FLORIDA DEPARTMENT OF Environmental Protection

Southwest District Office
13051 North Telecom Parkway #101
Temple Terrace, Florida 33637-0926

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

July 24, 2019

Southwest Florida Water Management District
% Jennette Seachrist
Highway 301 North, 7601
Tampa, Florida 33637
Jennette.Seachrist@SWFWMD.state.FL.us

File No.: 41-0362040-002-EG, Manatee County

Dear Mrs. Seachrist:

On July 8, 2019, we received your notice of intent to use a General Permit (GP), pursuant to Rule 62-330.485 Florida Administrative Code (F.A.C.) to construct an intake and pump station to divert up to 2.0 MGD from the Myakka River to an exploratory recharge well within Myakka River, a Class III Florida Waterbody. The project is located at 39450 Taylor Road, Myakka City, Section 19, Township 35 South, Range 22 East, Manatee County.

Your intent to use a general permit has been reviewed by Department staff for three types of authorizations: (1) regulatory authorization, (2) proprietary authorization (related to state-owned submerged lands), and (3) federal authorization. The authority for review and the outcomes of the reviews are listed below. Please read each section carefully.

Your project did not qualify for the federal review portion of this verification request. Specifically, the activity is not covered by the State Programmatic General Permit. **Additional authorization must be obtained prior to commencement of the proposed activity**. This letter does not relieve you from the responsibility of obtaining other federal, state, or local authorizations that may be required for the activity. Please refer to the specific section(s) dealing with that portion of the review below for advice on how to proceed.

If you change the project from what you submitted, the authorization(s) granted may no longer be valid at the time of commencement of the project. Please contact us prior to beginning your project if you wish to make any changes.

1. Regulatory Review – Verified

Based on the forms, drawings, and documents submitted with your notice, it appears that the project meets the requirements for the General Permit under Rule 62-330.485, F.A.C. Any activities performed under a general permit are subject to general conditions required in Rule 62-330.405, F.A.C. (attached), and the specific conditions of Rule 62-330.485, F.A.C. (attached). Any deviations from these conditions may subject the permittee to enforcement action and possible penalties.

Please be advised that the construction phase of the GP must be completed within five years from the date the notice to use the GP was received by the Department. If you wish to continue this GP beyond the expiration date, you must notify the Department at least 30 days before its expiration.

Authority for review- Part IV of Chapter 373, F.S., Title 62, F.A.C. and in accordance with the operating agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C.

2. Proprietary Review – Granted

The activity appears to be located on sovereign submerged lands owned by the Board of Trustees. The activity is not exempt from the need to obtain the applicable proprietary authorization. As staff to the Board of Trustees, the Department has reviewed the activity described above, and has determined that the activity qualifies for a letter of consent under Section 253.77, Florida Statutes, to construct and use the activity on the specified sovereign submerged lands, as long as the work performed is located within the boundaries as described herein and is consistent with the terms and conditions herein.

During the term of this Letter of Consent you shall maintain satisfactory evidence of sufficient upland interest as required by paragraph 18-21.004(3)(b), Florida Administrative Code. If such interest is terminated or the Board of Trustees determines that such interest did not exist on the date of issuance of this Letter of Consent, this Letter of Consent may be terminated by the Board of Trustees at its sole option. If the Board of Trustees terminates this Letter of Consent, you agree not to assert a claim or defense against the Board of Trustees arising out of this Letter of Consent.

Please be advised that any use of sovereign submerged lands without specific prior authorization from the Board of Trustees will be considered a violation of Chapter 253, Florida Statutes and may subject the affected upland riparian property owners to legal action as well as potential fines for the prior unauthorized use of sovereign land.

Authority for review - Chapter 253, F.S., Chapter 18-21, F.A.C., and Section 62-330.075, F.A.C. as required.

3. Federal Review – SPGP Not Included

This permit does not include Federal authorization or imply the presence or limits of Waters of the United States (WOTUS) on the subject property. Activities that may impact WOTUS shall require a separate permit from the Corps. It is recommended that you contact your local Corps office to determine whether your project site contains WOTUS and/or if a Department of the Army permit is needed. A map of local Corps offices and the federal application form (ENG 4345) are available online at the Jacksonville District Regulatory Division website.

Additional Information

Please retain this letter. The activities may be inspected by authorized state personnel in the future to ensure compliance with appropriate statutes and administrative codes. If the activities are not in compliance, you may be subject to penalties under Chapter 373, F.S., and Chapter 18-14, F.A.C.

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. You cannot justifiably rely on the finality of this decision unless notice of this decision and the right of substantially affected persons to challenge this decision has been duly published or otherwise provided to all persons substantially affected by the decision. While you are not required to publish notice of this action, you may elect to do so pursuant Rule 62-110.106(10)(a).

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. If you do not publish notice of this action, this waiver will not apply to persons who have not received written notice of this action.

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.

Executed in Hillsborough County, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Sincerely,

Anthony Pidala
Environmental Consultant
Permitting and Waste Cleanup Program
Southwest District

Enclosures:
Ch. 62-330.485, F.A.C.
General Conditions for All General Permits, Ch. 62-330.405, F.A.C.

Attachments:
Project Narrative
Project Drawings (1)
Project Drawings (2)

cc:
ERP Permitting, Southwest District, sw_erp@dep.state.fl.us
Kat Brioni, Southwest District, Katya.Brioni@Floridadep.gov
Michelle Hays, Jones Edmunds & Associates, mhays@jonesedmunds.com

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this determination, including all copies, was mailed before the close of business on July 24, 2019, to the above listed persons.

FILING AND ACKNOWLEDGMENT

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

Clerk

July 24, 2019
Date

62-330.485 General Permit to the Department and Water Management Districts for Environmental Restoration or Enhancement.

(1) A general permit is granted to the Department and Districts for the construction, alteration, operation, maintenance, removal and abandonment of projects to implement Department or District environmental restoration or enhancement projects.

(2) The environmental restoration or enhancement project must comply with any one of the following procedures:

(a) The project is part of a Surface Water Improvement and Management Plan developed pursuant to section 373.453, F.S.; o

(b) The project is approved by the District Governing Board or the Secretary of the Department after conducting at least one public meeting; or

(c) The project is wholly or partially funded through the Land Acquisition Trust Fund pursuant to Article X, Section 28 of the Florida Constitution, or through any successor trust fund

(3) When the activity is to be conducted by the Department, the Department shall provide the notice and any processing fee required by rule 62-330.071, F.A.C., to the appropriate District.

(4) When the activity is to be conducted by a District, the District shall provide the notice and any required fee to the appropriate Department office.

Rulemaking Authority 373.026(7), 373.043, 373.118(1), 373.406(5), 373.4131, 373.414(9), 373.4145, 373.418, 403.805(1) FS. Law Implemented 373.118(1), 373.406(5), 373.413, 373.4131, 373.414(9), 373.4145, 373.416, 373.418, 373.426, 403.814(1) FS. History–New 10-3-95, Amended 10-1-07, Formerly 62-341.485, Amended 10-1-13, 6-1-18.

62-330.405 General Conditions for All General Permits.

The following general permit conditions are binding upon the permittee and are enforceable under chapter 373, F.S. These conditions do not apply to the general permit for stormwater management systems under section 403.814(12), F.S.

(1) The general permit is valid only for the specific activity indicated. Any deviation from the specified activity and the conditions for undertaking that activity shall constitute a violation of the permit and may subject the permittee to enforcement action and revocation of the permit under chapter 373, F.S.

(2) The general permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any construction, alteration, operation, maintenance, removal or abandonment authorized by this permit; and it does not authorize any violation of any other applicable federal, state, local, or special district laws (including, but not limited to, those governing the "take" of listed species).

(3) The general 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 which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the general permit.

(4) The general permit does not relieve the permittee from liability and penalties when the permitted activity causes harm or injury to: human health or welfare; animal, plant or aquatic life; or property. It does not allow the permittee to cause pollution that violates state water quality standards.

(5) Section 253.77, F.S., provides that a person may not commence any excavation, construction, or other activity involving the use of state-owned or other lands of the state, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required consent, lease, easement, or other form of authorization authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing

activity on state-owned lands.

(6) The authorization to conduct activities under a general permit may be modified, suspended or revoked in accordance with chapter 120, F.S., and section 373.429, F.S.

(7) The general permit is not transferable to a new third party. To be used by a different permittee, a new notice to use a general permit must be submitted in accordance with rule 62-330.402, F.A.C. Activities constructed in accordance with the terms and conditions of a general permit are automatically authorized to be operated and maintained by the permittee and subsequent owners in accordance with subsection 62-330.340(1), F.A.C. Any person holding the general permit, persons working under the general permit, and owners of land while work is conducted under the general permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to sale, conveyance, or other transfer of ownership or control of the permitted project, activity, or the real property at which the permitted project or activity is located.

(8) Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the permitted system to ensure conformity with the plans and specifications approved by the general permit.

(9) The permittee shall maintain any permitted project or activity in accordance with the plans submitted to the Agency and authorized in the general permit.

(10) A permittee's right to conduct a specific activity under the general permit is authorized for a duration of five years.

(11) 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 implemented and maintained immediately prior to, during, and after construction as needed to stabilize all disturbed areas, including other measures specified in the permit to prevent adverse impacts to the water resources and adjacent lands. Erosion and sediment control measures shall be installed and maintained 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)*, available at https://www.flrules.org/Gateway/reference.asp?No=Ref-04227, and the *Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008)*, available at http://publicfiles.dep.state.fl.us/DEAR/Stormwater_Training_Docs/erosion-inspectors-manual.pdf.

(12) Unless otherwise specified in the general permit, temporary vehicular access within wetlands during construction shall be performed using vehicles generating minimum ground pressure to minimize rutting and other environmental impacts. Within forested wetlands, the permittee shall choose alignments that minimize the destruction of mature wetland trees to the greatest extent practicable. When needed to prevent rutting or soil compaction, access vehicles shall be operated on wooden, composite, metal, or other non-earthen construction mats. In all cases, access in wetlands shall comply with the following:

(a) Access within forested wetlands shall not include the cutting or clearing of any native wetland tree having a diameter four inches or greater at breast height;

(b) The maximum width of the construction access area shall be limited to 15 feet;

(c) All mats shall be removed as soon as practicable after equipment has completed passage through, or work has been completed, at any location along the alignment of the project, but in no case longer than seven days after equipment has completed work or passage through that location; and

(d) Areas disturbed for access shall be restored to natural grades immediately after the maintenance or repair is completed.

(13) Barges or other work vessels used to conduct in-water activities shall be operated in a manner that prevents unauthorized dredging, water quality violations, and damage to submerged aquatic communities.

(14) The construction, alteration, or use of the authorized project shall not adversely impede navigation or create a navigational hazard in the water body.

(15) Except where specifically authorized in the general permit, activities must not:

(a) Impound or obstruct existing water flow, cause adverse impacts to existing surface water storage and conveyance capabilities, or otherwise cause adverse water quantity or flooding impacts to receiving water and adjacent lands; or

(b) Cause an adverse impact to the maintenance of surface or ground water levels or surface water flows established pursuant to section 373.042, F.S., or a Works of the District established pursuant to section 373.086, F.S.

(16) If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, stone tools, 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 permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section (DHR), at (850)245-6333, as well as the appropriate permitting agency office. Project activities 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 the proper authorities notified in accordance with section 872.05, F.S.

(17) The activity must be capable, based on generally accepted engineering and scientific principles, of being performed and of functioning as proposed, and must comply with any applicable District special basin and geographic area criteria.

(18) The permittee shall comply with the following when performing work within waters accessible to federally- or state-listed aquatic species, such as manatees, marine turtles, smalltooth sawfish, and Gulf sturgeon:

(a) All vessels associated with the project shall operate at "Idle Speed/No Wake" at all times while in the work area and where the draft of the vessels provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

(b) All deployed siltation or turbidity barriers shall be properly secured, monitored, and maintained to prevent entanglement or entrapment of listed species.

(c) All in-water activities, including vessel operation, must be shut down if a listed species comes within 50 feet of the work area. Activities shall not resume until the animal(s) has moved beyond a 50-foot radius of the in-water work, or until 30 minutes elapses since the last sighting within 50 feet. Animals must not be herded away or harassed into leaving. All onsite project personnel are responsible for observing water-related activities for the presence of listed species.

(d) Any listed species that is killed or injured by work associated with activities performed shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1(888)404-3922 and ImperiledSpecies@myFWC.com.

(e) Whenever there is a spill or frac-out of drilling fluid into waters accessible to the above species during a directional drilling operation, the FWC shall be notified at ImperiledSpecies@myfwc.com with details of the event within 24 hours following detection of the spill or frac-out.

(19) The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any activity authorized by the general permit.

(20) The permittee shall immediately notify the Agency in writing of any submitted information that is discovered to be inaccurate.

Rulemaking Authority 373.026(7), 373.043, 373.118(1), 373.406(5), 373.4131, 373.414(9), 373.4145, 373.418, 403.805(1) FS. Law Implemented 373.044, 373.118(1), 373.129, 373.136, 373.406(5), 373.413, 373.4131, 373.414(9), 373.4145, 373.416, 373.422, 373.423, 373.429, 403.814(1) FS. History–New 10-3-95, Amended 10-1-07, Formerly 62-341.215, Amended 10-1-13, 6-1-18.

Special Consent Conditions

1. The applicant agrees to indemnify, defend and hold harmless the Board of Trustees and the State of Florida from all claims, actions, lawsuits and demands in any form arising out of the

authorization to use sovereignty submerged lands or the applicant's use and construction of structures on sovereignty submerged lands. This duty to indemnify and hold harmless will include any and all liabilities that are associated with the structure or activity including special assessments or taxes that are now or in the future assessed against the structure or activity during the period of the authorization.

2. Failure by the Board of Trustees to enforce any violation of a provision of the authorization or waiver by the Board of Trustees of any provision of the authorization will not invalidate the provision not enforced or waived, nor will the failure to enforce or a waiver prevent the Board of Trustees from enforcing the unenforced or waived provision in the event of a violation of that provision.

3. Applicant binds itself and its successors and assigns to abide by the provisions and conditions set forth in the authorization. If the applicant or its successors or assigns fails or refuses to comply with the provisions and conditions of the authorization, the authorization may be terminated by the Board of Trustees after written notice to the applicant or its successors or assigns. Upon receipt of such notice, the applicant or its successors or assigns will have thirty (30) days in which to correct the violations. Failure to correct the violations within this period will result in the automatic revocation of this authorization.

4. All costs incurred by the Board of Trustees in enforcing the terms and conditions of the authorization will be paid by the applicant. Any notice required by law will be made by certified mail at the address shown on page one of the authorization. The applicant will notify the Board of Trustees in writing of any change of address at least ten days before the change becomes effective.

5. This authorization does not allow any activity prohibited in a conservation easement or restrictive covenant that prohibits the activity.

General Conditions for Authorizations for Activities on State-Owned Submerged Land

All authorizations granted by rule or in writing under Rule 18-21.005, F.A.C., except those for geophysical testing, shall be subject to the general conditions as set forth in paragraphs (a) through (i) below. The general conditions shall be part of all authorizations under this chapter, shall be binding upon the grantee, and shall be enforceable under Chapter 253 or 258, Part II, F.S.

(a) Authorizations are valid only for the specified activity or use. Any unauthorized deviation from the specified activity or use and the conditions for undertaking that activity or use shall constitute a violation. Violation of the authorization shall result in suspension or revocation of the grantee's use of the sovereignty submerged land unless cured to the satisfaction of the Board.

(b) Authorizations convey no title to sovereignty submerged land or water column, nor do they constitute recognition or acknowledgment of any other person's title to such land or water.

(c) Authorizations may be modified, suspended or revoked in accordance with their terms or the remedies provided in Sections 253.04 and 258.46, F.S., or Chapter 18-14, F.A.C.

(d) Structures or activities shall be constructed and used to avoid or minimize adverse impacts to sovereignty submerged lands and resources.

(e) Construction, use, or operation of the structure or activity shall not adversely affect any species which is endangered, threatened or of special concern, as listed in Rules 68A-27.003, 68A-27.004, and 68A-27.005, F.A.C.

(f) Structures or activities shall not unreasonably interfere with riparian rights. When a court of competent jurisdiction determines that riparian rights have been unlawfully affected, the structure or activity shall be modified in accordance with the court's decision.

(g) Structures or activities shall not create a navigational hazard.

(h) Structures shall be maintained in a functional condition and shall be repaired or removed if they become dilapidated to such an extent that they are no longer functional. This shall not be construed to prohibit the repair or replacement subject to the provisions of Rule 18-21.005, F.A.C., within one year, of a structure damaged in a discrete event such as a storm, flood, accident, or fire.

(i) Structures or activities shall be constructed, operated, and maintained solely for water dependent purposes, or for non-water dependent activities authorized under Paragraph 18-21.004(1)(f), F.A.C., or any other applicable law.

Attachment 1

UIC Permit No. 344918-001-UC/1R

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

BOB MARTINEZ CENTER
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Ryan E. Matthews
Interim Secretary

SENT VIA ELECTRONIC MAIL:

In the Matter of an Application for Permit by:

February 27, 2017

Mark Hammond, Resource Management Director
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34604
mark.hammond@swfwmd.state.fl.us

Manatee County UIC
UIC Permit Number 344918-001-UC/1R
WACS ID 102926
Class V Aquifer Recharge Well
Construction and Testing Permit

NOTICE OF PERMIT

Enclosed is Permit Number 344918-001-UC/1R to construct and operationally test: One Class V, Group 2 Aquifer Recharge well (RW-1) will be constructed at the Flatford Swamp in Manatee County, Florida, to investigate the feasibility of recharging excess natural surface water into the upper Floridan aquifer during wet weather flows and anthropogenic dry season flows to aid in the recovery of aquifer water levels and, to the extent practical, restore the natural hydroperiod of the swamp.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of 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, agency_cleck@dep.state.fl.us; 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 Notice is filed with the Clerk of the Department.

Executed in Leon County, Florida.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Joseph Haberfeld

Joseph Haberfeld, P.G.
Environmental Administrator
Aquifer Protection Program

CERTIFICATE OF SERVICE

The undersigned designated clerk hereby certifies that this **NOTICE OF PERMIT** and all copies were mailed before the close of business on Monday, February 27, 2017 to the listed persons.

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Mary Genung

Clerk

February 27, 2017

Date

Copies Furnished To:

Joseph Haberfeld, FDEP/TLH	*joe.haberfeld@dep.state.fl.us*
Douglas Thornton, FDEP/TLH	*douglas.thornton@dep.state.fl.us*
Michael Lynch, FDEP/SWD	*michael.lynch@dep.state.fl.us*
Chris Baggett, JEA/Tampa	*cbaggett@jonesedmunds.com*
Lisann Morris, SWFWMD	*lisann.morris@swfwmd.state.fl.us*
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Pete Larkin, ASRus	*plarkin@asrus.net*
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Hope Cates, FDEP/TLH	*hope.cates@dep.state.fl.us*
Mary Genung, FDEP/TLH	*mary.genung@dep.state.fl.us*
Nancy Marsh, USEPA/ATL	*marsh.nancy@epa.gov*

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

BOB MARTINEZ CENTER
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Ryan E. Matthews
Interim Secretary

Underground Injection Control
Class V Aquifer Recharge Injection Well System
Construction and Testing Permit

Permittee:
Mark Hammond, Resource Management Director
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34604
mark.hammond@swfwmd.state.fl.us

Permit/Certification

Permit Number:	344918-001-UC/1R
WACS ID:	102926
Date of Issuance:	February 27, 2017
Date of Expiration:	February 26, 2022
Permit Processor:	Douglas Thornton

Facility
Flatford Swamp Recharge Well
Wauchula Road and Taylor Road
Manatee County, Florida

Location

County:	Manatee County UIC
Latitude:	27° 25' 09" N
Longitude:	82° 08' 18" W

Project: Class V Injection Well System RW-1.

This permit is issued under the provisions of Chapter 403, Florida Statutes, and the rules adopted thereunder. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows.

