILTER SOCKS PLACED IN FRONT OF THE THROAT OF CURB INLETS, DURING CONSTRUCTION.
6. ALL DISTURBED AREAS WHICH ARE NOT PAVED ARE TO BE SEEDED, FERTILIZED, MULCHED, HYDROSEEDED, OR SODDED AS NECESSARY, UNLESS NOTED OTHERWISE. SOD PINS SHALL BE USED WHERE SLOPES ARE STEEPER THAN 3:1.
7. GRASSING SHALL BE INSTALLED AND MAINTAINED ON ALL EXPOSED SLOPES AND DISTURBED AREAS WITHIN 48 HOURS OF COMPLETING FINAL GRADE, AND AT ANY OTHER TIME AS NECESSARY, TO PREVENT EROSION, SEDIMENTATION OR TURBID DISCHARGES INTO THE WATER OF THE STATE OR ADJACENT WETLANDS. A VEGETATIVE COVER THAT STABILIZES AND PREVENTS EROSION OF THE FILL MATERIAL SHALL BE ESTABLISHED WITHIN 60 DAYS OF SODDING. UPON ESTABLISHMENT OF A SUBSTANTIAL VEGETATIVE COVER, ALL TURBIDITY BARRIERS AND EROSION CONTROL DEVICES SHALL BE REMOVED.
8. ALL EROSION & SEDIMENT CONTROLS SHALL BE CONSISTENT WITH PERFORMANCE STANDARDS FOR EROSION AND SEDIMENT CONTROL AND STORMWATER TREATMENT SET FORTH IN SECTION 62-40.432, FLORIDA ADMINISTRATIVE CODE, THE APPLICABLE STORMWATER OR ENVIRONMENTAL RESOURCE PERMITTING REQUIREMENTS OF FDEP OR A WATER MANAGEMENT DISTRICT, AND THE GUIDELINES CONTAINED IN THE FLORIDA DEVELOPMENT MANUAL: A GUIDE TO SOUND LAND AND WATER MANAGEMENT (DEP) 1988 AND ANY SUBSEQUENT AMENDMENTS.
9. TEMPORARY SEDIMENT CONTROL MEASURES INCLUDE, BUT ARE NOT LIMITED TO: SILT FENCING, HAY BALE BARRIERS, CONSTRUCTION OF TEMPORARY SEDIMENT CHECK DAMS, AND TEMPORARY SEEDING. PERMANENT SEDIMENT CONTROL MEASURES INCLUDE BUT ARE NOT LIMITED TO SODDING, RIP-RAP STABILIZATION, THE STORMWATER CONVEYANCE SYSTEM, AND PERMANENT SODDING AND SEEDING. STABILIZATION PRACTICES ARE DETAILED ON THE CONSTRUCTION PLANS, BUT SHALL INCLUDE ANY MEASURES NECESSARY TO PREVENT SEDIMENT FROM ESCAPING THE SITE AND TO COMPLY WITH ALL APPLICABLE FDEP STANDARDS.
10. WHEN NECESSARY EARTHEN BERMS WILL BE PROVIDED TO PREVENT STORMWATER RUNOFF FROM DISCHARGING WITHOUT BEING ROUTED TO THE DRAINAGE SWALES AND THROUGH THE STORMWATER SYSTEM.
11. CONSTRUCTION OPERATIONS SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING AND/OR GRADING OPERATIONS.
12. SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
13. CLEANUP WILL BE DONE IN A MANNER TO INSURE THAT EROSION CONTROL MEASURES ARE NOT DISTURBED.
14. THE PROJECT WILL CONTINUALLY BE INSPECTED FOR SOIL EROSION AND SEDIMENT CONTROL COMPLIANCE. DEFICIENCIES WILL BE CORRECTED BY THE CONTRACTOR WITHIN 24 HOURS.
15. TEMPORARY EROSION CONTROL MEASURES SHALL BE COMPLETELY REMOVED BY THE CONTRACTOR UPON ESTABLISHMENT OF PERMANENT CONTROL MEASURES OR WHEN DIRECTED BY THE OWNER.
16. THE CONTRACTOR SHALL RESTORE ALL DISTURBED RIGHTS-OF-WAY IN ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
17. THE CONTRACTOR SHALL COMPLETE SITE RESTORATION AS THE PROJECT PROGRESSES.
18. THE OWNER SHALL SEND A COPY OF THE F.D.E.P. / N.P.D.E.S. NOTICE OF INTENT TO THE COUNTY BUILDING DEPARTMENT UPON RECEIPT.
19. THE CONTRACTOR SHALL INSTALL PRIOR TO THE START OF CONSTRUCTION AND MAINTAIN DURING CONSTRUCTION ALL SEDIMENT CONTROL MEASURES AS REQUIRED TO RETAIN ALL SEDIMENTS ON SITE. IMPROPER SEDIMENT CONTROL MEASURES MAY RESULT IN CODE ENFORCEMENT VIOLATION.
20. THIS PROJECT WILL REQUIRE AN F.D.E.P. / N.P.D.E.S. PERMIT. THE CONTRACTOR SHALL PREPARE A DRAFT S.W.P.P.P. FOR GULF POWER ENVIRONMENTAL AFFAIRS TO REVIEW. A SAMPLE S.W.P.P.P. IS PROVIDED AS AN APPENDIX TO THE SPECIFICATIONS. GULF POWER ENVIRONMENTAL AFFAIRS WILL BE RESPONSIBLE FOR N.P.D.E.S. PERMITTING AND INSPECTIONS.
21. CONTRACTOR IS RESPONSIBLE FOR PREVENTING THE TRACKING OF SOIL FROM THE SITE ONTO ADJACENT ROADWAYS. IN THE EVENT THE CONSTRUCTION EXIT FAILS TO ADEQUATELY CONTROL SOIL TRACKING THE CONTRACTOR SHALL BE RESPONSIBLE FOR SWEEPING ROADWAYS AS REQUIRED.

DEMOLITION & CLEARING NOTES:

1. CONTRACTOR SHALL TAKE EXTREME CARE TO REMOVE ONLY TREES AND VEGETATION ABSOLUTELY NECESSARY FOR THE CONSTRUCTION OF THIS WORK.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CLEARLY DESIGNATE THE LIMITS OF CONSTRUCTION ON-SITE. THE CONTRACTOR SHALL NOT PERFORM ANY WORK OUTSIDE THE LIMITS OF CONSTRUCTION. IN AREAS WHERE NO WORK IS PROPOSED THE CONTRACTOR SHALL PROTECT THE TOPOGRAPHY, THE SOIL, AND THE VEGETATION.
3. ALL PRACTICAL AND NECESSARY EFFORT SHALL BE TAKEN DURING CONSTRUCTION TO PREVENT UNNECESSARY TREE REMOVAL.
4. NO PROPOSED CUT OR FILL MATERIAL TO BE REMOVED OR PLACED WITHIN THE DRIP LINE OF SPECIMEN TREES TO REMAIN, INCLUDING TRENCHING FOR PROPOSED IMPROVEMENTS SUCH AS UTILITIES, WILL REQUIRE THE ADVANCED PRE-TREATMENT OF EACH IMPACTED TREE BY A QUALIFIED ARBORIST OR AT THE DIRECTION OF THE LANDSCAPE ARCHITECT TO MINIMIZE THE POTENTIALLY ADVERSE IMPACTS OF CONSTRUCTION.
5. IN AREAS REQUIRING FILL MATERIAL, THE CONTRACTOR SHALL STRIP OR OTHERWISE REMOVE ALL VEGETATION SUCH AS BRUSH, HEAVY SODS, HEAVY GROWTH OF GRASS, DECAYED VEGETATION MATTER, RUBBISH AND ANY OTHER DELETERIOUS MATERIAL BEFORE EMBANKMENT IS PLACED. IMMEDIATELY PRIOR TO THE PLACING OF FILL MATERIAL, THE ENTIRE AREA UPON WHICH FILL IS TO BE PLACED, SHALL BE SCARIFIED IN A DIRECTION APPROXIMATELY PARALLEL TO THE AXIS OF FILL. THE GEOTECHNICAL ENGINEER SHALL APPROVE THE AREA PRIOR TO THE PLACEMENT OF FILL.
6. DO NOT PROCEED WITH ANY DEMOLITION UNTIL SPECIFICALLY AUTHORIZED BY OWNER.
7. WHERE DEMOLITION REQUIREMENTS LEAVE OPEN TRENCHES, PITS OR OTHER VOIDS, PROVIDE CLEAN FILL AND COMPACTION PER GEOTECHNICAL REPORT OR OTHER REQUIREMENTS.
8. NO GRADING OR CLEARING BY OR STORAGE OF HEAVY EQUIPMENT SHALL OCCUR WITHIN THE DRIPLINE OF PROTECTED TREES OR WITHIN ENVIRONMENTALLY SENSITIVE AREAS.
9. TREE PROTECTION BARRICADES OR EQUIVALENT PROTECTIVE MEASURES WILL BE CONSTRUCTED ACCORDING TO THE LOCAL JURISDICTIONS CRITERIA FOR TREES TO REMAIN WITHIN THE LIMITS OF CONSTRUCTION.
10. ALL DEMOLISHED MATERIALS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTORS EXPENSE. DEBRIS SHALL BE DISPOSED ON IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

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DALE E. LONG LICENSE No. 55393 STATE OF FLORIDA PROFESSIONAL ENGINEER

Dale E. Long, P.E.
Registered Engineer No. 55393

FABRE ENGINEERING INC.
ENGINEERS • PLANNERS • SURVEYORS
1170 GODBOLD SQUARE PENSACOLA FLORIDA 32514
850-433-6438 FAX 850-434-7842
L.B. NO. 0007715

NPDES, EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

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Released for Construction
By: DEL Date: 10/29/13

As-Built "Record Drawing"
By: Date:

PLANT LANSING SMITH
DEEP WELL INJECTION SITE
FOR
GULF POWER COMPANY
BAY COUNTY, FLORIDA

Revisions:

Designed By:	DEL
Drawn By:	DLM
Checked By:	DEL
Date:	AUGUST 7, 2013
Job Number:	130052
File Name:	SEE LEFT
Sheet :	C-002

H:\2013\130052 Gulf Power - Plant Smith\DWG\02 C-002 NPDES Erosion and Sediment Control.dwg, 10/29/2013 2:23:19 PM, KIP 3000 Series.pc3

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GRAPHIC SCALE:
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SCALE IN FEET

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Page 4 of 9

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STATE OF FLORIDA

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OVERALL EXISTING CONDITIONS PLAN

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By: DEL Date: 10/29/13

As-Built Record Drawing
By: Date:

PLANT LANSING SMITH
DEEP WELL INJECTION SITE
FOR
GULF POWER COMPANY
BAY COUNTY, FLORIDA

Revisions:

DALE ERIC LONG
LICENSE
No. 55393
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Dale E. Long, P.E.
Florida Certificate No. 55393
Engineer
DEL
Drawn By:
DLM
Checked By:
DEL
Date:
AUGUST 7, 2013
Job Number:
130052
File Name:
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C-101

SHEET 03 OF 08

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November 12, 2013
Page 5 of 9

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STATE OF FLORIDA

GRAPHIC SCALE:
30 15 0 30
SCALE IN FEET

9.01 8.88 8.64 8.93 8.97 8.84

JURISDICTIONAL LINE

EXISTING DIRT ROAD

EXISTING DIRT ROAD

SITE BENCHMARK #1
SET NAIL IN CONCRETE
WALL AROUND WELL PAD
ELEV. = 12.92

SITE BENCHMARK #2
SET NAIL IN CONCRETE
WALL AROUND WELL PAD
ELEV. = 13.02

TIW-1
EXIST. CONCRETE PAD
ELEV. = 13.02

MW-1
EXIST. CONCRETE PAD
ELEV. = 12.92

JURISDICTIONAL LINE

9.50 10.22 9.65 8.67 9.97 9.88 8.65

PANAMA CITY SQUARE PENSACOLA PORT ST. JOE
119 HARRISON AVENUE, PANAMA CITY, FLORIDA 32401
L.B. NO. 00003870 E.B. NO. 00072715
PHONE: 850-763-5926 FAX: 850-763-7842

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TIW-1 & 2
EXISTING CONDITIONS PLAN

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PLANT LANSING SMITH
DEEP WELL INJECTION SITE
FOR
GULF POWER COMPANY
BAY COUNTY, FLORIDA

Revisions:

DALE ERIC LONG LICENSE No. 55393 STATE OF FLORIDA PROFESSIONAL ENGINEER
Dale E. Long, P.E.
Florida License No. 55393

Designed By: DEL
Drawn By: DLM
Checked By: DEL
Date: AUGUST 7, 2013
Job Number: 130052
File Name: SEE LEFT
Sheet: C-201

SHEET 04 OF 08

H:\2013\130052 Gulf Power - Plant Smith\DWG\04 C-201 Existing Conditions Plan.dwg, 10/29/2013 2:25:17 PM, KIP 3000 Series.pc3

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Page 6 of 9
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GRAPHIC SCALE:
30 15 0 30 60
SCALE IN FEET

INSTALL:
17 S.Y. – STONE RUBBLE RIP-RAP OVER FILTER FABRIC & BEDDING STONE AVG. STONE SIZE = 6"Ø

INSTALL:
40 L.F. – 12" ADS HP @ 0.30%
W/ MES @ WEST END
INV. OUT ELEV. = 9.18

INSTALL:
OVERFLOW ELEVATION W/ TRASH RACK
F.D.O.T. TYPE 'C' INLET
TOP ELEV. = 10.80
SLOT ELEV. = 10.15
ORIFICE ELEV. = 9.50
INV. ELEV. = 9.30

CONTRACTOR SHALL GRADE TO DAYLIGHT

PERMANENT WETLAND IMPACT = 1,148 S.F.

TEMPORARY WETLAND IMPACT = 4,266 S.F.

JURISDICTIONAL LINE

CONTRACTOR SHALL GRADE TO DRAIN AWAY FROM POND

RECLAIMED WATER RECEIVING STATION (8'x8')

TEMPORARY RECLAIMED WATER CHLORINATION SYSTEM, PUMP STATION & FILTRATION SYSTEM (15'x15')

CONTRACTOR SHALL RE-GRADE EXISTING GRAVEL PAD TO DRAIN TO SWALE AS SHOWN

WET DETENTION POND

EXISTING DIRT ROAD

12" GRAVITY MAIN

2" & 8" HDPE FIBERGLASS MAINS

(1)6" HDPE MAIN
(3)8" FIBERGLASS MAINS

CONTRACTOR SHALL ADJUST PROPOSED GRADING TO TIE BACK TO EXISTING GRADE AS REQUIRED TO MAINTAIN ACCESS TO DIRT DRIVE

CONTRACTOR SHALL ADJUST PROPOSED GRADING TO TIE BACK TO EXISTING GRADE AS REQUIRED TO MAINTAIN ACCESS TO EXISTING DIRT ROAD

2" SCH. 80 PVC

SITE BENCHMARK #2
SET NAIL IN CONCRETE WALL AROUND WELL PAD
ELEV. = 13.02

INJECTION WELL PUMP GRAVITY FEED PIPING

TIW-1
EXIST. CONCRETE PAD
ELEV. = 13.02

PERMANENT WETLAND IMPACT = 1,221 S.F.

SITE BENCHMARK #1
SET NAIL IN CONCRETE WALL AROUND WELL PAD
ELEV. = 12.92

MW-1
EXIST. CONCRETE PAD
ELEV. = 12.92

INSTALL:
452 S.Y. – GRAVEL PAVING

8", 12", & 16" FORCE MAINS

RECLAIMED WATER HOLDING TANK
TEMPORARY TANK (10' DIAMETER)
PERMANENT TANK (30' DIAMETER)

PERMANENT WETLAND IMPACT = 89 S.F.

EIW-2 CONCRETE WELL PAD (15'X15')

INJECTION WELL PUMP GRAVITY STATION (60'x60')

PUMP STATION PRECAST CONCRETE CONTROL & ELECTRICAL BUILDING (20'x15')

TEMPORARY WETLAND IMPACT = 5,523 S.F.

ASH POND WATER STORAGE TANK (30' DIAMETER)

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TIW-1 & 2
PROPOSED GRADING & DRAINAGE PLAN

As-Built "Record Drawing"
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PLANT LANSING SMITH
DEEP WELL INJECTION SITE
FOR
GULF POWER COMPANY
BAY COUNTY, FLORIDA

Revisions:

ADDRESS F.D.E.P. COMMENTS	DLM 09-13-13

Dale E. Long, P.E.
Florida Registration No. 55393

DALE ERIC LONG
LICENSE
No. 55393
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Designed By: DEL
Drawn By: DLM
Checked By: DEL
Date: AUGUST 7, 2013
Job Number: 130052
File Name: SEE LEFT
Sheet: C-301

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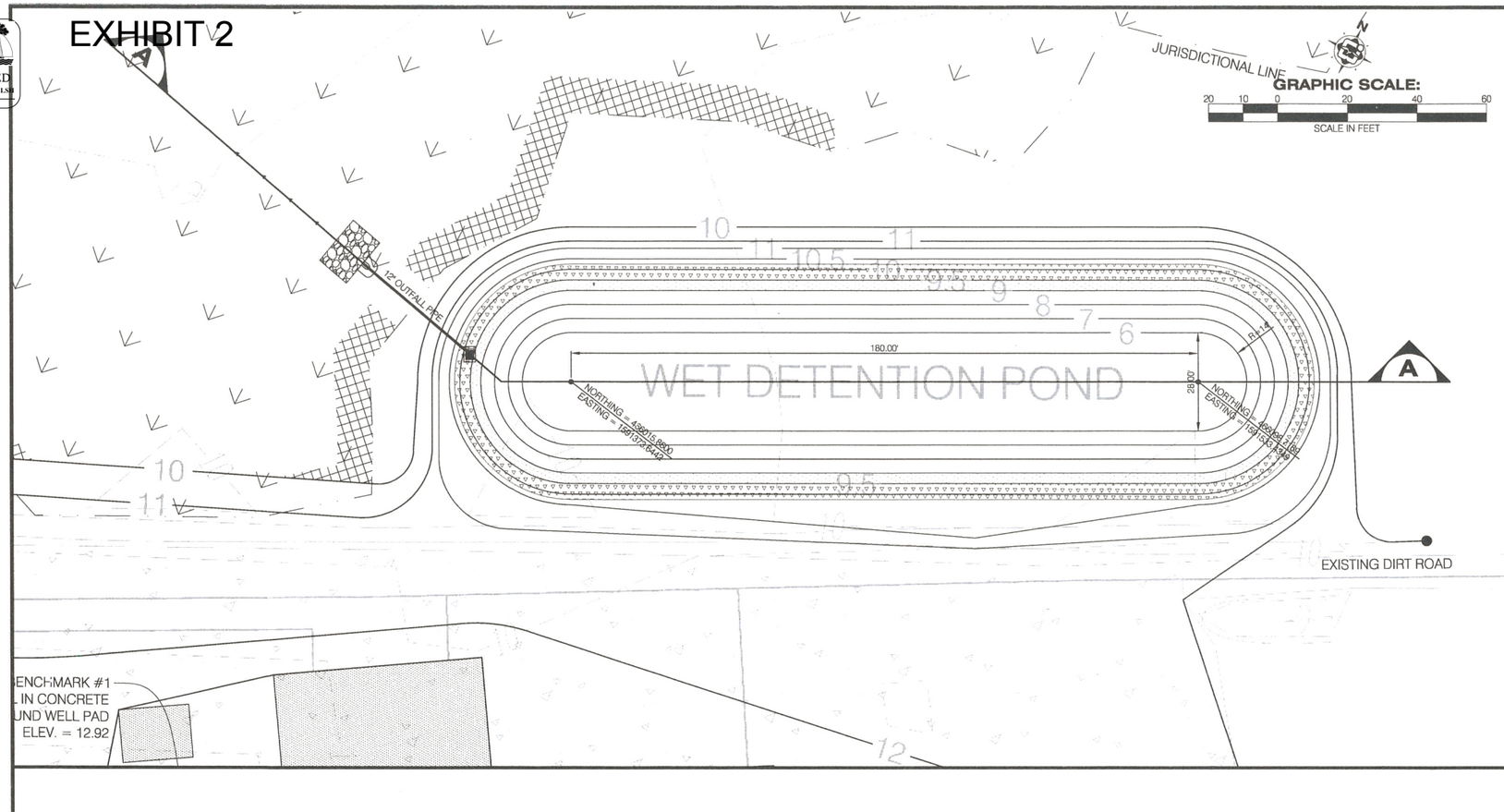
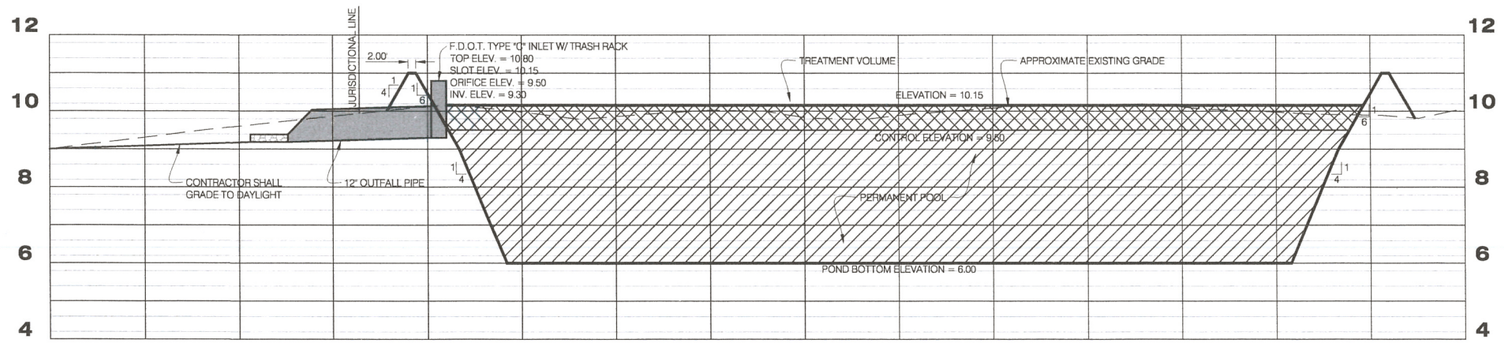
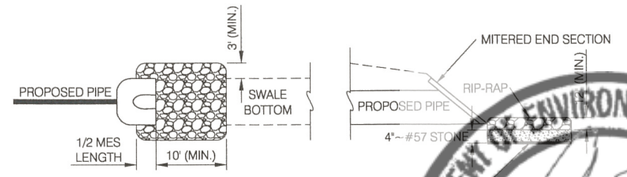




WET DETENTION POND CROSS SECTION A-A

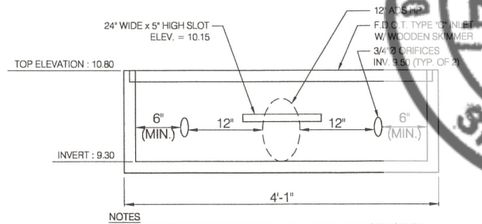
SCALE : 1"= 20' (H)
1"= 2' (V)



NOTE:
1. MINIMUM STONE WEIGHT SHALL BE 50 LBS.

RIP-RAP INSTALLATION DETAIL

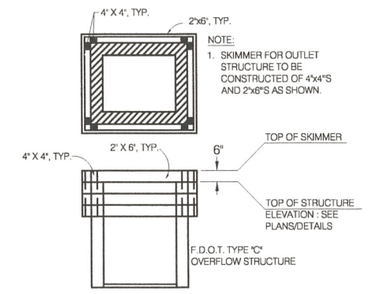
NOT TO SCALE



NOTES
1. REQUIRED ORIFICES/SLOTS SHALL BE PRE-CAST INTO STRUCTURE.
2. CONFIGURATION SHALL BE ORIFICES/SLOTS IN 4'-1" WALL OPPOSITE OUTLET.

OVERFLOW STRUCTURE DETAIL

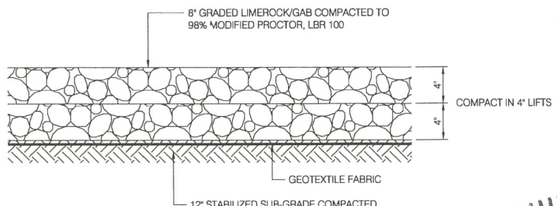
NOT TO SCALE



NOTE:
1. SKIMMER FOR OUTLET STRUCTURE TO BE CONSTRUCTED OF 4"x4"S AND 2"x6"S AS SHOWN.

SKIMMER DETAIL

NOT TO SCALE



NOTES:
1. ALL DEPTHS ARE COMPACTED DEPTHS.
2. CONTRACTOR SHALL UNDERCUT TWO FEET & REPLACE WITH SELECT MATERIAL BELOW PROPOSED GRAVEL PAVING SUBGRADE.

GRAVEL PAVING DETAIL

NO SCALE

PLANTING TABLE					
ZONE	SCIENTIFIC NAME	COMMON NAME	SIZE	ELEVATION RANGE	PLANT QUANTITY
	SPARTINA BAKER	SAND CORDGRASS	BARE ROOT EQUIVALENT	9.50 - 10.25 1 QUART	100
	JUNCUS EFFUSUS	SOFT RUSH	BARE ROOT 1 QUART EQUIVALENT	9.00 - 9.50	160

NOTE:
1. ALL VEGETATION SHALL BE PLANTED AT 2 FEET ON CENTER.

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TIW-1 & 2
PROPOSED POND
GEOMETRY PLAN & DETAILS

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PLANT LANSING SMITH
DEEP WELL INJECTION SITE
FOR
GULF POWER COMPANY
BAY COUNTY, FLORIDA

Revisions:

FDEP COMMENTS	DLM 09-13-13

Dale E. Long, P.E.
Registration Number No. 55393

DALE ERIC LONG LICENSE No. 55393 STATE OF FLORIDA PROFESSIONAL ENGINEER

Designed By: DEL
Drawn By: DLM
Checked By: DEL
Date: AUGUST 7, 2013
Job Number: 130052
File Name: SEE LEFT
Sheet: C-401

SHEET 06 OF 08

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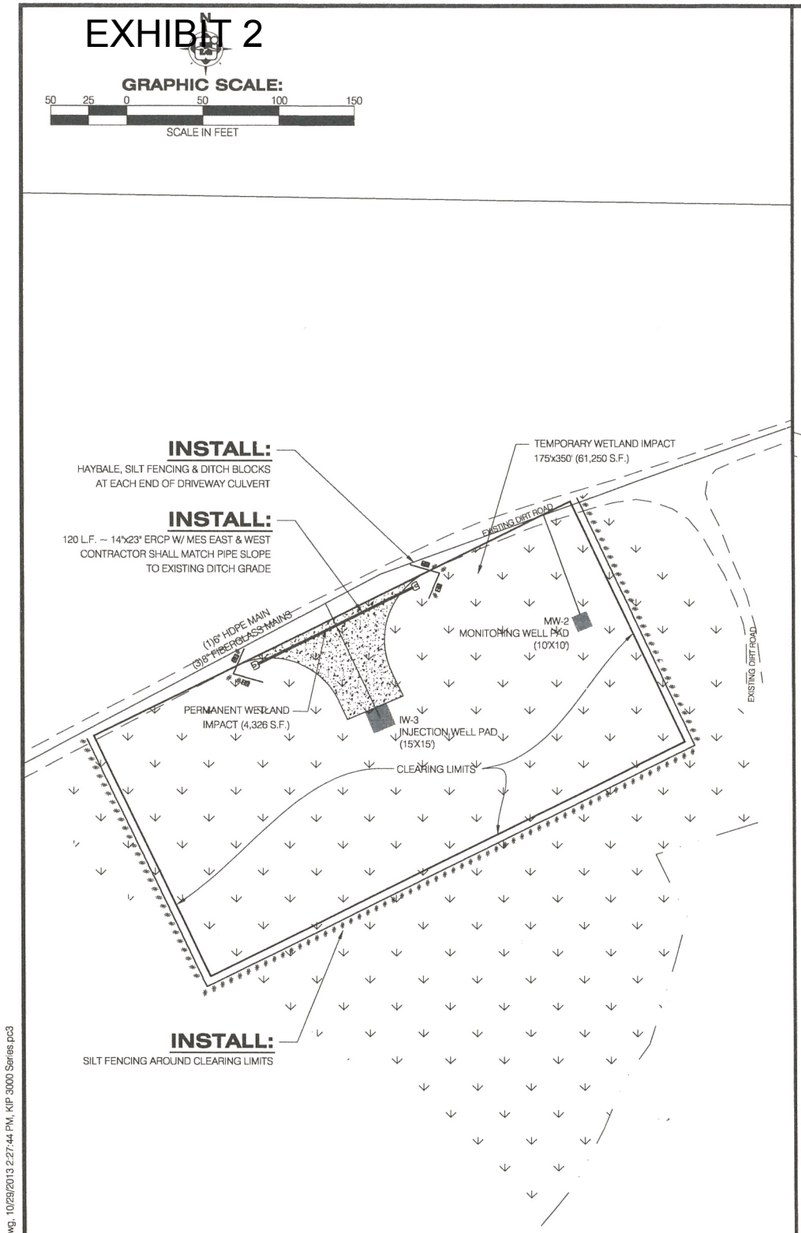
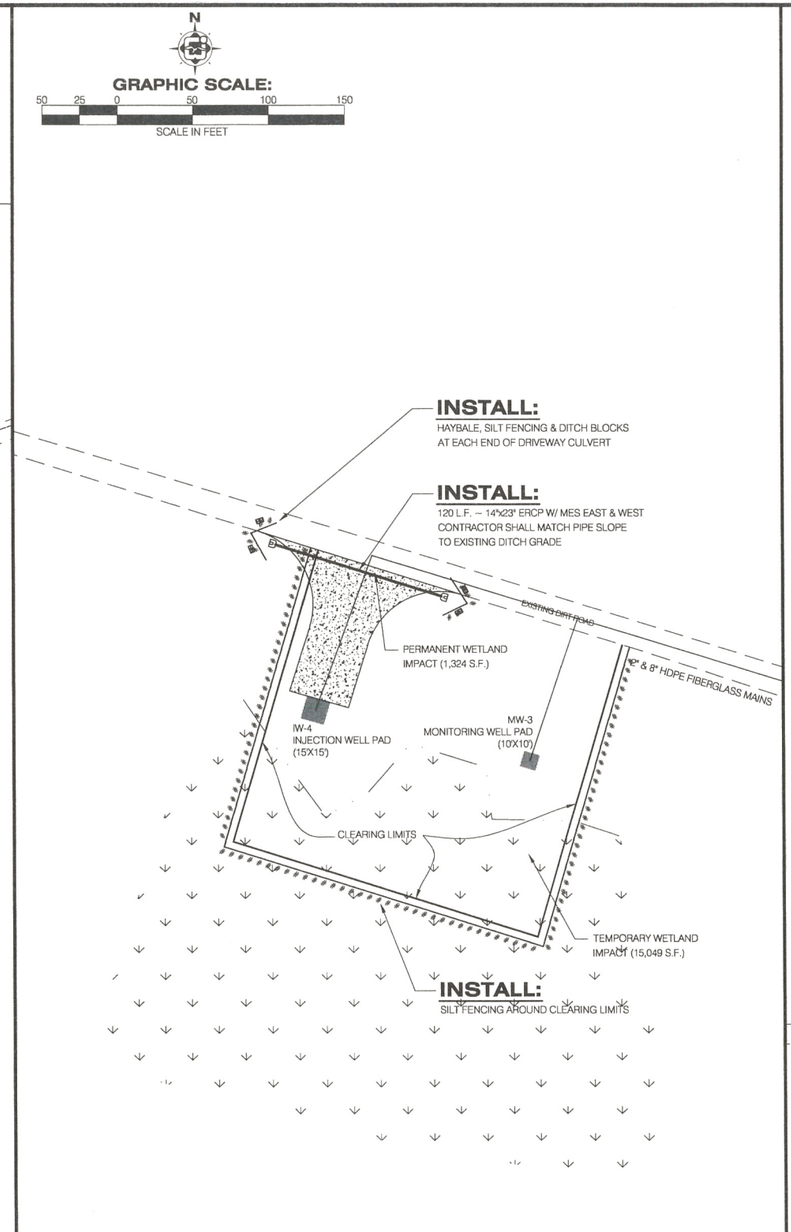
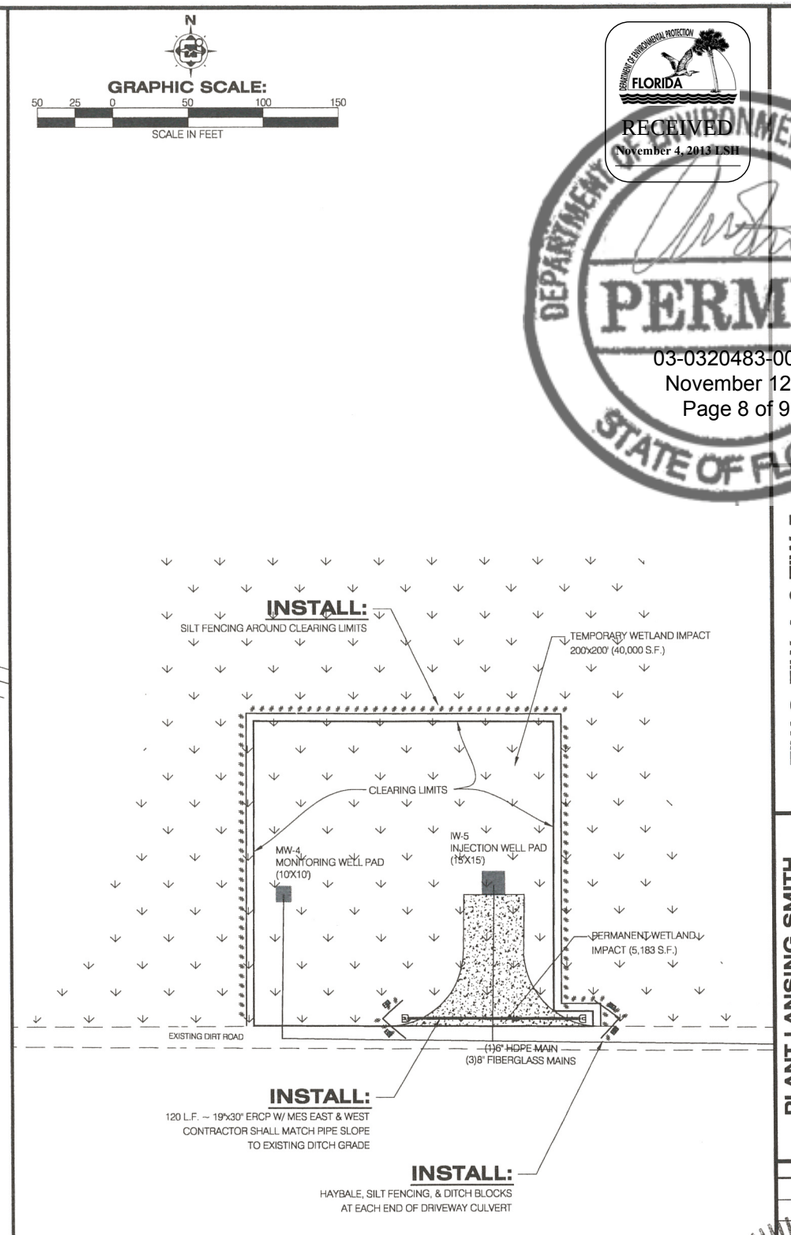


TIW-3



TIW-4



TIW-5

BRE ENGINEERING INC.
ENGINEERS • PLANNERS • SURVEYORS
119 GRANDY SQUARE PENSACOLA FLORIDA 32503 (850)-433-8438 FAX: 850-434-7842
L.B. NO. 0008261 E.B. NO. 0007215

TIW-3, TIW-4, & TIW-5
PROPOSED GRADING & DRAINAGE PLAN

This Drawing is the Property of FABRE ENGINEERING INC. and is not to be reproduced in whole or in part. It is not to be used on any other Project and is to be returned upon request.

Released for Construction
By: DEL Date: 10/29/13

As-Built "Record Drawing"
By: Date:

PLANT LANSING SMITH
DEEP WELL INJECTION SITE
FOR
GULF POWER COMPANY
BAY COUNTY, FLORIDA

Revisions:

DALE ERIC LONG
LICENSED
Dale E. Long, P.E.
No. 55393
STATE OF FLORIDA
PROFESSIONAL ENGINEER
11/4/13

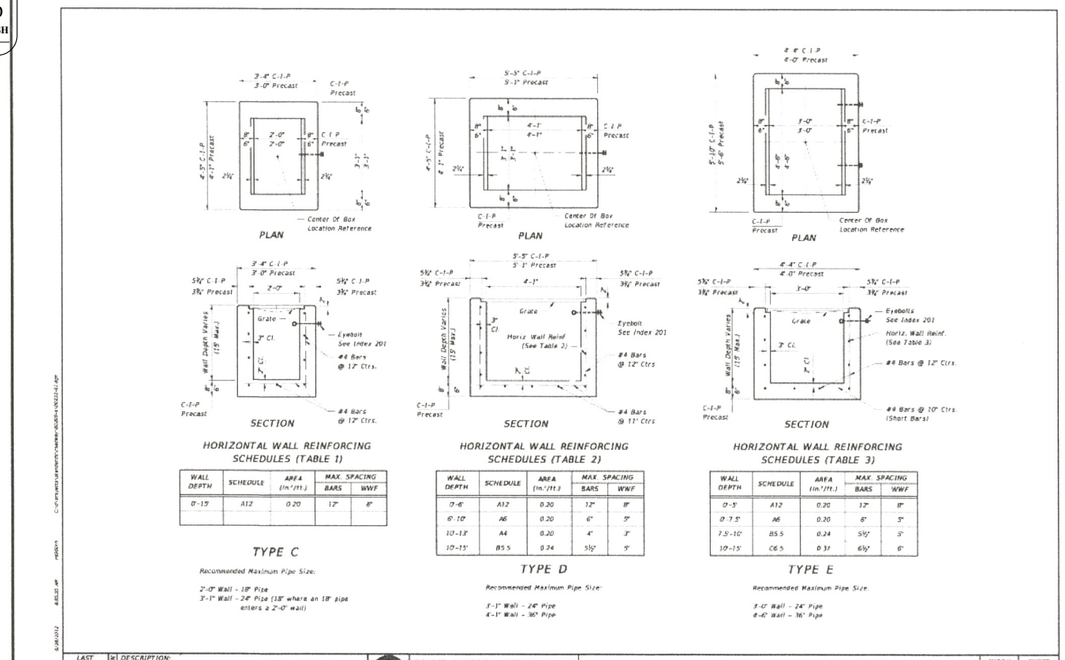
Designed By: DEL
Drawn By: DLM
Checked By: DEL
Date: AUGUST 7, 2013
Job Number: 130052
File Name: SEE LEFT
Sheet: C-501

SHEET 07 OF 08

H:\2013\130052 Gulf Power - Plant Smith\DWG\07 C-501 Proposed Grading & Drainage Plan.dwg, 10/29/2013 2:27:44 PM, KIP 3000 Series.pc3

EXHIBIT 2

RECEIVED
November 4, 2013 LSH



HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 1)

WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING BARS	MAX. SPACING WWF
0'-15'	A12	0.20	12"	8"

TYPE C

Recommended Maximum Pipe Size:

2'-0" Wall - 18" Pipe
3'-1" Wall - 24" Pipe (18" where an 18" pipe enters a 2'-0" wall)

HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 2)

WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING BARS	MAX. SPACING WWF
0'-6"	A12	0.20	12"	8"
6'-10"	A6	0.20	6"	5"
7.5'-10'	A4	0.20	4"	3"
10'-15'	B5.5	0.24	5½"	5"

TYPE D

Recommended Maximum Pipe Size:

3'-1" Wall - 24" Pipe
4'-1" Wall - 36" Pipe

HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 3)

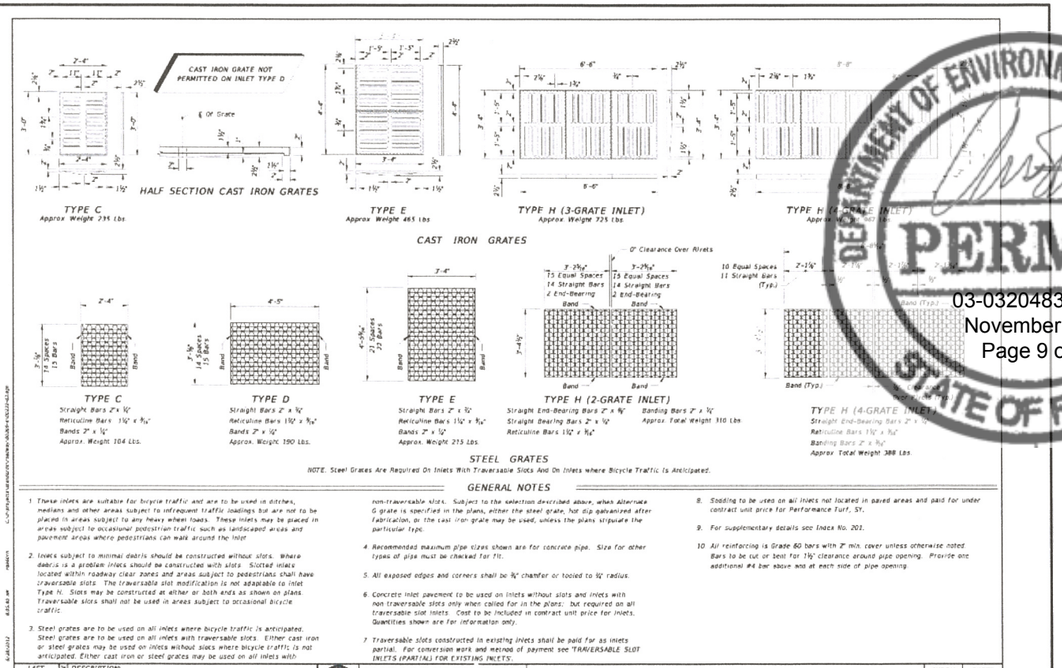
WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING BARS	MAX. SPACING WWF
0'-5'	A12	0.20	12"	8"
0'-7.5'	A6	0.20	6"	5"
7.5'-10'	B5.5	0.24	5½"	5"
10'-15'	C6.5	0.31	6½"	6"

TYPE E

Recommended Maximum Pipe Size:

3'-0" Wall - 24" Pipe
4'-0" Wall - 36" Pipe

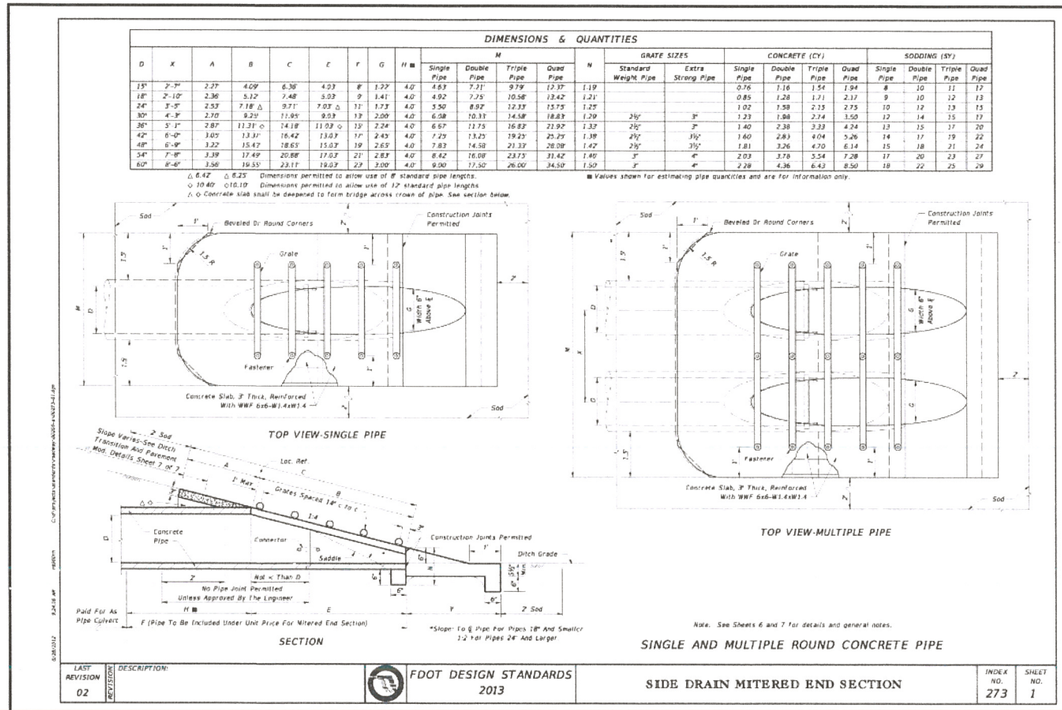
LAST REVISION	DESCRIPTION:	FDOT DESIGN STANDARDS 2013	DITCH BOTTOM INLET TYPES C, D, E AND H	INDEX NO.	SHEET NO.
07/01/05				232	1



GENERAL NOTES

1. These inlets are suitable for bicycle traffic and are to be used in ditches, medians and other areas subject to infrequent traffic loadings but are not to be placed in areas subject to any heavy wheel loads. These inlets may be placed in areas subject to occasional pedestrian traffic such as landscaped areas and pavement areas where pedestrians can walk around the inlet.
2. Inlets subject to minimal debris should be constructed without slots. Where debris is a problem inlets should be constructed with slots. Slotted inlets located within roadway clear zones and areas subject to pedestrians shall have traversable slots. The traversable slot modification is not adaptable to Inlet Type H. Slots may be constructed at either or both ends as shown on plans. Traversable slots shall not be used in areas subject to occasional bicycle traffic.
3. Steel grates are to be used on all inlets where bicycle traffic is anticipated. Steel grates are to be used on all inlets with traversable slots. Either cast iron or steel grates may be used on inlets without slots where bicycle traffic is not anticipated. Either cast iron or steel grates may be used on all inlets with non-traversable slots. Subject to the selection described above, when Alternate G grate is specified in the plans, either the steel grate, hot dip galvanized after fabrication, or the cast iron grate may be used, unless the plans stipulate the particular type.
4. Recommended maximum pipe sizes shown are for concrete pipe. Size for other types of pipe must be checked for fit.
5. All exposed edges and corners shall be ¾" chamfer or tooled to ½" radius.
6. Concrete inlet pavement to be used on inlets without slots and inlets with non-traversable slots only when called for in the plans; but required on all traversable slot inlets. Cost to be included in contract unit price for Inlets. Quantities shown are for information only.
7. Traversable slots constructed in existing inlets shall be paid for as inlets partial. For conversion work and method of payment see "TRAVERSABLE SLOT INLETS (PARTIAL) FOR EXISTING INLETS".
8. Sodding to be used on all inlets not located in paved areas and paid for under contract unit price for Performance Turf, SY.
9. For supplementary details see Index No. 201.
10. All reinforcing is Grade 60 bars with 2" min. cover unless otherwise noted. Bars to be cut or bent for 1½" clearance around pipe opening. Provide one additional #4 bar above and at each side of pipe opening.

LAST REVISION	DESCRIPTION:	FDOT DESIGN STANDARDS 2013	DITCH BOTTOM INLET TYPES C, D, E AND H	INDEX NO.	SHEET NO.
07/01/10				232	3



DIMENSIONS & QUANTITIES

D	X	A	B	C	E	F	G	H ■	M Single Pipe	M Double Pipe	M Triple Pipe	M Quad Pipe	N	GRATE SIZES Standard Weight Pipe	GRATE SIZES Extra Strong Pipe	CONCRETE (CY) Single Pipe	CONCRETE (CY) Double Pipe	CONCRETE (CY) Triple Pipe	CONCRETE (CY) Quad Pipe	SODDING (SY) Single Pipe	SODDING (SY) Double Pipe	SODDING (SY) Triple Pipe	SODDING (SY) Quad Pipe
15"	2'-7"	2.27	4.09'	6.36'	4.03	8"	1.22'	4.0'	4.63	7.31	9.79	12.37	1.19			0.76	1.16	1.54	1.94	8	10	11	12
18"	2'-10"	2.36	5.12'	7.48'	5.03	9"	1.41'	4.0'	4.92	7.75	10.56	13.42	1.21			0.85	1.28	1.71	2.17	9	10	12	13
24"	3'-5"	2.53	7.18' △	9.71'	7.03 △	11"	1.73'	4.0'	5.50	8.92	12.33	15.75	1.25			1.02	1.58	2.15	2.75	10	12	13	15
30"	4'-3"	2.70	9.23'	11.95'	9.03	13"	2.09'	4.0'	6.08	10.33	14.58	18.83	1.29	2½"	3"	1.23	1.88	2.74	3.50	12	14	15	17
36"	5'-1"	2.87	11.31' ○	14.18	11.03 ○	15"	2.24'	4.0'	6.67	11.75	16.83	21.92	1.33	2½"	3"	1.40	2.38	3.33	4.24	13	15	17	20
42"	6'-0"	3.05	13.31'	16.42	13.03	17"	2.43'	4.0'	7.25	13.25	19.25	25.25	1.38	2½"	3½"	1.60	2.83	4.04	5.26	14	17	19	22
48"	6'-9"	3.22	15.47'	18.65'	15.03	19"	2.63'	4.0'	7.83	14.58	21.33	28.08	1.42	2½"	3½"	1.81	3.26	4.70	6.14	15	18	21	24
54"	7'-8"	3.39	17.49'	20.88'	17.03	21"	2.83'	4.0'	8.42	16.08	23.75	31.42	1.49	3"	4"	2.03	3.76	5.54	7.28	17	20	23	27
60"	8'-6"	3.56	19.55'	23.11'	19.03	23"	3.00'	4.0'	9.00	17.50	26.00	34.50	1.50	3"	4"	2.29	4.36	6.43	8.50	18	22	25	29

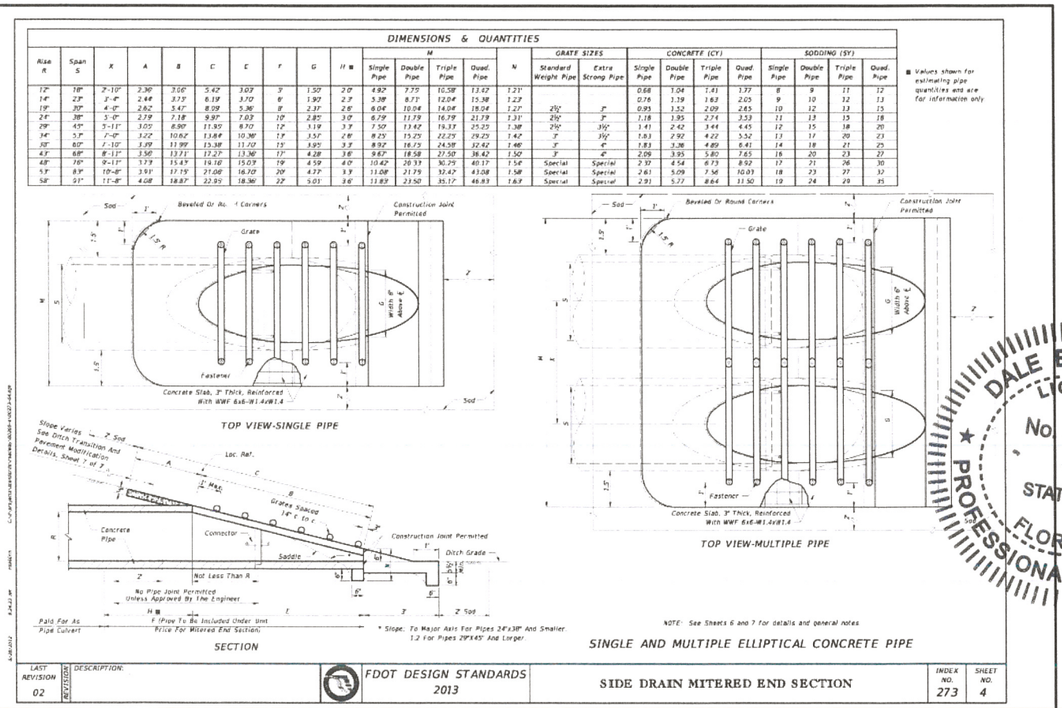
△ 6.42' △ 8.25' Dimensions permitted to allow use of 8' standard pipe lengths.
○ 10.40' ○ 15.19' Dimensions permitted to allow use of 12' standard pipe lengths.
△, ○ Concrete slab shall be deepened to form bridge across crown of pipe. See section below.

■ Values shown for estimating pipe quantities and are for information only.

Note: See Sheets 6 and 7 for details and general notes.

SINGLE AND MULTIPLE ROUND CONCRETE PIPE

LAST REVISION	DESCRIPTION:	FDOT DESIGN STANDARDS 2013	SIDE DRAIN MITERED END SECTION	INDEX NO.	SHEET NO.
02				273	1



DIMENSIONS & QUANTITIES

Alias R	Span S	X	A	B	C	E	F	G	H ■	M Single Pipe	M Double Pipe	M Triple Pipe	M Quad. Pipe	N	GRATE SIZES Standard Weight Pipe	GRATE SIZES Extra Strong Pipe	CONCRETE (CY) Single Pipe	CONCRETE (CY) Double Pipe	CONCRETE (CY) Triple Pipe	CONCRETE (CY) Quad. Pipe	SODDING (SY) Single Pipe	SODDING (SY) Double Pipe	SODDING (SY) Triple Pipe	SODDING (SY) Quad. Pipe
12"	18"	2'-10"	2.30'	3.06'	5.42'	3.03'	3"	1.50'	2.0'	4.92'	7.75'	10.58'	13.42'	1.21'			0.68	1.04	1.41	1.77	8	9	11	12
14"	23"	3'-0"	2.44'	3.13'	6.13'	3.70'	6"	1.90'	2.7'	5.38'	8.71'	12.04'	15.38'	1.23'			0.76	1.19	1.63	2.05	9	10	12	13
19"	30"	4'-0"	2.62'	5.47'	8.09'	5.36'	8"	2.37'	2.6'	6.04'	10.04'	14.04'	18.04'	1.27'	2½"	3"	0.95	1.52	2.09	2.65	10	12	13	15
24"	38"	5'-0"	2.79'	7.18'	9.87'	7.03'	10"	2.85'	3.0'	6.79'	11.79'	16.79'	21.79'	1.31'	2½"	3"	1.18	1.95	2.71	3.53	11	13	15	18
29"	45"	5'-11"	3.01'	8.90'	11.95'	8.70'	12"	3.19'	3.3'	7.50'	13.62'	19.33'	25.25'	1.38'	2½"	3½"	1.41	2.42	3.44	4.45	12	15	18	20
34"	53"	7'-0"	3.22'	10.62'	13.84'	10.36'	14"	3.51'	2.8'	8.25'	15.25'	22.29'	29.25'	1.42'	3"	3½"	1.63	2.92	4.22	5.52	13	17	20	23
38"	60"	7'-10"	3.39'	11.99'	15.38'	11.70'	15"	3.95'	3.3'	8.92'	16.13'	24.58'	32.42'	1.46'	3"	4"	1.83	3.36	4.89	6.41	14	18	21	25
43"	68"	8'-11"	3.56'	13.71'	17.27'	13.36'	17"	4.28'	3.6'	9.67'	18.58'	27.50'	36.42'	1.50'	3"	4"	2.09	3.95	5.80	7.65	16	20	23	27
48"	76"	9'-11"	3.73'	15.43'	19.18'	15.03'	19"	4.59'	4.0'	10.42'	20.33'	30.25'	40.17'	1.54'	Special	Special	2.37	4.54	6.73	8.92	17	21	26	30
53"	83"	10'-8"	3.91'	17.19'	21.08'	16.70'	20'	4.77'	3.9'	11.08'	21.79'	32.42'	43.08'	1.58'	Special	Special	2.61	5.09	7.56	10.03	18	23	27	32
58"	91"	11'-8"	4.08'	18.87'	22.95'	18.36'	22'	5.01'	3.6'	11.83'	23.50'	35.17'	46.83'	1.63'	Special	Special	2.84	5.71	8.64	11.50	19	24	29	35

■ Values shown for estimating pipe quantities and are for information only.

NOTE: See Sheets 6 and 7 for details and general notes.

SINGLE AND MULTIPLE ELLIPTICAL CONCRETE PIPE

LAST REVISION	DESCRIPTION:	FDOT DESIGN STANDARDS 2013	SIDE DRAIN MITERED END SECTION	INDEX NO.	SHEET NO.
02				273	4

SHEET 08 OF 08

PLANT LANSING SMITH
DEEP WELL INJECTION SITE
FOR
GULF POWER COMPANY
BAY COUNTY, FLORIDA

PROJECT DETAILS

Revisions:

DALE ERIC LONG
LICENSE
No 55393
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
Date Ex. Lic. Appr.
Florida Engineer No. 55393

Designed By: DEL
Drawn By: DLM
Checked By: DEL
Date: AUGUST 7, 2013
Job Number: 130052
File Name: SEE LEFT
Sheet: D-101

Released for Construction
By: DEL Date: 10/29/13
As Built "Record Drawing"
By: Date:

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C.A. NO. 00006 E.B. NO. 0007215

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
03-0320483-001-EI
November 12, 2013
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STATE OF FLORIDA

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EXHIBIT 3

GULF POWER PLANT SMITH
STORMWATER MAINTENANCE PLAN

The proposed storm water system includes stormwater treatment ponds. All proposed facilities shall be constructed and maintained per all applicable Florida Department of Environmental Protection (FDEP) rules and regulations.

Both during and upon completion of construction, Best Management Practices (BMP) shall be implemented as needed. These may include, but shall not be limited to, drainage swales, silt fencing, check dams, and sedimentation ponds.

The pond and all other portions of the storm water system shall be regularly inspected and maintained in good working order at all times and according to the following Florida Department of Environmental Protection (FDEP) minimum Operation and Maintenance Standards:

(a) All surface water management systems permitted by the FDEP shall be operated and maintained in accordance with the designs, plans, calculations, and other specifications that are submitted with an application, approved by the Department, and incorporated by reference or as a condition into any permit issued.

(b) The operation and maintenance entity shall provide for the inspection of the stormwater management system in accordance with subsection 62-346.095(6), F.A.C.

(c) Inspections of the permitted system should be conducted at least once every third year by a Registered Professional after conversion of a permit to the operation phase. However, systems that include vegetated natural buffers and systems in karst sensitive areas shall be inspected at least annually.

Maintenance procedures shall not be limited to those included in this plan, but shall include any measures necessary to ensure the proposed storm water system operates in a safe manner in accordance with all applicable codes, ordinances, regulations, and standards.

WET DETENTION POND MAINTENANCE PLAN

In order to enable the wet detention ponds to function correctly and to maintain the ponds' design capacity, sediment must be removed occasionally and adequate resources must be committed to properly maintain peripheral aquatic vegetation, control vector production and to maintain required permanent pool volume. Wet detention ponds can become a nuisance due to mosquito breeding, unless carefully maintained. A proactive and routine preventative maintenance plan is crucial to minimizing vector habitat. Following is a list of inspection and maintenance activities:

1. Inspect for invasive vegetation, trash and debris, clogging of inlet/outlet structures, orifice and skimmer, excessive erosion, sediment buildup in basin or outlet, bank stability, and density of the turf grass on bank side slopes. Monitor drains and check for algal growth, signs of pollution such as oil sheens, discolored water or unpleasant odors, and signs of flooding.
   (Frequency: Annually or as needed)
2. Inspect mechanical component condition of inlet and outlet structures, pipes, orifice, skimmers, weir and upstream and downstream channel conditions.
   (Frequency: Annually)
3. During inspections, note changes to the wet ponds or the contributing watershed as these may affect basin performance.
4. Regularly maintain emergent and shoreline vegetation.
5. Remove sediment from outlet structure(s). Dispose of properly. Remove accumulated trash and debris in the basin(s), inlet/outlet structures, side slopes and collection system as required. Repair undercut areas of erosion to banks and basin(s).
   (Frequency: Annually or as needed)

6. Maintain vegetation in littoral shelf planting zones. Mow side slopes and maintain vegetation in and around basin(s) to prevent any erosion or aesthetic problems. Minimize use of fertilizers and pesticides. Re-establish littoral plantings and up-gradient grasses. Manage and harvest wetland plants and repair or replace. (Frequency: Annual maintenance or as needed.)
7. Remove sediment when the permanent pool volume has become reduced significantly (sediment accumulation exceeds 25% of design depth), re-suspension is observed or the pond becomes eutrophic. (Frequency: 3 year maintenance)

Mr. Richard M. Markey
Manager Land and Water Programs

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
03-0320483-001-EI
November 12, 2013
Page 2 of 2
STATE OF FLORIDA

APPENDIX A-2

FDEP Environmental Resource Permit No: 0320483-004-EI/03

Florida Department of Environmental Protection

Northwest District Office
160 W. Government Street, Suite 308
Pensacola, Florida 32502-5740

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

Permittee/Authorized Entity:
Gulf Power Company, Richard Markey
One Energy Place
Pensacola, Florida 32520, Escambia County
RMMarkey@souhternco.com

Gulf Power Co. Plant Smith IW4 0320483-004-EI/03

Authorized Agent:
Gulf Power Company, Jeffrey Cole
1230 East 15th Street
Panama City, Florida 32405
jefcole@southernco.com

Environmental Resource Permit

State-owned Submerged Lands Authorization –Not Applicable

U.S. Army Corps of Engineers Authorization – Separate Corps Authorization Required

Bay County
Permit No.: 0320483-004-EI/03

Permit Issuance Date: December 19, 2017
Permit Construction Phase Expiration Date: December 18, 2022

Environmental Resource Permit

Permittee: Gulf Power Company
Permit No: 0320483-004-EI/03

PROJECT LOCATION

The activities authorized by this permit are located at parcel no. 26636-010-000, Panama City, Florida 32405, in Section 36, Township 02 South, Range 15 West in Bay County, at 30°16′29.00″ North Latitude, -85°41′59.00″ West Longitude.

PROJECT DESCRIPTION

The permittee is authorized to construction of a gravel access road to connect the main development portion of the plant to the IW-4 site. Stormwater treatment for the 0.7 acre road drainage basin will be proved by a wet detention pond with a littoral zone. A wet detention pond for the IW-4 6-acre deep-well injection site was previously permitted under Permit No. 03-0320483-001-EI. The project includes installation of a 36 linear foot 4-foot by 2-foot box culvert and .66 acres of direct impact and 0.48 acre of secondary impact to Hydric Pine Flatwoods, FLUCCS 625. The project is located within the landward extent of St. Andrew-St. Joseph Bays, a Class II Florida Waterbody, Conditionally Approved Shellfish Harvesting Area. Authorized activities are depicted on the attached exhibits.

To offset the 0.4 functional loss units due to unavoidable impacts that will occur from these authorized activities, the permittee shall purchase of 0.4 credits of Wet Prairie/Flatwood Wetland credits from Breakfast Point Mitigation Bank.

AUTHORIZATIONS

Gulf Power Co. Plant Smith IW4 0320483-004-EI/03

Environmental Resource Permit

The Department has determined that the activity qualifies for an Environmental Resource Permit. Therefore, the Environmental Resource Permit is hereby granted, pursuant to Part IV of Chapter 373, Florida Statutes (F.S.), and Chapter 62-330, Florida Administrative Code (F.A.C.).

Sovereignty Submerged Lands Authorization

As staff to the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), the Department has determined the activity is not on submerged lands owned by the State of Florida. Therefore, your project is not subject to the requirements of Chapter 253, F.S., or Rule 18-21, F.A.C.

Federal Authorization

Your proposed activity as outlined on your application and attached drawings **does not qualify** for federal authorization pursuant to the State Programmatic General Permit and a **SEPARATE permit** or authorization **shall be required** from the U.S. Army Corps of Engineers (Corps). You must apply separately to the Corps using the federal application form (ENG 4345). More information about Corps permitting may be found online in the Jacksonville District Regulatory

Division Sourcebook. **Failure to obtain Corps authorization prior to construction could subject you to federal enforcement action by that agency.**

Authority for review – an agreement with the Corps entitled "Coordination Agreement Between the U. S. Army Corps of Engineers (Jacksonville District) and the Florida Department of Environmental Protection, or Duly Authorized Designee, State Programmatic General Permit," Section 10 of the Rivers and Harbor Act of 1899, and Section 404 of the Clean Water Act.

Coastal Zone Management
Issuance of this authorization also constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act.

Water Quality Certification
This permit also constitutes a water quality certification under Section 401 of the Clean Water Act, 33 U.S.C. 1341.

Other Authorizations
You are advised that authorizations or permits for this activity may be required by other federal, state, regional, or local entities including but not limited to local governments or municipalities. This permit does not relieve you from the requirements to obtain all other required permits or authorizations.

The activity described may be conducted only in accordance with the terms, conditions and attachments contained in this document. Issuance and granting of the permit and authorizations herein do not infer, nor guarantee, nor imply that future permits, authorizations, or modifications will be granted by the Department.

PERMIT CONDITIONS
The activities described must be conducted in accordance with:

- **The Specific Conditions**
- **The General Conditions**
- **The limits, conditions and locations of work shown in the attached drawings**
- **The term limits of this authorization**

You are advised to read and understand these conditions and drawings prior to beginning the authorized activities, and to ensure the work is conducted in conformance with all the terms, conditions, and drawings herein. If you are using a contractor, the contractor also should read and understand these conditions and drawings prior to beginning any activity. Failure to comply with these conditions, including any mitigation requirements, shall be grounds for the Department to revoke the permit and authorization and to take appropriate enforcement action. Operation of the facility is not authorized except when determined to be in conformance with all applicable rules and this permit, as described.

SPECIFIC CONDITIONS – PRIOR TO ANY CONSTRUCTION
1. Authorized activities shall only occur at the locations identified on the enclosed drawings.

2. This permit does not authorize the construction of any additional structures or dredging or filling of wetlands not illustrated on the permit drawings.

3. If the approved permit drawings conflict with the specific conditions, then the specific conditions shall prevail.

4. Wetland areas or water bodies, which are outside the specific limits of construction authorized by this permit, must be protected from erosion, siltation, scouring and dewatering. There shall be no discharge in violation of the water quality standards in Chapter 62-302, Florida Administrative Code. Turbidity/erosion controls shall be installed prior to clearing, excavation or placement of fill material, shall be maintained until construction is completed, disturbed areas are stabilized, and turbidity levels have fallen to less than 29 NTU's above background. Methods shall include, but are not limited to the use of staked hay bales, staked filter cloth, sodding, seeding, and mulching; staged construction; and the installation of turbidity screens around the immediate project site. The turbidity and erosion control devices shall be removed within 14 days once these conditions are met.

SPECIFIC CONDITIONS – CONSTRUCTION ACTIVITIES

5. There shall be no storage or stockpiling of tools or materials (i.e., lumber, pilings, equipment, fill material) within wetlands or waters of the state unless specifically approved in the permit.

6. Any damage to wetlands outside the permitted area shall be restored to pre-construction elevations and conditions within 30 days of completion of the project and the Department shall be notified in writing of said incident.

7. The permittee shall be responsible for ensuring that erosion and turbidity control devices and procedures are inspected and maintained daily during all phases of construction authorized by this permit until all areas that were disturbed during construction are sufficiently stabilized to prevent erosion, siltation, and turbid discharges.

8. Fill material shall be clean and free of vegetative matter, trash, garbage, toxic or hazardous waste or other unsuitable materials.

9. If any construction de-watering is required, which results in an offsite discharge of groundwater, the permittee and/or the contractor shall ensure that the requirements of pertinent portions of Chapter 62-621, F.A.C. are met.

10. If dewatering occurs, water shall either be routed to the stormwater management facilities, and prevented from discharging through the outfall structures, or shall be routed to a self-contained, on-site upland area where it can percolate into the ground. Water shall not be discharged to waters of the State on or off-site without a proper dewatering permit.

11. All exposed and disturbed land surfaces shall be stabilized with sod, seed, or mulch immediately following completion of final grades at the project site to prevent erosion. All side slopes shall be stabilized with sod within 48 hours following completion of final grade.

12. Erosion controls shall remain in place until the filled area has sufficient vegetative coverage to ensure stability and prevent erosion into the surrounding wetlands or surface waters.

13. Culvert placement shall occur at the location that is indicated on the permit drawings. The diameter of the culverts shall not be decreased in size nor shall the length of the culverts that are indicated on the permit drawings be increased or decreased.

14. If construction of the stormwater management system authorized by this environmental resource permit has not been completed and continued use of the system formally transferred to the operating phase before the expiration date of the permit, then at least 60 days before such expiration date, the permittee shall apply for another environmental resource permit for construction, using the forms and accompanied by the fee required by rules in effect at that time. The application shall be timely and sufficient, as defined in subsection 62-4.090(1), F.A.C.

SPECIFIC CONDITIONS – MITIGATION

1. To offset impacts to 1.14 acres of Wet Prairie/Flatwood wetlands, the permittee will reserve 0.4 Wet Prairie/Flatwood wetland credits from Breakfast Point Mitigation Bank. Prior to any construction or impacts authorized by this permit, the DEP must have documentation that 0.4 Wet Prairie/Flatwood wetland credits have been deducted from the FDEP credit ledger of the Breakfast Point Mitigation Bank.

SPECIFIC CONDITIONS – MONITORING/REPORTING REQUIREMENTS

15. The construction phase expires at 11:59 p.m. on the date indicated on the cover page of this permit, unless an application for extension is received and approved pursuant to Rule 62-346.120, F.A.C.

16. For emergencies involving a serious threat to the public health, safety, welfare, or environment, the emergency telephone contact number is **800-320-0519** (State Warning Point). The Department telephone number for reporting nonthreatening problems or system malfunctions is (850) 595-0663, day or night.

17. The mailing address for submittal of forms for the "Construction Commencement Notice", "As-Built Certification …", "Request for Conversion of Stormwater Management Permit Construction Phase to Operation and Maintenance Phase", or other correspondence is FDEP, SLERP, 160 West Government Street, Pensacola, Florida, 32502.

SPECIFIC CONDITIONS – OPERATION AND MAINTENANCE ACTIVITIES

18. The stormwater management system shall be inspected by a registered professional to evaluate whether the system is functioning as designed and permitted. The registered professional may record his inspection on Form No 62-330.311(1), Operation and Maintenance Inspection Certification or may provide his evaluation in any other format; however, any report must be signed and sealed by the registered professional. Submittal of the inspection report to the Department is not required; but the report shall be made available to the Department upon request. Inspections shall be made by the registered professional in accordance with this schedule:

Wet Detention
a. On the first anniversary of the date of conversion to Operation and Maintenance Phase.
b. Every fifth year on the anniversary of conversion to Operation and Maintenance phase, after the first year of successful operation.

19. The littoral zone shall be constructed according to the following criteria:
a. The littoral zone shall be gently sloped (6:1 Horizontal:Vertical or flatter).
b. The littoral zone shall be planted with aquatic and wetland vegetation suitable for the specific anticipated hydroperiod of the pond.
c. Within 24 months of completion of the system, the littoral zone shall consist of 80% coverage with suitable aquatic and wetland vegetation.
d. The littoral zones shall be stabilized by either mulching or other means to ensure the stability of the native plants and soils.

20. The Stormwater Operation/Maintenance Plan, as approved and enclosed with this permit, shall be implemented.

21. The wet detention area shall be inspected periodically for debris and trash built up around the discharge structures. Accumulations of debris and trash that negatively affect the function of the system shall be removed upon discovery.

22. All structures authorized by this permit shall remain in operable condition and shall not be allowed to deteriorate or otherwise contribute to a water quality violation for the life of the facility. All stormwater structures authorized by this permit shall be maintained in proper working order for the life of the facility.

23. If construction of the stormwater management system authorized by this environmental resource permit has not been completed and continued use of the system formally transferred to the operating phase before the expiration date of the permit, then at least 60 days before such expiration date, the permittee shall apply for another environmental resource permit for construction, using the forms and accompanied by the fee required by rules in effect at that time. The application shall be timely and sufficient, as defined in subsection 62-4.090(1), F.A.C.

24. Within 30 days of any failure of a stormwater management system or deviation from the permit, a report shall be submitted to the Department on Form 62-330.311(1), Operation and Maintenance Inspection Certification, describing the remedial actions taken to resolve the failure or deviation. This report shall be signed and sealed by a registered professional.

GENERAL CONDITIONS FOR INDIVIDUAL PERMITS
The following general conditions are binding on all individual permits issued under chapter 62-330, F.A.C., except where the conditions are not applicable to the authorized activity, or where the conditions must be modified to accommodate project-specific conditions.

1. All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in

accordance with Rule 62-330.315, F.A.C. Any deviations that are not so authorized may subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.

2. A complete copy of this permit shall be kept at the work site of the permitted activity during the construction phase, and shall be available for review at the work site upon request by the Agency staff. The permittee shall require the contractor to review the complete permit prior to beginning construction.

3. Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be installed immediately prior to, and be maintained during and after construction as needed, to prevent adverse impacts to the water resources and adjacent lands. Such practices shall be in accordance with the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual* (Florida Department of Environmental Protection and Florida Department of Transportation June 2007), and the *Florida Stormwater Erosion and Sedimentation Control Inspector's Manual* (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008), which are both incorporated by reference in subparagraph 62-330.050(9)(b)5., F.A.C., unless a project-specific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.

4. At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), "Construction Commencement Notice," [October 1, 2013], which is incorporated by reference in paragraph 62-330.350(1)(d), F.A.C., indicating the expected start and completion dates. A copy of this form may be obtained from the Agency, as described in subsection 62-330.010(5), F.A.C. If available, an Agency website that fulfills this notification requirement may be used in lieu of the form.

5. Unless the permit is transferred under Rule 62-330.340, F.A.C., or transferred to an operating entity under Rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms and conditions of the permit for the life of the project or activity.

6. Within 30 days after completing construction of the entire project, or any independent portion of the project, the permittee shall provide the following to the Agency, as applicable:

a. For an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex – "Construction Completion and Inspection Certification for Activities Associated With a Private Single-Family Dwelling Unit" [Form 62-330.310(3)]; or
b. For all other activities – "As-Built Certification and Request for Conversion to Operational Phase" [Form 62-330.310(1)].
c. If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.

7. If the final operation and maintenance entity is a third party:

a. Prior to sales of any lot or unit served by the activity and within one year of permit issuance, or within 30 days of as- built certification, whichever comes first, the permittee shall submit, as applicable, a copy of the operation and maintenance documents (see sections 12.3 thru

12.3.3 of Volume I) as filed with the Department of State, Division of Corporations and a copy of any easement, plat, or deed restriction needed to operate or maintain the project, as recorded with the Clerk of the Court in the County in which the activity is located.

b. Within 30 days of submittal of the as- built certification, the permittee shall submit "Request for Transfer of Environmental Resource Permit to the Perpetual Operation Entity" [Form 62-330.310(2)] to transfer the permit to the operation and maintenance entity, along with the documentation requested in the form. If available, an Agency website that fulfills this transfer requirement may be used in lieu of the form.

8. The permittee shall notify the Agency in writing of changes required by any other regulatory agency that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.

9. This permit does not:
   a. Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified herein or in Chapter 62-330, F.A.C.;
   b. Convey to the permittee or create in the permittee any interest in real property;
   c. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or
   d. Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee.

10. Prior to conducting any activities on state-owned submerged lands or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.

11. The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any project authorized by the permit.

12. The permittee shall notify the Agency in writing:
   a. Immediately if any previously submitted information is discovered to be inaccurate; and
   b. Within 30 days of any conveyance or division of ownership or control of the property or the system, other than conveyance via a long-term lease, and the new owner shall request transfer of the permit in accordance with Rule 62-330.340, F.A.C. This does not apply to the sale of lots or units in residential or commercial subdivisions or condominiums where the stormwater management system has been completed and converted to the operation phase.

13. Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.

14. If any prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native

American cultures, or early colonial or American settlement are encountered at any time within the project site area, work involving subsurface disturbance in the immediate vicinity of such discoveries shall cease. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section, at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Such subsurface work shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and notification shall be provided in accordance with Section 872.05, F.S.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Rule 62-330.201, F.A.C., provides otherwise.

16. The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.

17. This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.

18. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with subsection 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.

NOTICE OF RIGHTS

This action is final and effective on the date filed with the Clerk of the Department unless a petition for an administrative hearing is timely filed under Sections 120.569 and 120.57, F.S. before the deadline for filing a petition. On the filing of a timely and sufficient petition, this action will not be final and effective until further order of the Department. Because the administrative hearing process is designed to formulate final agency action, the hearing process may result in a modification of the agency action or even denial of the application.

Petition for Administrative Hearing

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. Pursuant to Rules 28-106.201 and 28-106.301, F.A.C., a petition for an administrative hearing must contain the following information:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;
(c) A statement of when and how the petitioner received notice of the agency decision;
(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
(e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
(f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and
(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

The petition must be filed (received by the Clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, or via electronic correspondence at Agency_Clerk@dep.state.fl.us. Also, a copy of the petition shall be mailed to the applicant at the address indicated above at the time of filing.

Time Period for Filing a Petition

In accordance with Rule 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant and persons entitled to written notice under Section 120.60(3), F.S., must be filed within 21 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S., must be filed within **21** days of publication of the notice or within **21** days of receipt of the written notice, whichever occurs first. The failure to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S. or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

Extension of Time

Under Rule 62-110.106(4), F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, or via electronic correspondence at Agency_Clerk@dep.state.fl.us, before the deadline for filing a petition for an administrative hearing. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

Mediation

Mediation is not available in this proceeding.

FLAWAC Review
The applicant, or any party within the meaning of Section 373.114(1)(a) or 373.4275, F.S., may also seek appellate review of this order before the Land and Water Adjudicatory Commission under Section 373.114(1) or 373.4275, F.S. Requests for review before the Land and Water Adjudicatory Commission must be filed with the Secretary of the Commission and served on the Department within 20 days from the date when this order is filed with the Clerk of the Department.

Judicial Review
Once this decision becomes final, any party to this action has the right to seek judicial review pursuant to Section 120.68, F.S. by filing a Notice of Appeal pursuant to Florida Rules of Appellate Procedure 9.110 and 9.190 with the Clerk of the Department in the Office of General Counsel (Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000) and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice must be filed within 30 days from the date this action is filed with the Clerk of the Department.

Thank you for applying to the Submerged Lands and Environmental Resource Permit Program. If you have any questions regarding this matter, please contact Scott Casey at the letterhead address, at 850-595-0574, or at scott.casey@dep.state.fl.us .

EXECUTION AND CLERKING
Executed in Orlando, Florida.
STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

For Kimberly R. Allen
Permitting Program Administrator

TM:sc

Attachment(s):
Exhibit 1, Project Drawings and Design Specs., 11 pages
Exhibit 2, Wetland Impact Drawings, 1 pages
Exhibit 3, Stormwater Maintenance Plan, 2 pages
Exhibit 4, Draft Purchase Agreement, 6 pages

Copies of 62-330 forms may be obtained at:
http://www.dep.state.fl.us/water/wetlands/erp/forms.htm

CERTIFICATE OF SERVICE
The undersigned duly designated deputy clerk hereby certifies that this document and all attachments were sent on the filing date below to the following listed persons:

Bay County, lbrunson@baycountyfl.gov
DEP, tanya.mchale@dep.state.fl.us, linda.bauer@dep.state.fl.us, scott.casey@dep.state.fl.us

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to Section 120.52, F.S., with the designated Department Clerk, receipt of which is hereby acknowledged.

December 19, 2017

Clerk **Date**

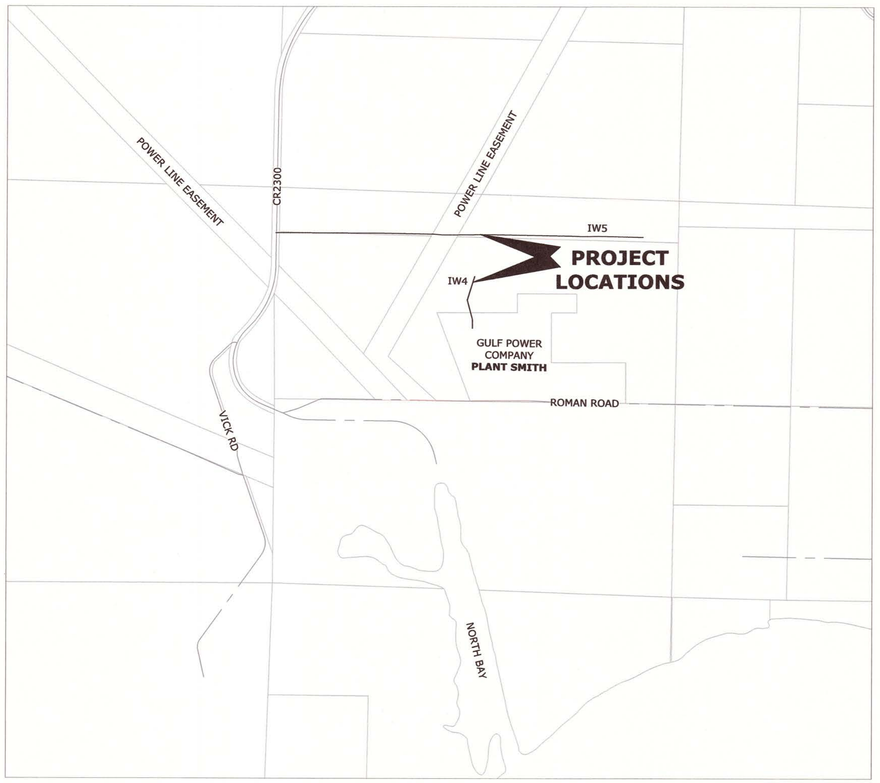
CONSTRUCTION PLANS

FOR

PLANT SMITH
IW4 & IW5 ACCESS DRIVES

GULF POWER

A SOUTHERN COMPANY



N

MES INC

LOCATION MAP

SCALE: 1"= 500'

ENGINEER:

MUNICIPAL ENGINEERING SERVICES, INC.
8574 TURKEY BLUFF ROAD
NAVARRE, FLORIDA 32566
CONTACT: DALE E. LONG, PE, LEED AP
PHONE: (850) 939-5732
EMAIL: dlong@mesi-fl.com

OWNER/DEVELOPER:

GULF POWER, INC.
1230 EAST 15TH ST
PANAMA CITY, FL 32405
CONTACT: MR. JEFFREY E. COLE
PHONE : (850) 872-3347
EMAIL: Jefcole@southernco.com

DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE OF FLORIDA
1/11
0320483-004-EI/03
PERMIT
Linda Bauer

SHEET INDEX

G-000	COVER SHEET, SHEET INDEX & LOCATION MAP
G-001	GENERAL NOTES
G-002	GENERAL NOTES & LEGEND
G-003	EROSION & SEDIMENT CONTROL DETAILS & GENERAL NOTES
C-101	IW4 ACCESS DRIVE - PLAN AND PROFILE
C-102	IW4 ACCESS DRIVE - SECTIONS
C-103	IW4 ACCESS DRIVE - GEOMETRY
C-201	IW4 ACCESS DRIVE - POND GEOMETRY AND GRADING PLAN
~~C-301~~	~~IW5 ACCESS DRIVE - PLAN AND PROFILE~~
~~C-302~~	~~IW5 ACCESS DRIVE - PLAN AND PROFILE~~
~~C-303~~	~~IW5 ACCESS DRIVE - PLAN AND PROFILE~~
~~C-304~~	~~IW5 ACCESS DRIVE - PLAN AND PROFILE~~
~~C-305~~	~~IW5 ACCESS DRIVE - PLAN AND PROFILE~~
~~C-306~~	~~IW5 ACCESS DRIVE - SECTIONS~~
~~C-307~~	~~IW5 ACCESS DRIVE - SECTIONS~~
~~C-308~~	~~IW5 ACCESS DRIVE - GEOMETRY~~
~~C-401~~	~~IW5 ACCESS DRIVE - POND GEOMETRY AND GRADING PLAN~~
C-501	DETAILS
C-502	DETAILS
C-503	DETAILS

MUNICIPAL ENGINEERING SERVICES, INC.
EXCELLENCE IN ENGINEERING SERVICE
8574 Turkey Bluff Road ◇ Navarre, Florida 32566 ◇ p: (850) 939-5732
CERTIFICATE OF AUTHORIZATION: CA-30686

COVER SHEET, SHEET INDEX & LOCATION MAP

NOT Released for Construction by_____Date_____

As-Built 'Record Drawing' by_____Date_____

PLANT SMITH IW4 & IW5 ACCESS DRIVES
FOR
GULF POWER COMPANY
BAY COUNTY FLORIDA

REVISION		
1	OWNER/FDEP COMMENTS	6-19-2017 EMD

DALE ERIC LONG
LICENSE
NO. 55393
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SCALE: AS NOTED

DATE: JULY 03, 2017

JOB NUMBER:	FILENAME:
150006-004	SEE LEFT
DRAWN BY:	DESIGNED BY:
EMD	DEL

SHEET:

G-000

M:\2015\150006-004 Plant Smith Access Drive\dwg\Sheets\00 G-000 Cover Sheet.dwg, G-000

GENERAL NOTES:

1. THE OWNER INTENDS THAT THE CONTRACT DOCUMENTS WILL PROVIDE A COMPLETE AND FULLY FUNCTIONAL PROJECT. WHERE LABOR AND MATERIAL MAY BE REQUIRED TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL PROJECT BUT IS NOT FULLY SPECIFIED, DETAILED, OR SHOWN AS A CONSTRUCTION ITEM, THE CONTRACTOR SHALL PROVIDE THE REQUIRED MATERIAL OR LABOR TO MEET THE INTENT OF THE CONTRACT DOCUMENTS. THIS REQUIREMENT MAY ONLY BE CONSTRUED AS A REQUIREMENT TO COMPLETE OR MAKE FUNCTIONAL CONSTRUCTION ITEMS SHOWN IN OR ON THE CONTRACT DOCUMENTS.
2. PRIOR TO COMMENCING CONSTRUCTION WITHIN THE PROJECT AREA(S), THE CONTRACTOR SHALL VIDEO EXISTING CONDITIONS AND AREAS ADJACENT TO THE PROJECT THAT MAY BE IMPACTED BY THE CONSTRUCTION. THE CONTRACTOR SHALL KEEP ONE COPY AND PROVIDE ONE COPY EACH TO THE OWNER AND OWNER'S CONSTRUCTION INSPECTION/ADMINISTRATION REPRESENTATIVE.
3. ALL FINAL CONSTRUCTION AND CONSTRUCTION WORK SHALL BE IN COMPLIANCE WITH ALL LOCAL, STATE AND FEDERAL BUILDING AND/OR CONSTRUCTION CODES, RULES OR REQUIREMENTS AS APPLICABLE.
4. ABOVE GROUND FEATURES SHOWN WHICH MAY AFFECT CONSTRUCTION WERE TAKEN FROM THE BEST AVAILABLE INFORMATION AND FIELD SURVEYS. THE OWNER DOES NOT GUARANTEE THAT ALL PHYSICAL FEATURES OR ABOVE GROUND OBSTRUCTIONS AFFECTING CONSTRUCTION ARE SHOWN. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF/HERSELF WITH THE EXISTING CONDITIONS PRIOR TO SUBMITTING HIS/HER BID. THERE SHALL BE NO ADJUSTMENT OF THE CONTRACT PRICE FOR VISIBLE FEATURES AFFECTING CONSTRUCTION.
5. THE CONTRACT DOCUMENTS, SPECIFICATIONS, AND GEOTECHNICAL INVESTIGATION REPORT FOR THIS PROJECT ARE AN INTEGRAL PART OF THE CONSTRUCTION. THE CONTRACTOR SHALL FULLY REVIEW AND FOLLOW ALL REQUIREMENTS OF THESE DOCUMENTS IN THE COMPLETION OF THE WORK. ALL CONSTRUCTION SHALL BE IN STRICT COMPLIANCE WITH THE CONTRACT DOCUMENTS UNLESS OTHERWISE APPROVED IN WRITING BY THE OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE.
6. ALL EXISTING FENCES, STORM DRAINS, PROPERTY CORNERS, SURVEY MONUMENTS, PAVEMENT, ROADS, SIDEWALKS, SIGNS OR ANY OTHER EXISTING OBJECTS OR STRUCTURES WHICH ARE NOT DESIGNATED FOR REMOVAL, BUT ARE DAMAGED OR DESTROYED BY THE CONTRACTOR OR BY ANYONE FOR WHOM THE CONTRACTOR IS RESPONSIBLE ARE TO BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING IN KIND OR REPAIRING TO ORIGINAL CONDITION; MAILBOXES, DRIVEWAY CULVERTS, RETAINING WALLS, LANDSCAPING, ETC. THAT ARE DISTURBED, DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES.
7. THE LEGEND IS TYPICAL FOR ALL SHEETS. SOME ITEMS MAY NOT APPLY TO EACH SHEET.
8. CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THE LIMITS OF CONSTRUCTION, RIGHT-OF-WAYS AND/OR EASEMENTS SHOWN. CONTRACTOR SHALL BE LIABLE FOR ALL DAMAGE TO AND RESTORATION OF ALL AREAS OUTSIDE OF RIGHT-OF-WAYS AND EASEMENTS, AT HIS EXPENSE.
9. THE FLORIDA DEPARTMENT OF TRANSPORTATION DOCUMENTS "ROADWAY AND TRAFFIC DESIGN STANDARDS" AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ARE CONSIDERED PART OF THE CONTRACT DOCUMENTS OF THIS PROJECT BY REFERENCE. WHERE F.D.O.T. INDICES OR SPECIFICATIONS ARE REFERENCED IN THE CONSTRUCTION PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE APPROPRIATE F.D.O.T. DOCUMENT(S) UNLESS OTHERWISE INDICATED ON, OR MODIFIED BY, THE CONSTRUCTION PLANS
10. IN THE EVENT THAT ANY STANDARDS OR SPECIFICATIONS AS DESCRIBED HEREIN OR SHOWN ON THE PLANS, ARE IN CONFLICT WITH EACH OTHER, THE MORE STRINGENT CRITERIA WILL APPLY. CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY AND IN WRITING. SHOULD THE MORE STRINGENT CRITERIA BE UNCLEAR, THE ENGINEER WILL PROVIDE AN INTERPRETATION AND DETERMINE WHICH CRITERIA IS TO BE USED.
11. THESE PLANS WERE BASED ON THE GEOTECHNICAL REPORT BY LMJ, PHONE: (850) 434-0846. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS AS DESCRIBED IN THE REPORT(S), AND COMPLY WITH ALL RECOMMENDATIONS MADE IN THE REPORT(S) SPECIFICALLY FOR SOIL PREPARATION ON THE SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COPY OF ALL SUPPLEMENTAL REPORTS FOR THIS PROJECT FROM THE OWNER AND TO FOLLOW THE SUPPLEMENTAL REPORTS' RECOMMENDATIONS.
12. THE OWNER, OWNER'S REPRESENTATIVES, AND INSPECTORS OF APPLICABLE GOVERNMENT AGENCIES HAVING JURISDICTION, SHALL AT ALL TIMES HAVE ACCESS TO THE WORK SITE. THE CONTRACTOR SHALL PROVIDE PROPER FACILITIES FOR SUCH ACCESS AND INSPECTIONS.
13. IT IS THE CONTRACTOR'S RESPONSIBILITY TO TAKE ALL REASONABLE AND PRUDENT PRECAUTIONS TO ENSURE THAT ALL COMPLETED WORK, MATERIALS AND EQUIPMENT STORED ON SITE ARE SAFE AND SECURE FROM UNAUTHORIZED ACCESS OR USE. SUCH PRECAUTIONS MAY INCLUDE INSTALLATION OF SIGNS, FENCES, OR POSTING OF SECURITY GUARDS.
14. CONSTRUCTION NOTES ON THE PLANS AND STATIONING IDENTIFIED ARE NONSPECIFIC AND APPROXIMATE AND ARE INTENDED TO SHOW GENERAL INTENT OF THE WORK. THE CONTRACTOR SHALL APPLY ALL MATERIALS AND LABOR TO PROVIDE A COMPLETE AND FUNCTIONAL PROJECT AS IDENTIFIED ON THE PLANS.
15. THE CONTRACTOR SHALL COMPLY FULLY WITH ALL PERMIT REQUIREMENTS IMPOSED BY THE REGULATORY AGENCIES.
16. THE ENGINEER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS IN ADVANCE OF ALL TESTING RELATED TO CIVIL WORK.
17. ALL DISCHARGE FROM ANY REQUIRED DE-WATERING OPERATIONS SHALL BE RESTRICTED AND MAINTAINED ON SITE. PERCOLATION THROUGH TEMPORARY PONDS OR EVAPORATION ARE THE ONLY ALLOWABLE NON-PERMITTED MEANS OF DISPOSAL OF GROUNDWATER. THE CONTRACTOR AT HIS EXPENSE, MAY PROVIDE TESTING OF GROUNDWATER PER F.D.E.P. GUIDELINES AND ACQUIRE AN F.D.E.P. DE-WATERING DISCHARGE PERMIT IF REQUIRED. GULF POWER ENVIRONMENTAL AFFAIRS SHALL BE NOTIFIED AT LEAST SEVEN (7) DAYS IN ADVANCE OF ANY DE-WATERING ACTIVITIES.
18. NO DEVIATIONS OR REVISIONS FROM THESE PLANS BY THE CONTRACTOR SHALL BE ALLOWED WITHOUT PRIOR APPROVAL FROM THE ENGINEER OF RECORD AND GULF POWER ENVIRONMENTAL AFFAIRS.
19. RETENTION/DETENTION AREAS SHALL BE SUBSTANTIALLY COMPLETE PRIOR TO ANY CONSTRUCTION ACTIVITIES THAT MAY INCREASE STORMWATER RUNOFF RATES. THE CONTRACTOR SHALL CONTROL STORMWATER DURING ALL PHASES OF CONSTRUCTION AND TAKE ADEQUATE STEPS TO PREVENT THE EXCAVATED POND FROM BLINDING DUE TO SEDIMENTS.
20. DEVELOPER/CONTRACTOR SHALL RE-SHAPE PER PLAN SPECIFICATIONS, CLEAN OUT ACCUMULATED SILT, AND STABILIZE PONDS AT THE END OF CONSTRUCTION WHEN ALL DISTURBED AREAS HAVE BEEN STABILIZED AND PRIOR TO THE REQUEST FOR A FINAL INSPECTION.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL STORMWATER FACILITIES UNTIL THE PROJECT HAS BEEN ACCEPTED BY THE OWNER. ALL DISTURBED AREAS SHALL BE RETURNED TO EQUAL OR BETTER CONDITION.

PROJECT SAFETY NOTES:

1. THE CONTRACTOR SHALL BE SOLELY LIABLE FOR THE SAFETY OF THE WORK AND ANY AND ALL DAMAGES ARISING FROM THE CONSTRUCTION SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ASSURING THAT THE CONSTRUCTION MATERIALS AND METHODS ARE COMPLIANT WITH ALL APPLICABLE LOCAL, STATE OR FEDERAL SAFETY CODES, RULES, OR REQUIREMENTS.
2. THE CONTRACTOR SHALL COMPLY IN EVERY RESPECT WITH THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 (OSHA) AND ALL RULES AND REGULATIONS NOW OR HEREAFTER IN EFFECT UNDER THIS ACT. THE CONTRACTOR FURTHER AGREES TO COMPLY WITH ANY AND ALL APPLICABLE STATE LAWS AND REGULATIONS PERTAINING TO JOB SAFETY AND HEALTH.
3. THE CONTRACTOR SHALL PROTECT AND KEEP THE OWNER (INCLUDING THEIR AGENTS, CONSULTANTS, AND EMPLOYEES) FREE AND HARMLESS FROM ANY AND ALL LIABILITY, PUBLIC OR PRIVATE, PENALTIES, CONTRACTUAL OR OTHERWISE, LOSSES, DAMAGES, COSTS, ATTORNEY'S FEES, EXPENSES, CAUSES OF ACTION, ETC. RESULTING FROM THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AS AMENDED.

HAZARDOUS MATERIALS NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH LOCAL STATE AND FEDERAL REGULATIONS REGARDING TESTING FOR AND DISPOSAL OF HAZARDOUS MATERIALS DURING DEMOLITION.
2. HAZARDOUS MATERIAL MEANS ANY SUBSTANCE: (A) THE PRESENCE OF WHICH REQUIRES INVESTIGATION OR REMEDIATION UNDER ANY PRESENT FEDERAL, STATE OR LOCAL STATUTE, REGULATION, ORDINANCE, RULE, CODE, ACTION, POLICY OR COMMON LAW, OR (B) WHICH IS OR BECOMES DEFINED AS A "HAZARDOUS WASTE", "HAZARDOUS SUBSTANCE" POLLUTANT OR CONTAMINANT UNDER ANY PRESENT FEDERAL, STATE OR LOCAL STATUTE, REGULATION, RULE OR ORDINANCE OR AMENDMENTS THERETO INCLUDING, WITHOUT LIMITATION, THE COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (42 USC SECTIONS 9601 ET SEQ.) AND/OR THE RESOURCE CONSERVATION AND RECOVERY ACT (42 USC SECTIONS 6901 ET SEQ.), OR (C) WHICH IS TOXIC, EXPLOSIVE, CORROSIVE, FLAMMABLE, INFECTIOUS, RADIOACTIVE, CARCINOGENIC, MUTAGENIC, OR OTHERWISE HAZARDOUS AND IS REGULATED BY ANY GOVERNMENTAL AUTHORITY, AGENCY, DEPARTMENT, COMMISSION, BOARD, AGENCY OR INSTRUMENTALITY OF THE UNITED STATES, THE STATE IN WHICH THE PREMISES ARE LOCATED OR ANY POLITICAL SUBDIVISION THEREOF, OR (D) THE PRESENCE OF WHICH ON THE PREMISES CAUSES OR THREATENS TO CAUSE A NUISANCE UPON THE PREMISES OR TO ADJACENT PROPERTIES OR POSES OR THREATENS TO POSE A HAZARD TO THE HEALTH OR SAFETY OF PERSONS ON OR ABOUT THE PREMISES, OR (E) WHICH CONTAINS GASOLINE, DIESEL FUEL, OR OTHER PETROLEUM HYDROCARBONS, OR (F) WHICH CONTAINS POLYCHLORINATED BIPHENYL (PCB'S), ASBESTOS, LEAD OR UREA FORMALDEHYDE FOAM INSULATION.
3. CONTRACTOR AND ITS SUBCONTRACTORS SHALL USE, HANDLE, TEST TRANSPORT, AND DISPOSE OF ALL HAZARDOUS MATERIALS (AS DEFINED HEREIN) IN COMPLIANCE WITH ALL CURRENT FEDERAL, STATE AND LOCAL ENVIRONMENTAL, HEALTH OR SAFETY LAW, INCLUDING, BUT NOT LIMITED TO, ALL SUCH STATUTES, REGULATIONS, RULES, ORDINANCES, CODES, AND RULES OF COMMON LAW.
4. CONTRACTOR FURTHER AGREES THAT CONTRACTOR AND ITS SUBCONTRACTORS SHALL NOT CAUSE THE DISCHARGE, RELEASE, OR DISPOSAL OF ANY HAZARDOUS MATERIAL CREATED BY ITS WORK ON OR ABOUT THE JOB SITE. IN THE EVENT OF ANY SPILL, RELEASE, OR ANY OTHER REPORTABLE OCCURRENCE, CONTRACTOR SHALL NOTIFY GULF POWER ENVIRONMENTAL AFFAIRS AND THE APPROPRIATE GOVERNMENTAL AGENCY AND SHALL TAKE SUCH ACTION AS MAY BE NECESSARY TO MINIMIZE THE DELETERIOUS EFFECT OF SUCH A SPILL ON PERSONS OR PROPERTY.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPORTING SPILLS OF POTENTIALLY HAZARDOUS SUBSTANCES (I.E. GASOLINE, DIESEL FUEL, HYDRAULIC FLUID, ETC.) TO GULF POWER ENVIRONMENTAL AFFAIRS, WHO WILL NOTIFY THE APPROPRIATE REGULATORY AGENCY.

PUBLIC RIGHT-OF-WAY NOTES:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL PERMITS AND LICENSES NECESSARY TO WORK IN THE BAY COUNTY RIGHT-OF-WAY.
2. ROAD LANE CLOSURES SHALL BE KEPT AS SHORT AS POSSIBLE AND SHALL BE COORDINATED WITH THE AGENCY HAVING JURISDICTION (AHJ) - DEPARTMENT OF TRANSPORTATION, CITY, OR COUNTY AS APPLICABLE. THE AHJ SHALL BE NOTIFIED 72 HOURS IN ADVANCE BEFORE ANY WORK COMMENCES ON THEIR RIGHT-OF-WAY. TEMPORARY ACCESS TO ALL DRIVEWAYS SHALL BE PROVIDED AND MAINTAINED. NO ROADWAYS SHALL BE CLOSED, LANE CLOSURES MAY BE ALLOWED WITH ADEQUATE NOTICE GIVEN AND PRIOR APPROVAL.
3. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL ON ALL ROADWAYS. PRIOR TO PERFORMING ANY WORK WITHIN ANY PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL DEVELOP AND SUBMIT A MAINTENANCE OF TRAFFIC PLAN TO THE AGENCY HAVING JURISDICTION FOR THEIR APPROVAL. THIS PLAN MUST MEET THE MINIMUM REQUIREMENTS AS OUTLINED IN THE FDOT DESIGN STANDARDS INDEX 600 AS APPLICABLE.
4. ANY DAMAGE TO EXISTING ROADWAYS DURING CONSTRUCTION WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
5. ALL RIGHT-OF-WAY INSTALLATIONS WILL BE IN ACCORDANCE WITH PRACTICES REFERENCED IN THE STATE OF FLORIDA UTILITY ACCOMMODATIONS MANUAL, LATEST EDITION.
6. SIGNS AND BARRICADES SHALL BE IN ACCORDANCE WITH THE US DEPARTMENT OF TRANSPORTATION'S MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND FDOT REQUIREMENTS.

RECORD DRAWING NOTES:

1. PRIOR TO CONSTRUCTION THE CONTRACTOR WILL OBTAIN A COPY OF THE MINIMUM REQUIREMENTS FOR AS-BUILT RECORD DRAWING ACCEPTANCE FOR THE AGENCY HAVING JURISDICTION (AHJ) SUCH AS A COUNTY OR CITY, THE OWNER, AND/OR A UTILITY SERVICE PROVIDER. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THESE REQUIREMENTS AND PRODUCE AS-BUILT RECORD DRAWINGS THAT SUBSTANTIALLY COMPLY WITH OR EXCEED THESE REQUIREMENTS.
2. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER OF RECORD REDLINE DRAWINGS DEPICTING THE AS-BUILT CONDITION AT LEAST TWO (2) WEEKS PRIOR TO REQUESTING A FINAL INSPECTION OF THE WORK TO BE CERTIFIED.
3. THE CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS DURING CONSTRUCTION WHICH SHOW THE AS-BUILT CONDITIONS OF ALL WORK INCLUDING PIPING, FITTINGS, DRAINAGE STRUCTURES, POND TOPOGRAPHY, OUTLET STRUCTURE DIMENSIONS, GRADING, ELEVATIONS, ETC.
4. THE CONTRACTOR SHALL KEEP A DAILY SET OF AS-BUILT DRAWINGS WHILE THE WORK IS BEING DONE IS VISIBLE AND EXPOSED ACCORDING TO THE CRITERIA CONTAINED HEREIN.
5. THE OWNER RESERVES THE RIGHT TO REQUIRE THAT THE CONTRACTOR UNCOVER, RE-TEST, AND/OR PERFORM ANY ACTION NECESSARY TO ENSURE THAT THE IMPROVEMENTS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
6. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING SUFFICIENT AS-BUILT INFORMATION TO CONVEY THAT THE CONSTRUCTION HAS BEEN COMPLETED WITHIN ACCEPTABLE TOLERANCES. AS-BUILT INFORMATION SHALL INCLUDE BUT IS NOT LIMITED TO THE FOLLOWING:
   A. STORM DRAINAGE:
      1) TOP ELEVATION OF EACH STRUCTURE FRAME AND COVER AS WELL AS THE TOP ELEVATION OF ALL HEADWALLS, CONTROL STRUCTURES, ETC.
      2) INVERT OF EACH LINE ENTERING AND EXITING EACH STRUCTURE.
      3) INVERTS OF ALL PIPE OUTFALLS.
      4) PIPE SLOPE (GRADE) BETWEEN STRUCTURES.
      5) LENGTH OF RUN OF MAIN BETWEEN STORMWATER STRUCTURES (MEASURED FROM CENTER TO CENTER OF STRUCTURE)
      6) PROVIDE DIMENSIONS AND INVERTS FOR ALL UNDERDRAINS INCLUDING FITTINGS AND CLEANOUTS.
      7) POND TOPOGRAPHY:
         i. CROSS-SECTIONS
         ii. PLANTINGS
         iii. OVERFLOW STRUCTURE INFORMATION
      8) LOCATE WITH MEASUREMENTS (MINIMUM TWO-POINT TIES) FROM PERMANENT VISIBLE OBJECTS ALL FITTINGS, STUB-OUT, ACCESSORIES, ETC. NOT VISIBLE FROM THE SURFACE.

MUNICIPAL ENGINEERING SERVICES, INC.
EXCELLENCE IN ENGINEERING SERVICE
8574 Turkey Bluff Road ◇ Navarre, Florida 32566 ◇ p: (850) 939-5732
CERTIFICATE OF AUTHORIZATION: CA-30868

GENERAL NOTES

NOT Released for Construction by _____ Date _____

As-Built 'Record Drawing' by _____ Date _____

PLANT SMITH IW4 & IW5 ACCESS DRIVES
FOR GULF POWER COMPANY
BAY COUNTY FLORIDA

REVISION

DALE BRIC FORD LICENSE NO. 55303 STATE OF FLORIDA PROFESSIONAL ENGINEER

SCALE: AS NOTED

DATE: JULY 03, 2017

JOB NUMBER: 150006-004 | FILENAME: SEE LEFT

DRAWN BY: EMD | DESIGNED BY: DEL

SHEET: G-001

M:\2015\150006-004 Plant Smith Access Drive\dwg\Sheets\02 G-001 General Notes.dwg, G-001

DEMOLITION AND CLEARING NOTES:

1. TREES SLATED FOR PROTECTION SHALL BE MARKED AND TREE PROTECTION BARRICADES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBING ACTIVITIES. NO PROTECTED TREES SHALL BE REMOVED, DESTRUCTIVELY DAMAGED, MUTILATED, RELOCATED, DISFIGURED, DESTROYED, CUT DOWN OR EXCESSIVELY PRUNED DURING CONSTRUCTION ACTIVITIES.
2. NO GRADING OR CLEARING BY, OR STORAGE OF HEAVY EQUIPMENT SHALL OCCUR WITHIN THE DRIP LINE OF PROTECTED TREES OR WITHIN ENVIRONMENTALLY SENSITIVE AREAS.
3. TREE PROTECTION BARRICADES OR EQUIVALENT PROTECTIVE MEASURES WILL BE CONSTRUCTED ACCORDING TO THE LOCAL JURISDICTION'S CRITERIA FOR TREES TO REMAIN WITHIN THE LIMITS OF CONSTRUCTION.
4. THE CONTRACTOR SHALL BE EXTREMELY CAUTIOUS WHEN WORKING NEAR TREES THAT ARE TO BE SAVED, WHETHER SHOWN ON THE PLANS OR DESIGNATED IN THE FIELD.
5. ALL PRACTICAL AND NECESSARY EFFORT SHALL BE TAKEN DURING CONSTRUCTION TO PREVENT UNNECESSARY TREE REMOVAL.
6. TRENCHING FOR PROPOSED UTILITY IMPROVEMENTS WITHIN THE DRIP LINE OF SPECIMEN TREES TO REMAIN, WILL REQUIRE THE ADVANCED PRE-TREATMENT OF EACH IMPACTED TREE BY A QUALIFIED ARBORIST TO MINIMIZE THE POTENTIALLY ADVERSE IMPACTS OF CONSTRUCTION. HAND DIGGING MAY BE REQUIRED WITHIN THE DRIP LINE OF PROTECTED TREES.
7. IN AREAS REQUIRING FILL MATERIAL, THE CONTRACTOR SHALL STRIP OR OTHERWISE REMOVE ALL VEGETATION SUCH AS BRUSH, HEAVY SOD, HEAVY GROWTH OF GRASS, DECAYED VEGETATION MATTER, RUBBISH AND ANY OTHER DELETERIOUS MATERIAL BEFORE EMBANKMENT IS PLACED. IMMEDIATELY PRIOR TO THE PLACING OF FILL MATERIAL, THE ENTIRE AREA UPON WHICH FILL IS TO BE PLACED, SHALL BE SCARIFIED IN A DIRECTION APPROXIMATELY PARALLEL TO THE AXIS OF FILL.
8. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CLEARLY DESIGNATE THE LIMITS OF CONSTRUCTION ON-SITE. THE CONTRACTOR SHALL NOT PERFORM ANY WORK OUTSIDE THE LIMITS OF CONSTRUCTION. IN AREAS WHERE NO WORK IS PROPOSED THE CONTRACTOR SHALL PROTECT THE TOPOGRAPHY, THE SOIL, AND THE VEGETATION.
9. WHERE DEMOLITION REQUIREMENTS LEAVE OPEN TRENCHES, PITS OR OTHER VOIDS, PROVIDE CLEAN FILL AND COMPACTION PER GEOTECHNICAL REPORT OR OTHER REQUIREMENTS.
10. ALL DEMOLISHED MATERIALS SHALL BE REMOVED FROM THE SITE AT THE CONTRACTOR'S EXPENSE. DEBRIS SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. GULF POWER ENVIRONMENTAL AFFAIRS SHALL APPROVE OF ALL DISPOSAL LOCATIONS IN ADVANCE.
11. DEMOLITION WORK SHALL BE COORDINATED WITH EACH PHASE OF THE WORK. DO NOT PROCEED WITH ANY DEMOLITION UNTIL SPECIFICALLY AUTHORIZED BY OWNER.
12. ALL EXCESS MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LEGAL MANNER BY THE CONTRACTOR. GULF POWER ENVIRONMENTAL AFFAIRS MUST APPROVE DISPOSAL LOCATIONS IN ADVANCE. IF THERE WILL BE TEMPORARY STOCKPILING OF MATERIALS ON THE SITE, THESE AREAS SHOULD CONTAIN EROSION CONTROL BMP'S (E.G. SILT FENCE, HAY BALES, ETC.) AS NECESSARY.
13. CONTRACTOR SHALL TAKE EXTREME CARE TO REMOVE ONLY TREES AND VEGETATION ABSOLUTELY NECESSARY FOR THE CONSTRUCTION OF THE WORK.

UTILITY NOTES:

1. THE EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UTILITIES AS TO SIZE, LOCATION, AND ELEVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AND ALL CONFLICTS PRIOR TO BEGINNING CONSTRUCTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING SIZE, TYPE, LOCATION, AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND NOTIFYING THE INVOLVED UTILITY PROVIDERS TO MAKE ANY NECESSARY ARRANGEMENTS FOR RELOCATION, DISRUPTION OF SERVICE OR CLARIFICATION OF ACTIVITY REGARDING SAID UTILITY. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THESE PLANS OR FIELD LOCATED. THE RESPECTIVE UTILITY PROVIDERS SHALL RELOCATE UTILITIES THAT INTERFERE WITH THE PROPOSED CONSTRUCTION AND THE CONTRACTOR SHALL COOPERATE WITH THE UTILITY PROVIDERS DURING RELOCATION OPERATIONS. ANY DELAY OR INCONVENIENCE CAUSED BY THE INVOLVED UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT.
3. THE CONTRACTOR SHALL CONFORM TO FLORIDA STATUTE CHAPTER 556 AND THE SUNSHINE 811 OF FLORIDA. CONTRACTOR SHALL NOTIFY ALL UTILITY OWNERS AND THE SUNSHINE UNDERGROUND NOTIFICATION CENTER AT 811 AT LEAST 48 HOURS PRIOR TO START OF WORK. CONTRACTOR IS RESPONSIBLE FOR CONTINUAL MAINTENANCE OF ALL UTILITY LOCATES, FLAGS, MARKINGS, ET CETERA THROUGH THE ENTIRE DURATION OF CONSTRUCTION.
4. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL CODES, RULES AND REGULATIONS REGARDING UTILITY LOCATIONS. THE CONTRACTOR IS COMPLETELY AND SOLELY RESPONSIBLE FOR ALL DAMAGES TO ANY UTILITIES CAUSED AS A RESULT OF, OR BY, THE CONSTRUCTION. THE LOCATION OF EXISTING UTILITIES ON THESE PLANS IS SHOWN IN AN APPROXIMATE WAY ONLY AND WAS TAKEN FROM LIMITED FIELD LOCATES AND THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL CONTACT GULF POWER AND/OR AT&T TO SUPPORT OR RELOCATE EXISTING POLES DURING CONSTRUCTION IF NECESSARY. THE CONTRACTOR SHALL PAY THE RESPECTIVE COMPANY FOR THIS WORK. THE CONTRACTOR SHALL COORDINATE ALL OTHER UTILITY WORK OR CONNECTIONS WITH THE APPROPRIATE UTILITY COMPANIES. UNDERGROUND UTILITIES MAY EXIST THAT ARE NOT SHOWN.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ALL NECESSARY ARRANGEMENTS WITH GOVERNMENTAL DEPARTMENTS, PUBLIC UTILITIES, PUBLIC CARRIERS, SERVICE COMPANIES, AND CORPORATIONS OWNING OR CONTROLLING ROADWAYS, RAILWAYS, WATER, SEWER, GAS, ELECTRICAL, TELEPHONE, AND TELEGRAPH FACILITIES, SUCH AS PAVEMENTS, TRACKS, PIPING, WIRES, CABLES, CONDUITS, POLES, GUYS, OR OTHER SIMILAR FACILITIES, INCLUDING INCIDENTAL STRUCTURES CONNECTED THEREWITH THAT ARE ENCOUNTERED IN THE WORK IN ORDER THAT SUCH ITEMS MAY BE PROPERLY SUPPORTED, PROTECTED OR LOCATED.
6. IN LOCATIONS WHERE CONSTRUCTION IS SHOWN CROSSING EXISTING UTILITIES, THE CONTRACTOR SHALL POTHOLE THE EXISTING UTILITIES TO CONFIRM LOCATION, SIZE AND DEPTH IN ADVANCE OF CONSTRUCTION. CONTRACTOR SHALL USE THE POTHOLE INFORMATION TO PROVIDE THE REQUIRED CLEARANCE BETWEEN THE PROPOSED UTILITY LINE ABOVE OR BELOW THE EXISTING UTILITIES.

GULF POWER GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION MONITORING AND NOTIFYING THE ENGINEER OF RECORD AND GULF POWER ENVIRONMENTAL AFFAIRS @ 850-485-5532 AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND CONCLUSION OF CONSTRUCTION, AS WELL AS SUPPLYING CLEAR AND LEGIBLE REVISIONS TO THE CONSTRUCTION PLANS FOR USE DURING AS-BUILT CERTIFICATION.
2. WHERE SOD IS BEING INSTALLED, TOPSOIL SHALL BE USED AS A BASE A LEAST 4" DEEP.
3. AFTER THE SITE HAS BEEN BROUGHT TO PROPER GRADE FOR PLACEMENT OF TOPSOIL AND IMMEDIATELY PRIOR TO DUMPING AND SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENED BY DISKING OR SCARIFYING TO A DEPTH OF 2" TO INSURE BONDING OF THE TOPSOIL AND SODDING. THE ENGINEER OF RECORD AND GULF POWER ENVIRONMENTAL AFFAIRS SHALL VERIFY GRADE PRIOR TO SEEDING/SODDING.
4. TOPSOIL SHALL NOT BE PLACED IN A MUDDY CONDITION, WHEN THE SUBGRADE IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND PROPOSED SODDING.
5. THE TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 4".
6. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOP-SOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
7. COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL AND TO OBTAIN A LEVEL SEED BED FOR THE ESTABLISHMENT OF HIGH MAINTENANCE TURF. AVOID UNDUE COMPACTION.
8. CONTRACTOR IS TO MAINTAIN SODDING AND GRASSING BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING AND OTHER OPERATIONS SUCH AS ROLLING, RE-GRADING AND REPLANTING AS REQUIRED TO ESTABLISH GRASSED/SODDED AREAS FREE OF ERODED OR BARE AREAS AND REPLACE ANY REJECTED MATERIALS PROMPTLY FROM THE SITE. CONTRACTOR IS TO INCLUDE COST OF MAINTAINING SODDING AND GRASSING IN THE BID.
9. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND TAKE ALL PRECAUTIONS NECESSARY TO AVOID DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
10. CONTRACTOR SHALL CONSTRUCT TEMPORARY MEASURES AND SUPPORT TO ACCESS THE SITE AND SHALL INCLUDE THE COST FOR SAME IN THE BID. CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE SATISFACTION OF THE OWNER AND/OR GOVERNING AGENCY. NO ADDITIONAL GRAVEL OR IMPERVIOUS AREAS SHALL BE ADDED UNLESS APPROVED BY THE DESIGN ENGINEER, GULF POWER ENVIRONMENTAL AFFAIRS AND APPLICABLE ENVIRONMENTAL AGENCIES.
11. SOLID WASTE SHALL BE KEPT IN COVERED DUMPSTERS THROUGHOUT CONSTRUCTION ACTIVITIES UNLESS APPROVED BY GULF POWER ENVIRONMENTAL AFFAIRS.
12. ADEQUATE PROVISIONS SHALL BE MADE FOR FLOW OF SEWERS, DRAINS, AND WATER COURSES ENCOUNTERED DURING CONSTRUCTION.
13. CONTACTOR SHALL INCLUDE IN HIS BID ANY COST ASSOCIATED WITH DE-WATERING AND DE-MUCKING FOR INSTALLATION OF REQUIRED INFRASTRUCTURE (IF APPLICABLE).
14. CONTRACTOR SHALL CLEAN UP ENTIRE SITE INCLUDING STAGING AREAS AT LEAST TWO TIMES PER WEEK. THIS SHALL INCLUDE LOCATING TRASH/SCRAP RECEPTACLES AT APPROPRIATE LOCATIONS AROUND THE SITE. CONTACTOR SHALL PICK UP ALL ROCKS, METAL, PIPE, NAILS, NUTS, BOLTS, BOARDS, PAPER, TRASH, ETC. AT LEAST TWICE A WEEK. CONTACTOR SHALL INCLUDE COST OF SAME IN BID.
15. CONTRACTOR SHALL RESTORE ALL STAGING AREAS TO AS GOOD AS OR BETTER CONDITION THAN EXISTED PRIOR TO CONSTRUCTION. THIS INCLUDES IRRIGATION AND SOD REPLACEMENT OF NECESSARY. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN 20 DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF TWO (2) TONS PER ACRE.
16. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT AT A THICKNESS OF TWO (2) TO FOUR (4 INCHES MIXED WITH THE TOP TWO (2) INCHES OF SOIL.
17. ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTES.
18. ANY AREAS USED FOR THE CONTRACTORS STAGING, INCLUDED BUT NOT LIMITED TO, TEMPORARY STORAGE OF STOCKPILED MATERIALS (I.E. CRUSHED STONE, QUARRY PROCESS STONE, SELECT FILL, EXCAVATED MATERIALS, ETC.) SHALL BE ENTIRELY PROTECTED BY A SILT FENCE ALONG THE LOW ELEVATION SIDE TO CONTROL SEDIMENT RUNOFF.
19. THE PROJECT ENGINEER (ENGINEER OF RECORD) SHALL PROVIDE TO GULF POWER ENVIRONMENTAL AFFAIRS "AS-BUILT" CERTIFICATION THAT THE PROJECT CONSTRUCTION ADHERES TO THE PERMITTED PLANS AND SPECIFICATIONS. THE "AS-BUILT" CERTIFICATION AND "AS BUILT" RECORD DRAWINGS MUST BE SIGNED, SEALED AND DATED BY A REGISTERED FLORIDA PROFESSIONAL ENGINEER.

EXISTING LEGEND:

LEGEND:

BOC	DENOTES BACK OF CURB
Ch	DENOTES CHORD
Ch Brg	DENOTES CHORD BEARING
CONC	DENOTES CONCRETE
Δ	DENOTES DELTA ANGLE
(D1)	DENOTES DEED INFORMATION (O.R. 1457, PG 154)
(D2)	DENOTES DEED INFORMATION (O.R. 3252, PG 1913)
DBL	DENOTES DOUBLE
EOP	DENOTES EDGE OF PAVEMENT
EL	DENOTES ELEVATION
(F)	DENOTES FIELD INFORMATION
FDOT	DENOTES FLORIDA DEPARTMENT OF TRANSPORTATION
INV	DENOTES INVERT
L	DENOTES ARC LENGTH
L.P.	DENOTES LIGHT POLE
NAVD 88	DENOTES NORTH AMERICAN VERTICAL DATUM 1988
No.	DENOTES NUMBER
O.R.	DENOTES OFFICAL RECORDS BOOK
PC	DENOTES POINT OF CURVATURE
PG	DENOTES PAGE
(PS)	DENOTES INFORMATION FROM PREVIOUS SURVEY
PT	DENOTES POINT OF TANGENCY
R	DENOTES RADIUS
R/W	DENOTES RIGHT-OF-WAY
TBM	DENOTES TEMPORARY BENCHMARK
⊗	SET 1/2" DIA RED CAPPED IRON ROD (No. 7916)
◔	FOUND 1/2" DIA IRON ROD (No. 0340)
⊡	FOUND 4"x4" CONCRETE MONUMENT (UNNUMBERED)
✥	DENOTES BENCHMARK
ϟ	DENOTES LINE SHOWN NOT TO SCALE/LINE BREAK
	DENOTES SINGLE SUPPORT SIGN
	DENOTES GUARD RAIL
8"	DENOTES SEWER LINE
	DENOTES TREE LINE
	DENOTES SURVEY LIMITS
Ⓢ	DENOTES SEWER MANHOLE
	DENOTES GAS MARKER
	DENOTES WATER VALVE
	DENOTES METAL LIGHT POLE
	DENOTES MAILBOX
20	DENOTES SECTION NUMBER
	DENOTES TREE (SIZE AND TYPE NOTED)
×6.00	DENOTES SPOT ELEVATION
100	DENOTES ELEVATION CONTOUR LINE AT ONE FOOT INTERVALS
	EXISTING GRAVEL/DIRT ROAD

PROPOSED LEGEND:

25.96	SPOT ELEVATIONS
	TREE PROTECTION
	LIMITS OF CONSTRUCTION
104	CONTOUR LINE
	SILT FENCE
HB	HAY BALE
	GRAVEL
	SODDED SHOULDER

MUNICIPAL ENGINEERING SERVICES, INC.
EXCELLENCE IN ENGINEERING SERVICE
8574 Turkey Bluff Road ◇ Navarre, Florida 32566 ◇ p: (850) 939-5732
CERTIFICATE OF AUTHORIZATION: CA-30888

GENERAL NOTES AND LEGEND

As-Built 'Record Drawing' by _____ Date _____

NOT Released for Construction by _____ Date _____

PLANT SMITH IW4 & IW5 ACCESS DRIVES
FOR GULF POWER COMPANY
BAY COUNTY FLORIDA

REVISION	

DALE ERIC LONG LICENSE No. 55303 STATE OF FLORIDA PROFESSIONAL ENGINEER

SCALE: AS NOTED

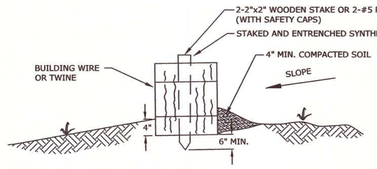
DATE: JULY 03, 2017

JOB NUMBER:	FILENAME:
150006-004	SEE LEFT
DRAWN BY: EMD	DESIGNED BY: DEL

SHEET:

G-002

M:\2015\150006-004 Plant Smith Access Drive\dwg\Sheets\02 G-001 General Notes.dwg, G-002

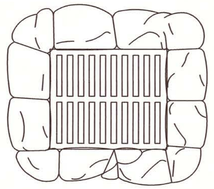


SYNTHETIC BALE BARRIER CONSTRUCTION

BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER. ALL BALES SHALL BE SECURELY ANCHORED BY AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER. CONTRACTOR SHALL WEDGE OR CHINK LOOSE STRAW BETWEEN BALES. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE AS PROMPTLY AS NEEDED. SYNTHETIC BALE BARRIERS SHALL BE REMOVED AFTER THEY HAVE SERVED THEIR USEFULNESS, BUT NOT BEFORE THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED. SYNTHETIC BALE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES.

NATURAL OR SYNTHETIC HAY BALE DETAIL

NOT TO SCALE

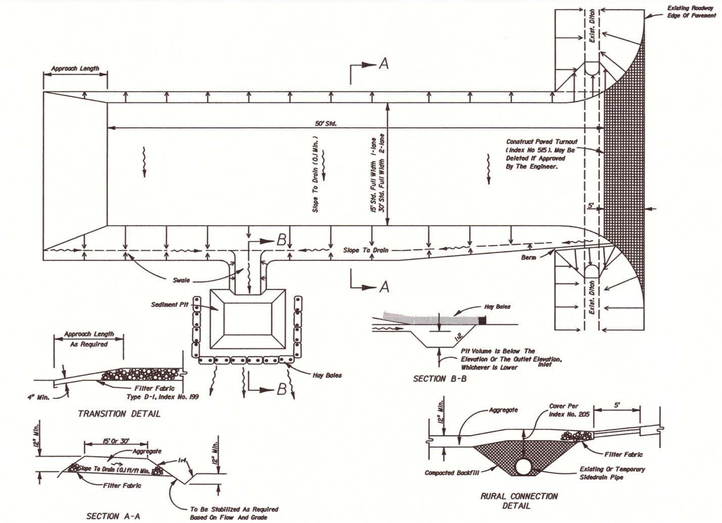


NOTES:

1. THE FILTER SOCK SHOULD BE PLACED AROUND THE ENTIRE CIRCUMFERENCE OF THE DROP INLET AND SHOULD ALLOW FOR AT LEAST 1 FOOT OF OVERLAP ON EITHER SIDE OF THE OPENING BEING PROTECTED. STAKES SHOULD BE USED TO KEEP THE SOCK IN PLACE.
2. UNDER LOW-FLOW CONDITIONS, A 9-INCH OR 12-INCH SOCK DIAMETER SHOULD SUFFICE.
3. SEDIMENT WILL COLLECT AROUND THE OUTSIDE OF THE FILTER SOCK AND SHOULD BE REMOVED WHEN THE SEDIMENT REACHES ONE-HALF OF THE SOCK HEIGHT.
4. FILTER FABRIC SHALL BE PLACED AND MAINTAINED UNDER THE GRATE.

FILTER SOCK DROP INLET FILTER DETAIL

NOT TO SCALE



GENERAL NOTES:

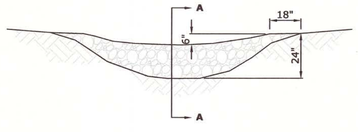
1. A SOIL TRACKING PREVENTION DEVICE (STPD) SHALL BE CONSTRUCTED AT APPROPRIATE LOCATIONS FOR POINTS OF EGRESS FROM UNSTABILIZED AREAS OF THE PROJECT TO PUBLIC ROADS WHERE OFFSITE TRACKING OF MUD COULD OCCUR. TRAFFIC FROM UNSTABILIZED AREAS OF THE CONSTRUCTION PROJECT SHALL BE DIRECTED THRU A STPD. BARRIERS, FLAGGING, OR OTHER POSITIVE MEANS SHALL BE USED AS REQUIRED TO LIMIT AND DIRECT VEHICULAR EGRESS ACROSS THE STPD.
2. ALL MATERIALS SPILLED, DROPPED, OR TRACKED ONTO PUBLIC ROADS (INCLUDING THE STPD AGGREGATE AND CONSTRUCTION MUD) SHALL BE REMOVED DAILY, OR MORE FREQUENTLY IF SO DIRECTED BY THE ENGINEER.
3. AGGREGATES SHALL BE AS DESCRIBED IN SECTION 901 OF THE F.D.O.T. STANDARD SPECIFICATIONS EXCLUDING 901-2.3. AGGREGATES SHALL BE F.D.O.T. SIZE #1. IF THIS SIZE IS NOT AVAILABLE, THE NEXT AVAILABLE SMALLER SIZE AGGREGATE MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER. SIZES CONTAINING EXCESSIVE SMALL AGGREGATE WILL TRACK OFF THE PROJECT AND ARE UNSUITABLE.
4. THE SEDIMENT PIT SHOULD PROVIDE A RETENTION VOLUME OF 3600 CUBIC FEET/ACRE OF SURFACE AREA DRAINING TO THE PIT. WHEN THE STPD IS ISOLATED FROM OTHER DRAINAGE AREAS, THE FOLLOWING PIT VOLUMES WILL SATISFY THIS REQUIREMENT:
   15'x 50'=100 FT³ 30'x 50'=200 FT³
   AS AN OPTION TO THE SEDIMENT PIT, THE WIDTH OF THE SWALE BOTTOM CAN BE INCREASED TO OBTAIN THE VOLUME. WHEN THE SEDIMENT PIT OR SWALE IS USED, HAY BALES OR SILT FENCE SHALL BE PLACED ALONG THE ENTIRE LENGTH.
5. THE SWALE DITCH DRAINING THE STPD SHALL HAVE A 0.2% MINIMUM AND A 1.0% MAXIMUM GRADE ALONG THE STPD AND TO THE SEDIMENT PIT.
6. MITRED END SECTIONS ARE NOT REQUIRED WHEN THE SIDEDRAIN PIPE SATISFIES THE CLEAR ZONE REQUIREMENTS.
7. THE STPD SHALL BE MAINTAINED IN A CONDITION THAT WILL ALLOW IT TO PERFORM ITS FUNCTION. TO PREVENT OFFSITE TRACKING, THE STPD SHALL BE RINSED (DAILY WHEN IN USE) TO MOVE ACCUMULATED MUD DOWNWARD THRU THE STONE. ADDITIONAL STABILIZATION OF THE VEHICULAR ROUTE LEADING TO THE STPD MAY BE REQUIRED TO LIMIT THE MUD TRACKED.
8. THE NOMINAL SIZE OF A STANDARD STPD IS 15'x 50' UNLESS OTHERWISE SHOWN IN THE PLANS. IF THE VOLUME OF ENTERING AND EXITING VEHICLES WARRANT, A 30' WIDTH STPD MAY BE USED IF APPROVED BY THE ENGINEER.

SOIL TRACKING PREVENTION DEVICE (CONSTRUCTION EXIT)

NOT TO SCALE

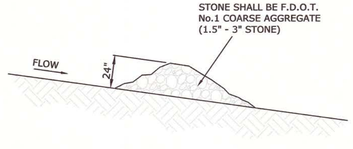
EROSION AND SEDIMENT CONTROL NOTES:

1. FOR SITES WITH DISTURBANCE EXCEEDING 1 ACRE, TO COMPLY WITH NPDES REQUIREMENTS, GULF POWER ENVIRONMENTAL AFFAIRS WILL SUBMIT AN NPDES NOTICE OF INTENT TO FDEP A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ADDITIONALLY, ALL EROSION CONTROL MEASURES WILL BE INSPECTED BY GULF POWER ENVIRONMENTAL AFFAIRS AFTER EACH ½" RAINFALL EVENT OR AT LEAST WEEKLY. A CERTIFIED STORMWATER MANAGEMENT INSPECTOR SHALL DOCUMENT SUCH INSPECTIONS AND EROSION CONTROL EFFORTS. THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHOULD BE ON HAND AT ALL TIMES AND PROVIDED TO ANY FDEP REPRESENTATIVE THAT MAY VISIT THE SITE DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND ALL REGULATIONS CONTROLLING POLLUTION OF THE ENVIRONMENT.
3. CONTRACTOR SHALL EXECUTE ALL MEASURES AND IMPLEMENT ALL NECESSARY BEST MANAGEMENT PRACTICES NECESSARY TO LIMIT THE TRANSPORTATION OF SEDIMENTS OUTSIDE THE LIMITS OF THE PROJECT. THE EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION AND MUST REMAIN IN SATISFACTORY OPERATION UNTIL THE PROJECT IS FULLY COMPLETED AND ACCEPTED AND UNTIL THE PERMANENT EROSION CONTROL MEASURES ARE ESTABLISHED AND CAPABLE OF PROVIDING EROSION AND SILTATION CONTROL. CONTRACTOR SHALL PROVIDE ROUTINE MAINTENANCE ON TEMPORARY EROSION CONTROL MEASURES AT HIS EXPENSE. CONTRACTOR SHALL CONTINUALLY MONITOR WEATHER AND SITE CONDITIONS AND SHALL PROVIDE CONTINUOUS MONITORING OF EROSION AND SEDIMENT CONTROLS AND SHALL DOCUMENT ALL CORRECTIVE MEASURES.
4. INLETS AND CATCH BASINS SHALL BE PROTECTED FROM SEDIMENTATION RESULTING FROM SURFACE RUNOFF UNTIL COMPLETION OF ALL CONSTRUCTION OPERATIONS THAT MAY CAUSE SEDIMENT TO RUNOFF. FILTER FABRIC SHALL BE PLACED AND MAINTAINED UNDER THE GRATE AND FILTER SOCKS SHALL BE PLACED IN FRONT OF THE THROAT OF CURB INLETS, DURING CONSTRUCTION AND SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT CONSTRUCTION.
5. ALL DISTURBED AREAS WHICH ARE NOT PAVED SHALL BE SEEDED, FERTILIZED AND MULCHED, HYDROSEEDED, OR SODDED AS REQUIRED, UNLESS NOTED OTHERWISE. SOD PINS SHALL BE USED FOR ALL SOD PLACED ON SLOPES STEEPER THAN 3:1.
6. PERMANENT GRASSING SHALL BE INSTALLED AND MAINTAINED ON ALL EXPOSED SLOPES AND DISTURBED AREAS WITHIN 48 HOURS OF COMPLETING FINAL GRADING, AND AT ANY OTHER TIME AS NECESSARY, TO PREVENT EROSION, SEDIMENTATION, OR TURBID DISCHARGES. A VEGETATIVE COVER THAT STABILIZES AND PREVENTS EROSION SHALL BE ESTABLISHED WITHIN 60 DAYS OF PERMANENT GRASSING INSTALLATION. UPON ESTABLISHMENT OF A SUBSTANTIAL VEGETATIVE COVER, ALL TURBIDITY BARRIERS AND EROSION CONTROL MEASURES SHALL BE REMOVED.
7. ALL EROSION AND SEDIMENT CONTROLS SHALL BE CONSISTENT WITH PERFORMANCE STANDARDS FOR EROSION AND SEDIMENT CONTROL AND STORMWATER TREATMENT SET FORTH IN SECTION 62-40.432, OF THE FLORIDA ADMINISTRATIVE CODE, AS WELL AS THE APPLICABLE STORMWATER OR ENVIRONMENTAL RESOURCE PERMITTING REQUIREMENTS OF FDEP, THE APPLICABLE WATER MANAGEMENT DISTRICT, THE US ENVIRONMENTAL PROTECTION AGENCY AND THE GUIDELINES CONTAINED IN THE FLORIDA DEVELOPMENT MANUAL: A GUIDE TO SOUND LAND AND WATER MANAGEMENT (DEP) 1988 AND ANY SUBSEQUENT AMENDMENTS.
8. TEMPORARY SEDIMENT CONTROL MEASURES INCLUDE, BUT ARE NOT LIMITED TO: SILT FENCING; HAY BALE BARRIERS; CONSTRUCTION OF SEDIMENT CHECK DAMS; CONSTRUCTION EXITS; FLOATING TURBIDITY CURTAINS, FILTER SOCKS; SEEDING AND MULCHING, ETC. PERMANENT SEDIMENT CONTROL MEASURES INCLUDE BUT ARE NOT LIMITED TO: PERMANENT GRASSING; EROSION BLANKETS; RIP RAP, ETC. STABILIZATION MEASURES ARE DETAILED ON THE CONSTRUCTION PLANS, BUT SHALL INCLUDE ANY AND ALL MEASURES NECESSARY TO PREVENT SEDIMENT FROM ESCAPING THE SITE AND TO COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.
9. CONSTRUCTION OPERATIONS SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION. TEMPORARY STABILIZATION MEASURES SHALL BE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING AND/OR GRADING OPERATIONS.
10. SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
11. CLEANUP WILL BE DONE IN A MANNER TO INSURE THAT EROSION CONTROL MEASURES ARE NOT DISTURBED.
12. THE PROJECT WILL BE CONTINUALLY INSPECTED FOR SOIL EROSION AND SEDIMENT CONTROL COMPLIANCE. DEFICIENCIES WILL BE CORRECTED BY THE CONTRACTOR WITHIN 24 HOURS.
13. TEMPORARY EROSION CONTROL MEASURES SHALL BE COMPLETELY REMOVED BY THE CONTRACTOR UPON ESTABLISHMENT OF PERMANENT CONTROL MEASURES OR WHEN DIRECTED BY THE OWNER.
14. THE CONTRACTOR SHALL RESTORE ALL DISTURBED RIGHTS-OF-WAY IN ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
15. THE CONTRACTOR SHALL COMPLETE SITE RESTORATION AS THE PROJECT PROGRESSES.
16. THE CONTRACTOR SHALL INSTALL PRIOR TO THE START OF CONSTRUCTION AND MAINTAIN DURING CONSTRUCTION ALL SEDIMENT CONTROL MEASURES AS REQUIRED TO RETAIN ALL SEDIMENTS ON SITE. IMPROPER SEDIMENT CONTROL MEASURES MAY RESULT IN A CODE ENFORCEMENT VIOLATION.
17. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING TRACKING OF SOIL FROM THE SITE ONTO ADJACENT ROADWAYS. IN THE EVENT THE CONSTRUCTION EXIT FAILS TO ADEQUATELY CONTROL SOIL TRACKING THE CONTRACTOR WILL BE RESPONSIBLE FOR SWEEPING ROADWAYS AS REQUIRED.
18. CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO CONTROL TURBIDITY IN SURROUNDING WATERS INCLUDING, BUT NOT LIMITED TO, THE INSTALLATION OF TURBIDITY BARRIERS AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING BODY OF WATER EXISTS DUE TO THE PROPOSED WORK. TURBIDITY BARRIERS MUST BE MAINTAINED AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND DISTURBED SOIL AREAS ARE STABILIZED. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REMOVING THE BARRIERS AND ANY ACCUMULATED SILT AT THE COMPLETION OF CONSTRUCTION AND PERMANENT STABILIZATION. AT NO TIME SHALL THERE BE ANY OFF-SITE DISCHARGE WHICH VIOLATES THE WATER QUALITY STANDARDS OF THE FLORIDA ADMINISTRATIVE CODE.
19. THE CONTRACTOR IS RESPONSIBLE FOR THE CONTROL OF DUST AND OTHER AIRBORNE POLLUTANTS DURING CONSTRUCTION. DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS AT THE CONTRACTOR'S DISCRETION.
20. ALL SOD USED ON THIS PROJECT SHALL BE PENSACOLA BAHIA.



VIEW LOOKING UPSTREAM

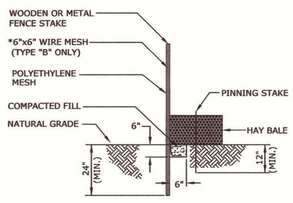
NOTE:
KEY STONE INTO THE DITCH BANKS AND EXTEND IT BEYOND THE ABUTMENTS A MINIMUM OF 18" TO PREVENT OVER FLOW AROUND DAM. CENTER OF STONE SHALL BE LOWER THAN ENDS.



SECTION A-A

STONE CHECK DAM DETAIL

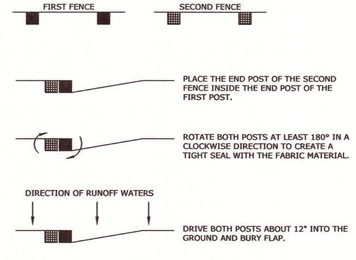
NOT TO SCALE



* ALL SILT FENCING THAT PROTECTS JURISDICTIONAL WETLANDS MUST BE TYPE "B" SILT FENCING. ALL OTHER AREAS MAY USE POLYETHYLENE MESH SILT FENCING.

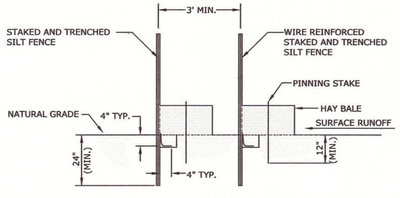
SILT FENCE DETAIL

NOT TO SCALE



BUTTING SILT FENCE DETAIL

NOT TO SCALE



* ALL SILT FENCING THAT PROTECTS JURISDICTIONAL WETLANDS MUST BE TYPE "B" SILT FENCING. ALL OTHER AREAS MUST USE POLYETHELENE MESH SILT FENCING.

DOUBLE ROW STAKED SILT FENCE DETAIL

NOT TO SCALE

MUNICIPAL ENGINEERING SERVICES, INC.
EXCELLENCE IN ENGINEERING SERVICE
8574 Turkey Bluff Road ◇ Navarre, Florida 32566 ◇ p: (850) 939-5732
CERTIFICATE OF AUTHORIZATION: CA-30888

EROSION & SEDIMENT CONTROL DETAILS & GENERAL NOTES

NOT Released for Construction by _____ Date _____

As-Built 'Record Drawing' by _____ Date _____

PLANT SMITH IW4 & IW5 ACCESS DRIVES
FOR GULF POWER COMPANY
BAY COUNTY FLORIDA

REVISION

DALE E. LONG LICENSE No. 55393 STATE OF FLORIDA PROFESSIONAL ENGINEER

SCALE: AS NOTED

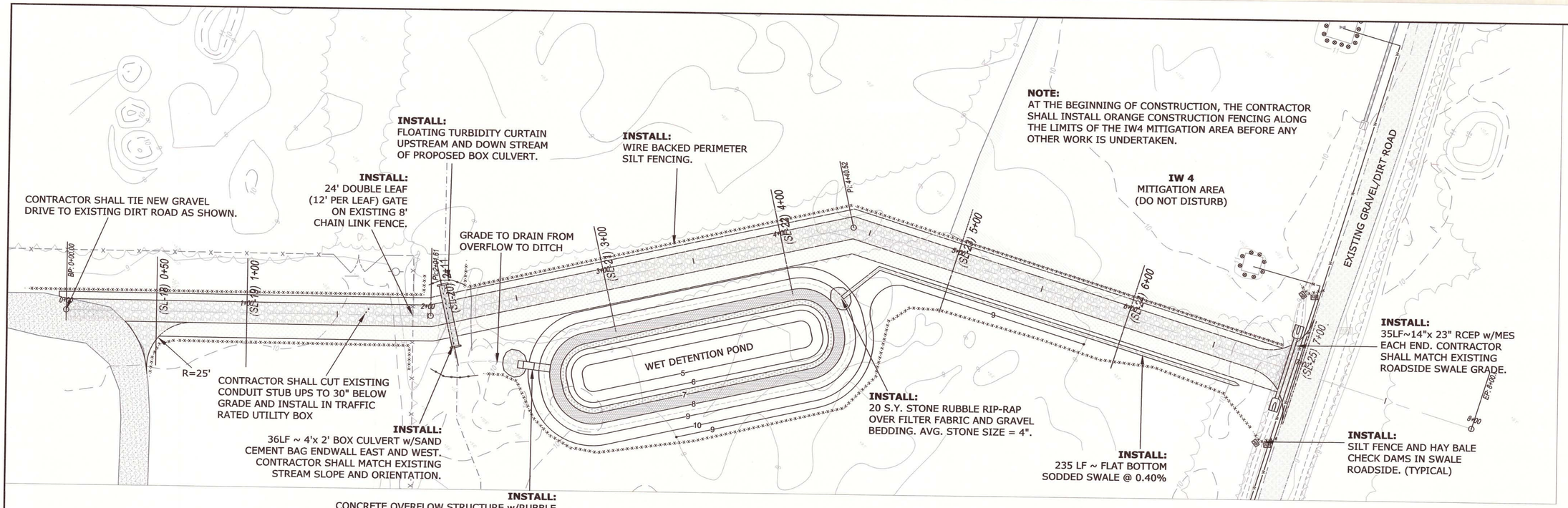
DATE: JULY 03, 2017

JOB NUMBER: 150006-004 | FILENAME: SEE LEFT

DRAWN BY: EMD | DESIGNED BY: DEL

SHEET: G-003

M:\2015\150006-004 Plant Smith Access Drive\dwg\Sheets\05 G-003 Erosion & Sediment Control Notes & Details.dwg, G-003



GRAPHIC SCALE:

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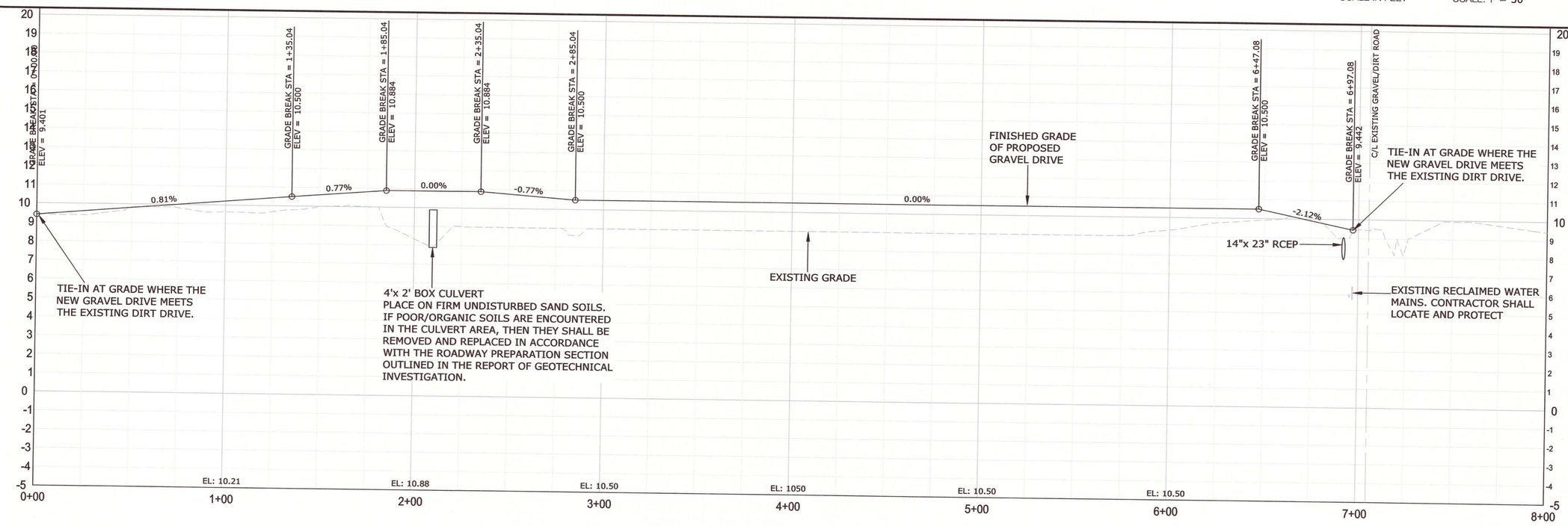
SCALE IN FEET SCALE: 1" = 30'



PROFILE

SCALE : HOR. : 1" = 30'
VER. : 1" = 3'

M:\2015\150006-004 Plant Smith Access Drive\dwg\Sheets\10 C-100 IW4 Access Drive.dwg, C-101

MUNICIPAL ENGINEERING SERVICES, INC.
EXCELLENCE IN ENGINEERING SERVICE
8574 Turkey Bluff Road ◇ Navarre, Florida 32566 ◇ ph: (850) 939-5732
CERTIFICATE OF AUTHORIZATION: CA-30886

IW4 ACCESS DRIVE PLAN AND PROFILE

As-Built 'Record Drawing' by _____ Date _____

NOT Released for Construction by _____ Date _____

PLANT SMITH IW4 & IW5 ACCESS DRIVES

FOR GULF POWER COMPANY

BAY COUNTY FLORIDA

REVISION		
1	OWNER/FDEP COMMENTS	9-19-2017 EMD

DALE E. DEL MONTE LICENSE No. 55393 STATE OF FLORIDA PROFESSIONAL ENGINEER

SCALE: AS NOTED

DATE: JULY 03, 2017

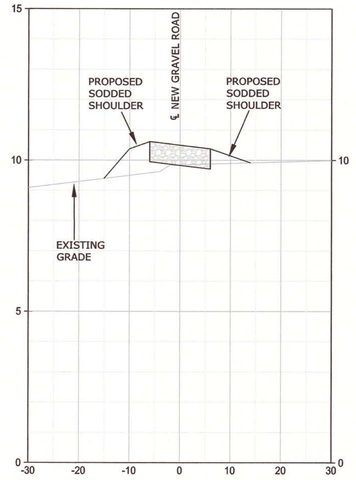
JOB NUMBER: 150006-004 | FILENAME: SEE LEFT

DRAWN BY: EMD | DESIGNED BY: DEL

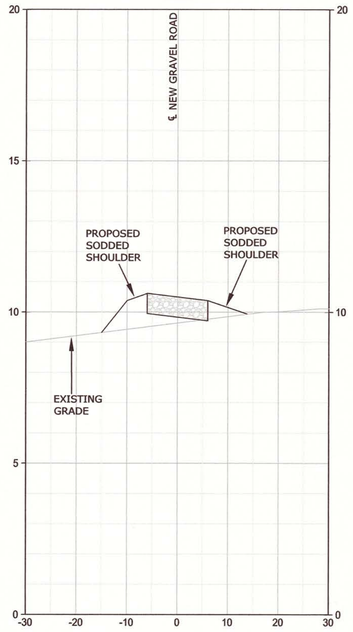
SHEET:

C-101

0+50



1+00



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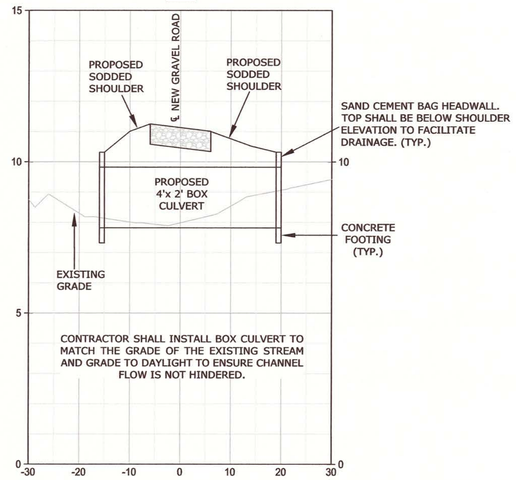

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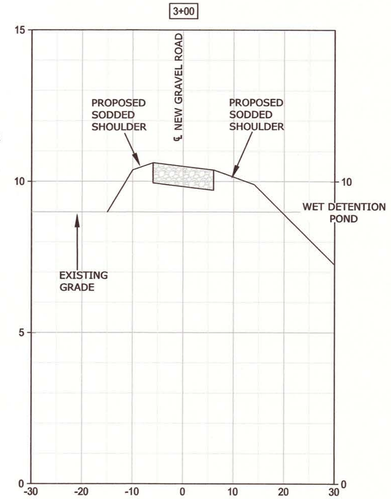

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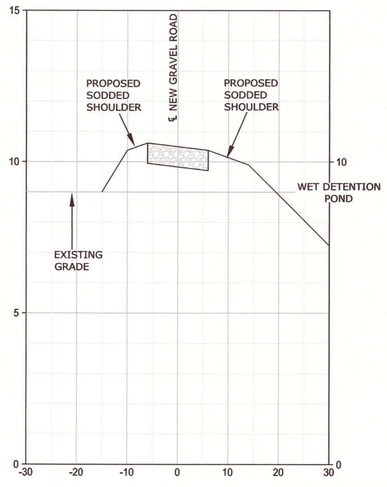

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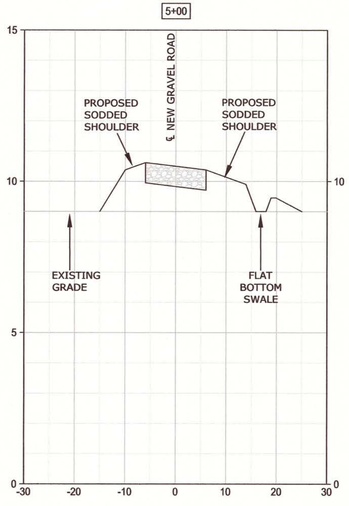

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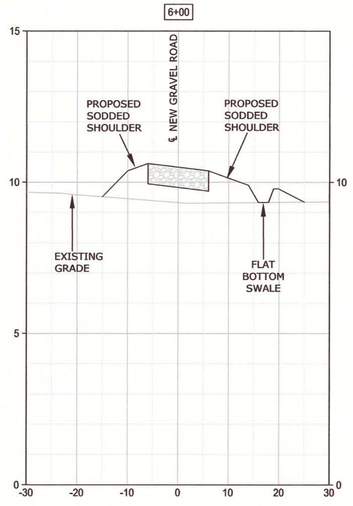


SECTION

SCALE : HOR. : 1" = 15'
VER. : 1" = 2.5'

MUNICIPAL ENGINEERING SERVICES, INC.
EXCELLENCE IN ENGINEERING SERVICE
8574 Turkey Bluff Road ◇ Navarre, Florida 32566 ◇ p: (850) 939-5732
CERTIFICATE OF AUTHORIZATION: CA-30886

IW4 ACCESS DRIVE CROSS SECTIONS

NOT Released for Construction by _____ Date _____

As-Built 'Record Drawing' by _____ Date _____

PLANT SMITH IW4 & IW5 ACCESS DRIVES

FOR

GULF POWER COMPANY

BAY COUNTY FLORIDA

REVISION

DALE ERIC LONG LICENSE No. 65386 STATE OF FLORIDA PROFESSIONAL ENGINEER

SCALE: AS NOTED

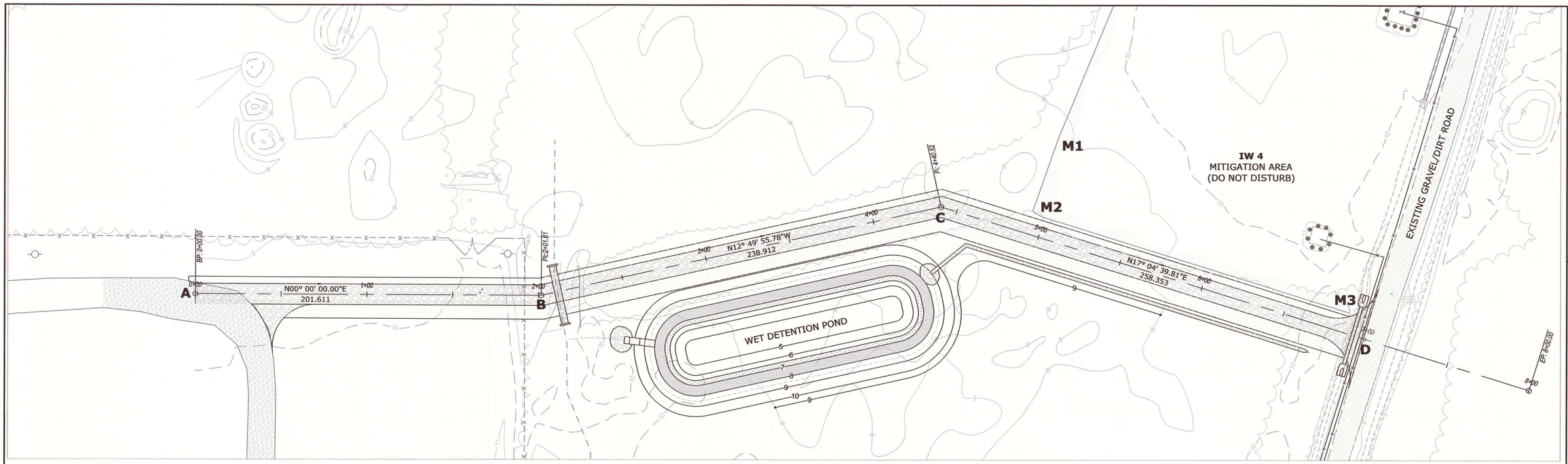
DATE: JULY 03, 2017

JOB NUMBER:	FILENAME:
150006-004	SEE LEFT
DRAWN BY:	DESIGNED BY:
EMD	DEL

SHEET:

C-102

M:\2015\150006-004 Plant Smith Access Drive\dwg\Sheets\10 C-100 IW4 Access Drive.dwg, C-102



GRAPHIC SCALE:

30 15 0 30 60 90

SCALE IN FEET SCALE: 1" = 30'

CONTROL CHART (FLORIDA STATE PLANE)

LOCATION	STATION	NORTHING	EASTING
A (DRIVE)	0+00	465339.3260	1589734.1093
B (DRIVE)	2+01.61	465540.9372	1589734.1093
C (DRIVE)	4+40.52	465773.8823	1589681.0480
D (DRIVE)	6+98.88	466020.8437	1589756.9181
M1 (MITIGATION AREA)		465842.3720	1589639.9540
M2 (MITIGATION AREA)		465827.2400	1589683.5600
M3 (MITIGATION AREA)		466012.0994	1589741.7269

MUNICIPAL ENGINEERING SERVICES, INC.
EXCELLENCE IN ENGINEERING SERVICE
8574 Turkey Bluff Road ◇ Navarre, Florida 32566 ◇ p: (850) 939-5732
CERTIFICATE OF AUTHORIZATION: CA-30886

IW4 ACCESS DRIVE GEOMETRY

NOT Released for Construction by _____ Date _____

As-Built 'Record Drawing' by _____ Date _____

PLANT SMITH IW4 & IW5 ACCESS DRIVES
FOR
GULF POWER COMPANY
BAY COUNTY FLORIDA

REVISION

DALE ERIC LONG LICENSE No. 55303 STATE OF FLORIDA PROFESSIONAL ENGINEER

SCALE: AS NOTED

DATE: JULY 03, 2017

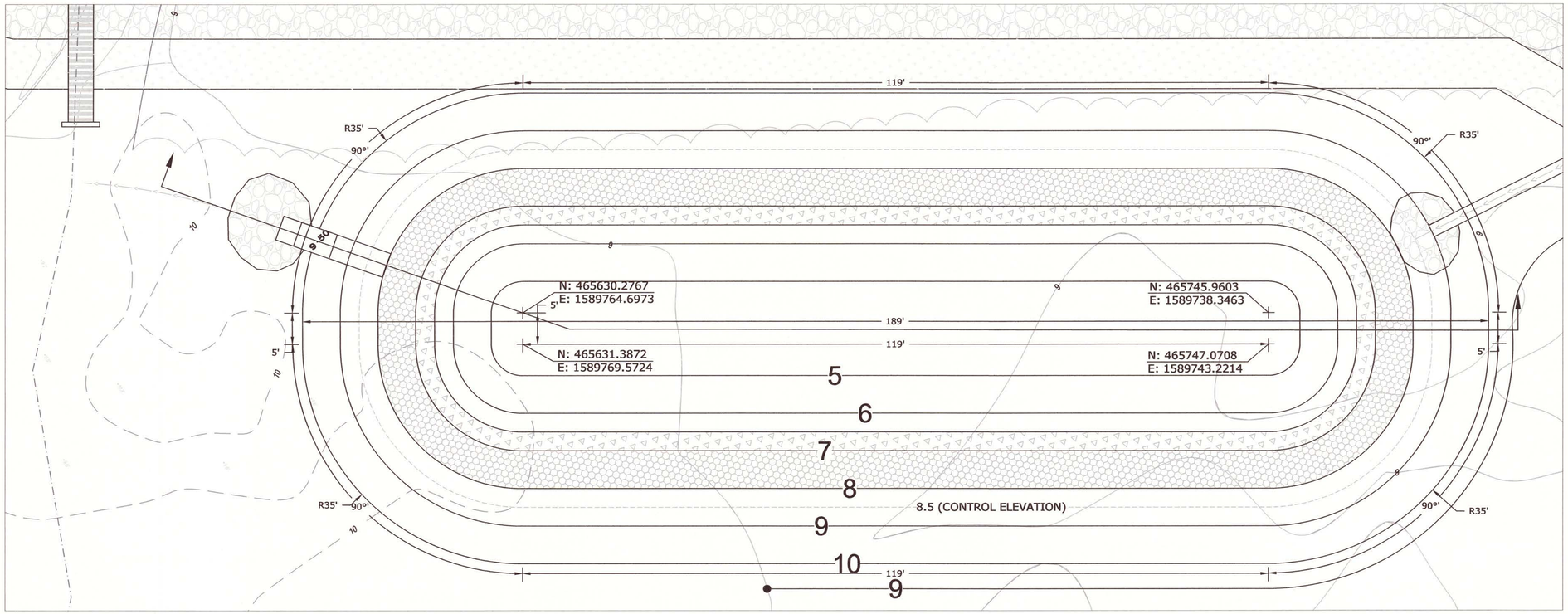
JOB NUMBER: 150006-004 | FILENAME: SEE LEFT

DRAWN BY: EMD | DESIGNED BY: DEL

SHEET:

C-103

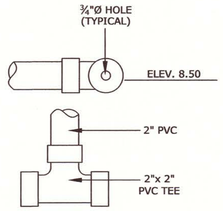
M:\2015\150006-004 Plant Smith Access Drive\dwg\Sheets\12 C-100 IW4 Geometry.dwg, C-103



GRAPHIC SCALE:

10 5 0 10 20 30

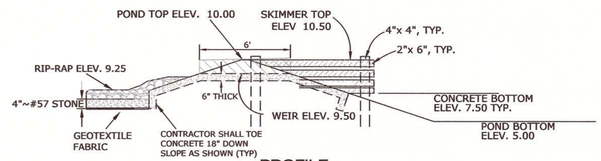
SCALE IN FEET SCALE: 1" = 10'



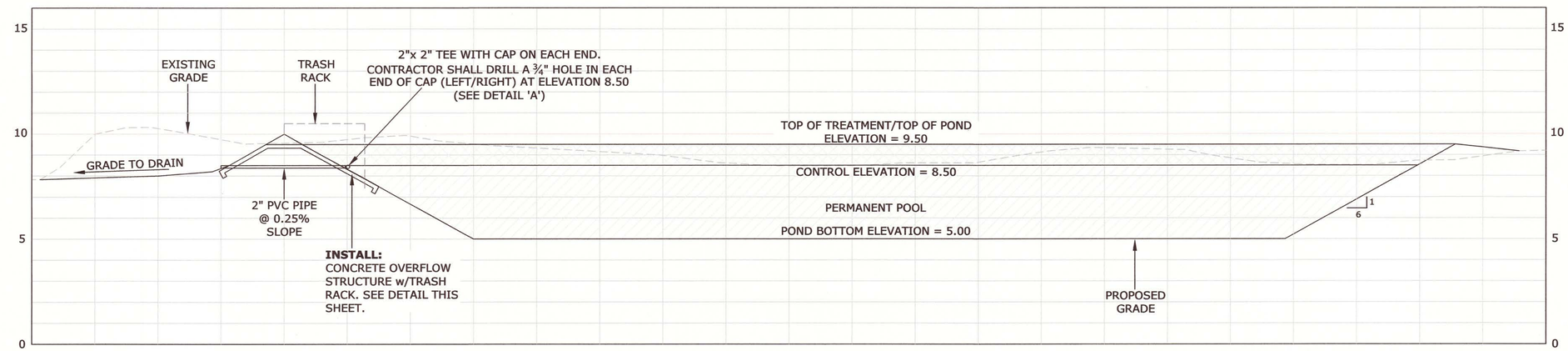
DETAIL 'A'
NOT TO SCALE

PLANTING TABLE IW-4					
ZONE	SCIENTIFIC NAME	COMMON NAME	SIZE	ELEVATION RANGE	PLANT QUANTITY
	SPARTINA BAKERI	SAND CORDGRASS	BARE ROOT 1 QUART EQUIVALENT	7.00 to 8.00	1119
	SAGITTARIA LANTIFOLIA	ARROWHEAD	BARE ROOT 1 QUART EQUIVALENT	6.50 to 7.00	517

NOTE:
1. ALL VEGETATION TO BE PLANTED TWO (2) FEET ON CENTER.
2. ABOVE THE LITTORAL PLANTINGS, THE CONTRACTOR SHALL PROVIDE PENSACOLA BAHIA SOD. SOD SHALL EXTEND TO A MINIMUM OF FIVE (5) FEET BEYOND THE TOP OF BANK.

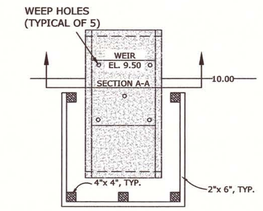


PROFILE
NOT TO SCALE



PROFILE
SCALE : HOR. : 1" = 10'
VER. : 1" = 3'

SECTION A-A



PLAN VIEW

OVERFLOW WEIR DETAIL
NOT TO SCALE

NOTES:
CONCRETE SHALL BE 6" THICK FIBERMESH 4000 PSI. PROVIDE (5) 4" Ø WEEP HOLES IN BOTTOM. WEEP HOLES SHALL BE FILLED WITH GRAVEL WITH FILTER FABRIC BELOW AND WIRE MESH OVER TOP OF HOLES. FASTEN MESH TO CONCRETE WITH STAINLESS STEEL CONNECTORS.

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CERTIFICATE OF AUTHORIZATION: CA-30886

IW4 ACCESS DRIVE
POND GEOMETRY AND GRADING PLAN

NOT Released for Construction
by _____ Date _____

As-Built 'Record Drawing'
by _____ Date _____

PLANT SMITH IW4 & IW5 ACCESS DRIVES
FOR
GULF POWER COMPANY
BAY COUNTY FLORIDA

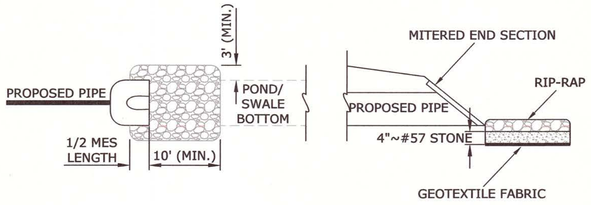
REVISION		
1	OWNER/FDEP COMMENTS	9-19-2017 EMD

DALE ERIC DEL
LICENSED
No. 55393
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

SCALE: AS NOTED	
DATE: JULY 03, 2017	
JOB NUMBER: 150006-004	FILENAME: SEE LEFT
DRAWN BY: EMD	DESIGNED BY: DEL

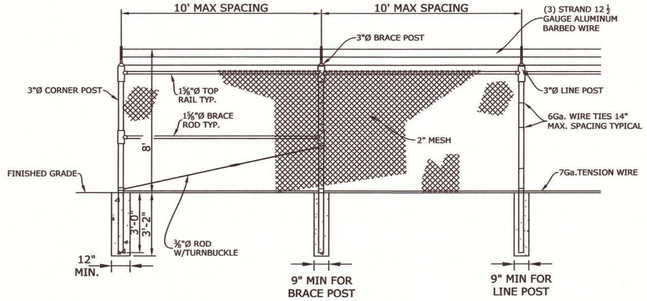
SHEET:
C-201

M:\2015\150006-004 Plant Smith Access Drive\dwg\Sheets\15 C-200 IW4 Stormwater Pond.dwg, C-201



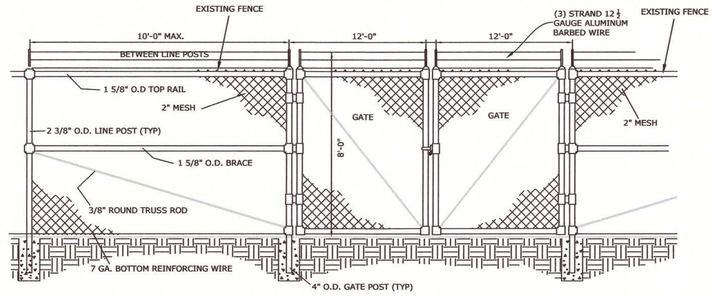
RIP-RAP INSTALLATION DETAIL

NOT TO SCALE



CHAIN LINK FENCE DETAIL

N.T.S.

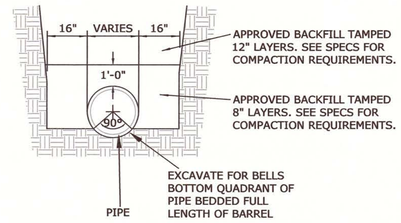


GATE DETAIL

N.T.S.

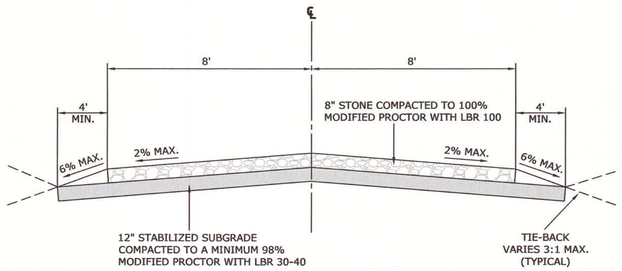
NOTE:

1. NEW GATE TO BE INSTALLED AS PART OF EXISTING FENCING.



PIPE BEDDING DETAIL

NOT TO SCALE

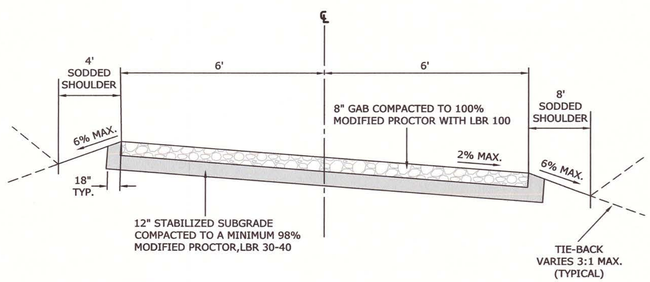


NOTES:

1. ALL THICKNESSES ARE COMPACTED THICKNESSES.
2. CONTRACTOR SHALL COMPLY WITH THE REPORT OF GEOTECHNICAL INVESTIGATION FOR THE CONSTRUCTION OF THE ROADWAY/DRIVEWAY. UNDERCUTTING AND /OR MIXING MAY BE REQUIRED.
3. SHOULDERS SHALL BE SODDED WITH PENSACOLA BAHIA.

IW-5 CROWNED GRAVEL DRIVEWAY SECTION

NOT TO SCALE



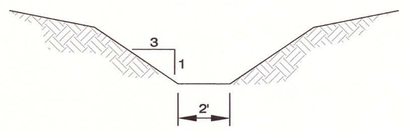
NOTES:

1. ALL THICKNESSES ARE COMPACTED THICKNESSES.
2. CONTRACTOR SHALL COMPLY WITH THE REPORT OF GEOTECHNICAL INVESTIGATION FOR THE CONSTRUCTION OF THE ROADWAY/DRIVEWAY. UNDERCUTTING AND /OR MIXING MAY BE REQUIRED.
3. SHOULDERS SHALL BE SODDED WITH PENSACOLA BAHIA.

IW-4 GRAVEL DRIVE TYPICAL SECTION

(CANT EAST TOWARDS POND & SWALE)

NOT TO SCALE



NOTES:

1. DEPTH VARIES.
2. CONTRACTOR SHALL SOD DITCH SLOPES AND ONE SOD WIDTH ALONG TOP.
3. CONTRACTOR IS RESPONSIBLE FOR WATERING SOD ONCE PLACED UNTIL IT TAKES ROOT AND IS ESTABLISHED.

FLAT-BOTTOM SODDED SWALE DETAIL

NOT TO SCALE

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CERTIFICATE OF AUTHORIZATION: CA-30886

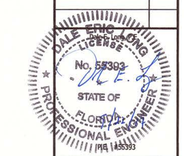
DETAILS

As-Built 'Record Drawing' by _____ Date _____

NOT Released for Construction by _____ Date _____

PLANT SMITH IW4 & IW5 ACCESS DRIVES
FOR
GULF POWER COMPANY
BAY COUNTY FLORIDA

REVISION



SCALE: AS NOTED

DATE: JULY 03, 2017

JOB NUMBER: 150006-004 | FILENAME: SEE LEFT

DRAWN BY: EMD | DESIGNED BY: DEL

SHEET:

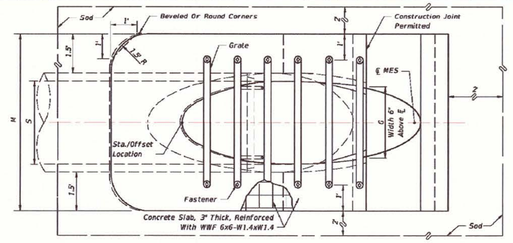
C-501

M:\2015\150006-004 Plant Smith Access Drive\dwg\Sheets\60 C-500 Details.dwg, C-501

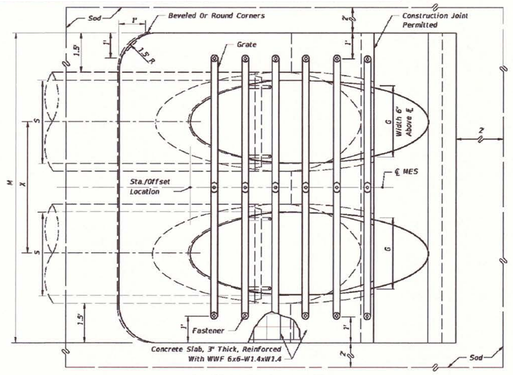
DIMENSIONS & QUANTITIES

Rise R	Span S	X	A	B	C	E	F	G	H ■	M Single Pipe	M Double Pipe	M Triple Pipe	M Quad. Pipe	N	GRATE SIZES Standard Weight Pipe	GRATE SIZES Extra Strong Pipe	CONCRETE (CY) Single Pipe	CONCRETE (CY) Double Pipe	CONCRETE (CY) Triple Pipe	CONCRETE (CY) Quad. Pipe	SODDING (SY) Single Pipe	SODDING (SY) Double Pipe	SODDING (SY) Triple Pipe	SODDING (SY) Quad. Pipe
12"	18"	2'-10"	2.36'	3.08'	5.42'	3.03'	5'	1.50'	2.0'	4.92'	7.75'	10.58'	13.42'	1.21'			0.68	1.04	1.41	1.77	8	9	11	12
14"	23"	2'-4"	2.44'	3.73'	6.19'	3.70'	6'	1.90'	2.3'	5.38'	8.31'	12.04'	15.38'	1.23'			0.76	1.19	1.63	2.05	9	10	12	13
19"	30"	4'-0"	2.62'	5.47'	8.09'	5.36'	8'	2.37'	2.6'	6.04'	10.04'	14.04'	18.04'	1.27'	2½"	3"	0.95	1.52	2.09	2.65	10	12	13	15
24"	38"	5'-0"	2.79'	7.18'	9.97'	7.03'	10'	2.85'	3.0'	6.79'	11.79'	16.79'	21.79'	1.31'	2½"	3"	1.18	1.95	2.74	3.53	11	13	15	18
29"	45"	5'-11"	3.05'	8.90'	11.95'	8.70'	12'	3.19'	3.3'	7.50'	13.42'	19.33'	25.25'	1.38'	2½"	3½"	1.41	2.42	3.44	4.45	12	15	18	20
34"	53"	7'-0"	3.22'	10.62'	13.84'	10.30'	13'	3.57'	2.6'	8.25'	15.25'	22.25'	29.25'	1.42'	3"	3½"	1.63	2.92	4.22	5.52	13	17	20	23
38"	60"	7'-10"	3.39'	11.99'	15.38'	11.70'	15'	3.95'	3.3'	8.92'	16.75'	24.58'	32.42'	1.46'	3"	4"	1.83	3.36	4.89	6.41	14	18	21	25
43"	68"	8'-11"	3.56'	13.71'	17.27'	13.36'	17'	4.28'	3.6'	9.67'	18.58'	27.50'	36.42'	1.50'	3"	4"	2.09	3.95	5.80	7.65	16	20	23	27
48"	76"	9'-11"	3.73'	15.43'	19.16'	15.03'	19'	4.59'	4.0'	10.42'	20.33'	30.25'	40.17'	1.54'	3"	HSS 5"x5"x¼"	2.37	4.54	6.73	8.92	17	21	26	30
53"	83"	10'-8"	3.91'	17.15'	21.06'	16.70'	20'	4.77'	3.3'	11.08'	21.75'	32.42'	43.08'	1.58'	3"	HSS 5"x5"x⅜"	2.61	5.09	7.56	10.03	18	23	27	32
58"	91"	11'-8"	4.08'	18.87'	22.95'	18.36'	22'	5.01'	3.6'	11.83'	23.50'	35.17'	46.83'	1.63	3½"	HSS 5"x8"x¼"	2.91	5.77	8.64	11.50	19	24	29	35

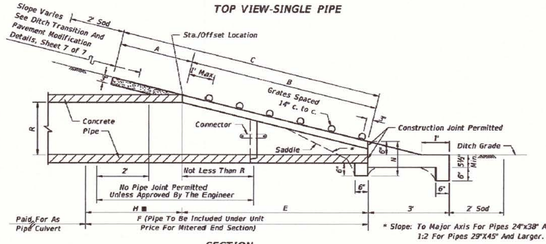
■ Values shown for estimating pipe quantities and are for information only.