TO CONSTRUCT AND OPERATIONALLY TEST: One Class V, Group 2 Aquifer Recharge well (RW-1) will be constructed at the Flatford Swamp in Manatee County, Florida, to investigate the feasibility of recharging excess natural surface water into the upper Floridan aquifer during wet weather flows and anthropogenic dry season flows to aid in the recovery of aquifer water levels and, to the extent practical, restore the natural hydroperiod of the swamp. RW-1 will be constructed with a 24-inch casing set to 950 feet below land surface (bls) and a total depth of 1500 feet bls. A monitor well will be completed in the recharge zone approximately 1100 feet northeast of RW-1, and a monitor well will be completed in an overlying aquifer approximately 150 feet north of RW-1. An optional second recharge zone monitor well will be constructed approximately 400 feet northeast of RW-1.

IN ACCORDANCE WITH The Application to Construct DEP Form No. 62-528.900(1) received, June 9, 2016, response to the Department's July 12, 2016, request for additional information, and supporting information submitted to this agency.

LOCATION: Flatford Swamp Recharge Well, Wauchula Road and Taylor Road, Manatee County, Florida, in the county of Manatee.

The injection and monitoring wells at this facility are designated as follows:

Injection Wells:

Well Name	*WACS Effluent Testsite ID*	*Total Well Depth **	*Casing Diameter (inches)*	*Casing or Tubing Type*	*Casing or Interval**
RW-1	14066	1500	42	Steel	60
			34	Steel	350
			24	Steel	950
			Open hole		From 950 to 1500

*Feet Below Land Surface

Monitoring Wells

Well Name	*WACS Monitoring Well Testsite ID*	*Monitoring Zone*	*Casing Diameter (OD)*	*Casing Type*	*Casing Depth**	*Monitoring Depth**
SLMW-1			20	Steel	60	
			14	Steel	350	
			6	Steel	550	
	30111	Upper Zone				From 550 to 600
RZMW-1			20	Steel	60	
			14	Steel	350	
			6	Steel	950	
	30110	Lower Zone				From 950 to 1150
RZMW-2 *Optional*			20	Steel	60	
			14	Steel	350	
			6	Steel	950	
	30169	Lower Zone				From 950 to 1150

*Feet Below Land Surface

SUBJECT TO: Specific Conditions 1-V and General Conditions 1-24.

Specific Conditions

I. GENERAL REQUIREMENTS

1. This permit is for Southwest Florida Water Management District to construct and operationally test One Class V, Group 2 Aquifer Recharge well (RW-1) and monitor wells SLMW-1, RZMW-1, and an optional RZMW-2 to be constructed at the Flatford Swamp to investigate the feasibility of recharging excess natural surface water into the upper Florida aquifer during wet weather flows and anthropogenic dry season flows to aid in the recovery of aquifer water levels and, to the extent practical, restore the natural hydroperiod of the swamp.. This permit does not authorize the construction or operational testing of any other well or wells. *[62-528.440(2)(a)]*

2. No underground injection is allowed that causes or allows movement of fluid into an underground source of drinking water (USDW) if such fluid movement may cause a violation of any Primary Drinking Water Standard outside a permitted Zone of Discharge or may otherwise affect the health of persons. *[62-528.630(3)]*

3. In the event a well must be plugged or abandoned, the permittee shall obtain a permit from the Department as required by Chapter 62-528, Florida Administrative Code. When no longer used for their intended purpose, these wells shall be properly plugged and abandoned. Within 180 days of well abandonment, the permittee shall submit to the Department the proposed plugging method, pursuant to Rule 62-528.460, F.A.C. *[62-528.435(6) and 62-528.460(1)]*

4. If injection is to continue beyond the expiration date of this permit the permittee shall apply for, and obtain an operation permit. If necessary to complete the operational testing period, the permittee shall apply for renewal of the construction permit at least 60 days prior to the expiration date of this permit. *[62-528.307(2)(a)]*

5. Zone of Discharge

   a. A zone of discharge under Rule 62-520.465(2)(b), F.A.C, is established for this injection project. The zone of discharge extends to the permittee's property boundary. *[62-520.465(2)(b)]*

   b. Compliance with the zone of discharge shall be demonstrated at monitor wells RZMW-1 and SLMW-1; primary and secondary drinking water standards and sodium must be met at these compliance wells. If the concentration for any standard in the natural background quality is greater than that which is listed in Rule 62-520.420(1), F.A.C., or in the case of pH is also less than the minimum, the representative natural background quality shall be the prevailing standard. *[62-520.420, 62-520.600]*

   c. Should ground water monitoring during operation indicate drinking water parameters are not met at compliance wells RZMW-1 and SLMW-1, the permittee

shall, upon the Department's request, submit a report addressing the results of the collected ground water monitoring data. The report shall be submitted to the Department no later than 90 days after the request and shall include a discussion of the changes in water quality for parameters exceeding maximum contaminant levels. The report shall also address the adequacy of the zone of discharge and the steps to be taken to come into compliance. *[62-520.700, 62-528.610(1)]*

II. SITE REQUIREMENTS

1. A drilling pad shall be provided to collect spillage of contaminants and to support the heaviest load that will be encountered during drilling. *[62-528.410(9)(b)]*

2. No drilling operations shall begin without an approved disposal site for drilling fluids, cuttings, or waste. It shall be the permittee's responsibility to obtain the necessary approval(s) for disposal prior to the start of construction. A detailed disposal plan shall be submitted to the Department prior to the commencement of drilling activities for the injection and monitoring wells. *[62-528.410(9)(a)]*

3. Specific drilling pad dimensions and design drawings for Department record shall be provided prior to commencing construction and shortly after selection of the drilling contractor. *[62-528.410(9)(b)]*

4. The water table monitoring wells surrounding the well pads shall be sampled and analyzed prior to drilling the test injection or monitoring wells and then weekly thereafter upon the beginning of drilling operations. Sampling shall include specific conductance (umhos/cm), pH (standard units), chloride (mg/L), temperature (C), and water level (feet or PSI). *[62-528.410(9)(b)]*

5. Hurricane Preparedness – Upon the issuance of a "Hurricane Watch" by the National Weather Service, the preparations to be made include but are not necessarily limited to the following:
   a. Secure all on-site salt and stockpiled additive materials to prevent surface and/or groundwater contamination.
   b. Properly secure drilling equipment and rig(s) to prevent damage to well(s) and on-site treatment process equipment.

   [62-528.307(1)(f)]

III. CONSTRUCTION AND TESTING REQUIREMENTS

A. General

1. Any construction, modification, repair, or abandonment of a well shall be performed by a Florida licensed water well contractor, licensed under Chapter 62-532, F.A.C., to engage in the business of construction, modification, repair, or abandonment of a well. *[62-532.200]*

2. Well construction shall follow the requirements of Rule 62-532.500 for Water Well Construction Standards. *[62-532.500]*

3. The measurement points for drilling and logging operations shall be surveyed and referenced to the North American Vertical Datum of 1988 (NAVD 88) prior to the onset of drilling activities for the injection and monitoring wells. *[62-160.240(3)(b)3.]*

4. Blow-out preventers or comparable flow control devices shall be installed on the injection and monitoring wells prior to penetration of the Floridan aquifer system. *[62-528.410(9)(c)]*

5. The Department shall be notified 7 days prior to the mobilization of drilling operations to the site. *[62-528.430(1)]*

6. Waters spilled during construction or testing of the injection well system shall be contained and properly disposed. *[62-528.307(1)(e) and (f), and 62-528.410(9)(b)]*

7. If additives that were not approved in the permit application are used during grouting, for lost circulation, or for any other reason, information on their properties shall be submitted to the Department prior to their use for review and approval. *[62-528.410(5)(c)]*

8. No more than 6% bentonite gel shall be used to cement any casing or tubing unless advance approval is received from the Department due to conditions found during the drilling and logging of the well. *[62-528.410(5)(f) and 62-528.420(5)(c)]*

B. Evaluation and Testing

1. The construction, geophysical logging, and packer testing programs shall be implemented in accordance with this permit and as proposed in the following submittals:

    - June 9, 2016, "Well Construction Application";
    - August 12, 2016, Response to RAI;
    - Other approved submittals received by the Department.

    [62.528.307(1)(b)]

2. Exact depths of casing seats and monitoring intervals shall be determined based on field conditions and the results obtained during the construction and testing program, and are subject to the conditions of this permit. The injection well will be constructed first followed by the monitoring wells. In the case of a multi-well injection system, at least one injection well shall be constructed first. *[62-528.410(4)(c)]*

3. Packer tests shall be conducted in the injection well to identify confinement and the base of the USDW (if applicable) and to collect hydraulic data and water quality data.

a. The program shall include the number of packer tests identified in the permit application, at intervals which are to be field determined.
b. Water samples shall be collected from each packer test, and analyzed for total dissolved solids (TDS), chlorides, specific conductance, ammonia, total Kjeldahl nitrogen, and sulfate.

[62-528.405(1)(a) and (2)(a), and 62-528.420(6)(f)]

4. Department approval is required prior to the following stages of construction and testing:
   a. Final (24-inch) casing seat in each injection well
   b. Final (6-inch) casing seat in the monitoring wells
   c. Monitoring zone selection
   d. Operational testing

   [62-528.410(4)(c) and 62-528.420(4)(c)]

5. The depth of the USDW (if applicable) and the background water quality of the monitoring zones shall be determined during drilling and testing using the following information:
   a. Water samples from packer test data with analysis and interpretation.
   b. Geophysical logging upon reaching the total depth of the appropriate pilot hole interval including the following logs at a minimum: caliper, gamma ray, dual induction, and borehole compensated sonic. Other logs as identified in the permit application documents shall be run.

   [62-528.405(1)(a) and 62-528.405(3)(b)]

6. The data and analysis supporting the selection of the monitoring intervals shall be submitted to the Department after the collection, interpretation, and analysis of all pertinent cores, geophysical logs, packer tests and analysis of fluid samples. The Department shall approve the final selection of the specific upper and lower monitoring intervals prior to monitor well completion. *[62-528.420(4)(c)]*

7. To identify the upper and lower monitoring zones, the following information from the injection and monitoring wells and all available on-site sources of data shall be analyzed, interpreted and submitted for Department review and approval:
   a. The characteristics of the transition zone (especially regarding TDS) in the vicinity of the base of the USDW, if applicable.
   b. Packer test data including water quality (TDS, chlorides, sulfate, specific conductance, ammonia, and total Kjeldahl nitrogen, at a minimum).
   c. The specific capacity or productivity of the proposed upper and lower monitoring zones based on packer testing results or other methods.
   d. The identification of the base of the USDW, if applicable.

   [62-528.420(4)(c)]

8. Test results pertaining to formation testing shall include and/or specifically reference the following informational and quality control items:

a. Information that documents the calibration of tools, including field checks prior to testing.
b. The conditioning/development of the borehole prior to logging, including the techniques used and the time periods in which they were applied, and
c. Pertaining to packer/pump testing - recording the pumping rate regularly throughout the test to account for possible variations in the pumping rate, and providing information regarding the detection of packer leaks, if any, during testing.

[62-528.405(2) and (3)]

9. Representative samples of circulation fluid shall be collected when drilling with water, air, or reverse air during the drilling of the pilot holes of injection and monitoring wells. Representative samples of circulation fluid shall be collected at a minimum of every 90 feet during drilling. The circulation fluid samples shall be analyzed for chloride and specific conductance at a minimum.
[62-528.405(1)(a), 62-528.420(6)(g)]

C. Mechanical Integrity

1. Mechanical integrity of each injection well shall be determined through the performance of a pressure test pursuant to Rule 62-528.300(6)(b)(2), F.A.C. *[62-528.300(6)(b)]*

2. Verification of pressure gauge calibration must be provided to the Department in the certified well completion report. *[62-528.300(6)(f)]*

D. Surface Equipment

1. The integrity of the monitoring zone sampling systems shall be maintained at all times. Sampling lines shall be clearly and unambiguously identified by monitoring zone at the point at which samples are drawn. All reasonable and prudent precautions shall be taken to ensure that samples are properly identified by monitoring well name or zone and that samples obtained are representative of those zones. Sampling lines and equipment shall be kept free of contamination with independent discharges and no interconnections with any other lines. *[62-528.307(1)(f) and 62-528.307(2)(b)]*

2. The surface equipment for each injection well disposing of domestic (municipal) effluent shall maintain compliance with Chapter 62-600.540(4), F.A.C., for water hammer control, screening, access for logging and testing, and reliability and flexibility in the event of damage to the well and effluent piping.
[62-600.540(4), 62-528.307(1)(f), and 62-528.307(2)(b)]

3. Injection wells not disposing of domestic (municipal) effluent shall maintain compliance with Chapter 62-528.450(2)(j), F.A.C., for water hammer control, as well as access for logging and testing, and reliability and flexibility in the event of damage to the well and effluent piping.

[62-528.450(2)(j), 62-528.307(1)(f), and 62-528.307(2)(b)]

4. The surface equipment and piping for the injection and monitoring wells shall be kept free of corrosion at all times. *[62-528.307(1)(f) and 62-528.307(2)(b)]*

5. Spillage onto the injection well pad(s) during construction activities, and any waters spilled during mechanical integrity testing, maintenance, testing, or repairs to the system(s) shall be contained on the pad(s) and directed to a sump which in turn discharges to the pumping station wet well, or via other approved means to the injection well system, or by another method approved by the Department. *[62-528.307(1)(f) and 62-528.307(2)(b)]*

6. After well construction activities are complete, the injection well pads are not, unless specific approval is obtained from the Department, to be used for storage of any material or equipment at any time. *[62-528.307(1)(f) and 62-528.307(2)(b)]*

7. Four surficial aquifer monitoring wells, identified as Pad Monitoring Wells (PMWs), shall be located near the corners of the pads to be constructed for the injection and monitoring wells, and shall be identified by number or pad location, i.e. NW, NE, SW, and SE. If located in a traffic area the well head(s) must be protected by traffic bearing enclosure(s) and cover(s). Each cover must lock and be specifically marked to identify the well and its purpose. The PMWs shall be sampled as follows:
    a. During the construction and associated testing phases, the PMWs shall be sampled weekly for chlorides (mg/L), specific conductance (µmho/cm or µS/cm), field temperature, and water level relative to the North American Vertical Datum of 1988 (NAVD 88). Initial PMW analyses shall be submitted prior to the onset of drilling activities.
    b. The PMWs shall also be sampled for total dissolved solids (mg/L) during the first four weeks of PMW sampling and at all times when specifically requested by the Department.
    c. The results of the PMW analyses shall be submitted to the Department in the weekly progress report. The PMWs shall be retained in service throughout the construction phase of the project. Upon completion of construction, the permittee may submit a request to the Department for cessation of sampling followed by capping, or plugging and abandonment of these wells.

[62-528.410(9)(b)]

IV. QUALITY ASSURANCE/QUALITY CONTROL

1. The permittee shall ensure that the construction and operational testing of this injection well system shall be as described in the application and supporting documents. Any proposed modifications to the permit, construction procedures, testing procedures, completion procedures, operation procedures, or any additional work not described in the application or supporting documents shall be submitted in writing to the Tallahassee office of the Aquifer Protection Program for review and clearance prior to implementation. Changes of negligible impact to the environment and staff time will

be reviewed by the program manager, cleared when appropriate and incorporated into this permit. Changes or modifications other than those described above will require submission of a completed application and appropriate processing fee as per Rule 62-4.050, F.A.C. *[62-528.100, 62-4.050]*

2. Proper operation and maintenance include effective performance and appropriate quality assurance procedures; adequate operator staffing and training; and adequate laboratory and process controls. *[62-528.307(2)(b)]*

3. All water quality samples required by this permit shall be collected in accordance with the appropriate Department Standard Operation Procedures (SOP), pursuant to Chapter 62-160, F.A.C., Field Procedures. A certified laboratory shall conduct the analytical work, as provided by Chapter 62-160, F.A.C., Laboratory Certification. Department approved test methods shall be utilized, unless otherwise stated in this permit. All calibration procedures for field testing and laboratory equipment shall follow manufacturer's instrumentation manuals and satisfy the requirements of the Department SOPs. A listing of the SOPs pertaining to field and laboratory activities is available at the FDEP website at: **http://www.dep.state.fl.us/water/sas/sop/sops.htm**. *[62-4.246, 62-160]*

4. All indicating, recording and totalizing devices associated with the injection well system shall be maintained in good operating condition and calibrated annually at a minimum. The pressure gauges, flow meter, and chart recorders shall be calibrated using standard engineering methods. *[62-528.307(1)(f) and 62-528.307(2)(b)]*

5. All reports submitted to satisfy the requirements of this permit shall be signed by a person authorized under Rule 62-528.340(1), F.A.C., or a duly authorized representative of that person under Rule 62-528.340(2), F.A.C. All reports required by this permit which are submitted to the Department shall contain the following certification as required by Rule 62-528.340(4), F.A.C.:

   I certify under penalty of law 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 gather and evaluate 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. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. *[62-528.340(1), (2), and (4)]*

6. Analyses shall be conducted on unfiltered samples, unless filtered samples have been approved by the Southwest District as being more representative of ground water conditions. *[62-520.310(5)]*

7. A professional engineer registered pursuant to Chapter 471, F.S., shall be retained throughout the construction period to be responsible for the construction operation and

to certify the application, specifications, completion report, and other related documents. The Department shall be notified immediately of any change of engineer. *[62-528.440(5)(b)]*

8. Continuous on-site supervision by qualified personnel (engineer and/or geologist, as applicable) is required during all testing and geophysical logging operations. *[62-528.440(5)(b)]*

V. REPORTING REQUIREMENTS

1. The drilling and construction schedule, site layout of drilling pad, and pad monitoring well locations shall be submitted to the Department during site preparation but prior to drilling operation commencement for the injection well system. *[62-528.430(2)(a)]*

2. Weekly progress reports shall be submitted to the Department's Tallahassee and Southwest District offices throughout the construction period for each well. These reports, which may be submitted by electronic mail, shall be submitted within 48 hours of the end of the period of record and shall include at a minimum the following information:
    a. A cover letter summary of the daily engineer report, driller's log, and a projection for activities in the next reporting period.
    b. Daily engineer's reports and driller's/work logs with detailed descriptions of all drilling progress, cementing, testing, logging, and casing installation activities.
    c. Description of daily footage drilled by diameter of bit, size of hole opener, or reamer being used.
    d. Collection of drilling cuttings every 10 feet and at every formation change.
    e. Description of work during installation and cementing of casing, including amounts of casing and cement used. Details of cementing operations shall include the number of cementing stages, and the following information for each stage of cementing: the volume and type of cement pumped, the theoretical fill depth, and the actual tag depth. From both the physical tag and the geophysical logs, a percent fill shall be calculated. An explanation of any deviation between actual versus theoretical fill shall be provided.
    f. Details of the additions of salt or other materials to suppress well flow, including the date, depth, and amount of material used.
    g. Description of testing accomplished including (but not limited to) pumping and packer tests.
    h. Lithologic logs and core descriptions with cuttings description, formation and depth encountered.
    i. Geophysical logs, video logs, and deviation survey results.
    j. Water quality analyses, including but not limited to the weekly water quality analysis and water levels for the PMWs.
    k. Well development records.
    l. Description of any construction problems that developed during the reporting period and current status.

m. Interpretations included with all test results and logs submitted.
n. Documentation of disposal of drilling fluids, cuttings, formation water, or waste as per specific condition II.2.

[62-528.410(9)(a) and 62-528.430(1)]

3. The final selection of specific injection and monitoring intervals must be approved by the Department. In order to obtain an approval, the permittee shall submit a written request to the Department's Tallahassee office. All casing seat requests for the injection and monitoring wells shall be accompanied by technical justification. To the extent possible, each casing seat request should address the following items:
   a. Lithologic and geophysical logs with interpretations, as the interpretations relate to the casing seat.
   b. Water quality data (including but not necessarily limited to TDS concentrations).
   c. Identification of confining units, including hydrogeologic data and interpretations.
   d. Identification of monitoring zones.
   e. Casing depth evaluation (mechanically secure formation, potential for grout seal).
   f. Lithologic drilling rate and weight on bit data, with interpretations (related to the casing seat).
   g. Identification of the base of the USDW, if applicable, using water quality and geophysical log interpretations.
   h. A certified (P.E. or P.G.) evaluation of all logging and test results submitted with test data.
   i. Transmissivity or specific capacity of proposed monitoring zone, or alternative evaluation of the zone's productivity.
   j. Packer test drawdown curves and interpretation.