TOP VIEW-SINGLE PIPE



TOP VIEW-MULTIPLE PIPE

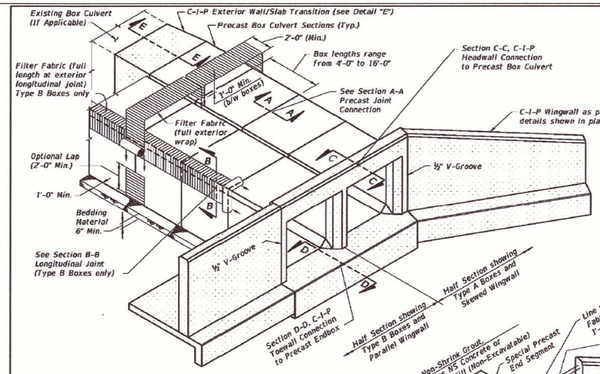


SECTION

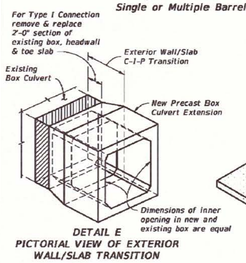
NOTE: See Sheets 6 and 7 for details and general notes.

SINGLE AND MULTIPLE ELLIPTICAL CONCRETE PIPE

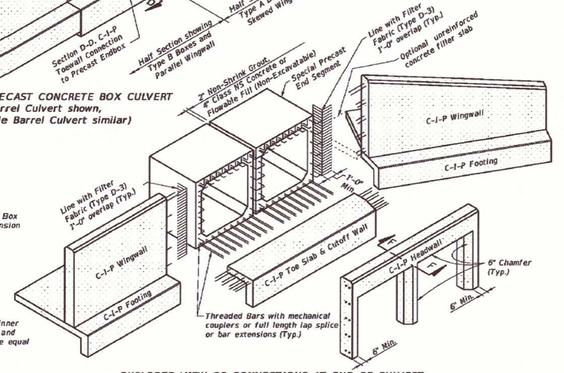
LAST REVISION 11/01/16	REVISION DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SIDE DRAIN MITERED END SECTION	INDEX NO. 273	SHEET NO. 4 of 7



ISOMETRIC VIEW OF PRECAST CONCRETE BOX CULVERT
(Double Barrel Culvert shown, Single or Multiple Barrel Culvert similar)



DETAIL E
PICTORIAL VIEW OF EXTERIOR WALL/SLAB TRANSITION



EXPLODED VIEW OF CONNECTIONS AT END OF CULVERT
(Double Barrel Culvert shown, Single or Multiple Barrel Culvert similar)

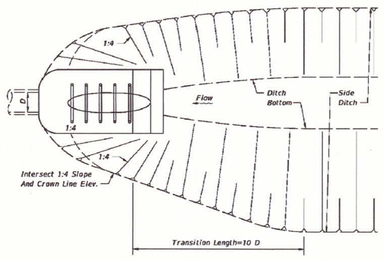
PERMITTED PRECAST ALTERNATE BOX SECTIONS

TYPE	DESCRIPTION	SINGLE BARREL	MULTIPLE BARRELS	DESIGN NOTES
A	Single Cell Monolithic (Four Sided)			Index No. 292 or Contractor Design
B	Single Cell Two-Piece (Four Sided)	Three sided bottom section; Top slab section		Contractor Design
C	Multicell Monolithic	Not Applicable		Contractor Design

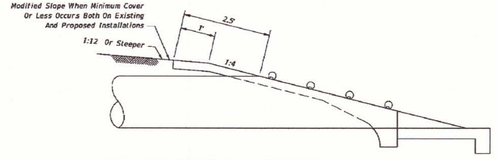
GENERAL NOTES:

1. Specifications.
   General:
   FDOT Standard Specifications for Road and Bridge Construction, Section 410 (current edition, and supplements thereto).
   Concrete (Precast):
   Class III or Class II Modified (5,000 psi) for slightly aggressive environments.
   Class IV (5,500 psi) for moderately to extremely aggressive environments.
   Concrete (Cast-In-Place):
   Class II (3,400 psi) for slightly aggressive environments.
   Class IV (5,500 psi) for moderately to extremely aggressive environments.
   Reinforcing Steel:
   Maintain minimum clearance of 2" for slightly and moderately aggressive environments or 3" for extremely aggressive environments, unless otherwise shown. Equal area substitution of welded wire (WWR) reinforcement is permitted.
2. Work this Index with the Cast-In-Place Concrete Box Culvert Details and Data Tables shown in the plans, Index No. 289 and the Precast Concrete Box Culverts shown in the shop drawings.
3. All joints between precast sections must be tongue & groove with joint sealant. Joints between cast-in-place & precast sections shall have longitudinal reinforcing extending from top, bottom & both side slabs of the precast box tied to the cast-in-place reinforcement. Single barrel culverts may have precast headwalls cast integrally with the end segment when approved by the Engineer.
4. Extension of existing multiple barrel box culverts with multiple single cell precast box culverts is not permitted unless approved by the District Structures Engineer. Full transition details must be shown in the shop drawings when approved.
5. Culverts larger than the specified size may be substituted with no additional payment to the Contractor. Substitution must be approved by the Engineer, minimum earth cover and invert elevations shown in the Contract Documents must be maintained.

LAST REVISION 01/01/11	REVISION DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SUPPLEMENTAL DETAILS FOR PRECAST CONCRETE BOX CULVERTS	INDEX NO. 291	SHEET NO. 1 of 5



PLAN
DITCH TRANSITION



PERMISSIBLE PAVEMENT MODIFICATION

GENERAL NOTES

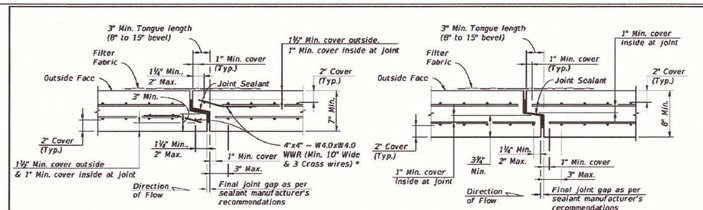
1. Unless otherwise designated in the plans, concrete pipe mitered end sections may be used with any type of side drain pipe; corrugated steel pipe mitered end sections may be used with any type of side drain pipe except aluminum pipe; and, corrugated aluminum mitered end sections may be used with any type of side drain pipe except steel pipe. When bituminous coated metal pipe is specified for side drain pipe, construct the mitered end sections with like pipe or concrete pipe. When the mitered end section pipe is dissimilar to the side drain pipe, construct a concrete jacket in accordance with Index 280.
2. Use either corrugated metal or concrete mitered end sections for corrugated polyethylene pipe (HDPE), polyvinyl-chloride pipe (PVC) and polypropylene pipe (PPP). When used in conjunction with corrugated mitered end sections, make connection using either a formed metal band specifically designated to join HDPE or PVC pipe, with metal pipe or other coupler approved by the State Drainage Engineer. When used in conjunction with a concrete mitered end sections, concrete jacket constructed in accordance with Index 280.
3. Select lengths of concrete pipe that avoid excessive connections in the assembly of the mitered end section.
4. Repair corrugated metal pipe galvanizing that is damaged during beveling and perforating.
5. Prior to placing concrete slab apply a bituminous coating to any portion of corrugated metal pipe in direct contact with concrete. Extend the coating 12" beyond the concrete slab.
6. When existing multiple side drain pipes are spaced other than the dimensions shown in this Index, have nonparallel axes, or non-uniform sections, either construct the mitered end sections separately as single pipe or collectively as multiple pipe end sections as directed by the Engineer.
7. Class NS concrete cast-in-place reinforced slabs are required for all sizes of side drain pipes.
8. Install grates on all round pipes 30" or greater, pipe-arches 35"x24" or greater, and elliptical pipe 19"x30" or greater, unless excluded in the Plans. Install grates on smaller size pipes only when called for in the Plans. Omit the lower grate on the downstream end of mitered end sections along divided highways.
9. Use Schedule 80 pipe for the lower grate on all traffic approach ends and Schedule 40 pipe for all remaining grates. Fabricate the grates from ASTM A53, Grade B, black steel pipe and hot dip galvanize after fabrication in accordance with ASTM A123 for all corrosive environments.

DESIGN NOTES

1. Do not use grates until the debris transport potential has been evaluated by the drainage engineer and appropriate adjustments made. Ditch grades in excess of 3% or pipe with less than 1.5' of cover and grades in excess of 1% will require such an evaluation (General Note 10).
2. The design engineer must determine and designate in the plans which alternate types of mitered end section will not be permitted. Restrict use based on corrosive or structural requirements.
3. Contact the District Drainage Engineer for possible alternate treatment of side drain mitered end sections where a minimum spacing of 30' will not result between the toe points of the mitered end sections.
4. Provide ditch transitions on all grades in excess of 3%.

NOTES & INFORMATION

LAST REVISION 11/01/16	REVISION DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SIDE DRAIN MITERED END SECTION	INDEX NO. 273	SHEET NO. 7 of 7

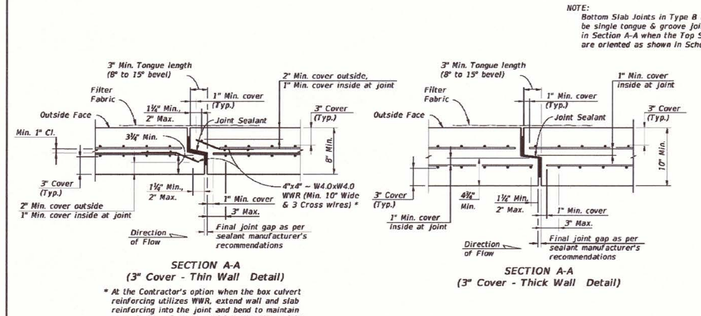


SECTION A-A
(2" Cover - Thin Wall Detail)

SECTION A-A
(2" Cover - Thick Wall Detail)

ALTERNATE BOTTOM SLAB TRANSVERSE JOINT
TYPICAL SECTION
(DOUBLE-SIDED TONGUE & GROOVE JOINT)
(All reinforcing not shown for clarity)

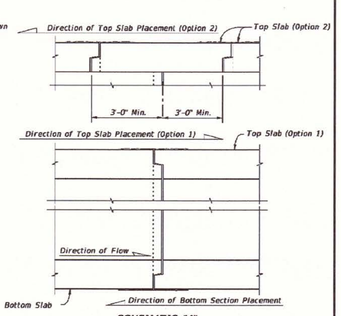
NOTE:
Bottom Slab Joints in Type B Boxes may be single tongue & groove joints as shown in Section A-A when the Top Slab Joints are oriented as shown in Schematic "A".



SECTION A-A
(3" Cover - Thin Wall Detail)

* At the Contractor's option when the box culvert reinforcing utilizes WWR, extend wall and slab reinforcing into the joint and bend to maintain cover in lieu of 4"x4" – W4.0xW4.0 WWR at joint. Transverse wire in tongue may be cut at corners of box to allow bending of the WWR.

SECTION A-A
(3" Cover - Thick Wall Detail)



SCHEMATIC "A"
TYPE B BOX SECTION PLACEMENT
FOR SINGLE TONGUE & GROOVE JOINTS

PRECAST SEGMENT TO SEGMENT TONGUE & GROOVE TRANSVERSE JOINTS

TWO-PIECE PRECAST SEGMENT ADDITIONAL JOINT DETAILS (TYPE B BOX)

LAST REVISION 07/01/15	REVISION DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SUPPLEMENTAL DETAILS FOR PRECAST CONCRETE BOX CULVERTS	INDEX NO. 291	SHEET NO. 2 of 5

MUNICIPAL ENGINEERING SERVICES, INC.
EXCELLENCE IN ENGINEERING SERVICE
8574 Turkey Bluff Road ◇ Navarre, Florida 32566 ◇ p: (850) 939-5732
CERTIFICATE OF AUTHORIZATION: CA-30888

DETAILS

As-Built 'Record Drawing' by _____ Date _____

NOT Released for Construction by _____ Date _____

PLANT SMITH IW4 & IW5 ACCESS DRIVES
FOR GULF POWER COMPANY
BAY COUNTY FLORIDA

REVISION

DALE E. ERIC LONG
LICENSE NO. 58393
STATE OF FLORIDA
PROFESSIONAL ENGINEER
3/11/17

SCALE: AS NOTED
DATE: JULY 03, 2017
JOB NUMBER: 150006-004
FILENAME: SEE LEFT
DRAWN BY: EMD
DESIGNED BY: DEL
SHEET: C-502

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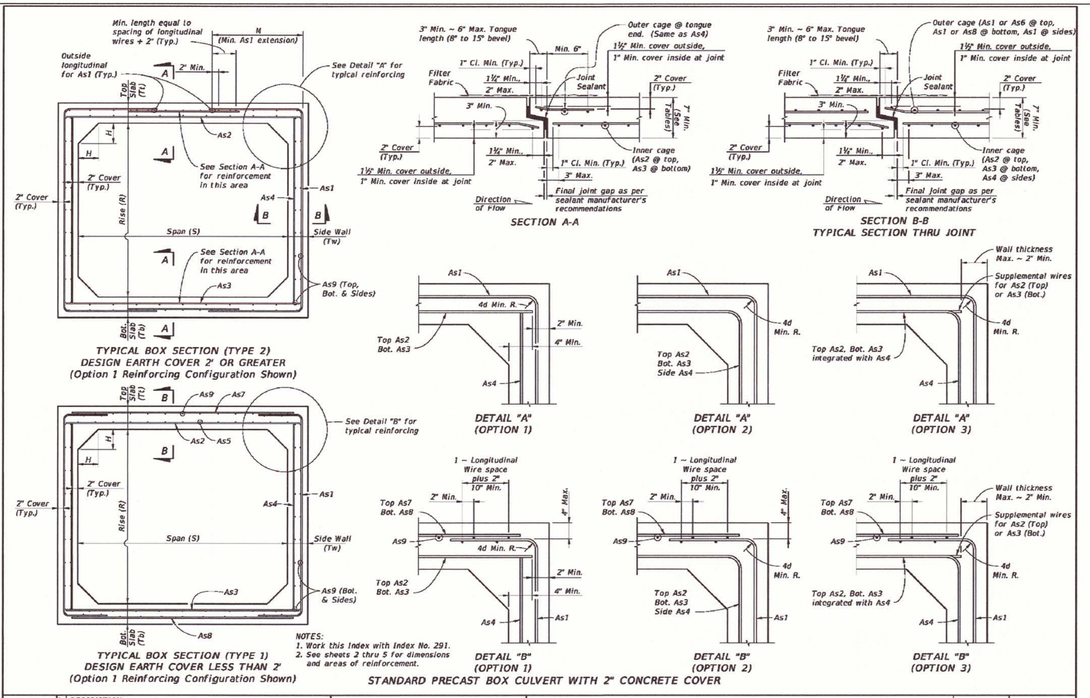
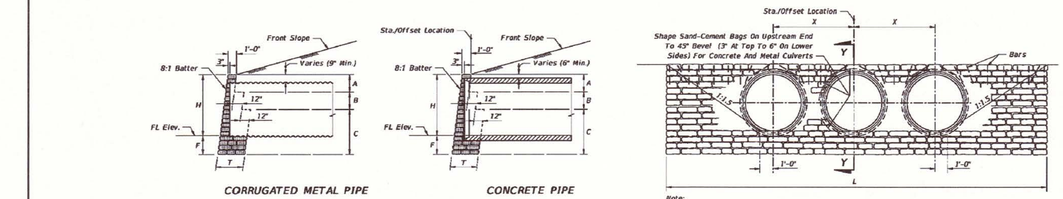


NOTES:
1. Work this Index with Index No. 291.
2. See sheets 2 thru 5 for dimensions and areas of reinforcement.

STANDARD PRECAST BOX CULVERT WITH 2" CONCRETE COVER

LAST REVISION	REVISION	DESCRIPTION:	FDOT			INDEX NO.	SHEET NO.
07/01/13			FY 2017-18 DESIGN STANDARDS	STANDARD PRECAST CONCRETE BOX CULVERTS		292	1 of 14



Note:
1. For concrete and corrugated metal pipes. Concrete pipe shown.
2. The top row of riprap bags shall be secured by pinning, using #4 reinforcing bars 18 inches in length, as follows:
   a. The end bags shall be secured using two bars per bag, one vertical and one diagonal as shown.
   b. The next to last bag on each end shall be secured with two bars vertically.
   c. Bags located over the pipe shall be secured by a bar which is driven diagonally except that for concrete pipe two bars shall be used for single bags above the pipe.
   d. Intermediate bags shall be secured with a single bar.

Bars shall be driven to one inch below the surface of the bag. The cost of furnishing and installing the bars shall be included in the cost of the riprap.

TABLE OF DIMENSIONS AND QUANTITIES FOR ONE ENDWALL

SIZE OF PIPE	H	T	A	B	C	F	X	ONE PIPE CULVERTS L	ONE PIPE CULVERTS RIPRAP CY CP	ONE PIPE CULVERTS RIPRAP CY CMP	TWO PIPE CULVERTS L	TWO PIPE CULVERTS RIPRAP CY CP	TWO PIPE CULVERTS RIPRAP CY CMP	THREE PIPE CULVERTS L	THREE PIPE CULVERTS RIPRAP CY CP	THREE PIPE CULVERTS RIPRAP CY CMP	FOUR PIPE CULVERTS L	FOUR PIPE CULVERTS RIPRAP CY CP	FOUR PIPE CULVERTS RIPRAP CY CMP
18"	2'-3"	1'-0"	4'-0"	0'-0"	0'-0"	1'-9"	2'-10"	8'-9"	1.2	1.2	11'-7"	1.5	1.6	14'-5"	1.8	1.9	17'-3"	2.1	2.3
24"	2'-9"	2'-0"	2'-0"	2'-6"	0'-0"	1'-9"	3'-5"	10'-3"	2.4	2.5	13'-8"	3.0	3.2	17'-1"	3.7	4.0	20'-6"	4.3	4.7
30"	3'-4"	2'-0"	2'-0"	3'-2"	0'-0"	1'-10"	4'-3"	12'-0"	3.3	3.4	16'-3"	4.2	4.5	20'-6"	5.1	5.5	24'-9"	6.0	6.5
36"	3'-10"	2'-0"	2'-0"	3'-8"	0'-0"	1'-10"	5'-1"	13'-8"	4.0	4.2	18'-7"	5.2	5.7	23'-8"	6.3	6.9	28'-9"	7.4	8.2
42"	4'-5"	3'-0"	2'-0"	2'-0"	2'-4"	1'-11"	6'-0"	15'-3"	6.4	6.7	21'-3"	8.3	8.9	27'-3"	10.2	11.2	33'-3"	12.3	13.4
48"	4'-11"	3'-0"	2'-0"	2'-0"	2'-10"	1'-11"	6'-9"	16'-9"	7.7	8.1	23'-6"	10.0	10.8	30'-3"	12.3	13.5	37'-0"	14.5	16.2
54"	5'-6"	3'-0"	2'-0"	2'-4"	3'-6"	2'-0"	7'-8"	18'-6"	9.5	10.1	26'-2"	12.4	13.5	33'-10"	15.3	17.0	41'-6"	18.2	20.4
60"	6'-0"	3'-0"	2'-0"	2'-4"	4'-6"	2'-0"	8'-6"	20'-0"	11.0	11.7	28'-6"	14.4	15.8	37'-0"	17.8	19.8	45'-6"	21.1	23.8
66"	6'-7"	3'-0"	2'-0"	2'-4"	4'-8"	2'-1"	9'-3"	21'-5"	13.2	14.1	31'-0"	17.2	18.9	40'-3"	21.2	23.7	49'-6"	25.1	28.5
72"	7'-1"	3'-0"	2'-0"	2'-8"	5'-2"	2'-1"	10'-0"	23'-3"	15.0	16.0	33'-3"	19.4	21.4	43'-3"	23.9	26.8	53'-3"	28.3	32.3
78"	7'-8"	3'-0"	2'-0"	2'-8"	5'-10"	2'-2"	10'-9"	25'-0"	17.5	18.7	35'-9"	22.6	25.0	46'-6"	27.8	31.3	57'-3"	32.9	37.6
84"	8'-2"	3'-0"	2'-0"	2'-8"	6'-4"	2'-2"	11'-8"	26'-8"	19.5	20.9	38'-2"	25.3	28.1	49'-10"	31.1	35.2	61'-6"	36.9	42.4

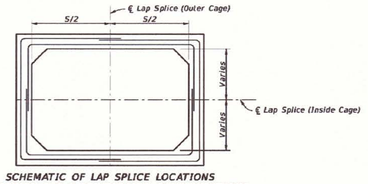
GENERAL NOTES

1. Straight sand-cement endwalls are intended for use outside the clear zone.

LAST REVISION	REVISION	DESCRIPTION:	FDOT			INDEX NO.	SHEET NO.
11/01/16			FY 2017-18 DESIGN STANDARDS	STRAIGHT SAND-CEMENT ENDWALS		258	1 of 1

GENERAL NOTES:

1. These precast designs may be substituted for cast-in-place box culverts designed to AASHTO LRFD Bridge Design Specifications, 4th Edition. Designs are based on the design criteria shown in FDOT Structures Design Guidelines.
2. Loading: HL-93 & any fill heights between the minimum & maximum shown.
3. Only one design of precast box culvert is to be used for any installation.
4. Reinforcing steel must consist of smooth or deformed welded wire reinforcement (WWR) meeting the requirements of Specification Section 931. Longitudinal reinforcement may consist of reinforcing bars meeting the requirements of Specification Section 931. Minimum cover must be 2" for slightly or moderately aggressive environments or 3" for extremely aggressive environments, unless otherwise shown. The spacing of circumferential wires must not be less than 2" nor more than 4". The spacing of longitudinal wires or bars must not be more than 8".
5. As9 longitudinal wires must have a minimum cross-sectional area of 40% of the circumferential wires, but not less than a W2.5 or D4.0 for WWR, or #3 bars for deformed bars.
6. Welding of reinforcement must be limited to the locations shown in ASTM C1577 and in accordance with AWSI/AWS D1.4 "Structural Welding Code - Reinforcing Steel".
7. For alternate reinforcing configuration Options 2 and 3 shown in Detail "A" and "B" (Sheet 1), As1 may be extended to the middle of either slab and lap spliced with As7 and As8. As4 may be lap spliced at any location or connected to As2 or As3 at corners by welding.
8. Haunch dimensions may vary between the minimum and maximum dimensions shown in the Design Tables but only one haunch dimension must be used within the full length of the box culvert installation.
9. Submittal of redesign calculations are not required for any increase to the slab and/or wall thickness when the minimum reinforcement areas shown in the Design Tables are provided.
10. For Design Earth Cover greater than 10 feet, the Contractor may interpolate the required areas of reinforcement and slab or wall thickness. Interpolated areas of reinforcement, slab or wall thickness must be approved by the Engineer.
11. Minimum length of precast box segments is 4 feet and maximum length is 16 feet.
12. See Index No. 291 for connections to wingwalls, headwalls and other general details.



SCHEMATIC OF LAP SPLICE LOCATIONS
FOR OPTION 2 & 3 REINFORCING CONFIGURATIONS

TABLE 1A - STANDARD PRECAST BOX CULVERT DESIGNS (2" COVER) - 3' & 4' SPANS

SPAN x RISE (S) x (R) (Ft.)	SLAB / WALL THICKNESS TOP (Tt) (in.)	BOT. (Tb) (in.)	SIDE (Tw) (in.)	HAUNCH (H) (in.)	DESIGN EARTH COVER ABOVE TOP SLAB	REINFORCEMENT AREAS (sq. in./Ft.) As1	As2	As3	As4	As5	As7	As8	As9	As1 EXT. LENGTH (M) (in.)
3' x 3'	7	7	7	4	0.33' - <2'	0.17	0.29	0.21	0.17	0.17	0.17	0.17	See General Note 5	-
					2' - <3'	0.13	0.28	0.21	0.09	-	-	-		31
					3' - <5'	0.09	0.17	0.17	0.09	-	-	-		31
				to	5' - 10'	0.09	0.17	0.17	0.09	-	-	-		31
					15'	0.09	0.17	0.17	0.09	-	-	-		31
					20'	0.12	0.17	0.17	0.09	-	-	-		31
					25'	0.14	0.18	0.18	0.09	-	-	-		31
				8	30'	0.17	0.21	0.22	0.09	-	-	-		31
					35'	0.19	0.25	0.25	0.09	-	-	-		31
4' x 3'	7	7	7	4	0.33' - <2'	0.19	0.38	0.26	0.17	0.19	0.17	0.19		-
					2' - <3'	0.19	0.38	0.26	0.09	-	-	-		38
					3' - <5'	0.14	0.20	0.22	0.09	-	-	-		38
				to	5' - 10'	0.11	0.17	0.17	0.09	-	-	-		38
					15'	0.15	0.17	0.18	0.09	-	-	-		38
					20'	0.20	0.23	0.23	0.09	-	-	-		38
					25'	0.24	0.28	0.29	0.09	-	-	-		38
				8	30'	0.29	0.34	0.35	0.09	-	-	-		38
4' x 4'	7	7	7	4	0.33' - <2'	0.19	0.41	0.28	0.17	0.21	0.17	0.19		-
					2' - <3'	0.19	0.41	0.28	0.09	-	-	-		38
					3' - <5'	0.14	0.21	0.24	0.09	-	-	-		38
				to	5' - 10'	0.12	0.17	0.17	0.09	-	-	-		38
					15'	0.16	0.19	0.20	0.09	-	-	-		38
					20'	0.21	0.25	0.25	0.09	-	-	-		38
				8	25'	0.26	0.31	0.32	0.09	-	-	-		38
					30'	0.31	0.37	0.38	0.09	-	-	-		38

TABLE 1B - STANDARD PRECAST BOX CULVERT DESIGNS (2" COVER) - 3' & 4' SPANS

SPAN x RISE (S) x (R) (Ft.)	SLAB / WALL THICKNESS TOP (Tt) (in.)	BOT. (Tb) (in.)	SIDE (Tw) (in.)	HAUNCH (H) (in.)	DESIGN EARTH COVER ABOVE TOP SLAB	REINFORCEMENT AREAS (sq. in./Ft.) As1	As2	As3	As4	As5	As7	As8	As9	As1 EXT. LENGTH (M) (in.)
3' x 3'	8	8	8	4	0.33' - <2'	0.20	0.26	0.32	0.20	0.20	0.20	0.20	See General Note 5	-
					2' - <3'	0.16	0.25	0.31	0.10	-	-	-		31
					3' - <5'	0.10	0.20	0.20	0.10	-	-	-		31
				to	5' - 10'	0.10	0.20	0.20	0.10	-	-	-		31
					15'	0.10	0.20	0.20	0.10	-	-	-		31
					20'	0.10	0.20	0.20	0.10	-	-	-		31
					25'	0.11	0.20	0.20	0.10	-	-	-		31
				8	30'	0.13	0.20	0.20	0.10	-	-	-		31
					35'	0.15	0.21	0.21	0.10	-	-	-		31
4' x 3'	8	8	8	4	0.33' - <2'	0.20	0.31	0.22	0.20	0.20	0.20	0.20		-
					2' - <3'	0.12	0.31	0.22	0.10	-	-	-		38
					3' - <5'	0.12	0.20	0.20	0.10	-	-	-		38
				to	5' - 10'	0.10	0.20	0.20	0.10	-	-	-		38
					15'	0.12	0.20	0.20	0.10	-	-	-		38
					20'	0.16	0.20	0.20	0.10	-	-	-		38
					25'	0.19	0.24	0.24	0.10	-	-	-		38
				8	30'	0.22	0.28	0.29	0.10	-	-	-		38
4' x 4'	8	8	8	4	0.33' - <2'	0.20	0.33	0.24	0.20	0.20	0.20	0.20		-
					2' - <3'	0.17	0.33	0.24	0.10	-	-	-		38
					3' - <5'	0.12	0.20	0.20	0.10	-	-	-		38
				to	5' - 10'	0.10	0.20	0.20	0.10	-	-	-		38
					15'	0.13	0.20	0.20	0.10	-	-	-		38
					20'	0.16	0.21	0.22	0.10	-	-	-		38
				8	25'	0.20	0.26	0.27	0.10	-	-	-		38
					30'	0.23	0.31	0.32	0.10	-	-	-		38

NOTES: 1. See Sheet 1 for Reinforcing Details and dimension locations.
2. See Sheet 14 for WWR Bending Diagram.

LAST REVISION	REVISION	DESCRIPTION:	FDOT			INDEX NO.	SHEET NO.
07/01/15			FY 2017-18 DESIGN STANDARDS	STANDARD PRECAST CONCRETE BOX CULVERTS		292	2 of 14

MUNICIPAL ENGINEERING SERVICES, INC.
EXCELLENCE IN ENGINEERING SERVICE
8574 Turkey Bluff Road ◇ Navarre, Florida 32566 ◇ p: (850) 939-5732
CERTIFICATE OF AUTHORIZATION: CA-30868

DETAILS

As-Built 'Record Drawing' by _____ Date _____

NOT Released for Construction by _____ Date _____

PLANT SMITH IW4 & IW5 ACCESS DRIVES
FOR
GULF POWER COMPANY
BAY COUNTY FLORIDA

REVISION			

DALE ERIC LONG, P.E. LICENSE No. 55303 STATE OF FLORIDA PROFESSIONAL ENGINEER

SCALE: AS NOTED

DATE: JULY 03, 2017

JOB NUMBER:	FILENAME:
150006-004	SEE LEFT
DRAWN BY: EMD	DESIGNED BY: DEL

SHEET: C-503

M:\2015\150006-004 Plant Smith Access Drive\dwg\Sheets\60 C-500 Details.dwg, C-503

Gulf Power Exhibit B

DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE OF FLORIDA
PERMIT
0320483-004-EM/3
1 page

WETLANDS

INSTALL:
FLOATING TURBIDITY CURTAIN UPSTREAM AND DOWN STREAM OF PROPOSED BOX CULVERT.

INSTALL:
24' DOUBLE LEAF (12' PER LEAF) GATE ON EXISTING 8' CHAIN LINK FENCE.

INSTALL:
WIRE BACKED PERIMETER SILT FENCING.

25' secondary impact buffer (.48 acres)

NOTE:
AT THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCING ALONG THE LIMITS OF THE IW4 MITIGATION AREA BEFORE ANY OTHER WORK IS UNDERTAKEN.

UPLANDS

IW 4
MITIGATION AREA
(DO NOT DISTURB)

WETLANDS

CONTRACTOR SHALL TIE NEW GRAVEL DRIVE TO EXISTING DIRT ROAD AS SHOWN.

GRADE TO DRAIN FROM OVERFLOW TO DITCH

EXISTING GRAVEL/DIRT ROAD

BP: 0+00.00
0+50 (SL-18)
1+00 (SE-19)
1+00
2+00
(SE-20)
3+00 (SL-21)
4+00 (SE-22)
5+00 (SL-23)
6+00 (SL-24)
7+00 (SE-25)
8+00
EP: 8+40.00
EP: 4+40.52

WET DETENTION POND

R=25'

CONTRACTOR SHALL CUT EXISTING CONDUIT STUB UPS TO 30" BELOW GRADE AND INSTALL IN TRAFFIC RATED UTILITY BOX

UPLANDS

INSTALL:
36LF ~ 4'x 2' BOX CULVERT w/SAND CEMENT BAG ENDWALL EAST AND WEST. CONTRACTOR SHALL MATCH EXISTING STREAM SLOPE AND ORIENTATION.

INSTALL:
CONCRETE OVERFLOW STRUCTURE w/RUBBLE RIP-RAP OVER FILTER FABRIC AND GRAVEL BEDDING. AVERAGE STONE SIZE = 4"

WETLANDS

Wetland impact area 0.66 acres
Silviculture, hydric pine flatwoods

INSTALL:
20 S.Y. STONE RUBBLE RIP-RAP OVER FILTER FABRIC AND GRAVEL BEDDING. AVG. STONE SIZE = 4".

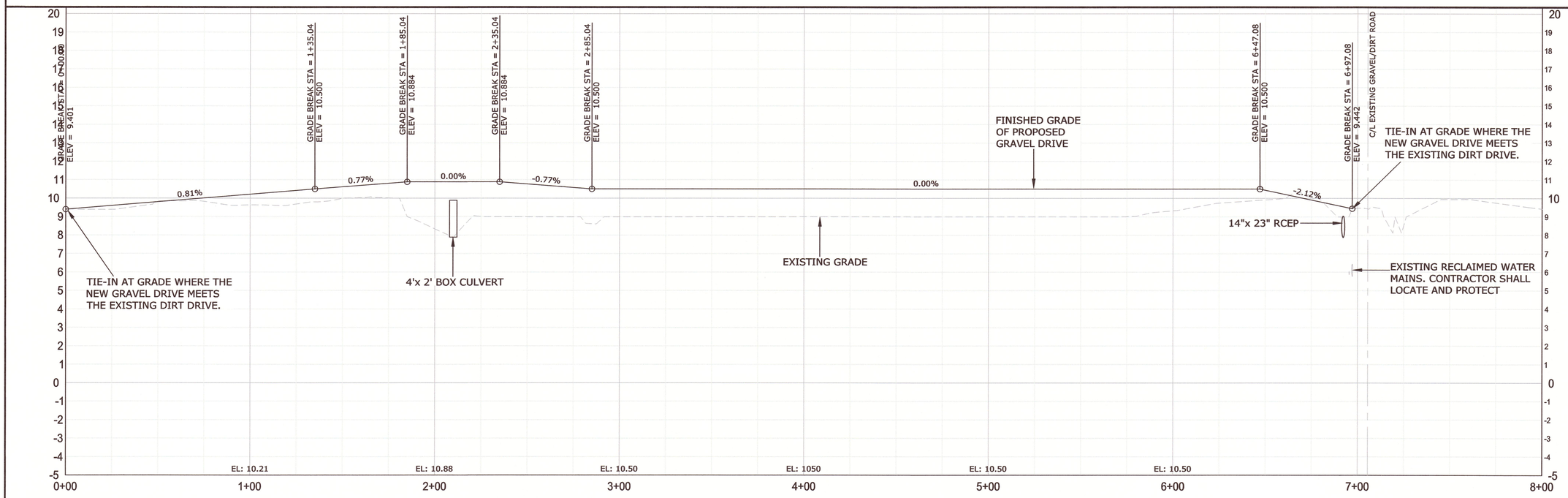
INSTALL:
235 LF ~ FLAT BOTTOM SODDED SWALE @ 0.40%

INSTALL:
35LF~14"x 23" RCEP w/MES EACH END. CONTRACTOR SHALL MATCH EXISTING ROADSIDE SWALE GRADE.

INSTALL:
SILT FENCE AND HAY BALE CHECK DAMS IN SWALE ROADSIDE. (TYPICAL)

GRAPHIC SCALE:
30 15 0 30 60 90
SCALE IN FEET
SCALE: 1" = 30'

N



PROFILE
SCALE : HOR. : 1" = 30'
VER. : 1" = 3'

M:\2015\150006-004 Plant Smith Access Drive\dwg\Sheets\10 C-100 IW4 Access Drive.dwg, C-101

MUNICIPAL ENGINEERING SERVICES, INC.
EXCELLENCE IN ENGINEERING SERVICE
8874 Turkey Bluff Road ◇ Navarre, Florida 32566 ◇ p: (850) 939-8732
CERTIFICATE OF AUTHORIZATION: CA-30886

IW4 ACCESS DRIVE PLAN AND PROFILE

As-Built 'Record Drawing' by _____ Date _____

NOT Released for Construction by _____ Date _____

PLANT SMITH IW4 & IW5 ACCESS DRIVES
FOR
GULF POWER COMPANY
BAY COUNTY FLORIDA

REVISION

DALE ERIC LONG
LICENSE
No. 55393
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SCALE: AS NOTED
DATE: JULY 03, 2017
JOB NUMBER: 150006-004
FILENAME: SEE LEFT
DRAWN BY: EMD
DESIGNED BY: DEL
SHEET:
C-101

GULF POWER PLANT SMITH – IW-4
STORMWATER MAINTENANCE PLAN

The proposed storm water system includes stormwater treatment ponds. All proposed facilities shall be constructed and maintained per all applicable Florida Department of Environmental Protection (FDEP) rules and regulations.

Both during and upon completion of construction, Best Management Practices (BMP) shall be implemented as needed. These may include, but shall not be limited to, drainage swales, silt fencing, check dams, and sedimentation ponds.

The pond and all other portions of the storm water system shall be regularly inspected and maintained in good working order at all times and according to the following Florida Department of Environmental Protection (FDEP) minimum Operation and Maintenance Standards:

(a) All surface water management systems permitted by the FDEP shall be operated and maintained in accordance with the designs, plans, calculations, and other specifications that are submitted with an application, approved by the Department, and incorporated by reference or as a condition into any permit issued.

(b) The operation and maintenance entity shall provide for the inspection of the stormwater management system in accordance with subsection 62-330.311(1), F.A.C.

(c) The permitted system should be inspected within 1 (one) year after being transferred to the operational phase and then once every five (5) years. Inspections shall be conducted by a Registered Professional.

Maintenance procedures shall not be limited to those included in this plan, but shall include any measures necessary to ensure the proposed storm water system operates in a safe manner in accordance with all applicable codes, ordinances, regulations, and standards.

WET DETENTION POND MAINTENANCE PLAN

In order to enable the wet detention ponds to function correctly and to maintain the pond's design capacity, sediment must be removed occasionally and adequate resources must be committed to properly maintain peripheral aquatic vegetation, control vector production and to maintain required permanent pool volume. Wet detention ponds can become a nuisance due to mosquito breeding, unless carefully maintained. A proactive and routine preventative maintenance plan is crucial to minimizing vector habitat. Following is a list of inspection and maintenance activities:

1. Inspect for invasive vegetation, trash and debris, clogging of inlet/outlet structures, orifice and skimmer, excessive erosion, sediment buildup in basin or outlet, bank stability, and density of the turf grass on bank side slopes. Monitor drains and check for algal growth, signs of pollution such as oil sheens, discolored water or unpleasant odors, and signs of flooding.
   (Annual Inspection)

2. Inspect mechanical component condition of inlet and outlet structures, pipes, orifice, skimmers, weir and upstream and downstream channel conditions.
   (Annual Inspection)
3. During inspections, note changes to the wet pond or the contributing watershed as these may affect basin performance.
4. If mosquito breeding becomes a problem, introduce mosquito fish to enhance natural mosquito control and regularly maintain emergent and shoreline vegetation.
5. Remove sediment from outlet structure(s). Dispose of properly. Remove accumulated trash and debris in the basin(s), inlet/outlet structures, side slopes and collection system as required. Repair undercut areas, rills, and erosion to banks and basin(s).
   (Annual Inspection)
6. Maintain vegetation in littoral shelf planting zones. Mow side slopes and maintain vegetation in and around basin(s) to prevent any erosion or aesthetic problems. Minimize use of fertilizers and pesticides. Re-establish littoral plantings and up-gradient grasses. Manage and harvest wetland plants and repair or replace.
   (Annual maintenance and as needed)
7. Remove sediment when the permanent pool volume has become reduced significantly (sediment accumulation exceeds 25% of design depth), re-suspension is observed or the pond becomes eutrophic.
   (Annual Inspection and as needed)

DEPARTMENT OF ENVIRONMENTAL PROTECTION
2/2
0320483-004-EI/03
PERMIT
Linda Bauer
STATE OF FLORIDA

6 pages
0320483-004-EI/03
DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
STATE OF FLORIDA

Draft

MITIGATION CREDIT PURCHASE AGREEMENT

THIS MITIGATION CREDIT PURCHASE AGREEMENT (the "Agreement") is made and entered into as of the ____ day of _____, 20____ (the "Effective Date"), by and between **THE ST. JOE COMPANY,** a Florida corporation, on behalf of itself and its subsidiary **ST. JOE TIMBERLAND COMPANY OF DELAWARE, L.L.C.**, a Delaware limited liability company, whose mailing address is 133 S. WaterSound Parkway, WaterSound, Florida 32413 ("Seller"), and Gulf Power Co., a Florida Corporation, FIN#59-0276810, whose mailing address is One energy Place, Pensacola, FL 32520 ("Buyer").

WITNESSETH:

WHEREAS, Seller maintains an ecological restoration project located in Bay County, Florida (the "Mitigation Property" known as The Breakfast Point Mitigation Bank); and

WHEREAS, Seller owns a mitigation bank with federal freshwater mitigation credits ("Credits") available for transfer and sale under Florida Department of Environmental Protection ("FDEP") Permit No. [Bay: 0227473-001] and U.S. Army Corps of Engineers ("USACOE") Permit No.[Bay: SAJ-2004-1865-NW-GAH] (collectively, "Seller's Permits"); and

WHEREAS, as part of Buyer's environmental permitting process for the proposed development of its project(s) known as Smith Plant – IW4 Gravel Access Drive Project (the "Project") located in Bay County, FL involving the FDEP Permit (0320483-004/03-EI) and ACOE No. SAJ-2017-02434, it is anticipated that Buyer's permits from such governmental agencies will be conditioned upon purchase of Credits as compensatory mitigation; and

WHEREAS, Seller desires to sell and Buyer desires to purchase Credits available from the Mitigation Property on the terms and conditions below to be used to offset wetland impacts associated with the Project.

NOW, THEREFORE, in consideration of the premises and of the mutual covenants hereinafter contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

1. **Terms of Purchase and Deposit.**

(a) **Purchase Price**. Under the terms of this Agreement, Seller hereby agrees to sell 0.40 Wet Prairie/Flatwoods Credits (the "Subject Credits") to Buyer and Buyer agrees to pay forand purchase the Subject Credits from Seller for the aggregate amount of Thirty Thousand Dollars ($30,000.00) (the "Purchase Price"). The Purchase Price shall be payable to Seller by Buyer by check, wired federal funds or cashier's check on or before February 1, 2018 (the "Payment Date").

(b) **Deposit**. Upon Buyer's execution of this Agreement, Buyer shall deliver to Seller the

sum of Three Thousand Dollars ($3,000.00) to be held as a deposit payment (the "Deposit"). Unless otherwise described herein or otherwise agreed, on the Payment Date the Deposit shall be credited against the Purchase Price paid by Buyer for the Subject Credits. The Deposit shall be non-refundable to Buyer except in the case of breach by Seller as set forth in Paragraph 5(a) below.

2. **Reservation of Credits.** Following Buyer's and Seller's execution of this Agreement, payment of the purchase price by Buyer, and upon Buyer's request, Seller will address reservation letters to the FDEP detailing the specific Subject Credits reserved by Seller.

3. **Timing of Transfer of Subject Credits.** Upon Seller's receipt of payment in full of the Purchase Price, the Subject Credits shall be deemed transferred and the Purchase Price shall be deemed fully earned. Seller shall provide to Buyer, upon Buyer's request, the documentation required by the FDEP and ACOE to debit the Subject Credits from each of the Seller's FDEP and ACOE ledgers.

4. **Costs.** Each party shall bear its own costs associated with the terms of this Agreement.

5. **Covenants.**

(a) **Seller.** Seller covenants and agrees that it shall comply with all conditions and continuing requirements set forth in Seller's Permits. Responsibility for compliance with the Seller's Permits as to mitigation on the Mitigation Property shall solely be the responsibility of Seller. Seller shall not be bound by any statement of any broker, employee, agent or other representative or affiliate of Seller.

(b) **Buyer.** Buyer covenants and agrees that:

i. the Subject Credits shall only be used in conjunction with the Project.

ii. the Subject Credits shall only be used as authorized by the applicable permits for the Project.

6. **Remedies.** In the event either Buyer or Seller breaches or fails to perform any covenant, agreement or obligation hereof, then the other party shall have all rights and remedies available at law or in equity including the right of injunctive relief, damages and the right to action for specific performance.

7. **Applicable Law**. This Agreement shall be construed and enforced in accordance with the laws of the State of Florida.

8. **Notices**. Any notice, demand, consent, authorization, request, approval or other communication that any party is required, or may desire, to give to or make upon the other party pursuant to this Agreement shall be effective and valid only if in writing, signed by the party giving notice, or its attorney, and delivered personally to the other parties or sent by express 24-hour guaranteed courier or delivery service, by facsimile transmission or by

certified mail of the United States Postal Service, postage prepaid and return receipt requested, addressed to the other party as follows (or to such other place as any party may by notice to the others specify):

To Seller:	The St. Joe Company Attn: Jorge Gonzalez 133 South WaterSound Parkway WaterSound, Florida 32413
With a Copy To:	The St. Joe Company Attn: Ken Borick, SVP 133 South WaterSound Parkway WaterSound, Florida 32413
To Buyer :	Gulf Power Co. Attn: Mr. Richard M. Markey Address: **One Energy Place** **Pensacola , Florida 32520** **Bin # 328** Phone: 850-444-6311 email: jovick@southernco.com
With a copy to:	Gulf Power Co. Attn: Jeff Cole Address: **One Energy Place** **Pensacola , Florida 32520** **Bin # 328** Phone: 850-444-6311 Facsimile: jefcole@southernco.com

Notice shall be deemed given when received. Buyer, and Seller may from time to time notify the other of changes with respect to whom and where notice should be sent by sending notification of such changes pursuant to this Paragraph.

9. **Entire Agreement**. This Agreement contains the entire understanding between the parties and the parties agree that no representation was made by or on behalf of the other which is not contained in this Agreement, and that in entering into this Agreement neither relied upon any representation not herein contained.

10. **Amendments and Waivers**. This Agreement may not be amended, modified, altered, or changed in any respect whatsoever, except by a further agreement in writing duly executed by each and all of the parties hereto. No failure by Buyer or Seller to insist upon the strict performance of any covenant, duty, agreement or condition of this Agreement or to exercise

any right or remedy upon a breach thereof shall constitute a waiver of any such breach or of such any other covenant, agreement, term or condition. Any party hereto, by written notice to the other parties, may but shall be under no obligation to, waive any of its rights or any conditions to its obligations hereunder, or any duty, obligation or covenants of any other party hereto. No waiver shall affect or alter this Agreement, but each and every covenant, agreement, term and condition of this Agreement shall continue in full force and effect with respect to any other then existing or subsequent breach thereof.

11. **No Joint Venture or Partnership or Agency Relationship**. Nothing contained in this Agreement shall be deemed or construed to create a joint venture or partnership and neither party shall be the agent of the other for any purpose. Neither party shall hold itself out as an agent, partner or joint venturer with the other and each party shall defend and indemnify the other against any claim of liability arising out of an asserted agency, partnership or joint venture by the other contrary to the express provisions of this Paragraph.

12. **Captions; Genders**. Captions used in this Agreement are for convenience of reference only and shall not affect the construction of any provision of this Agreement. Whenever used, the singular shall include the plural, the plural shall include the singular, and gender shall include all genders.

13. **Partial Invalidity**. In case any term of this Agreement shall be held to be invalid, illegal or unenforceable, in whole or in part, neither the validity of the remaining part of such term nor the validity of any other term of this Agreement shall in any way be affected thereby.

14. **Counterparts**. This Agreement may be executed in any number of counterparts, any one and all of which shall constitute the agreement of the parties and shall be deemed one original instrument.

15. **Time is of the Essence**. Time is of the essence under the terms of this Agreement. If any date referenced herein falls on a Saturday, Sunday or legal holiday, then such date shall automatically extend to the next business day. Failure to perform at the times stated in this Agreement shall constitute a default.

16. **Attorneys' Fees.** Non-prevailing party shall be liable for the prevailing party's reasonable attorneys' fees and court costs incurred in connection with any litigation relating to this Agreement, including but not limited to, attorneys' fees incurred in trial, post judgment, and appellate proceedings.

17. **No Warranty.** Buyer understands and agrees that Seller has made no representation or warranty as to the appropriateness, applicability, adequacy or suitability of the Subject Credits for Buyer's intended uses or purposes, and that Buyer accepts the Subject Credits in an "as is" condition without requiring any action, expense or other thing or matter on the part of Seller to be paid or performed.

18. **Agreement Not Recordable**. Neither this Agreement nor a memorandum thereof shall be recorded in the public records of any county.

19. **Confidentiality**. Except as required in the normal conduct of the business of the parties hereto by law or as part of Buyer's permitting process, Buyer shall not, without the prior written approval of Seller, at any time during the term of this Agreement or thereafter, divulge to any third party, other than its attorneys, accountants, employees and professional advisors who are bound by confidentiality, any information concerning the contents of this Agreement. Buyer shall not make any press releases or other media dissemination of information relating to the transaction contemplated by this Agreement without the prior written approval of Seller, which may be granted or withheld in Seller's sole discretion.

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IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the dates written below their respective names.

SELLER:	**BUYER**:
THE ST. JOE COMPANY, on its behalf and on behalf of ST. JOE TIMBERLAND COMPANY OF DELAWARE, L.L.C.	GULF POWER COMPANY
_____ Authorized Signature	_____ Authorized Signature
_____ Printed Name	_____ Printed Name
_____ Title	_____ Title
_____ Date	_____ Date

APPENDIX C

ERP Stormwater Report and Permit Application

ERP Stormwater Report

ERP Stormwater Report for Proposed Treatment System and Injection Well Pump Station at Plant Lansing Smith

Prepared for

Gulf Power Company

Panama City, Florida

Submitted to

Florida Department of Environmental Protection

February 2019

CH2M HILL, Inc
643 SW 4th Ave, Suite 400
Gainesville, FL 32601
FL Engineering Certificate of Authorization EB0000072

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Attachments

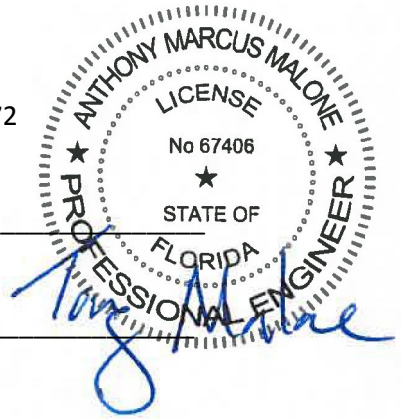
Attachment A Site Location Map (from Google Earth)
Attachment B Plans (11x17)
Attachment C FEMA FIRM Map
Attachment D NRCS Soils Map and Data
Attachment E Pre-Development & Post-Development Drainage Map
Attachment F Spreadsheets for Curve Number, Pond Capacity, Treatment Volume and PPV
Attachment G Stormwater Modeling Output for Pre and Post Development Conditions
Attachment H Temporary Construction Staging Area and Sediment Basin

1.0 Professional Engineer Certification

I, the undersigned, certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Professional Engineer's Signature/Seal:

Anthony Marcus Malone, PE
643 SW 4th Ave, Suite 400
Gainesville, FL 32601
FL PE No. 67406
CH2M Engineering Certificate of Authorization EB0000072



Name: _____

Date: _____

Anthony Marcus Malone, State of Florida, Professional Engineer, License No. 67406.

This item has been electronically signed and sealed by Anthony Marcus Malone, PE on 2/22/2019 using a Digital Signature.

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

2.0 Background

2.1 Location

This ERP Stormwater Report was prepared for the proposed treatment system and injection well pump station for the Gulf Power Company (Gulf Power) at the Lansing Smith Plant (Plant) in Panama City, Florida. Location information is below:

- See Attachment A for a site location map from Google Earth
- Lansing Smith Plant, Gulf Power Company, 4300 CR 2300, Panama City, FL 32409
- Bay County, FL
- Parcel No. 26636-010-000 and 26636-020-000
- Section 36, Township 2S & Range 15W
- Latitude and Longitude: 30^{O} 16' 26.9" N, 85^{o} 41' 41.6" W

2.2 Overview

Plant Smith is an electric generating facility located just north of Panama City, Florida that includes an oil-fired combustion turbine (CT) and a natural gas-fired combined cycle unit with nameplate capacity ratings of 41.85 MW and 619.65 MW. The two coal-fired Units 1 and 2 were retired in March 2016.

The Plant has three industrial injection wells and a temporary injection well pump station that was permitted under ERP 03-0320483-001-EI. The injection well site is in the northeast corner of the site. The temporary pump station was placed into service in 2016 and is being used to dispose industrial wastewater. A permanent system is being designed for the disposal of cooling tower blowdown after the Plant cooling system is converted to use municipal wastewater effluent as the primary cooling water source. Another injection well is planned for construction in 2018 and was recently permitted under FDEP Injection Well Permit 0177034-016 to 020-UC/II.

The purpose of this project is to replace the existing temporary injection well pump station with a permanent pump station and treatment system. The treatment system will provide filtration and pH adjustment of cooling tower blowdown prior to disposal into the injection wells.

The ERP application addresses the wetland impacts and wet detention stormwater ponds associated with the proposed treatment system and injection well pump station. Permit approval for the wetland impacts and the stormwater system is requested for the design of the treatment system and injection well pump station as submitted herein.

2.3 Federal, State and Local Regulations

Stormwater management must comply with the requirements from the following agencies:

- Florida Department of Environmental Protection (FDEP): Proposed developments must comply with the Environmental Resource Permit Applicant's Handbook Volume ll for the geographic limits of Northwest Florida Water Management District (NWFWMD).
- United States of Army Corps of Engineers (ACOE): Wetland impacts due to the proposed development shall be permitted by the United States Army Corps of Engineers (ACOE).

- Bay County: Proposed developments must comply with the Bay County Land Development Regulations, Chapter 24 Drainage/Stormwater Management.

2.4 Vertical and Horizontal Datum

The base map for the project is a survey performed by Dewberry and was completed in December 2017. The vertical datum for the project is the North American Vertical Datum 1988 (NAVD 88), obtained by a previous survey by Wood (formerly Amec Foster Wheeler Environment & Infrastructure, Inc.). All elevations in this report use this datum and are in feet (FT). The horizontal datum is the Florida State Plane Coordinate System, North Zone, North American Datum 1983/90, U.S. Survey Feet, per site control points obtained by the previous survey by Wood.

3.0 Existing Conditions

3.1 Description and Topography

The treatment plant and injection well pump station is proposed northeast of the existing Plant and in an area that is mostly undeveloped wetlands. The 8.65-acre limits of disturbance is shown in Figure 3.1 and the site plans can be found in Attachment B. The area north of the project contains the existing temporary injection well pump station and injection wells. There is currently a wet detention pond that provides treatment for this facility that was permitted under ERP 03-0320483-001-EI. The area to the southwest is the existing Unit 3 natural gas combined cycle facility. The area to the east and south of the project is undeveloped wetland area.

Based on a review of the topographic survey, the site is very flat with elevations ranging from 8.5 to 12 feet. Most of the wetland area is at elevation 10 with the existing developed area about elevation 11 Existing drainage patterns are to southeast.

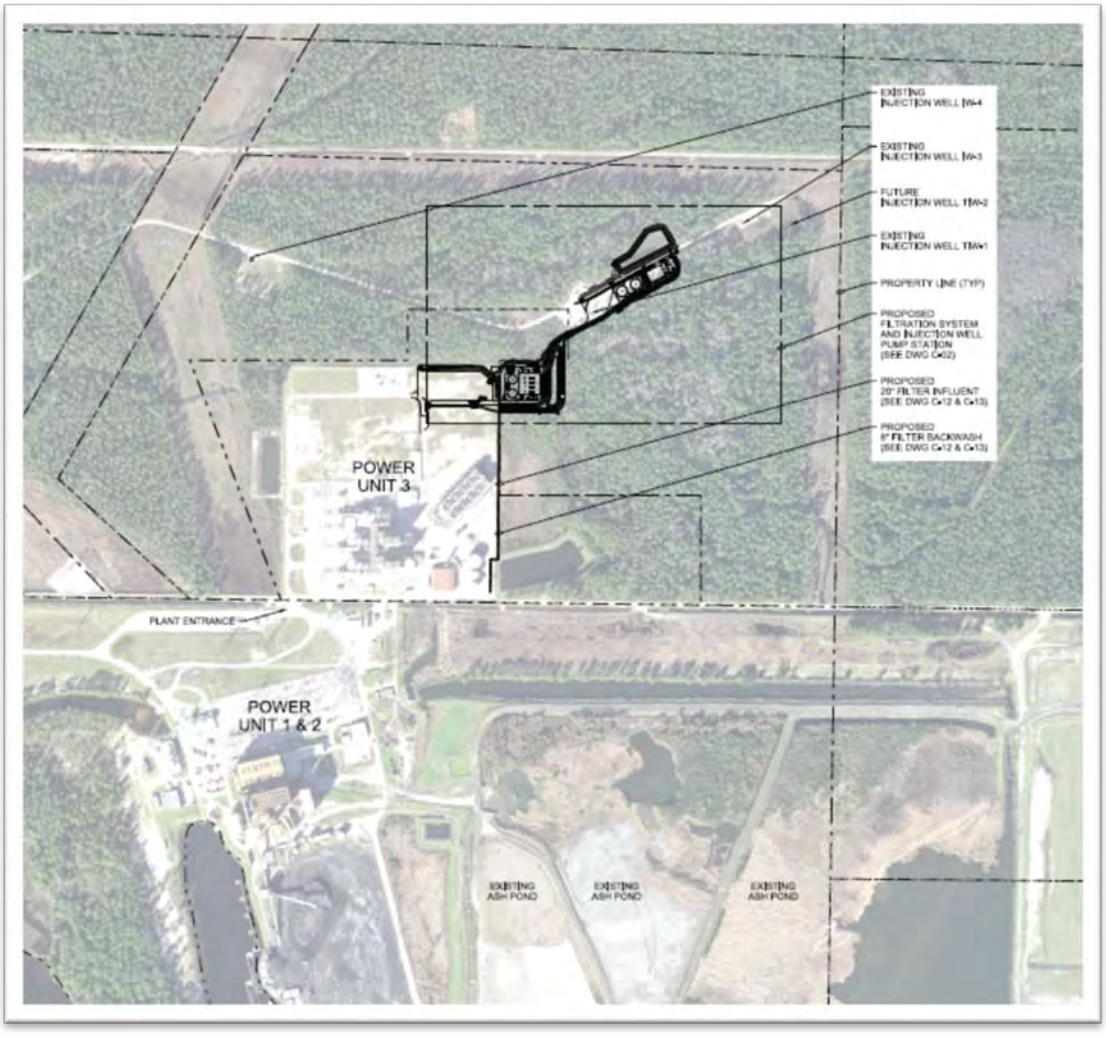


Figure 3.1 – Overall Site Plan
(see Attachment B)

3.2 Floodplain

The designated FEMA floodplain for the site according to FEMA FIRM Map 12005C0215H Panel 215 of 517 (Attachment C) is Zone A. Zone A is within the designated 100-year floodplain but does not have a base flood elevation determined.

There is no base flood elevation or flood studies available for the project area. The designated floodplain is a relatively large area that connects to adjoining wetlands and land at similar elevations. In order to provide an appropriate vertical separation from floodwaters and to comply with Bay County floodplain requirements, the top of the proposed wet detention ponds will be established above the average grade for the area. The grade ranges from elevation 9 ft to 11 ft, with the average grade at elevation 10 ft.

The top of Pond 1 is at elevation 11 ft with the normal water level at elevation 9.50 ft. The top of Pond 2 is at elevation 12 ft with the normal water level at elevation 9.50 ft. The minimum finished floor of the proposed structures will be elevation 13 ft, or 3 feet higher than the average adjacent natural grade. Most of the recent injection well infrastructure that was constructed has a pad elevation of 12 ft and a top of pond elevation of 11 ft with normal water elevation of 9.5 ft. Therefore, the proposed design exceeds the previous design elevations by at least one foot.

3.3 Soils

A geotechnical investigation was performed by Universal Engineering Sciences (UES Project No. 2030.1800088.0000, UES Report No. 1603139) between the dates of July 10, 2018, and July 20, 2018. Nineteen (19) Standard Penetration Test (SPT) borings in accordance with ASTM D 1586 were performed to determine the bearing capacity and other soil characteristics underlying the proposed ponds, structures, and drive. Subsurface conditions found within 10.5 ft depth consist of very loose to dense sand (SP), slightly silty sand (SP-SM), slightly clayey sand (SP-SC), silty sand (SM), clayey sand (SC), and wood. Groundwater was experienced between 0 and 1.2 ft below existing grade.

Other supporting soil information was obtained from the United States Department of Agriculture Web Soil Survey (Attachment D). As summarized in Table 3.1, the survey shows three soil series present within the project area. The hydrologic rating group for all three soils is A/D but are assumed to be D soils because of wetlands. The seasonal highwater table is assumed to be at ground surface.

Table 3.1 – Existing Soils

Soil Series	Drainage Class	Hydrologic Soils Group	Hydric Soil
Leon Sand	Poorly drained	D	No
Pottsburg, Wet Sand	Poorly drained	D	No
Rutledge Sand	Poorly drained	D	Yes

3.4 Existing Stormwater Pond (Pond 1)

There is an existing wet detention stormwater pond (see Attachment B) that handles the current runoff from the existing temporary injection well pump station and injection well site. This system was permitted in November of 2013 under ERP 03-0320483-001-EI. The system was designed with a top of pond elevation at 11.0. The design permanent pool elevation was 9.5 and established by a control structure orifice at elevation 9.5 and an overflow elevation of 10.80. The existing pond structure will be removed, and the existing pond will be shaped to handle the proposed conditions.

The improvements to the existing pond are designed to pass all post-development peak discharge rates less than the pre-development peak discharge rates. Also, the pre-development rate is assumed to be the discharge rate from the entire drainage area and not from the existing pond. Modifications to the existing pond are discussed in Section 5.5 and referenced as Pond 1.

4.0 Wetlands Impact

The wetland delineation was performed by Jeff Cole of Gulf Power Company. Dwg C-03 (Attachment B) presents the proposed Wetland Impacts and Erosion Control Plan. A portion of this plan is also shown in Figure 4.1.

The total disturbed area for the project is 8.69 acres, which includes 2.04 acres of permanent wetland impacts (shown red cross hatching #) and 6.65 acres of upland impacts. Also, there are 1.13 acres of secondary wetland impacts (shown purple hatching ///) that extend past the limits of disturbance into the wetland. The combined permanent and secondary wetland impacts is 3.17 acres. As shown in the grading plans (Dwg C-06 and C-07, Attachment B) and sections plan (Dwg C-10, Attachment B), the volume of in-place fill across the site is 11,540 CY (excluding the construction staging area) and the volume of in-place cut is 4,571 CY. The net fill in-place volume within the project area is 6,969 CY.

Construction of the proposed project will result in the unavoidable loss of 2.04 acres of wetlands. These wetland impacts will need to be approved and permitted by FDEP and the ACOE. To provide compensation for the loss of these wetlands, Gulf Power will provide wetland mitigation.

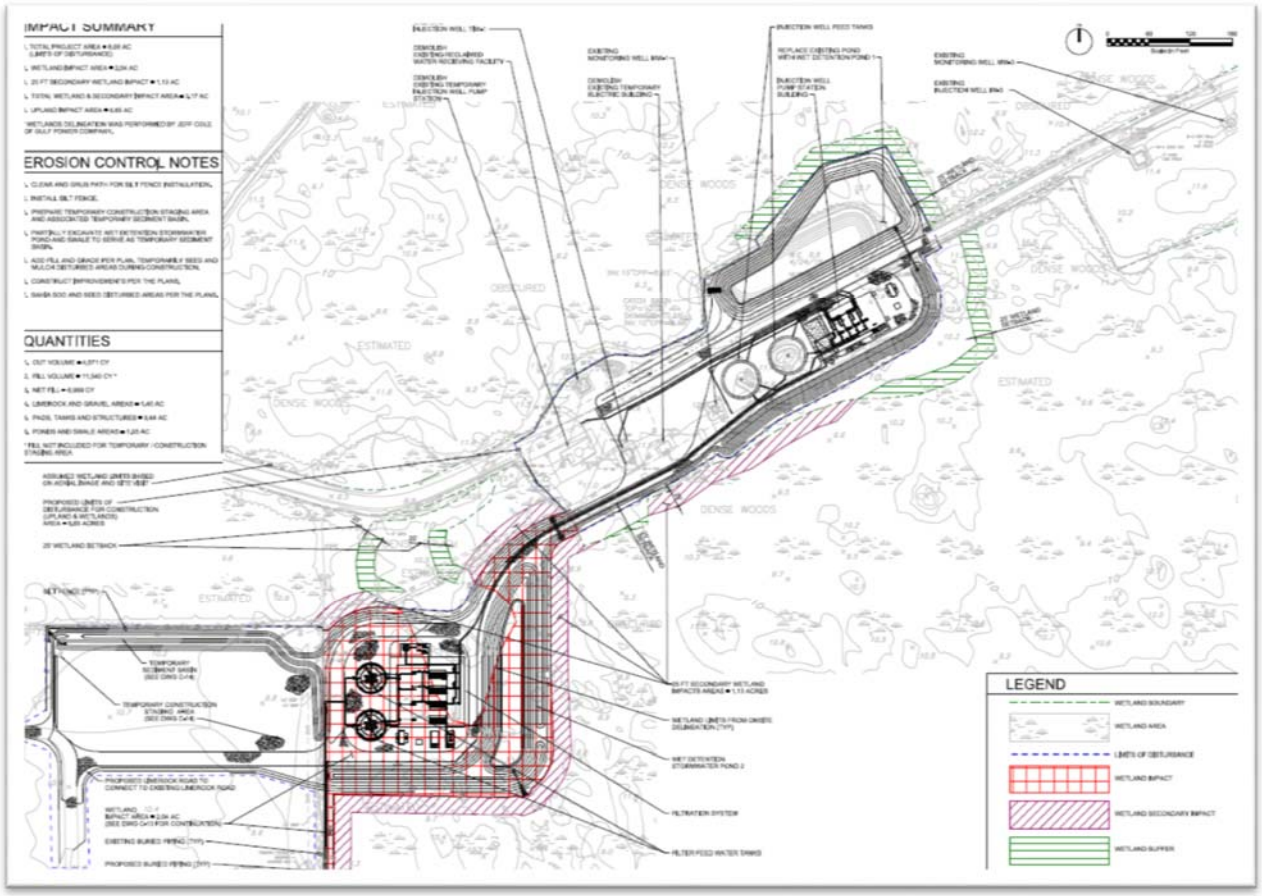


Figure 4.1 – Wetlands Impact Area
Injection Well and Temporary Pump Station Site (see Attachment B)

5.0 Hydrologic & Hydraulic Analysis

The stormwater system was modeled using the software from Autodesk® Storm and Sanitary Analysis 2017, Version 11.1.55.1. This software uses the Soil Conservation Service (SCS) TR-55 method developed by the Natural Resources Conservation Service (NRCS) to compute rainfall runoff rates and volumes. The software uses link and node-based elements to compute various hydrologic and hydraulic parameters.

5.1 Drainage Areas

The pre-development drainage map for the Project is included in Attachment E. There are two separate pre-development drainage areas. The outer limits of these drainage areas correspond to the post-development drainage areas, so that a more accurate comparison can be made between existing and proposed discharge rates.

Pre-development Drainage Area 1 (PDA-1) is 2.95 acres and is in the northeast corner of the site and discharges to the existing wet detention stormwater pond through overland sheet flow and a shallow swale. The area is currently developed and contains an injection well, temporary pump station, and other improvements surrounded by a gravel surface. Pre-development Drainage Area 2 (PDA-2) is 1.79 acres and is in the southwest portion of the site. PDA-2 is a wooded wetland and discharges to the south through sheet flow. The combined pre-development drainage area from the site is 4.74 acres.

The post-development drainage map is also included in Attachment E. The proposed site's runoff drains to the improved existing pond and the proposed wet detention stormwater pond through overland sheet flow and side swales. The grading and layout of the 2.95-acre post-development Drainage Area 1 (DA-1) is designed with a reduction of wooded area to the north for expanding Pond 1 and to the south to locate a drainage swale. Runoff from DA-1 drains to either Pond 1 directly by overland sheet flow or to a side swale that is hydraulically connected to Pond 1. Post-development Drainage Area 2 (DA-2) is 1.79 acres which replaces wooded area with the treatment filter system, above-ground tanks, two 18-inch equalization pipes under a new gravel road, and a new wet detention stormwater pond (Pond 2).

A third drainage area, DA-3, is for the temporary construction staging area (see Section 6) and is 1.6 acres. The temporary construction area is within a cleared area within the Unit 3 Plant site. The staging area will be raised approximately 2 feet to keep this area dry during construction.

5.2 Time of Concentration

The development of hydrographs are based on velocities of flow through segments of the watershed. The time of concentration is the time for runoff to travel from the hydraulically most distant point of the watershed to a point of interest within the watershed. It is computed by summing all the travel times for consecutive components of the drainage conveyance system. Due to the small size of the drainage areas, the highwater table, and to be conservative, a minimum time of concentration of 10 minutes was assigned to each pre-development and post-development drainage area.

5.3 Runoff Curve Number

Curve numbers are used to predict the runoff and initial infiltration rate for rainfall for a given soil type and land cover. Attachment F contains a spreadsheet of the curve number (CN) calculations used for the proposed project. A CN of 98 was used for paved areas and a CN of 91 was used for gravel areas. For open pervious areas, a CN between 79 and 89 was used to represent wooded wetland areas or sodded areas. A curve number of 100 was used for the permanent pond area. The calculated pre-development curve numbers for PDA-1 and PDA-2 were 92 and 81, respectively. The calculated post-development curve numbers for DA-1 and DA-2 were 94 and 95, respectively.

5.4 Rainfall

The rainfall data associated with design storm intensities for the 24-hour storm are summarized below per recurrence period. Intensities were obtained from the NWFWMD rainfall maps from their ERP Application's Handbook Volume II (Handbook). Rainfall totals were estimated to the nearest 0.25 inch.

Recurrence	1-year	2-year	5-year	10-year	25-year	50-year	100-year
Inches	4.75	6.00	7.50	9.25	10.50	12.00	13.25

5.5 Proposed Stormwater Design

FDEP, NWFWMD and Bay County regulations require water quality treatment and flood control for the proposed project. The water quality treatment is the first one-inch of runoff from the contributing drainage area. FDEP and NWFWMD design criteria for flood control requires the post-development peak discharge rate for the 25-year, 24-hour storm to be less than the pre-development runoff peak discharge rate from the 2-year, 24-hour storm. Other governing criteria includes a minimum 3-inches of freeboard from the top of pond and the ability of the outfall structures to handle the 100-year storm event without overtopping the pond. The proposed stormwater designs for Pond 1 and Pond 2 are shown in Table 5.1 and Figure 5.2 below and in the drawings of Attachment B.

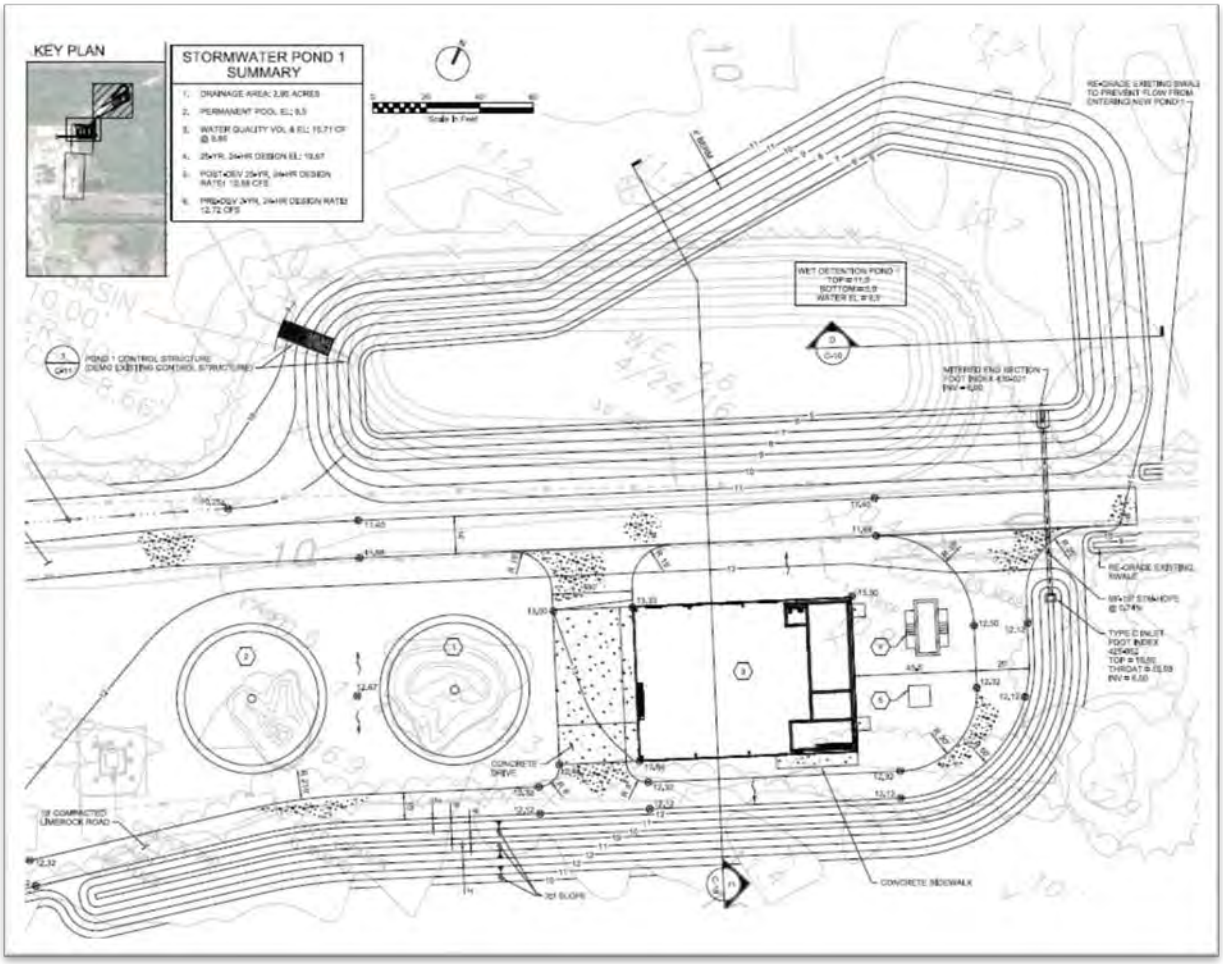


Figure 5.1 – Wet Detention Stormwater Pond 1
See Dwg C-07 (Attachment B)

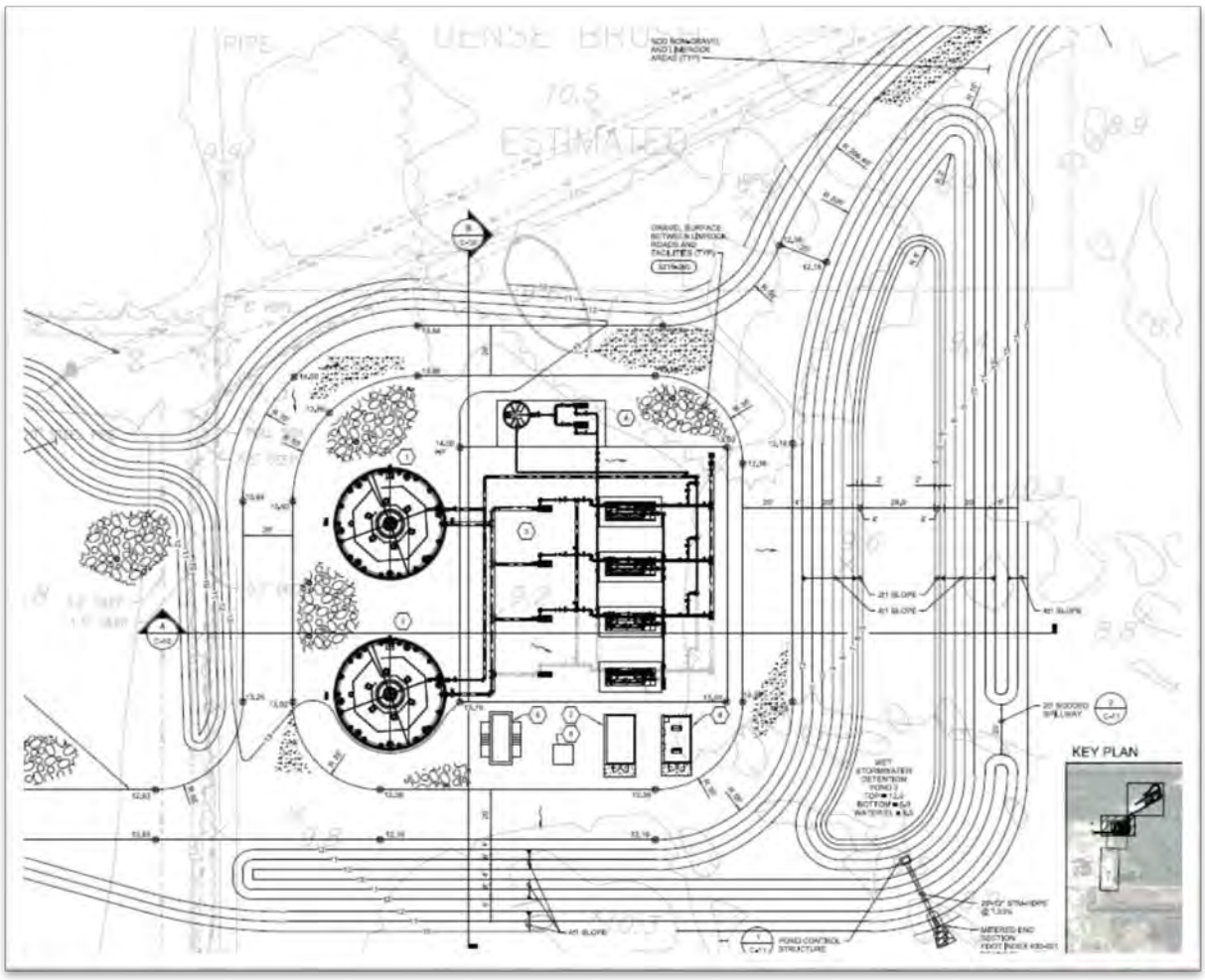


Figure 5.2 – Wet Detention Stormwater Pond 2
See Dwg C-06 (Attachment B)

5.5.1 Layout and Volume

Attachment B shows the proposed construction drawings for the proposed wet detention stormwater ponds. Major features of Pond 1 include a weir wall control structure that also serves as the emergency spillway. The bottom side slopes are 2:1 (horizontal to vertical) from elevation 5.0 ft to 7.0 ft. The side slopes are 4:1 between elevations 7.0 ft and 9.0 ft and then become 6:1 up to the top of bank at 11.0 ft. The total volume of the detention pond from the bottom elevation at 5.0 feet to the top at 11.0 FT is 3.43 acre-ft, (Attachment F). The total depth of the pond is about 4.5 feet with an additional 1.5 feet of storage for water quality treatment and storage. The depth of the permanent pool is 4.50 feet and the associated water elevation is 9.50 feet.

Major features of Pond 2 include a control structure and emergency spillway. The bottom side slopes are 2:1 (horizontal to vertical) from elevation 5.0 ft to 7.0 ft. The side slopes then become 4:1 to elevation 12.0 ft. The total volume of the detention pond from the bottom elevation at 5.0 feet to the top at 12.0 FT is 2.25 acre-ft (Attachment F). The total depth of the pond is about 4.5 feet with an additional 2.5 feet of storage for water quality treatment and storage. The depth of the permanent pool is 4.50 feet and the associated water elevation is 9.50 feet.

5.5.2 Outlet Control Structure

A control structure controls the rate of stormwater leaving a wet detention stormwater pond. Pond 1 proposed control structure is shown in Figure 5.3 and Dwg C-11 (Attachment B). It is a rectangular weir wall with an opening width of 5.33 ft and invert elevation of 9.86. The weir wall has a 1.5-inch treatment volume orifice at elevation 9.50 ft which maintains the wet permanent pool volume.

Pond 2 proposed control structure is shown in Figure 5.4 and Dwg C-11 (Attachment B). It is a modified FDOT Type C Inlet, Index No. 232. The control structure has a 1.1-inch treatment volume orifice at elevation 9.50 ft, a top grate weir at elevation 10.83 ft, and a 24-inch slotted weir at elevation 10.17 ft. The orifice maintains the wet permanent pool volume and a 12" HDPE outfall pipe discharges to the wetland at elevation 9.0 ft, which is approximately existing grade adjacent to drainage area DA-2. The 24-inch slotted weir is above the water quality treatment volume. Other features of the control structure include a fiberglass baffle and a concrete maintenance pad below the orifice to prevent vegetative growth under the orifice and weir.

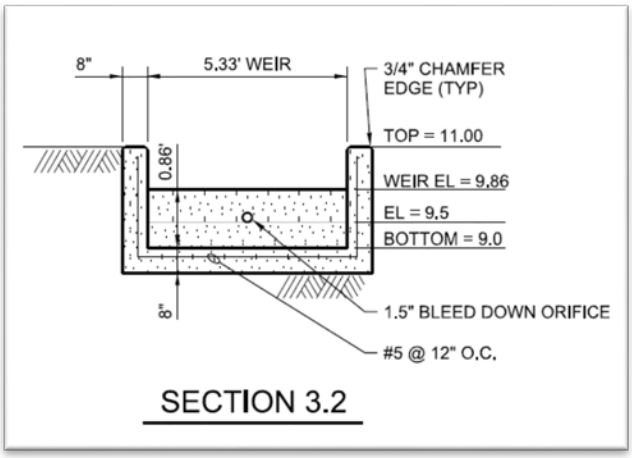


Figure 5.3 – Wet Detention Pond Control Structure for Pond 1
See Dwg C-11 of Attachment B

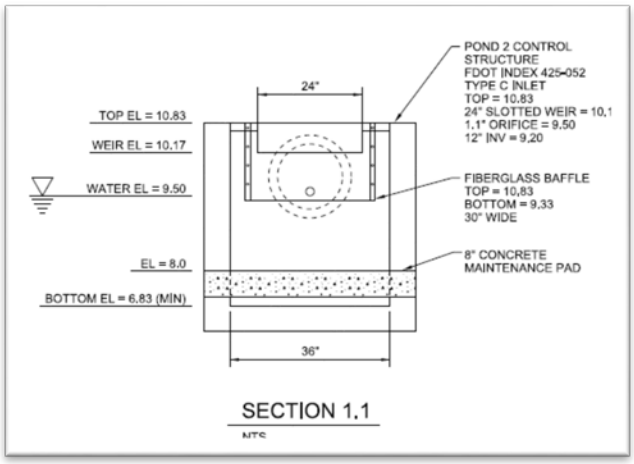


Figure 5.4 – Wet Detention Pond Control Structure for Pond 2
See Dwg C-11 of Attachment B

5.5.3 Water Quality Treatment Volume

The required water quality treatment volume is the first one-inch of runoff from the post development drainage areas as calculated below and presented in Attachment F.

Water Quality Treatment Volume = 1-inch x (1 ft/12 in) x area in acres

Drainage Area DA-1
0.246 acre-ft = 1-inch x 1 ft / 12 in x 2.95 acres
= 10,710 cubic feet (CF)

Drainage Area DA-2
0.15 acre-ft = 1-inch x 1 ft / 12 in x 1.79 acres
= 6,498 cubic feet (CF)

Each wet detention stormwater pond must detain their associated water quality treatment volume and slowly release one-half the volume within 48 to 60 hours through a control orifice. The volume must also be contained below any other discharge outlets.

With the proposed geometry of Pond 1 and its permanent pool volume (PPV) set at elevation 9.50 ft, the required 10,710 CF of water quality treatment volume stages 0.36 feet higher to an elevation of 9.855 ft. The provided treatment volume below the 5.33-feet wide rectangular weir wall at elevation 9.86 FT is 10,862 CF. Therefore, Pond 1 proposed wet detention pond provides sufficient water quality treatment.

With the proposed geometry of Pond 2 and its permanent pool volume (PPV) set at elevation 9.50 ft, the required 6,498 CF of water quality treatment volume stages 0.39 feet higher to an elevation of 9.89 ft. The provided treatment volume below the 24-inch slotted weir at elevation 10.17 FT is 11,489 CF. Therefore, Pond 2 proposed wet detention pond provides sufficient water quality treatment.

The References and Design Aids for Environmental Resource Permit Applicant's Handbook, Volume II, (Handbook) was used to size the treatment volume orifice. A 1.5-inch orifice for Pond 1 and a 1.1-inch orifice for Pond 2 was calculated to meet the drawdown criteria. With the before-mentioned heads of water above the control orifices, the maximum flows are calculated to be 0.03 CFS for the 1.5-inch orifice in Pond 1 and 0.02 CFS for the 1.1-inch orifice in Pond 2, (Attachment F). Each orifices performance was further analyzed in a drawdown analysis from Autodesk® Storm & Sanitary Analysis, (Attachment G). The drawdown graph from this analysis is shown in Figure 5.4. The figure shows that one-half of the treatment volume is discharged between 48 and 60 hours for both ponds, individually.

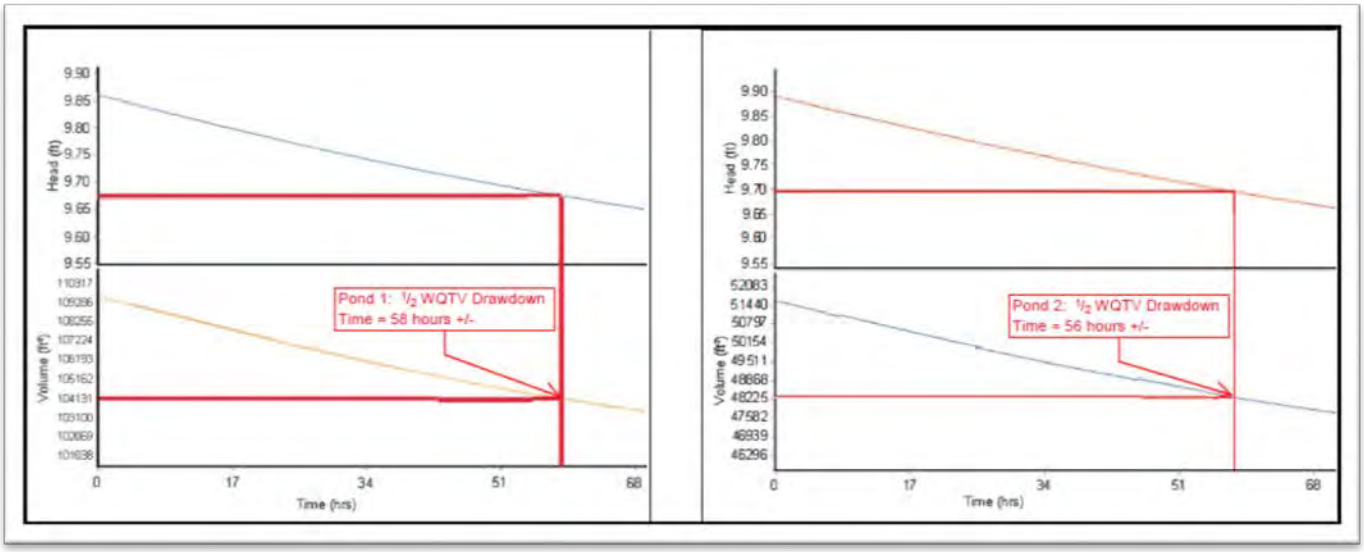


Figure 5.4 – Water Quality Treatment Volume Drawdown
Attachment F

5.5.4 Permanent Pool Volume

The permanent pool volume (PPV) for the proposed wet detention pond was sized in accordance with the Handbook to provide 14-day residence time for average wet season rainfall conditions and without a planted littoral zone. The minimum permanent pool calculation is provided below and in Attachment F.

- Minimum PPV = (1.5 x DA x C x R x RT) / (WS x CF)
    - DA = Drainage area to Pond (acres)
    - C = Runoff coefficient
    - R = Wet season rainfall depth (in)
    - RT = Residence time (days)
    - WS = Length of wet season (days)
    - CF = Conversion Factor 12 in/ft
    - 1.5 = factor for 50% larger PPV if not planting littoral zone per Handbook

Pond 1: 0.96 AC-FT = (1.5 x 2.95 ac x 0.78 x 29 in x 14 days) / (122 days x 12)

Pond 2: 0.60 AC-FT = (1.5 x 1.79 ac x 0.80 x 29 in x 14 days) / (122 days x 12)

The designed PPVs are 2.27 AC-FT for Pond 1 and 1.03 AC-FT for Pond 2, which are 136% and 72% more than required minimum permanent pool volumes of 0.96 AC-FT and 0.60 AC-FT, respectively.

5.5.5 Mean Depth

The mean depth of the permanent pool must be between 2 and 8 feet according to the Handbook. The mean depth of the pond is calculated by dividing the permanent pool volume by the area of the pond measured at the control elevation (A_P). The mean depth calculation is provided below and in Attachment F.

- Mean Depth = PPV / A_P

  Pond 1: 3.41 ft = 2.27 AC/FT / 0.67 acres Pond 2: 2.88 ft = 1.03 AC/FT / 0.36 acres

The mean depths of 3.41 ft for Pond 1 and 2.88 ft for Pond 2 are between the required 2 and 8 feet.

5.5.6 Design Storm Stages and Discharge Rates

The proposed wet detention ponds were designed to meet the flood control requirements for FDEP, NWFWMD and Bay County. For Bay County requirements, a wet detention pond is required to discharge at a post development rate less than pre-development conditions for all the design storms from the 1-year to the 100-year. To meet FDEP/NWFWMD criteria, a pond's 25-year, 24-hour post development discharge rate is required to be less than the pre-development 2-year, 24-hour discharge rate.

Table 5.2 presents the modeling results from Autodesk® Storm and Sanitary Analysis in Attachment G. Two separate modeling runs were created. One was for the existing drainage areas PDA-1 and PDA-2 to determine pre-development runoff rates. The other modeling run was for proposed conditions of DA-1 and DA-2 to determine post-development runoff rates and pond stages.

Pond 1 proposed conditions use a storage node for the wet detention pond; a rectangular weir with both ends contracting and a circular side flow orifice that represent the weir wall control structure. The weir and orifice discharge from the storage node to separate outfall nodes. Pond 1 design uses the rectangular weir wall as the overflow structure.

Pond 2 proposed conditions use a storage node for the wet detention pond; a rectangular side flow orifice, a rectangular bottom flow orifice, and a circular side flow orifice that represent the control structure; a junction in which the orifices discharge into; a pipe link that flows from the control structure to an outfall node; and a long, non-contracting trapezoidal weir representing the overflow structure which discharges to a separate outfall.

For all the design storms, the post-development discharge rate is less than the pre-development discharge rate, and therefore, meet Bay County criteria. For the 25-year, 24-hour storm, the maximum storm elevation is 10.67 ft for Pond 1 and 11.08 ft for Pond 2, which is 0.33 feet and 0.92 feet from the top of bank, respectively. The peak discharge rates from this storm is 12.58 CFS for Pond 1 and 6.14 CFS for Pond 2, which are less than the respective pre-development discharge rates of 12.72 CFS for DA-1 and 6.39 CFS for DA-2 from the 2-year, 24-hour storm. Therefore, both wet detention stormwater ponds meet the water quantity criteria of the FDEP/NWFWMD.

Table 5.2 – Design Storm Stages and Discharge Rates for the Modified Wet Detention Pond (*Pond 1*)
Calculated using Autodesk® Storm and Sanitary Analysis

Design Storm	Pre-Development Peak Discharge (CFS)	Post Development Peak Discharge (CFS)	Peak Elevation (FT-NAVD88)	Comment
1-year	9.85	3.88	10.22	Flows over weir wall at 9.86; ≥ 3" below TOB
2-year	12.72	6.00	10.35	Flows over weir wall at 9.86; ≥ 3" below TOB
5-year	16.29	8.27	10.47	Flows over weir wall at 9.86; ≥ 3" below TOB
10-year	20.23	10.81	10.59	Flows over weir wall at 9.86; ≥ 3" below TOB
25-year	23.14	12.58	10.67	Flows over weir wall at 9.86; ≥ 3" below TOB
50-year	26.64	14.67	10.76	Flows over weir wall at 9.86; below TOB
100-year	29.56	16.40	10.83	Flows over weir wall at 9.86; below TOB

See Attachment G for Autodesk® Storm & Sanitary Analysis Output

Table 5.3 – Design Storm Stages and Discharge Rates for the New Wet Detention Pond (*Pond 2*)
Calculated using Autodesk® Storm and Sanitary Analysis

Design Storm	Pre-Development Peak Discharge (CFS)	Post Development Peak Discharge (CFS)	Peak Elevation (FT-NAVD88)	Comment
1-year	4.56	0.96	10.43	Below top of control structure at 10.83
2-year	6.39	2.03	10.60	Below top of control structure at 10.83
5-year	8.53	3.24	10.79	Below top of control structure at 10.83
10-year	11.09	4.54	10.97	Just below emergency overflow spillway at 11.00
25-year	12.92	6.14	11.08	Above emergency overflow spillway and 0.92 ft of freeboard from top of pond at 12.00
50-year	14.97	8.91	11.15	Above emergency overflow spillway and 0.85 ft of freeboard from top of pond at 12.00
100-year	16.79	11.26	11.20	Above emergency overflow spillway and 0.80 ft of freeboard from top of pond at 12.00

See Attachment G for Autodesk® Storm & Sanitary Analysis Output

5.5.7 Emergency Overflow Weir

Pond 1 utilizes the top of the weir wall as its proposed emergency overflow weir. It is designed with the top of wall at the calculated 100-year 24-hr storm event elevation of 10.83. Above the 5.33 ft wide rectangular weir, water is able to flow freely between banks.

Pond 2 proposed emergency overflow weir (DWG C-11, Attachment B) is a 20-ft wide sodded weir in the wet detention stormwater pond's east embankment that will discharge to the wetland to the east. The elevation of the overflow weir is 11.0 ft, which is 1.0 foot below the top of the pond at 12.0 ft. Per Bay County requirements, the weir must pass the 25-year, 24-hour storm with three inches of freeboard. The proposed design safely passes the 25-year storm at elevation 11.20 ft, which provides over 9-inches of freeboard and is therefore sufficient.

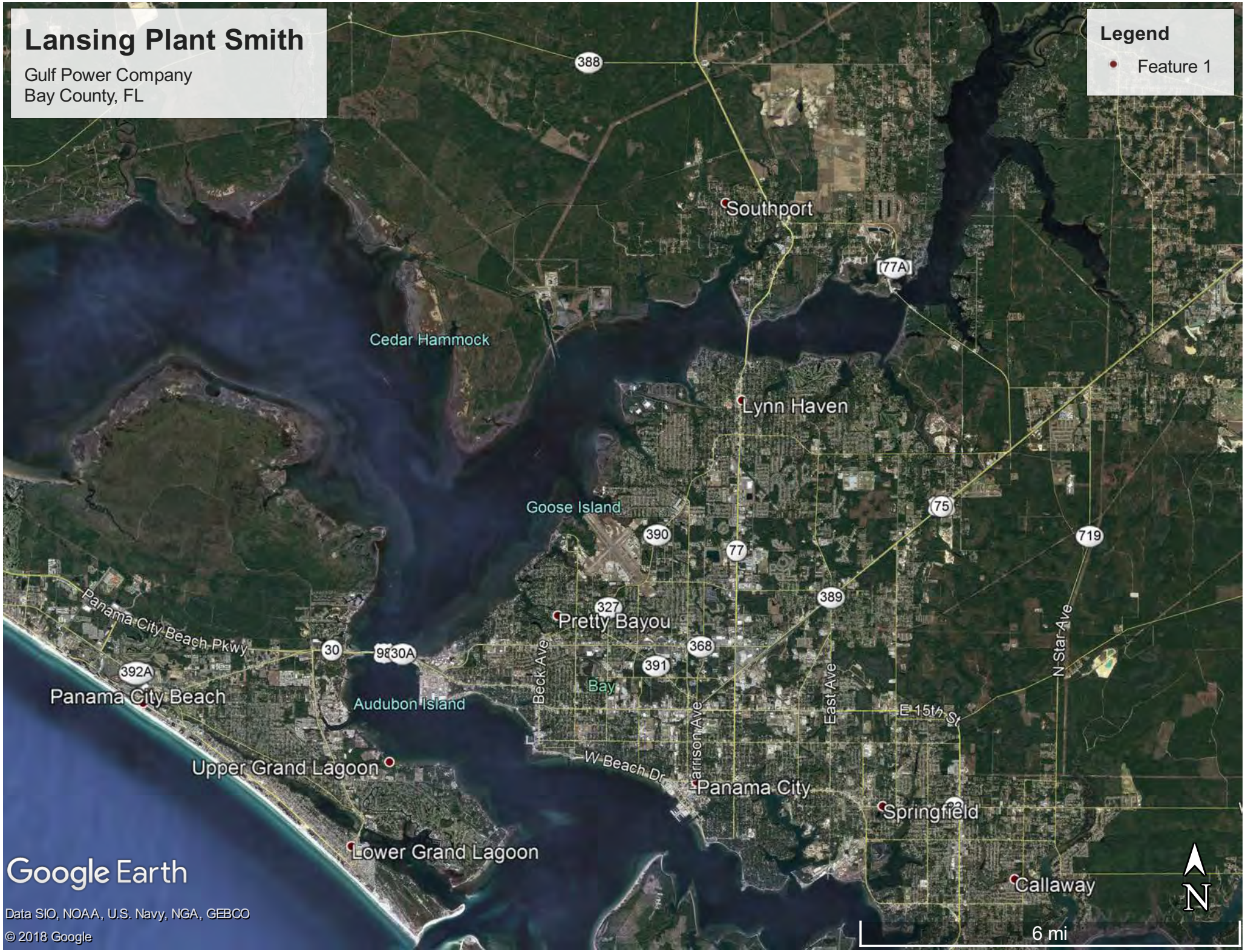
6.0 Temporary Construction Staging Area

Attachment H contains the plan for the temporary construction staging area and the calculations for the temporary sediment basin. The temporary sediment basin receives runoff from the staging area and is based on the guidelines from Chapter 3.7 of the Florida Stormwater Erosion and Sedimentation Control Inspectors Manual, July 2018 (Manual).

The Manual requires that temporary sediment basins provide 3,600 cubic feet of storage per acre of disturbed area and the basin shall remain until final stabilization of the site. The sediment basin has two control structures, a floating skimmer and emergency spillway. The sediment basin is 2 feet deep and follows the north and east perimeter of the staging area. The total volume of the sediment basin is 10,466 CF from the top (12.0) and 6,754 CF below the emergency spillway (11.50). The minimum required storage volume from the 1.6-acre drainage area is 5,904 CF. Therefore, the sediment basin has sufficient storage. A 1.5” skimmer design (equivalent to Fairlcoth Skimmer) is proposed that will discharge 1.2 CFS. The 20-ft wide spillway at elevation 11.50 is capable of passing the 10-year, 24-hour maximum discharge rate.

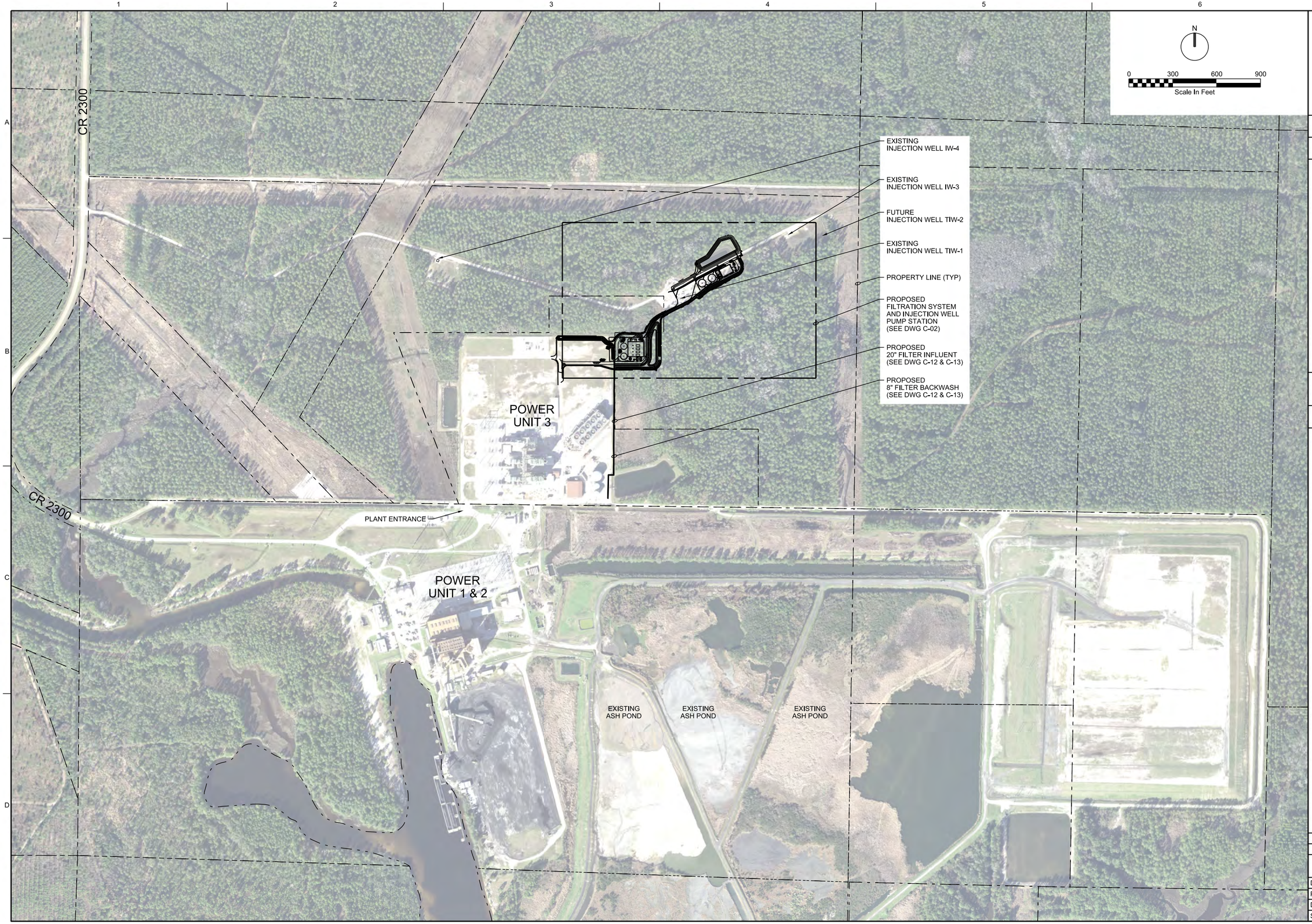
Attachment A

Site Location Map


Lansing Plant Smith
Gulf Power Company
Bay County, FL
Legend
Feature 1
388
Southport
77A
Cedar Hammock
Lynn Haven
Goose Island
75
390
77
719
389
327
Pretty Bayou
Panama City Beach Pkwy
30
98
30A
368
391
392A
Panama City Beach
Audubon Island
Beck Ave
Bay
East Ave
N Star Ave
E 15th St
W Beach Dr
Panama City
Springfield
Upper Grand Lagoon
Lower Grand Lagoon
Callaway
Google Earth
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
© 2018 Google
N
6 mi

Attachment B

Plans (11” x 17”)



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		A MALONE	C CHILDRESS		APVD

REVISION BY

A MALONE

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GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
OVERALL
SITE PLAN

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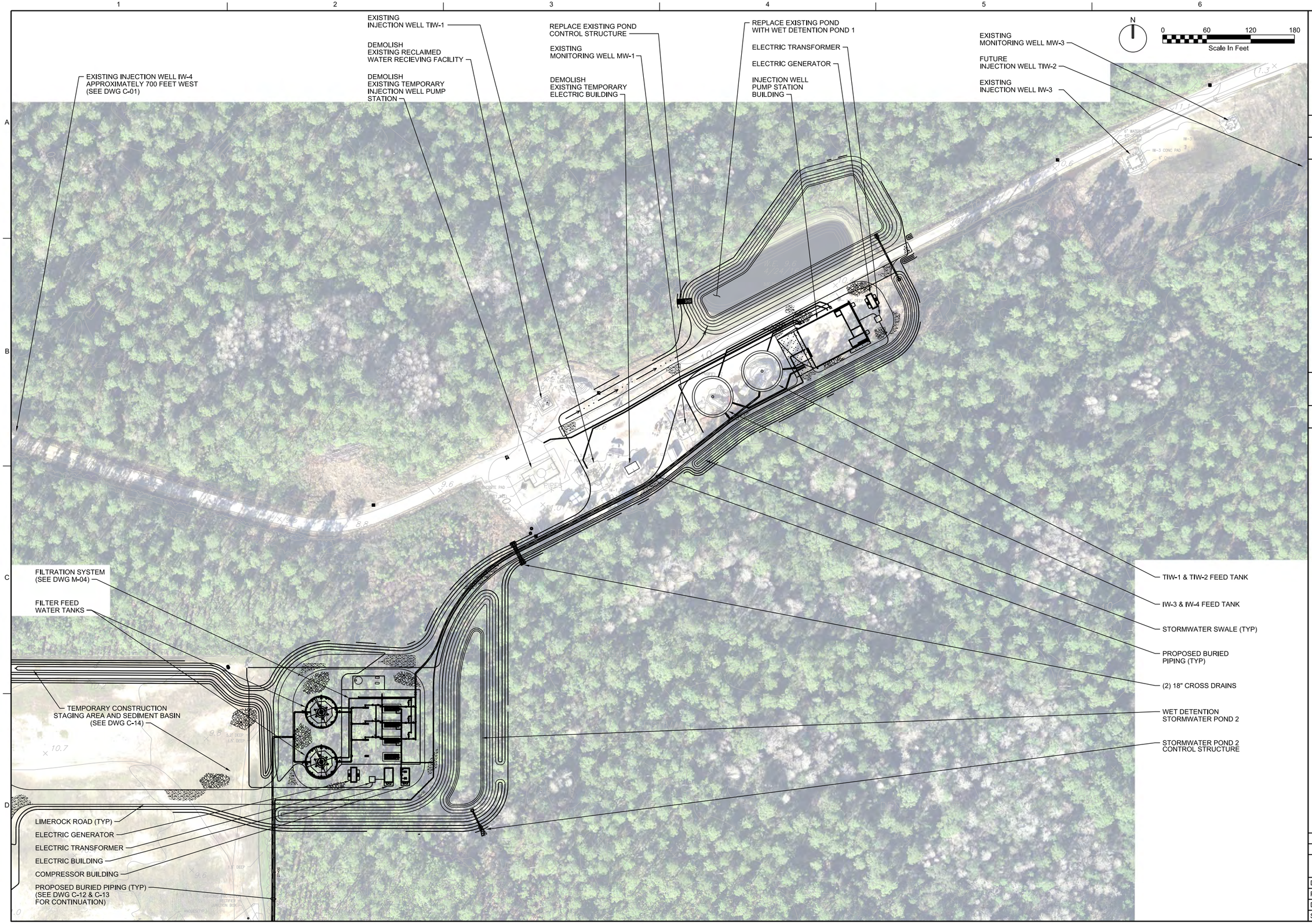
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-01
SHEET	of



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DWG	C-02
SHEET	of

IMPACT SUMMARY

1. TOTAL PROJECT AREA = 8.69 AC
   (LIMITS OF DISTURBANCE)
2. WETLAND IMPACT AREA = 2.04 AC
3. 25 FT SECONDARY WETLAND IMPACT = 1.13 AC
4. TOTAL WETLAND & SECONDARY IMPACT AREA = 3.17 AC
5. UPLAND IMPACT AREA = 6.65 AC

* WETLANDS DELINEATION WAS PERFORMED BY JEFF COLE OF GULF POWER COMPANY.

EROSION CONTROL NOTES

1. CLEAR AND GRUB PATH FOR SILT FENCE INSTALLATION.
2. INSTALL SILT FENCE.
3. PREPARE TEMPORARY CONSTRUCTION STAGING AREA AND ASSOCIATED TEMPORARY SEDIMENT BASIN.
4. PARTIALLY EXCAVATE WET DETENTION STORMWATER POND AND SWALE TO SERVE AS TEMPORARY SEDIMENT BASIN.
5. ADD FILL AND GRADE PER PLAN. TEMPORARILY SEED AND MULCH DISTURBED AREAS DURING CONSTRUCTION.
6. CONSTRUCT IMPROVEMENTS PER THE PLANS.
7. BAHIA SOD AND SEED DISTURBED AREAS PER THE PLANS.

QUANTITIES

1. CUT VOLUME = 4,571 CY
2. FILL VOLUME = 11,540 CY *
3. NET FILL = 6,969 CY
4. LIMEROCK AND GRAVEL AREAS = 1.40 AC
5. PADS, TANKS AND STRUCTURES = 0.64 AC
6. PONDS AND SWALE AREAS = 1.55 AC

* FILL NOT INCLUDED FOR TEMPORARY / CONSTRUCTION STAGING AREA

EXISTING INJECTION WELL TIW-1
DEMOLISH EXISTING RECLAIMED WATER RECIEVING FACILITY
DEMOLISH EXISTING TEMPORARY INJECTION WELL PUMP STATION
EXISTING MONITORING WELL MW-1
DEMOLISH EXISTING TEMPORARY ELECTRIC BUILDING
INJECTION WELL FEED TANKS
REPLACE EXISTING POND WITH WET DETENTION POND 1
INJECTION WELL PUMP STATION BUILDING
EXISTING MONITORING WELL MW-3
EXISTING INJECTION WELL IW-3
25' WETLAND SETBACK
ASSUMED WETLAND LIMITS BASED ON AERIAL IMAGE AND SITE VISIT
PROPOSED LIMITS OF DISTURBANCE FOR CONSTRUCTION (UPLAND & WETLANDS) AREA = 8.65 ACRES
SILT FENCE (TYP)
TEMPORARY SEDIMENT BASIN (SEE DWG C-14)
TEMPORARY CONSTRUCTION STAGING AREA (SEE DWG C-14)
PROPOSED LIMEROCK ROAD TO CONNECT TO EXISTING LIMEROCK ROAD
WETLAND IMPACT AREA = 2.04 AC (SEE DWG C-13 FOR CONTINUATION)
EXISTING BURIED PIPING (TYP)
PROPOSED BURIED PIPING (TYP)
25 FT SECONDARY WETLAND IMPACTS AREAS = 1.13 ACRES
WETLAND LIMITS FROM ONSITE DELINEATION (TYP)
WET DETENTION STORMWATER POND 2
FILTRATION SYSTEM
FILTER FEED WATER TANKS

N
0 60 120 180
Scale In Feet

LEGEND

- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER

NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
	A MALONE		C CHILDRESS		APVD	A MALONE	

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DWG	C-03
SHEET	of

NOTES

1. SEE DWG C-03, WETLAND IMPACTS, FOR SUMMARY OF WORK WITHIN THE WETLANDS, UPLANDS AND BUFFERS.
2. THE SILT FENCE WITHIN THE WETLAND SHALL BE INSTALLED BY CLEARING AND GRUBBING A 10' MAXIMUM STRIP PRIOR TO ANY OTHER CLEARING WORK WITHIN THE WETLANDS. SILT FENCE SHALL BE PLACED AT THE EDGE OF THE CLEARING LIMITS.
3. THE PROPOSED STORMWATER WET DETENTION POND SHALL BE CONSTRUCTED AFTER CLEARING AND GRUBBING. IT SHALL SERVE AS THE SEDIMENT BASIN DURING CONSTRUCTION AND FILL PLACEMENT. STAGE CONSTRUCTION OF THE POND TOP WITH FILL PLACEMENT FOR POSITIVE FLOW INTO THE POND.
4. TEMPORARILY SEED AND MULCH DISTURBED AREAS IF THOSE AREAS WILL REMAIN UNIMPROVED WITH A FINAL SURFACE TREATMENT FOR MORE THAN 7 DAYS.

LEGEND

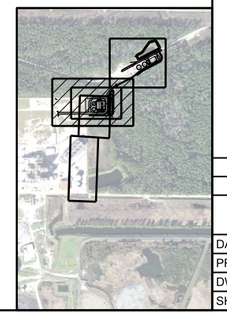
- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER

N

0 30 60 90
Scale In Feet

DEMOLISH EXISTING RECLAIMED WATER RECEIVING FACILITY
DEMOLISH EXISTING INJECTION WELL PUMP STATION
PROVIDE BREAK IN SILT FENCE FOR EXISTING DRIVE
MATCH LINE SEE DWG C-05
DEMOLISH EXISTING FENCE
WETLAND LIMITS (TYP)
(2) 18" CROSS DRAINS
25' SECONDARY WETLAND IMPACTS (TYP)
WETLAND IMPACTS (TYP)
SILT FENCE (SEE NOTE 2) 3125-165
WET DETENTION POND 2 TO BE USED AS SEDIMENT TRAP (SEE NOTE 3 AND DWG C-06)
PROPOSED FILTRATION FACILITY (SEE DWG C-06)
POND CONTROL STRUCTURE (SEE NOTE 3 AND DWG C-06)
25' WETLAND BUFFER (TYP)
OVERFLOW WEIR (SEE DWG C-14)
SKIMMER (SEE DWG C-14)
TEMPORARY SEDIMENT BASIN (SEE DWG C-14)
TEMPORARY CONSTUCTION STAGING AREA (SEE DWG C-14)
EXISTING BURIED PIPING (TYP)
PROPOSED BURIED PIPING (TYP)
DEMO EXISTING FENCE
TEMPORARY SEED & MULCH DURING CONSTRUCTION (TYP)
LIMITS OF CLEARING (TYP)
SEE DWG C-12 & C-13 FOR SILT FENCE CONTINUATION FOR YARD PIPE INSTALLATION
28+00
29+00
30+00

KEY PLAN



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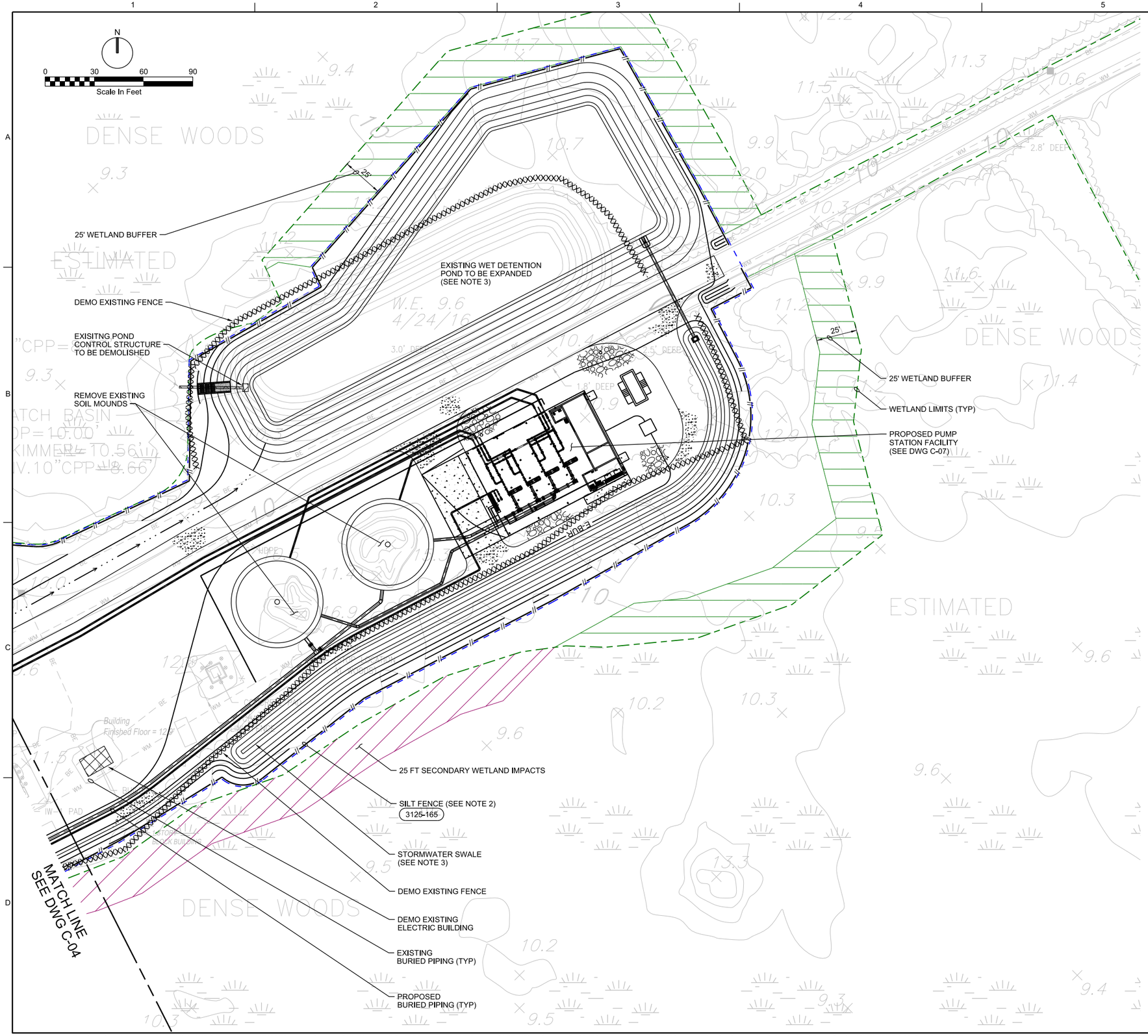


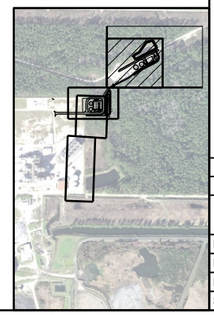
NOTES

1. SEE DWG C-03, WETLAND IMPACTS, FOR SUMMARY OF WORK WITHIN THE WETLANDS, UPLANDS AND BUFFERS.
2. THE SILT FENCE SHALL BE INSTALLED PRIOR TO ANY OTHER CLEARING WORK WITHIN THE UPLOADS OR WETLANDS. SILT FENCE SHALL BE PLACED AT THE EDGE OF THE CLEARING LIMITS.
3. THE PROPOSED STORMWATER SWALE ON THE SOUTH SIDE OF THE EXISTING ROAD SHALL BE USED AS A TEMPORARY SEDIMENT BASIN. STAGE CONSTRUCTION OF THE SWALE WITH FILL PLACEMENT FOR POSITIVE FLOW INTO THE SWALE. THE EXISTING WET DETENTION POND SHALL BE EXPANDED AND RECEIVE DISCHARGE FROM THE PROPOSED STORMWATER SWALE.
4. TEMPORARILY SEED AND MULCH DISTURBED AREAS IF THOSE AREAS WILL REMAIN UNIMPROVED WITH A FINAL SURFACE TREATMENT FOR MORE THAN 7 DAYS.

LEGEND

- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER

KEY PLAN



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0 1"

DATE	FEBRUARY 2019
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DWG	C-05
SHEET	of

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SHEET KEY NOTES

1. FILTER FEED WATER TANK 1, TOC = 13.67
2. FILTER FEED WATER TANK 1, TOC = 13.67
3. FILTRATION SYSTEM PAD, HP TOC = 14.00
4. FILTRATION BACKWASH TANK PAD, HP TOC = 13.85
5. ELECTRIC GENERATOR PAD, TOC = 13.50
6. ELECTRIC TRANSFORMER PAD, TOC = 13.00
7. ELECTRIC GENERATOR BUILDING, FF = 13.00
8. COMPRESSOR BUILDING FF = 13.00

STORMWATER POND 2 SUMMARY

1. DRAINAGE AREA: 1.79 ACRES
2. PERMANENT POOL EL: 9.5
3. WATER QUALITY VOL & EL: 6,498 CF @ 9.89
4. 25-YR, 24-HR DESIGN EL: 11.08
5. 25-YR, 24-HR DESIGN EL: 6.14 CFS
6. PRE-DEV 2-YR, 24-HR DESIGN RATE: 6.39 CFS
7. 100-YR, 24-HR DESIGN EL: 11.26

N

0 20 40 60
Scale In Feet

MITERED END SECTION, MULTIPLE FDOT INDEX 430-021 (TYP)

(2) 34' - 18" STM-HDPE @ 0.59%

TAPER LIMEROCK DRIVE FROM 20' WIDE TO 10' WIDE
3215-270

SOD NON-GRAVEL AND LIMEROCK AREAS (TYP)

MATCH LINE SEE DWG C-07

GRAVEL SURFACE BETWEEN LIMROCK ROADS AND FACILITIES (TYP)
3215-260

EXISTING BURIED PIPING (TYP)

TEMPORARY SEDIMENT BASIN (SEE DWG C-14)

TEMPORARY CONSTRUCTION STAGING AREA (SEE DWG C-14)

20' COMPACTED LIMEROCK ROAD
3215-270

B C-10

A C-10

1 C-11 POND CONTROL STRUCTURE

2 C-11 20' SODDED SPILLWAY

WET STORMWATER DETENTION POND 2
TOP = 12.0
BOTTOM = 5.0
WATER EL = 9.5

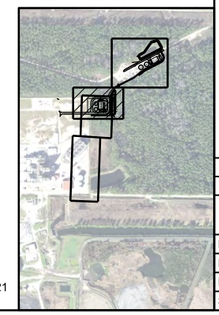
2:1 SLOPE

4:1 SLOPE

29'-12" STM-HDPE @ 1.03%

MITERED END SECTION FDOT INDEX 430-021 INV = 8.90

KEY PLAN



NO.	DATE	DSGN	DR	REVISION	CHK	APVD	BY	APVD
		A MALONE	C CHILDRESS				A MALONE	

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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
GRADING AND LAYOUT PLAN 1

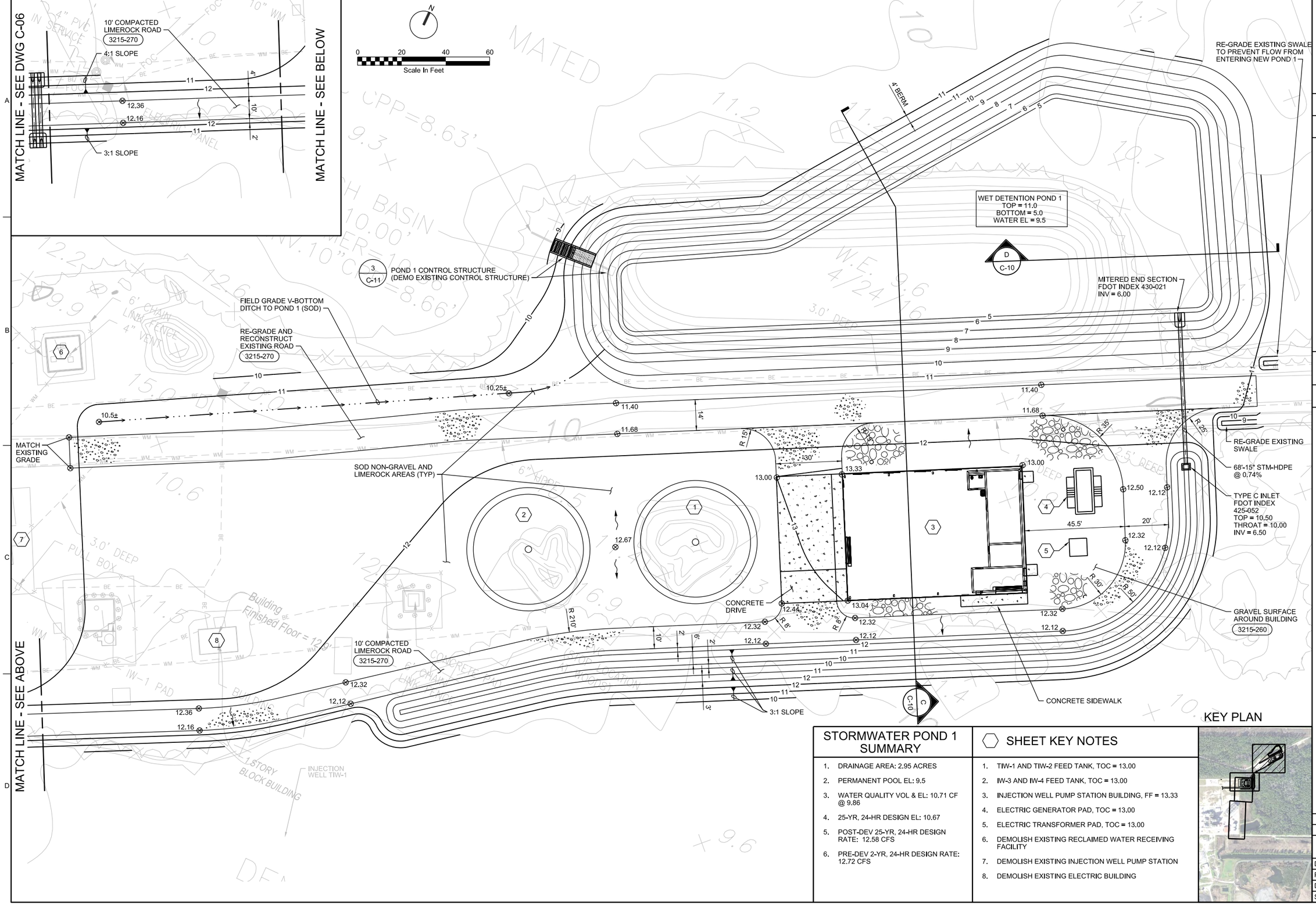
90% DESIGN - NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-06
SHEET	of

pw://projectwise.ch2m.com:CH2MHILL_WBG/Documents/474927&space;-&space;GULF&space;POWER&space;PLANT&space;SMITH/Plant&space;Smith/D&space;-&space;(PTS)&space;FiltrationSystemAndInjectionWellPumpStation/CI/Div/PTS-005-C-201_474927

FILENAME: PTS-005-C-201_474927.dgn PLOT DATE: 2/19/2019 PLOT TIME: 6:39:20 AM



STORMWATER POND 1 SUMMARY

1. DRAINAGE AREA: 2.95 ACRES
2. PERMANENT POOL EL: 9.5
3. WATER QUALITY VOL & EL: 10.71 CF @ 9.86
4. 25-YR, 24-HR DESIGN EL: 10.67
5. POST-DEV 25-YR, 24-HR DESIGN RATE: 12.58 CFS
6. PRE-DEV 2-YR, 24-HR DESIGN RATE: 12.72 CFS

SHEET KEY NOTES

1. TIW-1 AND TIW-2 FEED TANK, TOC = 13.00
2. IW-3 AND IW-4 FEED TANK, TOC = 13.00
3. INJECTION WELL PUMP STATION BUILDING, FF = 13.33
4. ELECTRIC GENERATOR PAD, TOC = 13.00
5. ELECTRIC TRANSFORMER PAD, TOC = 13.00
6. DEMOLISH EXISTING RECLAIMED WATER RECEIVING FACILITY
7. DEMOLISH EXISTING INJECTION WELL PUMP STATION
8. DEMOLISH EXISTING ELECTRIC BUILDING

KEY PLAN

NO.	DATE	DR	REVISION	CHK	APVD	BY	APVD
DSGN	A MALONE	C CHILDRESS				A MALONE	

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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
GRADING AND LAYOUT PLAN 2

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-07
SHEET	of

SHEET KEY NOTES

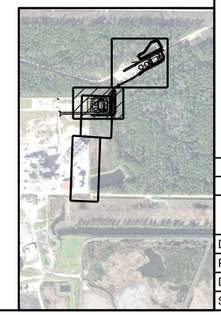
1. FILTER FEED WATER TANK 1, TOC = 13.67
2. FILTER FEED WATER TANK 1, TOC = 13.67
3. FILTRATION SYSTEM PAD, HP TOC = 14.00
4. FILTRATION BACKWASH TANK PAD, HP TOC = 13.85
5. ELECTRIC GENERATOR PAD, TOC = 13.50
6. ELECTRIC TRANSFORMER PAD, TOC = 13.00
7. ELECTRIC GENERATOR BUILDING, FF = 13.00
8. COMPRESSOR BUILDING FF = 13.00

N

0 20 40 60
Scale In Feet

8" HDPE
3" HDPE
MATCH LINE SEE DWG C-09
E-BUR
20" FE-HDPE (TO INJECTION WELL PUMP STATION)
3" WATER STUB OUT
EXISTING POWER POLE
20" STEEL PIPE
PULL BOX 0.5' DEEP
ELECTRIC SERVICE DROP FOR BURIED SERVICE
SEE DWG M-04 FOR CONTINUATION
0.7' DEEP
5.2' DEEP
1.5' DEEP
8" BWR-HDPE
(1) 8" TEE - HDPE
(2) 8" V-504 (BUTTERFLY)
EXISTING BURIED PIPING (TYP)
20" FI-HDPE (SEE DWG C-12 & 13)
8" BWR-HDPE (SEE DWG C-12 & 13)

KEY PLAN



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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
YARD PIPING PLAN 1

NO.	DATE	DSGN	DR	CHK	APVD
		A MALONE	C CHILDRESS		APVD

REVISION BY APVD
A MALONE

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0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-08
SHEET	of

MATCH LINE - SEE BELOW

N

0 20 40 60
Scale In Feet

10" WM

IW-1 PAD

4" PVC SERVICE

20" FE-HDPE

8" BWR-HDPE

BURIED ELECTRIC CONDUIT

EXISTING BURIED PIPING (TYP)

E-BUR

ELECTRIC PANEL

MATCH LINE SEE DWG C-08

8" IWR-FG
(RETURN TO FEED TANKS)

STUB FOR FUTURE EXTENSION TO TIW-2 AND TIW-3

3.0' DEEP

2.5' DEEP

1.8' DEEP

EXISTING
8" IW-FG TO TIW-4

CONNECT TO EXISTING
8" IW-FG

8" IW-FG
(TO TIW-4)

8" IW-FG
(TO TIW-1)

6' CHAIN LINK FENCE

4" VENT

24" PIPE

WATER LINE
1.0' DEEP

EXISTING 4" WM - PVC

REMOVE EXISTING PIPING AND CONNECT TO INJECTION WELL TIW-1

3.0' DEEP PULL BOX

CHAIN LINK FENCE

E-BUR

SEE DWG M-01
FOR CONTINUATION (TYP)

16" FE-HDPE

8" BW-HDPE

(2) 20" V-504 (BUTTERFLY)
(1) 20" TEE - HDPE

20" FE-HDPE

8" BW-HDPE

BURIED ELECTRIC CONDUIT

CONNECT TO EXISTING
4" POTABLE WATER AND EXTEND
2" W1-HDPE TO BUILDING

MATCH LINE - SEE ABOVE

SHEET KEY NOTES

1. TIW-1 AND TIW-2 FEED TANK, TOC = 13.00
2. IW-3 AND IW-4 FEED TANK, TOC = 13.00
3. INJECTION WELL PUMP STATION BUILDING, FF = 13.33
4. ELECTRIC GENERATOR PAD, TOC = 13.00
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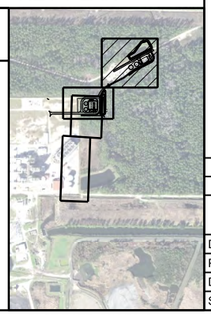
8. DEMOLISH EXISTING ELECTRIC BUILDING

KEY PLAN



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DSGN	A MALONE	C CHILDRESS				A MALONE	

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FILTRATION SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
YARD PIPING
PLAN 2

90% DESIGN - NOT FOR CONSTRUCTION

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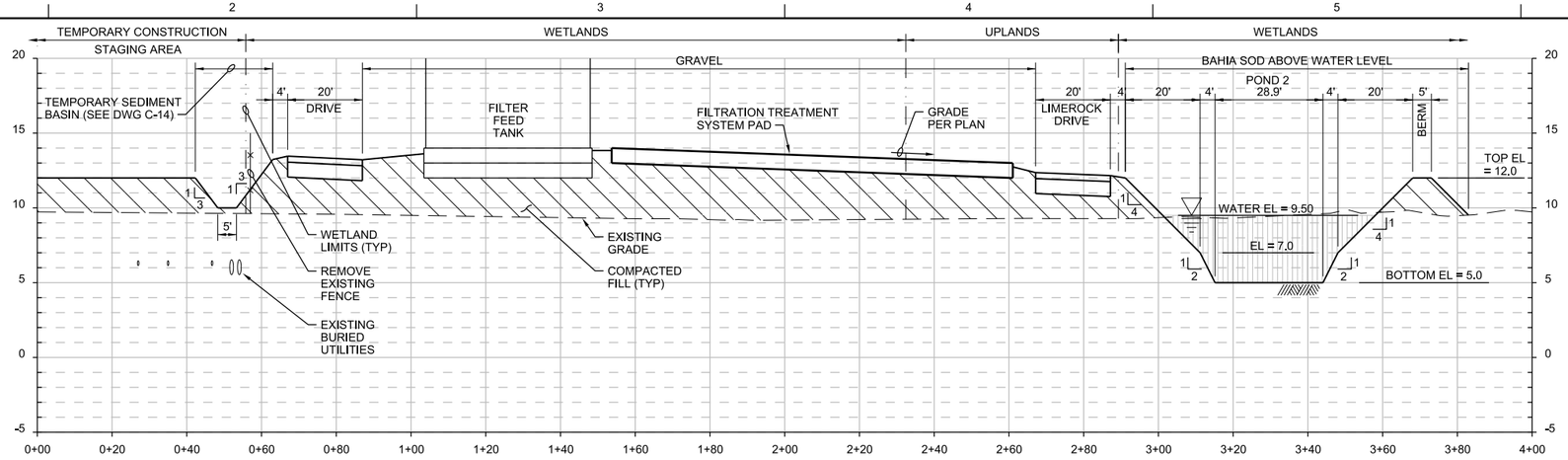
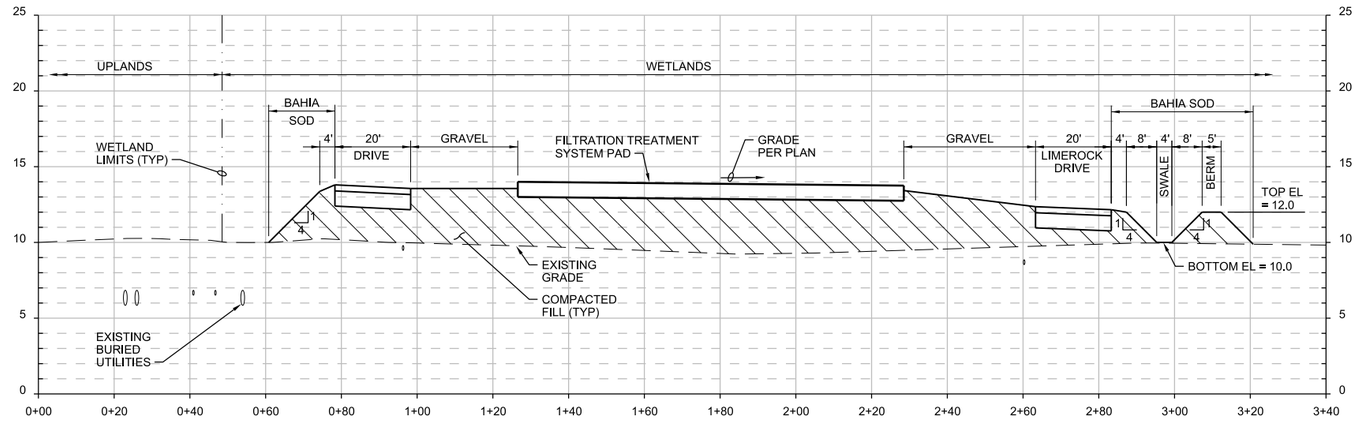
0 1"

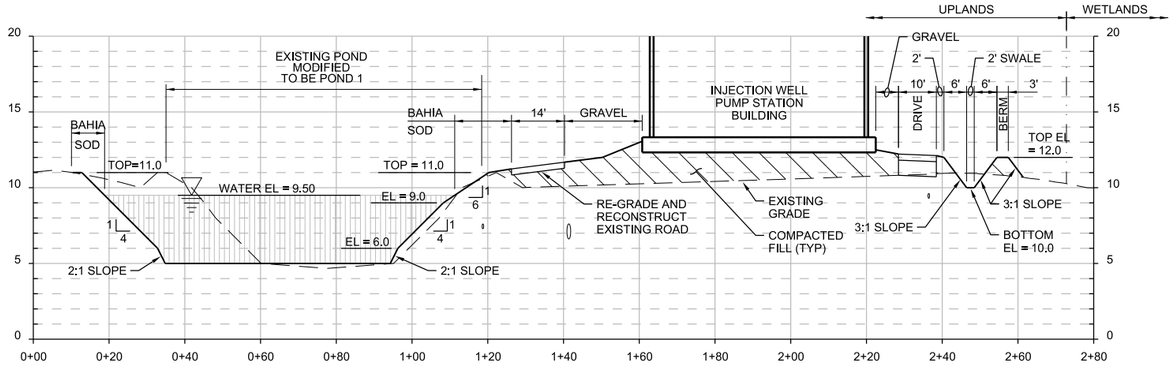
DATE	FEBRUARY 2019
PROJ	474927
DWG	C-09
SHEET	of



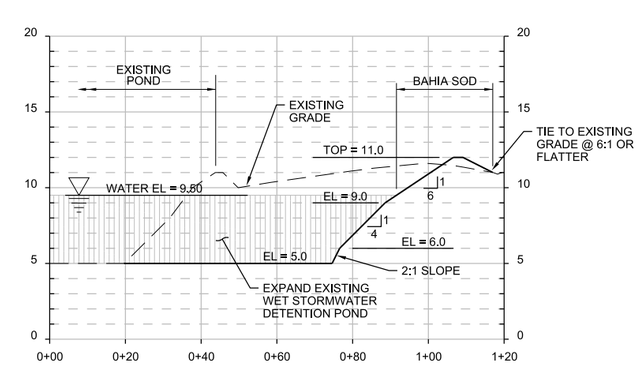
A SECTION
SCALE: 1" = 20' HORIZ
1" = 5' VERT
C-06



B SECTION
SCALE: 1" = 20' HORIZ
1" = 5' VERT
C-06



C SECTION
SCALE: 1" = 20' HORIZ
1" = 5' VERT
C-07



D SECTION
SCALE: 1" = 20' HORIZ
1" = 5' VERT
C-07

NO.	DATE	DR	REVISION	CHK	APVD	BY	APVD
DSGN	A MALONE		C CHILDRESS			A MALONE	

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FILTRATION SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
SITE SECTIONS

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VERIFY SCALE
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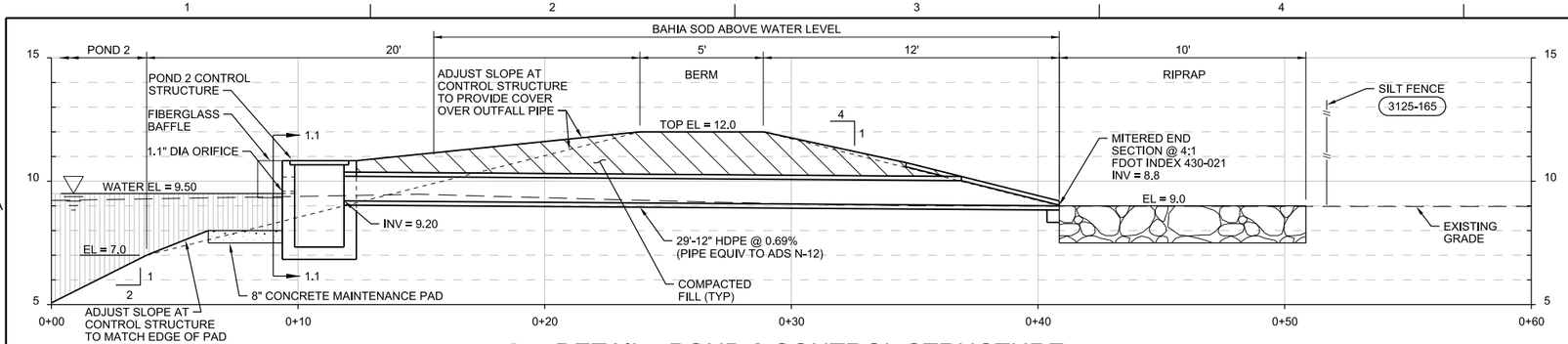
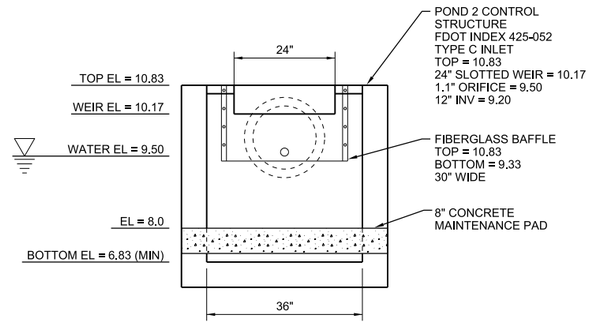
0 1"

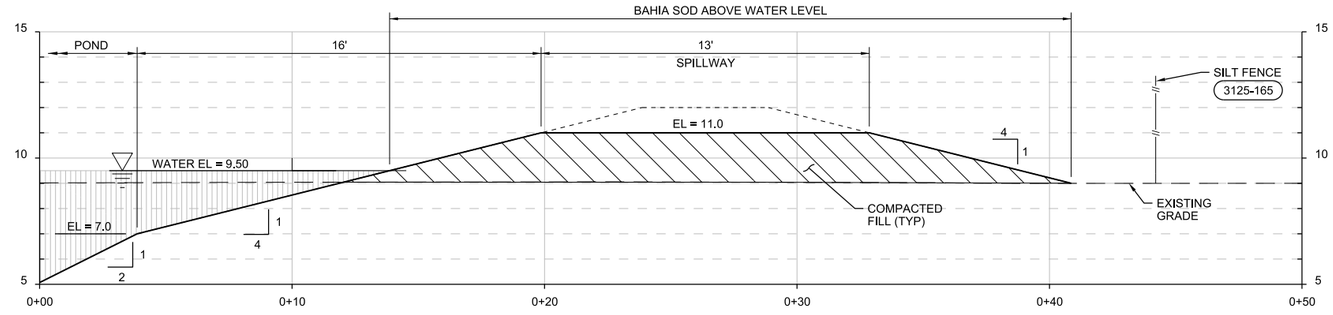
DATE	FEBRUARY 2019
PROJ	474927
DWG	C-10
SHEET	of



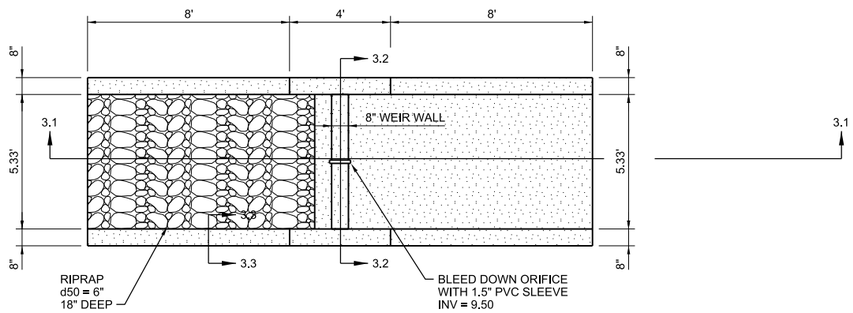
1 DETAIL - POND 2 CONTROL STRUCTURE
SCALE" 1" = 3'
C-06



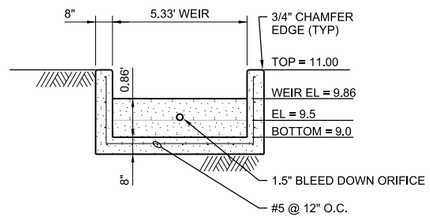
SECTION 1.1
NTS



2 DETAIL - POND 2 SODDED SPILLWAY
SCALE" 1" = 3'
C-06



PLAN VIEW



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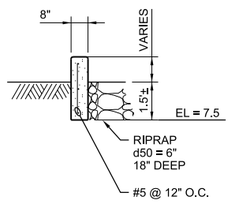

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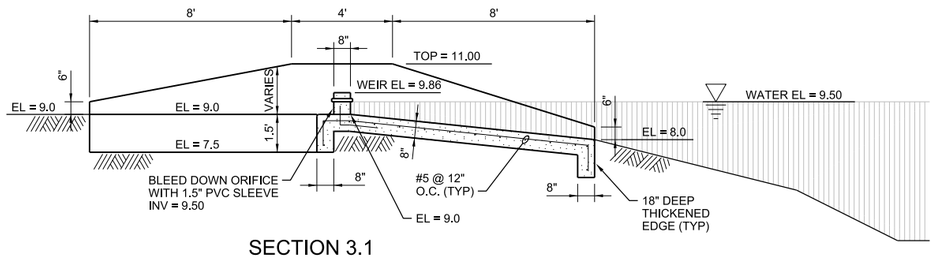

SECTION 3.1

3 DETAIL - POND 1 CONTROL STRUCTURE
SCALE" 1" = 3'
C-06

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FILTRATION SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
STORMWATER DETAILS AND SECTIONS

NO.	DSGN	DATE	DR	REVISION	CHK	APVD	BY	APVD
		A MALONE	C CHILDRESS				A MALONE	

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VERIFY SCALE
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0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-11
SHEET	of

UNIT 3

STORMWATER POND

TANK (typical)

EXISTING BURIED PIPING (TYP)

MATCH LINE - STA 25+20

19+00 20+00 21+00 22+00 23+00 24+00 25+00

WETLANDS BOUNDARY (TYP)

LIMITS OF DISTURBANCE (TYP)

WETLANDS IMPACT (TYP)

25' SECONDARY WETLANDS IMPACT (TYP)

8" BW - HDPE TO CONNECT TO FUTURE 8" BW-HDPE BY OTHERS

20" FI-HDPE TO CONNECT TO EXISTING ABOVE GRADE PIPING (SURVEY NEEDED AND CONECTION METHOD TO BE DETERMINED)

(1) 8" BW-HDPE
(1) 20" FI-HDPE
(MATCH INVERTS)

REMOVE EXISTING FENCE

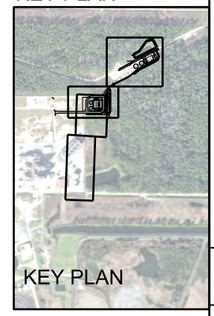
CLEAR AND GRUB 10' BEYOND CENTERLINE OF PROPOSED 8" BW-HDPE

SILT FENCE AT EDGE OF CLEARING
3125-165

N

0 30 60 90
Scale In Feet

KEY PLAN



LEGEND

- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER

MATCH LINE - STA 16+80

MATCH LINE - STA 25+20

20" FI-HDPE TO CONNECT TO EXISTING ABOVE GRADE PIPING (SURVEY NEEDED AND CONECTION METHOD TO BE DETERMINED)

24" BLOWDOWN
28" MAKEUP
WATER
28" MAKEUP
WATER
24" BLOWDOWN
2" FIBER OPTIC
WATER
10" STEEL
EXISTING GRADE
3' MIN COVER (TYP)
WATER
6" MIN SEPERATION (TYP)
8" BW-HDPE
20" FI-HDPE (MATCH INVERTS)
8" BW - HDPE TO CONNECT TO FUTURE 8" BW-HDPE BY OTHERS

SCALE:
1" = 30' HORIZ
1" = 3' VERT

15 10 5 0

17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00

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	A MALONE	C CHILDRESS		APVD	A MALONE		

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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL

FILTER BACKWASH PIPE PLAN AND PROFILE

90% DESIGN - NOT FOR CONSTRUCTION

VERIFY SCALE
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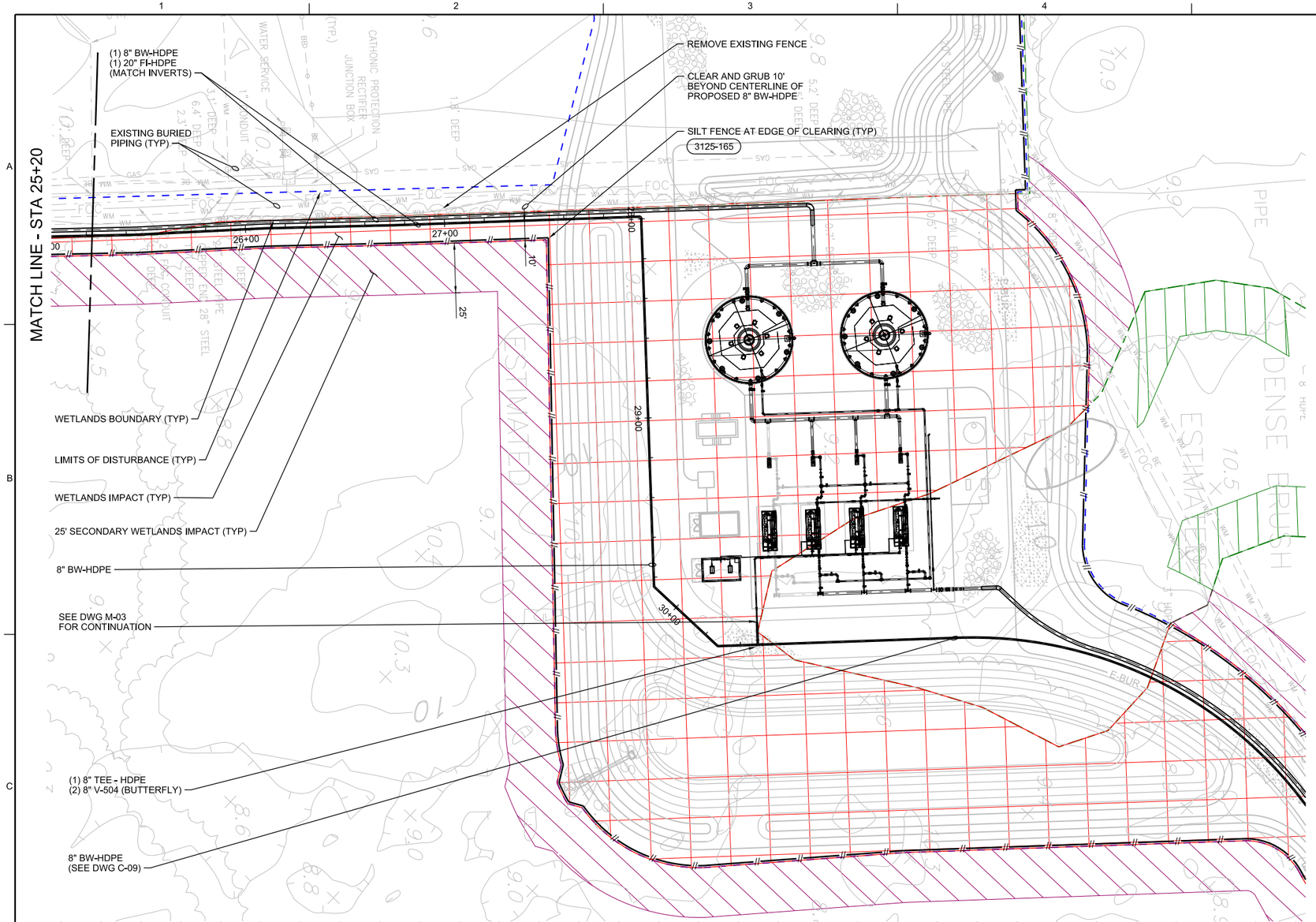
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-12
SHEET	of

pw://projectwise.ch2m.com:CH2MHILL_WBG/Documents/474927&space;-&space;GULF&space;POWER&space;PLANT&space;SMITH/Plant&space;Smith/D&space;-&space;(PTS)&space;FiltrationSystemAndInjectionWellPumpStation/CI/Div/PTS-005-C-323_474927

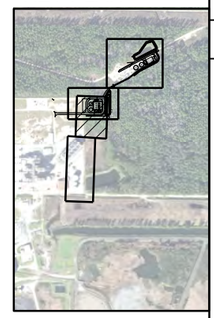
FILENAME: PTS-005-C-323_474927.dgn PLOT DATE: 2/19/2019 PLOT TIME: 6:39:16 AM

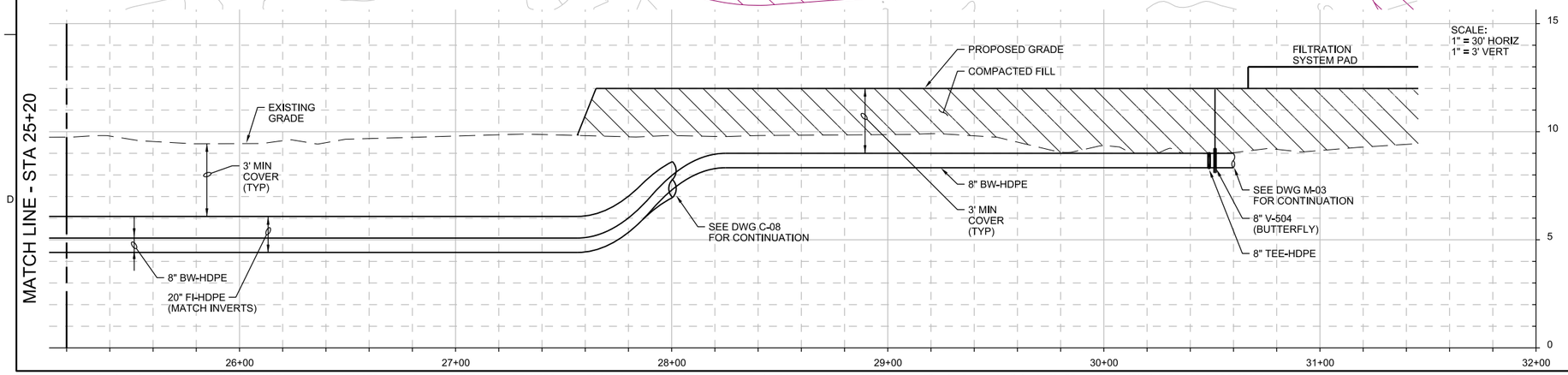


LEGEND

- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER

KEY PLAN





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FILTRATION SYSTEM AND
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GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL

FILTER BACKWASH PIPE PLAN AND PROFILE

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0 1"

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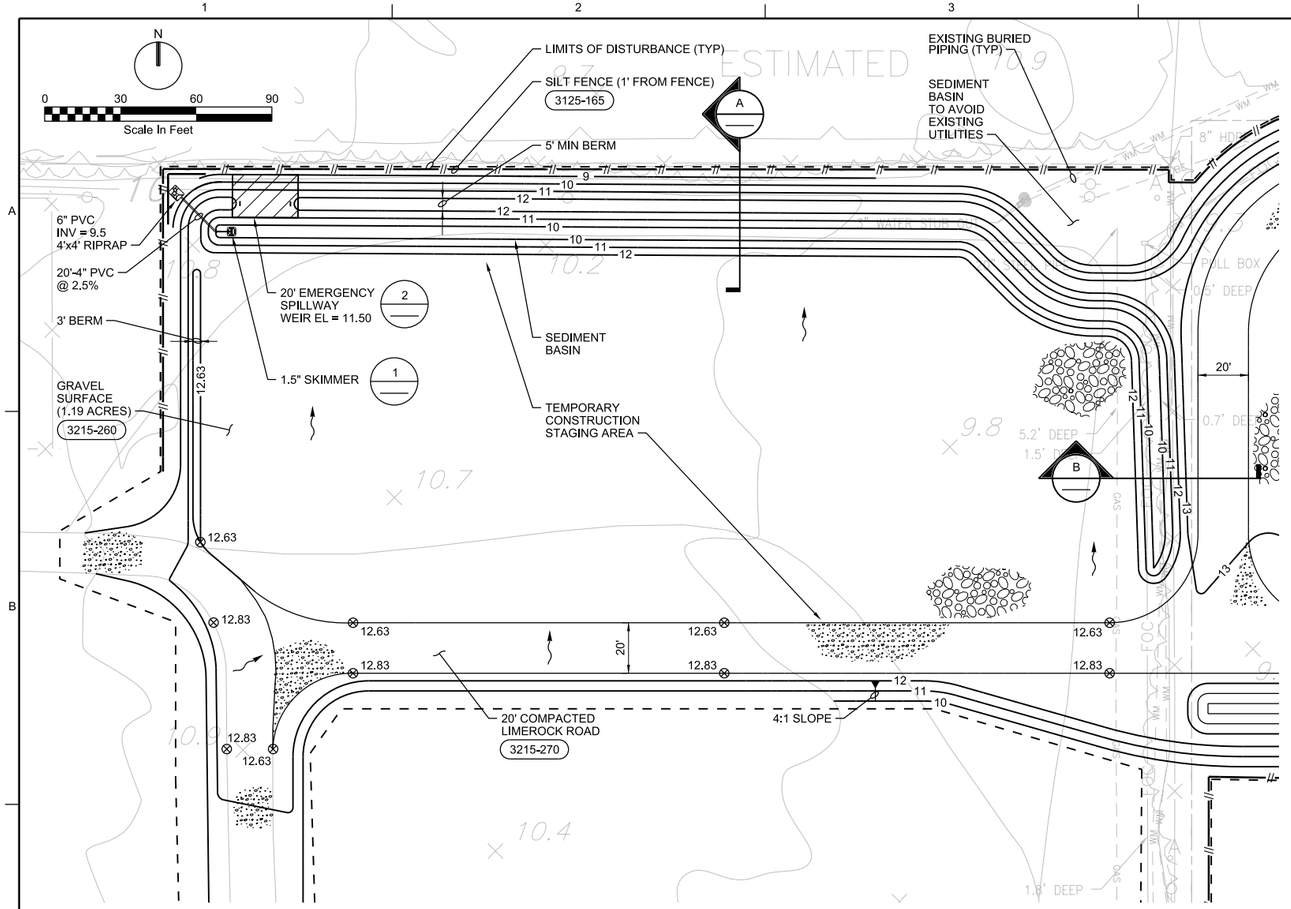
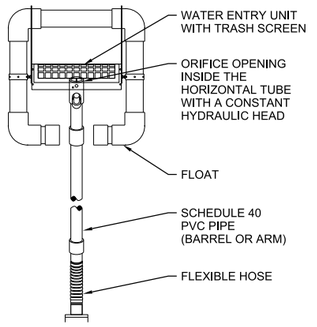
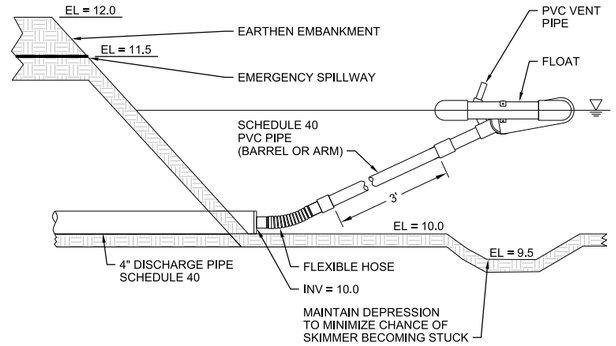
DWG	C-13
SHEET	of



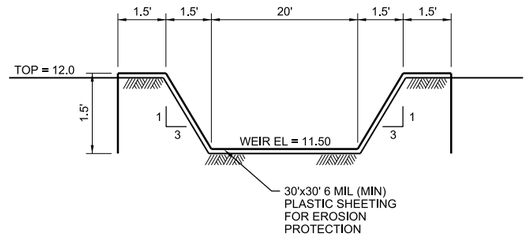




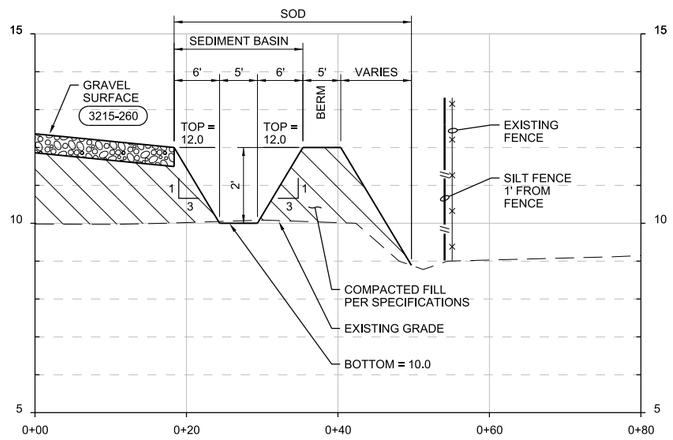
NOTES:

1. SKIMMER SHALL BE EQUIVALENT TO THE 1.5" DIA SKIMMER BY FAIRCLOTH SKIMMER (www.fairclothskimmer.com).

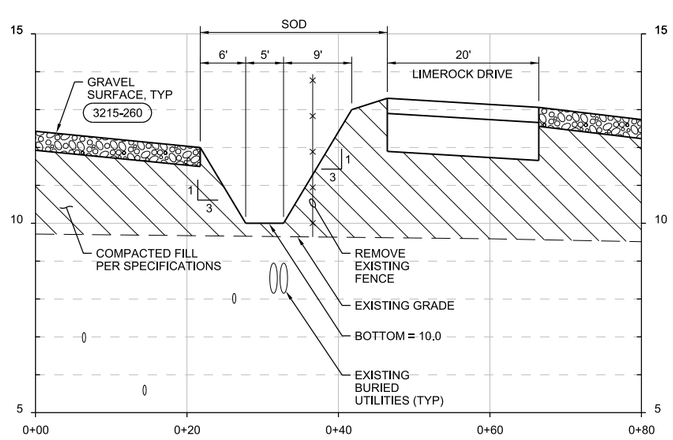
1 DETAIL - SKIMMER 1.5" DIA
NTS



2 DETAIL - EMERGENCY SPILLWAY
NTS



A SECTION - SEDIMENT BASIN
SCALE: 1" = 10' HORIZ
1" = 2' VERT



B SECTION - SEDIMENT BASIN
SCALE: 1" = 10' HORIZ
1" = 2' VERT

25 West Cedar Street, Suite 350
Pensacola, Florida
United States. 32502-5975
Tel: +1(850)438-2740

FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
TEMPORARY CONSTRUCTION AREA PLAN

NO.	DATE	DSGN	DR	CHK	APVD	BY	APVD
REVISION		A MALONE	C CHILDRESS			A MALONE	

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REUSE OF DOCUMENTS:

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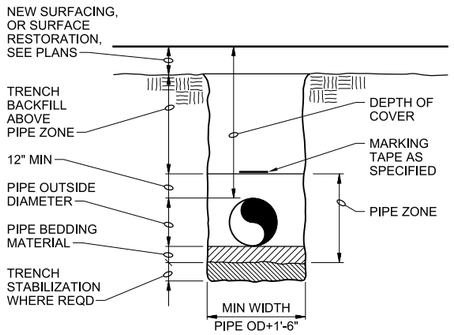
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

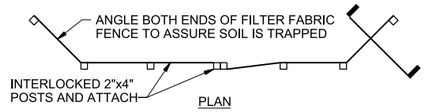
DATE	FEBRUARY 2019
PROJ	474927
DWG	C-14
SHEET	of

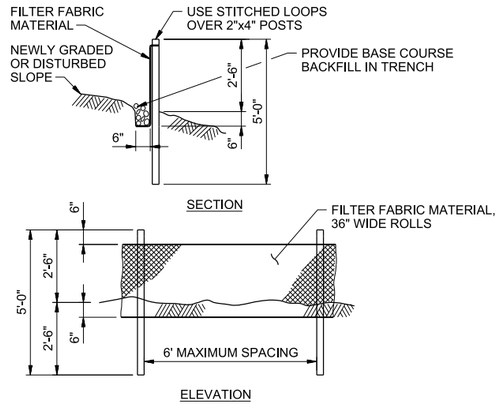


TYPICAL TRENCH

NTS

3123-110





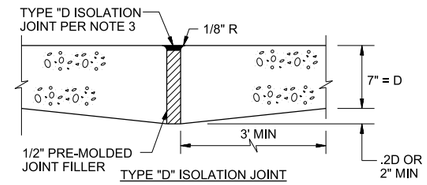
NOTES:

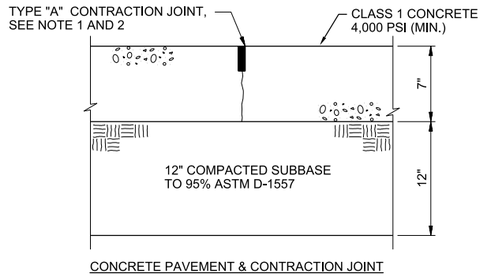
1. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
2. 2"x4" DOUGLAS FIR OR STEEL FENCE POSTS.
3. STITCHED LOOPS TO BE INSTALLED DOWNHILL SIDE OF SLOPE.
4. COMPACT ALL AREAS OF FILTER FABRIC TRENCH.

SILT FENCE

NTS

3125-165





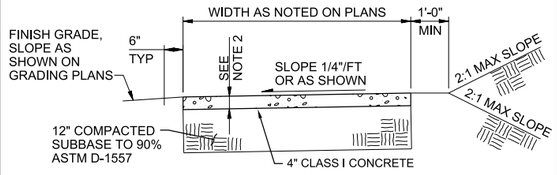
NOTES:

1. CONTRACTION JOINT SHALL BE MADE, CLEANED WITH COMPRESSED AIR, AND FILLED WITH SEALANT AS SPECIFIED. JOINT TO BE 1/4" TO 1/8" IN DEPTH.
2. CONCRETE JOINT SPACING: AS SHOWN OR MAXIMUM 15'x 15'.
3. INSTALL 1/2" PREMOLDED JOINT FILLER FULL DEPTH WHERE CONCRETE PAVEMENT ABUTS CONCRETE CURB, BUILDING OR ANY RIGID STRUCTURE.
4. THICKENED EDGES SHALL BE PLACED ADJACENT TO PAVEMENT AND ALONG PERIMETER.

CONCRETE DRIVE

NTS

3213-240



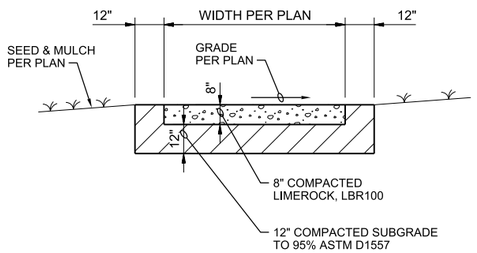
NOTES:

1. INSTALL 1/2" PREMOLDED JOINT FILLER BETWEEN THE SIDEWALK AND ALL STRUCTURES, CONCRETE PAVEMENT, AND CURBS.
2. CONTRACTION JOINTS SHALL BE INSTALLED EVERY 5' (MAX).

CONCRETE SIDEWALK

NTS

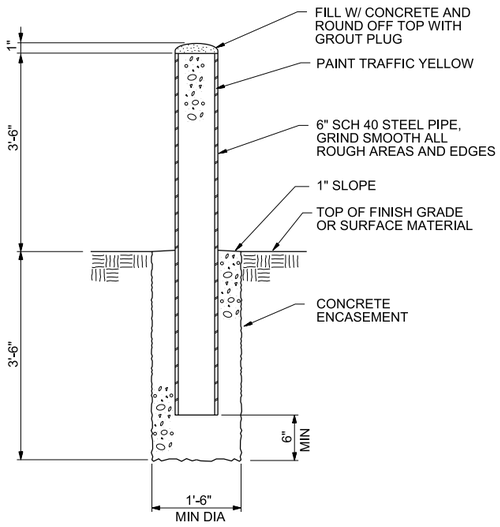
3213-220



LIMEROCK ROAD

NTS

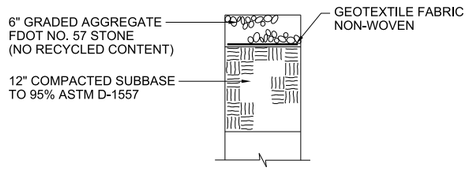
3215-270



BOLLARD

NTS

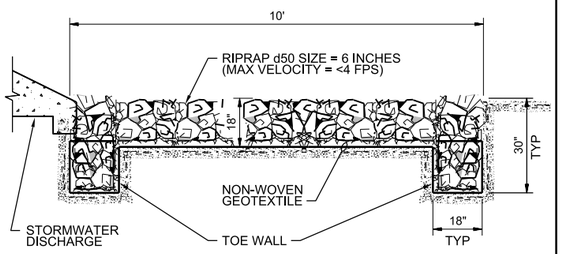
3305-954



GRAVEL SURFACE

NTS

3215-260



RIPRAP OULET PROTECTION

NTS

3220-100

NO.	DESCRIPTION	DATE	BY	APVD
DSGN	A MALONE	A MALONE	C CHILDRESS	APVD
DR			CHK	

REVISION

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Pensacola, Florida
United States 32502-5975
Tel: +1(850)438-2740

ch2m

FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
DETAILS

90% DESIGN - NOT FOR CONSTRUCTION

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-15
SHEET	of

Attachment C

FEMA FIRM Map

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Florida State Plane HARN North zone. The **horizontal datum** was NAD 83. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from Florida Department of Revenue Orthophotos produced at a scale of 1:200 from photography dated 2007.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

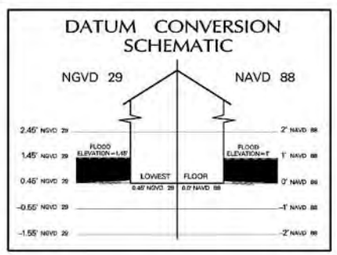
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

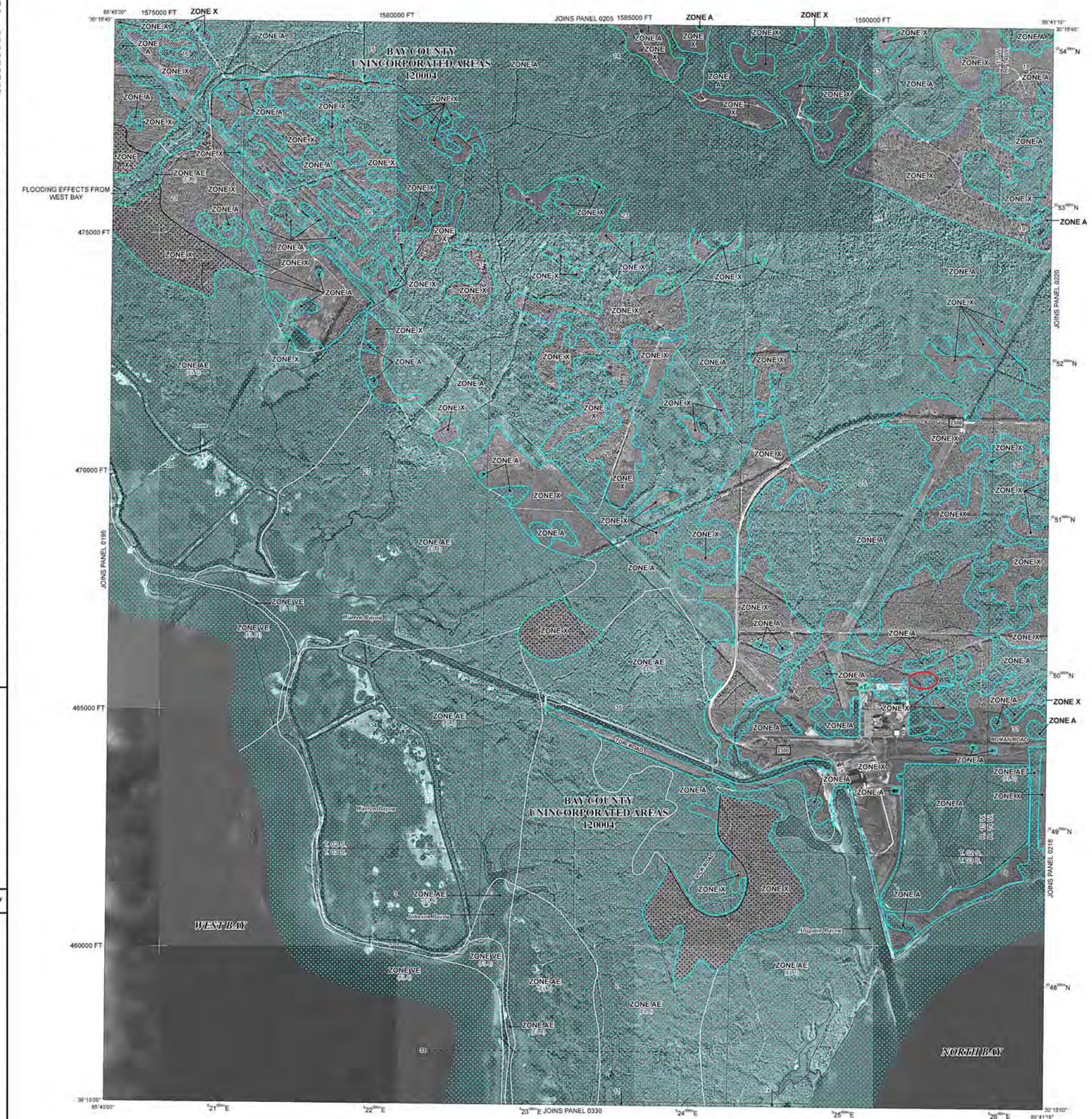
Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://www.fema.gov/msc.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.