   [62-528.410(4)(c), 62-528.420(4)(c)]

4. Upon completion of analysis of cores and sample cuttings recovered during the construction of wells covered by this permit (when no longer needed by the well owner), the permittee shall contact the Geological Sample Acquisition and Management Section of the Florida Geological Survey (FGS) to arrange for the transfer of the cores and cuttings. The FGS shall also be contacted to arrange for the collection of 100 ml water samples, with nitric acid preservative for metal analysis, at the end of each packer test (where sufficient water is available) and aquifer background sample collection events. *[62-528.450(5)]*

5. All cores, cuttings, and water samples for FGS shall be shipped to the Florida Geological Survey, Geological Sample Acquisition and Management Section, 3915 Commonwealth Boulevard, Tallahassee, Florida 32399. All cores and samples shall clearly identify the site name, well name/number, depths of samples/cores, and the latitude/longitude location of the well(s) using the form in this permit. *[62-528.450(5)]*

6. A final report of the construction and testing of the injection and monitoring wells shall be submitted no later than 120 days after commencement of operational testing, pursuant to Rule 62-528.430(1)(e), F.A.C. In addition, a copy of the cover letter for the report shall be sent to the U. S. Environmental Protection Agency, Region 4, UIC program, 61 Forsyth St. SW, Atlanta, GA 30303-8909, or R4_gwuic@epa.gov. This report shall include as a minimum, definitions of the injection interval, all relevant confining units, the depth of the base of the USDW, and all monitoring zones, including all relevant data and interpretations. *[62-528.450(5)]*

VI. OPERATIONAL TESTING AND MONITORING REQUIREMENTS

A. Operational Testing

1. The permittee shall conduct operational testing of the injection well system to demonstrate that the well can absorb the design and peak daily flows that are expected, prior to granting approval for operation. *[62-528.450(3)(a)]*

2. The operational testing of the Class I injection well system under this permit shall not commence without written authorization from the Department. *[62-528.450(3)(b)]*

3. Prior to operational testing approval, the following items must be submitted with the request for operational testing approval for Department review and approval:

   a. Lithologic and geophysical logs with interpretations.
   b. A copy of the borehole television survey(s) or borehole televiewer log(s) of the injection well with interpretation.
   c. Certification (P.E. or P.G.) of mechanical integrity and interpreted test data.
   d. Results of the short-term variable-rate pumping test or recirculation test with interpretation of the data.
   e. A description of the actual injection procedure including the anticipated maximum pressure or water level and flow rate at which the well will be operated under normal and high discharge conditions.
   f. Certification of completion of well construction from water well contractor and certification by the Engineer of Record that permit conditions are met.
   g. Calibration certificates for pressure gauges and flow meters, as applicable.
   h. Demonstration of confinement and definition of the injection and confining sequences shall utilize data collected during the drilling, logging, and testing of the injection and monitoring wells. This submittal shall be prepared, signed, and sealed by a Florida Registered Professional Geologist or appropriately qualified Florida Registered Professional Engineer.
   i. Background water quality data from the monitoring and injection zones, analyzed for primary and secondary drinking water standards (62-550, F.A.C.) excluding pesticides, PCB's, asbestos, dioxin, butachlor, acrylamide, and epichlorohydrin.
   j. A wastestream analysis for the same parameters as in condition VI.A.4.m., above. Unless already submitted, this analysis shall be submitted within 60 days after the beginning of operational testing.

k. Other data obtained during well construction needed by the Department to evaluate whether the injection well system will operate in compliance with Department rules.
[62-528.450(3)(a)3.]

5. Prior to operational testing approval and pursuant to Rule 62-528.450(2)(j) F.A.C., submit engineering drawings of the surface and subsurface construction details of the system, including design features for surge control and water hammer protection. These drawings shall be a minimum size of 18 x 24 inches and a maximum size of 36 x 42 inches but photographically reproduced drawings with a reduced size as small as 11 inches by 17 inches are acceptable if the original drawings are drawn to a scale that will permit all necessary information to be plainly seen on the reduced-size reproductions. The drawings shall be signed and sealed by a professional engineer registered in the State of Florida as required by Rule 62-528.440(5)(b), F.A.C.

   The engineering drawings, each signed and sealed by the professional(s) who prepared or approved it, should include, but not limited to, the following:

   - Facility location plan;
   - Process flow diagram; Flow control arrangement for the injectate flow to the injection well(s);
   - Injection well(s) construction and well(s) head details;
   - Monitoring well(s) construction and well(s) head details;
   - Inlet piping from the piping header to the well(s);
   - Location of sampling points for the effluent on the piping to the well(s);
   - Flow equalization system, if any; wet well(s) or effluent storage tanks;
   - Pump station and surface/subsurface suction/discharge piping to the injection well(s), filters; valves etc.; Flow control arrangement, if any;
   - Conveyance of surface water from intake point to injection well;
   - Surface/subsurface piping from the piping header to the injection well(s), valves etc.
   - Design features for surge control and water hammer protection;
   - Instruments and other devices;
   - Monitor well(s) purge piping, sample points and separation of sampling lines from other lines to prevent cross connection and intended disposal method of purge water.

   The drawings shall be legible and shall give sufficient detail to clearly appraise the Department of the work to be undertaken.

6. Prior to operational testing approval and pursuant to Rule 62-528.425(1)(b), F.A.C., submit document(s) showing the installation of:
   a. Continuous indicating, recording, and totalizing devices to monitor flow rate and volume.

b. Continuous indicating and recording devices to monitor the injection pressure or water level, and water level or pressure of the monitor wells.

7. Pressure gauges or water level indicators, and flow meters shall be installed on the injection wells prior to initiating injection activities at the site. *[62-528.450(3)(a)]*

8. Prior to the authorization of operational testing by the Department, the permittee shall contact the Southwest District office to arrange a site inspection. The inspection will determine if the conditions of the permit have been met and to verify that the injection well system is operational. During the inspection, emergency procedures and reporting requirements shall be reviewed. *[62-528.450(3)(c)]*

9. The Engineer of Record or designated qualified representative must be present for the start-up operations and the Department must be notified in writing of the date operational testing commenced for the subject wells. *[62-528.440(5)(b)]*

Monitoring

1. The permittee shall submit monthly to the Department the results of all recharge well and monitoring well data required by this permit no later than the last day of the month immediately following the month of record. The report shall include:
   a. A cover page summarizing the current status of all monthly activities, including the certification and signature required in condition IV.5.;
   b. Operational and water quality data in a tabular format. The following identifying information must be included on each data sheet:
      i. Facility Name
      ii. Well Name
      iii. UIC Permit Number
      iv. WACS Facility ID
      v. WACS Testsite ID (on appropriate data sheet) as provided on the Recharge Well and Monitoring Well tables on page 2 of this permit.
   c. Laboratory pages and supporting documentation.

   [62-528.307(3)(d)]

2. The report may be sent via electronic mail in Adobe™ (.pdf) format to the following Program e-mail addresses:

Southwest District	SWD_UIC@dep.state.fl.us
Tallahassee - UIC Program	TAL_UIC@dep.state.fl.us

   If a paper copy of the report is submitted, it should be sent to Department staff at the following addresses:

Southwest District	13051 N. Telecom Parkway Tampa, Florida 33637
Tallahassee - UIC Program	2600 Blair Stone Road, MS 3530 Tallahassee, Florida, 32399-2400

   [62-528.307(3)(d)]

3. The recharge system shall be monitored in accordance with Rules 62-528.425(l)(g) and 62-528.430(2), F.A.C. The following recharge well performance data and monitor zone data shall be recorded and reported in the Monthly Operating Report (MOR) as indicated below. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
[62-528.307(2)(d), 528.430(2), and 62-528.450(3)(b)5.]

PARAMETER	UNIT	RECORDING FREQUENCY OR SAMPLING METHOD	FREQUENCY OF ANALYSES		
			RW-1	SLMW-1 *Upper Zone*	RZMW-1, 2 *Lower Zone*
Injection Pressure or water level, max.	Psi or ft. NAVD	continuous	D/M [a]		
Injection Pressure or water level, min.	Psi or ft. NAVD	continuous	D/M [a]		
Injection Pressure or water level, avg.	Psi or ft. NAVD	continuous	D/M [a]		
Total Volume (Injected)	mg	daily/monthly	D/M [a]		
Flow Rate, max.	gpm	continuous	D/M [a]		
Flow Rate, min.	gpm	continuous	D/M [a]		
Flow Rate, avg.	gpm	continuous	D/M [a]		
Water Level or Pressure max.	ft NAVD or psi	continuous		D/M [a]	D/M [a]
Water Level or Pressure min.	ft NAVD or psi	continuous		D/M [a]	D/M [a]
Water Level or Pressure avg.	ft NAVD or psi	continuous		D/M [a]	D/M [a]
Biochemical Oxygen Demand (BOD)	mg/L	grab	W	W	W
Dissolved Oxygen [b]	mg/L	grab	W	W	W
Fecal Coliform	#/100 ml	grab	W	W	W
pH [b]	std. units	grab		W	W
Oxidation-Reduction Potential [b]	mV	grab	W	W	W
Specific Conductance [b]	µmhos/cm	grab	W	M	M
Total Coliform	#/100 ml	grab	W	W	W
E. coli	cfu/100 ml	grab	M	M	M
Enterococci	#/100 ml	grab	M	M	M
Gross Alpha	pCi/L	grab	M	M	M
Uranium	pCi/L	grab	M	M	M
Uranium	mg/L	grab	M	M	M
Temperature [b]	°C	grab		W	W
Arsenic	µg/L	grab	W	W	W
Chloride	mg/L	grab	M	M	M
Color	color units	grab	W	W	W
Nitrate (as N)	mg/L	grab	M	M	M
Odor	TON	grab	W	W	W
Sulfate	mg/L	grab	W	W	W
Total Alkalinity	mg/L	grab	W	W	W
Total Dissolved Solids	mg/L	grab	W	W	W
Total Suspended Solids	mg/L	grab	W	W	W
Total Iron	mg/L	grab	W	W	W
Cryptosporidium	oocysts/100 ml	grab	A	A	A
Giardia lamblia	cysts/100 ml	grab	A	A	A
Source Water, Primary and Secondary Standards		Composite	A	A	A

See injection well and monitoring well tables at beginning of permit for more information.
W – Weekly; M – Monthly; A – Annually
[a] – Operational data reporting for flows, pressures and water levels: daily max, min and average from continuous reporting; monthly max, min and average (calculated from daily averages).
[b] – Field samples
Sampling schedule may be adjusted after sufficient data has been collected to support a written request to do so, and with written Department approval.

4. Pertaining to the evacuation (purging) of the monitoring well(s), which is required prior to the collection of samples for the Monthly Operating Reports (MORs), the facility may elect to follow either one of the following two purging protocols:

   a. The protocol stated below:
   A minimum of three well volumes of fluid shall be evacuated from the monitoring systems prior to sampling for the chemical parameters listed above. Sufficient purging shall have occurred when either of the following has occurred:

      1) pH, specific conductance and temperature when sampled, upon purging the third or subsequent well volume, each vary less than 5% from that sampled upon purging the previous well volume; or
      2) Upon purging the fifth well volume.

   b. The following protocol taken from DEP-SOP-001/01(Field Procedures):
      1) Purge until the water level has stabilized (well recovery rate equals the purge rate), then purge a minimum of one well volume, and then collect the first set of stabilization parameters, namely pH, specific conductance and temperature;
      2) Thereafter, collect stabilization parameters ≥ every ¼ well volume;
      3) Purging shall be complete when either of the following have occurred:
         a) 3 consecutive readings of the parameters listed below are within the following ranges[1]:
            - pH ± 0.2 Standard Units
            - Specific Conductance ± 5.0% of reading
            - Temperature ± 0.2°C
         b) Upon purging the fifth well volume.

[62-160.210(1) and 62-528.430(2)]

VII. ABNORMAL EVENTS

1. In the event the permittee is temporarily unable to comply with any of the conditions of a permit due to breakdown of equipment, power outages or destruction by hazard of fire, wind, or by other cause, the permittee of the facility shall notify the Southwest District office. *[62-528.415(4)(a)]*

2. Notification shall be made in person, by telephone, or by electronic mail (e-mail) within 24 hours of breakdown or malfunction to the Southwest District office.
[62-528.307(1)(x)]

3. A written report of any noncompliance referenced in Specific Condition VII 1. above shall be submitted to the Southwest District office and the Tallahassee office within five days after its occurrence. The report shall describe the nature and cause of the breakdown or malfunction, the steps being taken or planned to be taken to correct the problem and prevent its reoccurrence, emergency procedures in use pending correction of the problem,

[1] Provided dissolved oxygen in the groundwater of the zone being monitored is ≤ 20% of saturation for the measured temperature and turbidity is ≤ 20 NTUs. This assumption holds true for groundwater in most zones of the Floridan aquifer.

and the time when the facility will again be operating in accordance with permit conditions. *[62-528.415(4)(b)]*

General Conditions

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit are "permit conditions" and are binding and enforceable pursuant to section 403.141, F.S. *[62-528.307(1)(a)]*

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action. *[62-528.307(1)(b)]*

3. As provided in subsection 403.087(7), F.S., the issuance of this permit does not convey any vested rights or exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in this permit. *[62-528.307(1)(c)]*

4. This permit conveys no title to land, water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title. *[62-528.307(1)(d)]*

5. This permit does not relieve the permittee from liability for harm to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties there from; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department. *[62-528.307(1)(e)]*

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, or are required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules. *[62-528.307(1)(f)]*

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:
    a. Have access to and copy any records that must be kept under conditions of this permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.
d. Reasonable time will depend on the nature of the concern being investigated.

[62-528.307(1)(g)]

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
   a. A description of and cause of noncompliance; and
   b. The period of noncompliance, including dates and times; or, if not corrected the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent the recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

   [62-528.307(1)(h)]

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is proscribed by sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules. *[62-528.307(1)(i)]*

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules. *[62-528.307(1)(j)]*

11. This permit is transferable only upon Department approval in accordance with rules 62-4.120 and 62-528.350, F.A.C. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department. *[62-528.307(1)(k)]*

12. This permit or a copy thereof shall be kept at the work site of the permitted activity. *[62-528.307(1)(l)]*

13. The permittee shall comply with the following:
    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records shall be extended automatically unless the Department determines that the records are no longer required.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
c. Records of monitoring information shall include:
   i. the date, exact place, and time of sampling or measurements;
   ii. the person responsible for performing the sampling or measurements;
   iii. the dates analyses were performed;
   iv. the person responsible for performing the analyses;
   v. the analytical techniques or methods used;
   vi. the results of such analyses.
d. The permittee shall furnish to the Department, within the time requested in writing, any information which the Department requests to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit.
e. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

[62-528.307(1)(m)]

14. All applications, reports, or information required by the Department shall be certified as being true, accurate, and complete. *[62-528.307(1)(n)]*

15. Reports of compliance or noncompliance with, or any progress reports on, requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each scheduled date. *[62-528.307(1)(o)]*

16. Any permit noncompliance constitutes a violation of the Safe Drinking Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. *[62-528.307(1)(p)]*

17. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. *[62-528.307(1)(q)]*

18. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit. *[62-528.307(1)(r)]*

19. This permit may be modified, revoked and reissued, or terminated for cause, as provided in 40 C.F.R. sections 144.39(a), 144.40(a), and 144.41 (1998). The filing of a request by the permittee for a permit modification, revocation or reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition. *[62-528.307(1)(s)]*

20. The permittee shall retain all records of all monitoring information concerning the nature and composition of injected fluid until five years after completion of any plugging and abandonment procedures specified under rule 62-528.435, F.A.C. The permittee shall deliver the records to the Department office that issued the permit at the conclusion of the retention period unless the permittee elects to continue retention of the records. *[62-528.307(1)(t)]*

21. All reports and other submittals required to comply with this permit shall be signed by a person authorized under rules 62-528.340(1) or (2), F.A.C. All reports shall contain the certification required in rule 62-528.340(4), F.A.C. *[62-528.307(1)(u)]*

22. The permittee shall notify the Department as soon as possible of any planned physical alterations or additions to the permitted facility. In addition, prior approval is required for activities described in rule 62-528.410(1)(h). *[62-528.307(1)(v)]*

23. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or injection activity which may result in noncompliance with permit requirements. *[62-528.307(1)(w)]*

24. The permittee shall report any noncompliance which may endanger health or the environment including:
    a. Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water; or
    b. Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

    Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. *[62-528.307(1)(x)]*

Issued this 27st day of February 2017

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

Joseph Haberfeld

Joseph Haberfeld
Environmental Administrator
Aquifer Protection Program
Division of Water Resource Management

Attachment 2

Governing Board Agenda

Southwest Florida Water Management District

2379 Broad Street, Brooksville, Florida 34604-6899
(352) 796-7211 or 1-800-423-1476 (FL only)
WaterMatters.org

An Equal Opportunity Employer

The Southwest Florida Water Management District (District) does not discriminate on the basis of disability. This nondiscrimination policy involves every aspect of the District's functions, including access to and participation in the District's programs and activities. Anyone requiring reasonable accommodation as provided for in the Americans with Disabilities Act should contact the District's Human Resources Office Chief, 2379 Broad St., Brooksville, FL 34604-6899; telephone (352) 796-7211 or 1-800-423-1476 (FL only), ext. 4703; or email ADACoordinator@WaterMatters.org. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

MEETING NOTICE

AGENDA

GOVERNING BOARD PUBLIC HEARING

SEPTEMBER 25, 2018 • 5:01 P.M.

TAMPA OFFICE

7601 US HIGHWAY 301 NORTH • TAMPA, FLORIDA

All meetings are open to the public.

Pursuant to Section 373.079(7), Florida Statutes, all or part of this meeting may be conducted by means of communications media technology in order to permit maximum participation of Governing Board members.

FINAL FISCAL YEAR 2019 ANNUAL SERVICE BUDGET

1. Call to Order
2. Opening Comments
3. Budget Overview
4. Public Announcement of the Name of the Taxing Authority, Rolled-Back Rate, Percentage Increase Over Rolled-Back Rate, and Millage Rate to be Levied for Fiscal Year 2019
5. Reconciliation of Tentative to Final Fiscal Year 2019 Budget
6. Public Comments
   a. Letters/Resolutions Received
   b. Persons Wishing to Address the Board
7. Adopt Final Fiscal Year 2019 Millage Rate
8. Adopt Final Fiscal Year 2019 Budget
9. Introduce All Materials as Composite Exhibit
10. Adjournment

If you have any questions concerning this meeting, please call 1-800-423-1476 or 352-796-7211, ext. 4606.

If you wish to address the Board concerning any item listed on the agenda or any item that does not appear on the agenda, please fill out a speaker's card at the reception desk in the lobby. Your card will be provided to the Chair who will call on you at the appropriate time during the meeting. To ensure that all participants have an opportunity to speak, comments will be limited to three minutes per speaker. In appropriate circumstances, the Chair may grant exceptions to the three-minute limit.