DATUM CONVERSION SCHEMATIC



This Flood Insurance Rate Map was developed in cooperation between Federal Emergency Management Agency and Northwest Florida Water Management District.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513 — Base Flood Elevation line and value; elevation in feet*

(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A — A — Cross section line

23 — 23 — Transect line

87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

9776000mN — 1000-meter Universal Transverse Mercator grid values, zone 16

600000 FT — 5000-foot grid ticks: Florida State Plane coordinate system, North zone (FIPSZONE 0903), Lambert Conformal Conic projection

DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)

M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 18, 2002

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
June 2, 2009 - to add and change Special Flood Hazard Areas

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0215H

FIRM

FLOOD INSURANCE RATE MAP

BAY COUNTY, FLORIDA
AND INCORPORATED AREAS

PANEL 215 OF 517

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
BAY COUNTY	120004	0215	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
12005C0215H

MAP REVISED
JUNE 2, 2009

Federal Emergency Management Agency

Attachment D

NRCS Soils Map and Data

Area of Interest (AOI) | Soil Map | Soil Data Explorer | Download Soils Data | Shopping Cart (Free)

Search

Map Unit Legend

Bay County, Florida (FL005)

Bay County, Florida (FL005)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
13	Leon sand, 0 to 2 percent slopes	10.1	31.4%
29	Rutlege sand, 0 to 2 percent slopes	9.2	28.6%
30	Pottsburg-Pottsburg, wet, sand, 0 to 2 percent slopes	12.8	39.9%
Totals for Area of Interest		**32.0**	**100.0%**

Legend

Soil Map

Scale (not to scale)

Bay County, Florida

13—Leon sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2rz0s
Elevation: 0 to 300 feet
Mean annual precipitation: 60 to 69 inches
Mean annual air temperature: 63 to 72 degrees F
Frost-free period: 252 to 306 days
Farmland classification: Not prime farmland

Map Unit Composition

Leon and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Leon

Setting

Landform: Marine terraces, flatwoods
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear, convex
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 5 inches: sand
E - 5 to 18 inches: sand
Bh - 18 to 26 inches: sand
E' - 26 to 65 inches: sand
B'h - 65 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 2 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: A/D
Forage suitability group: sandy soils on flats of mesic or hydric lowlands (G133AA141FL)
Other vegetative classification: North Florida Flatwoods (R152AY004FL)
Hydric soil rating: No

Minor Components

Leon, hydric
Percent of map unit: 5 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: Yes

Pottsburg
Percent of map unit: 4 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Hurricane
Percent of map unit: 4 percent
Landform: Flats on marine terraces, rises on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Mandarin
Percent of map unit: 3 percent
Landform: Flats on marine terraces, rises on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Pickney
Percent of map unit: 2 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Other vegetative classification: North Florida Flatwoods (R152AY004FL)
Hydric soil rating: Yes

Rutlege
Percent of map unit: 2 percent
Landform: Depressions on marine terraces

Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: North Florida Flatwoods (R152AY004FL)
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Bay County, Florida
Survey Area Data: Version 17, Sep 19, 2017

Bay County, Florida

30—Pottsburg-Pottsburg, wet, sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2rz0t
Elevation: 10 to 150 feet
Mean annual precipitation: 61 to 69 inches
Mean annual air temperature: 63 to 70 degrees F
Frost-free period: 252 to 282 days
Farmland classification: Not prime farmland

Map Unit Composition

Pottsburg and similar soils: 65 percent
Pottsburg, wet, and similar soils: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pottsburg

Setting

Landform: Flatwoods, marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex, concave
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 5 inches: sand
E - 5 to 60 inches: sand
Bh - 60 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D

Other vegetative classification: North Florida Flatwoods (R152AY004FL)
Hydric soil rating: No

Description of Pottsburg, Wet

Setting

Landform: Marine terraces, flatwoods
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 5 inches: sand
E - 5 to 60 inches: sand
Bh - 60 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G152AA141FL)
Other vegetative classification: North Florida Flatwoods (R152AY004FL)
Hydric soil rating: Yes

Minor Components

Leon, non-hydric

Percent of map unit: 6 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex, linear
Across-slope shape: Linear
Hydric soil rating: No

Chipley

Percent of map unit: 2 percent
Landform: Flats on marine terraces, rises on marine terraces, knolls on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Allanton

Percent of map unit: 2 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex, linear
Across-slope shape: Linear
Other vegetative classification: North Florida Flatwoods (R152AY004FL)
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Bay County, Florida
Survey Area Data: Version 17, Sep 19, 2017

Bay County, Florida

29—Rutlege sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2ttkm
Elevation: 0 to 450 feet
Mean annual precipitation: 59 to 69 inches
Mean annual air temperature: 63 to 72 degrees F
Frost-free period: 223 to 282 days
Farmland classification: Not prime farmland

Map Unit Composition

Rutlege and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rutlege

Setting

Landform: Marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy marine deposits and/or fluviomarine deposits

Typical profile

A - 0 to 22 inches: sand
Cg - 22 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: North Florida Flatwoods (R138XY004FL)

Forage suitability group: Sandy soils on stream terraces, flood plains, or in depressions (G152AA145FL)
Hydric soil rating: Yes

Minor Components

Pickney
Percent of map unit: 5 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: North Florida Flatwoods (R138XY004FL)
Hydric soil rating: Yes

Plummer
Percent of map unit: 5 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: North Florida Flatwoods (R138XY004FL)
Hydric soil rating: No

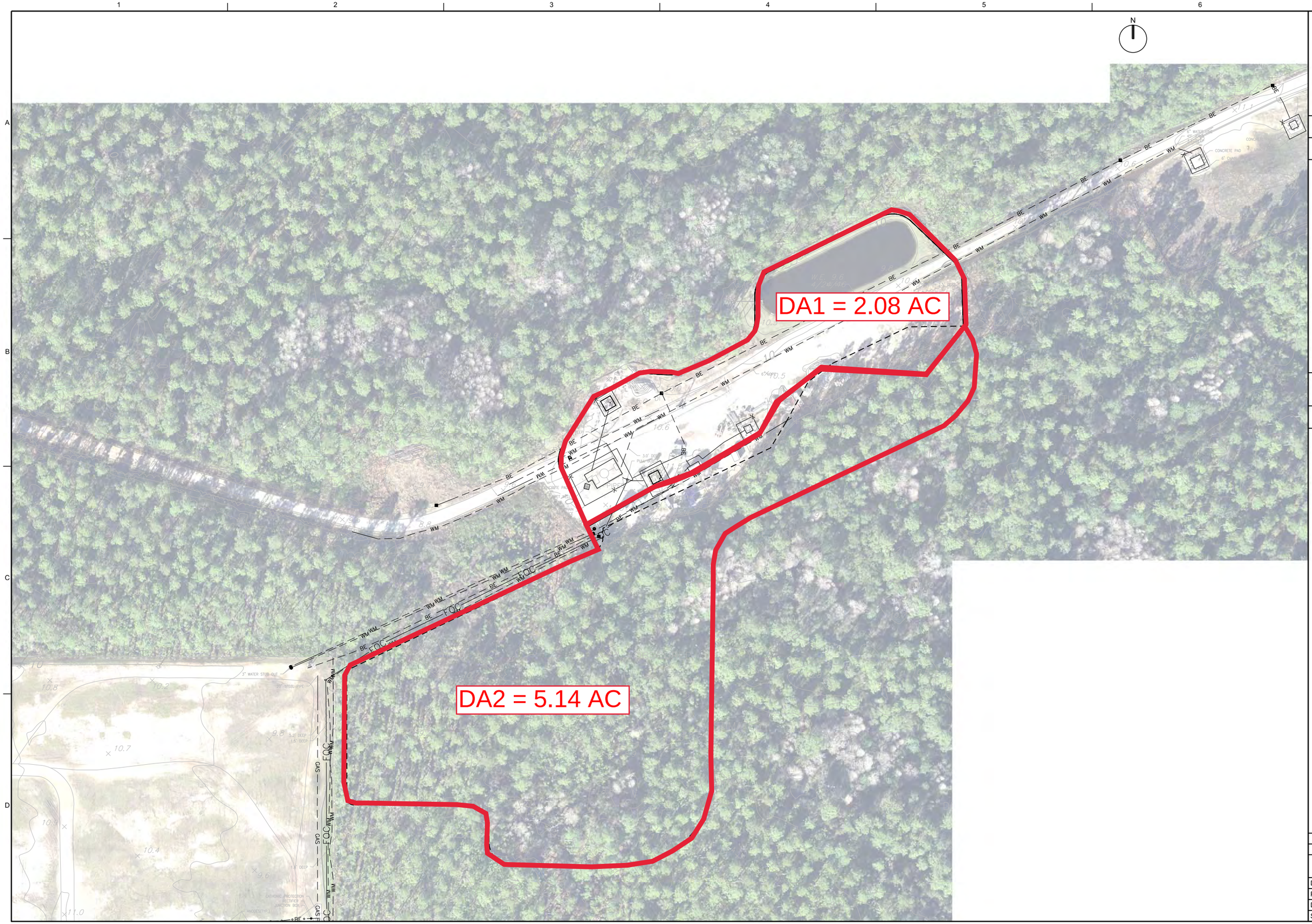
Scranton
Percent of map unit: 5 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: North Florida Flatwoods (R138XY004FL)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Bay County, Florida
Survey Area Data: Version 17, Sep 19, 2017

Attachment E

Pre-Development and Post-Development Drainage Maps



NO.	DATE	REVISION	DR	CHK	APVD	BY	APVD
DSGN	T MALONE		C CHILDRESS				T MALONE

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25 WEST CEDAR STREET, SUITE 350
PENSACOLA, FLORIDA 32502
TELEPHONE: 850.396.4930

TREATMENT SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT LANSING SMITH
PANAMA CITY, FLORIDA

CIVIL

PRE-DEVELOPMENT DRAINAGE PLAN

STORMWATER DOCUMENTS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2018
PROJ	474927
DWG	
SHEET	of

projectwise.ch2m.com:CH2MHILL_WBG\Documents \ 474927 - GULF POWER SMITH\PERM TREATMENT SYSTEM AND PS\

FILENAME: PRE DA.dgn PLOT DATE: 2018\05\04 PLOT TIME: 2:33:56 PM

DWG C-05

DA1 = 2.08 AC

DWG C-04

DA2 = 5.14 AC

N

NO.	DATE	REVISION	BY	APVD
DSGN	T MALONE	DR C.CHILDRESS CHK	APVD	T MALONE

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25 WEST CEDAR STREET, SUITE 350
PENSACOLA, FLORIDA 32502
TELEPHONE: 850.396.4930

TREATMENT SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT LANSING SMITH
PANAMA CITY, FLORIDA

CIVIL

POST-DEVELOPMENT DRAINAGE PLAN

STORMWATER DOCUMENTS

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2018
PROJ	474927
DWG	
SHEET	of

Attachment F

Spreadsheets for Curve Number, Pond Capacity, Treatment Volume, Permanent Pool Volume and Mean Depth

Lansing Plant Smith, Gulf Power, Bay County
Curve Number Spreadsheet

PRE DA1			
Total Area	90,525.00	2.08	
Item	Area (SF)	Area (AC)	CN
Concrete Pad 1 (SE)	254.00	0.01	98.00
Concrete Pad 2 (SE)	1,054.00	0.02	98.00
Concrete Pad 3 (SE)	266.00	0.01	98.00
Concrete Pad 4 (SE)	94.00	0.00	98.00
Concrete Pad 5 (NW)	219.00	0.01	98.00
Concrete Pad 6 (NW)	98.00	0.00	98.00
Wet Well	48.00	0.00	98.00
Building	190.00	0.00	98.00
Gravel	55,376.00	1.27	91.00
Total Impervious Area	57,599.00	1.32	91.27
Existing Pond	13,513.00	0.31	100.00
Pond Area	13,513.00	0.31	100.00
Open Space (Poor)	19,413.00	0.45	89.00
Total Pervious Area:	19,413.00	0.45	89.00
Average Curve Number:			92.09

PRE DA2			
Total Area	223,694.00	5.14	
Title	Area (SF)	Area (AC)	CN
Impervious Area	0.00	0.00	98.00
Pond Area	0.00	0.00	100.00
Open Space (Poor)	13,231.00	0.30	89.00
Dense Woods	210,463.00	4.83	79.00
Total Pervious Area:	223,694.00	5.14	79.59
Average Curve Number:			79.59

POST DA1			
Total Area	90,525.00	2.08	
Title	Area (SF)	Area (AC)	CN
Concrete Pad 1 (SE)	254.00	0.01	98.00
Concrete Pad 2 (SE)	1,054.00	0.02	98.00
Concrete Pad 3 (SE)	266.00	0.01	98.00
Concrete Pad 4 (SE)	94.00	0.00	98.00
Concrete Pad 5 (NW)	219.00	0.01	98.00
Concrete Pad 6 (NW)	98.00	0.00	98.00
Wet Well	48.00	0.00	98.00
Building	190.00	0.00	98.00
Gravel Around Impervious	55,376.00	1.27	91.00
Storage Tank (Partial)	1,136.00	0.03	98.00
Total Impervious Area	58,735.00	1.35	91.40
Existing Pond	13,513.00	0.31	100.00
Pond Area	13,513.00	0.31	100.00
Open Space (Poor)	18,277.00	0.42	89.00
Total Pervious Area:	18,277.00	0.42	89.00
Average Curve Number:			92.20

POST DA2			
Total Area	223,695.00	5.14	
Title	Area (SF)	Area (AC)	CN
Gravel Around Impervious	11,118.00	0.26	91.00
New Road	45,068.00	1.03	98.00
Injecteion Well Treatment System	40,207.00	0.92	98.00
Storage Tank (Partial)	1,691.00	0.04	98.00
Injection Well Pump Station (Half)	8,400.00	0.19	98.00
Total Impervious Area	106,484.00	2.44	97.27
New Pond	69,386.00	1.59	
Pond Area	69,386.00	1.59	100.00
Open Space (Good)	47,825.00	1.10	80.00
Total Pervious Area:	47,825.00	1.10	80.00
Average Curve Number:			94.42

Lansing Plant Smith, Gulf Power, Bay County
Spreadsheet for Pond Capacity, Treatment Volume, Orifice, Permanent Pool Volume and Mean Depth

Wet Stormwater Detention Pond - Capacity					
Stage	Area (SF)	Area (AC)	Vol (CF)	Vol (AC-FT)	Comment
3.00	10,571	0.24	0	0.00	Bot of Pond
4.00	12,755	0.29	11,663	0.27	
5.00	15,004	0.34	25,543	0.59	
6.00	17,528	0.40	41,809	0.96	
7.00	19,537	0.45	60,341	1.39	
8.00	26,753	0.61	83,486	1.92	
9.00	33,813	0.78	113,769	2.61	
9.17	35,067	0.81	119,624	2.75	Elev of Control Orifice
9.64	38,341	0.88	136,875	3.14	Elev of Treatment Volume
9.75	39,393	0.90	141,150	3.24	Elev of Side Weir
10.00	43,738	1.00	151,541	3.50	
10.83	53,799	1.24	192,019	4.43	Elev of Top Weir
11.00	55,861	1.28	201,340	4.65	Emergency Overflow Weir
12.00	69,286	1.59	263,914	6.08	Top of Pond

Treatment Volume Calculations

Drainage Area	5.14	ACRES	
Runoff	1.00	IN	
Treatment Volume = 4.76*1*1/12	0.43	AC-FT	18,658 CF
Treatment & Permanent Pool Vol (below 9.51)	1.39	AC-FT	
Elev of Treatment Volume	9.64		
Elev of One-half Treatment Volume	9.39		
Provided Treatment Below Weir at 9.75	0.49	AC-FT	21,526 CF

Treatment Volume Orifice Calculations

* Based on References and Design Aids for Environmental Resources Permit Applicant's Handbook Volume II

Treatment Vol EL	9.64	FT
Treatment Vol	0.43	AC-FT
Flow	0.05	CFS
Avg Head	0.35	FT
Orifice Coefficient	0.60	
Area	0.02	SF
Dia	1.87	IN, for 48 HRS

$$Q = \frac{TV}{2\,t\,CF} \qquad h = \frac{(h_1 + h_2)}{2}$$

$$A = \frac{Q}{C\sqrt{2\,g\,h}} \qquad D = \sqrt{\frac{4\,A}{\pi}}$$

** Will use a diameter of 1.8" for drawdown of 54 hours per Storm and Sanitary Analysis Modeling **

Permanent Pool Volume (PPV) Calculations

* Based on References and Design Aids for Environmental Resources Permit Applicant's Handbook Volume II

Drainage Area	5.14	ACRES
Runoff Coefficient	0.82	
Wet Season Rainfall Depth	29.00	IN
Residence Time	14.00	DAYS
Length of Wet Season	122.00	days
Conversion Factor	12.00	IN/FT
Minimum PPV	1.17	AC-FT
Provided PPV	2.75	AC-FT (155% more then the minimum requirement)

$$PPV = \frac{DA\,C\,R\,RT}{WS\,CF}$$

Mean Depth Calculations

* Based on References and Design Aids for Environmental Resources Permit Applicant's Handbook Volume II

PPV	2.75	AC-FT
Area of Pond at Control Elevation	0.81	ACRES
Mean Depth	3.41	FT (Meets requirement of being between 2 FT and 8 FT)

$$MD = \frac{PPV}{A_P}$$

Attachment G

Stormwater Modeling Output for Pre and Post Development Conditions

Pond Drawdown Analysis
through orifice

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Post Development Pond.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 4
Number of links 5

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-02	No Runoff	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Jun-01	JUNCTION	9.00	24.00	0.00	
Outfall	OUTFALL	8.75	9.80	0.00	
OutfallWeir	OUTFALL	9.50	19.50	0.00	
ProposedPond	STORAGE	3.00	12.00	0.00	

****
Link Summary

****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Outfall	Jun-01	Outfall	CONDUIT	36.0	0.5556	0.0120
1.8inOrifice	ProposedPond	Jun-01	ORIFICE			
ControlSide	ProposedPond	Jun-01	ORIFICE			
ControlTop	ProposedPond	Jun-01	ORIFICE			
OverflowWeir	ProposedPond	OutfallWeir	WEIR			

****
Cross Section Summary
****

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Outfall	CIRCULAR	1.00	1.00	1	0.79	0.25	2.88

Runoff Quantity Continuity **********	Volume acre-ft	Depth inches
Total Precipitation	0.000	0.000
Surface Runoff	0.000	0.000
Continuity Error (%)	0.000	

Flow Routing Continuity **********	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	0.328	0.107
Initial Stored Volume	3.141	1.024
Final Stored Volume	2.813	0.917
Continuity Error (%)	0.000	

****
Composite Curve Number Computations Report
****

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	4.76	-	94.40
Composite Area & Weighted CN	4.76		94.40

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's Roughness

Subbasin DA2

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
DA2	0.00	0.00	0.00	94.400	0	00:10:00

Node Depth Summary

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.08	0.10	9.10	0	00:02	0	0	0:00:00
Outfall	0.00	0.00	8.75	0	00:00	0	0	0:00:00
OutfallWeir	0.00	0.00	9.50	0	00:00	0	0	0:00:00
ProposedPond	6.41	6.64	9.64	0	00:00	0	0	0:00:00

Node Flow Summary

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
Jun-01	JUNCTION	0.00	0.05	0	00:00	0.00		
Outfall	OUTFALL	0.00	0.05	0	00:02	0.00		
OutfallWeir	OUTFALL	0.00	0.00	0	00:00	0.00		
ProposedPond	STORAGE	0.00	0.00	0	00:00	0.00		

Storage Node Summary

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Exfiltrated Volume 1000 ft³	Average Exfiltration Rate (%)	Maximum Exfiltration Rate cfs	Maximum Storage Node Outflow cfs	Maximum Time of Max. Total Volume hh:mm:ss	Maximum Total Exfiltrated Volume 1000 ft³
ProposedPond	136.829	52	0	00:00	128.076	48	0.05	0.00	0:00:00	0.000

Outfall Loading Summary

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Outfall	99.99	0.03	0.05
OutfallWeir	0.00	0.00	0.00

System	50.00	0.03	0.05

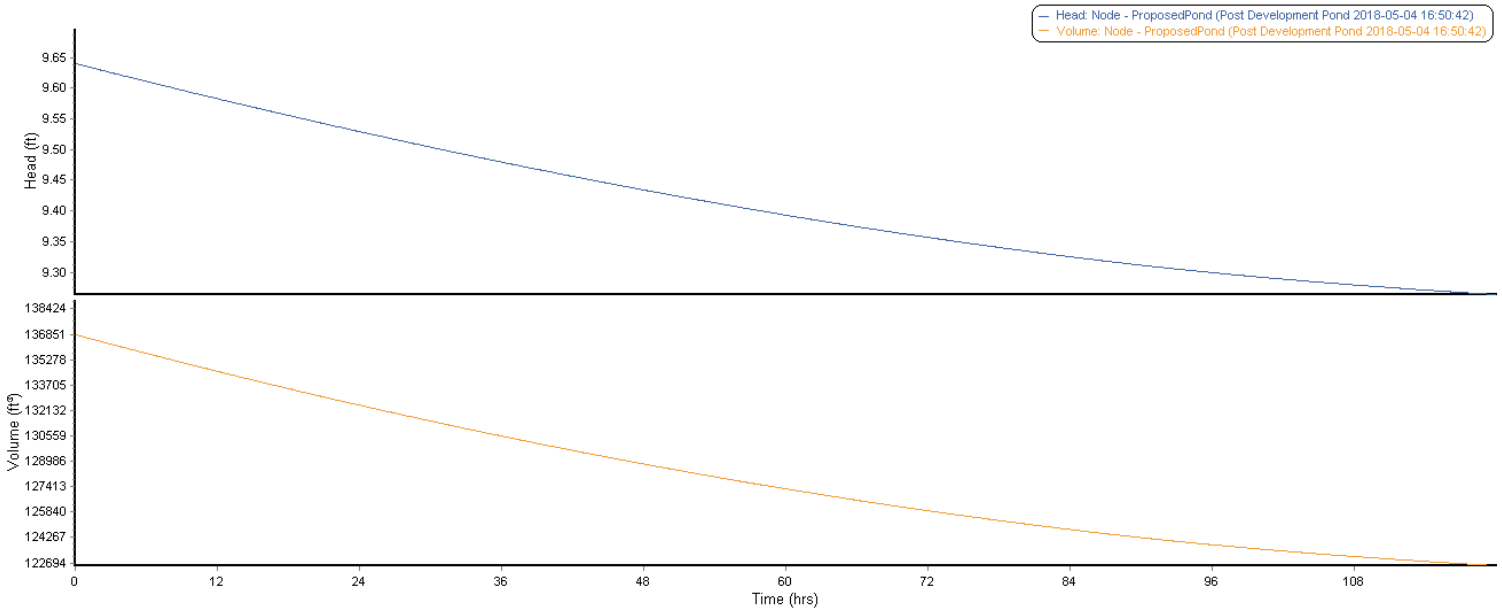
****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum Flow /Design Flow	Ratio of Maximum Depth	Total Time minutes	Reported Condition
Outfall	CONDUIT	0 00:02	1.43	1.00	0.05	2.88	0.02	0.10	0	Calculated
1.8inOrifice	ORIFICE	0 00:00			0.05			1.00		
ControlSide	ORIFICE	0 00:00			0.00			0.00		
ControlTop	ORIFICE	0 00:00			0.00					
OverflowWeir	WEIR	0 00:00			0.00			0.00		

****
Highest Flow Instability Indexes
****
All links are stable.

WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node Jun-01.

Analysis began on: Fri May 04 16:50:38 2018
Analysis ended on: Fri May 04 16:50:41 2018
Total elapsed time: 00:00:03


Head: Node - ProposedPond (Post Development Pond 2018-05-04 16:50:42)
Volume: Node - ProposedPond (Post Development Pond 2018-05-04 16:50:42)
Head (ft)
9.65
9.60
9.55
9.50
9.45
9.40
9.35
9.30
Volume (ft³)
138424
136851
135278
133705
132132
130559
128986
127413
125840
124267
122694
0
12
24
36
48
60
72
84
96
108
Time (hrs)

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Post Development Pond.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 4
Number of links 5

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-02	1 Yr	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Jun-01	JUNCTION	9.00	24.00	0.00	
Outfall	OUTFALL	8.75	9.80	0.00	
OutfallWeir	OUTFALL	9.50	19.50	0.00	
ProposedPond	STORAGE	3.00	12.00	0.00	

****
Link Summary

****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Outfall	Jun-01	Outfall	CONDUIT	36.0	0.5556	0.0120
1.8inOrifice	ProposedPond	Jun-01	ORIFICE			
ControlSide	ProposedPond	Jun-01	ORIFICE			
ControlTop	ProposedPond	Jun-01	ORIFICE			
OverflowWeir	ProposedPond	OutfallWeir	WEIR			

****
Cross Section Summary
****

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Outfall	CIRCULAR	1.00	1.00	1	0.79	0.25	2.88

Runoff Quantity Continuity **********	Volume acre-ft	Depth inches
Total Precipitation	2.068	4.827
Surface Runoff	0.176	0.411
Continuity Error (%)	-0.001	

Flow Routing Continuity **********	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	1.567	0.511
Initial Stored Volume	2.736	0.892
Final Stored Volume	2.928	0.954
Continuity Error (%)	0.000	

****
Composite Curve Number Computations Report
****

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	4.76	-	94.40
Composite Area & Weighted CN	4.76		94.40

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's Roughness

Subbasin DA2

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
DA2	4.75	4.11	18.66	94.400	0	00:10:00

Node Depth Summary

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.27	0.69	9.69	0	13:17	0	0	0:00:00
Outfall	0.00	0.00	8.75	0	00:00	0	0	0:00:00
OutfallWeir	0.00	0.00	9.50	0	00:00	0	0	0:00:00
ProposedPond	6.84	7.35	10.35	0	13:17	0	0	0:00:00

Node Flow Summary

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
Jun-01	JUNCTION	0.00	1.73	0	13:17	0.00		
Outfall	OUTFALL	0.00	1.73	0	13:17	0.00		
OutfallWeir	OUTFALL	0.00	0.00	0	00:00	0.00		
ProposedPond	STORAGE	17.96	17.96	0	12:14	0.00		

Storage Node Summary

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
ProposedPond	168.075	64	0	13:17	145.563	55	1.73	0.00	0:00:00	0.000

Outfall Loading Summary

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Outfall	97.51	0.49	1.73
OutfallWeir	0.00	0.00	0.00

System 48.75 0.49 1.73

****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum Flow /Design Flow	Ratio of Maximum Depth	Total Time minutes	Reported Condition
Outfall	CONDUIT	0 13:17	3.37	1.00	1.73	2.88	0.60	0.62	0	Calculated
1.8inOrifice	ORIFICE	0 12:18			0.07			1.00		
ControlSide	ORIFICE	0 13:17			1.66			0.07		
ControlTop	ORIFICE	0 00:00			0.00					
OverflowWeir	WEIR	0 00:00			0.00			0.00		

****
Highest Flow Instability Indexes
****
All links are stable.

WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node Jun-01.

Analysis began on: Fri May 04 16:45:27 2018
Analysis ended on: Fri May 04 16:45:30 2018
Total elapsed time: 00:00:03

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Post Development Pond.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 4
Number of links 5

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-02	2 Yr	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Jun-01	JUNCTION	9.00	24.00	0.00	
Outfall	OUTFALL	8.75	9.80	0.00	
OutfallWeir	OUTFALL	9.50	19.50	0.00	
ProposedPond	STORAGE	3.00	12.00	0.00	

****
Link Summary

****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Outfall	Jun-01	Outfall	CONDUIT	36.0	0.5556	0.0120
1.8inOrifice	ProposedPond	Jun-01	ORIFICE			
ControlSide	ProposedPond	Jun-01	ORIFICE			
ControlTop	ProposedPond	Jun-01	ORIFICE			
OverflowWeir	ProposedPond	OutfallWeir	WEIR			

****
Cross Section Summary
****

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Outfall	CIRCULAR	1.00	1.00	1	0.79	0.25	2.88

Runoff Quantity Continuity **********	Volume acre-ft	Depth inches
Total Precipitation	2.612	6.097
Surface Runoff	0.229	0.534
Continuity Error (%)	-0.001	

Flow Routing Continuity **********	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	2.094	0.682
Initial Stored Volume	2.736	0.892
Final Stored Volume	2.931	0.955
Continuity Error (%)	0.000	

****
Composite Curve Number Computations Report
****

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	4.76	-	94.40
Composite Area & Weighted CN	4.76		94.40

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's Roughness

Subbasin DA2

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
DA2	6.00	5.34	23.92	94.400	0	00:10:00

Node Depth Summary

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.35	1.00	10.00	0	13:04	0	0	0:00:00
Outfall	0.00	0.00	8.75	0	00:00	0	0	0:00:00
OutfallWeir	0.00	0.00	9.50	0	00:00	0	0	0:00:00
ProposedPond	6.93	7.61	10.61	0	13:02	0	0	0:00:00

Node Flow Summary

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
Jun-01	JUNCTION	0.00	2.74	0	13:00	0.00		
Outfall	OUTFALL	0.00	2.74	0	13:05	0.00		
OutfallWeir	OUTFALL	0.00	0.00	0	00:00	0.00		
ProposedPond	STORAGE	22.95	22.95	0	12:14	0.00		

Storage Node Summary

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
ProposedPond	180.972	68	0	13:02	149.566	57	2.74	0.00	0:00:00	0.000

Outfall Loading Summary

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Outfall	98.07	0.76	2.74
OutfallWeir	0.00	0.00	0.00

System 49.04 0.76 2.74

****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum Flow /Design Flow	Ratio of Maximum Depth	Total Time minutes	Reported Condition
Outfall	CONDUIT	0 13:05	3.84	1.00	2.74	2.88	0.95	0.85	0	Calculated
1.8inOrifice	ORIFICE	0 12:10			0.07			1.00		
ControlSide	ORIFICE	0 13:00			2.67			0.10		
ControlTop	ORIFICE	0 00:00			0.00					
OverflowWeir	WEIR	0 00:00			0.00			0.00		

****
Highest Flow Instability Indexes
****
All links are stable.

WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node Jun-01.

Analysis began on: Fri May 04 16:46:29 2018
Analysis ended on: Fri May 04 16:46:32 2018
Total elapsed time: 00:00:03

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Post Development Pond.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 4
Number of links 5

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-02	5 Yr	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Jun-01	JUNCTION	9.00	24.00	0.00	
Outfall	OUTFALL	8.75	9.80	0.00	
OutfallWeir	OUTFALL	9.50	19.50	0.00	
ProposedPond	STORAGE	3.00	12.00	0.00	

****
Link Summary

****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Outfall	Jun-01	Outfall	CONDUIT	36.0	0.5556	0.0120
1.8inOrifice	ProposedPond	Jun-01	ORIFICE			
ControlSide	ProposedPond	Jun-01	ORIFICE			
ControlTop	ProposedPond	Jun-01	ORIFICE			
OverflowWeir	ProposedPond	OutfallWeir	WEIR			

****
Cross Section Summary
****

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Outfall	CIRCULAR	1.00	1.00	1	0.79	0.25	2.88

Runoff Quantity Continuity **********	Volume acre-ft	Depth inches
Total Precipitation	3.265	7.622
Surface Runoff	0.293	0.683
Continuity Error (%)	-0.001	

Flow Routing Continuity **********	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	2.728	0.889
Initial Stored Volume	2.736	0.892
Final Stored Volume	2.934	0.956
Continuity Error (%)	0.000	

****
Composite Curve Number Computations Report
****

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	4.76	-	94.40
Composite Area & Weighted CN	4.76		94.40

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's Roughness

Subbasin DA2

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
DA2	7.50	6.83	30.21	94.400	0	00:10:00

Node Depth Summary

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.47	1.50	10.50	0	12:55	0	0	0:00:00
Outfall	0.00	0.00	8.75	0	00:00	0	0	0:00:00
OutfallWeir	0.00	0.00	9.50	0	00:00	0	0	0:00:00
ProposedPond	7.04	7.90	10.90	0	12:53	0	0	0:00:00

Node Flow Summary

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
Jun-01	JUNCTION	0.00	4.03	0	12:49	0.00		
Outfall	OUTFALL	0.00	4.03	0	12:55	0.00		
OutfallWeir	OUTFALL	0.00	0.00	0	00:00	0.00		
ProposedPond	STORAGE	28.89	28.89	0	12:10	0.00		

Storage Node Summary

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
ProposedPond	196.349	74	0	12:53	154.823	59	4.03	0.00	0:00:00	0.000

Outfall Loading Summary

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Outfall	98.52	1.11	4.03
OutfallWeir	0.00	0.00	0.00

System 49.26 1.11 4.03

****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum Flow /Design Flow	Ratio of Maximum Depth	Total Time minutes	Reported Condition
Outfall	CONDUIT	0 12:55	5.31	1.00	4.03	2.88	1.40	0.92	0	> CAPACITY
1.8inOrifice	ORIFICE	0 12:14			0.07			1.00		
ControlSide	ORIFICE	0 12:33			3.51			0.14		
ControlTop	ORIFICE	0 12:53			0.66					
OverflowWeir	WEIR	0 00:00			0.00			0.00		

****
Highest Flow Instability Indexes
****
All links are stable.

WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node Jun-01.

Analysis began on: Fri May 04 16:46:59 2018
Analysis ended on: Fri May 04 16:47:03 2018
Total elapsed time: 00:00:04

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Post Development Pond.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 4
Number of links 5

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-02	10 Yr	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Jun-01	JUNCTION	9.00	24.00	0.00	
Outfall	OUTFALL	8.75	9.80	0.00	
OutfallWeir	OUTFALL	9.50	19.50	0.00	
ProposedPond	STORAGE	3.00	12.00	0.00	

****
Link Summary

****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Outfall	Jun-01	Outfall	CONDUIT	36.0	0.5556	0.0120
1.8inOrifice	ProposedPond	Jun-01	ORIFICE			
ControlSide	ProposedPond	Jun-01	ORIFICE			
ControlTop	ProposedPond	Jun-01	ORIFICE			
OverflowWeir	ProposedPond	OutfallWeir	WEIR			

****
Cross Section Summary
****

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Outfall	CIRCULAR	1.00	1.00	1	0.79	0.25	2.88

Runoff Quantity Continuity **********	Volume acre-ft	Depth inches
Total Precipitation	4.026	9.400
Surface Runoff	0.367	0.858
Continuity Error (%)	-0.001	

Flow Routing Continuity **********	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	3.474	1.132
Initial Stored Volume	2.736	0.892
Final Stored Volume	2.936	0.957
Continuity Error (%)	0.000	

****
Composite Curve Number Computations Report
****

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	4.76	-	94.40
Composite Area & Weighted CN	4.76		94.40

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's Roughness

Subbasin DA2

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
DA2	9.25	8.57	37.48	94.400	0	00:10:00

Node Depth Summary

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.59	1.98	10.98	0	12:39	0	0	0:00:00
Outfall	0.00	0.00	8.75	0	00:00	0	0	0:00:00
OutfallWeir	0.00	0.00	9.50	0	00:00	0	0	0:00:00
ProposedPond	7.12	8.15	11.15	0	12:38	0	0	0:00:00

Node Flow Summary

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
Jun-01	JUNCTION	0.00	5.50	0	12:22	0.00		
Outfall	OUTFALL	0.00	5.04	0	12:39	0.00		
OutfallWeir	OUTFALL	0.00	3.87	0	12:38	0.00		
ProposedPond	STORAGE	35.84	35.84	0	12:10	0.00		

Storage Node Summary

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
ProposedPond	210.131	80	0	12:38	159.001	60	8.91	0.00	0:00:00	0.000

Outfall Loading Summary

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Outfall	98.84	1.43	5.04
OutfallWeir	7.71	1.74	3.87

System	53.28	3.17	8.91

****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum Flow /Design Flow	Ratio of Maximum Depth	Total Time minutes	Reported Condition
Outfall	CONDUIT	0 12:39	6.50	1.00	5.04	2.88	1.75	0.96	0	> CAPACITY
1.8inOrifice	ORIFICE	0 12:08			0.07			1.00		
ControlSide	ORIFICE	0 12:17			3.71			0.17		
ControlTop	ORIFICE	0 12:22			2.66					
OverflowWeir	WEIR	0 12:38			3.87			0.07		

****
Highest Flow Instability Indexes
****
All links are stable.

WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node Jun-01.

Analysis began on: Fri May 04 16:48:17 2018
Analysis ended on: Fri May 04 16:48:21 2018
Total elapsed time: 00:00:04

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Post Development Pond.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 4
Number of links 5

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-02	25 Yr	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Jun-01	JUNCTION	9.00	24.00	0.00	
Outfall	OUTFALL	8.75	9.80	0.00	
OutfallWeir	OUTFALL	9.50	19.50	0.00	
ProposedPond	STORAGE	3.00	12.00	0.00	

****
Link Summary

****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Outfall	Jun-01	Outfall	CONDUIT	36.0	0.5556	0.0120
1.8inOrifice	ProposedPond	Jun-01	ORIFICE			
ControlSide	ProposedPond	Jun-01	ORIFICE			
ControlTop	ProposedPond	Jun-01	ORIFICE			
OverflowWeir	ProposedPond	OutfallWeir	WEIR			

****
Cross Section Summary
****

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Outfall	CIRCULAR	1.00	1.00	1	0.79	0.25	2.88

Runoff Quantity Continuity **********	Volume acre-ft	Depth inches
Total Precipitation	4.570	10.670
Surface Runoff	0.421	0.982
Continuity Error (%)	-0.001	

Flow Routing Continuity **********	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	4.007	1.306
Initial Stored Volume	2.736	0.892
Final Stored Volume	2.937	0.957
Continuity Error (%)	0.000	

****
Composite Curve Number Computations Report
****

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	4.76	-	94.40
Composite Area & Weighted CN	4.76		94.40

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's Roughness

Subbasin DA2

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
DA2	10.50	9.82	42.68	94.400	0	00:10:00

Node Depth Summary

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.63	2.09	11.09	0	12:33	0	0	0:00:00
Outfall	0.00	0.00	8.75	0	00:00	0	0	0:00:00
OutfallWeir	0.00	0.00	9.50	0	00:00	0	0	0:00:00
ProposedPond	7.15	8.26	11.26	0	12:33	0	0	0:00:00

Node Flow Summary

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
Jun-01	JUNCTION	0.00	6.12	0	12:15	0.00		
Outfall	OUTFALL	0.00	5.24	0	12:33	0.00		
OutfallWeir	OUTFALL	0.00	9.11	0	12:33	0.00		
ProposedPond	STORAGE	40.97	40.97	0	12:14	0.00		

Storage Node Summary

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Occurrence days	Time of Max Ponded Occurrence hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
ProposedPond	216.682	82	0	12:33	160.548	61	14.35	0.00	0:00:00	0.000

Outfall Loading Summary

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Outfall	98.99	1.52	5.24
OutfallWeir	9.56	3.58	9.11

System 54.27 5.10 14.35

****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time minutes	Reported Condition
Outfall	CONDUIT	0 12:33	6.75	1.00	5.24	2.88	1.82	0.96	0	> CAPACITY
1.8inOrifice	ORIFICE	0 12:03			0.07			1.00		
ControlSide	ORIFICE	0 12:12			3.76			0.18		
ControlTop	ORIFICE	0 12:16			3.11					
OverflowWeir	WEIR	0 12:33			9.11			0.13		

****
Highest Flow Instability Indexes
****
All links are stable.

WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node Jun-01.

Analysis began on: Fri May 04 16:48:50 2018
Analysis ended on: Fri May 04 16:48:54 2018
Total elapsed time: 00:00:04

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Post Development Pond.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 4
Number of links 5

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-02	50 Yr	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Jun-01	JUNCTION	9.00	24.00	0.00	
Outfall	OUTFALL	8.75	9.80	0.00	
OutfallWeir	OUTFALL	9.50	19.50	0.00	
ProposedPond	STORAGE	3.00	12.00	0.00	

****
Link Summary

****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Outfall	Jun-01	Outfall	CONDUIT	36.0	0.5556	0.0120
1.8inOrifice	ProposedPond	Jun-01	ORIFICE			
ControlSide	ProposedPond	Jun-01	ORIFICE			
ControlTop	ProposedPond	Jun-01	ORIFICE			
OverflowWeir	ProposedPond	OutfallWeir	WEIR			

****
Cross Section Summary
****

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Outfall	CIRCULAR	1.00	1.00	1	0.79	0.25	2.88

Runoff Quantity Continuity **********	Volume acre-ft	Depth inches
Total Precipitation	5.223	12.194
Surface Runoff	0.485	1.132
Continuity Error (%)	-0.001	

Flow Routing Continuity **********	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	4.646	1.514
Initial Stored Volume	2.736	0.892
Final Stored Volume	2.938	0.957
Continuity Error (%)	0.000	

****
Composite Curve Number Computations Report
****

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	4.76	-	94.40
Composite Area & Weighted CN	4.76		94.40

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's Roughness

Subbasin DA2

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
DA2	12.00	11.32	48.88	94.400	0	00:10:00

Node Depth Summary

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.66	2.20	11.20	0	12:28	0	0	0:00:00
Outfall	0.00	0.00	8.75	0	00:00	0	0	0:00:00
OutfallWeir	0.00	0.00	9.50	0	00:00	0	0	0:00:00
ProposedPond	7.19	8.37	11.37	0	12:28	0	0	0:00:00

Node Flow Summary

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
Jun-01	JUNCTION	0.00	6.35	0	12:11	0.00		
Outfall	OUTFALL	0.00	5.44	0	12:28	0.00		
OutfallWeir	OUTFALL	0.00	15.75	0	12:28	0.00		
ProposedPond	STORAGE	46.81	46.81	0	12:14	0.00		

Storage Node Summary

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
ProposedPond	223.385	85	0	12:28	162.119	61	21.19	0.00	0:00:00	0.000

Outfall Loading Summary

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Outfall	99.13	1.61	5.44
OutfallWeir	10.96	5.47	15.75

System	55.05	7.09	21.19

****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum Flow /Design Flow	Total Reported Condition	Ratio of Maximum Flow Depth	Time Surcharged minutes
Outfall	CONDUIT	0 12:28	7.00	1.00	5.44	2.88	1.89	0.97	0	> CAPACITY
1.8inOrifice	ORIFICE	0 11:54			0.07			1.00		
ControlSide	ORIFICE	0 12:08			3.76			0.20		
ControlTop	ORIFICE	0 12:11			3.29					
OverflowWeir	WEIR	0 12:28			15.75			0.19		

****
Highest Flow Instability Indexes
****
All links are stable.

WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node Jun-01.

Analysis began on: Fri May 04 16:49:24 2018
Analysis ended on: Fri May 04 16:49:28 2018
Total elapsed time: 00:00:04

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Post Development Pond.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 4
Number of links 5

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-02	100 Yr	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Jun-01	JUNCTION	9.00	24.00	0.00	
Outfall	OUTFALL	8.75	9.80	0.00	
OutfallWeir	OUTFALL	9.50	19.50	0.00	
ProposedPond	STORAGE	3.00	12.00	0.00	

****
Link Summary

****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Outfall	Jun-01	Outfall	CONDUIT	36.0	0.5556	0.0120
1.8inOrifice	ProposedPond	Jun-01	ORIFICE			
ControlSide	ProposedPond	Jun-01	ORIFICE			
ControlTop	ProposedPond	Jun-01	ORIFICE			
OverflowWeir	ProposedPond	OutfallWeir	WEIR			

****
Cross Section Summary
****

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Outfall	CIRCULAR	1.00	1.00	1	0.79	0.25	2.88

Runoff Quantity Continuity **********	Volume acre-ft	Depth inches
Total Precipitation	5.767	13.465
Surface Runoff	0.538	1.256
Continuity Error (%)	-0.001	

Flow Routing Continuity **********	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	5.176	1.687
Initial Stored Volume	2.736	0.892
Final Stored Volume	2.939	0.958
Continuity Error (%)	0.000	

****
Composite Curve Number Computations Report
****

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	4.76	-	94.40
Composite Area & Weighted CN	4.76		94.40

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

```
        Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

        Where:

        Tc = Time of Concentration (hrs)
        n  = Manning's Roughness
        Lf = Flow Length (ft)
        P  = 2 yr, 24 hr Rainfall (inches)
        Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation
----------------------------------

        V  = 16.1345 * (Sf^0.5) (unpaved surface)
        V  = 20.3282 * (Sf^0.5) (paved surface)
        V  = 15.0 * (Sf^0.5) (grassed waterway surface)
        V  = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
        V  = 9.0 * (Sf^0.5) (cultivated straight rows surface)
        V  = 7.0 * (Sf^0.5) (short grass pasture surface)
        V  = 5.0 * (Sf^0.5) (woodland surface)
        V  = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
        Tc = (Lf / V) / (3600 sec/hr)

        Where:

        Tc = Time of Concentration (hrs)
        Lf = Flow Length (ft)
        V  = Velocity (ft/sec)
        Sf = Slope (ft/ft)

Channel Flow Equation
---------------------

        V  = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
        R  = Aq / Wp
        Tc = (Lf / V) / (3600 sec/hr)

        Where:

        Tc = Time of Concentration (hrs)
        Lf = Flow Length (ft)
        R  = Hydraulic Radius (ft)
        Aq = Flow Area (ft²)
        Wp = Wetted Perimeter (ft)
        V  = Velocity (ft/sec)
        Sf = Slope (ft/ft)
        n  = Manning's Roughness

---------------
Subbasin DA2
---------------

        User-Defined TOC override (minutes):     10.00

**********************
Subbasin Runoff Summary
**********************

-------------------------------------------------------------------------------
Subbasin             Total     Total      Peak  Weighted           Time of
ID                  Precip    Runoff    Runoff     Curve     Concentration
                       in        in       cfs    Number    days  hh:mm:ss
-------------------------------------------------------------------------------
DA2                  13.25     12.56     54.06    94.400       0  00:10:00
-------------------------------------------------------------------------------
```

Node Depth Summary

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.69	2.28	11.28	0	12:26	0	0	0:00:00
Outfall	0.00	0.00	8.75	0	00:00	0	0	0:00:00
OutfallWeir	0.00	0.00	9.50	0	00:00	0	0	0:00:00
ProposedPond	7.21	8.45	11.45	0	12:25	0	0	0:00:00

Node Flow Summary

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
Jun-01	JUNCTION	0.00	6.29	0	12:08	0.00		
Outfall	OUTFALL	0.00	5.58	0	12:26	0.00		
OutfallWeir	OUTFALL	0.00	21.32	0	12:25	0.00		
ProposedPond	STORAGE	51.76	51.76	0	12:14	0.00		

Storage Node Summary

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
ProposedPond	228.324	86	0 12:25	163.311	62	26.90	0.00	0:00:00	0.000

Outfall Loading Summary

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Outfall	99.22	1.69	5.58
OutfallWeir	11.95	6.81	21.32

System 55.59 8.50 26.90

****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum Flow /Design Flow	Ratio of Maximum Depth	Total Time minutes	Reported Condition
Outfall	CONDUIT	0 12:26	7.18	1.00	5.58	2.88	1.94	0.97	0	> CAPACITY
1.8inOrifice	ORIFICE	0 10:48			0.07			1.00		
ControlSide	ORIFICE	0 12:24			3.82			0.21		
ControlTop	ORIFICE	0 12:08			3.24					
OverflowWeir	WEIR	0 12:25			21.32			0.23		

****
Highest Flow Instability Indexes
****
All links are stable.

WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node Jun-01.

Analysis began on: Fri May 04 16:49:56 2018
Analysis ended on: Fri May 04 16:50:00 2018
Total elapsed time: 00:00:04

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Pre Development DA2.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 1
Number of links 0

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-01	1 Yr	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Outfall	OUTFALL	0.00	0.00	0.00	

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	2.068	4.827
Surface Runoff	0.113	0.264
Continuity Error (%)	-0.000	

************************* Flow Routing Continuity *************************	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	1.131	0.369
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

****
Composite Curve Number Computations Report
****

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	5.14	-	79.60
Composite Area & Weighted CN	5.14		79.60

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n

R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's Roughness

Subbasin DA2

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
DA2	4.75	2.64	13.05	79.600	0	00:10:00

Analysis began on: Fri May 04 16:56:46 2018
Analysis ended on: Fri May 04 16:56:49 2018
Total elapsed time: 00:00:03

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Pre Development DA2.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 1
Number of links 0

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-01	2 Yr	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Outfall	OUTFALL	0.00	0.00	0.00	

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	2.612	6.097
Surface Runoff	0.160	0.374
Continuity Error (%)	-0.000	

************************* Flow Routing Continuity *************************	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	1.601	0.522
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

****
Composite Curve Number Computations Report
****

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	5.14	-	79.60
Composite Area & Weighted CN	5.14		79.60

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n

R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's Roughness

Subbasin DA2

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
DA2	6.00	3.74	18.36	79.600	0	00:10:00

Analysis began on: Fri May 04 16:58:06 2018
Analysis ended on: Fri May 04 16:58:09 2018
Total elapsed time: 00:00:03

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Pre Development DA2.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 1
Number of links 0

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-01	5 Yr	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Outfall	OUTFALL	0.00	0.00	0.00	

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	3.265	7.622
Surface Runoff	0.219	0.511
Continuity Error (%)	-0.000	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	2.191	0.714
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

Composite Curve Number Computations Report

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	5.14	-	79.60
Composite Area & Weighted CN	5.14		79.60

SCS TR-55 Time of Concentration Computations Report

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n

R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's Roughness

Subbasin DA2

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
DA2	7.50	5.11	24.84	79.600	0	00:10:00

Analysis began on: Fri May 04 16:59:48 2018
Analysis ended on: Fri May 04 16:59:50 2018
Total elapsed time: 00:00:02

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Pre Development DA2.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 1
Number of links 0

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-01	10 Yr	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Outfall	OUTFALL	0.00	0.00	0.00	

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	4.026	9.400
Surface Runoff	0.289	0.675
Continuity Error (%)	-0.000	

************************* Flow Routing Continuity *************************	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	2.891	0.942
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

****
Composite Curve Number Computations Report
****

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	5.14	-	79.60
Composite Area & Weighted CN	5.14		79.60

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n

R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's Roughness

Subbasin DA2

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
DA2	9.25	6.76	32.42	79.600	0	00:10:00

Analysis began on: Fri May 04 16:59:16 2018
Analysis ended on: Fri May 04 16:59:18 2018
Total elapsed time: 00:00:02

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Pre Development DA2.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 1
Number of links 0

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-01	25 Yr	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Outfall	OUTFALL	0.00	0.00	0.00	

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	4.570	10.670
Surface Runoff	0.341	0.795
Continuity Error (%)	-0.000	

************************* Flow Routing Continuity *************************	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	3.405	1.110
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

****
Composite Curve Number Computations Report
****

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	5.14	-	79.60
Composite Area & Weighted CN	5.14		79.60

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n

R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's Roughness

Subbasin DA2

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Total Precip in	Total Runoff in	Peak Runoff cfs	Weighted Curve Number	Time of Concentration days	Time of Concentration hh:mm:ss
DA2	10.50	7.95	37.86	79.600	0	00:10:00

Analysis began on: Fri May 04 17:00:23 2018
Analysis ended on: Fri May 04 17:00:26 2018
Total elapsed time: 00:00:03

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Pre Development DA2.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 1
Number of links 0

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-01	50 Yr	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Outfall	OUTFALL	0.00	0.00	0.00	

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	5.223	12.194
Surface Runoff	0.402	0.939
Continuity Error (%)	-0.000	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	4.023	1.311
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

Composite Curve Number Computations Report

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	5.14	-	79.60
Composite Area & Weighted CN	5.14		79.60

SCS TR-55 Time of Concentration Computations Report

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n

```
        R  = Aq / Wp
        Tc = (Lf / V) / (3600 sec/hr)

        Where:

        Tc = Time of Concentration (hrs)
        Lf = Flow Length (ft)
        R  = Hydraulic Radius (ft)
        Aq = Flow Area (ft²)
        Wp = Wetted Perimeter (ft)
        V  = Velocity (ft/sec)
        Sf = Slope (ft/ft)
        n  = Manning's Roughness

---------------
Subbasin DA2
---------------

        User-Defined TOC override (minutes):     10.00

**********************
Subbasin Runoff Summary
**********************

-------------------------------------------------------------------------------
Subbasin             Total     Total      Peak  Weighted           Time of
ID                  Precip    Runoff    Runoff     Curve     Concentration
                        in        in       cfs    Number    days  hh:mm:ss
-------------------------------------------------------------------------------
DA2                  12.00      9.39     44.28    79.600       0  00:10:00
-------------------------------------------------------------------------------


Analysis began on:  Fri May 04 17:01:00 2018
Analysis ended on:  Fri May 04 17:01:02 2018
Total elapsed time: 00:00:02
```

Autodesk® Storm and Sanitary Analysis 2016 - Version 11.1.55 (Build 1)

****
Project Description
****
File Name ..... Pre Development DA2.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. SCS TR-55
Time of Concentration..... SCS TR-55
Storage Node Exfiltration.. None
Starting Date APR-05-2018 00:00:00
Ending Date APR-10-2018 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of rain gages 1
Number of subbasins 1
Number of nodes 1
Number of links 0

****
Raingage Summary
****

Gage ID	Data Source	Data Type	Recording Interval min
Rain Gage-01	100Yr	INTENSITY	6.00

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DA2	5.14

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Outfall	OUTFALL	0.00	0.00	0.00	

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	5.767	13.465
Surface Runoff	0.454	1.060
Continuity Error (%)	-0.000	

************************* Flow Routing Continuity *************************	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	4.540	1.479
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

****
Composite Curve Number Computations Report
****

Subbasin DA2

Soil/Surface Description	Area (acres)	Soil Group	CN
-	5.14	-	79.60
Composite Area & Weighted CN	5.14		79.60

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

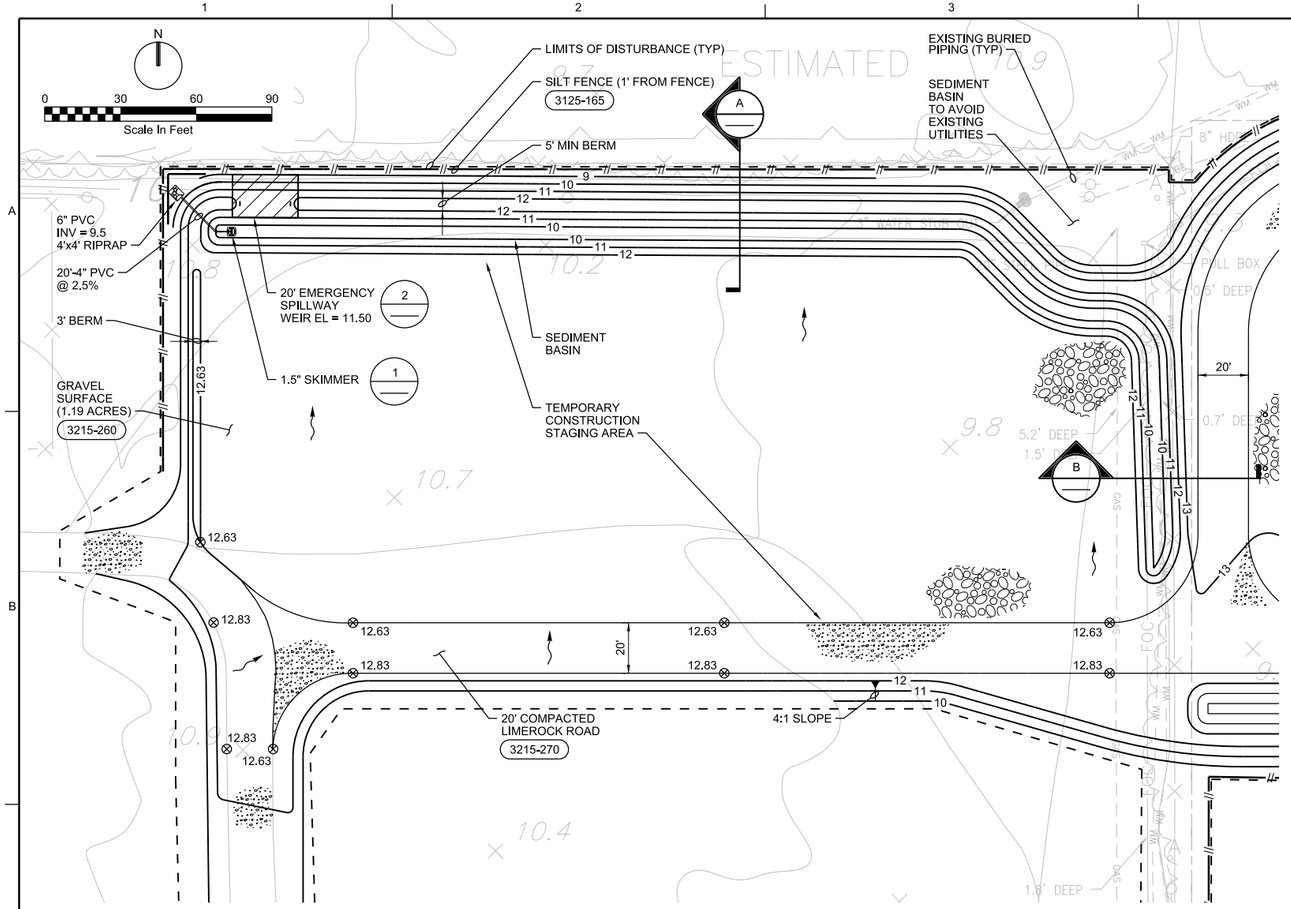
Channel Flow Equation

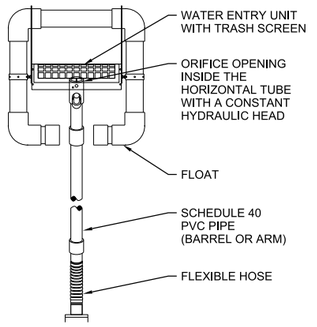
V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n

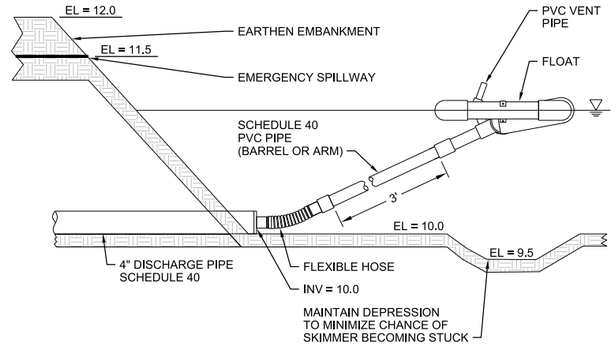
```
        R  = Aq / Wp
        Tc = (Lf / V) / (3600 sec/hr)

        Where:

        Tc = Time of Concentration (hrs)
        Lf = Flow Length (ft)
        R  = Hydraulic Radius (ft)
        Aq = Flow Area (ft²)
        Wp = Wetted Perimeter (ft)
        V  = Velocity (ft/sec)
        Sf = Slope (ft/ft)
        n  = Manning's Roughness

---------------
Subbasin DA2
---------------

        User-Defined TOC override (minutes):     10.00

**********************
Subbasin Runoff Summary
**********************

-------------------------------------------------------------------------------
Subbasin             Total     Total      Peak  Weighted           Time of
ID                  Precip    Runoff    Runoff     Curve     Concentration
                        in        in       cfs    Number    days  hh:mm:ss
-------------------------------------------------------------------------------
DA2                  13.25     10.60     49.66    79.600       0  00:10:00
-------------------------------------------------------------------------------


Analysis began on:  Fri May 04 17:01:32 2018
Analysis ended on:  Fri May 04 17:01:35 2018
Total elapsed time: 00:00:03
```

Attachment H

Temporary Construction Staging Area and Sediment Basin



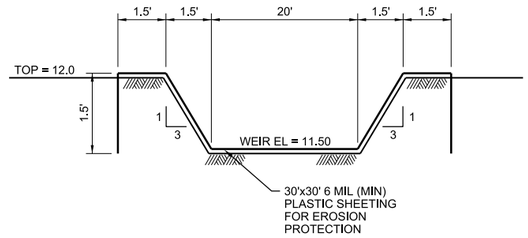




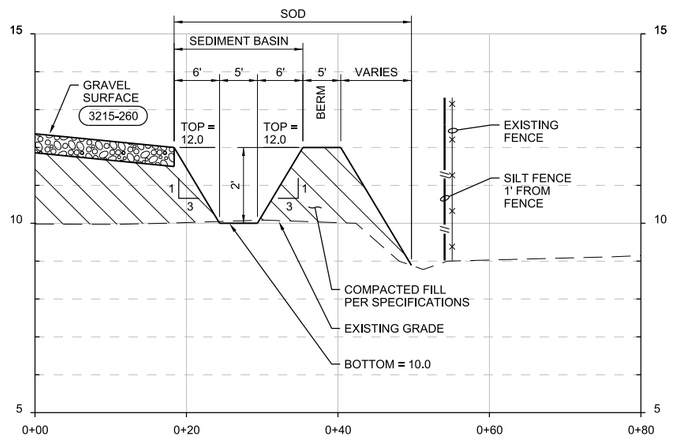
NOTES:

1. SKIMMER SHALL BE EQUIVALENT TO THE 1.5" DIA SKIMMER BY FAIRCLOTH SKIMMER (www.fairclothskimmer.com).

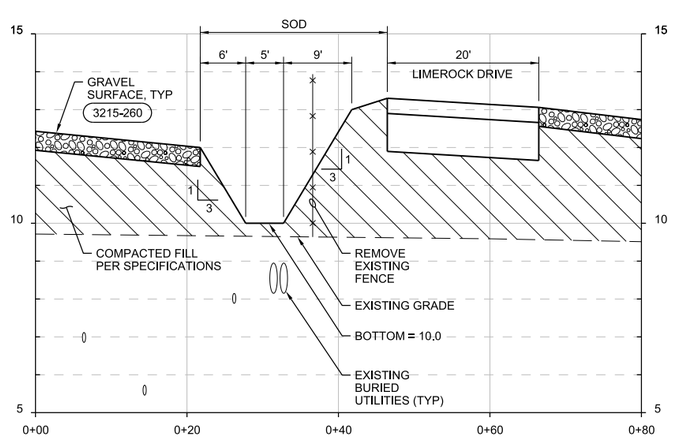
1 DETAIL - SKIMMER 1.5" DIA
NTS



2 DETAIL - EMERGENCY SPILLWAY
NTS



A SECTION - SEDIMENT BASIN
SCALE: 1" = 10' HORIZ
1" = 2' VERT



B SECTION - SEDIMENT BASIN
SCALE: 1" = 10' HORIZ
1" = 2' VERT

25 West Cedar Street, Suite 350
Pensacola, Florida
United States. 32502-5975
Tel: +1(850)438-2740

FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
TEMPORARY CONSTRUCTION AREA PLAN

NO.	DATE	DSGN	DR	CHK	APVD	BY	APVD
REVISION		A MALONE	C CHILDRESS			A MALONE	

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REUSE OF DOCUMENTS:

90% DESIGN - NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-14
SHEET	of

Temporary Sediment Basin Calculations					
For:	Gulf Power Plant Smith			Engineer:	Ben Dykes
Date:	2/14/2019			Supervising Engineer:	Tony Malone

1) Required Storage Volume:

(3,600 Cu. Ft. per Acre)

Drainage Area = 1.64 acres

Volume = 5904 ft^3

2) Basin Stage vs. Area vs. Volume:

Stage	Area (ft^2)	Cumulative Volume (ft^3)
10.00	2339	0
11.00	5217	3778
11.50	6688	6754
12.00	8158	10466

3) TR-55 Analysis:

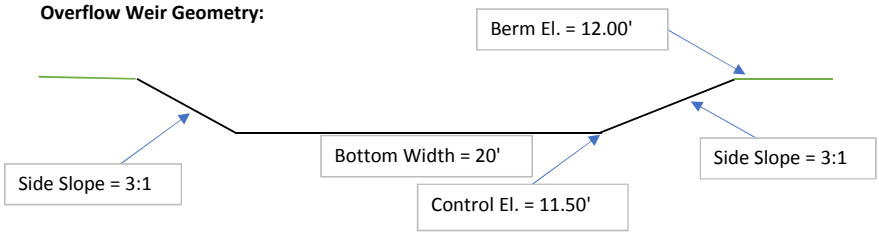
Basin Area =	1.64	acres
Hydrologic Group =	"A"	Type Soils
Land Cover =	Gravel	
Curve Number =	77	For Gravel with "A" Type Soils

Time of Concentration (Tc) =

Area	Sheet Flow				
	n	L (ft)	P2 (in)	s (ft/ft)	T1 (min)
Basin 1	0.011	148	6	0.003	2.6

Assume Tc = 10 min

4) Overflow Weir Geometry:



5) ICPR Results Using 10Y-24H Storm

Peak Pond Stage = **11.75'** **OK**

6) Skimmer Sizing

Skimmer to be sized for minimum of 0.2 cfs per acre of drainage area

Drainage Area = 1.64 acres

Minimum Flow Rate = 0.328 cfs

1 1/2" Faircloth Skimmer Design Capacity

Capacity = 1,728 cfd (max)

1,728 cfd = **1.2 cfs** **OK**

Manual Basin: Drainage Basin

Scenario: Scenario1
Node: Sediment Basin
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coeficient Zone	Reference ET Station
1.6400	Gravel	A	~SCSIII-24		

Comment:

Node: Sediment Basin

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 10.00 ft
Warning Stage: 12.00 ft

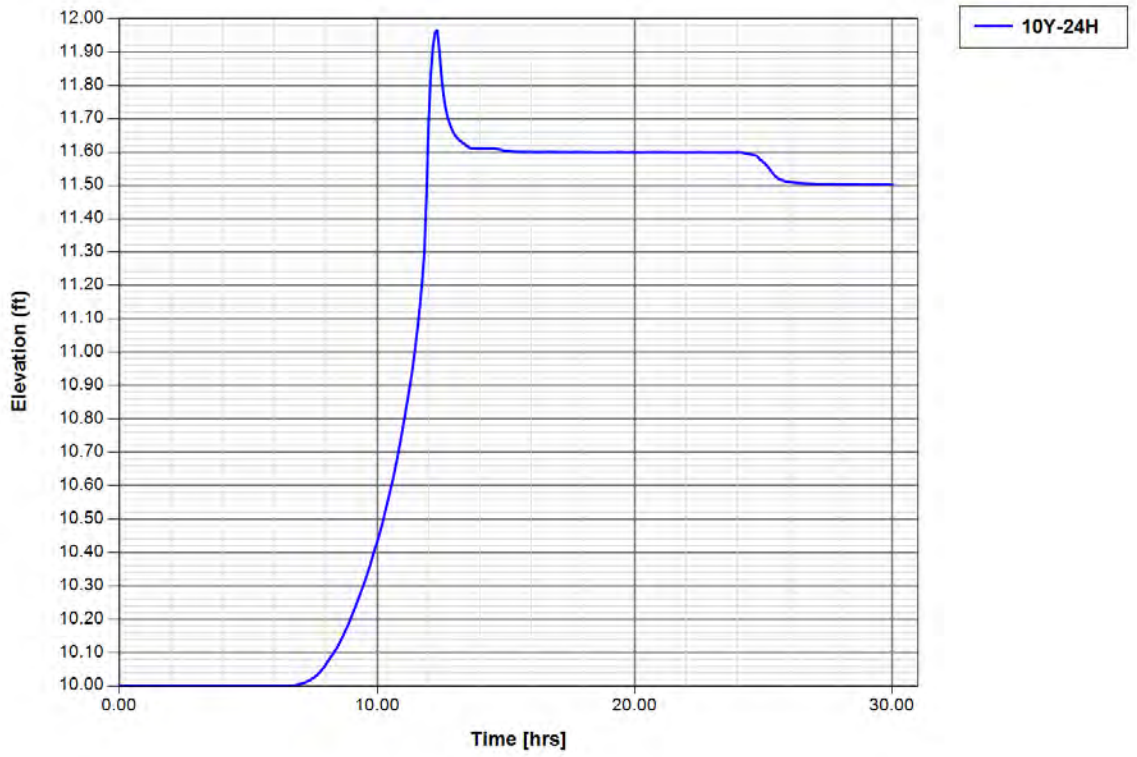
Stage [ft]	Area [ac]	Area [ft2]
10.00	0.0445	1938
11.00	0.1094	4765
12.00	0.1819	7924

Comment:

Node Max Conditions [Scenario1]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Sediment Basin	10Y-24H	12.00	11.97	0.0010	7.21	6.67	7829

Node Stage: Sediment Basin [Scenario1]



Drop Structure Link: Emergency Overflow		Upstream Pipe		Downstream Pipe	
Scenario:	Scenario1	Invert:	11.50 ft	Invert:	11.25 ft
From Node:	Sediment Basin	Manning's N:	0.0160	Manning's N:	0.0160
To Node:	Wetland	Geometry: Rectangular		Geometry: Rectangular	
Link Count:	1	Max Depth:	0.50 ft	Max Depth:	0.50 ft
Flow Direction:	Both	Max Width:	10.00 ft	Max Width:	10.00 ft
Solution:	Combine	Fillet:	0.00 ft	Fillet:	0.00 ft
Increments:	10	Bottom Clip			
Pipe Count:	1	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	20.00 ft	Ref Node:		Ref Node:	
FHWA Code:	54	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 ft	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Pipe Comment:

Weir Component	
Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Rectangular
Invert:	11.50 ft
Control Elevation:	11.50 ft
Max Depth:	0.50 ft
Max Width:	10.00 ft
Fillet:	0.00 ft

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

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

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

Weir Comment:

Drop Structure Comment:

ERP Application
Section A

Application for Individual and Conceptual Approval Environmental Resource Permit and Authorization to Use State-Owned Submerged Lands

Florida Department of Environmental Protection/

Water Management Districts

Effective June 1, 2018

Instructions for Use of This Form:

This form is designed to assist you in submitting a complete application. All applications must include Section A-General Information for All Activities. Sections B through H list typical information that is needed based on the proposed activities and are only required as applicable. Part 1-C of Section A will guide you to the correct sections needed based on your proposed activities. Applicants are advised to consult Chapter 62-330, F.A.C., and the Environmental Resource Permit Applicant's Handbooks Volumes I and II for information regarding the ERP permitting process and requirements while preparing their application. Internet addresses for Chapter 62-330, F.A.C., and the Applicant's Handbook, Agency contact information, and additional instructions for this form can be found in Attachment 1.

What Sections of the Application Must I Fill Out?

Type of Activity	Section A	Section B	Section C	Section D	Section E	Section F	Section G	Section H
Fill in wetlands or waters for a single family residence?	Y	Y	N	N	N	N	N	N
Docks, shoreline stabilization, seawalls associated with a single family residence?	Y	Y	N	N	N	Y, as needed	N	N
Wetland impacts (other than association with an individual residence)?	Y	N	Y	N	N	N	N	N
Boating facilities, a marina, jetty, reef, or dredging?	Y	N	Y	Y	N	Y, as needed	N	N
Any work on state owned submerged land?	Y	N	Y	N	N	Y	N	N
Construction of a stormwater management system?	Y	N	Y, as needed	N	Y	N	N	N
Constructing a mitigation bank?	Y	N	Y	N	Y, as needed	N	Y	N
Creating a mine?	Y	N	Y, as needed	N	N	N	N	Y

Note- if you are required to provide Section B, then you do not have to provide any other Sections, unless the activities are on state-owned submerged lands. In that case, Section F will also be required.

If you have any questions, or would like assistance completing this form, please contact the staff of the nearest office of either the Florida Department of Environmental Protection (DEP) or a Water Management District (WMD) (see Attachment 2).

Section A:
General Information for All Activities

Part 1: Name, Application Type, Location, and Description of Activity

A. Name of project, including phase if applicable:
Plant Lansing Smith Treatment Pump Station

B. This is for (check all that apply):

X Construction and operation of **new** works, activities, and/ or a stormwater management system

☐ **Conceptual Approval** of proposed works, activities and/ or a stormwater management system

☐ Modification or alteration of **existing** works, activities, and/or a stormwater management system. Provide the existing DEP or WMD permit #, if known: Note: Minor modifications do not require completion of this form, and may instead be requested by letter in accordance with section 6.2 of Applicant's Handbook Volume I.

☐ **Maintenance or repair** of works, activities, and/ or a stormwater management system previously permitted by the DEP or WMD. Provide existing permit #, if known:

☐ Abandonment or removal of works, activities, and/ or a stormwater management system.

Provide existing DEP or WMD permit #, if known:

☐ Operation of an **existing unpermitted** work, activity, and/or stormwater management system.

☐ Construction of additional phases of a permitted work, activity, or system.

Provide the existing DEP or WMD permit #, if known:

C. **List the type of activities proposed. Check all that apply**, **and provide the supplemental information requested in each of the referenced application sections.** Please also reference Applicant's Handbook Volumes I and II for the type of information that may be needed.

☐ Activities associated with one single-family residence, duplex, triplex, or quadruplex that do not qualify for an exemption or a General Permit: **Provide the information requested in Section B. Do not complete Section C.**

X Activities within wetlands or surface waters, or within 25 feet of a wetland or surface water, (not including the activities associated with an individual single-family residence). Examples include dredging, filling, outfall structures, docks, piers, over-water structures, shoreline stabilization, mitigation, reclamation, and restoration/enhancement. **Provide the information requested in Section C.**

☐ Activities within navigable or flowing surface waters such as a multi-slip dock or marina, dry storage facility, dredging, bridge, breakwaters, reefs, or other offshore structures: **In addition to Section C, also provide the information requested in Section D.**

☐ Activities that are (or may be) located within, on, or over state-owned submerged lands (See Chapter 18-21, F.A.C. https://www.flrules.org/gateway/ChapterHome.asp?Chapter=18-21): **In addition to Section B or C, also provide the information requested in Section F.**

X Construction or alteration of a stormwater management system serving residential, commercial, transportation, industrial, agricultural, or other land uses, or a solid waste facility (excluding mines that are regulated by DEP). **Provide the information requested in Section E.**

☐ Creation or modification of a Mitigation Bank (refer to Chapter 62-342, F.A.C. https://www.flrules.org/gateway/ChapterHome.asp?Chapter=62-342): **Provide the information requested in Section G.**

☐ Mines (as defined in Section 2.0 of Applicant's Handbook Volume I) that are regulated by the DEP: **Provide the information requested in Section H.**

☐ Other, describe: Please contact the Agency to determine which additional sections of the application are needed. See Attachment 2 for Agency contacts.

D. Describe in general terms the proposed project, system, works, or other activities. For permit modifications, please briefly describe the changes requested to the permit: See Exhibit D ERP Report

E. Project/Activity Street/Road Address or other location (if applicable): 4300 CR 2300
City: Southport County(ies): Bay Zip: 32409

Note: For utility, road, or ditch/canal activities, provide a starting and ending point using street names and nearest house numbers or provide length of project in miles along named streets or highways.

F. Project location map and Section, Township, and Range information (use additional sheets if needed):

Please attach a location map showing the location and boundaries of the proposed activity in relation to major intersections or other landmarks. The map should also contain a north arrow and a graphic scale; show Section(s), Township(s), and Range(s); and must be of sufficient detail to allow a person unfamiliar with the site to find it. See location map attached as Exhibit A.
Section(s): 36 Township: 2S Range: 15W Land Grant name, if applicable:
Section(s): Township: Range:

1. Section(s): Township: Range:

G. Latitude (DMS) 30° 16' 26.9" Longitude (DMS) 85° 41' 41.6" (Taken from central location of the activity). Explain source for obtaining latitude and longitude (i.e. U.S.G.S. Quadrangle Map, GPS, online resource): FL Map Direct

H. Tax Parcel Identification Number(s): 26636-010-000

[Number may be obtained from property tax bill or from the county property appraiser's office; if on multiple parcels, provide multiple Tax Parcel Identification Numbers]

I. Directions to Site (from major roads; include distances and landmarks as applicable): From Lynn Haven, FL travel north on HWY 77 take left on HWY 2300 to dead end at Plant Lansing Smith .

J. Project area or phase area: 8.69 acres

K. Name of waterbody(ies) (if known) in which activities will occur or into which the system will discharge: North Bay

The following questions (M-O) are not applicable to activities related to an individual single-family residence, including a dock, pier, and/or seawall associated with that residence.

L. Is it part of a larger plan of development or sale? **X** yes ☐ no

M. Impervious or semi-impervious area excluding wetlands and other surface waters (if applicable):

2.04 acres Lime rock, gravel areas, pads, tanks, and structures.

N. Volume of water the system is capable of impounding (if applicable):

Normal Pool: acre-feet. Depth ft.
Maximum Pool: acre-feet. Depth ft.

Part 2: Supplemental Information, and Permit History

A. Is this an application to modify an existing Environmental Resource Permit or to construct or implement part of a multi-phase project, such as a project with a Conceptual Approval permit? ☐ Yes X No (If you answered "yes", please provide permit numbers below*):*

Agency	Date	Permit/Application No.	Project Name

Agency	Date	Permit/Application No.	Project Name

B. Indicate if there have been any **pre-application meeting(s)** with the DEP, WMD, or delegated local government, or other discussions, meetings, or coordination with other stakeholders or agencies about the proposed project, system or activity. If so, please provide the date(s), location(s) of the meeting, and the name(s) of Agency staff that attended the meeting(s):

Agency	Date	Location	Meeting Attendees
USACE	**02-12-19**	**Gulf Power office**	**Jeff Cole- Gulf Power / Lisa Lovvorn- USACE**

C. **Attach a depiction (plan and section views), which clearly shows the works or other activities proposed to be constructed.** Use multiple sheets, if necessary, a scale sufficient to show the location and type of works, and include a north arrow and a key to any symbols used. **Specific information to be included in the plans is based on the activities proposed and is further described in Sections B-H**. However, supplemental information may be required based on the specific circumstances or location of the proposed works or other activies. See Exhibit D ERP Report

D. Processing Fee: **Please submit the application processing fee along with this application form and supplemental information.** Processing fees vary based on the size of the activity, the type of permit applied for, and the reviewing Agency. Please reference Appendix D of Applicant's Handbook Volume I to determine the appropriate fee.

Part 3: Applicant and Associated Parties Information

Instructions: Please complete the following sections. For corporations, list a person who is a registered agent or officer of the corporation who has the legal authority to bind the corporation.

A. Applicant (Entity Must Have Sufficient Real Property Interest)
☐ **This is a Contact Person for Additional Information**

Last Name: Markey
First Name: Richard
Middle Initial: M
Title: Environmental Services Director
Company: Gulf Power Company
Address: One Energy Place
City: Pensacola
State: FL
Zip: 32520
Home Telephone:
Work Telephone: 850-444-6573

Cell Phone:
E-mail Address: Richard.Markey@nexteraenergy.com

Correspondence will be sent via email, unless you check here to receive it via US Mail: ☐

B. Land Owner(S) (If Different or in Addition to Applicant)
☐ **Check here if land owner is also a co-applicant**

Last Name:	First Name:	Middle Initial:
Title:	Company:	
Address:		
City:	State:	Zip:
Home Telephone:	Work Telephone:	
Cell Phone:		
E-mail Address:		

Correspondence will be sent via email, unless you check here to receive it via US Mail: ☐

C. Operation and Maintenance Entity(see Applicant's Handbook I, Section 12.3)

Last Name: Markey	First Name: Richard	Middle Initial: M
Title: Environmental Services Director	Company: Gulf Power Company	
Address: One Energy Place		
City: Pensacola	State: FL	Zip: 32520
Home Telephone:	Work Telephone: 850-444-6573	
Cell Phone:		
E-mail Address: Richard.Markey@nexteraenergy.com		

Correspondence will be sent via email, unless you check here to receive it via US Mail: ☐

D. Co-Applicant (If Different or In Addition to Applicant and Owner)

Last Name:	First Name:	Middle Initial:
Title:	Company:	
Address:		
City:	State:	Zip:
Home Telephone:	Work Telephone:	
Cell Phone:		
E-mail Address:		

Correspondence will be sent via email, unless you check here to receive it via US Mail: ☐

E. Registered Professional Consultant
☐**This is a contact person for additional information**

Last Name:	First Name:	Middle Initial:
Title:	Company:	
Address:		
City:	State:	Zip:
Home Telephone:	Work Telephone:	
Cell Phone:		
E-mail Address:		

Correspondence will be sent via email, unless you check here to receive it via US Mail: ☐

F. Environmental Consultant
X This is a contact person for additional information

Last Name: Cole	First Name: Jeffrey	Middle Initial: E
Title: Environmental Specialist	Company: Gulf Power Company	
Address: 1230 E 15th Street		
City: Panama City	State: FL	Zip: 32405
Home Telephone:	Work Telephone: 850-872-3347	
Cell Phone: 850-458-5532		
E-mail Address: Jeffrey.Cole@nexteraenergy.com		

Correspondence will be sent via email, unless you check here to receive it via US Mail: ☐

G. Agent Authorized to Secure Permit (If Different from Consultant)

Last Name:	First Name:	Middle Initial:
Title:	Company:	
Address:		
City:	State:	Zip:
Home Telephone:	Work Telephone:	
Cell Phone:		
E-mail Address:		

Correspondence will be sent via email, unless you check here to receive it via US Mail: ☐

If necessary, please add additional pages for other contacts and property owners related to this project.

H. Real Property Interest

a. Permits are only issued to entities having sufficient real property interest as described in Section 4.2.3(d) of Applicant's Handbook Volume I**. Please attach evidence of the applicant's real property interest over the land upon which the activities subject to the application will be conducted, including mitigation areas (if applicable).** Refer to Sections 4.2.3(d)-(e) for sufficient real property interest documentation. See Exhibit B.

b. For activities that require a recorded notice in accordance with rule 62-330.090(7), F.A.C., please provide either the complete legal description of the property or a copy of the pages of the document recorded in the public records that contains the complete legal description. If the land upon which the proposed activities are to occur is not owned by the applicant, the applicant must also provide copies of any right-of-way, leases, easements, or other legal agreement which authorizes the applicant to perform the activities on those lands.

Part 4: Signatures and Authorization to Access Property

Instructions: For multiple applicants please provide a separate Part 4 for each applicant. For corporations, the application must be signed by a person authorized to bind the corporation. A person who has sufficient real property interest (see Section 4.2.3(d) of Applicant's Handbook Volume I) is required in (B) to authorize access to the property, except when the applicant has the power of eminent domain.

A. By signing this application form, I am applying for the permit and any proprietary authorizations identified above, according to the supporting data and other incidental information filed with this application. I am familiar with the information contained in this application and represent that such information is true, complete and accurate. I understand this is an application and not a permit, and that work prior to approval is a violation. I understand that this application and any permit issued or proprietary authorization issued pursuant thereto does not relieve me of any obligation for obtaining any other required federal, state, water management district, or local permit prior to commencement of construction. I agree to operate and maintain the permitted system unless the permitting agency authorizes transfer of the permit to a different responsible operation and maintenance entity. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

Richard "Mike" Markey
Typed/Printed Name of Applicant or Applicant's Authorized Agent

Signature of Applicant or Applicant's Authorized Agent

3/8/19
Date

Environmental Affairs Director
(Corporate Title if applicable)

B. Certification of Sufficient Real Property Interest And Authorization For Staff To Access The Property:

I certify that:

☒ **I possess sufficient real property interest in or control, as defined in Section 4.2.3 (d) of Applicant's Handbook Volume I,** over the land upon which the activities described in this application are proposed and I have legal authority to grant permission to access those lands. I hereby grant permission, evidenced by my signature below, for staff of the Agency to access, inspect, and sample the lands and waters of the property as necessary for the review of the proposed works and other activities specified in this application, upon advance notice. I authorize these agents or personnel to enter the property as many times as may be necessary to make such review, inspection, and/ or sampling. Further, if a permit is granted, upon advance notice, I agree to provide entry to the project site for such agents or personnel with proper identification to determine compliance with permit conditions and permitted plans and specifications.

OR

☐ I represent an entity having **the power of eminent domain and condemnation authority**, and I/we shall make appropriate arrangements to enable staff of the Agency to legally access, inspect, and sample the property as described above.

Richard "Mike" Markey
Typed/Printed Name

Signature

3/8/19
Date

Environmental Affairs Director

(Corporate Title if applicable)

C. Designation of Authorized Agent (If Applicable):

I hereby designate and authorize Jeff Cole to act on my behalf, or on behalf of my corporation, as the agent in the processing of this application for the permit and/or proprietary authorization indicated above; and to furnish, on request, supplemental information in support of the application. In addition, I authorize the above-listed agent to bind me, or my corporation, to perform any requirements which may be necessary to procure the permit or authorization indicated above. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S., and 18 U.S.C. Section 1001.

Richard "Mike" Markey
Typed/Printed Name of Applicant

Signature of Applicant

3/8/19
Date

Environmental Affairs Director
(Corporate Title if applicable)

ERP Application
Section C

Section C: Supplemental Information for Works or Other Activities In, On, or Over Wetlands and/or Other Surface Waters

Instructions: **This section is for applications that do not involve activities associated with an individual single-family residence, duplex, triplex, or quadruplex. For those activities, please use Section B.** This form is to be completed if the proposed work or activity will occur in, on, over, or within 25 feet of a wetland or other surface water. The supplemental information required by this section is in addition to the information required by Section A of the application.

Part 1: Wetland or Other Surface Water Impact Summary

1. Describe the basic purpose of the project or activity: Plant Lansing Smith Treatment Pump Station

2. Total area of work (dredging, filling, construction, alteration, or removal) in, on, or over wetlands or other surface waters: sq. ft.; 3.17 ac.

3. Total volume of material to be dredged or filled in wetlands or other surface waters:
   a. to be dredged: 4571cubic yards,
   b. to be filled: 11540 cubic yards.

4. Identify the seasonal high water level (SHWL) and wetland normal pool elevations for each wetland or surface water within the project site. For tidal wetlands and/or surface waters provide the elevation of mean high and mean low water. Include an aerial photograph showing the location of each sampling location, dates, datum, and methods used to determine these elevations. 7.0 SHWL

5. Name of waterbody(ies) (if applicable & if known) in which work will occur? Unnamed wetlands

6. Is the activity proposed in an Outstanding Florida Water or Aquatic Preserve?
   ☐ yes, name: x☐ no ☐ I don't know

7. Has there ever been a formal or informal wetland determination for the project site? If yes, provide the identifying number and/or a copy of the jurisdictional map. NO

8. Provide a map(s) of the project area and vicinity delineating USDA/NRCS soil types. **Attachment D**

9. Provide recent aerials~~,~~ legible for photointerpretation (no photocopies) with a scale of 1" = 400 ft, or more detailed, with project boundaries and wetland boundaries delineated on the aerial. **See CH2M ERP stormwater report in Appendix C**

10. Provide maps accurately portraying the existing and proposed natural vegetative community types and land cover classifications using recognized classification schemes. Suggested sources include: the Florida Natural Areas Inventory Guide to the Natural Communities of Florida (2010) available at http://www.fnai.org/naturalcommguide.cfm, or the Florida Land Use and Cover Classification System (FLUCCS) (FDOT 1999, available at

http://www.dot.state.fl.us/surveyingandmapping/documentsandpubs/fluccmanual1999.pdf). For vegetated areas dominated by exotic vegetation, use the descriptors representative of the native community type that was present prior to exotic infestation.

11. Impact Summary Tables (located at the end of this section):
    a. For all projects, complete Table 1, 2 and 3 as applicable.
    b. For shoreline stabilization projects, provide the information requested in Table 4.

12. If the activity is located on state owned submerged lands and requires a lease or easement, provide a list of names and addresses from the latest county tax assessment roll of all property owners located within a 500 ft. radius of the proposed lease or easement boundary in mailing label format, or you may elect to send notice to those persons by certified mail, with the return-receipt card addressed to the DEP or water management district, as applicable, in accordance with subsection 18-21.005(3), F.A.C., and Section 253.115, F.S. Attach additional sheets if necessary.
    1. Name:
       Mailing Address:
       City, State, Zip Code:

    2. Name:
       Mailing Address:
       City, State, Zip Code:

    3. Name:
       Mailing Address:
       City, State, Zip Code:

    4. Name:
       Mailing Address:
       City, State, Zip Code:

    5. Name:
       Mailing Address:
       City, State, Zip Code:

    6. Name:
       Mailing Address:
       City, State, Zip Code:

Part 2: Environmental Considerations

Note: for many questions, a state statute/Applicant's Handbook Volume I (AH I) section is cited to assist the applicant in addressing these questions. However, additional federal criteria may apply.

1. Elimination or Reduction of Impacts (Avoidance and Minimization). Describe measures taken to eliminate or reduce impacts to wetlands and other surface waters (*Refer to AH I Section 10.2.1*). **See Exhibit E**

2. Fish, Wildlife, Listed Species, and their Habitats. Provide results of any wildlife assessments that have been conducted on the project site and provide any comments, biological opinions, formal or informal consultation decisions, or recommended actions you have received pertaining to the project from the

Florida Fish and Wildlife Conservation Commission, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service. (*Refer to AH I Section 10.2.2*). **See Exhibit D**

3. Water quantity impacts to wetlands and other surface waters (*Refer to AH I Section 10.2.2.4 and AH II*).

   a. Does the activity include a proposed surface water management system with a control elevation different than the wetland normal pool elevation(s) of existing or proposed created wetlands or other surface waters? **YES**

   b. If yes to (a), provide documentation (e.g. drawdown assessment or other methods) that shows the proposed surface water management system will not change the hydroperiod of the existing or created wetland or other surface water. **See CH2M ERP Stormwater Report in Appendix C**

4. Public Interest Test. Please describe how the proposed activity will ***not be contrary*** to the public interest, OR if such an activity significantly degrades or is located within an Outstanding Florida Water (OFW), that the regulated activity will be ***clearly in*** the public interest (*Refer to AH I Section 10.2.3*).

   a. Please describe how the project will be designed to avoid adverse effects to public health, safety, or the welfare or the property of others. **See Exhibit E**

   b. Please describe how the project will be designed to avoid adverse effects to the conservation of fish and wildlife, including endangered or threatened species, or their habitats. **See Exhibit E**

   c. Please describe how the project will be designed to avoid adverse effects to navigation or the flow of water or cause harmful erosion or shoaling. **No navigation or water flow will be impacted**

   d. Please describe how the project will be designed to avoid adverse effects to the fishing or recreational values or marine productivity in the vicinity of the activity. **Water quality and quantity will be maintained through a stormwater management system**

   e. Will the project be of a temporary or permanent nature? **permanent**

   f. Please describe how the project will be designed to avoid adverse impacts to significant historical and archaeological resources, under the provisions of section 267.061, F.S. **See Exhibit I. If any historical resources are located during construction work will stop in that area for further review.**

   g. Please describe how the project will be designed to avoid adverse effects to the current condition and relative value of functions being performed by areas affected by the proposed regulated activity. **See Exhibit E**

5. Water Quality.
   Provide a description of how water quality will be maintained in wetlands and other surface waters that will be preserved or will remain undisturbed, both on and offsite. Please address both short-term (such as during construction) and long-term water quality considerations (*Refer to AH I Section 10.2.4*). **A stormwater system will maintain water quality before it is discharged to local wetlands.**

6. Class II Waters; Waters approved for shellfish harvesting *(Refer to AH I Section 10.2.5)*.

a. Will the project occur in Class II that are NOT approved for shellfish harvesting? If yes, please provide a plan or procedure detailing the measures to be taken to meet the requirements of *AH I Section 10.2.5(a)*. NA

b. Is the project located adjacent to or in close proximity to Class II waters? If yes, please provide a plan or procedure detailing the measures to be taken to meet the requirements of *AH I Section 10.2.5(b)*. NA

c. Is the project located in Class II or Class III waters that are classified as “approved”, “restricted”, “conditionally approved”, or “conditionally restricted”? If yes, demonstrate that the project meets the requirements of *AH I Section 10.2.5(c)*. NA

7. Vertical seawalls. Are vertical seawalls proposed in an estuary or lagoon as part of the project? If yes, please describe how the project meets the requirements of *AH I Section 10.2.6*. NA

8. Secondary Impacts (*AH I Section 10.2.7*).

a. Will an upland buffer, with a minimum width of 15' and an average width of 25', be provided between the proposed activities and existing wetlands or wetlands to be preserved, enhanced, restored, or created? Provide the location and dimension of all buffers on the plans. **See Exhibit C** If not, demonstrate that secondary impacts will not occur or describe how they will be offset.
25’ wetland buffers and 25’ secondary wetland impacts have been provided in design

b. If listed species are present or may be present, then coordination with wildlife agencies is needed. Have you coordinated with the FFWCC and/or USFWS? If so, please provide correspondence from the wildlife agencies indicating concurrence with the species management plan(s). **Exhibit D**

c. What measures will be taken to avoid impacts to wetland-dependent wildlife and/or listed species that use uplands for nesting or denning? **A 25’ upland buffer has been provided in area where possible.**

d. Describe whether there are any other relevant activities that are very closely linked and causally related to any proposed dredging or filling in wetlands or other surface waters that have the potential to cause impacts to significant historical and archaeological resources. **NA**

e. Are there additional future phases or extensions of the proposed activities that are not shown? If yes, please describe. None

9. Cumulative Impacts. Is the proposed mitigation located within the same drainage basin (*Refer to AH I Figures 10.2.8.1 – 10.2.8.5)* as the proposed wetland impacts? yes If not, please submit a Cumulative Impact Evaluation in accordance with *AH I Section 10.2.8*.