Attachment 3

Proposed Design Plans

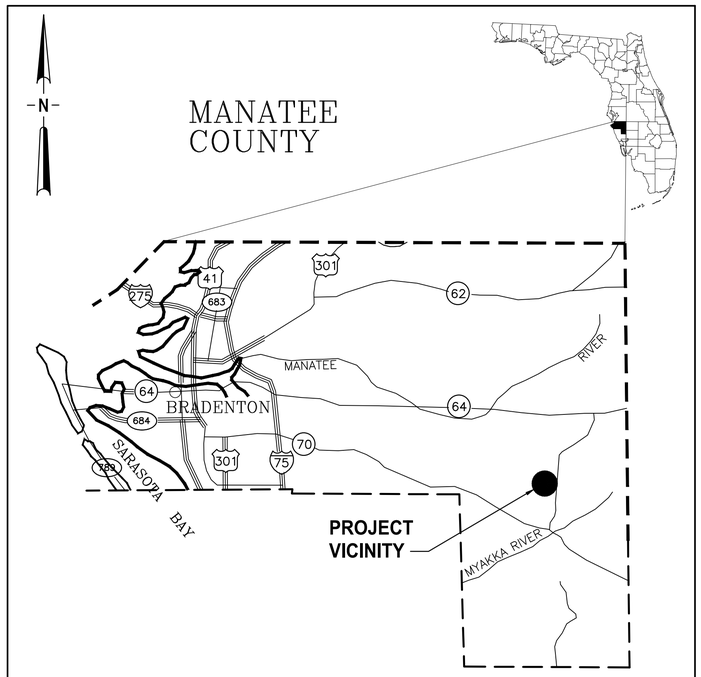
22x34

AQUIFER RECHARGE

AT FLATFORD SWAMP

PREPARED FOR:

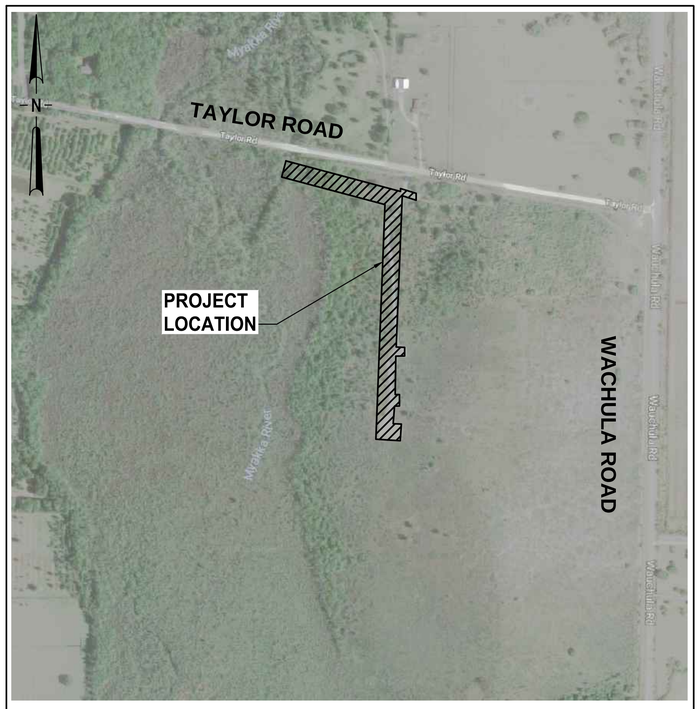
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT



SITE VICINITY MAP

PREPARED BY:

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703



SITE LOCATION MAP

PROJECT NO: 19850-041-01

MAY 2019

60% SUBMITTAL

GENERAL NOTES

1. TOPOGRAPHIC SURVEY DATED JUNE 6, 2018 PROVED BY DEGROVE SURVEYORS, INC. (904) 722-0400.
2. ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (1988) AND ARE BASED ON NGS BENCHMARKS "D 562" (PID# DE8679) ELEVATION=56.14' NAVD88.
3. UNDERGROUND UTILITIES, FOUNDATIONS, OR OTHER IMPROVEMENTS, IF ANY WERE NOT LOCATED EXCEPT AS SHOWN.
4. JURISDICTIONAL WETLANDS WERE LOCATED BY JONES EDMUNDS AND ASSOCIATES AND RECORDED BY HANDHELD GPS.
5. FLOODPLAIN ELEVATIONS NOTED ON THE DRAWINGS ARE REFERENCED FROM THE FEMA FIRM PANEL 12081C039E, EFFECTIVE DATE 3/17/2014 AND FLOOD INSURANCE STUDY NUMBER 12081CV00A, MYAKKA RIVER FLOODWAY SECTION AH, EFFECTIVE DATE 3/17/2014,
6. THE COORDINATES SHOWN HEREON ARE REFERENCE TO THE STATE PLANE COORDINATE SYSTEM (WEST ZONE), NORTH AMERICAN DATUM OF 1983 (NAD83(2011)), U.S.SURVEY FEET. THE PLANE COORDINATES WERE DERIVED USING REAL TIME KINEMATIC (RTK) GPS WITH DIRECT OBSERVATIONS TO THE FLORIDA PERMANENT REFERENCE NETWORK.
7. CONTRACTOR SHALL VERIFY THE ACCURACY OF THE PROVIDED SURVEY INFORMATION TO HIS/HER SATISFACTION. CONTRACTOR IS SOLELY RESPONSIBLE FOR PROPER VERTICAL AND HORIZONTAL ALIGNMENT OF CONSTRUCTED FACILITIES, PIPELINES, AND FINISHED GRADE. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR RESTORING PROPERTY CORNERS AND LAND MARKERS WHICH MAY BE DISTURBED BY CONSTRUCTION. ALL STAKING SHALL BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA.
8. CONTRACTOR SHALL RETAIN ON THE WORK SITE COPIES OF ANY PERMITS REQUIRED FOR CONSTRUCTION.
9. ALTHOUGH MEASUREMENTS MAY BE SHOWN ON THE DRAWINGS, CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ALL MATERIAL QUANTITIES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
10. CONTRACTOR SHALL PROVIDE OWNER A "RECORD DRAWING" SURVEY, SIGNED AND SEALED BY A REGISTERED SURVEYOR, FOR DOCUMENTATION OF MODIFICATIONS MADE DURING CONSTRUCTION.
11. CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IMMEDIATELY WHEN CONFLICTS BETWEEN DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED DURING WORK.
12. ALL REFERENCED FDOT STANDARD INDEX DRAWINGS CAN BE FOUND AT WWW.FDOT.GOV/DESIGN/STANDARDPLANS
13. FDOT INDICES SHALL REFER TO THE "FY 2019-20 FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD PLANS FOR ROAD CONSTRUCTION."
14. ALL WORK AND THE QUALITY OF MATERIALS SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE 2019 "FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".
15. IT IS THE RESPONSIBILITY OF CONTRACTOR TO BECOME FAMILIAR WITH THE OSHA EXCAVATION SAFETY STANDARDS AND TO ABIDE BY THEM AS COVERED UNDER THE FLORIDA TRENCH SAFETY ACT (LAWS OF FLORIDA 90-96) EFFECTIVE OCTOBER 1, 1990.
16. CONTRACTOR SHALL FIELD LOCATE AND VERIFY EXISTING UTILITIES, (SIZE, MATERIAL OF CONSTRUCTION, ELEVATION, ETC.) ESPECIALLY AT CONNECTING POINTS, PRIOR TO SHOP DRAWING PREPARATION AND SUBMITTAL. CONTRACTOR SHALL INCLUDE CONSIDERATION OF SUCH UTILITIES IN PLANNING AND PRIOR TO EXECUTION OF WORK. CONTRACTOR SHALL INCLUDE FIELD MEASUREMENTS ON SHOP DRAWINGS.
17. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE DRAWINGS BUT ARE NOT PURPORTED TO BE ABSOLUTELY CORRECT. THERE MAY BE OTHER IMPROVEMENTS, UTILITIES, ETC. WHICH ARE WITHIN THE PROJECT AREA. CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE DRAWINGS) AFFECTING THE PROPOSED WORK.
18. CONTRACTOR SHALL NOTIFY UTILITY OWNERS THROUGH "SUNSHINE STATE ONE CALL OF FLORIDA, INC." (1-800-432-4770) AT LEAST TWO BUSINESS DAYS IN ADVANCE OF BEGINNING CONSTRUCTION ON THE JOB SITE.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES, STRUCTURES, AND PROPERTY ON AND ADJACENT TO THE SITE CAUSED BY CONSTRUCTION ACTIVITIES.
20. CONTRACTOR SHALL COORDINATE CONSTRUCTION SCHEDULE WITH INDIVIDUAL COMPANIES CONCERNING RELOCATION OF UTILITIES AND ANY ADDITIONAL RELOCATIONS RESULTING FROM CONFLICTS NOT DELINEATED ON THE DRAWINGS.
21. CONTRACTOR IS RESPONSIBLE FOR BRACING, SHORING, OR PROVIDING OTHER MEANS NECESSARY TO PROTECT AND SUPPORT EXISTING UTILITIES EXPOSED OR UNEXPOSED DURING CONSTRUCTION. AS REQUIRED TO COMPLETE THE WORK, THE CONTRACTOR SHALL DEWATER, HAND EXCAVATE, SHORE-UP TRENCHES, STABILIZE UTILITIES INCLUDING UTILITY POLES, AND PROVIDE SHEET PILING AT NO ADDITIONAL COST TO THE OWNER.
22. CONTRACTOR SHALL HAND EXCAVATE WHEN CONSTRUCTION IS WITHIN 2 FEET OF EXISTING UTILITIES.
23. THE CONTRACTOR IS HEREBY MADE RESPONSIBLE FOR THE SAFE MAINTENANCE OF PEDESTRIAN AND VEHICULAR TRAFFIC AT ALL TIMES DURING THE DURATION OF THE PROJECT.
24. CONTRACTOR SHALL MAINTAIN TRAFFIC IN ACCORDANCE WITH FDOT STANDARD PLANS 102 SERIES AND THE TECHNICAL SPECIFICATIONS. ONE TRAFFIC LANE MUST BE MAINTAINED AT ALL TIMES WITH USE OF FLAGGER IF NECESSARY. LANE CLOSURE HOURS SHALL BE BETWEEN 9 AM to 4 PM ON WEEKDAYS. ALL TRAFFIC LANES MUST BE OPEN FOR TRAFFIC AT THE CLOSE OF WORKDAYS. ALL SIGNING, BARRICADES, LIGHTING, AND FLAGGERS SHALL BE INCLUDED IN THE BID PRICE. ALL WORK IS TO BE CARRIED OUT MONDAY THROUGH FRIDAY 9 A.M. TO 4 P.M., WITH NO WEEKEND OR HOLIDAY WORK WITHOUT APPROVAL BY THE OWNER.
25. EXISTING FEATURES ARE SHOWN LIGHT-LINED AND/OR SCREENED AND PROPOSED FEATURES ARE SHOWN HEAVY-LINED.
26. CONTRACTOR WILL REQUEST INSPECTIONS BY MANATEE COUNTY STAFF BY CONTACTING (904)748-4501.
27. CONTRACTOR TO CONTACT MANATEE COUNTY FOR INSPECTION PRIOR TO REMOVING TREES. OVER 8 INCHES IN DIAMETER AT BREAST HEIGHT CONTRACTOR TO COORDINATE NUMBER AND TYPE OF TREES FOR MITIGATION.
28. CONTRACTOR SHALL REMOVE LITTER PER THE 2019 FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE SECTION 107-1. LITTER SHALL BE REMOVED AS NEEDED BUT NOT LESS THAN ONCE PER MONTH OR AS DIRECTED BY THE OWNER OR ENGINEER, IF REQUIRED. THE CONTRACTOR SHALL PROVIDE AN APPROPRIATE TRASH CONTAINER SUCH AS A DUMPSTER OR A ROLL-OFF. THE CONTRACTOR OR SUBCONTRACTORS SHALL NOT LITTER THE PROJECT AREA WITH PERSONAL TRASH. SUCH TRASH SHALL BE PICKED UP AND PROPERLY DISPOSED OF DAILY. NO TRASH SHALL BE PERMANENTLY DISPOSED OF ONSITE.
29. THE CONTRACTOR SHALL NOT USE THE RIGHT-OF-WAY TO STAGE EQUIPMENT OR STORE MATERIAL. THE CONTRACTOR MUST PROVIDE THEIR OWN STAGING AREA.

DRAWING INDEX

60% SUBMITTAL

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

DRAWING INDEX AND GENERAL NOTES

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: G2

STANDARD ABBREVIATIONS

&	AND
@	AT
A	AUTOMATIC
AA STD	ALUMINUM ASSOCIATION STANDARD
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AC	ASBESTOS CEMENT
AC	ALTERNATING CURRENT
AC	AIR CONDITIONER
ACI	AMERICAN CONCRETE INSTITUTE
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIP	ABANDONED IN PLACE
AISI	AMERICAN IRON STEEL INSTITUTE
AIT	ANALYTICAL INDICATING TRANSMITTER
ALT	ALTERNATIVE
ALUM	ALUMINUM
AM	AUTO-MANUAL
AMPS	AMPERES
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AP	ANALYZER PANEL
APP	APPROVE, APPROVED
APPROX	APPROXIMATE
AR	AIR RELEASE
ARV	AIR RELEASE VALVE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASD	ADJUSTABLE SPEED DRIVE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AVE	AVENUE
AWG	AMERICAN WIRE GUAGE
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION
B/	BOTTOM OF
B/L	BASELINE OF CONSTRUCTION
BC	BARE COPPER
BF	BLIND FLANGE
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BKR	BREAKER
BLD	BLIND
BLDG	BUILDING
BLVD	BOULEVARD
BM	BENCH MARK
BO	BLOW-OFF
BTM	BOTTOM
BTM/	BOTTOM OF
BV	BALL VALVE
BYP	BYPASS
C	CONDUIT, CONDUCTOR, CLOSE
C/L, CL	CENTERLINE
CAM	COMPUTER-AUTO-MANUAL
CAT	CATALOGUE
CB	CIRCUIT BREAKER
CC	CENTER TO CENTER
CCS	CENTRAL CONTROL SYSTEM
CF	COLUMN FOUNDATION
CFWE	CABLE FURNISHED WITH EQUIPMENT
CI	CAST IRON
CIP	CAST IN PLACE, CAST IRON PIPE
CISP	CAST IRON SLIP PIECE
CJ	CONSTRUCTION/CONTRACTION JOINT
CLF	CHAIN LINK FENCE
CLR	CLEAR
CM	COMPUTER-MANUAL
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
CO	COMPANY
COL	COLUMN
COM	COMMUNICATION
CON	CONCENTRIC
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CORP	CORPORATION
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CRE	CORROSION RESISTANT
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
CS	CARBON STEEL
CT	CURRENT TRANSFORMER, CABLE TRAY CONTACTOR
CTRD	CENTERED
CV	CHECK VALVE
D	DRAIN
DB	DUCT BANK
DBI	DITCH BOTTOM INLET
DC	DIRECT CURRENT
DES	DESIGNATION
DET	DETAIL
DI	DUCTILE IRON
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DIPS	DUCTILE IRON PIPE SIZE
DIV	DIVISION
DN	DOWN, DAMPER
DR	DIMENSION RATIO
DR	DRAIN
DWG	DRAWING
DXS	DOUBLE EXTRA STRONG
E	EAST
E	ELECTRIC ACTUATOR
EA	EACH
ECC	ECCENTRIC
EES	EMERGENCY EYEWASH AND SHOWER
EF	EACH FACE, EXHAUST FAN
EG	SUCH AS
EJ	EXPANSION JOINT
EL, ELEV	ELEVATION
ELB	ELBOW
ELEC	ELECTRICAL
EOP	EDGE OF PAVEMENT
EQ	EQUAL
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
EST	ELEVATED STORAGE TANK
ETC	ETCETERA
EW	EACH WAY
EXIST	EXISTING
FBC	FLORIDA BUILDING CODE
F, FU	FUSE
F/F	FINISHED FLOOR
FAB	FABRICATED
FAC	FLORIDA ADMINISTRATIVE CODE
FCA	FLANGED COUPLING ADAPTER
FCV	FLOW CONTROL VALVE
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FDN	FOUNDATION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FDR	FEEDER
FE	FLOW ELEMENT
FF	FINISHED FLOOR
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE, FIBERGLASS
FH	FIRE HYDRANT
FIG	FIGURE
FIN	FINISHED
FIT	FLOW INDICATING TRANSMITTER
FJ	FLANGED JOINT
FL	FLOOR
FLEX	FLEXIBLE
FLG	FLANGE(D)
FND	FOUNDATION
FNPT	FEMALE NATIONAL PIPE THREAD
FO	FIBER OPTIC
FOS	FAST-OFF-SLOW
FOSA	FAST-OFF-SLOW-AUTO
FOSR	FAST-OFF-SLOW-REMOTE
FP	FULL PENETRATION, FIELD PANEL
FR	FORWARD-REVERSE
FREQ	FREQUENCY
FRP	FIBER REINFORCED PLASTIC
FS	FLORIDA STATUTES, FAR SIDE, FLOW SWITCH
FT	FOOT
G	GROUND
GAL	GALLON
GALV	GALVANIZED
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERUPTER
GND	GROUND
GPM	GALLONS PER MINUTE
GR	GRADE
GRTG	GRATING
GS	GALVANIZED STEEL
GSP	GALVANIZED STEEL PIPE
GST	GROUND STORAGE TANK
GV	GATE VALVE
H	HIGH
HD	HAND
HDD	HORIZONTAL DIRECTIONAL DRILL
HDNS	HARDNESS
HDPE	HIGH DENSITY POLYETHYLENE
HHWL	HIGH HIGH WATER LEVEL
HK	HOOK
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
HORIZ	HORIZONTAL
HP	HORSEPOWER OR HIGH POINT
HPS	HIGH PRESSURE SODIUM
HR	HANDRAIL
HSP	HIGH SERVICE PUMP
HT	HEIGHT
HWL	HIGH WATER LEVEL
I&C	INSTRUMENTATION AND CONTROL
IC	INTERRUPTING CAPACITY
ID	INSIDE DIAMETER
ID	IDENTIFICATION
IE	INVERT ELEVATION
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
IF	INSULATED FLANGE
IJ	ISOLATION JOINT
INC	INCORPORATED
IPS	IRON PIPE SIZE
J, JB	JUNCTION BOX
JT	JOINT
KA	KILOAMPERES
KB	KNEE BRACE
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT AMPERES
KW	KILOWATTS
KWH	KILOWATT HOUR
L	LOWER
LB, LBS	POUND(S)
LE	LEVEL ELEMENT
LEL	LOWER EXPLOSIVE LIMIT
LF	LINEAR FEET
LG	LONG
LIT	LEVEL INDICATING TRANSMITTER
LIU	LIGHT INTERFACE UNIT
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LLWL	LOW LOW WATER LEVEL
LOS	LOCKOUT STOP
LR	LONG RADIUS, LOCAL-REMOTE
LS	LIFT STATION
LSIG	LONG SHORT INSTANTANEOUS GROUND
LWL	LOW WATER LEVEL
M	MAGNETIC CONTACTOR COIL, MOTOR, MANUAL
M/F	MALE/FEMALE
MAX	MAXIMUM
MC	MODULATE-CLOSE
MCC	MOTOR CONTROL CENTER
MCJ	MASONRY CONTROL JOINT
MECH	MECHANICAL
MES	MITERED END SECTION
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MNPT	MALE NATIONAL PIPE THREAD
MO	MOTOR OPERATOR
MP	METERING PUMP
MPH	MILES PER HOUR
MS	MOTOR STARTER
MSC	MANUFACTURER SUPPLIED CABLE
MT, MTD	MOUNT(ED)
MTL	METAL
MV	MEDIUM VOLTAGE
N	NORTH(ING), NEUTRAL, NORMAL
N/A	NOT APPLICABLE
NAD	NORTH AMERICAN DATUM
NAVD	NORTH AMERICAN VERTICAL DATUM
NC	NORMALLY CLOSED
NE	NORTH EAST
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT	NEUTRAL
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NIC	NOT IN CONTRACT
No.	NUMBER
NO	NORMALLY OPEN
NOM	NOMINAL
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
NPT	NATIONAL PIPE THREAD
NRS	NONRISING STEM
NS	NEAR SIDE
NSF	NATIONAL SANITATION FOUNDATION
NTS	NOT TO SCALE
NW	NORTH WEST
OC	ON CENTER(S), OPEN-CLOSE(D)
OCA	OPEN-CLOSE-AUTO
OCR	OPEN-CLOSE-REMOTE
OD	OUTSIDE DIAMETER
OF	OVERFLOW
OO	ON-OFF
OOA	ON-OFF-AUTO
OOR	ON-OFF-REMOTE
OPP	OPPOSITE
OS&Y	OUTSIDE STEM AND YOKE
OSC	OPEN-STOP-CLOSE
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
P&ID	PIPING AND INSTRUMENTATION DIAGRAM
P/L	PROPERTY LINE
PB	PULL BOX
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PCV	PRESSURE CONTROL VALVE
PE	PLAIN END, POLYETHYLENE
PET	POLYETHYLENE TUBING
PF	POWER FACTOR
pH	HYDROGEN ION CONCENTRATION
PH	PHASE
PI	PRESSURE INDICATOR/GAUGE
PID	PROPORTIONAL INTEGRAL DERIVATIVE
PIT	PRESSURE INDICATING TRANSMITTER
PIV	POST INDICATOR VALVE
PL	PLATE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PLCS	PLACES
POC	POINT OF CONNECTION
POE	POINT OF ENTRY
POJ	PUSH ON JOINT
PP	POWER POLE
PPE	PERSONAL PROTECTIVE EQUIPMENT
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSID	POUNDS PER SQUARE INCH DIFFERENTIAL
PSIG	POUNDS PER SQUARE INCH GAUGE
PSV	PRESSURE SUSTAINING VALVE
PT	PRESSURE TREATED, POTENTIAL TRANSFORMER
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PWR	POWER
R	RADIUS
R/W, ROW	RIGHT-OF-WAY
RCP	REINFORCED CONCRETE PIPE
RCPT	RECEPTACLE
RED	REDUCER
REF	REFERENCE
REINF	REINFORCEMENT, REINFORCING
REQ, REQ'D	REQUIRED
RGS	RIGID GALVANIZED STEEL
RJ	RESTRAINED JOINT
RM	REMOTE MULTIPLEXING MODULE
RMS	ROOT MEAN SQUARE
RPZ	REDUCED PRESSURE ZONE
RT	RIGHT
RTU	REMOTE TELEMETRY UNIT
S	SOUTH
SARV	SURGE ANTICIPATOR RELIEF VALVE
SBC	STANDARD BUILDING CODE
SCH	SCHEDULE
SCJ	SAW CUT JOINT
SDI	STEEL DECK INSTITUTE
SE	SOUTH EAST
SEC	SECOND
SF	SLOWER-FASTER
SHEC	SHOULDERED-END COUPLING
SHT	SHEET
SIM	SIMILAR
SJI	STEEL JOINT INSTITUTE
SM	STATIC MIXER
SP	SPACING, SPACED
SPD	SURGE PROTECTIVE DEVICE
SQ	SQUARE
SR	STATE ROAD, SURGE RELIEF
SRV	SURGE RELIEF VALVE
SS	START-STOP
SS, SST	STAINLESS STEEL
SSC	SUPERVISORY SET POINT CONTROL
SSRV	SOLID STATE REDUCED VOLTAGE
ST	SHUNT TRIP
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STS	STORMWATER SEWER
SW	SOUTH WEST, SWITCH
SWD	SIDE WATER DEPTH
SWJ	SOLVENT WELD JOINT
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
SY	SQUARE YARD
T, THK	THICK
T/	TOP OF
T/B,T&B	TOP AND BOTTOM
TBM	TEMPORARY BENCHMARK
TEMP	TEMPERATURE
TGS	THREADED GALVANIZED STEEL
TGSP	THREADED GALVANIZED STEEL PIPE
TH	TOTAL HEAD
THD	THREADED
TJB	TERMINAL JUNCTION BOX
TK	TANK
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
TOSJ	TOP OF STEEL JOIST
TOW	TOP OF WALL
TS	TUBULAR STEEL
TSF	THICKENED SLAB FOOTING
TSP	TWISTED SHIELDED PAIR
TURB	TURBIDITY
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITER'S LABORATORIES
ULC	ULTRASONIC LEVEL CONTROLLER
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTAGE, VOLTS
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VH	VAPOR HEATER
VIB	VIBRATION
VIF	VERIFY IN FIELD
VP	VAPORIZER
W	WIDE, WATT
W/	WITH
W/O	WITHOUT
WCJ	WALL CONTROL JOINT
WF	WALL FOOTING
WGT	WEIGHT
WP	WORK POINT, WEATHERPROOF
WSE, WSEL	WATER SURFACE ELEVATION
WT	WEIGHT
WV	WATER VALVE
WWF	WELDED WIRE FABRIC
XFMR	TRANSFORMER
XS	EXTRA STRONG

CUSTOM ABBREVIATIONS

ASR	AQUIFER STORAGE AND RECOVERY
P&ID	PIPING AND INSTRUMENTATION DIAGRAM
SWFWMD	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
WTP	WATER TREATMENT PLANT
RW	RECOVERED WATER

NOTES:
1. SEE LEGENDS AND PIPE SCHEDULE FOR ADDITIONAL ABBREVIATIONS.
2. NOT ALL ABBREVIATIONS MAY BE USED FOR THIS PROJECT.

60% SUBMITTAL

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

ABBREVIATIONS

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
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CIVIL LEGEND

- 90 — CONTOUR
- LOC — LIMITS OF CONSTRUCTION
- PROPERTY BOUNDARY
- CENTERLINE
- SF — SILT FENCE
- DEMO AND REMOVE HATCH
- X — FENCE
- OHE — OVERHEAD ELECTRIC
- UGE — UNDERGROUND ELECTRIC
- UGW — UNDERGROUND WATER MAIN
- STS — STORM SEWER
- UGTV — UNDERGROUND CABLE TELEVISION
- UGT — UNDERGROUND TELEPHONE
- GAS — GAS MAIN
- SAN — GRAVITY SANITARY SEWER
- FM — SANITARY FORCE MAIN
- SS — SANITARY SEWER MANHOLE
- SW — STORM WATER MANHOLE
- +100.00 — SPOT ELEVATION
- COORDINATE POINT
- BOLLARD
- MILLING AND RESURFACING
- ASPHALT PAVEMENT RESTORATION
- ASPHALT PAVEMENT
- CONCRETE
- GRAVEL
- LIMEROCK
- COMPACTED SOIL

NOTE:
EXISTING PIPE AND EQUIPMENT ARE SHOWN IN THE DRAWINGS AS LIGHT-LINED AND/OR SCREENED. PROPOSED PIPE AND EQUIPMENT ARE SHOWN IN THE DRAWINGS AS HEAVY-LINED. ABOVE GRADE PIPE AND EQUIPMENT ARE SHOWN IN DRAWINGS AS SOLID-LINED. BELOW GRADE PIPE AND EQUIPMENT ARE SHOWN IN DRAWINGS AS DASHED-LINED. SEE BELOW EXAMPLES:

- OR — EXISTING PIPE (ABOVE GRADE)
- OR — NEW PIPE (BELOW GRADE)

PIPING SYMBOLS

DOUBLE LINE	SINGLE LINE	
		PIPE
		WELDED PIPE
		FLANGED JOINT
		MECHANICAL JOINT OR RESTRAINED PUSH-ON JOINT
		FLEXIBLE COUPLING ADAPTER
		EXPANSION JOINT
		HUB & SPIGOT JOINT
		BALL JOINT
		FLANGED COUPLING ADAPTER W/ THRUST TIES
		FLEXIBLE COUPLING WITH THRUST TIES
		BLIND FLANGE
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		FEMALE QUICK DISCONNECT FITTING
		MALE QUICK DISCONNECT FITTING

MECHANICAL LEGEND

DOUBLE LINE	SINGLE LINE	
		LATERAL UP
		LATERAL DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		UNION
		CAP
		ANCHOR
		WYE
		TEE
		CROSS
		ELBOW, 90 DEGREE
		ELBOW, 45 DEGREE
		ELBOW, 22.5 DEGREE
		ABANDON IN PLACE
		DEMOLISH AND REMOVE

VALVE SYMBOLS

- GATE
- BUTTERFLY
- BALL
- CHECK
- DIAPHRAGM
- NEEDLE
- PRESSURE RELIEF
- AIR RELEASE AND/OR VACUUM RELIEF
- REGULATED SIDE
- HYDRAULIC CONTROL VALVE

PIPE SUPPORT SYMBOLS

- FLANGED PIPE SUPPORT
- U-SHAPED PIPE SUPPORT
- PIPE SUPPORT W/ AXIAL LOAD SUPPORT

PIPING DESIGNATION

EXAMPLE:

12"-DI-FM
- PIPE USE - SEE PIPE SCHEDULE
- PIPE MATERIAL - SEE PIPE SCHEDULE
- NOMINAL PIPE DIAMETER

PIPE SCHEDULE

RESTRAINT SYSTEM NOTES:
(1) RESTRAIN ALL JOINTS, FITTINGS, AND VALVES IN ACCORDANCE WITH RESTRAINED JOINT SCHEDULE
(2) RESTRAIN ALL JOINTS, FITTINGS, AND VALVES INCLUDING NEW TO EXISTING

ABBREVIATION	FLOW STREAM IDENTIFICATION	PIPE/DUCT MATERIAL	PIPE MATERIAL ABBREV	SPECIFICATION NUMBER	PIPE LINING	NORMAL MAX OPERATING PRESSURE (PSIG)	FIELD TEST PRESSURE (PSIG)	RESTRAINT SYSTEM NOTES
X"-FPVC-GR	GRAVITY	FUSABLE POLYVINYL CHLORIDE	FPVC	15148	N/A	10	150	(2)
X"-FPVC-FM	FORCE MAIN	FUSABLE POLYVINYL CHLORIDE	FPVC	15148	N/A	50	150	(2)
X"-DI-FM	FORCE MAIN	DUCTILE IRON	DI	15155	CERAMIC EPOXY	50	150	(2)
X"-SS-WELL	WELL	TYPE 304L SCH 40 STAINLESS STEEL	SS	15276	N/A	50	150	(2)
X"-PVC-WELL	WELL	POLYVINYL CHLORIDE	PVC	15290	N/A	50	150	N/A
X"-PVC-VENT	VENT	POLYVINYL CHLORIDE	PVC	15291	N/A	50	N/A	N/A

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

LEGENDS

APPROVED BY
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PROJECT NO: 19850-041-01
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DWG NO: G4

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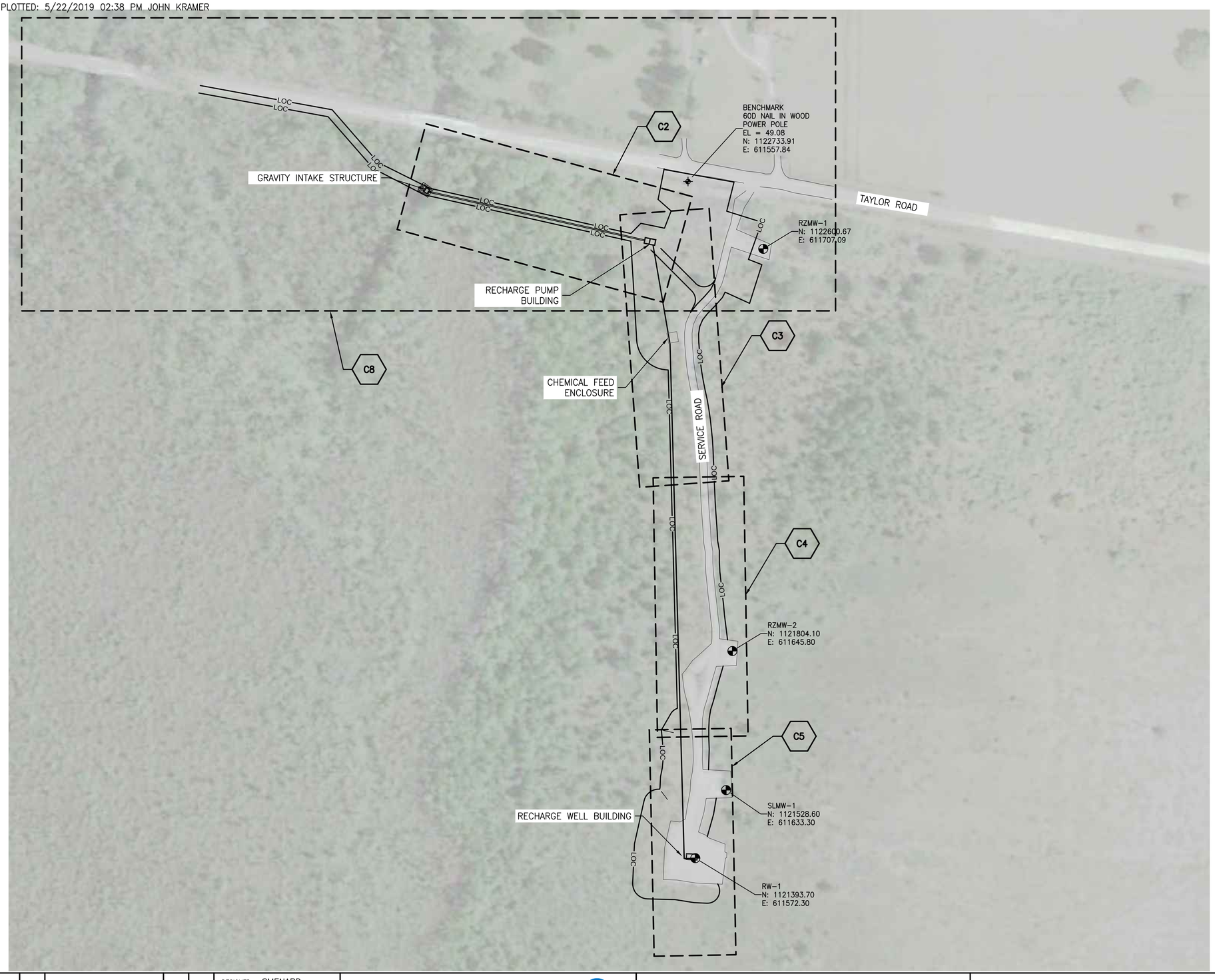

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GRAPHIC SCALE

0 50 100 200

SCALE IN FEET

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

KEY MAP

APPROVED BY
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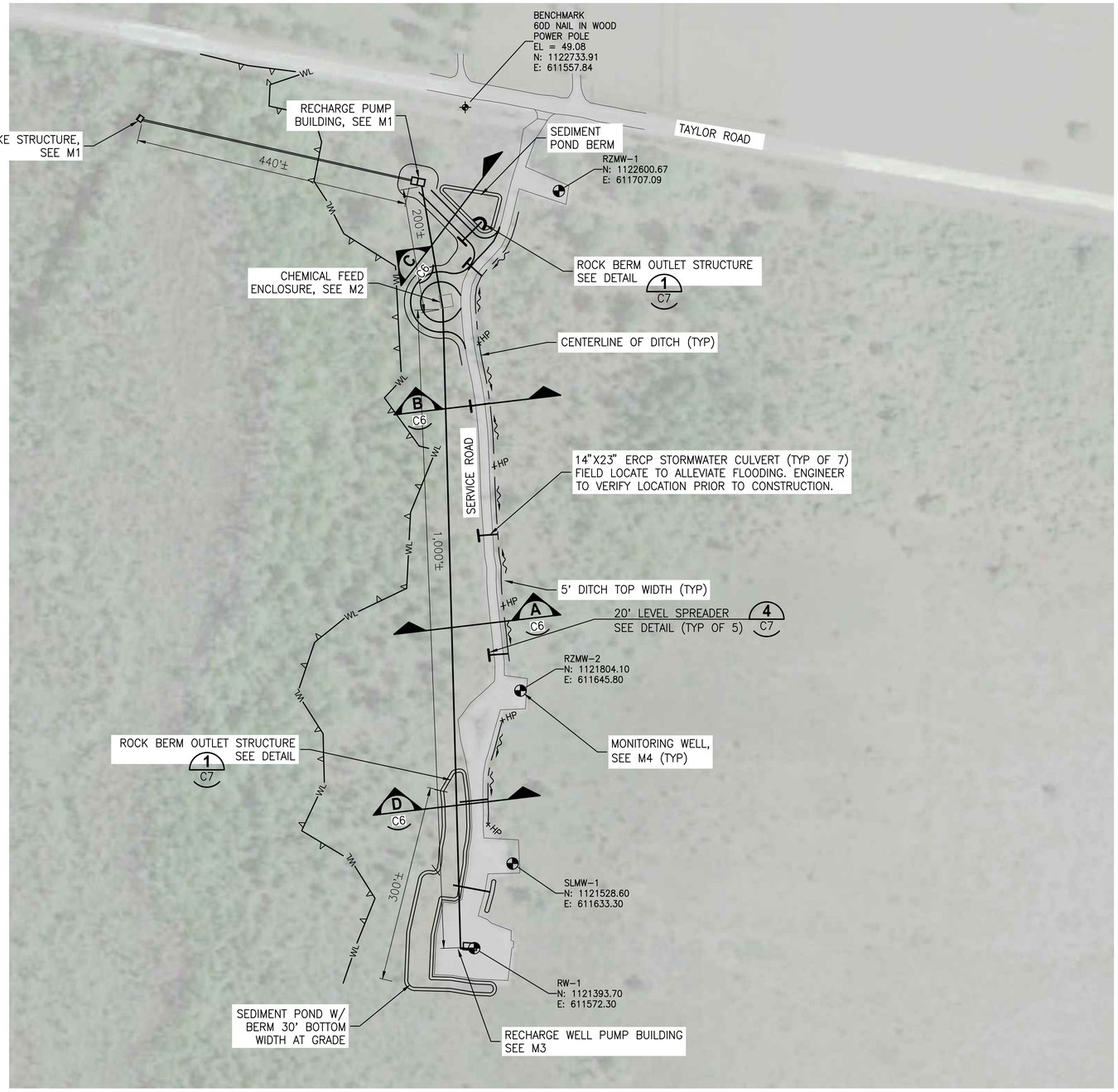
PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: G5



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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

CIVIL SITE PLAN

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GRAPHIC SCALE

0 10 20 40

SCALE IN FEET

N

GRAVITY INTAKE STRUCTURE, SEE C7, M1

STA: 9+74.99
N: 1122713.88
E: 611042.82

STA: 9+50.00
N: 1122719.37
E: 611018.44

24"–FPVC–GR, BY HDD

GRADE TO MATCH EXISTING

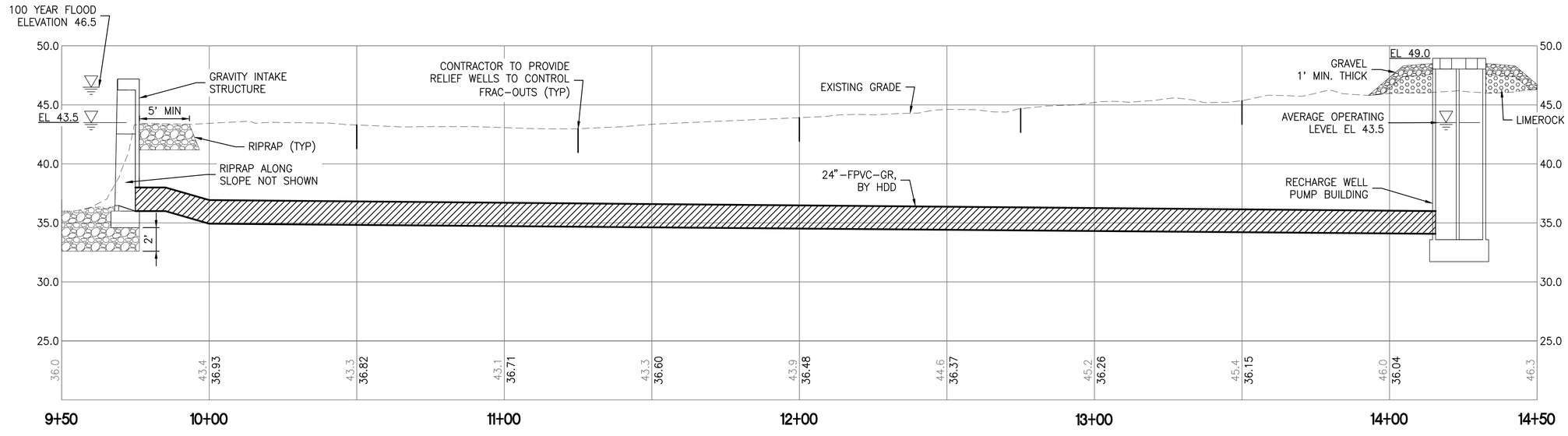
10' GRAVEL STRIP AROUND BUILDING

RECHARGE WELL PUMP BUILDING, SEE M1

STA: 14+50.00
N: 1122609.68
E: 611506.26

STA: 14+15.59
N: 1122617.23
E: 611472.69

LIMEROCK ROAD



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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PLAN AND PROFILE