10. Mitigation Plan (*Refer to AH I Section 10.3*).

a. If a mitigation bank is proposed to offset wetland/other surface water impacts, provide:

i. the name of the bank: **Breakfast Point**. A letter of reservation from the banker will be required once the application has been evaluated.
ii. If the mitigation bank was assessed using UMAM, provide UMAM worksheets for impact area(s). If the bank was assessed using a method other than UMAM, then prepare the impact assessment using the same method. See attached UMAM Sheets

b. If mitigation is proposed to offset wetland/other surface water impacts, please provide a mitigation plan that includes, at a minimum, the following:

i. ☐ Proposed mitigation narrative:
   (1) ☐ Describe the current and proposed condition for each type of mitigation component (restoration, enhancement, creation, preservation), including:
      (a) ☐ Describe current and proposed vegetation
      (b) ☐ Describe current and proposed hydrologic conditions for the proposed mitigation.
      (c) ☐ Describe the soil types from NRCS maps and confirm if actual soil conditions appear to match.
   (2) ☐ Provide details of the proposed construction/mitigation activities including phasing and timing, as appropriate.
   (3) ☐ Identify measures that will be implemented during and after construction to avoid adverse impacts related to the proposed activities.
   (4) ☐ A mitigation implementation and monitoring schedule with dates.
   (5) ☐ Identify the success criteria.
   (6) ☐ Describe the anticipated site conditions in and around the mitigation area after the mitigation plan is successfully implemented.
   (7) ☐ Provide a comparison of current fish and wildlife habitat to expected habitat after the mitigation plan is successfully implemented.

ii. ☐ Provide a Management Plan that includes, as appropriate, aspects of operation and maintenance, including water management practices, vegetation establishment, exotic and nuisance species control, fire management, and control of access.

iii. ☐ Maps:
   (1) ☐ Soil map (include soil names/codes, hydrologic soil groups and hydric soil types).
   (2) ☐ Topographic map of the mitigation area and adjacent contributing and receiving areas.
   (3) ☐ Hydrologic features map of the mitigation area and adjacent contributing and receiving areas.
   (4) ☐ Vegetative communities map (using FLUCCS or other appropriate classification system).
   (5) ☐ For all maps, identify source.

iv. Provide the necessary supporting information for the application of sections 62-345.400 - .600 (Uniform Mitigation Assessment Method (UMAM)). To meet this requirement, submittal of UMAM worksheets is acceptable for impact and mitigation areas. Attached

v. If onsite and/or offsite applicant-responsible mitigation is proposed, submit a draft Conservation Easement document or other form of restrictive covenant that provides for protection of the mitigation area in perpetuity. Standard forms, as described in subsection 62-330.301(6), F.A.C., are available from the Agency or on its website. NA

vi. If onsite and/or offsite applicant-responsible mitigation is proposed, submit a cost estimate for completing the mitigation, including monitoring and maintenance. NA

vii. If onsite and/or offsite applicant-responsible mitigation is proposed and the proposed mitigation exceeds $25,000, please provide a draft financial assurance document. Standard

forms, as described in subsection 62-330.301(5), F.A.C., are available from the agency or on its website.NA

viii. Identify the entity responsible for monitoring, maintenance, and long-term stewardship of the mitigation area (i.e. the landowner or homeowner association, not the consultant or contractor that will do the work). NA

Note: It is highly recommended that you coordinate the design of any mitigation plan that also may be required for the Corps permit to meet the requirements of both permits. Pre-application meetings with both the applicable Agency and the Corps can help you to choose a mitigation option that is acceptable to both the applicable Agency and the Corps.

Part 3: Plans

Plans: The information listed in the checklist below represents the typical information required on the submitted project plans. The Plans checklists in each application section are cumulative unless otherwise noted. Separate plans for each application section are not required.

1. ☐ Include the following on the construction plans and cross sections:

   a. ☐ An Existing Conditions sheet showing the entire project and wetland/other surface water boundaries. Include the following: Acreage and type (herbaceous, forested or other surface water) of each wetland/other surface water.
   b. ☐ A Proposed Conditions sheet showing the entire project and wetland/other surface water boundaries with construction plan overlay.
   c. ☐ A Proposed Wetland Impact sheet that includes the following:
      i. ☐ Acreage and type (herbaceous, forested, or other surface water) of each wetland/other surface water to be impacted.
      ii. ☐ Proposed upland buffers with dimensions.
      iii. ☐ Identify the seasonal high water and wetland normal pool elevations on the plans.
   d. ☐ Include wetland boundaries on all construction plan sheets.

2. ☐ If onsite and/or offsite applicant-responsible mitigation is proposed, submit mitigation ~~permit~~ plans and cross sections including, at a minimum:

   a. ☐ existing conditions plan sheet identifying upland and wetland communities and acreage of each, topography, drainage patterns, and location of cross-section detail.
   b. ☐ proposed conditions plan sheet identifying proposed improvements by type (restoration, enhancement, creation, preservation), acreage of each, topography, drainage patterns, and location of cross-section detail.
   c. ☐ monitoring plan sheet including proposed improvements, monitoring transects, photostations, and mitigation signage (if applicable).
   d. ☐ cross-section and/or profile detail(s) sheet(s) including representative section of each type of mitigation component. Include existing and proposed conditions and representative elevations.
   e. ☐ planting schedule, plant species including common and scientific names divided into three sections (canopy, shrub, herbaceous) by mitigation component, quantity, spacing, size, and elevation range.

Table 1 - Project Wetland (WI) And Other Surface Water (SW) And Impact Summary

WL & SW ID	UMAM ASSESSMENT AREA NAME(S)	WL & SW TYPE	WL & SW SIZE (acres)	WL & SW NOT IMPACTED (acres)	TEMPORARY WL &SW IMPACT SIZE (acres)	TEMPORARY WL & SW IMPACT TYPE	PERMANENT WL &SW IMPACT SIZE (acres)	PERMANENT WL & SW IMPACT TYPE	MITIGATION ID
625	**Smith Pump Station**	**Hydric Pine FW**	10	**6.83**			**3.17**	**D F**	
PROJECT TOTALS:			**10**	**6.83**			**3.17**		

Comments:

Codes (multiple entries per cell not allowed):

- Wetland & Surface Water ID: Include ID on submitted wetland and surface water impact maps
- Wetland Type: from an established wetland classification system
- Impact Type: D=dredge; F=fill; H=change hydrology; S=shading; C=clearing; O=other

Table 2 - Project On-Site Mitigation Summary

MITIGATION ID	UMAM ASSESSMENT AREA NAME(S)	TARGET TYPE	CREATION AREA (acres)	RESTORATION AREA (acres)	ENHANCEMENT AREA (acres)	WETLANDS PRESERVE AREA (acres)	UPLAND PRESERVE AREA (acres)	OTHER AREA (acres)
NA								
PROJECT TOTALS:								

COMMENTS:

Codes (multiple entries per cell not allowed):

- Target Type or Type=target or existing habitat type from an established wetland classification system or land use classification for non-wetland mitigation

Table 3 - Project Off-Site Mitigation Summary

MITIGATION ID	UMAM ASSESSMENT AREA NAME(S)	TARGET TYPE	CREATION AREA (acres)	RESTORATION AREA (acres)	ENHANCEMENT AREA (acres)	WETLANDS PRESERVE AREA (acres)	UPLAND PRESERVE AREA (acres)	OTHER AREA (acres)
NA								
PROJECT TOTALS:								

COMMENTS:

Codes (multiple entries per cell not allowed):

- Target Type or Type=target or existing habitat type from an established wetland classification system or land use classification for non-wetland mitigation

Table 4 - Shoreline Stabilization

Stabilization	Linear Ft. New	Linear Ft. Replaced	Linear Ft. Repaired	Linear Ft. Removed	Slope H: V:	Toe Width (Ft.)
Natural Vegetation (living shoreline)	**NA**				**N/A**	**N/A**
Rip Rap + Vegetation						
Rip Rap						
Seawall + Rip Rap						
Vertical Seawall						
Other Shoreline Stabilization Type						

Size of Rip Rap

Type of Rip Rap

ERP Application
Section E

Section E: Supplemental Information Required for Works or Other Activities Involving a Stormwater Management System
(Other Than a Single-Family Project)

Instructions: The information listed in the checklists below represents the level of information that is usually required to evaluate an application. Information can be provided within reports, plans, and documents. The level of information required for a specific project will vary depending on the nature and location of the site and the activity proposed. Conceptual approvals generally do not require the same level of detail as a construction permit. However, providing a greater level of detail will reduce the need to submit additional information at a later date. If an item does not apply to your project, proceed to the next item. The supplemental information required by this section is in addition to the information required by Section A of the application. **All information in Section E has been provided within the drawing set and ERP report.**

Part 1: Stormwater Management System Summary

Provide drainage calculations, signed and sealed by an appropriate registered professional, and supporting documentation demonstrating that the proposed project meets the conditions for issuance under 62-330.301(1)(a),(b),(c),(e), F.A.C. The drainage calculations should include, but not necessarily be limited to, the following:

1. General Site Information:

   a. ☐ Provide pre-development and post-development drainage map(s), as appropriate, that include drainage patterns and basin boundaries with acreage served by each hydraulically separate system, showing the direction of flows, including any off-site runoff being routed through or around the system; topographic information; and connections between wetlands and other surface waters. **See site plans in Appendix C**

   b. ☐ Provide the results of any percolation tests, where appropriate, and soil borings that are representative of the actual site conditions. Identify the wet season high water table elevations, soil profiles, and hydraulic conductivity. Include dates, datum, and methods used to determine these soil parameters. **See Appendix G - Geotech Investigation**

   c. ☐ Identify the onsite hydrologic soil classification (e.g. Type A, B/D, D). Reference the source, such as the USDA/NRCS Soil Survey, used in estimating the onsite hydrologic soil classification. Provide maps, as appropriate, with the project limits delineated. **See Appendix F- Soil Map**

   d. ☐ Identify the seasonal high water or mean high tide elevation for receiving waters/wetlands into which runoff will be discharged. Include dates, datum, and methods used to determine these elevations. **Seasonal high water table assumed to be at ground surface. See page 5 of ERP report.**

   e. ☐ Identify the name of each receiving waterbody to which the proposed stormwater management system will discharge: .

   f. ☐ Indicate the existing land use and land cover. **See ecological review - D**

   g. ☐ Provide the acreage and percentages of the total project, of the following:
      1. Impervious surfaces (excluding buildings, wetlands, and other surface waters);
      See page 5 of 17 of site plan

2. Buildings;
3. Pervious surfaces (green areas not including wetlands);
4. Lakes, canals, retention areas, other open water areas; and
5. Wetlands (Please compare to Section C to ensure consistency in wetland acreages).

h. ☐ Provide the location and description of any nearby existing offsite features (such as wetlands and other surface waters, stormwater management ponds, and buildings or other structures) which might be affected by or affect the proposed construction or development.

2. Water Quality Analysis: **See Appendix D of the ERP stormwater report**

a. ☐ Provide a description of the proposed stormwater treatment methodology that addresses the type of treatment, pollution abatement volumes, and recovery analysis.

b. ☐ Is the receiving waterbody known to be impaired and/or have an established Total Maximum Daily Load (TMDL) or Basin Management Action Plan (BMAP)? If so, please provide specific descriptions of all water quality parameters for which the waterbody is known to be impaired. For more information about water quality, impaired waters, and to determine whether a TMDL has been adopted in your project area, refer to: https://floridadep.gov/dear/water-quality-evaluation-tmdl/content/final-tmdl-reports. To determine whether a BMAP exists, or is being developed in your project area, refer to: https://floridadep.gov/dear/water-quality-restoration/content/basin-management-action-plans-bmaps.

☐ yes ☐ no ☐ don't know

If yes, provide calculations demonstrating that the proposed project will not contribute to violations of state water quality standards in accordance with the applicable Applicant's Handbook, Vol. II.

c. ☐ Does the project have a direct discharge to ~~a~~ Class I or II waters; Outstanding Florida Waters (OFW); or Class III waters, which are approved, conditionally approved, restricted, or conditionally restricted for shellfish harvesting? *To determine whether your project is within or will discharge to an OFW, or for more information about OFWs in general, refer to: https://floridadep.gov/dear/water-quality-standards/content/outstanding-florida-waters.*

☐ yes ☐ no ☐ don't know

If yes, additional treatment in accordance with the applicable Applicant's Handbook, Vol. II, may be required.

d. ☐ Provide construction plans and calculations that address the required treatment volume and recovery, as well as stage-storage and design elevations, which demonstrate compliance with the appropriate water quality treatment criteria in the applicable Applicant's Handbook, Vol. II.

e. ☐ Provide a description of the engineering methodology, assumptions, and references for the parameters listed above and a copy of all ~~such~~ computations, engineering plans, and specifications used to analyze the system. If a computer program is used for the analysis, provide the name of the program, a description of the program, input and output data, and justification for model selection.

3. Water Quantity Analysis:**See Appendix D of the ERP stormwater report.**

Provide calculations and documentations demonstrating that the project, as proposed, meets the applicable design criteria as indicated in the applicable Applicant's Handbook, Vol. II. Typically, the information would include, at a minimum, but ~~is~~ not necessarily limited to, the following:

a. ☐ For projects requiring pre-development analysis, provide an analysis of the pre-development peak rate of discharge and~~/~~or volume of runoff~~,~~ for all design storm events.

Account for all onsite depressional storage and offsite contributing area. Please refer to the applicable Applicant's Handbook, Vol. II for the design storm event(s) that apply to your project.

b. ☐ Provide an analysis of the post-development peak rate of discharge and~~/~~or volume of runoff for all applicable design storm events. Account for all onsite storage and offsite contributing area. Please refer to the applicable Applicant's Handbook, Vol. II for the design storm event(s) and criteria that apply to your project.

These analyses should include:

1. ☐ Runoff characteristics, including area, runoff curve number or runoff coefficient, and time of concentration for each drainage basin in the pre-development and post-development condition;
2. ☐ Design storms used including rainfall depth, duration, frequency, and distribution;
3. ☐ Runoff hydrograph(s) for each drainage basin~~,~~ for all required design storm event(s);
4. ☐ Stage-storage computations for any area, such as a reservoir, closed basin, detention area, or channel, used in storage routing;
5. ☐ Stage-discharge computations for any storage areas at a selected control point, such as control structure or natural restriction;
6. ☐ Flood routings through on-site conveyance and storage areas;
7. ☐ Water surface profiles in the primary drainage system for each required design storm event(s);
8. ☐ Runoff peak rates and volumes discharged from the site for each required design storm event(s);
9. ☐ Design tailwater elevation(s) for each storm event at all points of discharge (include source or method of estimate); and
10. ☐ Pump specifications and operating curves for range of possible operating conditions (if used in system).

c. ☐ Provide a description of the engineering methodology, assumptions, and references for the parameters listed above, and a copy of all such computations, engineering plans, and specifications used to analyze the system. If a computer program is used for the analysis, provide the name of the program, input and output data, justification for model selection, and, if necessary, a description of the program.

4. Floodplain Analysis (where applicable).

a. ☐ If the project is in a known floodplain of a stream or other water course, identify the appropriate floodplain boundary and approximate flooding elevations of any lake, stream, or other watercourse located on or adjacent to the site.

b. ☐ For traversing works, in accordance with the applicable Applicant's Handbook, Vol. II, provide:
   1. ☐ Hydraulic calculations for all proposed traversing works; and
   2. ☐ Water surface profiles showing upstream impact of traversing works.

c. ☐ For impacts to regulated floodplains, in accordance with the applicable Applicant's Handbook, Vol. II, provide:
   1. ☐ Location and volume of encroachment within regulated floodplain(s); and
   2. ☐ Plans and calculations for compensating floodplain storage, if necessary, and calculations required for determining minimum building and road flood elevations.

Part 2: Construction Plans See Site Plans

1. Provide clear, construction level detailed plans for the system. The plans must be signed and sealed by an appropriate registered professional as required by law. These plans should include cumulative information from all applicable sections, as well as the following:

See Sheet 5 of 17 in the site plans.

a. ☐ Project area boundary and total land area (as defined in A.H. Vol. I, subsection 2.0(a)(107), including distances and orientation from roads or other landmarks.

b. ☐ Existing topography extending at least 100 feet off the project area. All topography shall include location and description of benchmarks, reference to NGVD 1929 or NAVD 1988 along with the conversion factor.

c. ☐ Proposed site plan with acreage, including the following:
   1. ☐ plan view of proposed development, including impervious surfaces and water management areas;
   2. ☐ land cover and natural communities*;
   3. ☐ wetlands and other surface waters*;
   4. ☐ undisturbed uplands*;
   5. ☐ aquatic communities*;
   6. ☐ proposed buffers*;
   7. ☐ proposed impacts to wetlands and other surface waters, and any proposed connections/outfalls to other surface waters or wetlands, (if applicable); and
   8. ☐ onsite wetland mitigation areas*.
   9. ☐ For phased projects, provide a master development plan clearly delineating the limits of each phase of construction.

   *Information should reflect that provided in Section C.

d. ☐ Paving, Grading, and Drainage Information, which includes, but is not necessarily limited to, the following:
   1. ☐ Existing topography;
   2. ☐ Boundaries of wetlands and other surface waters and upland buffers (see Section C);
   3. ☐ Plan view of proposed development;
   4. ☐ Proposed elevations and/or profiles, including:
      a) ☐ roadway, parking, and pavement grades;
      b) ☐ floor slabs, walkways, and other paved surfaces;
      c) ☐ earthwork grades for pervious landscaped areas; and
      d) ☐ perimeter site grading, tying back into existing grades.
   5. ☐ Location of all water management areas, including elevations, dimensions, side slopes, and design water depths;
   6. ☐ Location, size, and invert elevations of existing and proposed stormwater conveyance systems;
   7. ☐ Vegetative cover plan for all on-site and off-site earth surfaces disturbed by construction; and
   8. ☐ Rights-of-way and easements for the system, including all on-site and off-site areas to be reserved for water management purposes (including access), and rights-of-way and easements for the existing drainage system, if any.

See site plans. e. ☐ Stormwater detail information, including but not necessarily limited to, the following:
   1. ☐ Cross section of all stormwater management areas, including elevations, dimensions, side slopes, and proposed stabilization measures (with location of the cross section(s) shown on the corresponding plan view);
   2. ☐ Detail of all proposed control structures, including elevations, dimensions, and skimmer, where applicable; and

3. ☐ Details of proposed stormwater management systems, such as underdrains, exfiltration trenches, vaults, and other proposed Best Management Practices (BMPs).

f. ☐ Location and description of any nearby existing offsite features (such as wetland and other surface waters, stormwater management ponds, and building or other structures) which might be affected by or affect the proposed construction or development.

Part 3: Construction Schedule and Techniques **See Sheet 5 of 17 of the site plans**

Provide a construction schedule~~,~~ and a description of construction techniques, sequencing, and equipment. This information should include, as applicable, the following.

a. ☐ Access and staging of equipment;

b. ☐ Location and details of the erosion, sediment, and turbidity control measures to be implemented during each phase of construction and all permanent control measures to be implemented in post-development conditions.

c. ☐ The location of disposal site(s) for any excavated material, including temporary and permanent disposal sites.

d. ☐ A demolition plan for any existing structures to be removed.

e. ☐ Dewatering plan details. If dewatering is required, detail the dewatering proposal including the methods that are proposed to contain the discharge, methods of isolating dewatering areas, and indicate the period dewatering structures will be in place. **Note: A Consumptive Use or Water Use permit may be required for dewatering.**

f. ☐ Methods for transporting equipment and materials to and from the work site. If barges are required for access, provide the low water depths and draft of the fully loaded barge;

Part 4: Operation and Maintenance and Legal Documentation: **See Exhibit I**

a. ☐ Describe the overall maintenance and operation schedule for the proposed system.

b. ☐ Identify the entity (or entities) that will be responsible for operating and maintaining the system (or parts of the system) to demonstrate that the entity (or entities) meet(s) the requirements of section 12.3 of the Applicant's Handbook, Vol. I.

1. ☐ If different from the permittee, provide a draft document enumerating the enforceable affirmative obligations on the entity to properly operate and maintain the system for its expected life and documentation of the entity's financial responsibility for long-term maintenance.
2. ☐ If the proposed operation and maintenance entity is not a property owner's association, provide proof of the existence of an entity or the future acceptance of the system by an entity which will operate and maintain the system.

c. ☐ Provide drafts of all proposed conservation easements, stormwater management system easements, draft property owner's association documents, and plats for the property containing the proposed system.

d. ☐ Provide legal reservations for access to the treatment system for maintenance and operation by future maintenance entities for subdivided projects.

e. ☐ Provide indication of how water and wastewater service will be supplied.

f. ☐ Provide a copy of the boundary survey and/or legal description and acreage of the total land area of contiguous property owned/controlled by the applicant.

g. ☐ If any associated land agreements are required to implement the proposed activities, such as flowage easements across lands not owned by the applicant, include such documentation. If negotiations are underway, but not yet concluded, regarding such land use agreements, please indicate that and provide an anticipated date for providing that documentation. A permit cannot be issued for an activity to use lands that are not owned by the applicant or for which the applicant does not hold a sufficient real property interest to use those lands.

Part 5: Water Use N/A

a. ☐ Describe how irrigation will be provided to the project. Will the surface water system be used for water supply, including landscape irrigation, or recreation?

b. ☐ If a Consumptive Use or Water Use permit has been issued for the project, state the permit number:

c. ☐ If a Consumptive Use or Water Use permit has not been issued for the project, indicate if such a permit will be required. ☐ yes ☐ no ☐ don't know
If yes, please indicate when the application for a permit will be submitted:

d. ☐ Indicate how any existing wells located within the project site will be utilized or abandoned.

Part 6: Special Basin Information N/A

a. Is your project within a special basin as described in the applicable Applicant's Handbook, Vol. II?

☐ yes ☐ no ☐ don't know

b. If yes, please demonstrate that the project will meet the applicable special basin criteria.

ERP Application
Exhibit A – Location Map

Plant Smith Location Map

March 1, 2019

1:36,112

0 0.38 0.75 1.5 mi

0 0.5 1 2 km

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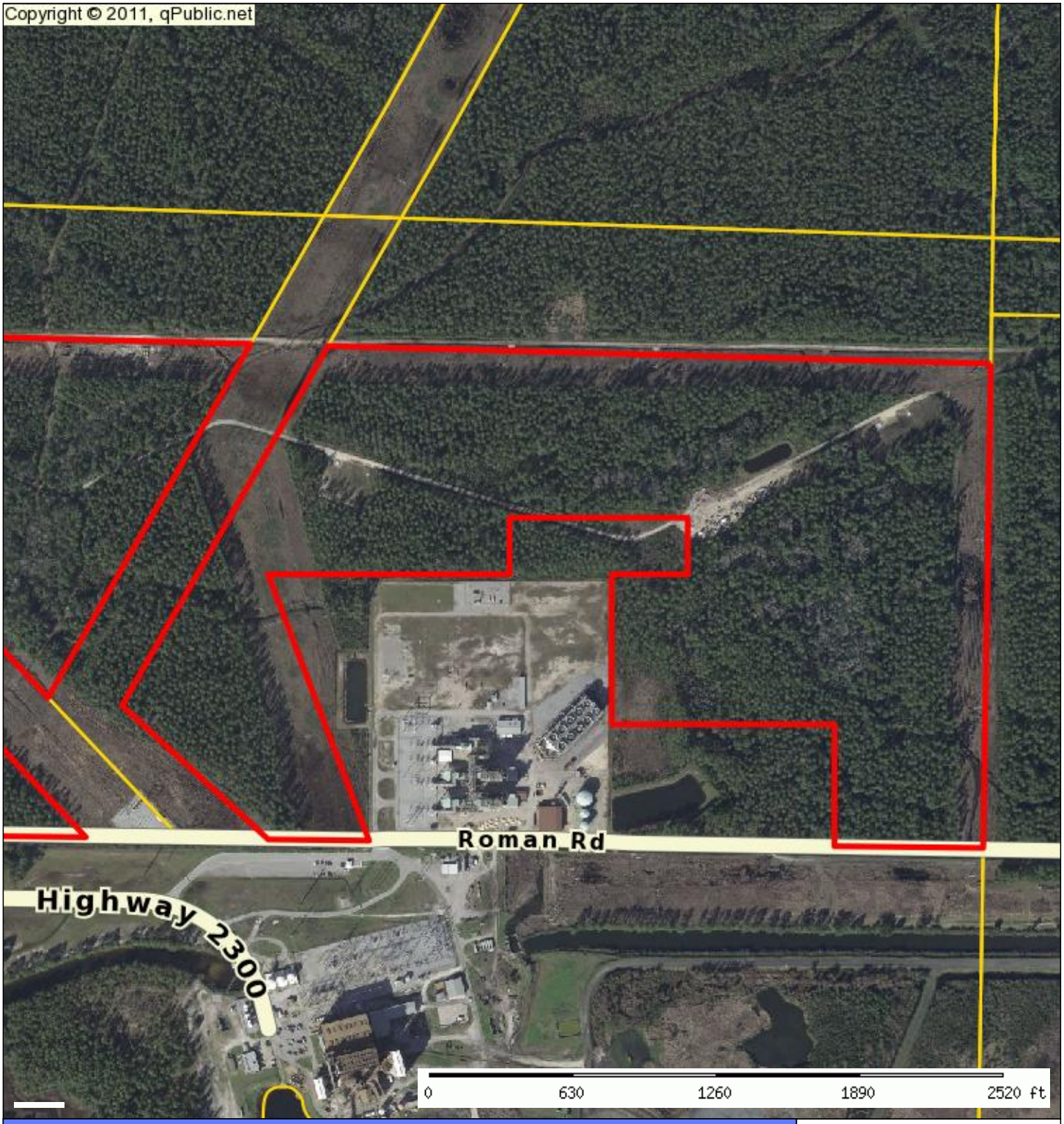
ERP Application

Exhibit B – Property Appraiser Map



Bay County Appraiser			
Parcel: 26636-010-000 Acres: 182			
Name:	GULF POWER CO.	Land Value:	0
Site:	36 2S 15W -1.1-	Building Value:	0
Sale:	$952,000 on 04-1991 Reason=Y Qual=U	Misc Value:	0
Mail:	SOUTHERN ACCOUNTS PAYABLE P.O BOX 830736 BIRMINGHAM, AL 35283	Just Value:	154,700
		Assessed Value	26,390
		Exempt Value	0
		Taxable Value	26,390

Bay County makes every effort to produce the most accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use or interpretation. The assessment information is from the last certified taxroll. All data is subject to change before the next certified taxroll.
Date printed: 04/11/18 : 08:39:09

ERP Application
Exhibit C – Civil Drawings

FILTRATION SYSTEM AND INJECTION WELL PUMP STATION

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Gulf Power®

PREPARED FOR

GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

VOLUME 2 OF 2
DRAWINGS

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CH2M HILL ENGINEERS, INC. FL COA: 25861

For information regarding
this project contact:

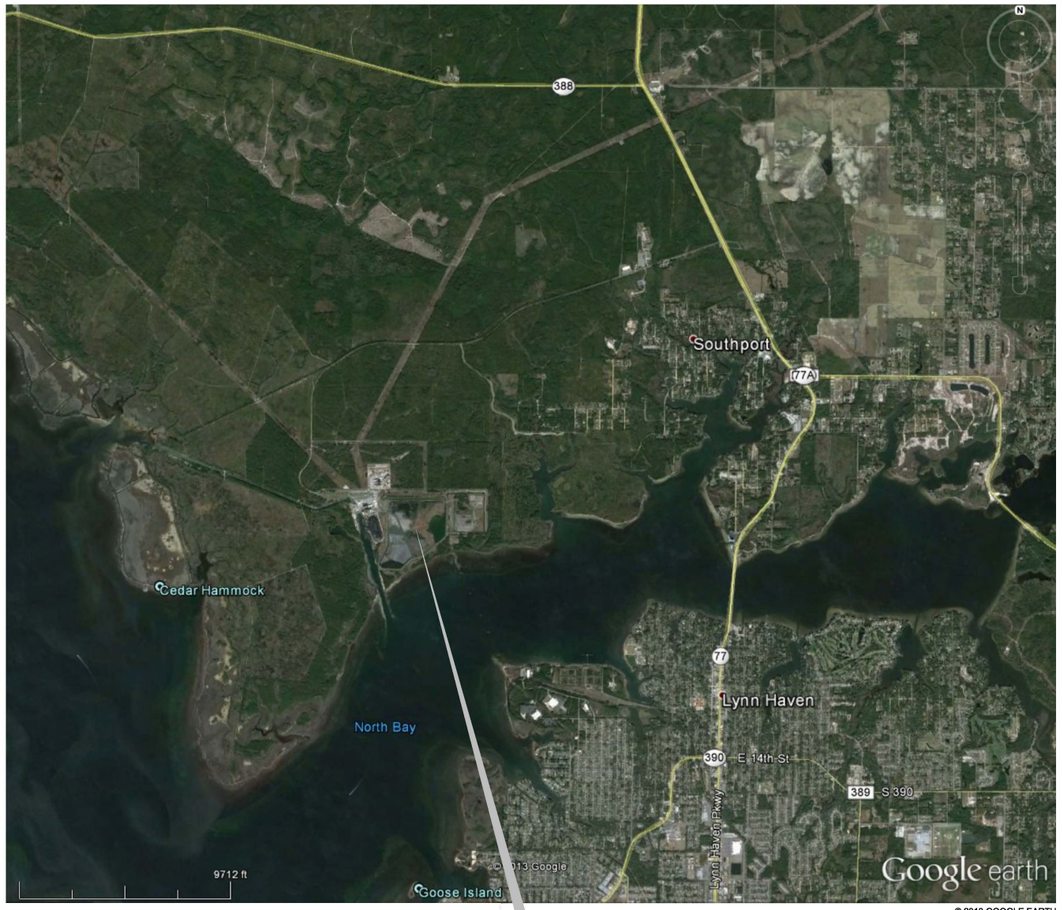
MIKE STICKLEY, P.E.
2112 ELEVENTH AVENUE SOUTH
SUITE 320
BIRMINGHAM, ALABAMA 35205
205-209-3013

ch2m SM
CH2M HILL ENGINEERS, INC.
643 SW 4TH AVE, SUITE 400, GAINESVILLE, FL 32601
FL COA: 25861

Project No. 474927

FEBRUARY 2019

PTS-001-G-000_474927.dgn



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LOCATION MAP
NTS

N

PLANT SMITH
6804 BAY COUNTY ROAD 2300
PANAMA CITY, FL 32409

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3	G-03	ARCHITECTURAL LEGEND AND GENERAL NOTES
4	G-04	STRUCTURAL NOTES
5	G-05	STRUCTURAL NOTES
6	G-06	PROCESS MECHANICAL LEGEND
7	G-07	HVAC AND PLUMBING LEGEND
8	G-08	ELECTRICAL LEGEND 1
9	G-09	ELECTRICAL LEGEND 2
10	G-10	ELECTRICAL LEGEND 3
11	G-11	ELECTRICAL NOTES
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NO.	DATE	DSGN	DR	CHK	APVD	BY	APVD
		M STICKLEY	KL DIAZ				

REVISION

25 West Cedar Street, Suite 350
Pensacola, Florida
United States, 32502-5975
Tel: +1(850)438-2740

FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

GENERAL

DRAWING INDEX, LOCATION MAP

NTS
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	G-01
SHEET	of

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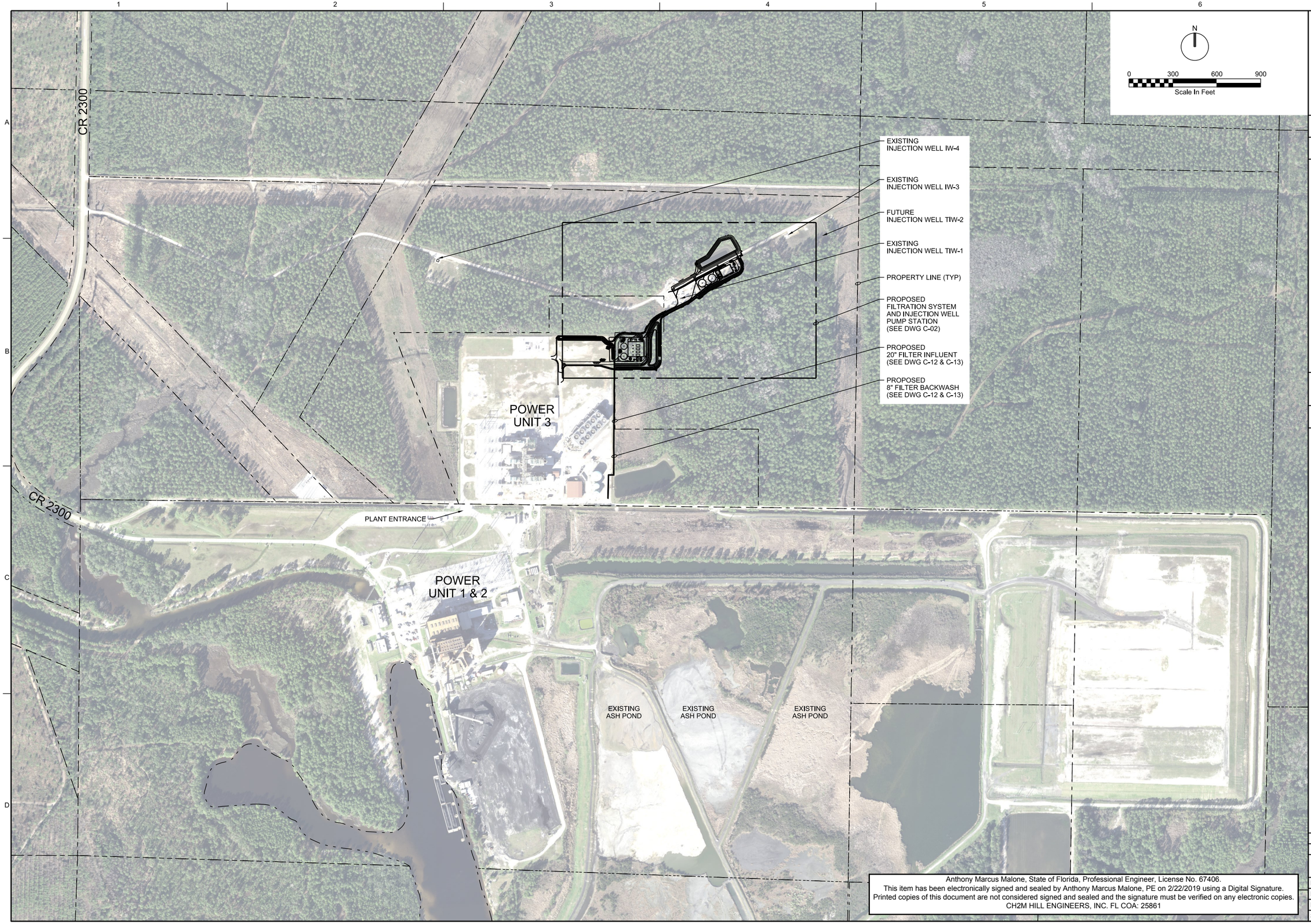

NO.	DATE	DSGN	DR	CHK	APVD
		A MALONE	C CHILDRESS		A MALONE

REVISION BY APVD

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FILTRATION SYSTEM AND
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GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
OVERALL
SITE PLAN

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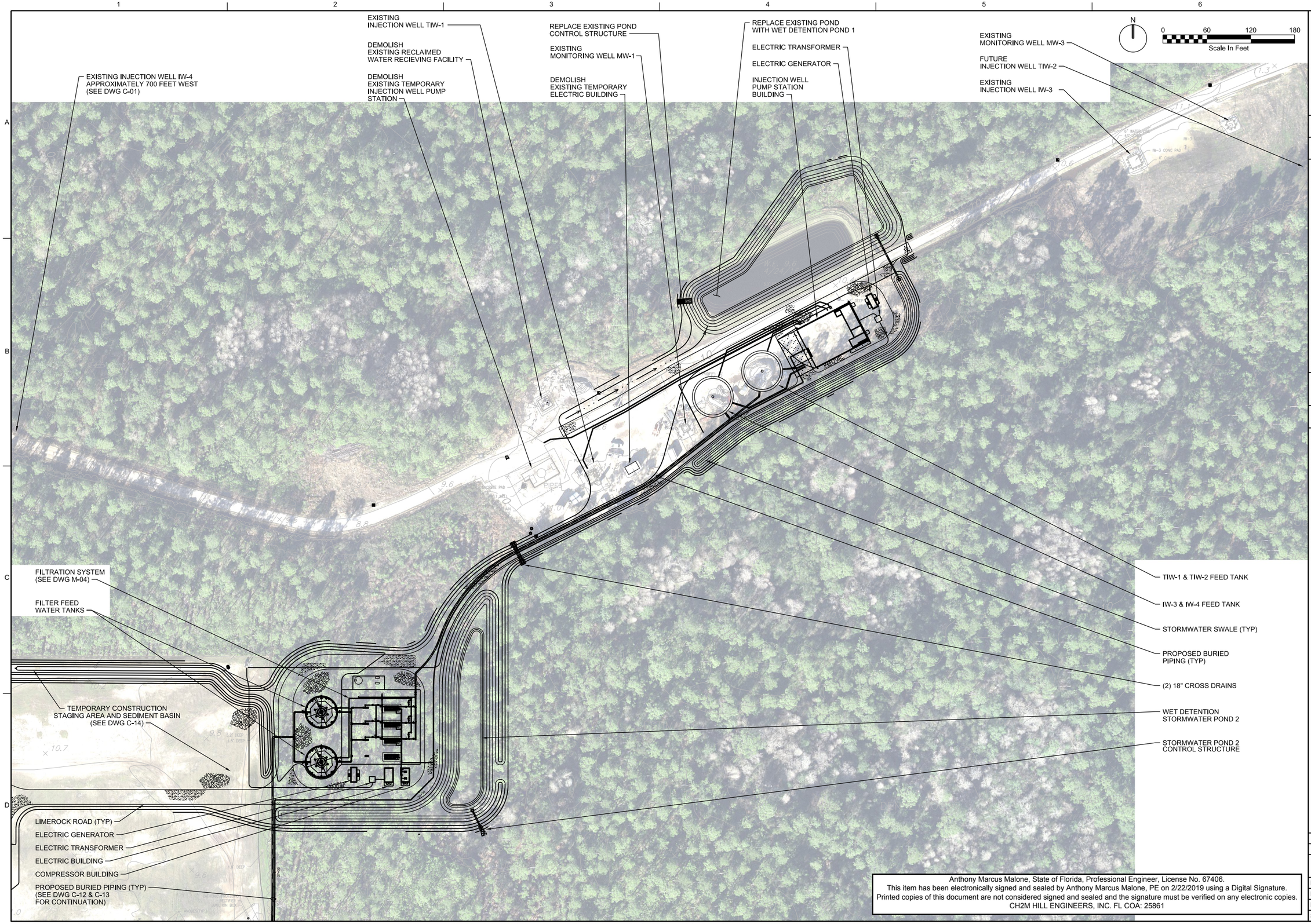

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FILTRATION SYSTEM AND
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GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL

FILTRATION SYSTEM AND PUMP STATION SITE PLAN

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IMPACT SUMMARY

1. TOTAL PROJECT AREA = 8.69 AC
   (LIMITS OF DISTURBANCE)
2. WETLAND IMPACT AREA = 2.04 AC
3. 25 FT SECONDARY WETLAND IMPACT = 1.13 AC
4. TOTAL WETLAND & SECONDARY IMPACT AREA = 3.17 AC
5. UPLAND IMPACT AREA = 6.65 AC

* WETLANDS DELINEATION WAS PERFORMED BY JEFF COLE OF GULF POWER COMPANY.

EROSION CONTROL NOTES

1. CLEAR AND GRUB PATH FOR SILT FENCE INSTALLATION.
2. INSTALL SILT FENCE.
3. PREPARE TEMPORARY CONSTRUCTION STAGING AREA AND ASSOCIATED TEMPORARY SEDIMENT BASIN.
4. PARTIALLY EXCAVATE WET DETENTION STORMWATER POND AND SWALE TO SERVE AS TEMPORARY SEDIMENT BASIN.
5. ADD FILL AND GRADE PER PLAN. TEMPORARILY SEED AND MULCH DISTURBED AREAS DURING CONSTRUCTION.
6. CONSTRUCT IMPROVEMENTS PER THE PLANS.
7. BAHIA SOD AND SEED DISTURBED AREAS PER THE PLANS.

QUANTITIES

1. CUT VOLUME = 4,571 CY
2. FILL VOLUME = 11,540 CY *
3. NET FILL = 6,969 CY
4. LIMEROCK AND GRAVEL AREAS = 1.40 AC
5. PADS, TANKS AND STRUCTURES = 0.64 AC
6. PONDS AND SWALE AREAS = 1.55 AC

* FILL NOT INCLUDED FOR TEMPORARY / CONSTRUCTION STAGING AREA

EXISTING INJECTION WELL TIW-1
DEMOLISH EXISTING RECLAIMED WATER RECIEVING FACILITY
DEMOLISH EXISTING TEMPORARY INJECTION WELL PUMP STATION
EXISTING MONITORING WELL MW-1
DEMOLISH EXISTING TEMPORARY ELECTRIC BUILDING
INJECTION WELL FEED TANKS
REPLACE EXISTING POND WITH WET DETENTION POND 1
INJECTION WELL PUMP STATION BUILDING
EXISTING MONITORING WELL MW-3
EXISTING INJECTION WELL IW-3
25' WETLAND SETBACK
ASSUMED WETLAND LIMITS BASED ON AERIAL IMAGE AND SITE VISIT
PROPOSED LIMITS OF DISTURBANCE FOR CONSTRUCTION (UPLAND & WETLANDS) AREA = 8.65 ACRES
SILT FENCE (TYP)
TEMPORARY SEDIMENT BASIN (SEE DWG C-14)
TEMPORARY CONSTRUCTION STAGING AREA (SEE DWG C-14)
PROPOSED LIMEROCK ROAD TO CONNECT TO EXISTING LIMEROCK ROAD
WETLAND IMPACT AREA = 2.04 AC (SEE DWG C-13 FOR CONTINUATION)
EXISTING BURIED PIPING (TYP)
PROPOSED BURIED PIPING (TYP)
25 FT SECONDARY WETLAND IMPACTS AREAS = 1.13 ACRES
WETLAND LIMITS FROM ONSITE DELINEATION (TYP)
WET DETENTION STORMWATER POND 2
FILTRATION SYSTEM
FILTER FEED WATER TANKS

N
0 60 120 180
Scale In Feet

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LEGEND

- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER

NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
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Tel: +1(850)438-2740

FILTRATION SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
WETLAND IMPACTS

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N

0 30 60 90
Scale In Feet

NOTES

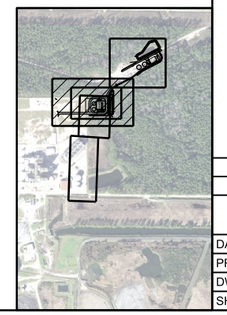
1. SEE DWG C-03, WETLAND IMPACTS, FOR SUMMARY OF WORK WITHIN THE WETLANDS, UPLANDS AND BUFFERS.
2. THE SILT FENCE WITHIN THE WETLAND SHALL BE INSTALLED BY CLEARING AND GRUBBING A 10' MAXIMUM STRIP PRIOR TO ANY OTHER CLEARING WORK WITHIN THE WETLANDS. SILT FENCE SHALL BE PLACED AT THE EDGE OF THE CLEARING LIMITS.
3. THE PROPOSED STORMWATER WET DETENTION POND SHALL BE CONSTRUCTED AFTER CLEARING AND GRUBBING. IT SHALL SERVE AS THE SEDIMENT BASIN DURING CONSTRUCTION AND FILL PLACEMENT. STAGE CONSTRUCTION OF THE POND TOP WITH FILL PLACEMENT FOR POSITIVE FLOW INTO THE POND.
4. TEMPORARILY SEED AND MULCH DISTURBED AREAS IF THOSE AREAS WILL REMAIN UNIMPROVED WITH A FINAL SURFACE TREATMENT FOR MORE THAN 7 DAYS.

LEGEND

- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER

DEMOLISH EXISTING RECLAIMED WATER RECEIVING FACILITY
DEMOLISH EXISTING INJECTION WELL PUMP STATION
PROVIDE BREAK IN SILT FENCE FOR EXISTING DRIVE
MATCH LINE SEE DWG C-05
DEMOLISH EXISTING FENCE
WETLAND LIMITS (TYP)
(2) 18" CROSS DRAINS
25' SECONDARY WETLAND IMPACTS (TYP)
WETLAND IMPACTS (TYP)
SILT FENCE (SEE NOTE 2) 3125-165
WET DETENTION POND 2 TO BE USED AS SEDIMENT TRAP (SEE NOTE 3 AND DWG C-06)
PROPOSED FILTRATION FACILITY (SEE DWG C-06)
POND CONTROL STRUCTURE (SEE NOTE 3 AND DWG C-06)
25' WETLAND BUFFER (TYP)
OVERFLOW WEIR (SEE DWG C-14)
SKIMMER (SEE DWG C-14)
TEMPORARY SEDIMENT BASIN (SEE DWG C-14)
TEMPORARY CONSTUCTION STAGING AREA (SEE DWG C-14)
EXISTING BURIED PIPING (TYP)
PROPOSED BURIED PIPING (TYP)
DEMO EXISTING FENCE
TEMPORARY SEED & MULCH DURING CONSTRUCTION (TYP)
LIMITS OF CLEARING (TYP)
SEE DWG C-12 & C-13 FOR SILT FENCE CONTINUATION FOR YARD PIPE INSTALLATION
28+00
29+00
30+00

KEY PLAN



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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
EROSION CONTROL AND DEMOLITION PLAN 1

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DATE	FEBRUARY 2019
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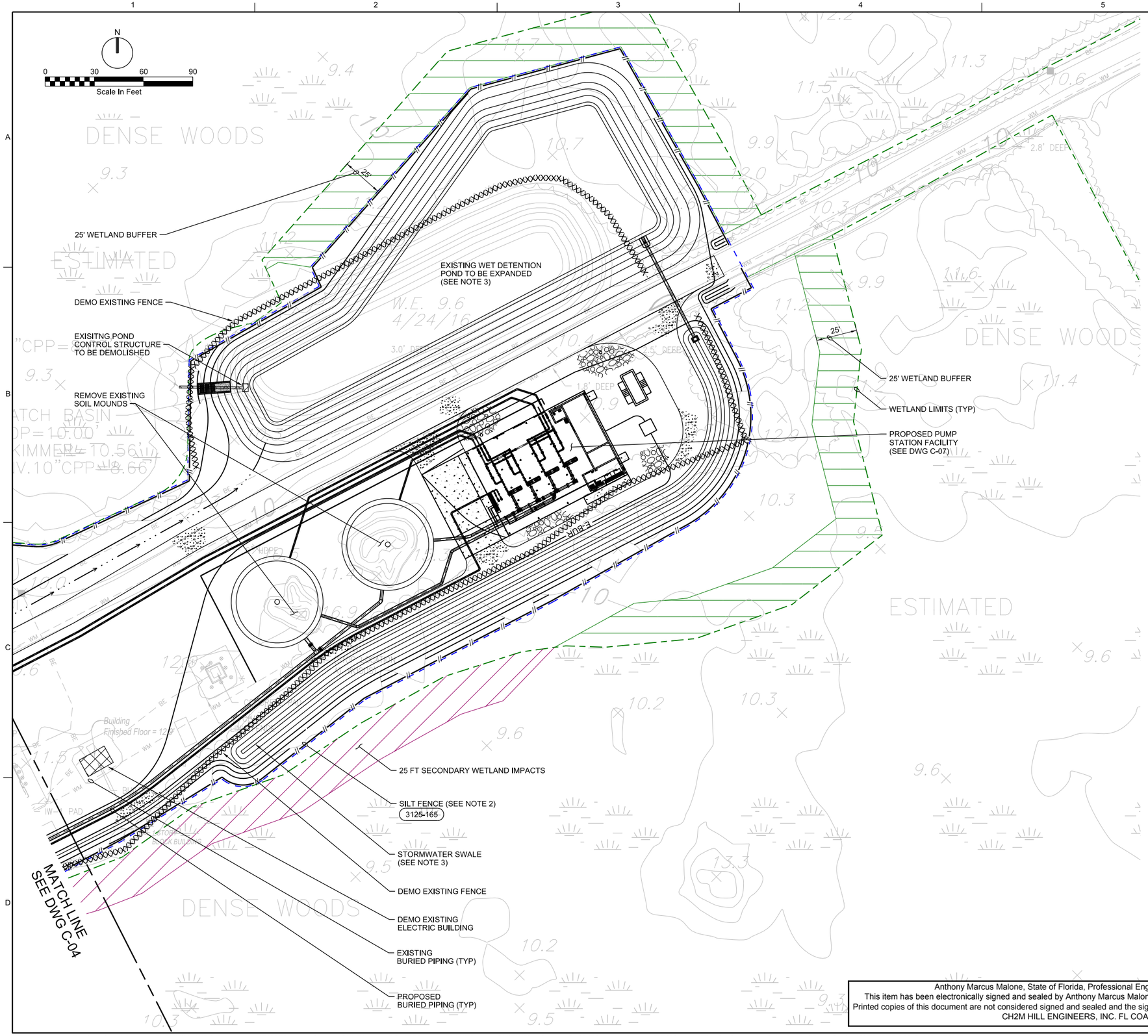
DWG	C-04
SHEET	of



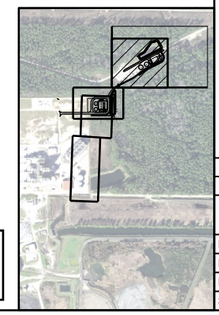
NOTES

1. SEE DWG C-03, WETLAND IMPACTS, FOR SUMMARY OF WORK WITHIN THE WETLANDS, UPLANDS AND BUFFERS.
2. THE SILT FENCE SHALL BE INSTALLED PRIOR TO ANY OTHER CLEARING WORK WITHIN THE UPLOADS OR WETLANDS. SILT FENCE SHALL BE PLACED AT THE EDGE OF THE CLEARING LIMITS.
3. THE PROPOSED STORMWATER SWALE ON THE SOUTH SIDE OF THE EXISTING ROAD SHALL BE USED AS A TEMPORARY SEDIMENT BASIN. STAGE CONSTRUCTION OF THE SWALE WITH FILL PLACEMENT FOR POSITIVE FLOW INTO THE SWALE. THE EXISTING WET DETENTION POND SHALL BE EXPANDED AND RECEIVE DISCHARGE FROM THE PROPOSED STORMWATER SWALE.
4. TEMPORARILY SEED AND MULCH DISTURBED AREAS IF THOSE AREAS WILL REMAIN UNIMPROVED WITH A FINAL SURFACE TREATMENT FOR MORE THAN 7 DAYS.

LEGEND

- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER

KEY PLAN



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Tel: +1(850)438-2740

FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
EROSION CONTROL AND DEMOLITION PLAN 2

90% DESIGN - NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-05
SHEET	of

SHEET KEY NOTES

1. FILTER FEED WATER TANK 1, TOC = 13.67
2. FILTER FEED WATER TANK 1, TOC = 13.67
3. FILTRATION SYSTEM PAD, HP TOC = 14.00
4. FILTRATION BACKWASH TANK PAD, HP TOC = 13.85
5. ELECTRIC GENERATOR PAD, TOC = 13.50
6. ELECTRIC TRANSFORMER PAD, TOC = 13.00
7. ELECTRIC GENERATOR BUILDING, FF = 13.00
8. COMPRESSOR BUILDING FF = 13.00

STORMWATER POND 2 SUMMARY

1. DRAINAGE AREA: 1.79 ACRES
2. PERMANENT POOL EL: 9.5
3. WATER QUALITY VOL & EL: 6,498 CF @ 9.89
4. 25-YR, 24-HR DESIGN EL: 11.08
5. 25-YR, 24-HR DESIGN EL: 6.14 CFS
6. PRE-DEV 2-YR, 24-HR DESIGN RATE: 6.39 CFS
7. 100-YR, 24-HR DESIGN EL: 11.26

N

0 20 40 60
Scale In Feet

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CH2M HILL ENGINEERS, INC. FL COA: 25861

MITERED END SECTION, MULTIPLE FDOT INDEX 430-021 (TYP)

(2) 34' - 18" STM-HDPE @ 0.59%

TAPER LIMEROCK DRIVE FROM 20' WIDE TO 10' WIDE
3215-270

SOD NON-GRAVEL AND LIMEROCK AREAS (TYP)

MATCH LINE SEE DWG C-07

GRAVEL SURFACE BETWEEN LIMROCK ROADS AND FACILITIES (TYP)
3215-260

EXISTING BURIED PIPING (TYP)

TEMPORARY SEDIMENT BASIN (SEE DWG C-14)

TEMPORARY CONSTRUCTION STAGING AREA (SEE DWG C-14)

20' COMPACTED LIMEROCK ROAD
3215-270

2:1 SLOPE

4:1 SLOPE

20' SODDED SPILLWAY
2 / C-11

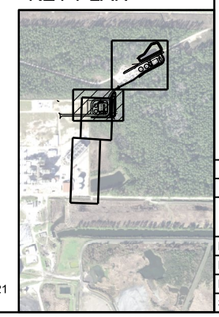
WET STORMWATER DETENTION POND 2
TOP = 12.0
BOTTOM = 5.0
WATER EL = 9.5

29'-12" STM-HDPE @ 1.03%

MITERED END SECTION FDOT INDEX 430-021
INV = 8.90

1 / C-11 POND CONTROL STRUCTURE

KEY PLAN



NO.	DATE	DSGN	DR	REVISION	CHK	APVD	BY	APVD
		A MALONE	C CHILDRESS				A MALONE	

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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
GRADING AND LAYOUT PLAN 1

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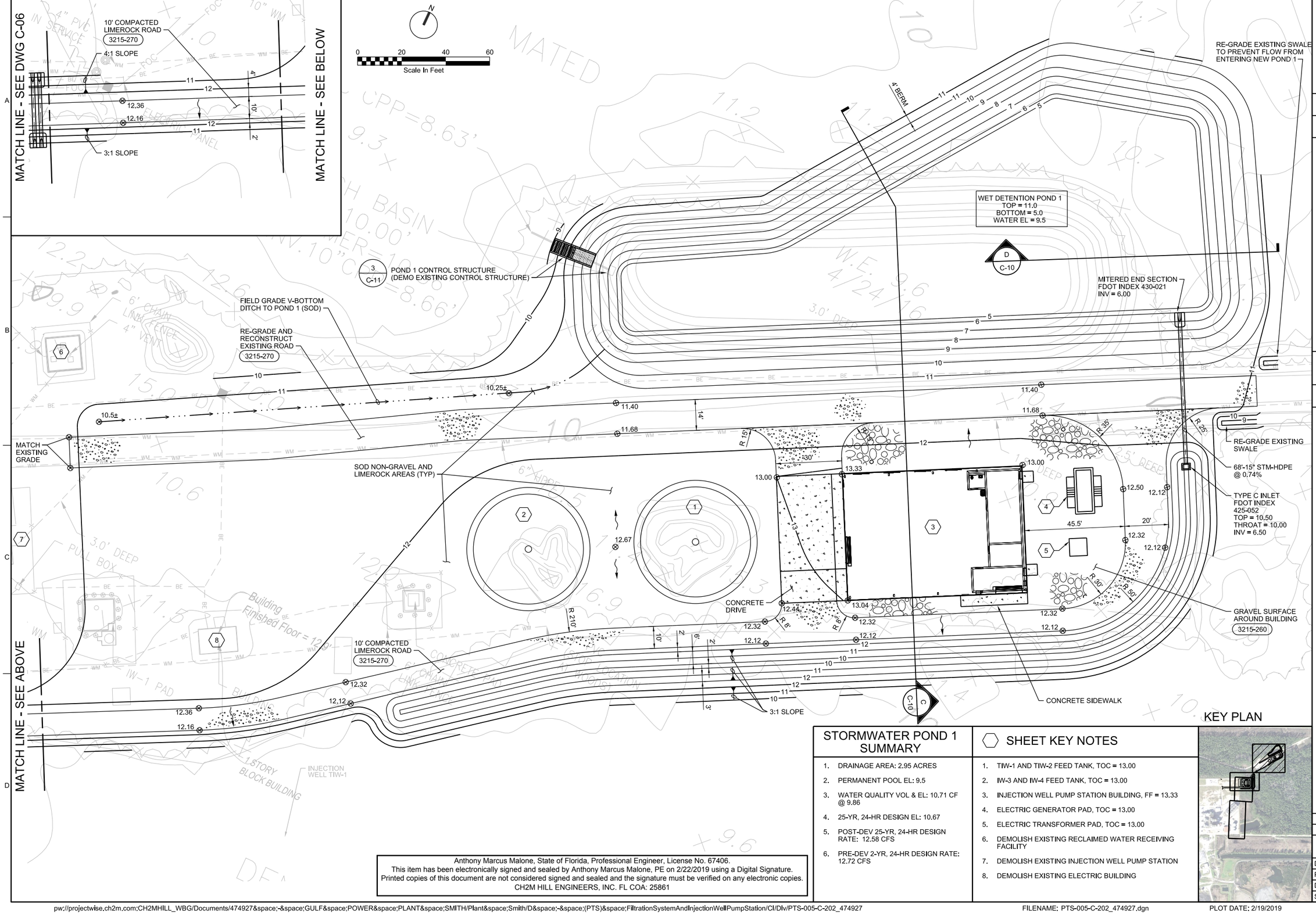
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-06
SHEET	of



KEY PLAN

STORMWATER POND 1 SUMMARY

1. DRAINAGE AREA: 2.95 ACRES
2. PERMANENT POOL EL: 9.5
3. WATER QUALITY VOL & EL: 10.71 CF @ 9.86
4. 25-YR, 24-HR DESIGN EL: 10.67
5. POST-DEV 25-YR, 24-HR DESIGN RATE: 12.58 CFS
6. PRE-DEV 2-YR, 24-HR DESIGN RATE: 12.72 CFS

SHEET KEY NOTES

1. TIW-1 AND TIW-2 FEED TANK, TOC = 13.00
2. IW-3 AND IW-4 FEED TANK, TOC = 13.00
3. INJECTION WELL PUMP STATION BUILDING, FF = 13.33
4. ELECTRIC GENERATOR PAD, TOC = 13.00
5. ELECTRIC TRANSFORMER PAD, TOC = 13.00
6. DEMOLISH EXISTING RECLAIMED WATER RECEIVING FACILITY
7. DEMOLISH EXISTING INJECTION WELL PUMP STATION
8. DEMOLISH EXISTING ELECTRIC BUILDING

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CH2M HILL ENGINEERS, INC. FL COA: 25861

NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
	A MALONE	A MALONE	C CHILDRESS		APVD	A MALONE	

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FILTRATION SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
GRADING AND LAYOUT PLAN 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-07
SHEET	of

90% DESIGN - NOT FOR CONSTRUCTION

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4. FILTRATION BACKWASH TANK PAD, HP TOC = 13.85
5. ELECTRIC GENERATOR PAD, TOC = 13.50
6. ELECTRIC TRANSFORMER PAD, TOC = 13.00
7. ELECTRIC GENERATOR BUILDING, FF = 13.00
8. COMPRESSOR BUILDING FF = 13.00

N

0 20 40 60
Scale In Feet

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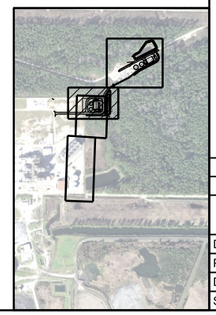
8" HDPE
3" HDPE
MATCH LINE SEE DWG C-09
E-BUR
20" FE-HDPE (TO INJECTION WELL PUMP STATION)
SEE DWG M-04 FOR CONTINUATION
8" BWR-HDPE
SEE DWG M-04 FOR CONTINUATION
(1) 8" TEE - HDPE
(2) 8" V-504 (BUTTERFLY)
3" WATER STUB OUT
EXISTING POWER POLE
20" STEEL PIPE
PULL BOX
0.5' DEEP
ELECTRIC SERVICE DROP FOR BURIED SERVICE
0.7' DEEP
5.2' DEEP
1.5' DEEP
EXISTING BURIED PIPING (TYP)
20" FI-HDPE (SEE DWG C-12 & 13)
8" BWR-HDPE (SEE DWG C-12 & 13)

KEY PLAN



NO.	DATE	DSGN
A	A MALONE	DR C CHILDRESS

REVISION CHK APVD BY APVD

A MALONE

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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

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CIVIL
YARD PIPING PLAN 1

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-08
SHEET	of

MATCH LINE - SEE BELOW

N

0 20 40 60
Scale In Feet

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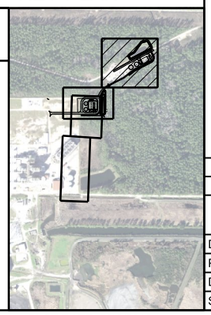
10" WM
IW-1 PAD
4" PVC SERVICE
ELECTRIC PANEL
20" FE-HDPE
8" BWR-HDPE
BURIED ELECTRIC CONDUIT
EXISTING BURIED PIPING (TYP)
E-BUR
MATCH LINE SEE DWG C-08

8" IWR-FG (RETURN TO FEED TANKS)
STUB FOR FUTURE EXTENSION TO TIW-2 AND TIW-3
3.0' DEEP
2.5' DEEP
1.8' DEEP
EXISTING 8" IW-FG TO TIW-4
CONNECT TO EXISTING 8" IW-FG
8" IW-FG (TO TIW-4)
8" IW-FG (TO TIW-1)
6' CHAIN LINK FENCE
4" VENT
24" PIPE
WATER LINE 1.0' DEEP
EXISTING 4" WM - PVC
REMOVE EXISTING PIPING AND CONNECT TO INJECTION WELL TIW-1
3.0' DEEP PULL BOX
CHAIN LINK FENCE
20" HDPE
E-BUR
SEE DWG M-01 FOR CONTINUATION (TYP)
16" FE-HDPE
8" BW-HDPE
(2) 20" V-504 (BUTTERFLY)
(1) 20" TEE - HDPE
20" FE-HDPE
8" BW-HDPE
BURIED ELECTRIC CONDUIT
CONNECT TO EXISTING 4" POTABLE WATER AND EXTEND 2" W1-HDPE TO BUILDING
MATCH LINE - SEE ABOVE

SHEET KEY NOTES

1. TIW-1 AND TIW-2 FEED TANK, TOC = 13.00
2. IW-3 AND IW-4 FEED TANK, TOC = 13.00
3. INJECTION WELL PUMP STATION BUILDING, FF = 13.33
4. ELECTRIC GENERATOR PAD, TOC = 13.00
5. ELECTRIC TRANSFORMER PAD, TOC = 13.00
6. DEMOLISH EXISTING RECLAIMED WATER RECEIVING FACILITY
7. DEMOLISH EXISTING INJECTION WELL PUMP STATION
8. DEMOLISH EXISTING ELECTRIC BUILDING

KEY PLAN



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	A MALONE	A MALONE	C CHILDRESS	APVD		A MALONE	

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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
YARD PIPING PLAN 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
PROJ	474927
DWG	C-09
SHEET	of

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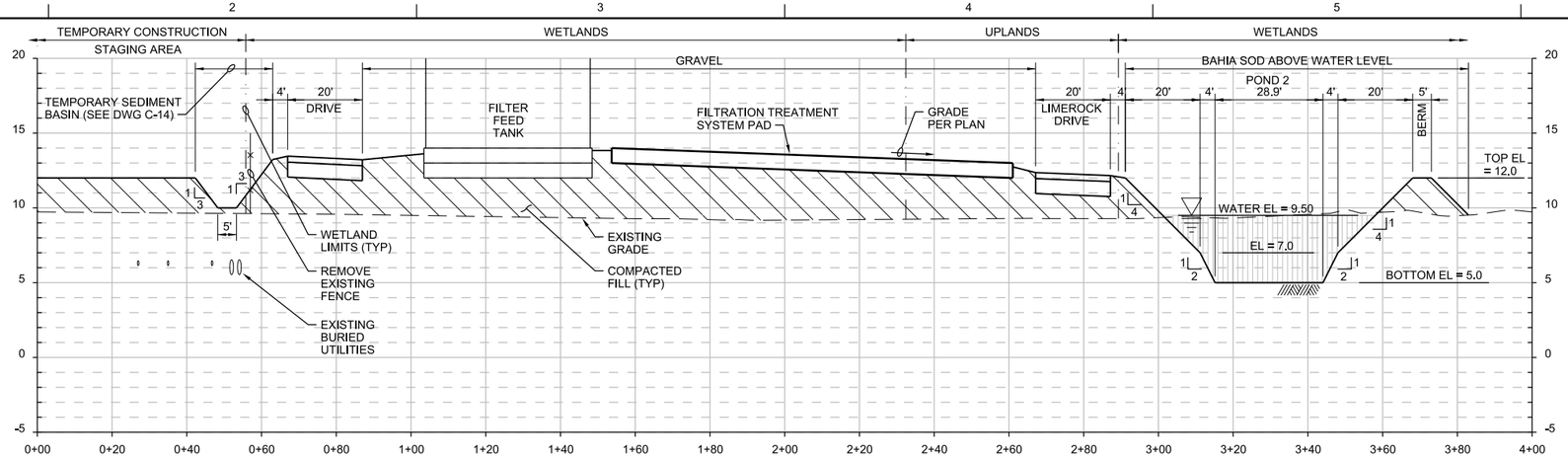
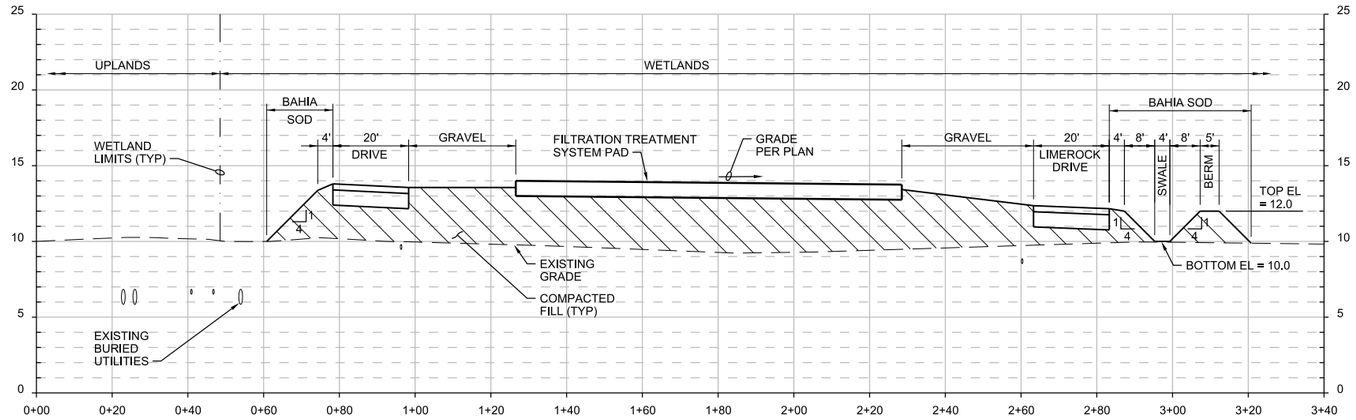
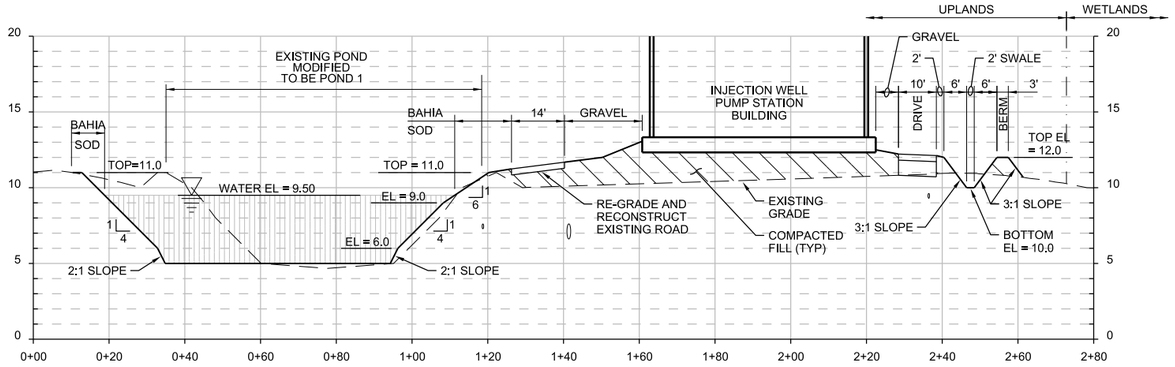


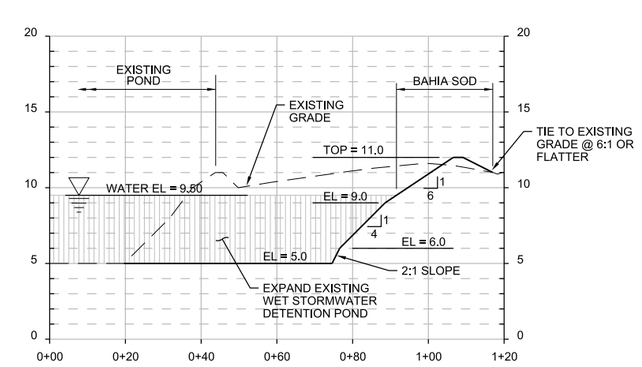
A SECTION
SCALE: 1" = 20' HORIZ
1" = 5' VERT
C-06



B SECTION
SCALE: 1" = 20' HORIZ
1" = 5' VERT
C-06



C SECTION
SCALE: 1" = 20' HORIZ
1" = 5' VERT
C-07



D SECTION
SCALE: 1" = 20' HORIZ
1" = 5' VERT
C-07

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DSGN	A MALONE	A MALONE	C CHILDRESS			A MALONE	

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FILTRATION SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

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CIVIL
SITE SECTIONS

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0 1"

DATE	FEBRUARY 2019
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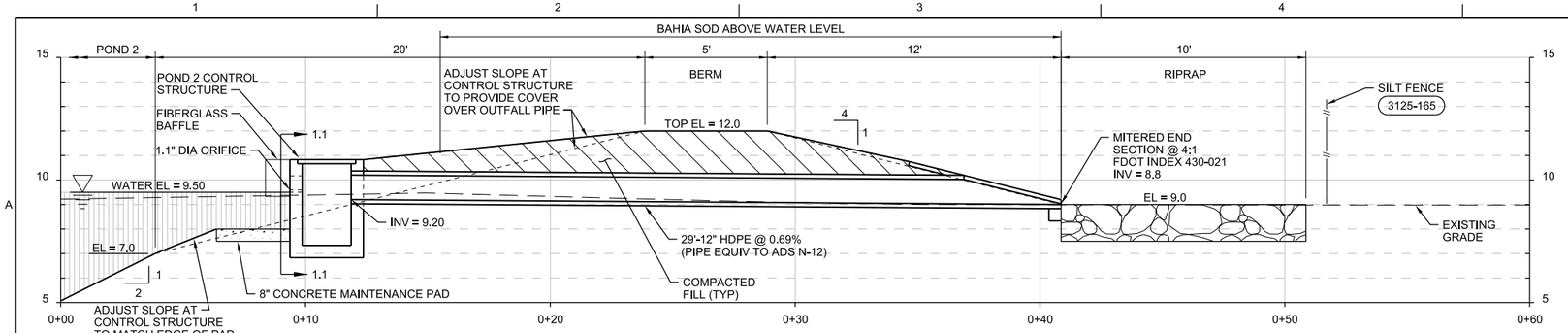
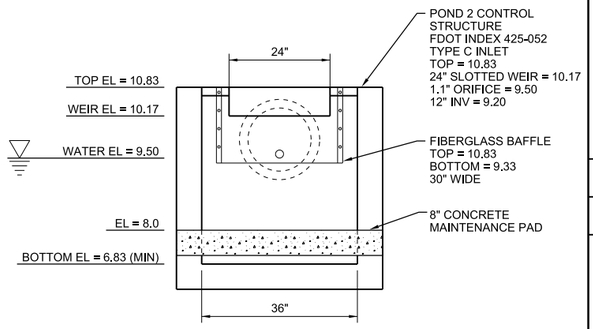
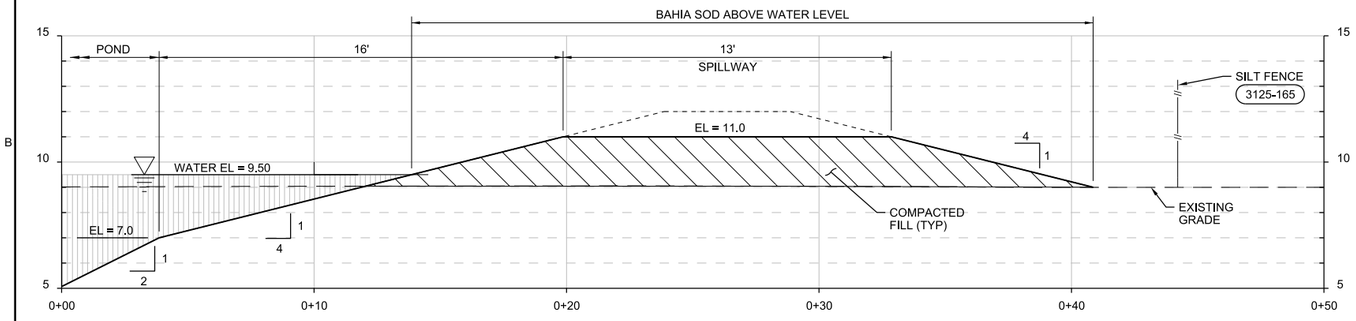
DWG	C-10
SHEET	of



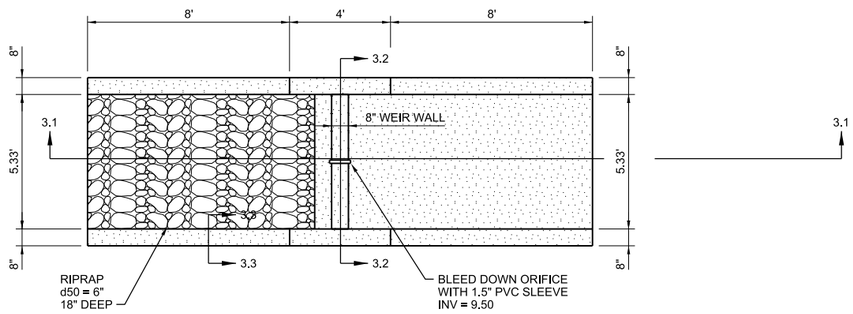
1 DETAIL - POND 2 CONTROL STRUCTURE
SCALE" 1" = 3'
C-06



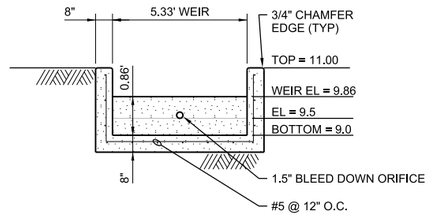
SECTION 1.1
NTS



2 DETAIL - POND 2 SODDED SPILLWAY
SCALE" 1" = 3'
C-06



PLAN VIEW



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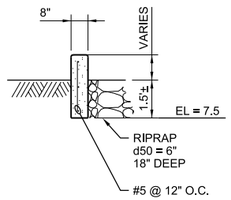

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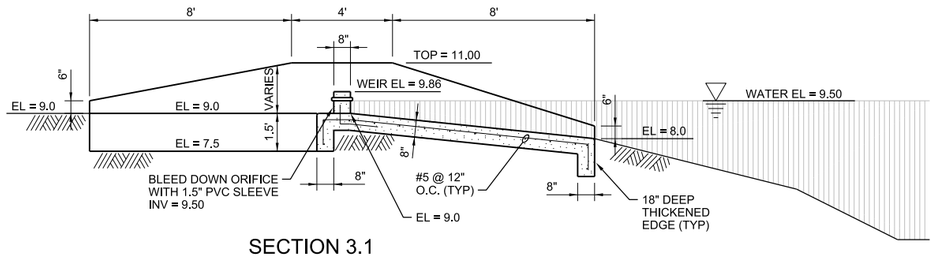

SECTION 3.1

3 DETAIL - POND 1 CONTROL STRUCTURE
SCALE" 1" = 3'
C-06

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COA: 25861

NO.	DESCRIPTION	DATE	DSGN	DR	CHK	APVD
	REVISION	A MALONE	C CHILDRESS			A MALONE

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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
STORMWATER DETAILS AND SECTIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2019
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UNIT 3

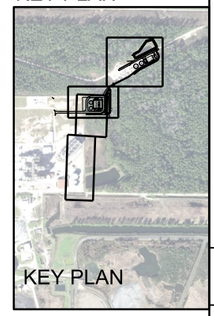
N

0 30 60 90
Scale In Feet

EXISTING BURIED PIPING (TYP)

MATCH LINE - STA 25+20

KEY PLAN



STORMWATER POND

WETLANDS BOUNDARY (TYP)

LIMITS OF DISTURBANCE (TYP)

WETLANDS IMPACT (TYP)

25' SECONDARY WETLANDS IMPACT (TYP)

8" BW - HDPE TO CONNECT TO FUTURE 8" BW-HDPE BY OTHERS

20" FI-HDPE TO CONNECT TO EXISTING ABOVE GRADE PIPING (SURVEY NEEDED AND CONECTION METHOD TO BE DETERMINED)

(1) 8" BW-HDPE
(1) 20" FI-HDPE
(MATCH INVERTS)

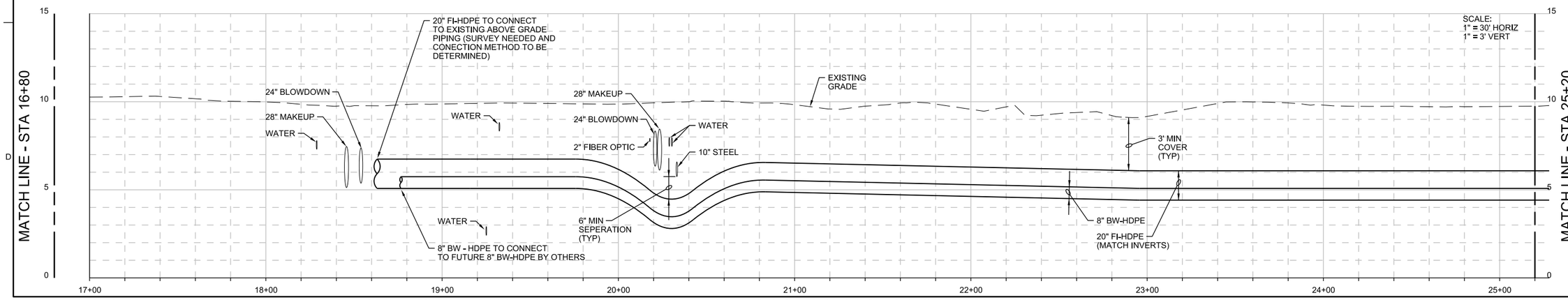
REMOVE EXISTING FENCE

CLEAR AND GRUB 10' BEYOND CENTERLINE OF PROPOSED 8" BW-HDPE

SILT FENCE AT EDGE OF CLEARING
3125-165

LEGEND

- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER



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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
FILTER BACKWASH PIPE PLAN AND PROFILE

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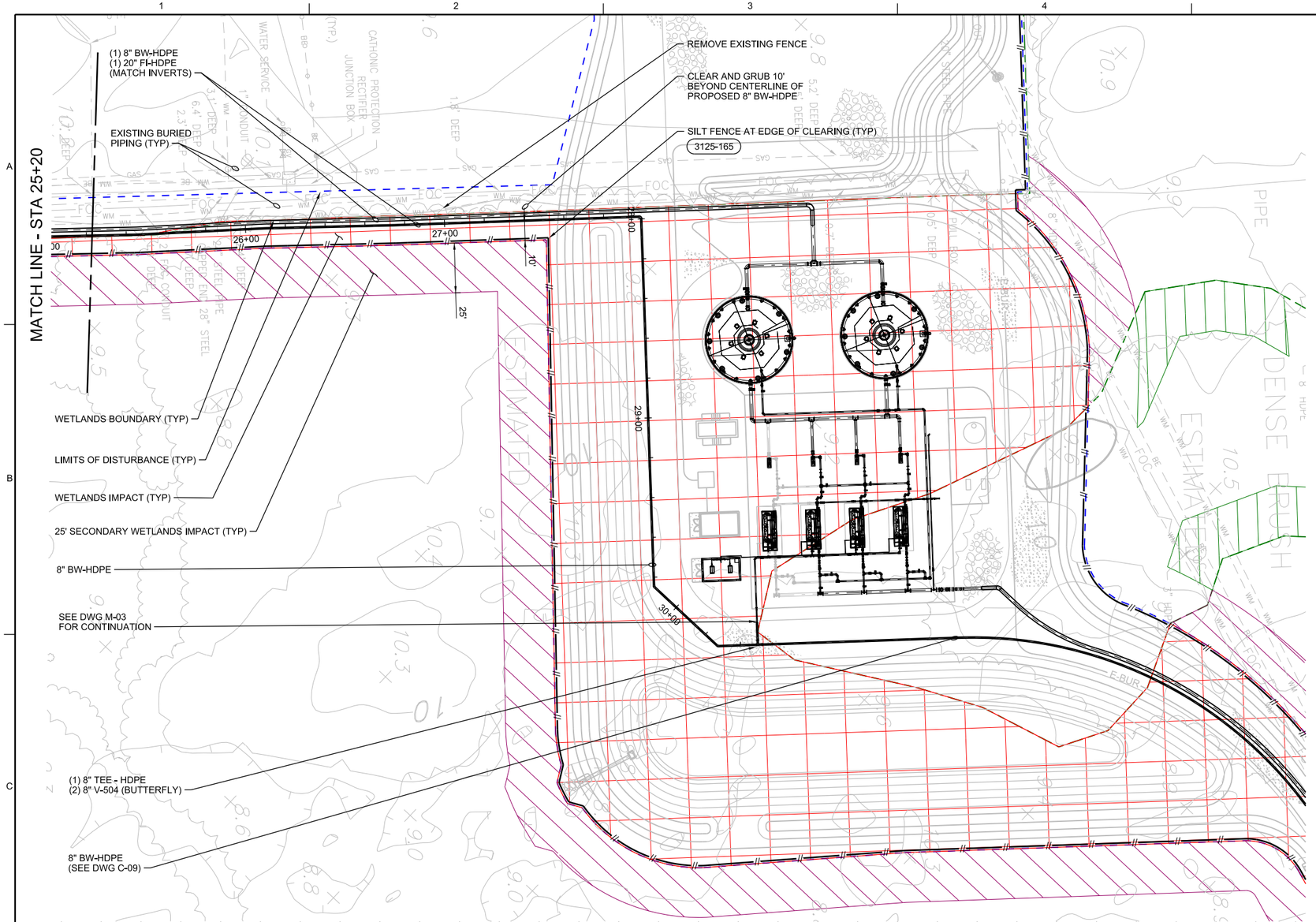
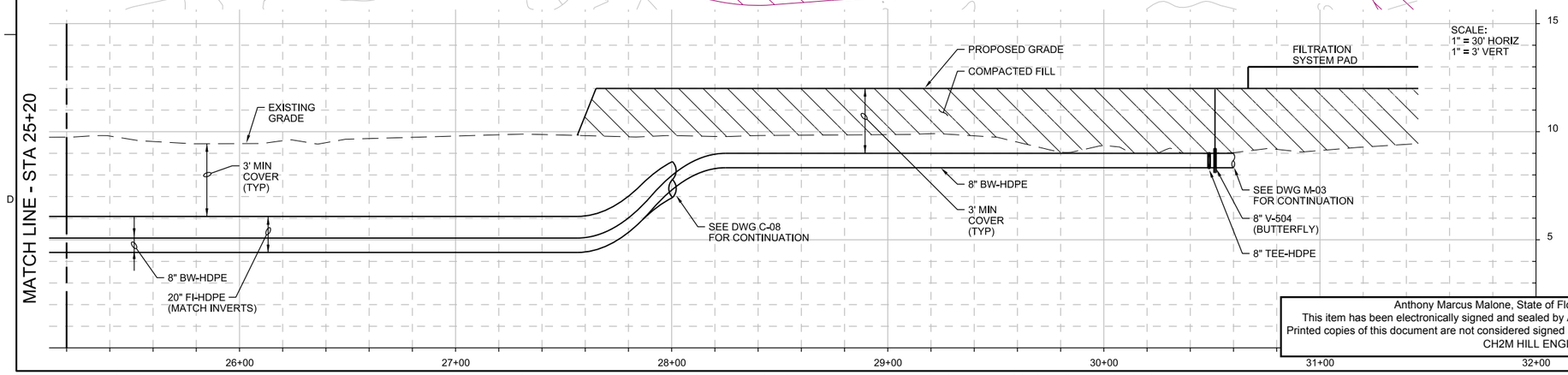
SHEET	of





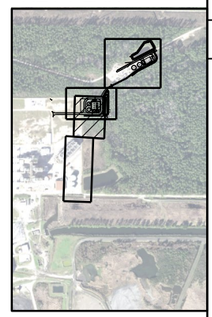
N

0 30 60 90
Scale In Feet

LEGEND

- WETLAND BOUNDARY
- WETLAND AREA
- LIMITS OF DISTURBANCE
- WETLAND IMPACT
- WETLAND SECONDARY IMPACT
- WETLAND BUFFER

KEY PLAN



NO.	DATE	DSGN	DR	REVISION	CHK	APVD	BY	APVD
	A MALONE	A MALONE	C CHILDRESS				A MALONE	

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FILTRATION SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL

FILTER BACKWASH PIPE PLAN AND PROFILE

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0 1"

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PROJ	474927
DWG	C-13
SHEET	of

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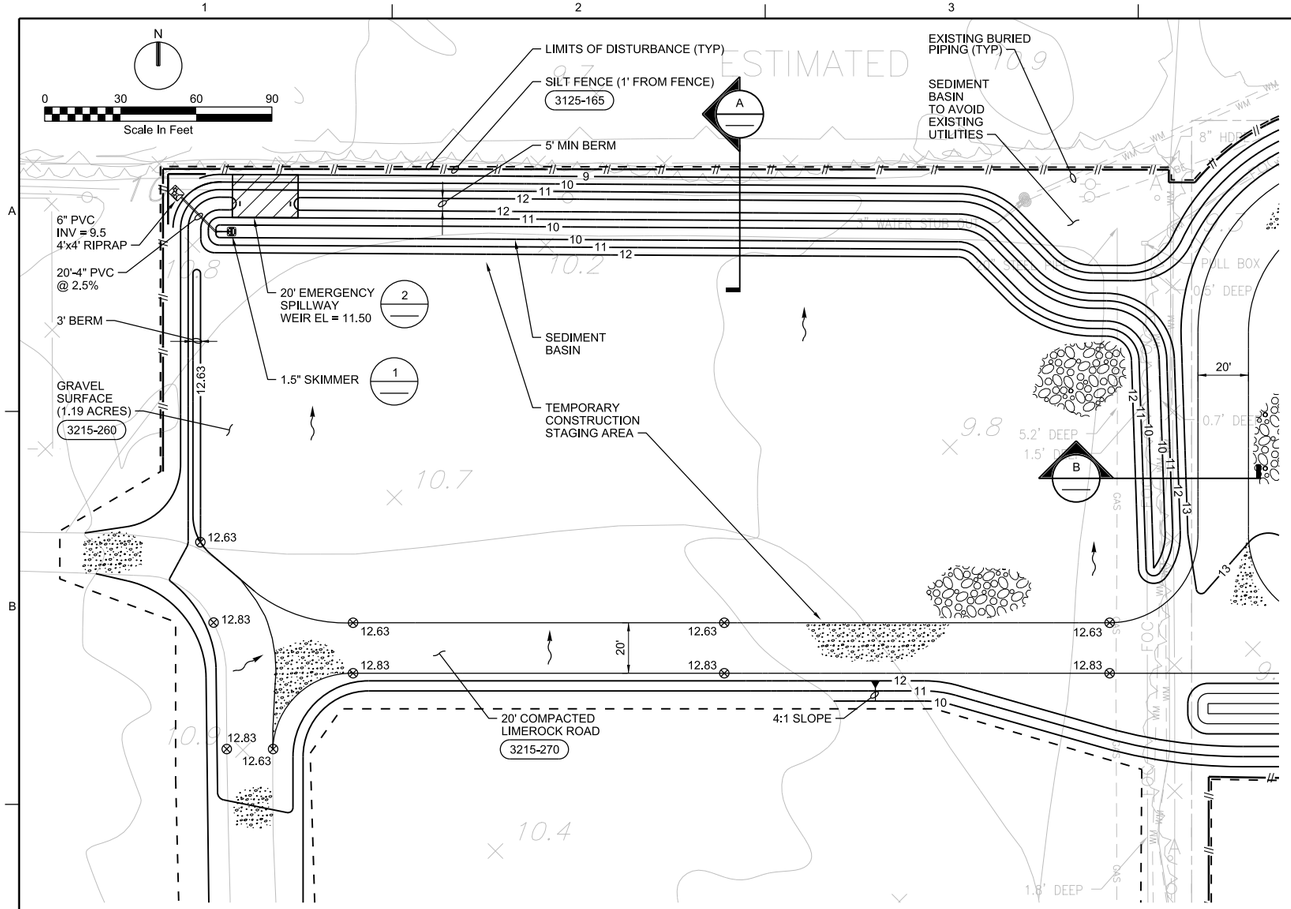
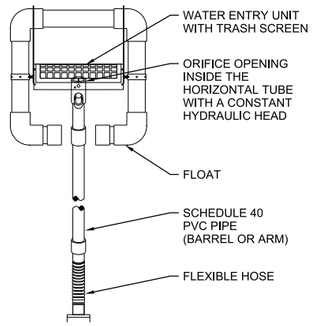
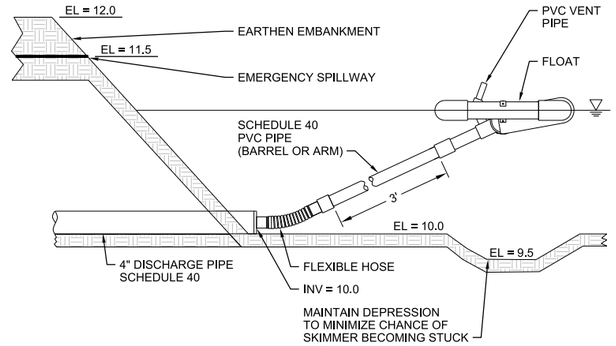


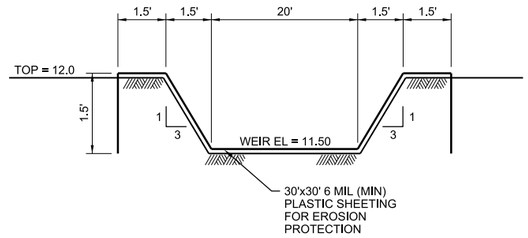




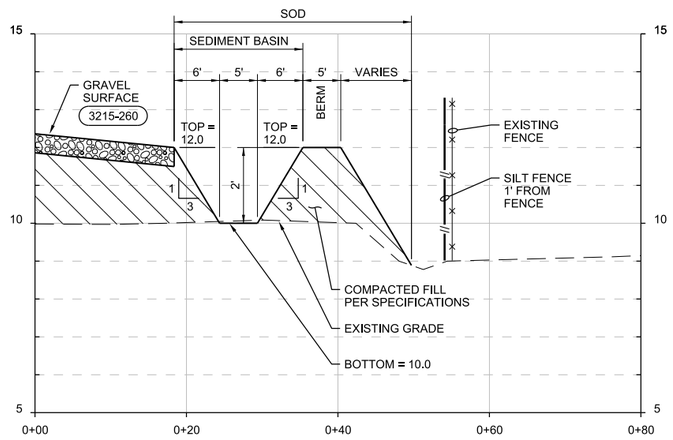
NOTES:

1. SKIMMER SHALL BE EQUIVALENT TO THE 1.5" DIA SKIMMER BY FAIRCLOTH SKIMMER (www.fairclothskimmer.com).

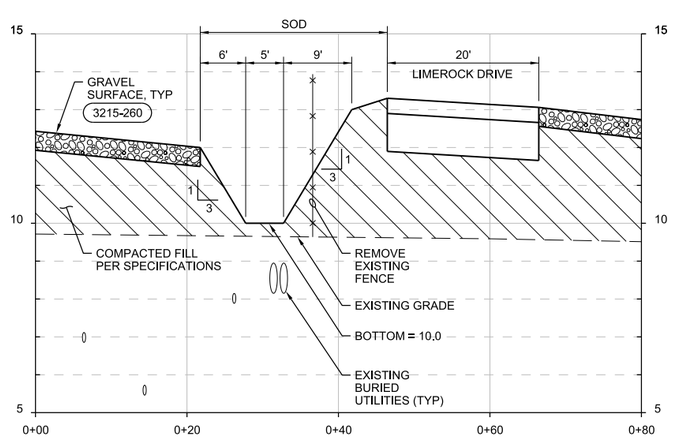
1 DETAIL - SKIMMER 1.5" DIA
NTS



2 DETAIL - EMERGENCY SPILLWAY
NTS



A SECTION - SEDIMENT BASIN
SCALE: 1" = 10' HORIZ
1" = 2' VERT



B SECTION - SEDIMENT BASIN
SCALE: 1" = 10' HORIZ
1" = 2' VERT

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		A MALONE	C CHILDRESS				A MALONE	

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FILTRATION SYSTEM AND
INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
TEMPORARY
CONSTRUCTION AREA PLAN

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0 1"

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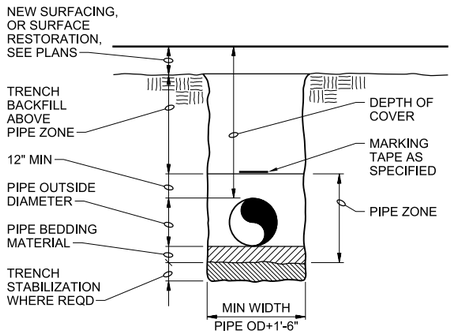
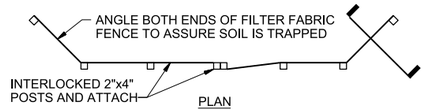
DWG	C-14
SHEET	of

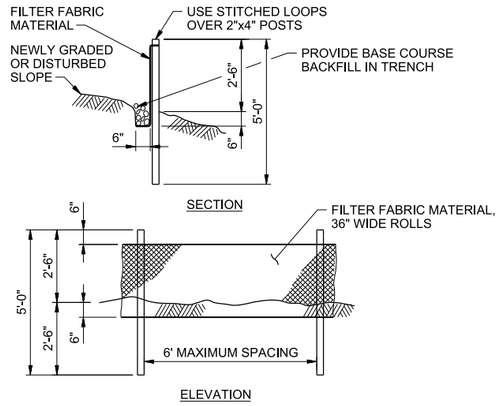


TYPICAL TRENCH

NTS

3123-110





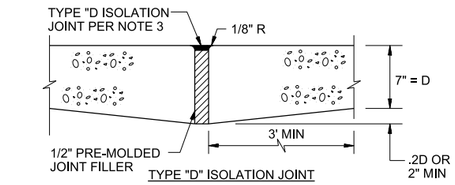
NOTES:

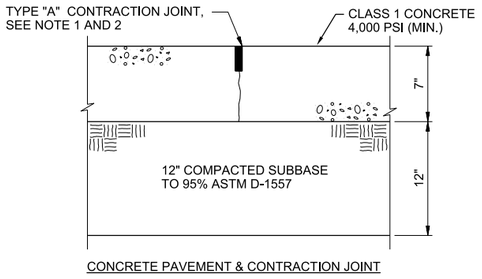
1. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
2. 2"x4" DOUGLAS FIR OR STEEL FENCE POSTS.
3. STITCHED LOOPS TO BE INSTALLED DOWNHILL SIDE OF SLOPE.
4. COMPACT ALL AREAS OF FILTER FABRIC TRENCH.