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DWG NO: C2

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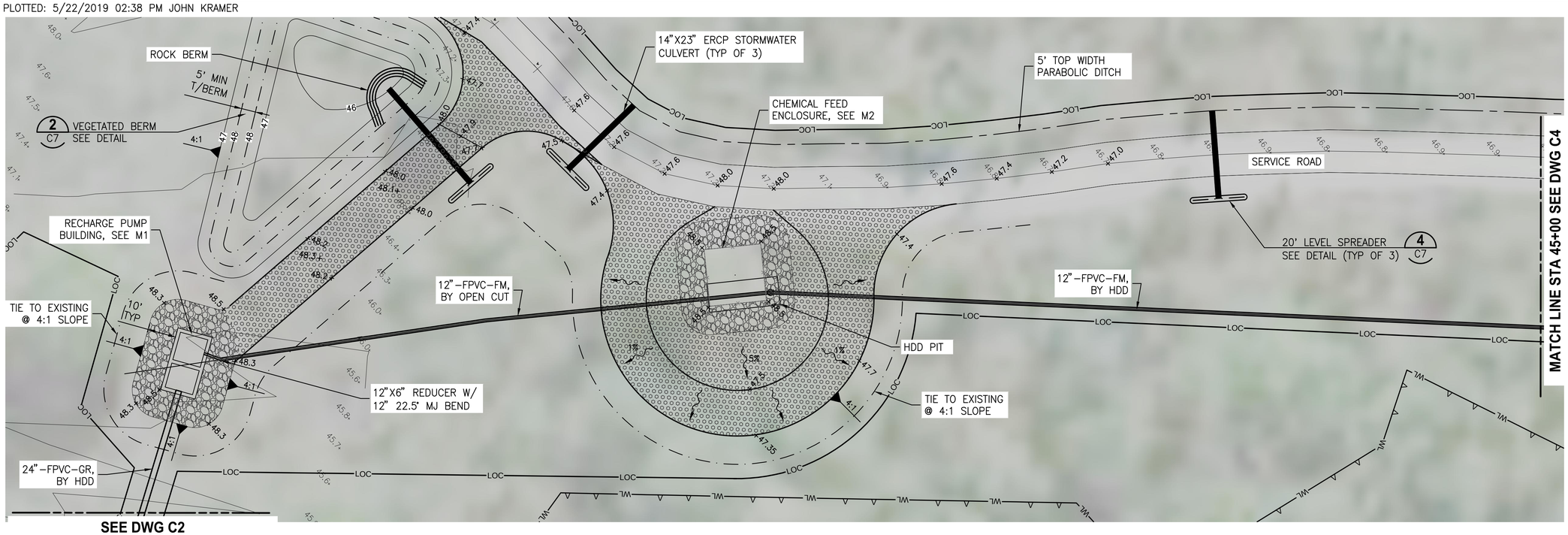

GRAPHIC SCALE

0 10 20 40

SCALE IN FEET

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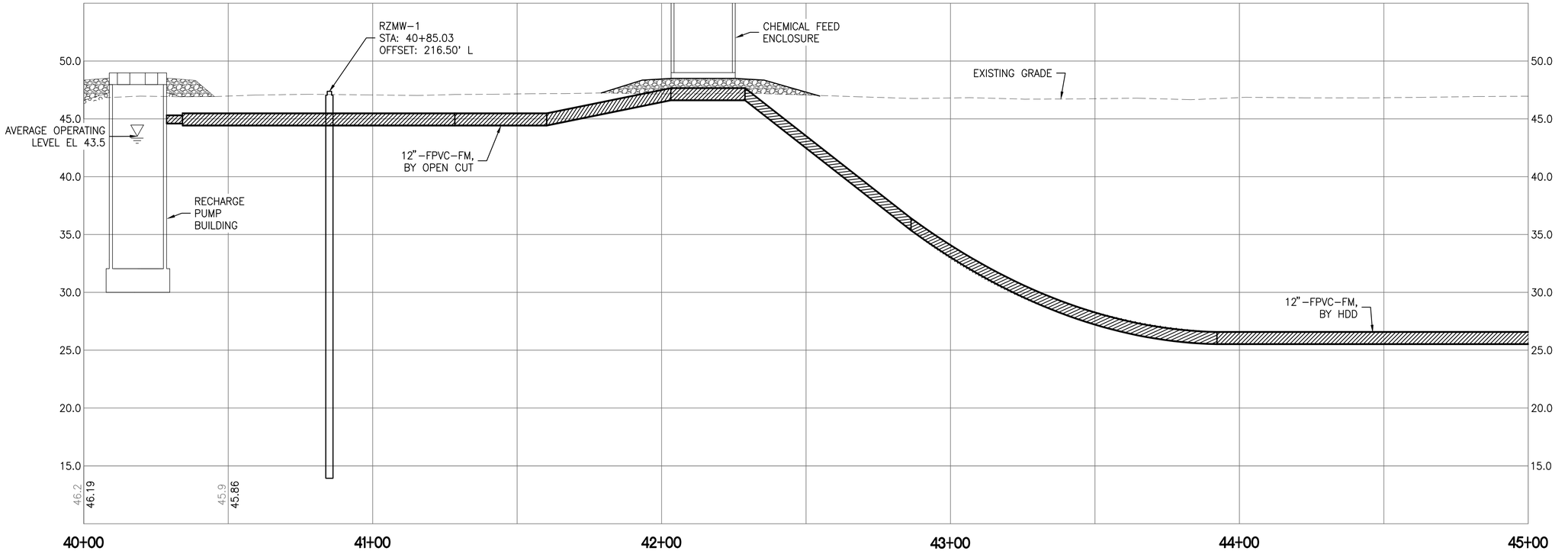

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PLAN AND PROFILE

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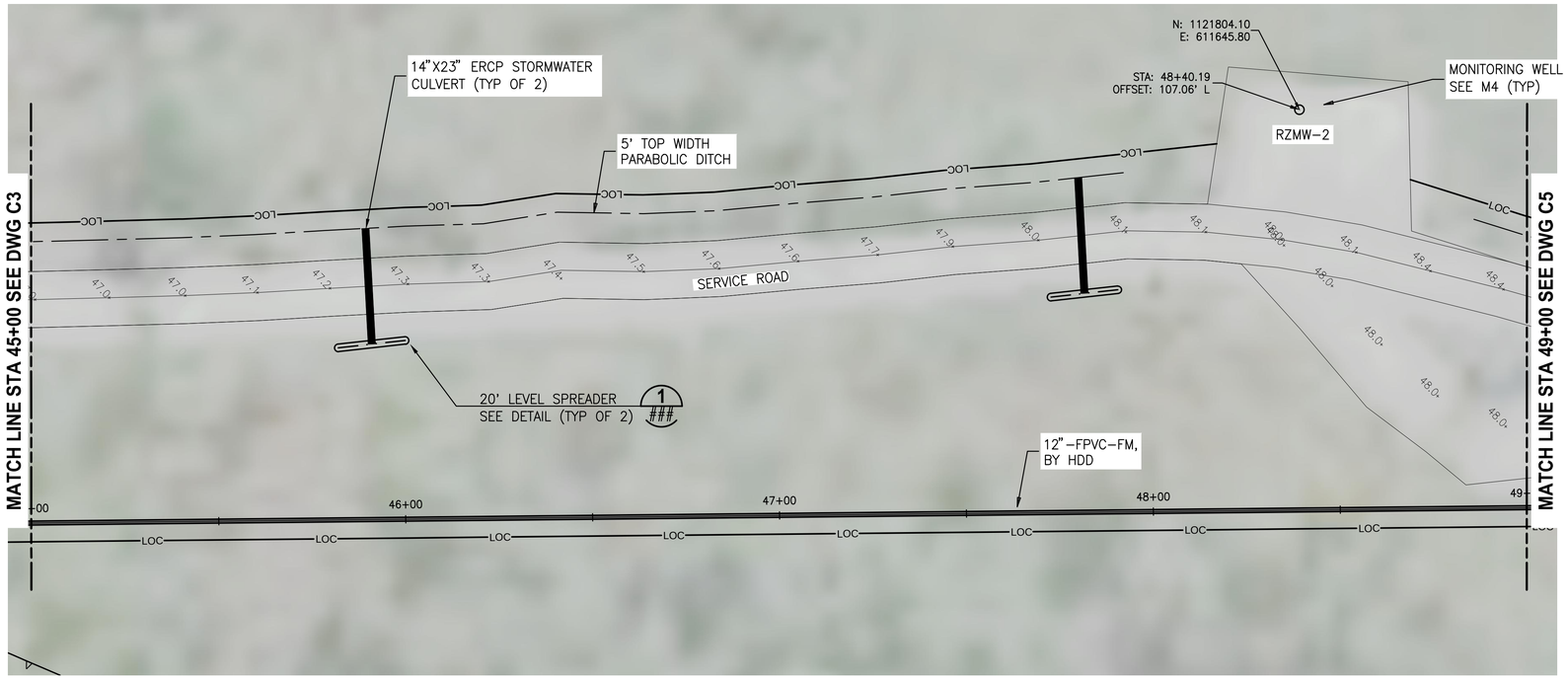

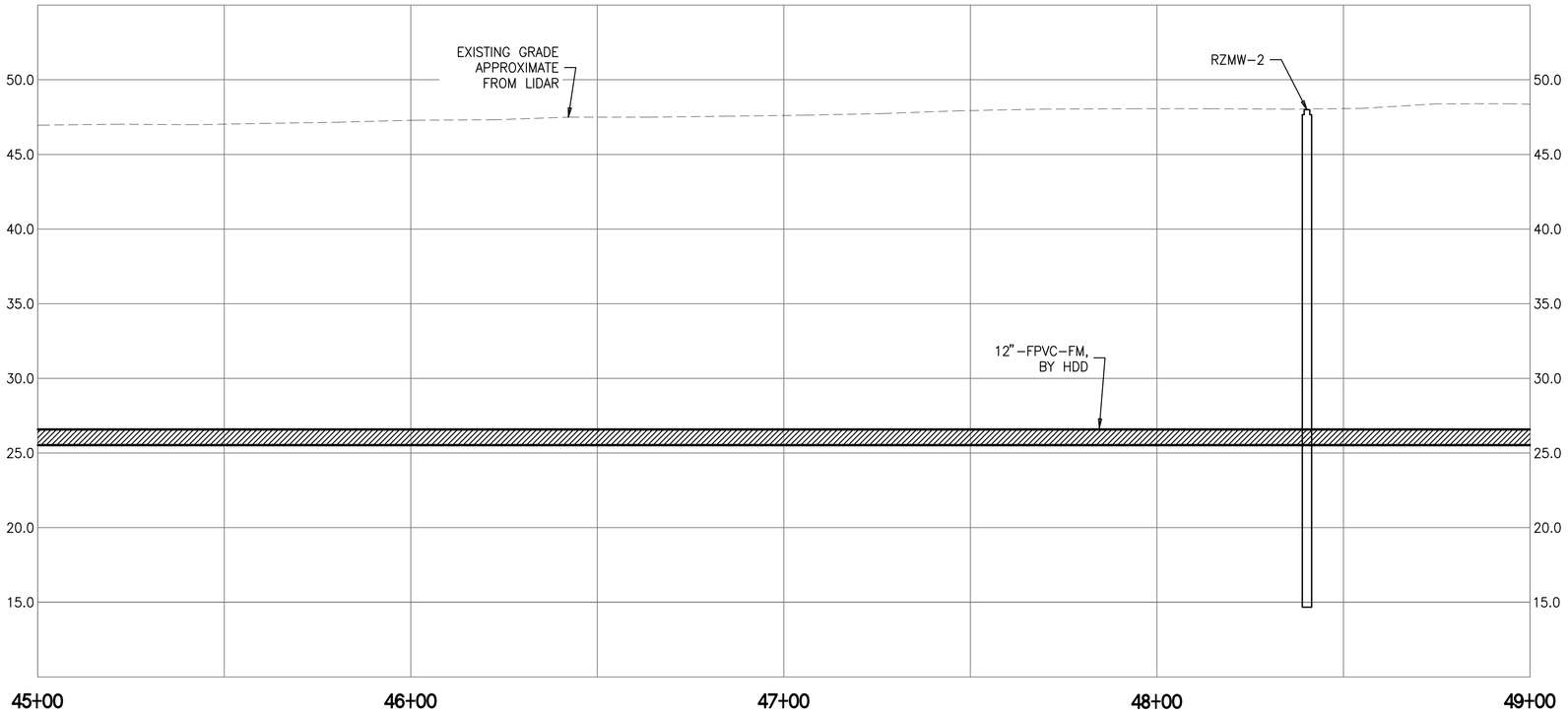

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SCALE IN FEET
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60% SUBMITTAL

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PLAN AND PROFILE

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: C4

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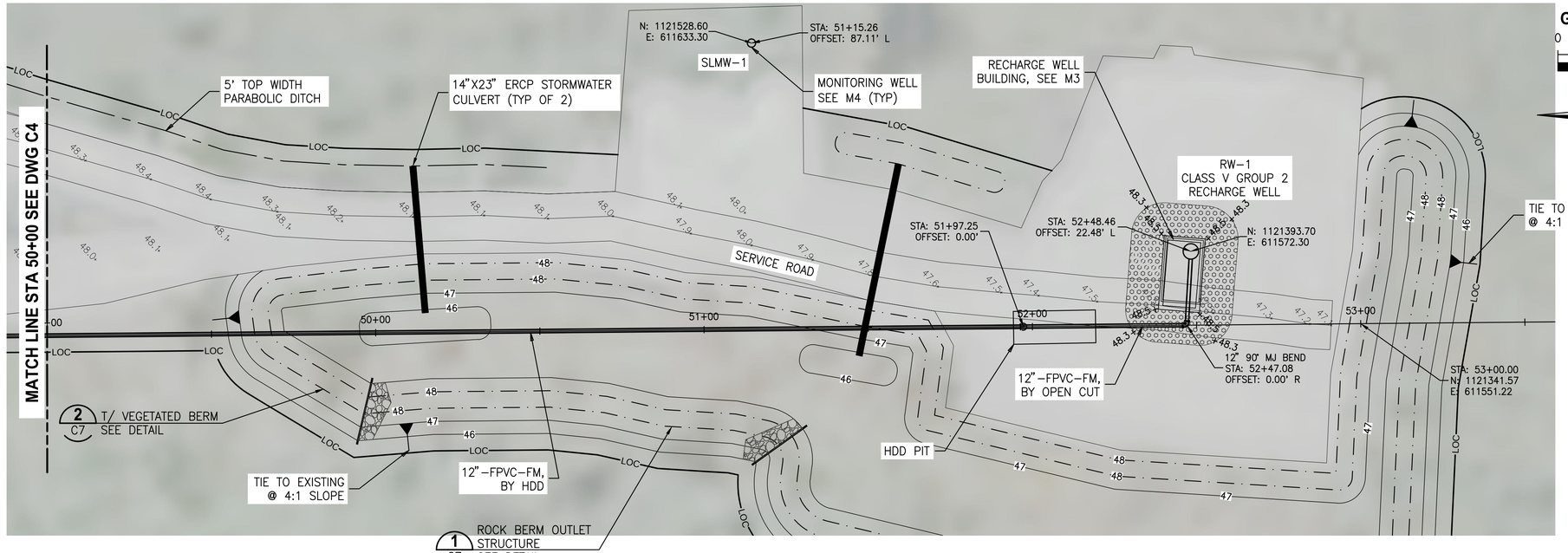

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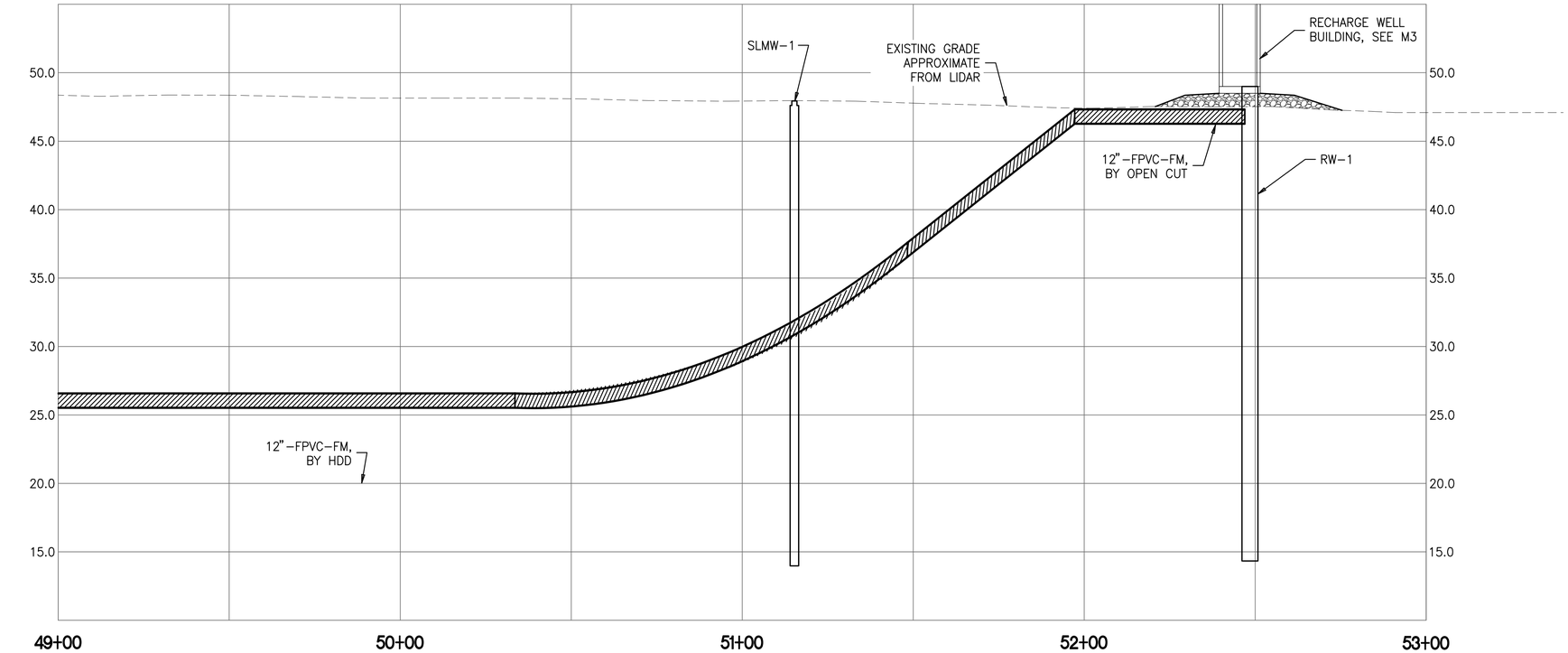

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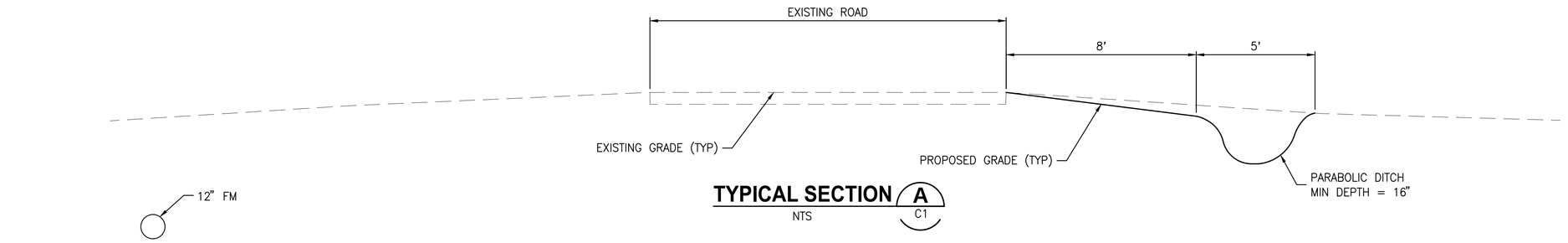
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PLAN AND PROFILE

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: C5



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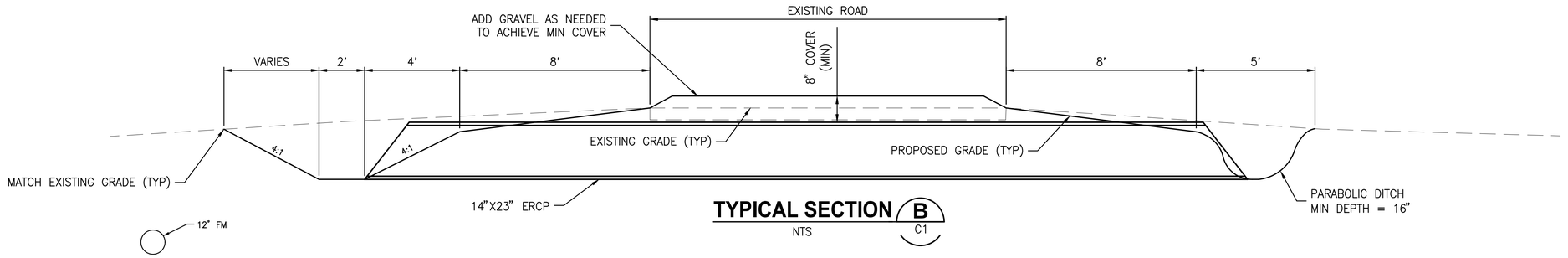

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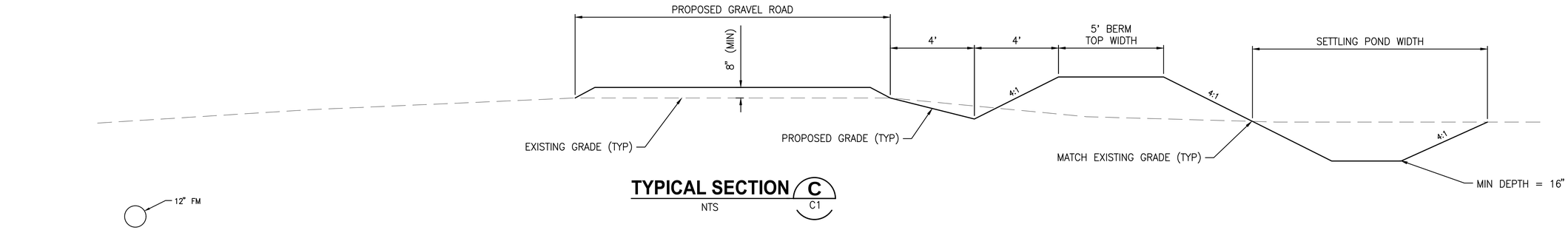

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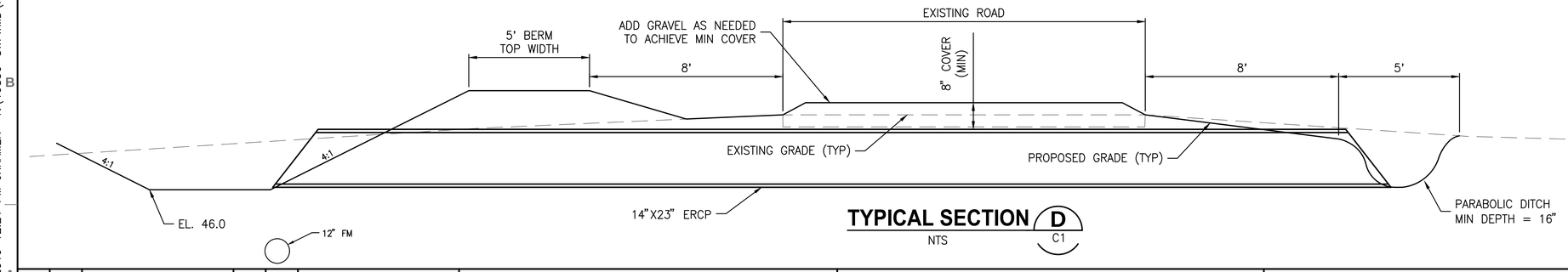

TYPICAL SECTION D (C1)
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LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED SMENARD
DRAWN JKRAMER
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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

TYPICAL SECTIONS

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: C6

60% SUBMITTAL

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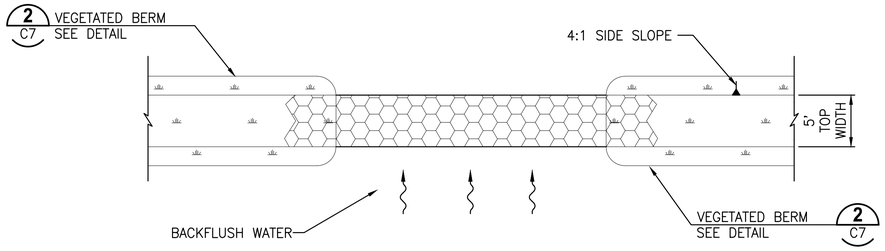

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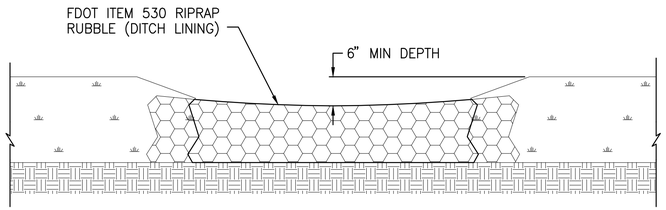

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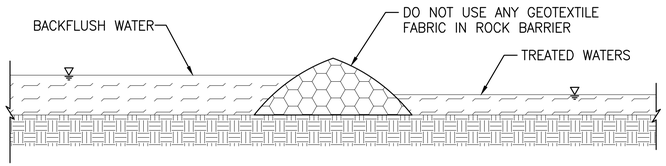
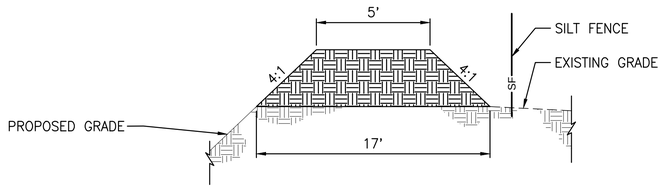


SIDE

ROCK BERM OUTLET STRUCTURE DETAIL 1
C1

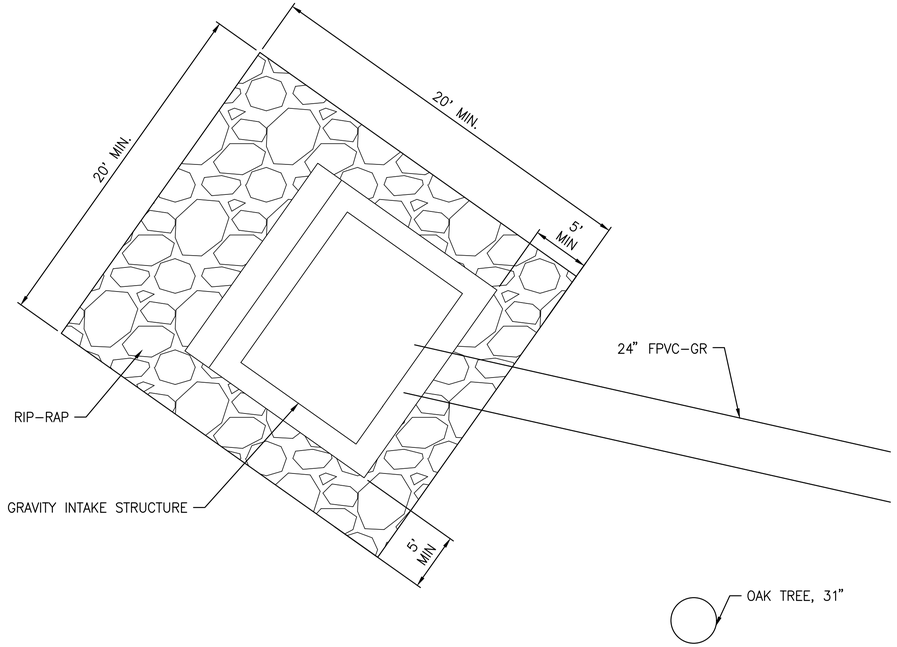
NTS



NOTES:

1. BERM SHALL BE COMPACTED TO PREVENT FAILURE.
2. WITHIN 7 DAYS OF CONSTRUCTION, BERM SHALL BE STABILIZED BY SEEDING AND MULCHING SLOPES AND BERM CREST WITH SEED MIX, PER SPECIFICATION 02920.
3. AREAS THAT FAIL TO ESTABLISH VEGETATIVE COVER TO PREVENT EROSION WILL BE FILLED WITH TOPSOIL AND RESEEDED AS SOON AS THEY ARE IDENTIFIED.
4. DAMAGE CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY MUST BE REPAIRED BEFORE THE END OF EACH WORKING DAY.

VEGETATED BERM 2
NTS



GRAVITY INTAKE STRUCTURE DETAIL 3
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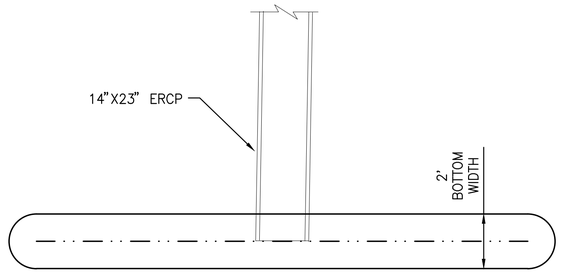
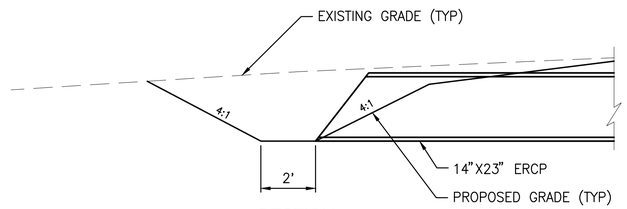


PLAN



SECTION

20' LEVEL SPREADER DETAIL 4
NTS

60% SUBMITTAL

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LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED AGOODDEN
DRAWN JKRAMER
CHECKED WNICKEL

JonesEdmunds
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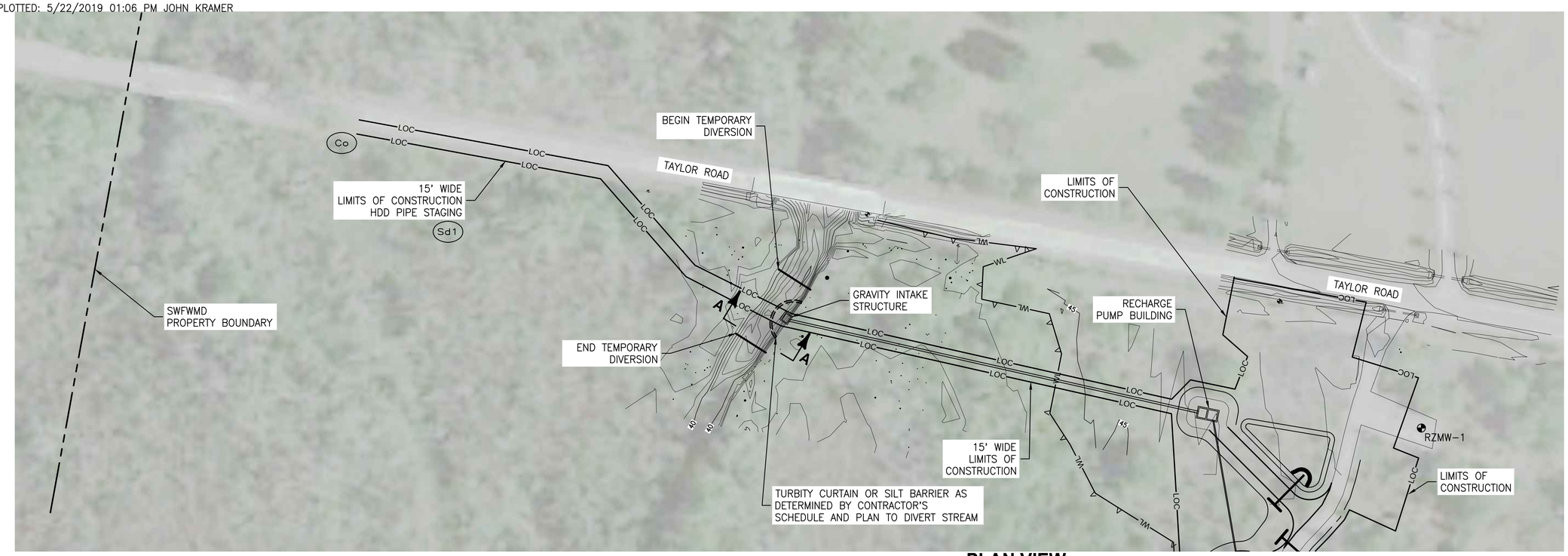
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

CIVIL DETAILS

APPROVED BY
AMY LIANE GOODDEN
P.E. # 60097

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: C7



PLAN VIEW

1' = 60'

GRAPHIC SCALE

0 30 60 120

SCALE IN FEET

SWPPP BMPS LEGEND

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Co	CONSTRUCTION EXIT		Co (LABEL)	A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
Cr	CONSTRUCTION ROAD STABILIZATION		Cr	A travelway constructed as part of a construction plan including access roads, subdivision roads, parking areas and other on-site vehicle transportation routes.
Dc	STREAM DIVERSION CHANNEL			A temporary channel constructed to convey flow around a construction site while a permanent structure is being constructed.
Fr	FILTER RING			A temporary stone barrier constructed at storm drain inlets and pond outlets.
Lv	LEVEL SPREADER			A structure to convert concentrated flow of water into less erosive sheet flow. This should be constructed only on undisturbed soils.
Sd1	SEDIMENT BARRIER		(INDICATE TYPE)	A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles, gravel, or a silt fence.
Sd2	INLET SEDIMENT TRAP			An impounding area created by excavating around a storm drain drop inlet. The excavated area will be filled and stabilized on completion of construction activities.
Sd3	TEMPORARY SEDIMENT BASIN		Sd3 (LABEL)	A basin created by excavation or a dam across a waterway. The surface water runoff is temporarily stored allowing the bulk of the sediment to drop out.
Tc	TURBIDITY CURTAIN		Tc	A floating or staked barrier installed within the water (it may also be referred to as a floating boom, silt barrier, or silt curtain).
Tr	TREE PROTECTION		(DENOTE TREE CENTERS)	To protect desirable trees from injury during construction activity.

EROSION PREVENTION AND CONTROL CONSTRUCTION NOTES:

A. ALL EROSION PREVENTION AND CONTROL MEASURES MUST BE INSPECTED AND APPROVED BY A QUALIFIED FLORIDA STORMWATER, EROSION, AND SEDIMENTATION CONTROL INSPECTOR PRIOR TO ANY CONSTRUCTION ACTIVITIES. REMOVAL OF THESE SAME EROSION CONTROLS AND PREVENTION MEASURES MAY BE DONE ONLY AFTER AUTHORIZATION BY THE EROSION AND SEDIMENTATION CONTROL INSPECTOR IS OBTAINED.

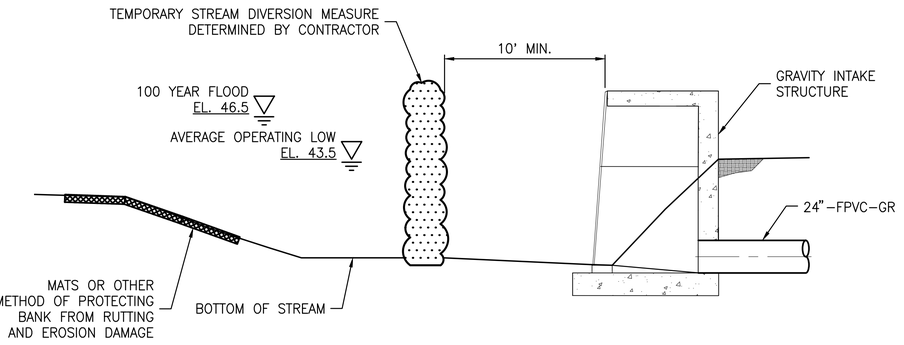
B. DURING CONSTRUCTION THE CONTRACTOR WILL PROVIDE TEMPORARY SEEDING AND MULCHING FOR AREAS THAT HAVE BEEN CLEARED AND NOT REWORKED WITHIN 7 CALENDAR DAYS DURING THE WET SEASON (APRIL THROUGH SEPTEMBER) AND 14 CALENDAR DAYS DURING THE DRY SEASON (OCTOBER THROUGH MARCH).

C. ALL SURFACES WATER DISCHARGE FROM THIS SITE, INCLUDING DEWATERING DISCHARGE SHALL MEET STATE WATER QUALITY STANDARDS (LESS THAN 29 NTU ABOVE BACKGROUND) PRIOR TO REACHING ANY WATERS OF THE STATE, INCLUDING WETLANDS.

D. IN THE EVENT THAT THE EROSION PREVENTION AND CONTROL DEVICES SHOWN IN THESE PLANS PROVE NOT TO BE EFFECTIVE, ALTERNATE METHODS FOR MAINTAINING STATE WATER QUALITY STANDARDS FOR DISCHARGE FROM THE CONSTRUCTION SITE WILL BE REQUIRED. ONE EFFECTIVE ALTERNATIVE METHOD INCLUDES THE INTRODUCTION OF FLOC LOGS INTO THE DISCHARGE FROM THE CONSTRUCTION SITE. NOTE THAT ANY ALTERNATE EROSION PREVENTION AND CONTROL DEVICES MUST BE APPROVED BY THE EROSION AND SEDIMENT CONTROL INSPECTOR PRIOR TO PLACEMENT.

NOTES:

1. CONTRACTOR TO COORDINATE WITH SPECIFICATIONS 02240 DEWATERING AND 02370 EROSION & SEDIMENTATION.
2. EQUIPMENT AND ARRANGEMENT IS SHOWN FOR INVERT ONLY. CONTRACTOR TO SUBMIT PROPOSED DEWATERING PLAN AND EROSION CONTROL PLAN, ALONG WITH EQUIPMENT AND ARRANGEMENT, MATERIALS, LOCATIONS, AND ANY TEMPORARY FLUME OR CULVERT.



SECTION A-A

NTS

60% SUBMITTAL

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

EROSION CONTROL SITE PLAN

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: C8

CONTRACTOR REQUIREMENTS

SITE DESCRIPTION

PROJECT NAME(S) AND LOCATION:

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT FLATFORD SWAMP

MANATEE COUNTY: SECTIONS 19, 24, TOWNSHIP 35S; RANGES 21E, 22E

OWNER AND ADDRESS:

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET
BROOKSVILLE, FL 34604

DESCRIPTION:

THIS PROJECT WILL CONSIST OF:
THE CONSTRUCTION OF A SURFACE WATER INTAKE, GRAVITY PIPELINE, PUMP STATION, FORCE MAIN, CHEMICAL FEED ENCLOSURE, RECHARGE WELL, ACCESS ROAD AND ASSOCIATED STORMWATER FEATURES. .

SOIL DISTURBING ACTIVITIES WILL INCLUDE:
CLEARING, GRUBBING; INSTALLING STABILIZED CONSTRUCTION ENTRANCE, STABILIZED PIPE LAY–DOWN AREA AND INSTALLATION ACCESS, PERIMETER, AND OTHER EROSION AND SEDIMENT CONTROLS; GRADING; EXCAVATION FOR STORMWATER, UTILITIES, BUILDING AND CONSTRUCTION OF GRAVEL ROAD, AND BUILDING AND CONSTRUCTION OF SURFACE WATER INTAKE STRUCTURE..

SOILS:

PIPE LAY–DOWN AREA, INSTALLATION ACCESS, AND SURFACE WATER INTAKE HAVE WETLAND SOILS THAT SHALL BE PROTECTED FROM RUTTING. SEE GEOTECHNICAL REPORT FOR SOILS DATA. FOR THE REMAINDER OF THE SITE.