SILT FENCE

NTS

3125-165





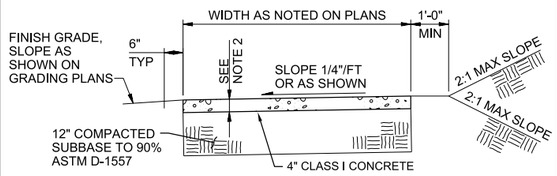
NOTES:

1. CONTRACTION JOINT SHALL BE MADE, CLEANED WITH COMPRESSED AIR, AND FILLED WITH SEALANT AS SPECIFIED. JOINT TO BE 1/4" TO 1/8" IN DEPTH.
2. CONCRETE JOINT SPACING: AS SHOWN OR MAXIMUM 15'x 15'.
3. INSTALL 1/2" PREMOLDED JOINT FILLER FULL DEPTH WHERE CONCRETE PAVEMENT ABUTS CONCRETE CURB, BUILDING OR ANY RIGID STRUCTURE.
4. THICKENED EDGES SHALL BE PLACED ADJACENT TO PAVEMENT AND ALONG PERIMETER.

CONCRETE DRIVE

NTS

3213-240



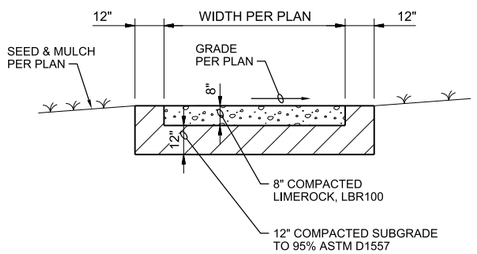
NOTES:

1. INSTALL 1/2" PREMOLDED JOINT FILLER BETWEEN THE SIDEWALK AND ALL STRUCTURES, CONCRETE PAVEMENT, AND CURBS.
2. CONTRACTION JOINTS SHALL BE INSTALLED EVERY 5' (MAX).

CONCRETE SIDEWALK

NTS

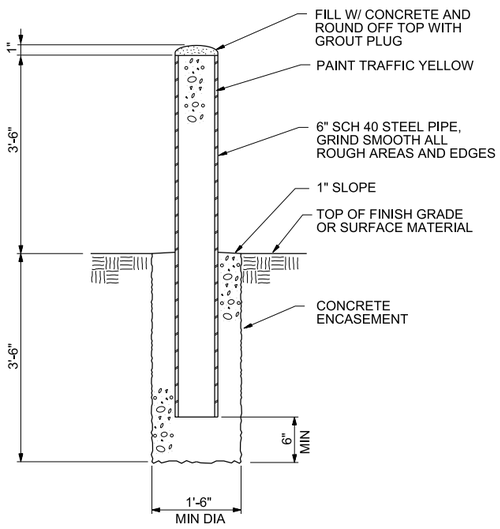
3213-220



LIMEROCK ROAD

NTS

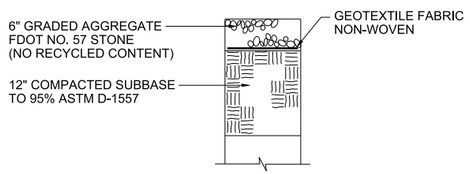
3215-270



BOLLARD

NTS

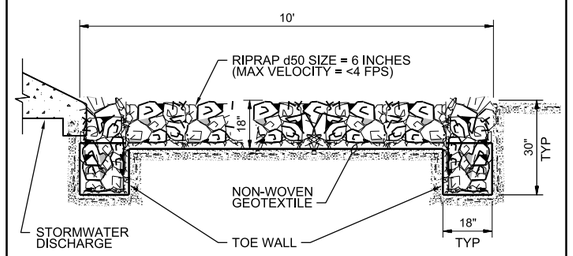
3305-954



GRAVEL SURFACE

NTS

3215-260



RIPRAP OULET PROTECTION

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3220-100

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			C CHILDRESS		A MALONE

REVISION

BY APVD

A MALONE

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FILTRATION SYSTEM AND INJECTION WELL PUMP STATION
GULF POWER, PLANT SMITH
PANAMA CITY, FLORIDA

CIVIL
DETAILS

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0 1"

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ERP Application
Exhibit D – Ecological Review

Gulf Power Plant Lansing Smith has an historic ecology of hydric pine flatwoods landscape. State of Florida FLUCC code 625, St. Andrews Bay watershed, Class II waters. The Plant Smith land area has a geographic and hydrologic connection through wetlands, surface waters and uplands with North Bay which influences West Bay, St. Andrews Bay, and Gulf of Mexico. This historical community is forest with sparse to moderate canopy of slash pine. The understory is grasses, wire grass, forbs, and saw palmetto.

This area is currently dominated by Silviculture slash pine, wax myrtle, water oak, Titi, and myrtle leaf holly. Anticipated wildlife utilizing this area are raccoons, squirrel, white tail deer, frogs, snakes, crayfish, and song birds. Silviculture and fire suppression of the area has degraded wildlife usage. Power plant activities also restricts and limits wildlife access, due to active work disturbance, access roads, and perimeter fencing. Due to siliviculture activities, historical ditches, and drainage the historic hydrogeology of the area has been altered.

State and Federal listed species were not noted within this assessment area. Below are species that are active within Northwest Florida.

1. Bald Eagle (*Haliaeetus leucocephalu)* have been seen within this area, but are not known to nest within Plant Smith boundary. A visual inspection was completed for active or inactive nest sites. No Bald Eagle nest sites were located.
2. Red Cockaded woodpecker *(Leuconotopicus borealis)* has not been identified within Plant Smith boundary. The current forest pine DBH size is not large enough to accommodate pine tree nest cavities for RCW.
3. Indigo Snake *(Drymarchon couperi)* and Gopher Tortoise *(Gopherus polyphemusare)* not known to inhabit the assessment area. This area doesn't contain a sufficient amount of upland habitat to support them. No Gopher Tortoise burrows have been identified within Plant Smith boundary.

ERP Application

Exhibit E – Wetland Impact Avoidance and Mitigation

Exhibit E - FDEP

January 16, 2019

Wetland Impact Avoidance and Minimization, Plant Smith injection well pump station:

In choosing the location for the Plant Smith injection well pump station, Gulf Power considered the area to be disturbed next to the injection well for avoidance and minimization. The proposed project area that will be disturbed for construction of new structures and required stormwater management facilities utilizes uplands to the maximum extent. By selecting the site to the east of the existing Unit 3 natural gas combined cycle plant cooling tower and south of the existing injection wells, we were able to reduce new disturbance due to access roads and electrical buildings, minimize the area disturbed for the new fenced area of the pump station, and minimized wetland impact for the stormwater facilities. This was accomplished by locating the stormwater pond east of the new pump station and expanding an existing stormwater pond into an upland area. The existing temporary injection well pump station will be removed and Gulf Power will utilize the upland are at the temporary injection well site for part of the proposed new pump station.

The original design has been minimized to reduce wetland impacts to a large cypress wetland area south of the exiting temporary pump station yard. Impervious parking and access drives have been reduced in size or eliminated to reduce the required stormwater system size. Pump station gravel pad sizes were reduced, and some equipment has been relocated to upland areas. This enabled Gulf Power to reduce wetland impacts from 6.81 to 3.17 acres (1.13 acres of secondary impacts and 2.04 acres of direct impacts). Utilizing existing cleared uplands as a laydown area enables Gulf Power to also avoid any new wetland impact areas outside of current construction limits.

Gulf Power is proposing 1.36 Wet Prairie /Hydric Pine Flatwoods mitigation credits to offset wetland impacts. Credits will be purchased from Breakfast Point Mitigation Bank, Panama City Beach, FL.

If you have any further questions, please contact Jeff Cole at (850) 872-3347 or Jeffrey.Cole@nexteraenergy.com

Sincerely

Jeffrey E. Cole

Jeff Cole
Gulf Power
Environmental Specialist

ERP Application
Exhibit F – Elevations

Elevations

November 8, 2018

Elevation Contours and Depressions

- 0 - 10
- 10 - 20
- 20 - 30
- 30 - 40
- 40 - 50
- 50 - 60
- 60 - 70
- 70 - 80
- 80 - 90
- 90 - 100
- 100 - 125
- 125 - 150
- 150 - 175
- 175 - 200
- 200 - 225
- 225 - 250
- 250 - 275
- 275 - 300
- 300 - 350

1:4,514

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

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Map created by Map Direct, powered by ESRI.

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ERP Application

Exhibit G – Geotechnical Report

UNIVERSAL
Engineering Sciences

REPORT OF A
GEOTECHNICAL EXPLORATION

Geotechnical Investigation and Laboratory Testing for the Design of Treatment System and Injection Well Pump Station
Gulf Power – Plant Lansing Smith
Southport, Bay County, Florida

September 17, 2018

UES PROJECT NO. 2030.1800088.0000
UES REPORT NO. 1603139

Prepared For:

Mr. Robert Jernigan
Gulf Power Company
One Energy Place
Pensacola, Florida 32520

***Prepared By*:**

UNIVERSAL ENGINEERING SCIENCES
1712 Airport Road
Panama City, Florida 32405
(850) 215-2060

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- Pensacola
- Rockledge
- Sarasota
- St. Petersburg
- Tampa
- Tifton, GA
- West Palm Beach

September 17, 2018

Mr. Robert Jernigan
Gulf Power Company
One Energy Place
Pensacola, Florida 32520

Reference: ***Geotechnical Investigation and Laboratory Testing***
Design of Treatment System and Injection Well Pump Station
Gulf Power – Plant Lansing Smith
Southport, Bay County, Florida
UES Project No. 2030.1800088.0000
UES Report No. 1603139

Dear Mr. Jernigan:

Universal Engineering Sciences, Inc. has completed the geotechnical investigation and laboratory testing for the design of the proposed treatment system and injection well pump station at Gulf Power Company's Lansing Smith Plant located in Southport, Bay County, Florida. This report contains the results of our limited exploration and presents subsurface soil and groundwater information, and laboratory testing data to aid in the proposed design.

Objectives

The objectives of our geotechnical consulting services on this portion of the project were summarized as follows:

- Explore the shallow subsurface conditions within the areas of the proposed facilities at the locations selected by CH2M / Jacobs.
- To establish relevant soil engineering characteristics.
- Present subsurface soil and groundwater information for design of the proposed facilities by CH2M / Jacobs.

Project Information

The subject project is located off Highway 2300 in Southport, Bay County, Florida. We understand that the proposed construction will consist of four 60-foot diameter water holding tanks, miscellaneous pumps, piping and filters. In addition, a stormwater pond of less than 1 acre is planned as well as an interior roadway.

Site Conditions

UES engineering personnel visited the project site during the performance of the field portion of this geotechnical study. At the time of our field exploration, the areas of the proposed

construction were mainly undeveloped, surficially grassed or wooded areas with medium dense to dense underbrush. An east-west access roadway consisting of limerock base with various injection well and monitoring well pads were also present onsite. Topographic information was not available at the time of our exploration, however observations made at the time of exploration indicated the subject areas to be relatively flat with an overall grade change of 3 feet or less.

Local Geology

The subject property is located within the Coastal Lowlands physiographic region. The Coastal Lowlands are characterized by nearly level, poorly drained land extending approximately 12 miles inland from the coast.

Groundwater systems in Bay County are considered part of the Apalachicola Embayment System of the Florida Panhandle. The Apalachicola Embayment is characterized by a deeply buried Floridan Aquifer and a thick Intermediate Aquifer System (Pratt, et. al., 1996). The thickness of the Surficial System in this region is variable, ranging from 20 to 75 feet (Pratt, et. al., 1996). The Intermediate System, which ranges in thickness from 150 to 500 feet, consists of a complex sequence of clays, silts, sands, and low permeability carbonates. These low-permeability units act as a confining unit, limiting recharge to the underlying Floridan Aquifer. Both the Surficial and Intermediate systems are of minor importance as groundwater sources in Bay County (Pratt, et. al., 1996).

Due to limited groundwater recharge, extensive development of secondary porosity in the Floridan Aquifer System has not occurred. Groundwater in the Floridan is also highly mineralized due to the low recharge rates and groundwater availability from the Floridan is limited (Pratt, et. al., 1996). Excessive withdrawals can results in significant water level declines and invasion of the aquifer from underlying mineralized water. Due to the groundwater limitations noted above, the Apalachicola Embayment is the only region in the Northwest Florida Water Management District where surface water is used extensively as a drinking water source (Pratt, et. al., 1996).

Subsurface Exploration

The field geotechnical testing activities were initiated on July 10, 2018 and completed on July 20, 2018. The boring locations were selected prior to our mobilization by CH2M / Jacobs. Gulf Power Company had cleared trails within the wooded portions of the site prior to our arrival for assistance in the field drilling operation. Field tests for this portion of the geotechnical study were performed at the locations shown on the attached Boring Location Plan in Appendix A.

To explore the subsurface conditions present, we located and drilled nineteen (19) Standard Penetration Test (SPT) borings. The SPT borings were performed to a depths ranging from approximately 10.5 feet to 75 feet below the existing ground surface. The SPT borings were performed in general accordance with the methodology outlined in ASTM D 1586. A summary of this field procedure has been included in Appendix B. Split-spoon soil samples recovered during performance of the borings were visually classified in the field and representative portions of the samples were transported to our laboratory for further evaluation.

Our field personnel visually inspected the recovered soil samples, and recorded their observations on the field logs. Representative portions of each soil sample were placed in plastic containers and transported to our Panama City office. Samples of the soils encountered

will be held in our laboratory for a period of 6 months after the field work was completed unless we are notified otherwise. Groundwater levels were measured and recorded on the field logs. Upon 24-hour groundwater recordings, the boreholes were cement grouted to the surface.

The Boring Logs have been included in Appendix B. The stratification lines on the Boring Logs represent the approximate boundary between soil types, as determined in the field by our drill crews. The transition between soil types at each boring location may be gradual. A more detailed description of the drilling and sampling techniques used is provided on the Field Exploration Procedures sheet in Appendix B.

This Report presents an evaluation of conditions at the specific locations noted on the basis of traditional geotechnical procedures for characterization. The recovered samples were not examined, either visually or analytically, for chemical composition or environmental hazards.

Subsurface Findings

The boring locations and detailed subsurface conditions are illustrated in the Boring Logs attached in Appendix B. The classifications and descriptions shown on the logs have been generally based upon visual characterizations of the recovered soil samples. Also, see Appendix B: Key to Boring Logs, for further explanation of the symbols and placement of data on the Boring Logs. Table 1: General Soil Profile, summarizes the soil conditions found.

Table 1 – General Soil Profile

Typical Depth (feet below existing grades)		Soil Descriptions
From	To	
0	10.5	Very loose to dense sand (SP), slightly silty sand (SP-SM), slightly clayey sand (SP-SC), silty sand (SM), clayey sand (SC), and wood
10.5	25	Very loose to medium dense sand (SP), slightly silty sand (SP-SM), slightly clayey sand (SP-SC), silty sand (SM), clayey sand (SC), and silty clayey sand (SC-SM)
25	75*	Very loose to medium dense silty sand (SM), clayey sand (SC), silty clayey sand (SC-SM)

*** Termination depth of the deepest test boring**
[ ] Indicates Unified Soil Classification

Laboratory Soil Tests

The soil samples recovered from the field exploration program were placed in plastic containers and returned to our soils laboratory, where a member of our geotechnical staff visually classified the samples. Laboratory soil tests were performed to aid in the classification of the soils, and to help in the evaluation of pertinent engineering characteristics of the soils. The laboratory testing program was provided by CH2M / Jacobs. Representative soil samples were selected for natural water content determination, percent fines determination, grainsize analysis, hydrometer analysis, Atterberg limits, corrosion testing, and organic content. The test results have been presented in Appendix C.

Natural Moisture Content

Certain recovered soil samples were selected to determine the natural moisture content. In these tests, the soil samples were placed in metal containers and dried. The natural moisture

content of the soil is termed the ratio of “pore” or “free” water in a given mass of material to the mass of solid material particles. The natural moisture contents of the samples tested were determined in general accordance with the latest revision of ASTM D2216, Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass.

Percent passing No. 200 Sieve

Certain recovered soil samples were selected to determine the percentage of fines. In these tests the soil samples were dried and washed over a No. 200 mesh sieve. The percent of soil by weight passing the sieve is termed the percentage of fines or portion of the sample in the silt and clay size range. This test was conducted in accordance with the latest revision of ASTM Procedure D1140, Standard Test Method for Determining the Amount of Material Finer Than the No. 200 Sieve in Soils by Washing.

Grain Size Analysis

Grain size analysis was performed on selected samples in accordance with the latest revision of ASTM D-6913, Standard Test Method for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis. The samples were dried, weighed and passed through a set of nested sieves, including U.S. Standard sieve sizes of ⅜ in., 4, 10, 20, 40, 60, 80, 100, 140, and 200. The particle size of the materials passing the No. 200 sieve, if requested, was determined by performing a hydrometer analysis in accordance with the latest revision of ASTM D7928, Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis.

Atterberg Limits

Certain soil samples obtained from the test borings were selected to determine the Atterberg limits. The Atterberg Limits are the upper and lower limits of the range of water content over which a soil exhibits plastic behavior, and are defined as the liquid limit, plastic limit, and plasticity index of soils. The Atterberg limits of the sample tested were determined in accordance with the latest revision of ASTM D4318, Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

Corrosion Testing

The corrosion tests were performed in accordance with the latest revisions of ASTM D4972, Standard Test Method for pH of Soils, ASTM C1580, Standard Test Method for Water-Soluble Sulfate in Soil, ASTM G187, Standard Test Method for Measurement of Soil Resistivity Using the Two-Electrode Soil Box Method, and AASHTO T291-94, Standard Method of Test for Determining Water-Soluble Chloride Content in Soil.

Organic Loss on Ignition (Percent Organics)

Certain recovered soil samples obtained from the test borings were selected to determine the organic content. The percent organics is the material, expressed as a percentage, which is burned off in a muffle furnace. The organic loss on ignition or percent organic material in the sample tested was determined in accordance with the latest revision of ASTM D 2974, Standard Test Method for Organic Matter of Peat and Other Organic Soils.

Groundwater Considerations

We measured the water levels in the boreholes during the period of July 12 through July 23, 2018 following completion of the test borings. The encountered groundwater levels have been presented below in Table 2. The measured groundwater level at each boring location has been shown on the attached boring logs. Fluctuations in groundwater levels should be anticipated throughout the year, primarily due to seasonal variations in rainfall, surface runoff, and other factors that may vary from the time the borings were conducted.

Table 2 – Groundwater Level Readings

Boring No.	*GWL (ft)	Date of Reading
AB-1	1.2	7/20/2018
AB-2	0.8	7/20/2018
AB-3	0	7/20/2018
AB-4	0.5	7/20/2018
B-1	0.8	7/16/2018
B-2	1	7/13/2018
B-3	0.7	7/13/2018
B-4	0.3	7/18/2018
B-5	0.4	7/19/2018
B-7	0	7/18/2018
B-8	0	7/19/2018
B-10	0.8	7/12/2018
HA-1	0.3	7/23/2018
HA-2	0.3	7/23/2018
HA-3	0	7/20/2018
HA-4	1.1	7/20/2018
HA-6	0	7/20/2018
MP-1	0.3	7/23/2018
MP-2	0.8	7/23/2018

***Groundwater Levels (GWL) recorded in feet below existing ground surface**

Report Limitations

This report has been prepared for the exclusive use of ***Gulf Power Company*** and other designated members of the Design/Construction Team associated with the proposed construction for the specific project discussed in this report. No other site or project facilities should be designed using the soil information contained in this report. As such, UES will not be responsible for the performance of any other site improvement designed using the data in this report.

This data report should not be relied upon for final design recommendations or professional opinions by unauthorized third parties without the expressed written consent of UES. Unauthorized third parties that rely upon the information contained herein without the expressed written consent of UES assume all risk and liability for such reliance.

The information submitted in this data report has been based upon the data obtained from the soil borings performed at the locations indicated on the Boring Location Plan and from other information as referenced. This report does not reflect any variations which may occur between the boring locations. The nature and extent of such variations may not become evident until construction. If variations become evident, it may then be necessary for a re-evaluation of the information of this report after performing on-site observations or additional services during the construction period and noting the characteristics of the variations.

Borings for a typical geotechnical report are widely spaced and generally not sufficient for reliably detecting the presence of isolated, anomalous surface or subsurface conditions, or reliably estimating unsuitable or suitable material quantities. Accordingly, UES does not recommend relying on our boring information for estimation of material quantities unless our contracted services ***specifically*** include sufficient exploration for such purpose(s) and within the report we so state that the level of exploration provided should be sufficient to detect anomalous conditions or estimate such quantities. Therefore, UES will not be responsible for any extrapolation or use of our data by others beyond the purpose(s) for which it is applicable or intended.

All users of this report are cautioned that there was no requirement for UES to attempt to locate any man-made buried objects or identify any other potentially hazardous conditions that may exist at the site during the course of this exploration. Therefore, no attempt was made by UES to locate or identify such concerns. UES cannot be responsible for any buried man-made objects or environmental hazards which may be subsequently encountered during construction that are not discussed within the text of this report. We can provide this service, if requested.

During the early stages of most construction projects, geotechnical issues not addressed in this report may arise. Because of the natural limitations inherent in working with the subsurface, it is not possible for a geotechnical engineer to predict and address all possible problems. A GBC/The Geotechnical Business Council publication, "Important Information About This Geotechnical Engineering Report," appears in Appendix D, and will help explain the nature of geotechnical issues.

Further, we present documents in Appendix D: Constraints and Restrictions, to bring to your attention the potential concerns and the basic limitations of a typical geotechnical report.

Closure

We appreciate this opportunity to be of service as your geotechnical consultant on this project. If you have any questions concerning this report or if we may be of any further service, please contact us at any time.

Respectfully submitted,
UNIVERSAL ENGINEERING SCIENCES, INC.
Certificate of Authorization Number 549

Reviewed By:

Brandon J. Tarr, P.E.
Branch Manager
Florida P.E. No. 83259

Guy H. Rabens, M.S., P.E.
Principal Engineer
Florida P.E. No. 60917

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APPENDIX A

SITE LOCATION MAP
BORING LOCATION PLAN

SITE LOCATION

N

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ENGINEERING SCIENCES

GULF POWER – PLANT LANSING SMITH
SOUTHPORT, BAY COUNTY, FLORIDA

SITE LOCATION MAP

DRAWN BY: BT	CHECKED BY: GR	PROJECT NO: 2030.1800088.0000	SCALE: NTS
DATE: 9/6/2018	DATE: 9/10/2018	REPORT NO: 1603139	PAGE NO: A-1

LEGEND

BORING LOCATION

BORING LOCATION PLAN

SCALE: NTS

NOTE: BASE MAP PROVIDED BY OTHERS

UNIVERSAL ENGINEERING SCIENCES, INC.
1712 AIRPORT ROAD
PANAMA CITY, FL 32405

PROJECT NAME	GULF POWER COMPANY - PLANT LANSING SMITH		
PROJECT NUMBER	2030.1800088.0000	U.E.S. DOCS #	1603139
PROJECT LOCATION	SOUTHPORT, BAY COUNTY, FLORIDA		
DRAWN BY	BRANDON TARR, P.E.		
DATE OF SUB-SURFACE EXPLORATION	JULY 10-20, 2018	SHEET NUMBER	A-2

LEGEND

BORING LOCATION

BORING LOCATION PLAN

SCALE: NTS

NOTE: BASE MAP PROVIDED BY OTHERS

UNIVERSAL ENGINEERING SCIENCES, INC.
1712 AIRPORT ROAD
PANAMA CITY, FL 32405

PROJECT NAME	GULF POWER COMPANY - PLANT LANSING SMITH
PROJECT NUMBER	2030.1800088.0000
PROJECT LOCATION	SOUTHPORT, WALTON COUNTY, FLORIDA
DRAWN BY	BRANDON TARR, P.E.
DATE OF SUB-SURFACE EXPLORATION	JULY 10-20, 2018

U.E.S. DOCS # 1603139

SHEET NUMBER A-2

APPENDIX B

BORING LOGS
KEY TO BORING LOGS
FIELD EXPLORATION PROCEDURES

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
REPORT NO.:	1603139
PAGE:	1

PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
,

BORING DESIGNATION: **AB-1** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'28.3"N 85°41'44.5"W ; 5 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 10.0
WATER TABLE (ft): 1.2
DATE OF READING: 7/20/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/19/18
DATE FINISHED: 7/19/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
10	0												
					▼		Dark gray very loose silty SAND, many organics (SM)						
			1-1-2	3									
							Dark gray loose slightly silty SAND (SP-SM)						
			3-4-5	9				7.8	25				
							Gray medium dense SAND, trace of silt (SP)						
			5-7-9	16									
5	5												
			8-11-15	26									
			6-6-7	13				3.5	22				
			5-5-6	11									
							Gray medium dense SAND, trace of wood (SP)						
0	10												
			5-6-7	13									
							Boring Terminated @ 10.5'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
REPORT NO.:	1603139
PAGE:	2

PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
,

BORING DESIGNATION: **AB-2** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'27.6"N 85°41'44.4"W ; 5 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 11.0
WATER TABLE (ft): 0.8
DATE OF READING: 7/20/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/19/18
DATE FINISHED: 7/19/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
	0						Dark gray loose silty SAND, many organics (SM)						
10			1-2-2	4	▼		Gray/tan loose SAND, trace of silt (SP)						
			2-3-4	7			Gray/tan medium dense slightly silty SAND (SP-SM)	4.9	18				
			3-5-7	12			Gray medium dense slightly silty SAND (SP-SM)	6.0	18				
	5												
5			7-8-13	21									
			6-7-7	14			Gray loose slightly silty SAND, trace of wood (SP-SM)						
			4-4-5	9			Gray medium dense slightly silty SAND (SP-SM)						
	10												
			4-5-6	11			Boring Terminated @ 10.5'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
REPORT NO.:	1603139
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PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
,

BORING DESIGNATION: **AB-3** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'27.0"N 85°41'44.4"W ; 5 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 9.0
WATER TABLE (ft): 0
DATE OF READING: 7/20/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/19/18
DATE FINISHED: 7/19/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
	0				▼								
							Dark gray very loose silty SAND, trace of roots (SM)						
			WOH/18"	WOH			Gray loose SAND, trace of silt (SP)						
			2-2-3	5			Gray/tan medium dense SAND, trace of silt (SP)	3.7	21				
5			4-6-9	15			Gray medium dense SAND, trace of silt (SP)						
	5												
			5-7-10	17									
			5-6-6	12			Gray medium dense slightly silty SAND (SP-SM)						0.4
0			6-7-8	15			Gray medium dense slightly silty SAND, trace of wood (SP-SM)						
	10												
			6-7-7	14			Boring Terminated @ 10.5'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
REPORT NO.:	1603139
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PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
,

BORING DESIGNATION: **AB-4** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'26.4"N 85°41'46.0"W ; 5 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 11.0
WATER TABLE (ft): 0.5
DATE OF READING: 7/20/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/19/18
DATE FINISHED: 7/19/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
	0				▼		Gray/brown loose slightly silty SAND (SP-SM)						
10			1-2-3	5			Gray/tan loose SAND, trace of silt (SP)						
			3-3-5	8			Gray medium dense SAND, trace of silt (SP)	4.6	19				
			4-7-13	21									
	5												
5			7-10-17	27									
			8-13-15	28			Gray medium dense slightly silty SAND (SP-SM)						
			6-7-7	14			Gray medium dense slightly silty SAND, some roots (SP-SM)						
	10												
			7-8-8	16			Boring Terminated @ 10.5'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
REPORT NO.:	1603139
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PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
,

BORING DESIGNATION: **B-1** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'32.5"N 85°41'40.9"W ; 10 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 10.0
WATER TABLE (ft): 0.8
DATE OF READING: 7/16/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/12/18
DATE FINISHED: 7/13/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
10	0												
			4-6-7	13			Limerock Roadbase						
			4-4-6	10			Gray loose to medium dense SAND, trace of silt (SP)						
			7-9-13	22									
5	5		9-12-15	27									
			6-10-9	19			Dark gray/brown medium dense slightly silty SAND (SP-SM)						1.1
			4-5-6	11									
0	10		4-4-5	9			Gray loose slightly silty SAND (SP-SM)	5.8	23				
-5	15		3-4-3	7									
							Gray very loose to medium dense SAND, trace of silt (SP)						
10	20		5-5-8	13									
15	25		2-1-2	3				3.7	19				
							Dark gray very loose silty clayey SAND (SC-SM)						
20	30		WOH/18"	WOH				20	32	28	5		
							Gray loose to medium dense silty clayey SAND, some slightly cemented sand (SC-SM)						
25	35		5-7-9	16									
30	40		3-5-6	11									
35	45		5-7-9	16									
40	50		3-3-5	8									
45	55		3-4-4	8									
50	60		3-4-5	9									
							Gray loose clayey SAND, some slightly cemented sand (SC)						
55	65		4-4-5	9					35	NP	NP		
60	70		2-3-4	7									
65	75		3-4-6	10									
							Boring Terminated @ 75'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
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PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
,

BORING DESIGNATION: **B-2** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'32.7"N 85°41'40.4"W ; 6 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 9.0
WATER TABLE (ft): 1
DATE OF READING: 7/13/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/11/18
DATE FINISHED: 7/12/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
	0				▼		Limerock Roadbase						
			5-6-9	15			Gray/tan medium dense SAND, trace of silt (SP)						
			4-5-7	12									
5			6-7-13	20			Gray medium dense to dense SAND, trace of silt (SP)						
	5		9-13-17	30									
			13-17-19	36				4.8	18				
0			6-7-9	16			Dark gray medium dense slightly silty SAND, trace of roots (SP-SM)						
	10		4-4-5	9			Dark gray loose silty SAND, seams of wood (SM)						
							Gray medium dense slightly clayey SAND (SP-SC)						
-5	15		4-5-6	11				8.3	18				
							Gray medium dense clayey SAND, many shell fragments (SC)						
-10	20		5-6-6	12					31	NP	NP		
-15	25		5-6-8	14				19	39				
							Gray medium dense silty SAND, some shell fragments (SM)						
-20	30		8-8-9	17					32				
							Gray medium dense silty SAND, trace of shell fragments (SM)						
-25	35		9-10-9	19				19	30				
-30	40		5-7-8	15									
							Gray loose silty clayey SAND (SC-SM)						
-35	45		4-5-5	10									
-40	50		3-2-3	5									
-45	55		2-3-4	7									
							Gray loose silty clayey SAND, trace of slightly cemented sands (SC-SM)						
-50	60		3-3-4	7									
-55	65		3-4-4	8									
							Gray loose clayey SAND (SC)						
-60	70		2-3-4	7									
-65	75		3-4-4	8					41				
							Boring Terminated @ 75'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
REPORT NO.:	1603139
PAGE:	7

PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
,

BORING DESIGNATION: **B-3** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'32.9"N 85°41'39.1"W ; 30 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 11.0
WATER TABLE (ft): 0.7
DATE OF READING: 7/13/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/10/18
DATE FINISHED: 7/11/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
10	0		2-1-2	3	▼		Gray/brown very loose slightly silty SAND (SP-SM)						
			5-6-6	12			Gray loose to medium dense SAND, trace of silt (SP)	4.3	18				
	5		8-13-17	30									
5			2-2-5	7			Dark gray medium dense slightly silty SAND (SP-SM)						
			9-11-14	25									
			4-4-5	9			Gray/brown loose slightly silty SAND, few wood (SP-SM)						3.7
0	10		4-5-7	12			Gray/brown medium dense slightly silty SAND (SP-SM)						
							Gray loose silty clayey SAND (SC-SM)						
-5	15		5-5-3	8									
							Gray loose SAND, trace of silt (SP)						
	20		5-4-2	6				3.1	12				
-10							Gray loose silty clayey SAND, trace of shell fragments (SC-SM)						
	25		2-2-2	4				36	29				
-15							Gray loose to medium dense silty clayey SAND, some slightly cemented sands (SC-SM)						
	30		5-7-9	16					37				
-20													
	35		5-6-9	15									
-25													
	40		5-6-7	13									
-30													
	45		4-5-6	11									
-35													
	50		3-4-4	8									
							Boring Terminated @ 50'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
REPORT NO.:	1603139
PAGE:	8

PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
,

BORING DESIGNATION: **B-4** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'28.4"N 85°41'47.2"W ; 20 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 9.0
WATER TABLE (ft): 0.3
DATE OF READING: 7/18/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/16/18
DATE FINISHED: 7/17/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
	0				▼								
			WOH-3-3	6			Gray/tan loose slightly silty SAND, trace of roots (SP-SM)						
			4-4-8	12				14	17				
5			5-12-15	27			Tan/orange medium dense clayey SAND (SC)						
	5		20-17-20	37			Gray medium dense slightly silty SAND (SP-SM)						
			9-10-11	21			Gray dense slightly clayey SAND (SP-SC)		23				
			4-7-4	11			Gray medium dense clayey SAND (SC)						
0	10		3-2-2	4			Gray medium dense slightly silty SAND (SP-SM)						0.8
							Dark gray loose silty SAND (SM)						
-5							Dark gray loose slightly silty SAND, some wood						
	15		3-2-3	5			(SP-SM)	6.3	41				
							Gray loose clayey SAND (SC)						
-10	20		3-1-3	4					22	NP	NP		
							Gray loose slightly silty SAND (SP-SM)						
-15	25		6-5-5	10					18				
							Gray loose silty clayey SAND, trace of shell						
-20	30		1-2-4	6			fragments (SC-SM)	24	47				
							Gray medium dense silty clayey SAND, trace of						
-25	35		5-5-6	11			slightly cemented sand (SC-SM)						
							Gray medium dense silty clayey SAND, some						
-30	40		4-5-6	11			slightly cemented sand (SC-SM)						
-35	45		4-5-6	11									
-40	50		4-6-5	11									
-45	55		4-6-8	14									
-50	60		5-7-8	15									
-55	65		4-5-6	11									
							Gray medium dense clayey SAND, trace of						
-60	70		4-6-8	14			slightly cemented sand (SC)		41	NP	NP		
-65	75		4-5-7	12									
							Boring Terminated @ 75'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
REPORT NO.:	1603139
PAGE:	9

PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
,

BORING DESIGNATION: **B-5** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'27.9"N 85°41'45.6"W ; 5 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 10.0
WATER TABLE (ft): 0.4
DATE OF READING: 7/19/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/18/18
DATE FINISHED: 7/18/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
10	0				▼								
			1-2-3	5			Dark gray loose silty SAND, trace of organics (SM)						
			4-6-7	13			Gray/tan medium dense slightly silty SAND (SP-SM)						
			7-9-16	25			Gray medium dense slightly silty SAND (SP-SM)						
5	5		7-10-14	24					18				
			12-15-14	29									
			12-12-11	23									0.5
0	10		7-7-6	13			Gray loose to medium dense SAND, trace of clay (SP)	4.8	23				
-5	15		5-5-5	10									
							Gray very loose silty clayey SAND (SC-SM)						
-10	20		1-1-1/36"	1/36"									
							Gray very loose silty clayey SAND, some slightly cemented sand (SC-SM)						
-15	25		1/12"-2	2									
							Gray loose to medium dense silty clayey SAND, some slightly cemented sand (SC-SM)						
-20	30		7-8-10	18					34				
-25	35		6-7-5	12									
-30	40		4-5-4	9									
-35	45		4-5-5	10									
-40	50		4-5-6	11									
							Boring Terminated @ 50'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
REPORT NO.:	1603139
PAGE:	10

PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
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BORING DESIGNATION: **B-7** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'27.1"N 85°41'47.2"W ; 5 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 9.0
WATER TABLE (ft): 0
DATE OF READING: 7/18/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/17/18
DATE FINISHED: 7/17/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
	0				▼		Gray/tan loose slightly silty SAND (SP-SM)						
			1-1-3	4									
			4-6-8	14			Tan/orange medium dense slightly clayey SAND (SP-SC)						
5			9-14-19	33			Gray dense clayey SAND (SC)						
	5		15-13-15	28			Gray loose to dense slightly silty SAND (SP-SM)						
			12-16-16	32									
0			8-10-9	19									
	10		9-11-13	24									
-5			3-4-3	7				5.1	20				
	15												
-10			6-6-7	13					20				
	20						Dark gray very loose very clayey SAND (SC)						
-15			WOR/18"	WOR				31	42	32	16		
	25						Gray medium dense silty clayey SAND, some slightly cemented sand (SC-SM)						
-20			5-7-11	18									
	30												
-25			4-6-7	13									
	35												
-30			5-5-6	11									
	40												
-35			4-5-6	11									
	45												
-40			4-5-6	11									
	50						Boring Terminated @ 50'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

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BORING LOG

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PROJECT: Plant Lansing Smith
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BORING DESIGNATION: **B-8** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'27.1"N 85°41'46.0"W ; 5 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 9.0
WATER TABLE (ft): 0
DATE OF READING: 7/19/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/18/18
DATE FINISHED: 7/18/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
	0				▼								
			1-2-2	4			Gray/brown loose slightly silty SAND (SP-SM)						
			2-3-4	7			Gray loose SAND, trace of silt (SP)						
5	5		3-5-6	11			Gray medium dense to dense slightly silty SAND (SP-SM)						
			9-15-19	34									
			13-19-14	33			Gray medium dense to dense SAND, trace of silt (SP)						
0			9-10-8	18									
	10		6-8-9	17			Gray medium dense slightly silty SAND, trace of roots (SP-SM)						
							Gray loose slightly clayey SAND (SP-SC)						
-5	15		5-5-5	10					23				
-10	20		2-2-3	5				11	23				
							Gray medium dense slightly silty SAND (SP-SM)						
-15	25		6-7-9	16									
							Dark gray loose silty SAND (SM)						
-20	30		1-2-2	4									
							Gray loose to medium dense silty clayey SAND, some slightly cemented sand (SC-SM)						
-25	35		6-8-8	16									
-30	40		6-5-5	10									
-35	45		4-5-5	10									
-40	50		4-5-6	11									
							Boring Terminated @ 50'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

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BORING LOG

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PROJECT: Plant Lansing Smith
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BORING DESIGNATION: **B-10** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'34.3"N 85°41'38.7"W ; 10 feet of 3-inch Temporary Steel Casing ; Ground Surface elevations are approximate.

G.S. ELEVATION (ft): 11.0
WATER TABLE (ft): 0.8
DATE OF READING: 7/12/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/10/18
DATE FINISHED: 7/10/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
	0				▼		Gray/brown very loose SAND, trace of silt (SP)						
10			2-1-2	3									
							Gray loose to dense SAND, trace of silt (SP)						
			3-2-3	5				3.3	19				
			5-12-19	31									
	5						Wood/Stump						
5			Refusal	50/6"									
							Dark gray/brown medium dense slightly silty SAND, trace of roots (SP-SM)						
			8-8-8	16			Dark gray/brown medium dense slightly silty SAND (SP-SM)						
			5-5-7	12			Dark gray loose silty SAND, trace of roots (SM)						
	10												
			4-4-5	9									
0							Gray loose to medium dense slightly silty SAND (SP-SM)						
	15		4-5-6	11									
-5													
	20		4-4-5	9									
-10							Gray medium dense SAND, trace of silt (SP)						
	25		5-9-9	18									
							Boring Terminated @ 25'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
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PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
,

BORING DESIGNATION: **HA-1** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'32.4"N 85°41'39.6"W ; 5 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 10.0
WATER TABLE (ft): 0.3
DATE OF READING: 7/23/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/20/18
DATE FINISHED: 7/20/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
10	0				▼		Gray very loose slightly silty SAND, trace of roots (SP-SM)						
			1-1-1	2			Gray loose to medium dense slightly silty SAND (SP-SM)						
			1-3-6	9					19				
			5-6-8	14			Gray medium dense SAND, trace of silt (SP)						
5	5												
			8-11-16	27									
			5-6-6	12			Gray medium dense slightly silty SAND (SP-SM)						
			5-7-7	14									
0	10												
			6-7-8	15			Boring Terminated @ 10.5'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

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PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
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BORING DESIGNATION: **HA-2** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'30.7"N 85°41'42.4"W ; 5 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 10.0
WATER TABLE (ft): 0.3
DATE OF READING: 7/23/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/20/18
DATE FINISHED: 7/20/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
10	0				▼		Dark gray very loose silty SAND, trace of roots (SM)						
			1-1-2	3			Gray/tan loose slightly silty SAND (SP-SM)						
			2-3-3	6			Gray medium dense slightly clayey SAND (SP-SC)						
			3-5-8	13			Gray medium dense SAND, trace of silt (SP)						
5	5												
			6-8-11	19									
			6-7-7	14									
			6-7-8	15									
0	10												
			7-7-9	16			Boring Terminated @ 10.5'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
REPORT NO.:	1603139
PAGE:	15

PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
,

BORING DESIGNATION: **HA-3** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'29.5"N 85°41'45.5"W ; 5 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 9.0
WATER TABLE (ft): 0
DATE OF READING: 7/20/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/19/18
DATE FINISHED: 7/19/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
	0				▼								
			1-1-1	2			Gray very loose slightly silty SAND, trace of roots (SP-SM)						
			2-3-5	8			Gray loose to medium dense SAND, trace of silt (SP)						
5			3-5-6	11									
	5						Gray medium dense slightly silty SAND (SP-SM)						
			6-8-8	16				10	16				
			6-7-7	14			Dark gray medium dense slightly silty SAND (SP-SM)						1.2
0			5-6-6	12									
	10												
			6-7-7	14			Boring Terminated @ 10.5'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
REPORT NO.:	1603139
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PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
,

BORING DESIGNATION: **HA-4** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'29.1"N 85°41'46.6"W ; 5 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 11.0
WATER TABLE (ft): 1.1
DATE OF READING: 7/20/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/19/18
DATE FINISHED: 7/19/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
	0						Gray loose SAND, trace of silt (SP)						
10			1-2-2	4	▼								
							Gray/tan loose SAND, trace of silt (SP)						
			3-4-6	10									
							Gray medium dense SAND, trace of silt (SP)						
			4-6-7	13									
							Gray medium dense slightly silty SAND (SP-SM)						
	5												
5			7-10-11	21					16				
			6-7-8	15									
			7-7-9	16									
							Gray medium dense SAND, trace of silt (SP)						
	10												
			6-6-7	13									
							Boring Terminated @ 10.5'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
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PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
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BORING DESIGNATION: **HA-6** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'26.8"N 85°41'47.2"W ; 5 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 9.0
WATER TABLE (ft): 0
DATE OF READING: 7/20/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/19/18
DATE FINISHED: 7/19/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
	0				▼		Gray loose slightly silty SAND (SP-SM)						
			2-2-4	6			Gray/tan loose slightly silty SAND (SP-SM)						
			3-4-6	10			Gray dense SAND, trace of silt (SP)		17				
5			9-16-19	35			Gray/tan dense slightly silty SAND (SP-SM)						
	5		8-13-18	31			Dark gray medium dense slightly silty SAND (SP-SM)						
			7-6-7	13									
0			5-6-6	12									
	10		5-5-6	11			Boring Terminated @ 10.5'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	2030.1800088.0000
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PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
,

BORING DESIGNATION: **MP-1** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'31.1"N 85°41'41.2"W ; 5 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 10.0
WATER TABLE (ft): 0.3
DATE OF READING: 7/23/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/20/18
DATE FINISHED: 7/20/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
10	0				▼		Gray very loose SAND, many roots (SP)						
			1-2-1	3									
							Gray medium dense SAND, trace of silt (SP)						
			3-5-7	12				2.3	20				
			6-7-9	16									
5	5												
			8-8-10	18									
							Dark gray medium dense slightly silty SAND (SP-SM)						
			7-7-9	16									
							Gray medium dense SAND, trace of silt (SP)						
			6-7-8	15									
0	10												
			7-7-7	14									
							Boring Terminated @ 10.5'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

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BORING LOG

PROJECT NO.:	2030.1800088.0000
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PROJECT: Plant Lansing Smith
Southport, Bay County, Florida 32409
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BORING DESIGNATION: **MP-2** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Gulf Power Company

LOCATION: Per Boring Location Plan

REMARKS: Drill Rig: Marsh Master D-25 ; Drilling Method: Mud Rotary ; GPS Coordinates: 30°16'29.0"N 85°41'45.5"W ; 5 feet of 3-inch Temporary Steel Casing ; Ground surface elevations are approximate.

G.S. ELEVATION (ft): 11.0
WATER TABLE (ft): 0.8
DATE OF READING: 7/23/2018
EST. W.S.W.T. (ft):

DATE STARTED: 7/20/18
DATE FINISHED: 7/20/18
DRILLED BY: L.P.
TYPE OF SAMPLING: SPT

ELEVATION	DEPTH / FT	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
	0						Gray/brown loose SAND, many roots (SP)						
10			1-2-2	4			Gray loose to medium dense SAND, trace of silt (SP)						
			4-4-6	10									
			4-8-10	18									
	5												
5			5-8-13	22									
			4-5-8	13									
			5-6-6	12			Gray medium dense slightly silty SAND (SP-SM)						
	10												
			6-6-7	13			Boring Terminated @ 10.5'						

ELEV START.GPJ UNIENGSC.GDT 9/17/18

UNIVERSAL
ENGINEERING SCIENCES

KEY TO BORING LOGS

SYMBOLS AND ABBREVIATIONS

SYMBOL	DESCRIPTION
N-Value	No. of Blows of a 140-lb. Weight Falling 30 Inches Required to Drive a Standard Spoon 1 Foot
WOR	Weight of Drill Rods
WOH	Weight of Drill Rods and Hammer
	Sample from Auger Cuttings
	Standard Penetration Test Sample
	Thin-wall Shelby Tube Sample (Undisturbed Sampler Used)
% REC	Percent Core Recovery from Rock Core Drilling
RQD	Rock Quality Designation
	Stabilized Groundwater Level
	Seasonal High Groundwater Level (also referred to as the W.S.W.T.)
NE	Not Encountered
GNE	Groundwater Not Encountered
BT	Boring Terminated
-200 (%)	Fines Content or % Passing No. 200 Sieve
MC (%)	Moisture Content
LL	Liquid Limit (Atterberg Limits Test)
PI	Plasticity Index (Atterberg Limits Test)
K	Coefficient of Permeability
Org. Cont.	Organic Content
G.S. Elevation	Ground Surface Elevation

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS More than 50% retained on the No. 200 sieve*	GRAVELS 50% or more of coarse fraction retained on No. 4 sieve	CLEAN GRAVELS	GW	Well-graded gravels and gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES	GM	Silty gravels and gravel-sand-silt mixtures
			GC	Clayey gravels and gravel-sand-clay mixtures
	SANDS More than 50% of coarse fraction passes No. 4 sieve	CLEAN SANDS 5% or less passing No. 200 sieve	SW**	Well-graded sands and gravelly sands, little or no fines
			SP**	Poorly graded sands and gravelly sands, little or no fines
		SANDS with 12% or more passing No. 200 sieve	SM**	Silty sands, sand-silt mixtures
			SC**	Clayey sands, sand-clay mixtures
FINE-GRAINED SIOLS 50% or more passes the No. 200 sieve*	SILTS AND CLAYS Liquid limit 50% or less		ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS Liquid limit greater than 50%		MH	Inorganic silts, micaceous or diamicaceous fine sands or silts, elastic silts
			CH	Inorganic clays or clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
			PT	Peat, muck and other highly organic soils

*Based on the material passing the 3-inch (75 mm) sieve
** Use dual symbol (such as SP-SM and SP-SC) for soils with more than 5% but less than 12% passing the No. 200 sieve

RELATIVE DENSITY
(Sands and Gravels)
Very loose – Less than 4 Blow/Foot
Loose – 4 to 10 Blows/Foot
Medium Dense – 11 to 30 Blows/Foot
Dense – 31 to 50 Blows/Foot
Very Dense – More than 50 Blows/Foot

CONSISTENCY
(Silts and Clays)
Very Soft – Less than 2 Blows/Foot
Soft – 2 to 4 Blows/Foot
Firm – 5 to 8 Blows/Foot
Stiff – 9 to 15 Blows/Foot
Very Stiff – 16 to 30 Blows/Foot
Hard – More than 30 Blows/Foot

RELATIVE HARDNESS
(Limestone)
Soft – 100 Blows for more than 2 Inches
Hard – 100 Blows for less than 2 Inches

MODIFIERS

These modifiers Provide Our Estimate of the Amount of Minor Constituents (Silt or Clay Size Particles) in the Soil Sample
Trace – 5% or less
With Silt or With Clay – 6% to 11%
Silty or Clayey – 12% to 30%
Very Silty or Very Clayey – 31% to 50%

These Modifiers Provide Our Estimate of the Amount of Organic Components in the Soil Sample
Trace – Less than 3%
Few – 3% to 4%
Some – 5% to 8%
Many – Greater than 8%

These Modifiers Provide Our Estimate of the Amount of Other Components (Shell, Gravel, Etc.) in the Soil Sample
Trace – 5% or less
Few – 6% to 12%
Some – 13% to 30%
Many – 31% to 50%

Field Exploration Procedures

Penetration Borings

The penetration borings were made in general accordance with the latest revision of ASTM D 1586, "Penetration Test and Split-Barrel Sampling of Soils". The borings were advanced by rotary drilling techniques using a circulating bentonite fluid for borehole flushing and stability. The borings were performed on 1.5 foot intervals from the ground surface to a depth of 10.5 feet below ground surface and at 5 foot intervals thereafter, the drilling tools were removed from the borehole and a split-barrel sampler inserted to the borehole bottom and driven 18 inches into the soil using a 140 pound hammer falling on the average 30 inches per hammer blow. The number of blows for the final 12 inches of penetration is termed the "penetration resistance, blow count, or N-value". This value is an index to several in-place geotechnical properties of the material tested, such as relative density and Young's Modulus.

After driving the sampler 18 inches (or less if in hard rock-like material), the sampler was retrieved from the borehole and representative samples of the material within the split-barrel were placed in plastic containers and sealed. After completing the drilling operations, the samples for each boring were transported to our laboratory where they were examined by our engineer in order to verify the driller's field classification.

APPENDIX C

TABLE C-1: SUMMARY OF CLASSIFICATION AND INDEX TESTING
GRAIN SIZE ANALYSIS REPORTS
HYDROMETER ANALYSIS REPORTS

TABLE C-1: SUMMARY OF CLASSIFICATION AND INDEX TESTING

Boring No.	Sample Depth (feet, BEG)	Percent Fines (%)	Moisture Content (%)	Organic Content (%)	Corrosive Series				Atterberg Testing		Unified Soil Classification
					pH	Resistivity	Sulfate	Chloride	Liquid Limit (LL)	Plasticity Index (PI)	
AB-1	1.5 – 3	7.8	25	—	—	—	—	—	—	—	SP-SM
AB-1	6 – 7.5	3.5	22	—	—	—	—	—	—	—	SP
AB-2	1.5 – 3	4.9	18	—	—	—	—	—	—	—	SP
AB-2	3 – 4.5	6.0	18	—	—	—	—	—	—	—	SP-SM
AB-3	1.5 – 3	3.7	21	—	—	—	—	—	—	—	SP
AB-3	6 – 7.5	—	—	0.4	—	—	—	—	—	—	SP
AB-4	1.5 – 3	4.6	19	—	—	—	—	—	—	—	SP
B-1	6 – 7.5	—	—	1.1	—	—	—	—	—	—	SP-SM
B-1	9 – 10.5	5.8	23	—	—	—	—	—	—	—	SP-SM
B-1	23.5 – 25	3.7	19	—	—	—	—	—			SP
B-1	28.5 – 30	20	32	—	—	—	—	—	28	5	SC-SM
B-1	63.5 – 65	—	35	—	—	—	—	—	NP	NP	SC
B-2	6 – 7.5	4.8	18	—	—	—	—	—	—	—	SP
B-2	13.5 – 15	8.3	18	—	—	—	—	—	—	—	SP-SC
B-2	18.5 – 20	—	31	—	—	—	—	—	NP	NP	SC
B-2	23.5 – 25	19	39	—	—	—	—	—	—	—	SC
B-2	28.5 – 30	—	32	—	—	—	—	—	—	—	SM
B-2	33.5 – 35	19	30	—	—	—	—	—	—	—	SM
B-2	73.5 – 75	—	41	—	—	—	—	—	—	—	SC
B-3	1.5 – 3	4.3	18	—	—	—	—	—	—	—	SP
B-3	7.5 – 9	—	—	3.7	—	—	—	—	—	—	SP-SM
B-3	18.5 – 20	3.1	12	—	—	—	—	—	—	—	SP
B-3	23.5 – 25	36	29	—	—	—	—	—	—	—	SC-SM
B-3	28.5 – 30	—	37	—	—	—	—	—	—	—	SC-SM
B-4	1.5 – 3	14	17	—	—	—	—	—	—	—	SC
B-4	6 – 7.5	—	23	—	—	—	—	—	—	—	SC
B-4	9 – 10.5	—	—	0.8	—	—	—	—	—	—	SM
B-4	13.5 – 15	6.3	41	—	—	—	—	—	—	—	SP-SM
B-4	18.5 – 20	—	22	—	—	—	—	—	NP	NP	SC

TABLE C-1: SUMMARY OF CLASSIFICATION AND INDEX TESTING											
Boring No.	Sample Depth (feet, BEG)	Percent Fines (%)	Moisture Content (%)	Organic Content (%)	Corrosive Series				Atterberg Testing		Unified Soil Classification
					pH	Resistivity (ohm-cm)	Sulfate (ppm)	Chloride (ppm)	Liquid Limit (LL)	Plasticity Index (PI)	
B-4	23.5 – 25	—	18	—	—	—	—	—	—	—	SP-SM
B-4	28.5 – 30	24	47	—	—	—	—	—	—	—	SC-SM
B-4	68.5 – 70	—	41	—	—	—	—	—	NP	NP	SC
B-5	4.5 – 6	—	18	—	—	—	—	—	—	—	SP-SM
B-5	7.5 – 9	—	—	0.5	—	—	—	—	—	—	SP-SM
B-5	9 – 10.5	4.8	23	—	—	—	—	—	—	—	SP
B-5	28.5 – 30	—	34	—	—	—	—	—	—	—	SC-SM
B-7	13.5 – 15	5.1	20	—	—	—	—	—	—	—	SP-SM
B-7	18.5 – 20	—	20	—	—	—	—	—	—	—	SP-SM
B-7	23.5 – 25	31	42	—	—	—	—	—	32	16	SC
B-8	13.5 – 15	—	23	—	—	—	—	—	—	—	SP-SC
B-8	18.5 – 20	11	23	—	—	—	—	—	—	—	SP-SC
B-10	1.5 – 3	3.3	19	—	—	—	—	—	—	—	SP
HA-1	1.5 – 3	—	19	—	—	—	—	—	—	—	SP-SM
HA-3	4.5 – 6	10	16	—	—	—	—	—	—	—	SP-SM
HA-3	6 – 7.5	—	—	1.2	—	—	—	—	—	—	SP-SM
HA-4	4.5 – 6	—	16	—	—	—	—	—	—	—	SP-SM
HA-6	1.5 – 3	—	17	—	—	—	—	—	—	—	SP-SM
MP-1	1.5 – 3	2.3	20	—	—	—	—	—	—	—	SP
B-2/B-3	13.5 – 15	—	—	—	4.51	3,200	0	5	—	—	SP-SC/SC-SM
B-4/B-7	6-7.5 / 3-4.5	—	—	—	6.55	6,300	264	125	—	—	SP-SC/SC

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Project Name:	Plant Lansing Smith	**Project #:**	2030.1800088.0000
USCS Classification:	SP-SM	**DOCS #:**	1603139
Sample Location:	AB-2	**Depth:**	3 - 4.5 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.

ASTM D 1140 - Materials Finer Than No. 200 Sieve

Pan Number	138
Weight of Dry Soil & Pan	285.1 **grams**
Weight of Wash Soil & Pan	271.6 **grams**
Weight of Pan	49.6 **grams**
Weight of Original Dry Sample	235.5 **grams**
Weight of -200 Material	13.6 **grams**
Percent Passing No. 200 Sieve	5.8 **%**

ASTM D 6913 - Particle Size Distribution of Soils Using Sieve Analysis

Total Input (Weight of Original Dry Sample) = 235.5 ***grams***

Sieve Number	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Weight (g)	Cumulative Weight (%)	Percent Finer (%)
3/8 in	9.500	0.0	0.0	0.0	0.0	100.0
4	4.750	0.0	0.0	0.0	0.0	100.0
10	2.000	1.0	0.4	1.0	0.4	99.6
20	0.850	16.1	6.8	17.2	7.3	92.7
40	0.425	37.8	16.0	55.0	23.3	76.7
60	0.250	63.1	26.8	118.1	50.1	49.9
100	0.150	75.1	31.9	193.1	82.0	18.0
140	0.106	27.3	11.6	220.5	93.6	6.4
200	0.075	1.0	0.4	221.5	94.0	6.0
Pan	N/A	0.5	0.2	221.9	94.2	---
Total Percent Passing No. 200 Sieve =					**6.0 %**	

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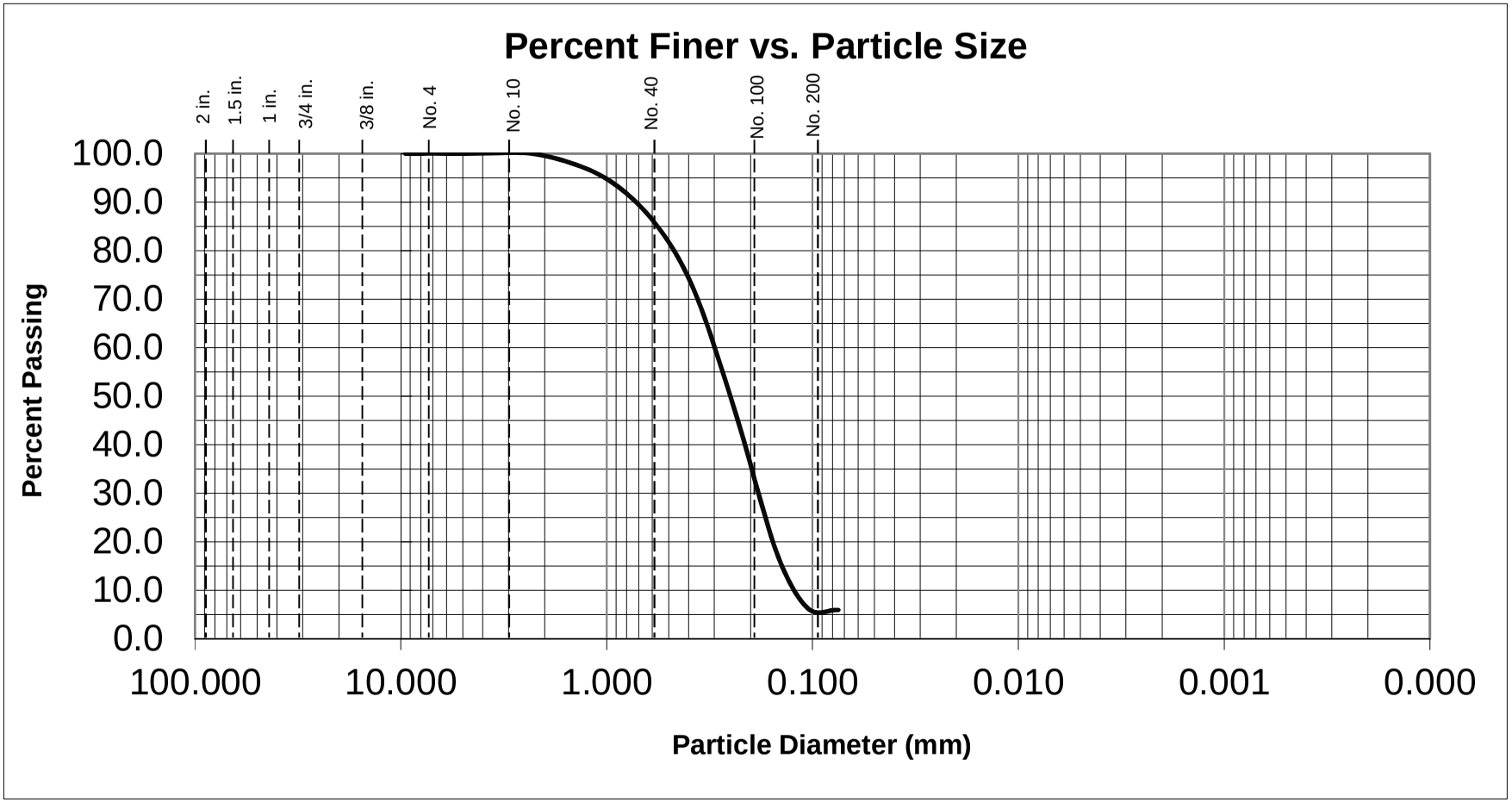
Project Name:	Plant Lansing Smith	**Project Number:**	2030.1800088.0000
Sample Description:	SP-SM	**UES DOCS #:**	1603139
Sample Location:	AB-2	**Sample Number:**	3 - 4.5 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.



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Project Name:	Plant Lansing Smith	**Project #:**	2030.1800088.0000
USCS Classification:	SP	**DOCS #:**	1603139
Sample Location:	AB-3	**Depth:**	1.5 - 3 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.

ASTM D 1140 - Materials Finer Than No. 200 Sieve

Pan Number	132
Weight of Dry Soil & Pan	324.8 **grams**
Weight of Wash Soil & Pan	314.9 **grams**
Weight of Pan	50.7 **grams**
Weight of Original Dry Sample	274.1 **grams**
Weight of -200 Material	9.9 **grams**
Percent Passing No. 200 Sieve	3.6 **%**

ASTM D 6913 - Particle Size Distribution of Soils Using Sieve Analysis

Total Input (Weight of Original Dry Sample) = 274.1 ***grams***

Sieve Number	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Weight (g)	Cumulative Weight (%)	Percent Finer (%)
3/8 in	9.500	0.0	0.0	0.0	0.0	100.0
4	4.750	0.0	0.0	0.0	0.0	100.0
10	2.000	0.8	0.3	0.8	0.3	99.7
20	0.850	15.7	5.7	16.4	6.0	94.0
40	0.425	40.9	14.9	57.3	20.9	79.1
60	0.250	78.7	28.7	136.0	49.6	50.4
100	0.150	96.8	35.3	232.8	84.9	15.1
140	0.106	30.1	11.0	262.9	95.9	4.1
200	0.075	1.1	0.4	264.0	96.3	3.7
Pan	N/A	0.1	0.0	264.2	96.4	---
Total Percent Passing No. 200 Sieve =					**3.7 %**	

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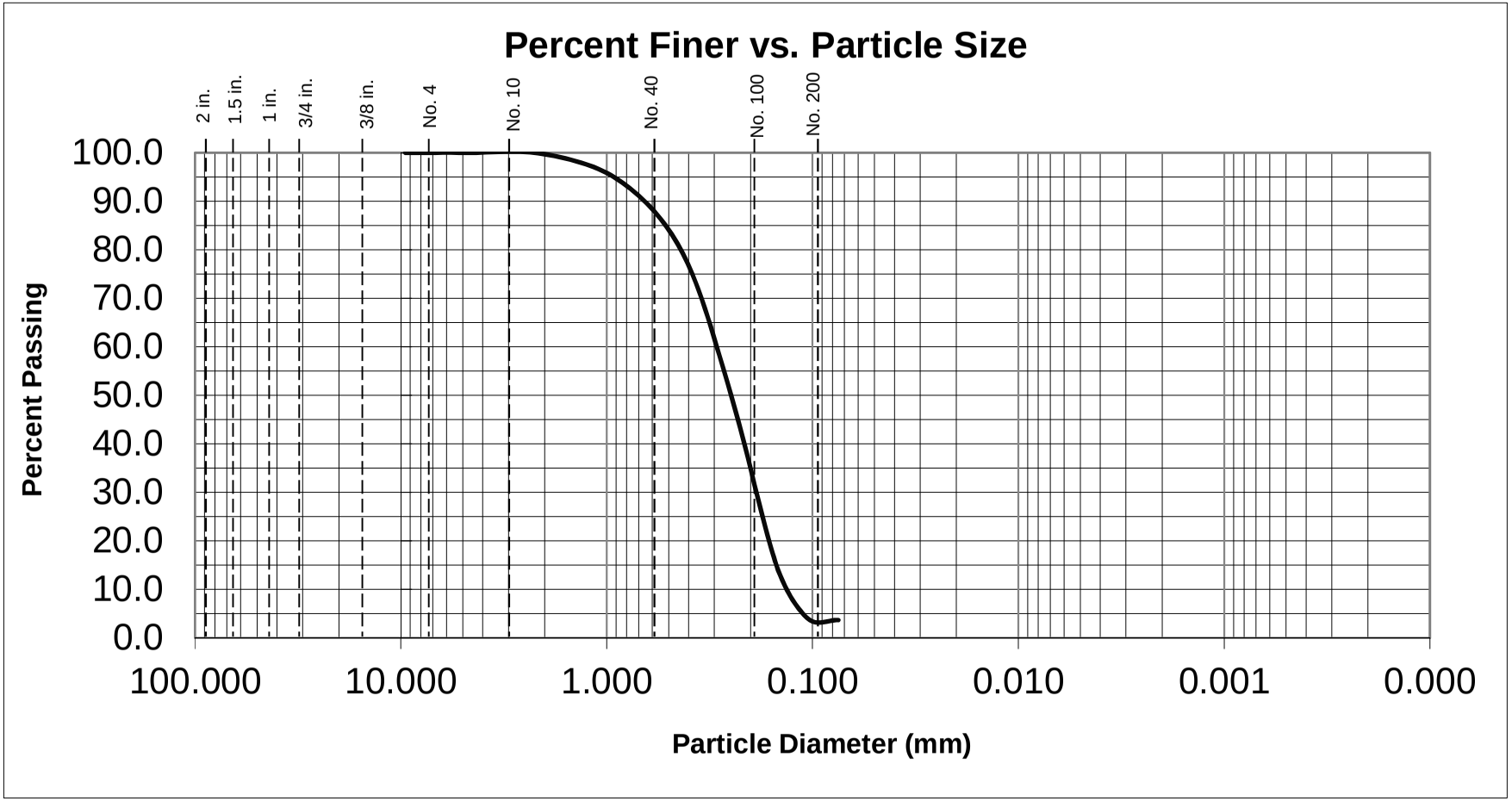
Project Name:	Plant Lansing Smith	**Project Number:**	2030.1800088.0000
Sample Description:	SP	**UES DOCS #:**	1603139
Sample Location:	AB-3	**Sample Number:**	1.5 - 3 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.



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Project Name:	Plant Lansing Smith	**Project #:**	2030.1800088.0000
USCS Classification:	SP	**DOCS #:**	1603139
Sample Location:	B-1	**Depth:**	23.5 - 25 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.

ASTM D 1140 - Materials Finer Than No. 200 Sieve

Pan Number	137
Weight of Dry Soil & Pan	335.3 **grams**
Weight of Wash Soil & Pan	325.1 **grams**
Weight of Pan	48.8 **grams**
Weight of Original Dry Sample	286.5 **grams**
Weight of -200 Material	10.2 **grams**
Percent Passing No. 200 Sieve	3.5 **%**

ASTM D 6913 - Particle Size Distribution of Soils Using Sieve Analysis

Total Input (Weight of Original Dry Sample) = 286.5 ***grams***

Sieve Number	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Weight (g)	Cumulative Weight (%)	Percent Finer (%)
3/8 in	9.500	0.0	0.0	0.0	0.0	100.0
4	4.750	0.2	0.1	0.2	0.1	99.9
10	2.000	14.1	4.9	14.2	5.0	95.0
20	0.850	51.8	18.1	66.0	23.0	77.0
40	0.425	66.2	23.1	132.2	46.2	53.8
60	0.250	62.7	21.9	194.9	68.0	32.0
100	0.150	58.0	20.3	252.9	88.3	11.7
140	0.106	20.2	7.1	273.1	95.3	4.7
200	0.075	2.8	1.0	276.0	96.3	3.7
Pan	N/A	0.3	0.1	276.3	96.4	---
Total Percent Passing No. 200 Sieve =					**3.7 %**	

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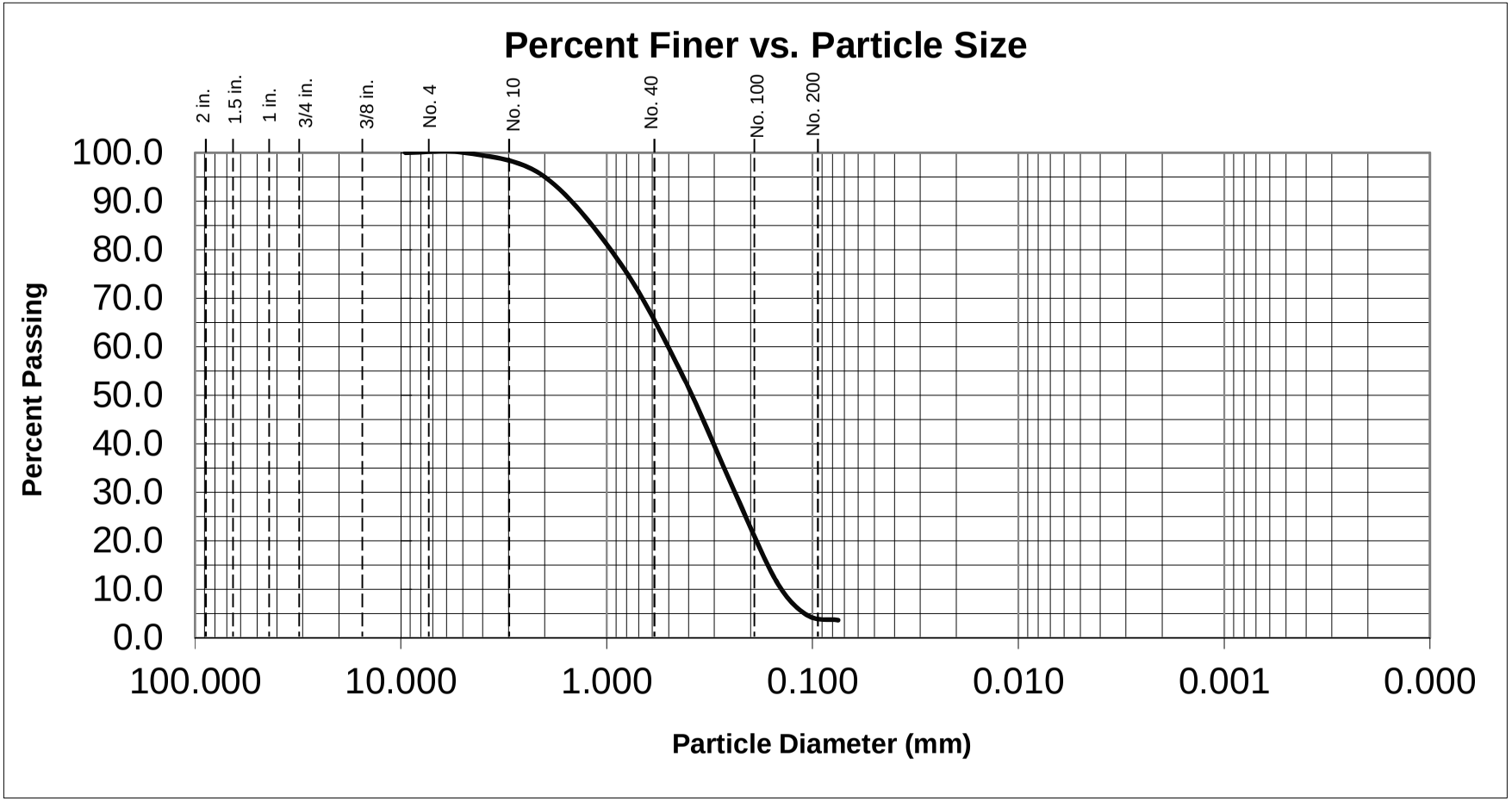
Project Name:	Plant Lansing Smith	**Project Number:**	2030.1800088.0000
Sample Description:	SP	**UES DOCS #:**	1603139
Sample Location:	B-1	**Sample Number:**	23.5 - 25 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.



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Project Name:	Plant Lansing Smith	**Project #:**	2030.1800088.0000
USCS Classification:	SP	**DOCS #:**	1603139
Sample Location:	B-3	**Depth:**	1.5 - 3 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.

ASTM D 1140 - Materials Finer Than No. 200 Sieve

Pan Number	145
Weight of Dry Soil & Pan	279.5 **grams**
Weight of Wash Soil & Pan	269.9 **grams**
Weight of Pan	49.2 **grams**
Weight of Original Dry Sample	230.4 **grams**
Weight of -200 Material	9.6 **grams**
Percent Passing No. 200 Sieve	4.2 **%**

ASTM D 6913 - Particle Size Distribution of Soils Using Sieve Analysis

Total Input (Weight of Original Dry Sample) = 230.4 ***grams***

Sieve Number	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Weight (g)	Cumulative Weight (%)	Percent Finer (%)
3/8 in	9.500	2.1	0.9	2.1	0.9	99.1
4	4.750	0.4	0.2	2.5	1.1	98.9
10	2.000	0.7	0.3	3.1	1.4	98.6
20	0.850	6.3	2.7	9.5	4.1	95.9
40	0.425	18.5	8.0	27.9	12.1	87.9
60	0.250	69.2	30.0	97.1	42.1	57.9
100	0.150	90.6	39.3	187.7	81.5	18.5
140	0.106	31.0	13.5	218.8	94.9	5.1
200	0.075	1.7	0.7	220.4	95.7	4.3
Pan	N/A	0.3	0.1	220.7	95.8	---
Total Percent Passing No. 200 Sieve =					**4.3 %**	

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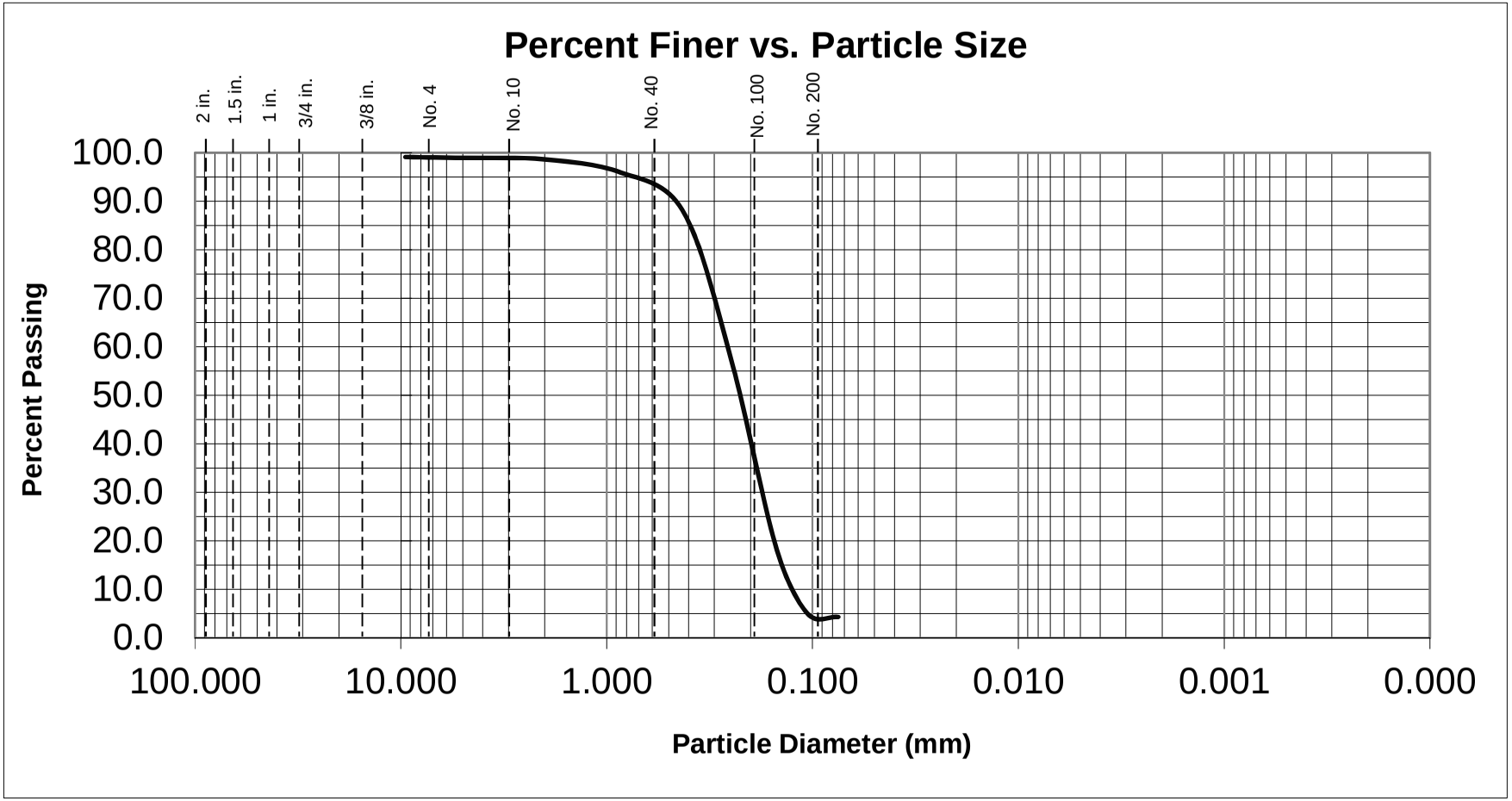
Project Name:	Plant Lansing Smith	**Project Number:**	2030.1800088.0000
Sample Description:	SP	**UES DOCS #:**	1603139
Sample Location:	B-3	**Sample Number:**	1.5 - 3 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.



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Project Name:	Plant Lansing Smith	**Project #:**	2030.1800088.0000
USCS Classification:	SP	**DOCS #:**	1603139
Sample Location:	B-5	**Depth:**	9 - 10.5 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.

ASTM D 1140 - Materials Finer Than No. 200 Sieve

Pan Number	95
Weight of Dry Soil & Pan	354.8 **grams**
Weight of Wash Soil & Pan	340.5 **grams**
Weight of Pan	49.5 **grams**
Weight of Original Dry Sample	305.3 **grams**
Weight of -200 Material	14.3 **grams**
Percent Passing No. 200 Sieve	4.7 **%**

ASTM D 6913 - Particle Size Distribution of Soils Using Sieve Analysis

Total Input (Weight of Original Dry Sample) = 305.3 ***grams***

Sieve Number	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Weight (g)	Cumulative Weight (%)	Percent Finer (%)
3/8 in	9.500	0.0	0.0	0.0	0.0	100.0
4	4.750	0.5	0.2	0.5	0.2	99.8
10	2.000	7.1	2.3	7.6	2.5	97.5
20	0.850	39.8	13.0	47.4	15.5	84.5
40	0.425	55.1	18.0	102.5	33.6	66.4
60	0.250	77.2	25.3	179.6	58.8	41.2
100	0.150	76.8	25.1	256.4	84.0	16.0
140	0.106	31.6	10.4	288.0	94.3	5.7
200	0.075	2.6	0.9	290.6	95.2	4.8
Pan	N/A	0.3	0.1	291.0	95.3	---
Total Percent Passing No. 200 Sieve =					**4.8 %**	

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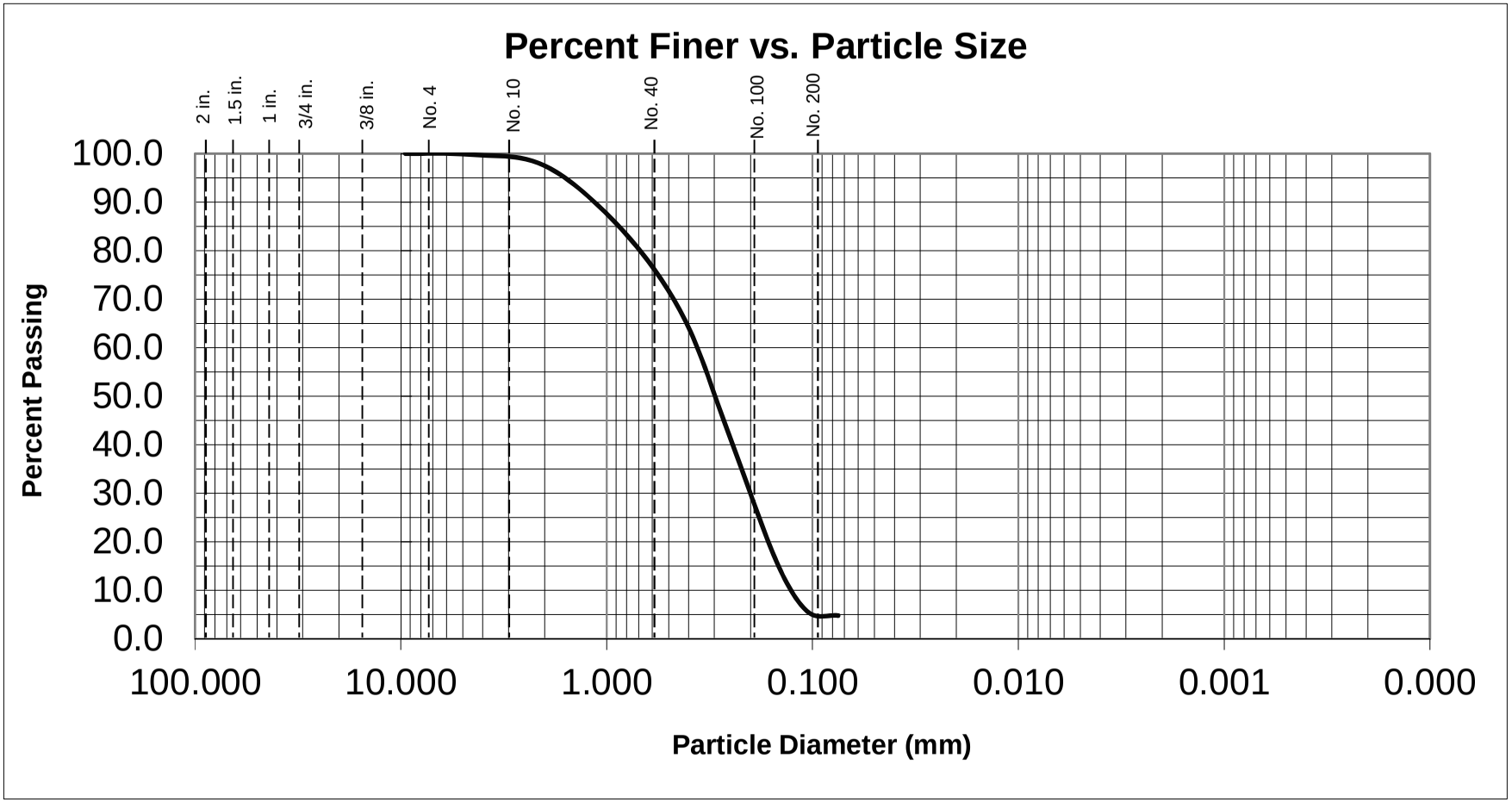
Project Name:	Plant Lansing Smith	**Project Number:**	2030.1800088.0000
Sample Description:	SP	**UES DOCS #:**	1603139
Sample Location:	B-5	**Sample Number:**	9 - 10.5 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.



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Project Name:	Plant Lansing Smith	**Project #:**	2030.1800088.0000
USCS Classification:	SP-SC	**DOCS #:**	1603139
Sample Location:	B-8	**Depth:**	18.5 - 20 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.

ASTM D 1140 - Materials Finer Than No. 200 Sieve

Pan Number	165
Weight of Dry Soil & Pan	317.6 **grams**
Weight of Wash Soil & Pan	290.7 **grams**
Weight of Pan	52.5 **grams**
Weight of Original Dry Sample	265.1 **grams**
Weight of -200 Material	26.8 **grams**
Percent Passing No. 200 Sieve	10.1 **%**

ASTM D 6913 - Particle Size Distribution of Soils Using Sieve Analysis

Total Input (Weight of Original Dry Sample) = 265.1 ***grams***

Sieve Number	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Weight (g)	Cumulative Weight (%)	Percent Finer (%)
3/8 in	9.500	0.0	0.0	0.0	0.0	100.0
4	4.750	0.0	0.0	0.0	0.0	100.0
10	2.000	2.0	0.7	2.0	0.7	99.3
20	0.850	12.1	4.6	14.1	5.3	94.7
40	0.425	40.6	15.3	54.7	20.6	79.4
60	0.250	65.5	24.7	120.1	45.3	54.7
100	0.150	71.9	27.1	192.0	72.4	27.6
140	0.106	39.0	14.7	231.0	87.1	12.9
200	0.075	6.1	2.3	237.1	89.4	10.6
Pan	N/A	1.2	0.4	238.3	89.9	---
Total Percent Passing No. 200 Sieve =					**10.6 %**	

GRAIN SIZE DISTRIBUTION CURVE

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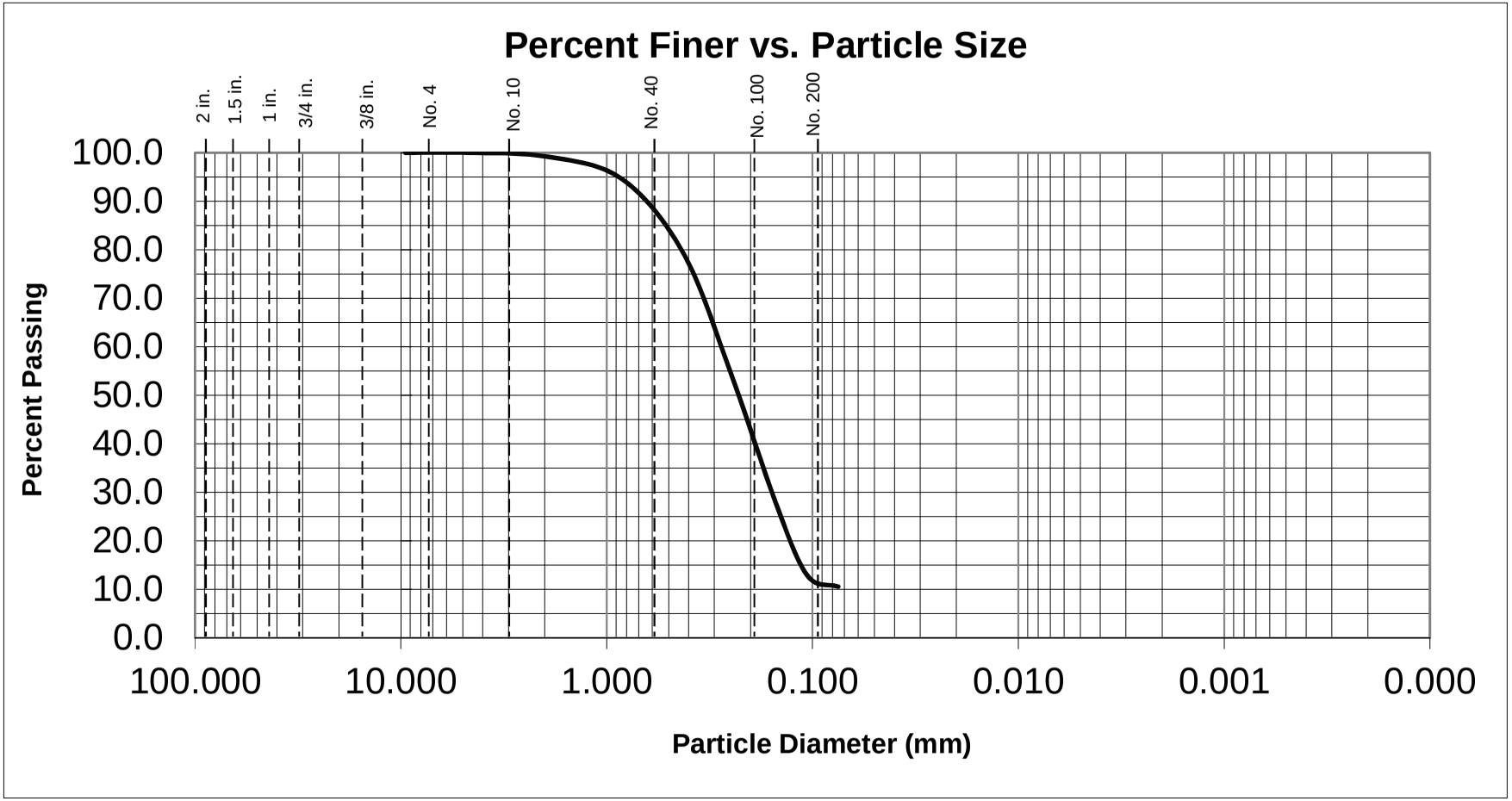
Project Name:	Plant Lansing Smith	**Project Number:**	2030.1800088.0000
Sample Description:	SP-SC	**UES DOCS #:**	1603139
Sample Location:	B-8	**Sample Number:**	18.5 - 20 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.



GRAINSIZE ANALYSIS

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Materials Testing • Threshold Inspection • Private Provider Inspection
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UNIVERSAL ENGINEERING SCIENCES

Project Name:	Plant Lansing Smith	**Project #:**	2030.1800088.0000
USCS Classification:	SP	**DOCS #:**	1603139
Sample Location:	B-10	**Depth:**	1.5 - 3 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.

ASTM D 1140 - Materials Finer Than No. 200 Sieve

Pan Number	176
Weight of Dry Soil & Pan	303.9 **grams**
Weight of Wash Soil & Pan	295.7 **grams**
Weight of Pan	49.7 **grams**
Weight of Original Dry Sample	254.2 **grams**
Weight of -200 Material	8.2 **grams**
Percent Passing No. 200 Sieve	3.2 **%**

ASTM D 6913 - Particle Size Distribution of Soils Using Sieve Analysis

Total Input (Weight of Original Dry Sample) = 254.2 ***grams***

Sieve Number	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Weight (g)	Cumulative Weight (%)	Percent Finer (%)
3/8 in	9.500	0.0	0.0	0.0	0.0	100.0
4	4.750	0.0	0.0	0.0	0.0	100.0
10	2.000	0.2	0.1	0.2	0.1	99.9
20	0.850	5.7	2.2	5.9	2.3	97.7
40	0.425	15.0	5.9	20.9	8.2	91.8
60	0.250	80.3	31.6	101.2	39.8	60.2
100	0.150	111.4	43.8	212.6	83.6	16.4
140	0.106	31.8	12.5	244.3	96.1	3.9
200	0.075	1.5	0.6	245.8	96.7	3.3
Pan	N/A	0.2	0.1	246.0	96.8	---
Total Percent Passing No. 200 Sieve =					**3.3 %**	

GRAIN SIZE DISTRIBUTION CURVE

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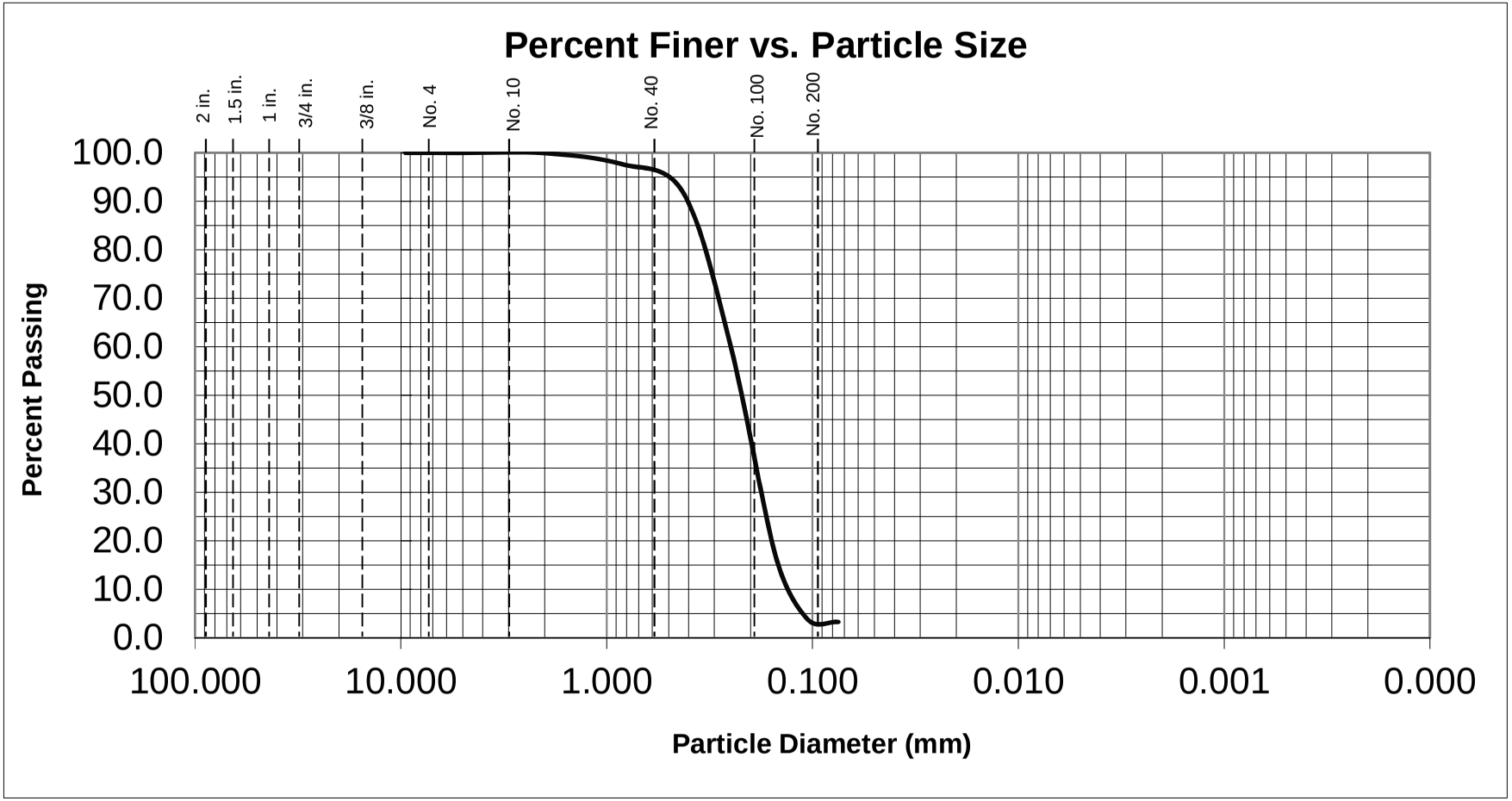
Project Name:	Plant Lansing Smith	**Project Number:**	2030.1800088.0000
Sample Description:	SP	**UES DOCS #:**	1603139
Sample Location:	B-10	**Sample Number:**	1.5 - 3 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.



GRAINSIZE ANALYSIS

Consultants In: Geotechnical Engineering • Enviromental Engineering • Construction
Materials Testing • Threshold Inspection • Private Provider Inspection
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Project Name:	Plant Lansing Smith	**Project #:**	2030.1800088.0000
USCS Classification:	SP	**DOCS #:**	1603139
Sample Location:	MP-1	**Depth:**	1.5 - 3 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.

ASTM D 1140 - Materials Finer Than No. 200 Sieve

Pan Number	142
Weight of Dry Soil & Pan	311.0 **grams**
Weight of Wash Soil & Pan	305.3 **grams**
Weight of Pan	51.5 **grams**
Weight of Original Dry Sample	259.5 **grams**
Weight of -200 Material	5.8 **grams**
Percent Passing No. 200 Sieve	2.2 **%**

ASTM D 6913 - Particle Size Distribution of Soils Using Sieve Analysis

Total Input (Weight of Original Dry Sample) = 259.5 ***grams***

Sieve Number	Sieve Size (mm)	Weight Retained (g)	Weight Retained (%)	Cumulative Weight (g)	Cumulative Weight (%)	Percent Finer (%)
3/8 in	9.500	0.0	0.0	0.0	0.0	100.0
4	4.750	0.0	0.0	0.0	0.0	100.0
10	2.000	0.3	0.1	0.3	0.1	99.9
20	0.850	8.2	3.2	8.5	3.3	96.7
40	0.425	26.2	10.1	34.7	13.4	86.6
60	0.250	73.6	28.4	108.3	41.7	58.3
100	0.150	106.6	41.1	214.8	82.8	17.2
140	0.106	37.1	14.3	251.9	97.1	2.9
200	0.075	1.7	0.7	253.6	97.7	2.3
Pan	N/A	0.2	0.1	253.8	97.8	---
Total Percent Passing No. 200 Sieve =					**2.3 %**	

GRAIN SIZE DISTRIBUTION CURVE

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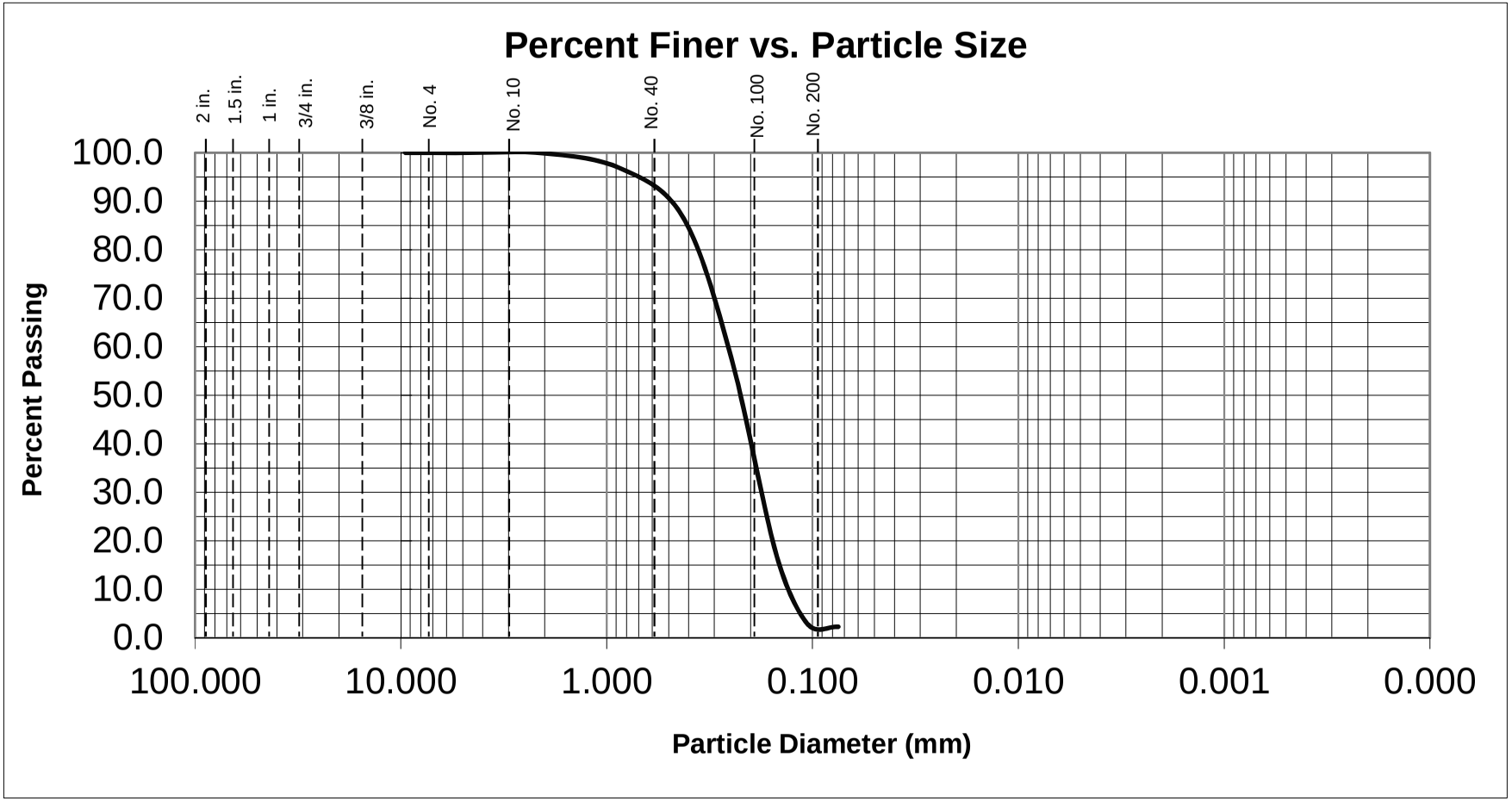
Project Name:	Plant Lansing Smith	**Project Number:**	2030.1800088.0000
Sample Description:	SP	**UES DOCS #:**	1603139
Sample Location:	MP-1	**Sample Number:**	1.5 - 3 feet
Date Tested:	8/29/2018	**Tested By:**	J.W.



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UES Report No. 1603139
Report Date: 9/12/2018

REPORT OF PARTICLE SIZE ANALYSIS OF SOIL - ASTM D7928

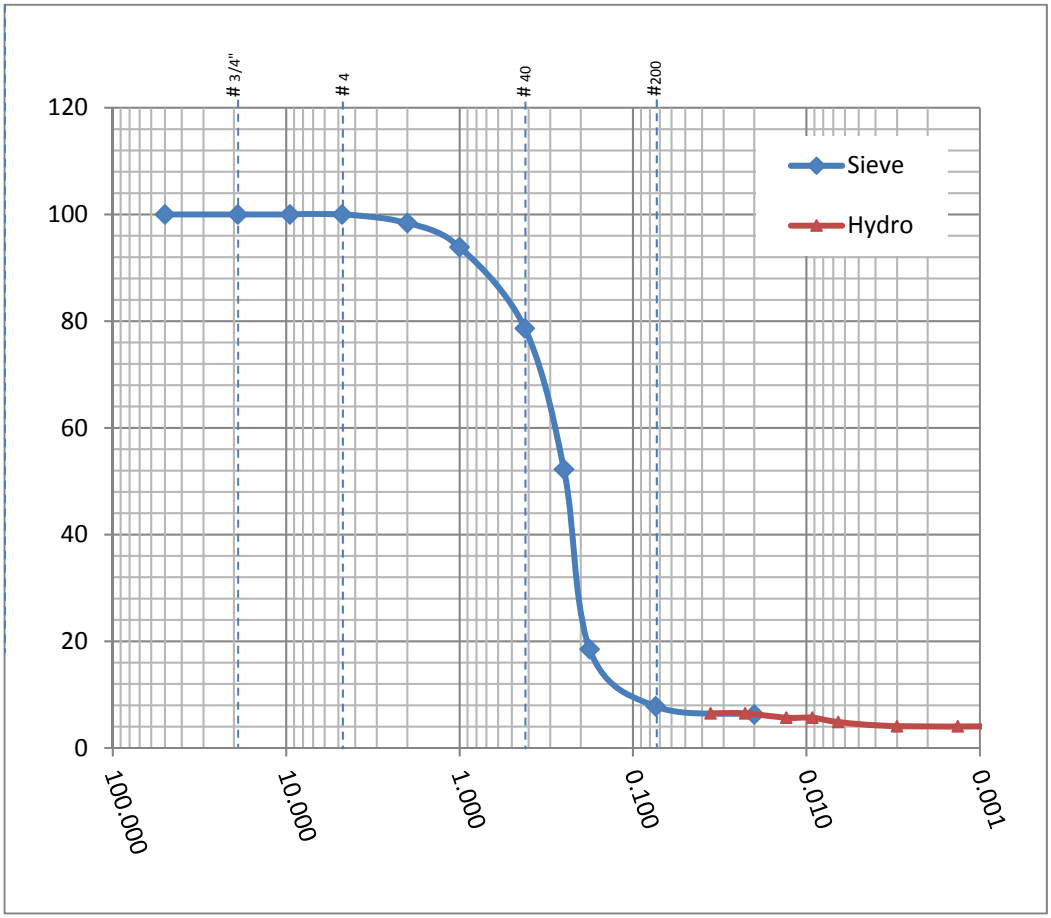
Client : Gulf Power
Project Name: Plant Lansing
Sample Description: Gray Tan
Sample Number: AB-1 1.5-3

Project Number: 2030.1800088.0000
USCS: SP-SM
Tested By: RAB
Date Tested: 9/7/2018

Sieve Size	mm	Percent Passing
2"	50.00	100
3/4"	19.00	100
3/8"	9.510	100
#4	4.760	100
#10	2.000	98
#20	1.000	94
#40	0.420	79
#60	0.250	52
#100	0.178	18
#200	0.074	7.8
Hydro	0.020	6.3
Hydro	0.002	4.1
Hydro	0.001	4.1

Silt Content (ASTM)
3.3 %

Clay Content (Passing 0.0050)
4.5 %



Dispersion Device Used: Dispersed for 1 minute using a Hamilton Beach Commercial Blender, Model 936.
Maximum Particle Size: 2.00 mm, #10.
Shape: Rounded
Hardness: Hard and Durable
Specific Gravity: 2.65 - Assumed.

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UES Report No. 1603139
Report Date: 9/12/2018

REPORT OF PARTICLE SIZE ANALYSIS OF SOIL - ASTM D422

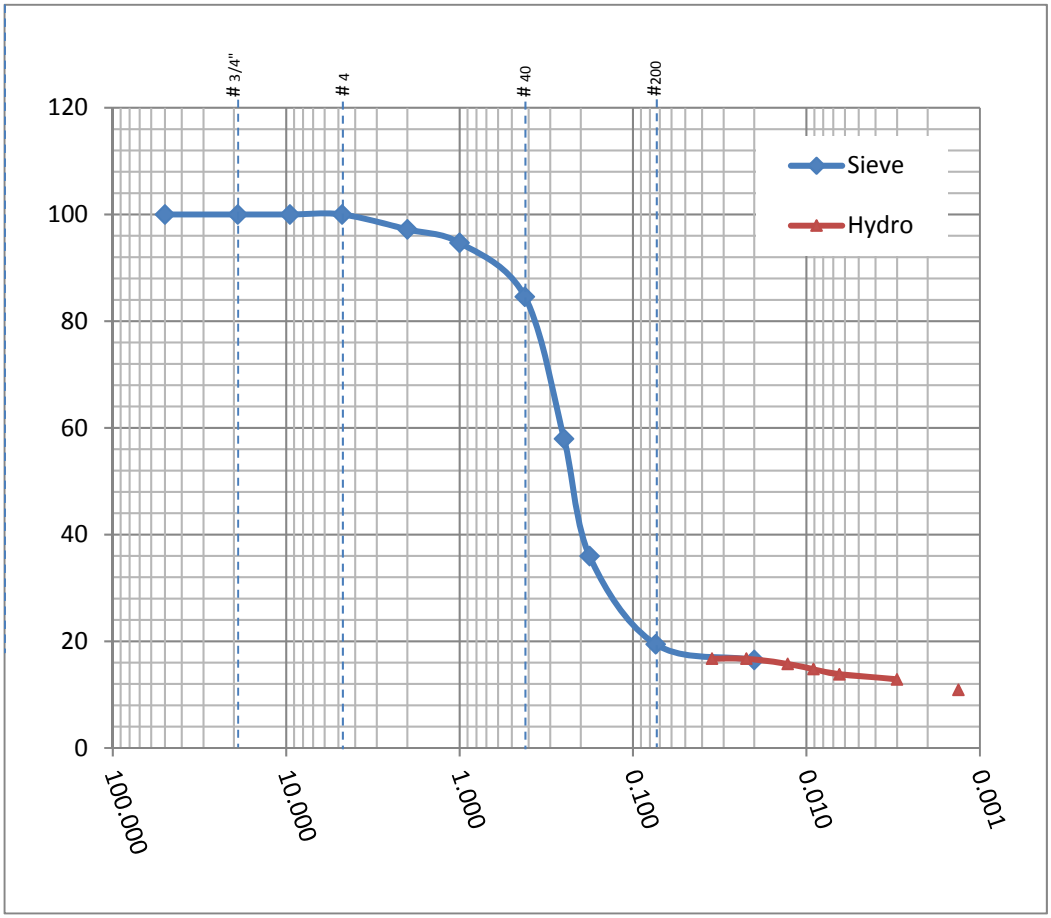
Client : Gulf Power
Project Name: Plant Lansing
Sample Description: Gray Tan
Sample Number: B-2 23.5

Project Number: 2030.1800088.0000
USCS: SC
Tested By: RAB
Date Tested: 9/7/2018

Sieve Size	mm	Percent Passing
2"	50.00	100
3/4"	19.00	100
3/8"	9.510	100
#4	4.760	100
#10	2.000	97
#20	1.000	95
#40	0.420	85
#60	0.250	58
#100	0.178	36
#200	0.074	19.4
Hydro	0.020	16.5
Hydro	0.002	11.7
Hydro	0.001	10.5

Silt Content (ASTM)
6.1 %

Clay Content (Passing 0.0050)
13.3 %



Dispersion Device Used: Dispersed for 1 minute using a Hamilton Beach Commercial Blender, Model 936.
Maximum Particle Size: 9.51 mm, #10.
Shape: Rounded
Hardness: Hard and Durable
Specific Gravity: 2.65 - Assumed.

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UES Report No. 1603139
Report Date: 9/12/2018

REPORT OF PARTICLE SIZE ANALYSIS OF SOIL - ASTM D7928

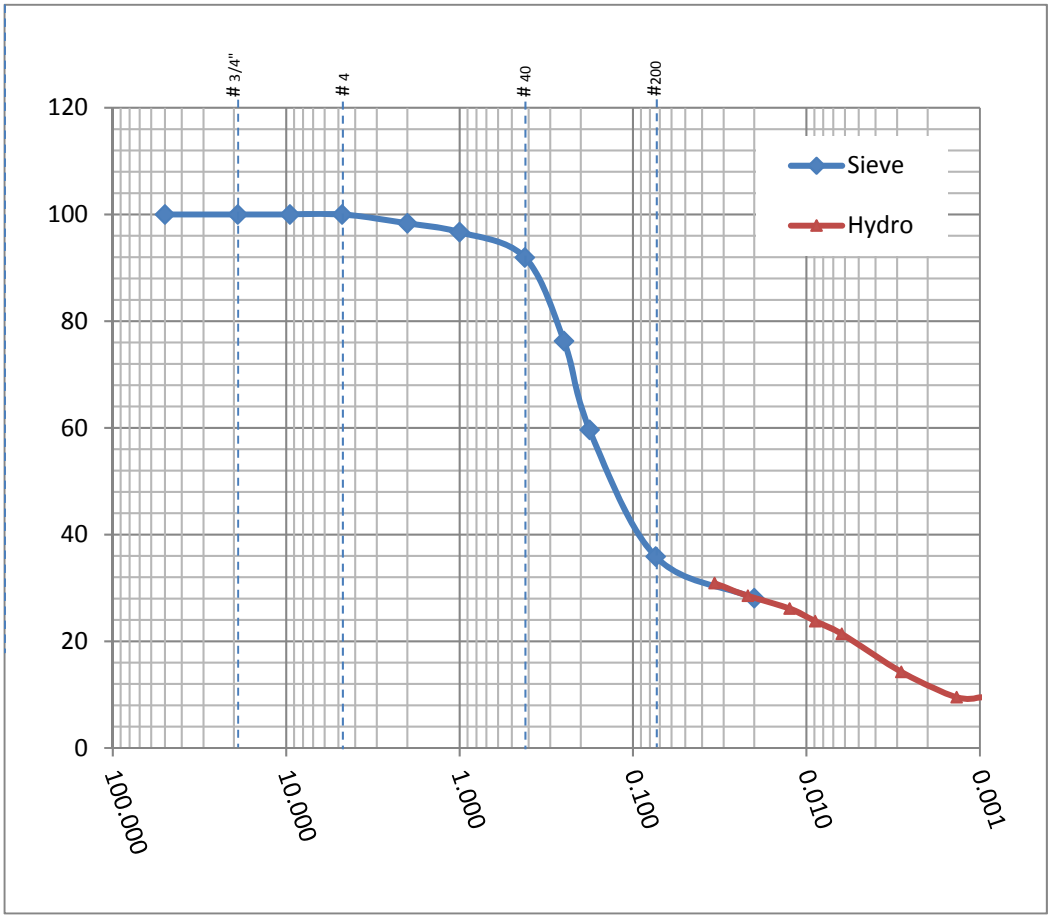
Client : Gulf Power
Project Name: Plant Lansing
Sample Description: Gray Tan
Sample Number: B3 23.5

Project Number: 2030.1800088.0000
USCS: SC-SM
Tested By: RAB
Date Tested: 9/7/2018

Sieve Size	mm	Percent Passing
2"	50.00	100
3/4"	19.00	100
3/8"	9.510	100
#4	4.760	100
#10	2.000	98
#20	1.000	97
#40	0.420	92
#60	0.250	76
#100	0.178	60
#200	0.074	35.9
Hydro	0.020	28.1
Hydro	0.002	11.6
Hydro	0.001	8.3

Silt Content (ASTM)
17.1 %

Clay Content (Passing 0.0050)
18.8 %



Dispersion Device Used: Dispersed for 1 minute using a Hamilton Beach Commercial Blender, Model 936.
Maximum Particle Size: 2.00 mm, #10.
Shape: Rounded
Hardness: Hard and Durable
Specific Gravity: 2.65 - Assumed.

APPENDIX D

IMPORTANT INFORMATION ABOUT THIS GEOTECHNICAL ENGINEERING REPORT

CONSTRAINTS AND RESTRICTIONS

GENERAL CONDITIONS

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical- engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply this report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by*: the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold- prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical- engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.

GEOTECHNICAL BUSINESS COUNCIL
of the Geoprofessional Business Association

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@geoprofessional.org www.geoprofessional.org

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CONSTRAINTS AND RESTRICTIONS

WARRANTY

Universal Engineering Sciences has prepared this report for our client for his exclusive use, in accordance with generally accepted soil and foundation engineering practices, and makes no other warranty either expressed or implied as to the professional advice provided in the report.

UNANTICIPATED SOIL CONDITIONS

The analysis and recommendations submitted in this report are based upon the data obtained from soil borings performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur between these borings.

The nature and extent of variations between borings may not become known until excavation begins. If variations appear, we may have to re-evaluate our recommendations after performing on-site observations and noting the characteristics of any variations.

CHANGED CONDITIONS

We recommend that the specifications for the project require that the contractor immediately notify Universal Engineering Sciences, as well as the owner, when subsurface conditions are encountered that are different from those present in this report.

No claim by the contractor for any conditions differing from those anticipated in the plans, specifications, and those found in this report, should be allowed unless the contractor notifies the owner and Universal Engineering Sciences of such changed conditions. Further, we recommend that all foundation work and site improvements be observed by a representative of Universal Engineering Sciences to monitor field conditions and changes, to verify design assumptions and to evaluate and recommend any appropriate modifications to this report.

MISINTERPRETATION OF SOIL ENGINEERING REPORT

Universal Engineering Sciences is responsible for the conclusions and opinions contained within this report based upon the data relating only to the specific project and location discussed herein. If the conclusions or recommendations based upon the data presented are made by others, those conclusions or recommendations are not the responsibility of Universal Engineering Sciences.

CHANGED STRUCTURE OR LOCATION

This report was prepared in order to aid in the evaluation of this project and to assist the architect or engineer in the design of this project. If any changes in the design or location of the structure as outlined in this report are planned, or if any structures are included or added that are not discussed in the report, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions modified or approved by Universal Engineering Sciences.

USE OF REPORT BY BIDDERS

Bidders who are examining the report prior to submission of a bid are cautioned that this report was prepared as an aid to the designers of the project and it may affect actual construction operations.

Bidders are urged to make their own soil borings, test pits, test caissons or other investigations to determine those conditions that may affect construction operations. Universal Engineering Sciences cannot be responsible for any interpretations made from this report or the attached boring logs with regard to their adequacy in reflecting subsurface conditions which will affect construction operations.

STRATA CHANGES

Strata changes are indicated by a definite line on the boring logs which accompany this report. However, the actual change in the ground may be more gradual. Where changes occur between soil samples, the location of the change must necessarily be estimated using all available information and may not be shown at the exact depth.

OBSERVATIONS DURING DRILLING

Attempts are made to detect and/or identify occurrences during drilling and sampling, such as: water level, boulders, zones of lost circulation, relative ease or resistance to drilling progress, unusual sample recovery, variation of driving resistance, obstructions, etc.; however, lack of mention does not preclude their presence.

WATER LEVELS

Water level readings have been made in the drill holes during drilling and they indicate normally occurring conditions. Water levels may not have been stabilized at the last reading. This data has been reviewed and interpretations made in this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, tides, and other factors not evident at the time measurements were made and reported. Since the probability of such variations is anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based upon such assumptions of variations.

LOCATION OF BURIED OBJECTS

All users of this report are cautioned that there was no requirement for Universal Engineering Sciences to attempt to locate any man-made buried objects during the course of this exploration and that no attempt was made by Universal Engineering Sciences to locate any such buried objects. Universal Engineering Sciences cannot be responsible for any buried man-made objects which are subsequently encountered during construction that are not discussed within the text of this report.

TIME

This report reflects the soil conditions at the time of exploration. If the report is not used in a reasonable amount of time, significant changes to the site may occur and additional reviews may be required.

Universal Engineering Sciences, Inc.
GENERAL CONDITIONS

SECTION 1: RESPONSIBILITIES

1.1 *Universal Engineering Sciences, Inc*., ("UES"), has the responsibility for providing the services described under the Scope of Services section. The work is to be performed according to accepted standards of care and is to be completed in a timely manner. The term "UES" as used herein includes all of *Universal Engineering Sciences, Inc's* agents, employees, professional staff, and subcontractors.

1.2 The Client or a duly authorized representative is responsible for providing UES with a clear understanding of the project nature and scope. The Client shall supply UES with sufficient and adequate information, including, but not limited to, maps, site plans, reports, surveys and designs, to allow UES to properly complete the specified services. The Client shall also communicate changes in the nature and scope of the project as soon as possible during performance of the work so that the changes can be incorporated into the work product.

1.3 The Client acknowledges that UES's responsibilities in providing the services described under the Scope of Services section is limited to those services described therein, and the Client hereby assumes any collateral or affiliated duties necessitated by or for those services. Such duties may include, but are not limited to, reporting requirements imposed by any third party such as federal, state, or local entities, the provision of any required notices to any third party, or the securing of necessary permits or permissions from any third parties required for UES's provision of the services so described, unless otherwise agreed upon by both parties.

1.4 Universal will not be responsible for scheduling our services and will not be responsible for tests or inspections that are not performed due to a failure to schedule our services on the project or any resulting damages.

1.5 **PURSUANT TO FLORIDA STATUTES §558.0035, ANY INDIVIDUAL EMPLOYEE OR AGENT OF UES MAY NOT BE HELD INDIVIDUALLY LIABLE FOR NEGLIGENCE.**

SECTION 2: STANDARD OF CARE

2.1 Services performed by UES under this Agreement will be conducted in a manner consistent with the level of care and skill ordinarily exercised by members of UES's profession practicing contemporaneously under similar conditions in the locality of the project. No other warranty, express or implied, is made.

2.2 The Client recognizes that subsurface conditions may vary from those observed at locations where borings, surveys, or other explorations are made, and that site conditions may change with time. Data, interpretations, and recommendations by UES will be based solely on information available to UES at the time of service. UES is responsible for those data, interpretations, and recommendations, but will not be responsible for other parties' interpretations or use of the information developed.

2.3 Execution of this document by UES is not a representation that UES has visited the site, become generally familiar with local conditions under which the services are to be performed, or correlated personal observations with the requirements of the Scope of Services. It is the Client's responsibility to provide UES with all information necessary for UES to provide the services described under the Scope of Services, and the Client assumes all liability for information not provided to UES that may affect the quality or sufficiency of the services so described.

2.4 Should UES be retained to provide threshold inspection services under Florida Statutes §553.79, Client acknowledges that UES's services thereunder do not constitute a guarantee that the construction in question has been properly designed or constructed, and UES's services do not replace any of the obligations or liabilities associated with any architect, contractor, or structural engineer. Therefore it is explicitly agreed that the Client will not hold UES responsible for the proper performance of service by any architect, contractor, structural engineer or any other entity associated with the project.

SECTION 3: SITE ACCESS AND SITE CONDITIONS

3.1 Client will grant or obtain free access to the site for all equipment and personnel necessary for UES to perform the work set forth in this Agreement. The Client will notify any and all possessors of the project site that Client has granted UES free access to the site. UES will take reasonable precautions to minimize damage to the site, but it is understood by Client that, in the normal course of work, some damage may occur, and the correction of such damage is not part of this Agreement unless so specified in the Proposal.

3.2 The Client is responsible for the accuracy of locations for all subterranean structures and utilities. UES will take reasonable precautions to avoid known subterranean structures, and the Client waives any claim against UES, and agrees to defend, indemnify, and hold UES harmless from any claim or liability for injury or loss, including costs of defense, arising from damage done to subterranean structures and utilities not identified or accurately located. In addition, Client agrees to compensate UES for any time spent or expenses incurred by UES in defense of any such claim with compensation to be based upon UES's prevailing fee schedule and expense reimbursement policy.

SECTION 4: SAMPLE OWNERSHIP AND DISPOSAL

4.1 Soil or water samples obtained from the project during performance of the work shall remain the property of the Client.

4.2 UES will dispose of or return to Client all remaining soils and rock samples 60 days after submission of report covering those samples. Further storage or transfer of samples can be made at Client's expense upon Client's prior written request.

4.3 Samples which are contaminated by petroleum products or other chemical waste will be returned to Client for treatment or disposal, consistent with all appropriate federal, state, or local regulations.

SECTION 5: BILLING AND PAYMENT

5.1 UES will submit invoices to Client monthly or upon completion of services. Invoices will show charges for different personnel and expense classifications.

5.2 Payment is due 30 days after presentation of invoice and is past due 31 days from invoice date. Client agrees to pay a finance charge of one and one-half percent (1 ½ %) per month, or the maximum rate allowed by law, on past due accounts.

5.3 If UES incurs any expenses to collect overdue billings on invoices, the sums paid by UES for reasonable attorneys' fees, court costs, UES's time, UES's expenses, and interest will be due and owing by the Client.

SECTION 6: OWNERSHIP AND USE OF DOCUMENTS

6.1 All reports, boring logs, field data, field notes, laboratory test data, calculations, estimates, and other documents prepared by UES, as instruments of service, shall remain the property of UES.

6.2 Client agrees that all reports and other work furnished to the Client or his agents, which are not paid for, will be returned upon demand and will not be used by the Client for any purpose.

6.3 UES will retain all pertinent records relating to the services performed for a period of five years following submission of the report, during which period the records will be made available to the Client at all reasonable times.

6.4 All reports, boring logs, field data, field notes, laboratory test data, calculations, estimates, and other documents prepared by UES, are prepared for the sole and exclusive use of Client, and may not be given to any other party or used or relied upon by any such party without the express written consent of UES.

SECTION 7: DISCOVERY OF UNANTICIPATED HAZARDOUS MATERIALS

7.1 Client warrants that a reasonable effort has been made to inform UES of known or suspected hazardous materials on or near the project site.

7.2 Under this agreement, the term hazardous materials include hazardous materials (40 CFR 172.01), hazardous wastes (40 CFR 261.2), hazardous substances (40 CFR 300.6), petroleum products, polychlorinated biphenyls, and asbestos.

7.3 Hazardous materials may exist at a site where there is no reason to believe they could or should be present. UES and Client agree that the discovery of unanticipated hazardous materials constitutes a changed condition mandating a renegotiation of the scope of work. UES and Client also agree that the discovery of unanticipated hazardous materials may make it necessary for UES to take immediate measures to protect health and safety. Client agrees to compensate UES for any equipment decontamination or other costs incident to the discovery of unanticipated hazardous waste.

7.4 UES agrees to notify Client when unanticipated hazardous materials or suspected hazardous materials are encountered. Client agrees to make any disclosures required by law to the appropriate governing agencies. Client also agrees to hold UES harmless for any and all consequences of disclosures made by UES which are required by governing law. In the event the project site is not owned by Client, Client recognizes that it is the Client's responsibility to inform the property owner of the discovery of unanticipated hazardous materials or suspected hazardous materials.

7.5 Notwithstanding any other provision of the Agreement, Client waives any claim against UES, and to the maximum extent permitted by law, agrees to defend, indemnify, and save UES harmless from any claim, liability, and/or defense costs for injury or loss arising from UES's discovery of unanticipated hazardous materials or suspected hazardous materials including any costs created by delay of the project and any cost associated with possible reduction of the property's value. Client will be responsible for ultimate disposal of any samples secured by UES which are found to be contaminated.

SECTION 8: RISK ALLOCATION

8.1 Client agrees that UES's liability for any damage on account of any breach of contract, error, omission or other professional negligence will be limited to a sum not to exceed $50,000 or UES's fee, whichever is greater. If Client prefers to have higher limits on contractual or professional liability, UES agrees to increase the limits up to a maximum of $1,000,000.00 upon Client's written request at the time of accepting our proposal provided that Client agrees to pay an additional consideration of four percent of the total fee, or $400.00, whichever is greater. The additional charge for the higher liability limits is because of the greater risk assumed and is not strictly a charge for additional professional liability insurance.

SECTION 9: INSURANCE

9.1 UES represents and warrants that it and its agents, staff and consultants employed by it, is and are protected by worker's compensation insurance and that UES has such coverage under public liability and property damage insurance policies which UES deems to be adequate. Certificates for all such policies of insurance shall be provided to Client upon request in writing. Within the limits and conditions of such insurance, UES agrees to indemnify and save Client harmless from and against loss, damage, or liability arising from negligent acts by UES, its agents, staff, and consultants employed by it. UES shall not be responsible for any loss, damage or liability beyond the amounts, limits, and conditions of such insurance or the limits described in Section 8, whichever is less. The Client agrees to defend, indemnify and save UES harmless for loss, damage or liability arising from acts by Client, Client's agent, staff, and other UESs employed by Client.

SECTION 10: DISPUTE RESOLUTION

10.1 All claims, disputes, and other matters in controversy between UES and Client arising out of or in any way related to this Agreement will be submitted to alternative dispute resolution (ADR) such as mediation or arbitration, before and as a condition precedent to other remedies provided by law, including the commencement of litigation.

10.2 If a dispute arises related to the services provided under this Agreement and that dispute requires litigation instead of ADR as provided above, then:

(a) the claim will be brought and tried in judicial jurisdiction of the court of the county where UES's principal place of business is located and Client waives the right to remove the action to any other county or judicial jurisdiction, and

(b) The prevailing party will be entitled to recovery of all reasonable costs incurred, including staff time, court costs, attorneys' fees, and other claim related expenses.

SECTION 11: TERMINATION

11.1 This agreement may be terminated by either party upon seven (7) days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof. Such termination shall not be effective if that substantial failure has been remedied before expiration of the period specified in the written notice. In the event of termination, UES shall be paid for services performed to the termination notice date plus reasonable termination expenses.

11.2 In the event of termination, or suspension for more than three (3) months, prior to completion of all reports contemplated by the Agreement, UES may complete such analyses and records as are necessary to complete its files and may also complete a report on the services performed to the date of notice of termination or suspension. The expense of termination or suspension shall include all direct costs of UES in completing such analyses, records and reports.

SECTION 12: ASSIGNS

12.1 Neither the Client nor UES may delegate, assign, sublet or transfer their duties or interest in this Agreement without the written consent of the other party.

SECTION 13. GOVERNING LAW AND SURVIVAL

13.1 The laws of the State of Florida will govern the validity of these Terms, their interpretation and performance.

13.2 If any of the provisions contained in this Agreement are held illegal, invalid, or unenforceable, the enforceability of the remaining provisions will not be impaired. Limitations of liability and indemnities will survive termination of this Agreement for any cause.

SECTION 14. INTEGRATION CLAUSE

14.1 This Agreement represents and contains the entire and only agreement and understanding among the parties with respect to the subject matter of this Agreement, and supersedes any and all prior and contemporaneous oral and written agreements, understandings, representations, inducements, promises, warranties, and conditions among the parties. No agreement, understanding, representation, inducement, promise, warranty, or condition of any kind with respect to the subject matter of this Agreement shall be relied upon by the parties unless expressly incorporated herein.

14.2 This Agreement may not be amended or modified except by an agreement in writing signed by the party against whom the enforcement of any modification or amendment is sought.

ERP Application
Exhibit H – UMAM

PART I – Qualitative Description
(See Rule 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Gulf Power Plant Smith IW Pump Station		IW Pump Station Impacts

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
625 Hydric Pine Flatwoods	625	Impact	

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
Choctawhatchee-St. Andrew	III	None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Hydrologically connected to North Bay via a canal.

Assessment area description

Hydric Pine Flatwoods shrubs and Silviculture pine trees consisting of slash pine, wax myrtle, water oak and myrtle leaf holly.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Wetland is within power plant property and surrounded by pine silviculture.	Common silviculture for this area.

Functions	Mitigation for previous permit/other historic use
Water filtration and mininal habitat for wildlife.	NONE

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Racoon, squirrel, white tail deer, frog, snake, crayfish, and song birds.	NONE

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Whitetail deer, racoon, and water moccasin.

Additional relevant factors:

Wetland is within a power plant and connected to deep well injections site. Power plant has an existing perimeter fence that restricts some wildlife movement. An internal IW road fence also limits wildlife support movement. Silviculture and fire supprission of the area has degraded wildlife use.

Assessment conducted by:	Assessment date(s):
Jeff Cole	Nov 8, 2018

PART II – Quantification of Assessment Area (impact or mitigation)
(See Rules 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Gulf Power Plant Smith IW Pump Station		IW4 Pump Station
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
625 Hydric Pine Flatwoods	625	08-NOV-2018

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 0
Wetland is adjacent to power plant to the south and adjacent to deep well injection site to the north and east. HWY 2300 intersects this section of woodlands from additional area to the west. Silviculture practices are ongoing to the north and has just been clear cut. Power plant has an existing perimeter fence that restricts some wildlife movement. An internal IW road fence also limits wildlife support movement. Three sections of Transmission line also cross this area to the west, east and north.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 6	with: 0
Water quality in minimal, historic ditches have redirected some flow around power plant. Silviculture rowing has also redirected and changed historic water patterns.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 0
Wetland consist of planted slash pine with row and bed ground cover. Small shrubs and young oaks have established under the pine canopy. Area has been fire suppressed for many years. Due to fire suppression Titi has expanded over much of the area and largely reduced the amount of herbaceous ground cover. Silviculture and fire suppression has caused a shift from appropriate native species to inappropriate dominance of Titi and Water Oak.		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres: 0.56	with: 0

Delta = [with-current]
0.56

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = . 0.56X 2.04=1.15

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART II – Quantification of Assessment Area (impact or mitigation)
(See Rules 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Gulf Power Plant Smith IW Pump Station		IW4 Pump Station Secondary Impacts
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
625 Hydric Pine Flatwoods	625	08-NOV-2018

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 4
Wetland is adjacent to power plant to the south and adjacent to deep well injection site to the north and east. HWY 2300 intersects this section of woodlands from additional area to the west. Silviculture practices are ongoing to the north and has just been clear cut. Power plant has an existing perimeter fence that restricts some wildlife movement. An internal IW road fence also limits wildlife support movement. Three sections of Transmission line also cross this area to the west, east and north.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 6	with: 4
Water quality in minimal, historic ditches have redirected some flow around power plant. Silviculture rowing has also redirected and changed historic water patterns.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 3
Wetland consist of planted slash pine with row and bed ground cover. Small shrubs and young oaks have established under the pine canopy. Area has been fire suppressed for many years. Due to fire suppression Titi has expanded over much of the area and largely reduced the amount of herbaceous ground cover. Silviculture and fire suppression has caused a shift from appropriate native species to inappropriate dominance of Titi and Water Oak.		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres: 0.56	with: .36

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
0.19X1.13 =0.2
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.300(2) [effective date 02-04-2004]
Incorporated by reference in paragraph 62-345.300(3)(b), F.A.C.

Mitigation Determination Formulas
(See Section 62-345.600(3), F.A.C.)

For each impact assessment area:

(FL) Functional Loss = Impact Delta X Impact acres

For each mitigation assessment area:

(RFG) Relative Functional Gain = Mitigation Delta (adjusted for preservation, if applicable)/((t-factor)(risk))

If the acreage of mitigation proposed is known:

(FG) Functional Gain = Relative Functional Gain X Mitigation acres

(a) Mitigation Bank Credit Determination

The total potential credits for a mitigation bank is the sum of the credits for each assessment area where assessment area credits equal the RFG times the acres of the assessment area scored

Bank Assessment Areas	RFG	X	Acres	=	Credits
example					
a.a.1					
a.a.2					
total					

(b) Mitigation needed to offset impacts, when using a mitigation bank

The number of mitigation bank credits needed, when the bank or regional offsite mitigation area is assessed in accordance with this rule, is equal to the summation of the calculated functional loss for each impact assessment area.

Impact Assesment Area	FL	=	Credits needed
example			
a.a.1	1.34		1.34
a.a.2			
total			

(c) Mitigation needed to offset impacts, when not using a bank

To determine the acres of mitigation needed to offset impacts when not using a bank or a regional offsite mitigation area as mitigation, divide functional loss (FL) by relative functional gain (RFG).

	FL	/	RFG	=	Acres of Mitigation
example					
a.a.1					

If there are multiple impact assessment areas and/or multiple mitigation assessment areas to offset those impacts,or if the proposed mitigation acreage is a given, then the summation of the appropriate functional gain (FG) must be equal to or greater than the summation of respective functional losses (FL)

	example	FL	<	FG
impact	a.a.1			
	a.a.2			
	a.a.3			
mitigation	a.a.4			
	a.a.5			
summation				

ERP Application

Exhibit I – SHPO Response Letter

FLORIDA DEPARTMENT of STATE

RON DESANTIS
Governor

JENNIFER KENNEDY
Interim Secretary of State

Gulf Power Environmental Services
One Energy Place
Pensacola, Florida 32520

January 25, 2019

RE: DHR Project File No.: 2013-3672-B Received by DHR: January 24, 2019
Project: *Plant Smith COC Modification Package*
County: Bay

To Whom It May Concern:

Our office has reviewed the above referenced project and provided comments as part of a Due Diligence review in anticipation of state and federal permitting applications. Please note that our comments may change if other information is presented for this project during the state or federal permitting process that indicates it may effect historic properties.

It is the opinion of this office that the proposed project is unlikely to affect historic properties. However, unexpected finds may occur during ground disturbing activities, and we request that the permit, if issued, should include the following special condition regarding inadvertent discoveries:

> • If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The applicant shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section at (850)-245-6333. Project activities shall not resume without verbal and/or written authorization. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statutes.

If you have any questions, please contact Kristen Hall, Historic Sites Specialist, by email at *Kristen.Hall@dos.myflorida.com*, or by telephone at 850.245.6342 or 800.847.7278.

Sincerely,

Jason Aldridge
For
Timothy A Parsons, Ph.D.
Director, Division of Historical Resources & State Historic Preservation Officer

APPENDIX C

Division of Historical Resources Due Diligence Review

FLORIDA DEPARTMENT of STATE

RON DESANTIS
Governor

JENNIFER KENNEDY
Interim Secretary of State

Gulf Power Environmental Services
One Energy Place
Pensacola, Florida 32520

January 25, 2019

RE: DHR Project File No.: 2013-3672-B Received by DHR: January 24, 2019
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If you have any questions, please contact Kristen Hall, Historic Sites Specialist, by email at *Kristen.Hall@dos.myflorida.com*, or by telephone at 850.245.6342 or 800.847.7278.

Sincerely,

Jason Aldridge
For
Timothy A Parsons, Ph.D.
Director, Division of Historical Resources & State Historic Preservation Officer

Gulf Power

January 24, 2019

Ms. Kristen Hall
Historic Sites Specialist
Division of Historical Research
500 South Bronough Street
Tallahassee, Florida 32399

Ms. Hall:

Gulf Power Company owns and operates the Lansing Smith Electrical Generating Facility (Plant Smith), an electric generating facility located at 4300 CR 2300, Panama City 32409, Bay County, Florida, within Section 36, Township 2S, and Range 15W (See Figures 1 and 2). Plant Smith Units 1 and 2 were previously in operation from 1965 to 2016 and Unit 3 has been in operation since 2002.

Our record research identified that the Florida Department of Historic Resources (FDHR) has provided two letters of concurrence pertaining to Plant Smith. On April 7, 1999, a letter of concurrence was issued stating that no significant archaeological or historical sites were recorded or likely to be present within the project area identified during the certification of Plant Smith Unit 3 (See Attachment 1 - DHR Project File No.: 991458 and Figure 1-A).

Plant Smith currently has three industrial injection wells and a temporary injection well pump station located in the northeast corner of the project area (See Figure 4). The wells and temporary pump station (permitted under ERP 03-0320483-001-EI) began service in 2016 and are used to support closure activities associated with Units 1 and 2. On August 28, 2013, a letter of concurrence was issued by FDHR stating that no significant archaeological or historical sites were recorded or likely to be present within the project area associated with the injection wells and pump station (See Attachment 2 - DHR No.: 2013-03672 and Figure 2-A).

A permanent injection well pump system and station are being designed to replace the temporary injection well pump station. The proposed area for construction of the new pump station is within the vicinity of the area that has been previously reviewed by FDHR. The Florida Master Site File confirms that there are no known archaeological or historical sites within ½ mile of the Plant Smith property boundary (See Figure 3). We are requesting review of the proposed pump system and treatment system and its location in reference to desktop analysis, the previous site reviews and concurrence. Additionally, with the retirement of Plant Smith Units 1 and 2, Gulf Power intends to expand the certified site boundary and incorporate various existing ancillary support components and their applicable permits into the FDEP Conditions of Certification to support Unit 3 operations (See Figure 4).

PREVIOUSLY CONDUCTED SURVEYS AND PREVIOUSLY RECORDED CULTURAL RESOURCES WITHIN THE PROJECT AREA

The areas discussed above were previously evaluated for cultural resources and archaeological significance. According to the desktop analyses and per the 1999 and 2013 review of the Florida Master Site File by FDHR, there were no significant archaeological or historic resources or sites recorded for or likely to be

present within the project area or expanded site boundary. Further, it is unlikely that any sites will be affected based on the location and/or nature of the projects.

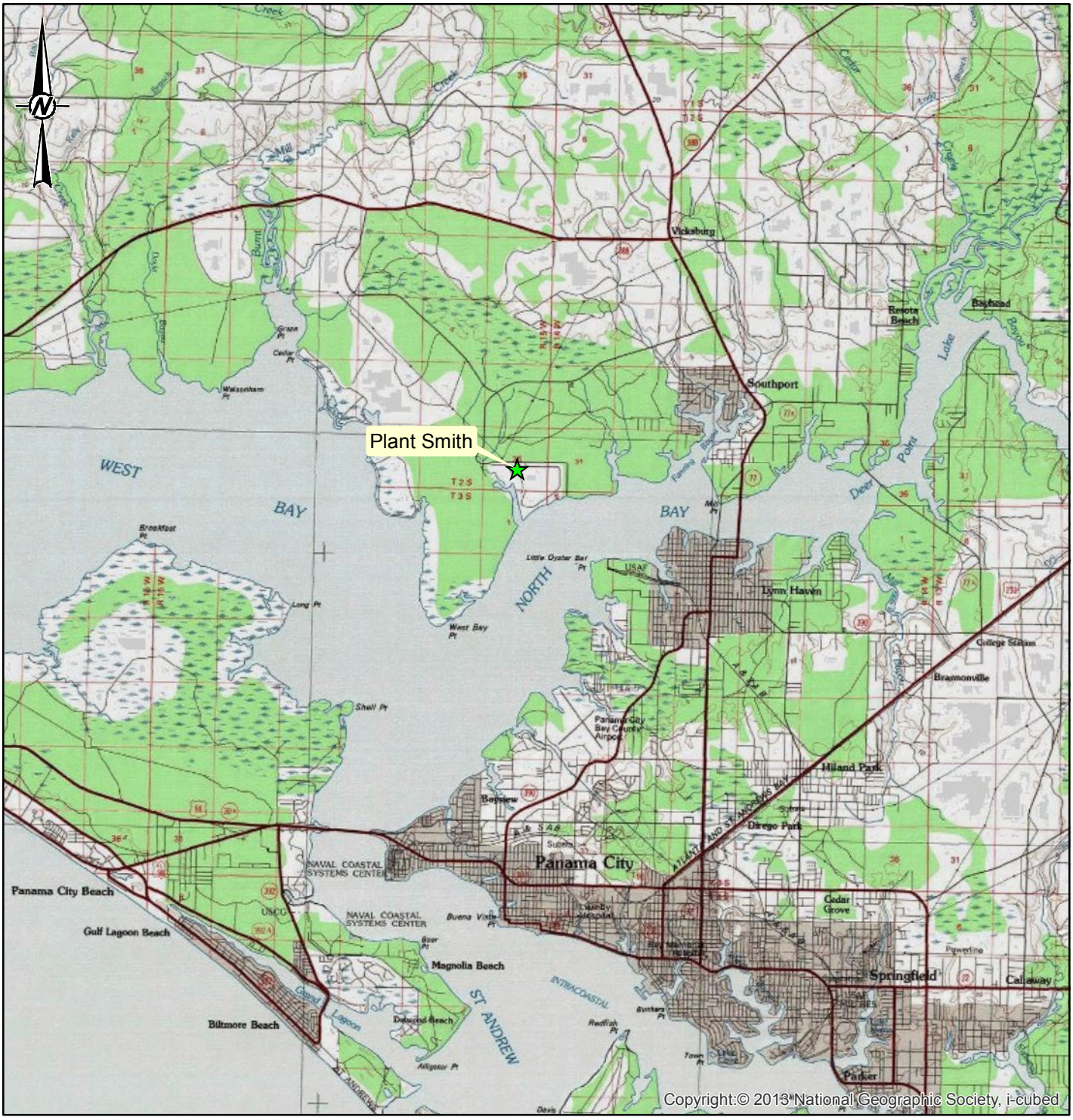
Based on the characteristics of the proposed project, the previous disturbances by the existing power plant, and the expanded site boundary, Gulf Power anticipates the Project will have no impacts on cultural resources, and therefore recommends that the FDHR confirms in writing that no further investigation of cultural resources is required for the proposed Project.

Sincerely,

Mike Markey
Environmental Services Director

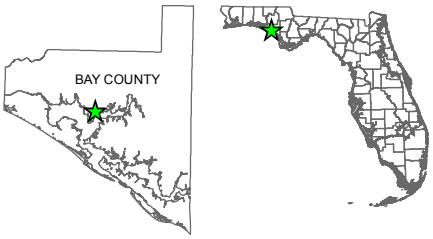
Attachments:

Figure 1 – USGS Map
Figure 2 – Aerial Map
Figure 3 – Cultural Resources (within ½ mile of Plant Smith property boundary)
Figure 4 – Plant Smith modified site boundary (with call out of pump station/treatment system)
Attachment 1 - DHR Project File No.: 991458 letter and Figure 1-A. – USGS map of COC boundary
Attachment 2 - DHR No.: 2013-03672 letter and Figure 2-A) – USGS map of ERP project area



LEGEND

★ Plant Location



0 6,000 12,000 24,000

Feet

REFERENCE(S)

USGS 24K QUADS: WEST BAY, SOUTHPORT, BAYHEAD, PANAMA CITY BEACH, PANAMA CITY, AND SPRINGFIELD, PUBLISHED 1984

CLIENT
GULF POWER

CONSULTANT
GOLDER

YYYY-MM-DD	2018-12-04
DESIGNED	NRL
PREPARED	NRL
REVIEWED	KJB
APPROVED	MM

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
USGS LOCATION MAP

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	A001	0	1

PATH:

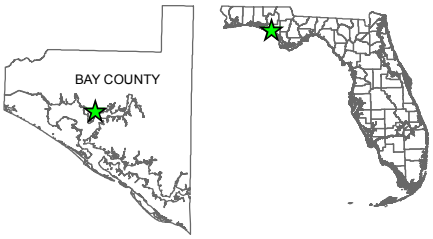
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

1 in

0

LEGEND

★ Plant Location



0 6,000 12,000 24,000

Feet

REFERENCE(S)

IMAGERY, BAY COUNTY, 2016

CLIENT

GULF POWER

CONSULTANT

GOLDER

YYYY-MM-DD	2018-12-04
DESIGNED	NRL
PREPARED	NRL
REVIEWED	KJB
APPROVED	MM

PROJECT

PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE

AERIAL LOCATION MAP

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	A002	0	**2**

PATH:

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

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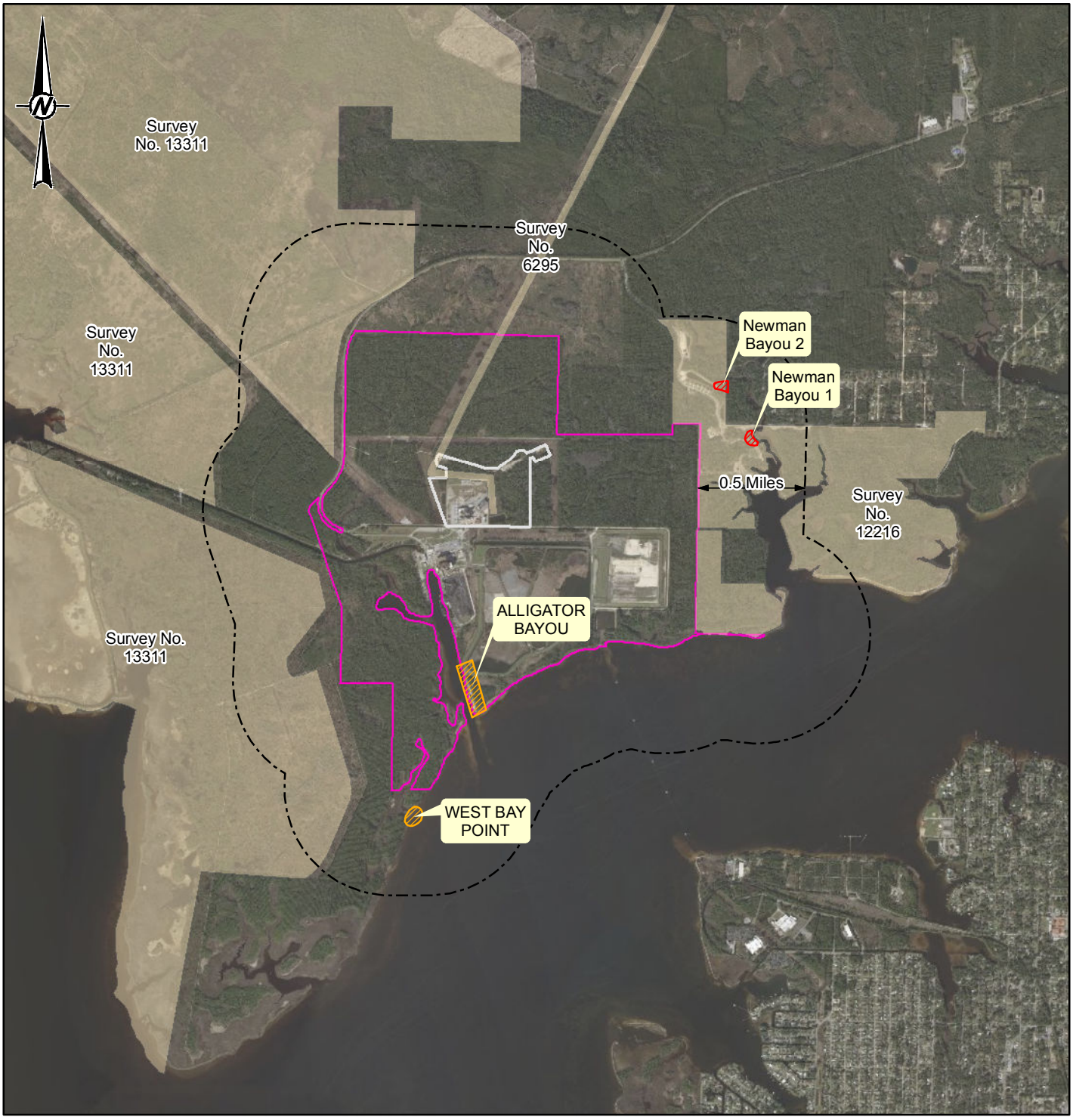

LEGEND

- Plant Smith Boundary
- 1/2 Mile Buffer
- Bay_Surveys_FMSF_201810

Cultural Sites

- Ineligible for NRHP
- Not Evaluated by SHPO
- Proposed Plant Smith Unit 3 Project Area

0 1,800 3,600 7,200

Feet

REFERENCE(S)

IMAGERY, BAY COUNTY, 2016

CULTURAL SITES, SURVEYS, FLORIDA MASTER SITE FILE, 2018

CLIENT

GULF POWER

CONSULTANT

GOLDER

YYYY-MM-DD	2018-12-04
DESIGNED	NRL
PREPARED	NRL
REVIEWED	KJB
APPROVED	MM

PROJECT

PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE

CULTURAL RESOURCES WITHIN 1/2 MILE

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	A003	0	3

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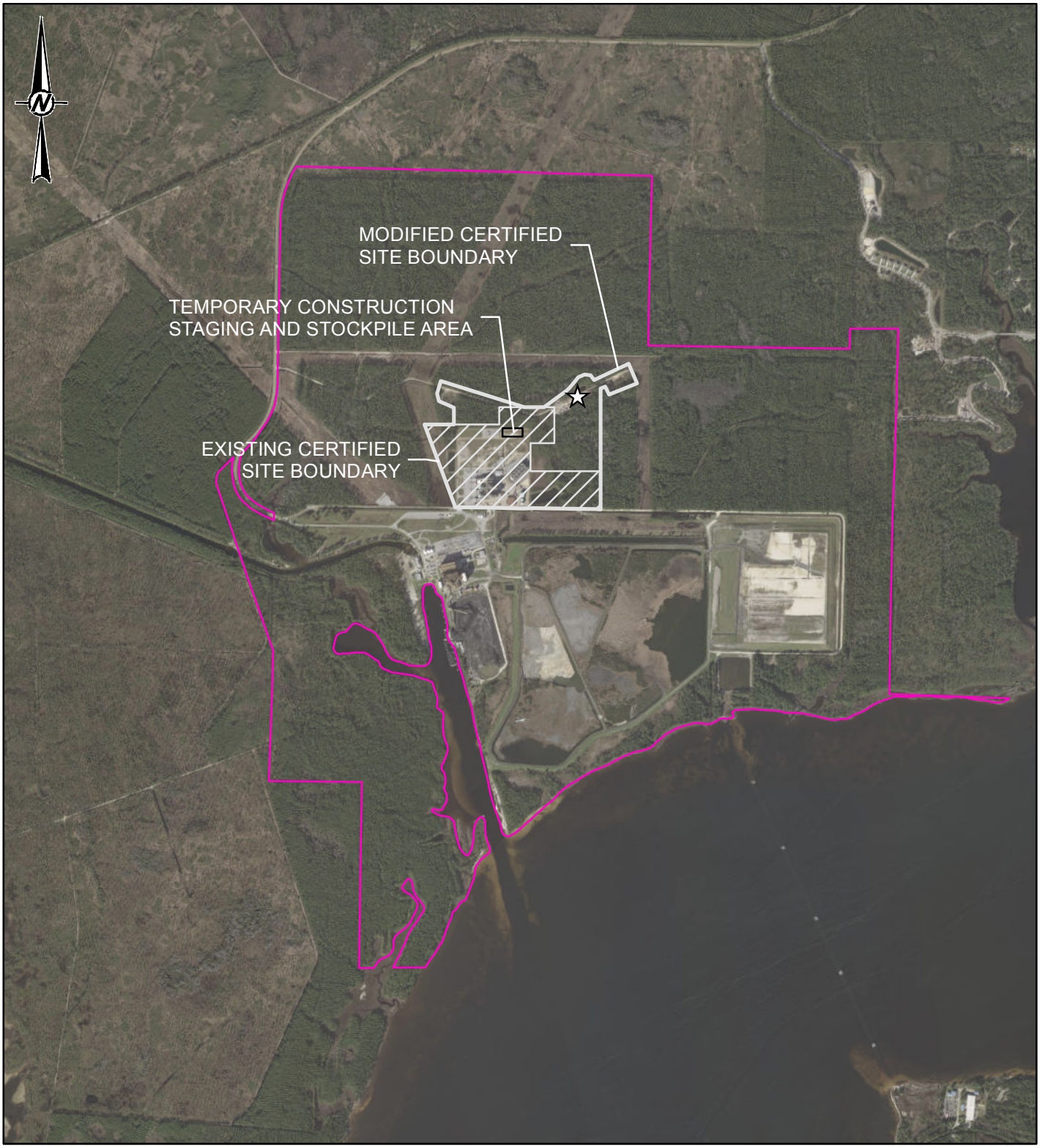

LEGEND

☆ New Pump Station/Treatment System Location

Plant Smith Boundary

Proposed Plant Smith COC Project Boundary

Existing Certified Site Boundary

0 500 1,000 2,000

Feet

REFERENCE(S)

IMAGERY: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

CLIENT
GULF POWER

CONSULTANT
GOLDER

YYYY-MM-DD	2018-12-04
DESIGNED	NRL
PREPARED	JWT
REVIEWED	KJB
APPROVED	MM

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
PROPOSED PLANT SMITH COC PROJECT BOUNDARY

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	A006	0	**4**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

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Attachment 1

DIVISIONS OF FLORIDA DEPARTMENT OF STATE
Office of the Secretary
Office of International Relations
Division of Elections
Division of Corporations
Division of Cultural Affairs
Division of Historical Resources
Division of Library and Information Services
Division of Licensing
Division of Administrative Services

MEMBER OF THE FLORIDA CABINET
State Board of Education
Trustees of the Internal Improvement Trust Fund
Administration Commission
Florida Land and Water Adjudicatory Commission
Siting Board
Division of Bond Finance
Department of Revenue
Department of Law Enforcement
Department of Highway Safety and Motor Vehicles
Department of Veterans' Affairs

FLORIDA DEPARTMENT OF STATE
Katherine Harris
Secretary of State

DIVISION OF HISTORICAL RESOURCES

April 7, 1999

Mr. Darren L. Stowe
Environmental Consulting & Technologies, Inc.
5405 Cypress Center Drive, Suite 200
Tampa, Florida 33609

RECEIVED
APR 12 1999

RE: DHR Project File No. 991458
Cultural Resource Assessment Request
L. Smith Plant Unit 3
Bay County, Florida

Dear Mr. Stowe:

In accordance with the procedures contained in Chapter 403, Florida Statutes, we have reviewed the above referenced project for possible impact to archaeological and historical sites or properties listed, or eligible for listing, in the National Register of Historic Places, or otherwise of archaeological, historical or architectural value.

A review of the Florida Master Site File indicates that no significant archaeological or historical sites are recorded for or likely to be present within the project area. Furthermore, because of the project location and/or nature it is unlikely that any such sites will be affected. Therefore, it is the opinion of this office that the proposed project will have no effect on historic properties listed, or eligible for listing, in the *National Register of Historic Places.*

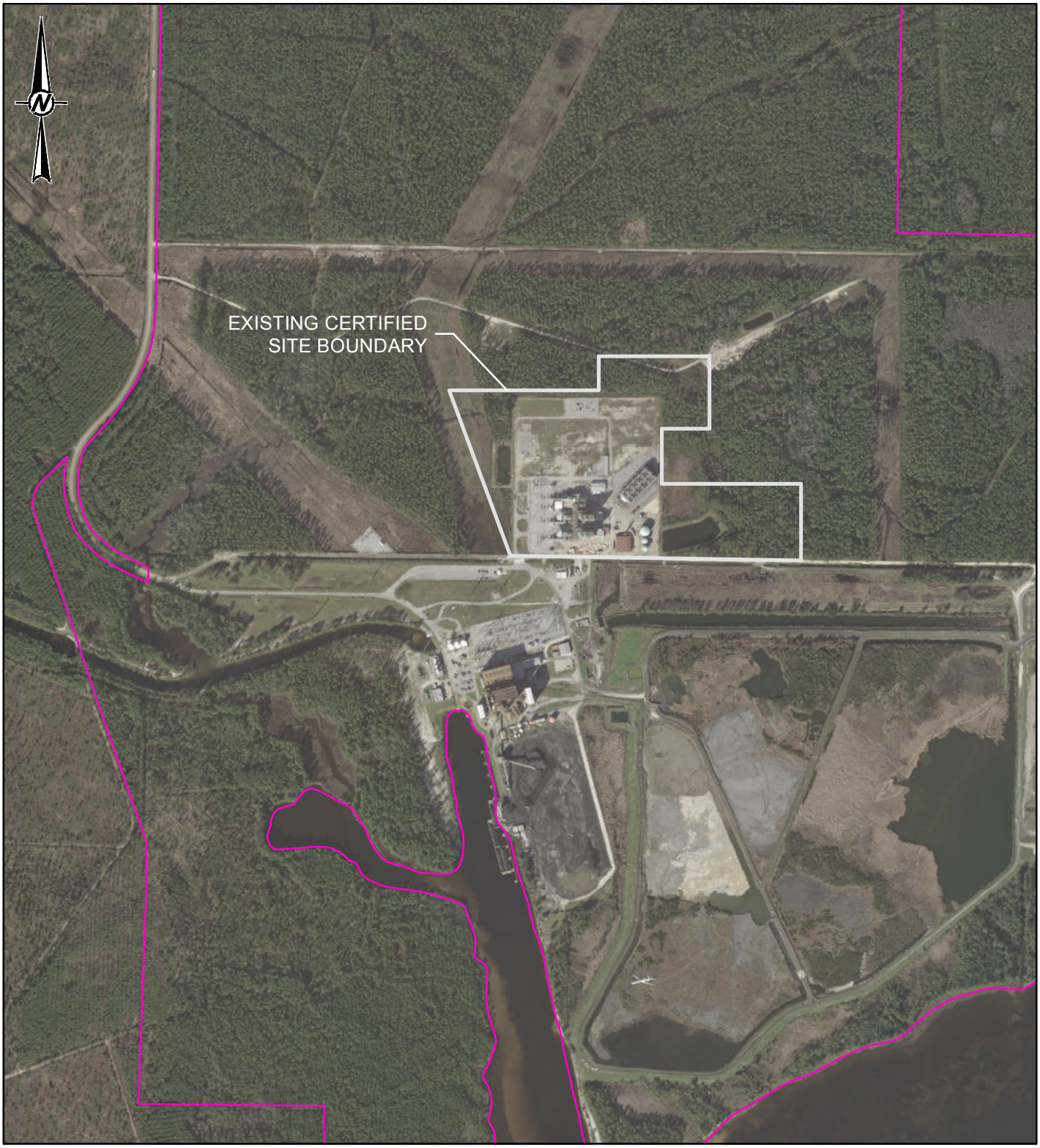
If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservation Planner, at 850-487-2333 or 800-847-7278. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Laura A. Kammerer

for George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/Ese



LEGEND

Plant Smith Boundary

Existing Certified Site Boundary

0 500 1,000 2,000

Feet

REFERENCE(S)

IMAGERY: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

CLIENT

GULF POWER

CONSULTANT

GOLDER

YYYY-MM-DD	2018-12-04
DESIGNED	NRL
PREPARED	JWT
REVIEWED	KJB
APPROVED	MM

PROJECT

PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE

EXISTING COC BOUNDARY

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	A004	0	**1-A**

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

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Attachment 2

RECEIVED
SEP 0 5 2013
NORTHWEST FLORIDA
DEP

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Florida Department of Environmental Protection
Northwest District Office
160 Governmental Center
Pensacola, Florida 32502-5794

August 28, 2013

Re: Projects Reviewed by the Florida State Historic Preservation Office
No Historic Properties Likely Affected – **See Enclosed List**
Date Received: August 6- August 8, 2013

To Whom It May Concern:

Our office received and reviewed the referenced projects in accordance with Chapters 253, 267 and 373, *Florida Statutes*, Florida's Coastal Management Program, and implementing state regulations, for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places*, or otherwise of historical, architectural or archaeological value. The State Historic Preservation Officer is to advise and assist state and federal agencies when identifying historic properties, assessing effects upon them, and considering alternatives to avoid or minimize adverse effects.

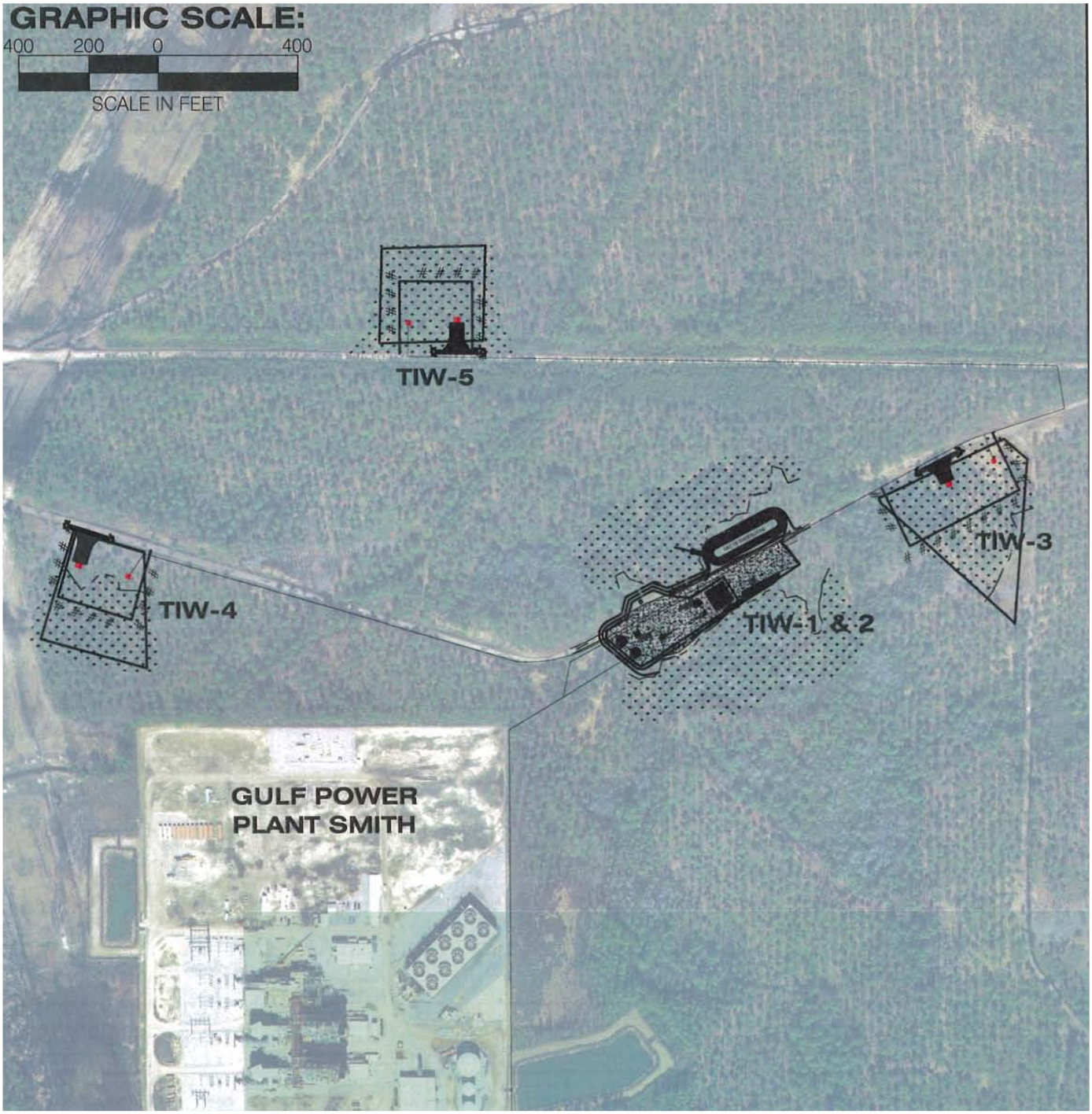
Our review of the Florida Master Site File indicates that no significant archaeological or historic resources are recorded within the project areas. Furthermore, because of the location and/or nature of the projects it is unlikely that any such sites will be affected.

If there are any questions concerning our comments or recommendations, please contact Michael Hart, Historic Sites Specialist, by phone at 850.245.6333, or by electronic mail at Michael.Hart@dos.myflorida.com. We appreciate your continued interest in protecting Florida's historic properties.

Sincerely

Robert F. Bendus, Director
Division of Historical Resources
and State Historic Preservation Officer

DHR NO.	App. No.	Applicant/Project Name	County
2013-03672	03-0320483-001-EI	Gulf Power Company, Inc./ Plant Smith Deep Well Injection Facility	Bay
2013-03667	17-276485-002-EE	Elaine Besanko/ Besanko Seawall	Escambia
2013-03696	46-320445-001-EI	Glenn Clark/ Clark Seawall	Okaloosa



REFERENCE(S)
OVERALL SITE PLAN, FABRE ENGINEERING INC. 8/5/2013

CLIENT
GULF POWER

CONSULTANT
GOLDER

YYYY-MM-DD	2018-12-04
DESIGNED	NRL
PREPARED	NRL
REVIEWED	KJB
APPROVED	MM

PROJECT
PLANT SMITH CONDITIONS OF CERTIFICATION MODIFICATION

TITLE
ERP PERMIT #03-0320483 PROJECT AREA

PROJECT NO.	CONTROL	REV.	FIGURE
18114683	A007	0	**2-A**

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
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ERP Application

Exhibit J – Pond Maintenance Plan

MAINTENANCE PLAN & PROCEDURES

The following sections are derived from the Department of Environmental Protection's and the Northwest Florida Water Management District's Environmental Resource Permit Applicant's Handbook Volume II, 2013. The reference chapters include Chapter 8 – Wet Detention Design and Performance Criteria.

Inspection Activities

Inspection activities for the (**Plant Smith injection well pump station**) site shall consist of the following bulleted items and follow the frequency stated below:

- Inspect for trash and debris, clogging of inlet/outlet structures, condition of weir and spillway, excessive erosion, sediment buildup in basin or outlet, bank stability, and density of turf grass on bank side slopes. (Annual Inspection)
- Monitor drains and check for algal growth, signs of pollution such as oil sheens, discolored water or unpleasant odors, and signs of flooding. (Annual Inspection)
- Inspect mechanical component condition of inlet and outlet structures, pipes, orifice, skimmers, weir and upstream and downstream channel conditions. (Annual Inspection)
- During all inspections note any changes to the pond or the contributing watershed as these may affect basin performance.

Wet Detention Operation/Maintenance

The following procedures are recommended to avoid degradation of wet detention basins.

Maintenance Activities:

- Remove sediment from outlet structures and dispose of properly. (Annually or as needed)
- Remove vegetation growth from atop the sand filter to prevent blinding. (Annually or as needed)
- Remove accumulated trash and debris in the basins, inlet/outlet structures, side slopes and collection system as required. (Annually or as needed)
- Mowing and landscaping maintenance should be done as needed during the active growing season for this area. Inspect and maintain as required during the growing season.
- Repair undercut areas, rills, and erosion to banks and basins. (Annually or as needed)
- Remove sediment when the permanent pool volume has become reduced significantly (sediment accumulation exceeds 25% of design depth), re-suspension is observed or the pond becomes eutrophic. (As-needed).

Final Inspection Criteria

Final Inspections:

- A maintenance inspection must be performed every 5 years by a registered professional.
- The maintenance inspection must be documented on FDEP standard inspection form 62-330.311(1)
- The inspection form must be signed and dated by the registered professional and kept on file and available to the Agency if requested.

golder.com