SITE MAPS:

SEE ATTACHED GRADING PLAN FOR PRE & POST DEVELOPMENT GRADES, AREAS OF SOILS, DISTURBANCE, LOCATION OF SURFACE WATERS, WETLANDS, PROTECTED AREAS, MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS AND STORM WATER DISCHARGE POINTS.

SEE GENERAL NOTES AND SPECIFICATIONS FOR REQUIREMENTS FOR TEMPORARY AND PERMANENT STABILIZATION.

SITE AREA:
TOTAL AREA OF SITE – 10 ACRES
TOTAL AREA TO BE DISTURBED – 1 ACRES

NAME OF RECEIVING WATERS:
MYAKKA CREEK AT FLATFORD SWAMP
NOTE: MYAKKA RIVER AT SR 64, 11.2 SQUARE MILE DRAINAGE AREA PEAK DISCHARGE 1,157 CFS FOR 10 YEAR EVENT. MYAKKA RIVER AT TAYLOR ROAD 10 YEAR FLOOD ELEVATION IS 45 FT NAVD 88

CONTROLS

THIS PLAN UTILIZES BEST MANAGEMENT PRACTICES TO CONTROL EROSION AND TURBIDITY CAUSED BY STORM WATER RUN OFF, AN EROSION & SEDIMENT CONTROL PLAN HAS BEEN PREPARED TO INSTRUCT THE CONTRACTOR ON PLACEMENT OF THESE CONTROLS, IT IS THE CONTRACTORS RESPONSIBILITY TO INSTALL AND MAINTAIN THE CONTROLS AS PER PLAN AS WELL AS ENSURING THE PLAN IS PROVIDING THE PROPER PROTECTION AS REQUIRED BY FEDERAL, STATE, AND LOCAL LAWS. REFER TO 'CONTRACTORS REQUIREMENTS' FOR A VERBAL DESCRIPTION OF THE CONTROLS THAT MAY BE IMPLEMENTED.

CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

IN AN EFFORT TO ENSURE COMPLIANCE WITH FEDERAL, STATE, AND LOCAL LAWS REGARDING EROSION AND TURBIDITY CONTROLS, THE FOLLOWING PERMITS HAVE BEEN OBTAINED.

FDEP ERP PERMIT # _____TBD_____
U.S.A.C.E. PERMIT #_____TBD_____

POLLUTION PREVENTION PLAN CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW 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 FORGATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

SIGNED: _____

TITLE:_____

DATE:_____

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, THE SILT FENCES, STABILIZED CONSTRUCTION ENTRANCE AND TURBIDITY BARRIERS WILL BE CONSTRUCTED PRIOR TO CLEARING OR GRADING OF ANY OTHER PORTIONS OF THE SITE. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICAL IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN ACCORDANCE WITH THE PLANS AND AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED SEDIMENT WILL BE REMOVED FROM THE SEDIMENT TRAPS AND STABILIZED IN ACCORDANCE WITH THE SEDIMENT AND EROSION CONTROL PLAN.

GENERAL

THE CONTRACTOR SHALL AT A MINIMUM IMPLEMENT THE CONTRACTOR'S REQUIREMENTS OUTLINED BELOW AND THOSE MEASURES SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN. IN ADDITION THE CONTRACTOR SHALL UNDERTAKE ADDITIONAL MEASURES REQUIRED TO BE IN COMPLIANCE WITH APPLICABLE PERMIT CONDITIONS AND STATE WATER QUALITY STANDARDS DEPENDING ON THE NATURE OF MATERIALS AND METHODS OF CONSTRUCTION.

SEQUENCE OF MAJOR ACTIVITIES

1. COMPLETE AND SUBMIT NOTICE OF INTENT (NOI) TO FDEP.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCES.
3. STABILIZE LAY DOWN AREA AND ACCESS TO PROTECT WETLAND SOILS FROM RUTTING.
4. INSTALL SILT FENCES AND OTHER EROSION CONTROL DEVICES.
5. INSTALL TURBIDITY BARRIERS.
6. USE TEMPORARY STREAM DIVERSION AS NEEDED TO DIRECT MYAKKA RIVER FLOW WAY FROM INTAKE STRUCTURE AND GRAVITY PIPELINE DURING CONSTRUCTION.
7. PERFORM PRELIMINARY GRADING ON SITE AS REQUIRED.
8. STABILIZE CLEARED AREAS AND STOCKPILES AS SOON AS PRACTICABLE.
9. INSTALL UTILITIES, STORMWATER CULVERTS, AND FOOTINGS/SLABS.
10. CONSTRUCT DRIVE AREAS.
11. COMPLETE GRADING AND INSTALL PERMANENT SEEDING.
12. REMOVE ACCUMULATED SEDIMENT FROM PONDS AND DITCHES.
13. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ANY TEMPORARY ROADS, DIVERSION DIKES AND RESEED AS REQUIRED.
14. COMPLETE AND SUBMIT NOTICE OF TERMINATION (NOT) TO FDEP.

CONTROLS

IT IS THE CONTRACTORS RESPONSIBILITY TO DEVELOP A DETAILED SEDIMENT AND EROSION CONTROL PLAN. THAT TAKES INTO ACCOUNT THEIR MEANS, METHODS, AND SCHEDULE. THE PLAN AND DETAILS SHOWN HERE ARE PERFORMANCE BASED CRITERIA.. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THEIR CONTROLS ARE ADEQUATE AND ARE PROPERLY INSTALLED, MAINTAINED AND FUNCTIONING PROPERLY TO PREVENT TURBID OR POLLUTED WATER FROM LEAVING THE PROJECT SITE. THE CONTRACTOR WILL ADJUST THE EROSION CONTROL PLAN AND ADD ADDITIONAL CONTROL MEASURES, AS REQUIRED, TO ENSURE THE SITE MEETS ALL FEDERAL STATE AND LOCAL EROSION AND SEDIMENT CONTROL PLAN AND AS REQUIRED TO MEET THE SEDIMENT AND TURBIDITY REQUIREMENTS IMPOSED ON THE PROJECT SITE BY THE REGULATORY AGENCIES.

EROSION AND SEDIMENT CONTROLS

STABILIZATION PRACTICES

1. FILTER FABRIC BARRIER: FILTER FABRIC BARRIERS CAN BE USED BELOW DISTURBED AREAS SUBJECT TO SHEET AND RILL EROSION WITH THE FOLLOWING LIMITATIONS:
   A. WHERE THE MAXIMUM SLOPE BEHIND THE BARRIER IS 33 PERCENT.
   B. IN MINOR SWALES OR DITCH LINES WHERE THE MAXIMUM CONTRIBUTING DRAINAGE AREA IS NO GREATER THAN 2.0 ACRES.
2. BRUSH BARRIER WITH FILTER FABRIC: BRUSH BARRIER MAY BE USED BELOW DISTURBED AREAS SUBJECT TO SHEET AND RILL EROSION WHERE ENOUGH RESIDUE MATERIAL IS AVAILABLE ON SITE.
3. LEVEL SPREADER: A LEVEL SPREADER MAY BE USED WHERE SEDIMENT–FREE STORM RUNOFF IS INTERCEPTED AND DIVERTED AWAY FROM THE GRADED AREAS ONTO UNDISTURBED STABILIZED AREAS. THIS PRACTICE APPLIES ONLY IN THOSE SITUATIONS WHERE THE SPREADER CAN BE CONSTRUCTED ON UNDISTURBED SOIL AND THE AREA BELOW THE LEVEL UP IS STABILIZED. THE WATER SHOULD NOT BE ALLOWED TO RECONCENTRATE AFTER RELEASE.
4. STOCKPILING MATERIAL: NO EXCAVATED MATERIAL SHALL BE STOCKPILED IN SUCH A MANNER AS TO DIRECT RUNOFF DIRECTLY OFF THE PROJECT SITE INTO ANY ADJACENT WATER BODY OR STORM WATER COLLECTION FACILITY.
5. EXPOSED AREA LIMITATION: THE SURFACE AREA OF OPEN, ERODIBLE SOIL EXPOSED BY CLEARING GRUBBING OPERATIONS OR EXCAVATION AND FILLING OPERATIONS SHALL NOT EXCEED 1.0 ACRES.
6. TEMPORARY SEEDING: AREAS OPENED BY CONSTRUCTION OPERATIONS AND THAT ARE NOT ANTICIPATED TO BE RE–EXCAVATED OR DRESSED AND RECEIVE FINAL GRASSING TREATMENT WITHIN 21 DAYS SHALL BE SEEDED WITH A QUICK GROWING GRASS. SPECIES WHICH WILL PROVIDE AN EARLY COVER DURING THE SEASON IN WHICH IT IS PLANTED AND WILL NOT LATER COMPETE WITH THE PERMANENT GRASSING.
7. TEMPORARY GRASSING: THE SEEDED AND MULCHED AREA(S) SHALL BE ROLLED AND WATERED OR OTHER SUITABLE METHODS IF REQUIRED TO ASSURE OPTIMUM GROWING CONDITIONS FOR THE ESTABLISHMENT OF A GOOD GRASS COVER.
8. TEMPORARY MATTING: THE CONTRACTOR SHALL USE MATTING OR OTHER MEAN TO PROTECT THE WETLAND SOILS AND STREAM BANK FROM RUTTING AND EROSION DURING PIPELINE ASSEMBLY AND INSTALLATION.
8. TEMPORARY STREAM DIVERSION: THE CONTRACTOR SHALL DIVERT THE MYAKKA RIVER AS NEEDED TO CONTROL EROSION AND TURBIDITY DURING THE INSTALLATION OF THE PIPELINE AND THE INTAKE STRUCTURE.

INVENTORY FOR POLLUTION PREVENTION PLAN

THE MATERIAL OR SUBSTANCES LISTED BELOW ARE EXPECTED TO BE PRESENT ONSITE DURING CONSTRUCTION:

CONCRETE
DETERGENTS
AGGREGATE
PETROLEUM BASED PRODUCTS
CLEANING SOLVENTS
PAINTS
WOOD

9. TEMPORARY REGRASSING: IF, AFTER 14 DAYS FROM SEEDING, THE TEMPORARY GRASSED AREAS HAVE NOT MAINTAINED A MINIMUM OF 75 PERCENT GOOD GRASS COVER, THE AREA WILL BE REWORKED AND ADDITIONAL SEED APPLIED SUFFICIENT TO ESTABLISH THE DESIRED VEGETATIVE COVER.
10. MAINTENANCE: ALL FEATURES OF THE PROJECT DESIGNED AND CONSTRUCTED TO PREVENT EROSION AND SEDIMENT SHALL BE MAINTAINED DURING THE LIFE OF THE CONSTRUCTION SO AS TO FUNCTION AS THEY WERE ORIGINALLY DESIGNED AND CONSTRUCTED.
11. PERMANENT EROSION CONTROL: THE EROSION CONTROL FACILITIES OF THE PROJECT SHOULD BE DESIGNED TO MINIMIZE THE IMPACT ON THE OFFSITE FACILITIES.
12. PERMANENT SEEDING: ALL AREAS WHICH HAVE BEEN DISTURBED BY CONSTRUCTION WILL BE SEEDED.

STRUCTURAL PRACTICES

1. TEMPORARY DIVERSION DIKE: TEMPORARY DIVERSION DIKES MAY BE USED TO DIVERT RUNOFF THROUGH A SEDIMENT–TRAPPING FACILITY.
2. TEMPORARY SEDIMENT TRAP: A SEDIMENT TRAP IS USUALLY INSTALLED IN AN DRAINAGEWAY AT A STORM DRAIN INLET OR AT OTHER POINTS OF DISCHARGE FROM A DISTURBED AREA WITH THE FOLLOWING LIMITATIONS:
   A. THE SEDIMENT TRAP MAY BE CONSTRUCTED EITHER INDEPENDENTLY OR IN CONJUNCTION WITH A TEMPORARY DIVERSION DIKE.
3. OUTLET PROTECTION: APPLICABLE TO THE OUTLETS OF ALL PIPES WHERE THE VELOCITY OF FLOW AT DESIGN CAPACITY OF THE OUTLET WILL EXCEED THE PERMISSIBLE VELOCITY OF THE RECEIVING CHANNEL OR AREA.

SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED ON SITE AND SITE PERSONNEL WILL BE MADE AWARE OF THE METHODS AND POSTED LOCATION.

MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE, BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, LIQUID ABSORBENT (I.e. KITTY LITTER OR EQUAL), SAND SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.

ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.

THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

SPILL OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED IMMEDIATELY TO THE OWNER.

THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.

THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY–TO–DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE/SHE WILL DESIGNATE AT LEAST ONE OTHER SITE PERSONNEL, WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP, THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IF APPLICABLE, IN THE OFFICE TRAILER ONSITE.

SPILL PREVENTION

MATERIAL MANAGEMENT PRACTICES

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.

GOOD HOUSEKEEPING

THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.

AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB.

ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.

PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.

SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.

WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.

MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.

HAZARDOUS PRODUCTS

THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS.

PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.

ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION.

IF SURPLUS PRODUCT MUST BE DISPOSED OF MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES

THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ONSITE:

PETROLEUM PRODUCTS

ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS

FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED AREA. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS

ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURERS' INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS

CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER TO DITCHES, PONDS OR OTHER WATERWAYS. WASHWATER SHALL BE COLLECTED IN A TEMPORARY SETTLING POND.

OTHER CONTROLS

WASTE DISPOSAL

WASTE MATERIALS

ALL WASTE MATERIALS EXCEPT LAND CLEARING DEBRIS SHALL BE COLLECTED AND STORED IN A METAL DUMPSTER. THE DUMPSTER WILL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS. THE DUMPSTER WILL BE EMPTIED AS NEEDED AND THE TRASH WILL BE HAULED TO A STATE APPROVED LANDFILL ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES WILL BE POSTED AT THE CONSTRUCTION SITE BY THE CONSTRUCTION SUPERINTENDENT, THE INDIVIDUAL WHO MANAGES THE DAY–TO–DAY SITE OPERATIONS, WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

HAZARDOUS WASTE

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES AND THE SITE SUPERINTENDENT, THE INDIVIDUAL WHO MANAGES DAY–TO–DAY SITE OPERATIONS, WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

SANITARY WASTE

ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS AS NEEDED TO PREVENT POSSIBLE SPILLAGE. THE WASTE WILL BE COLLECTED AND DISPOSED OF IN ACCORDANCE WITH STATE AND LOCAL WASTE DISPOSAL REGULATIONS FOR SANITARY SEWER OR SEPTIC SYSTEMS.

OFFSITE VEHICLE TRACKING

A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS. THE PAVED AREA ADJACENT TO THE SITE ENTRANCE WILL BE SWEPT DAILY TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARP.

MAINTENANCE/INSPECTION PROCEDURES

EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES

THE FOLLOWING ARE INSPECTION AND MAINTENANCE PRACTICES THAT WILL BE USED TO MAINTAIN EROSION AND SEDIMENT CONTROLS.

NO MORE THAN 1.0 ACRES OF THE SITE WILL BE CLEARED AT ONE TIME WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.

ALL CONTROL MEASURES WILL BE INSPECTED BY A CERTIFIED SUPERINTENDENT, THE PERSON RESPONSIBLE FOR THE DAY–TO–DAY SITE OPERATION OR SOMEONE APPOINTED BY THE SUPERINTENDENT, AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF ANY STORM EVENT OF 1/2" OR GREATER.

ALL TURBIDITY CONTROL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.

BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE–THIRD THE HEIGHT OF THE FENCE.

SILT FENCE WILL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, TO SEE IF THE FABRIC IS SECURELY ATTACHED TO THE FENCE POSTS, AND TO SEE THAT THE FENCE POSTS ARE FIRMLY IN THE GROUND.

CONSTRUCTION ENTRANCES WILL BE INSPECTED FOR DEPTH OF CRUSHED STONE BED AND FILTER FABRIC CONDITION. THE BED SHALL HAVE A 6" THICKNESS AND THE FILTER FABRIC SHALL BE FREE OF TEARS AND FIRMLY SECURE. ENTRANCES SHALL BE REMOVED PRIOR TO CONSTRUCTION OF DRIVEWAYS.

THE SEDIMENT BASINS WILL BE INSPECTED FOR DEPTH OF SEDIMENT, AND BUILT UP SEDIMENT WILL BE REMOVED WHEN IT REACHES 10 PERCENT OF THE DESIGN CAPACITY AND AT THE END OF THE JOB.

DIVERSION DIKES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.

TEMPORARY AND PERMANENT SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH.

A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION. COPY OF THE REPORT FORM TO BE COMPLETED BY THE INSPECTOR IS ATTACHED. THE REPORTS WILL BE KEPT ON SITE DURING CONSTRUCTION AND AVAILABLE UPON REQUEST TO THE OWNER, ENGINEER OR ANY FEDERAL, STATE, AND LOCAL AGENCY APPROVING SEDIMENT AND EROSION PLANS, OR STORM WATER MANAGEMENT PLANS. THE REPORTS SHALL BE MADE AND RETAINED AS PART OF THE STORM WATER POLLUTION PREVENTION PLAN FOR AT LEAST THREE YEARS FROM THE DATE THAT THE SITE IS FINALLY STABILIZED AND THE NOTICE OF TERMINATION IS SUBMITTED. THE REPORTS SHALL IDENTIFY ANY INCIDENTS OF NON–COMPLIANCE.

THE SITE SUPERINTENDENT WILL SELECT UP TO THREE CERTIFIED INDIVIDUALS WHO WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.

PERSONNEL SELECTED FOR INSPECTION AND MAINTENANCE RESPONSIBILITIES WILL RECEIVE TRAINING FROM THE SITE SUPERINTENDENT AND MUST ENFORCE THE FDEP NPDES SWPPP FOR THIS PROJECT. THEY WILL BE TRAINED IN ALL THE INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ONSITE IN GOOD WORKING ORDER.

NON–STORM WATER DISCHARGES

IT IS EXPECTED THAT THE FOLLOWING NON–STORM WATER DISCHARGES WILL OCCUR FROM THE SITE DURING THE CONSTRUCTION PERIOD.

UNCONTAMINATED GROUNDWATER (FROM DEWATERING EXCAVATION).

ALL NON–STORM WATER DISCHARGES WILL BE DIRECTED TO THE SEDIMENT BASIN OR OTHER APPROPRIATE AREA PRIOR TO DISCHARGE TO EXISTING DITCHES OR WETLANDS.

CONTRACTORS CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FROM THE SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

SIGNATURE	BUSINESS NAME & ADDRESS OF CONTRACTOR, ALL SUBS	RESPONSIBLE FOR/DUTIES
		GENERAL CONTRACTOR
		SUBCONTRACTOR
		SUBCONTRACTOR
		SUBCONTRACTOR

60% SUBMITTAL

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED AGOODDEN
DRAWN JKRAMER
CHECKED WNICKEL

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

EROSION CONTROL NOTES

APPROVED BY
AMY LIANE GOODDEN
P.E. # 60097

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: C9

SAVED: 5/22/2019 6:49 AM CAUTODESK Y:\19850-SWFWMD\PROJECTS\041-01_FLATFORD SWAMP AQUIFER RECHARGE\CAD\DWGS\CIVIL\19850041O1-C09.DWG

SEDIMENT AND EROSION CONTROL NOTES

STORMWATER POLLUTION PREVENTION PLAN

INSPECTIONS MUST OCCUR AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM EVENT THAT IS 0.50 INCHES OR GREATER

INSPECTOR: _____ FDEP NPDES STORMWATER IDENTIFICATION NUMBER: _____

LOCATION	RAIN DATA	TYPE OF CONTROL (SEE BELOW)	DATE INSTALLED / MODIFIED	CURRENT CONDITION (SEE BELOW)	CORRECTIVE ACTION / OTHER REMARKS

CONDITION CODE:
G = GOOD M = MARGINAL, NEEDS MAINTENANCE OR REPLACEMENT SOON P = POOR, NEEDS IMMEDIATE MAINTENANCE OR REPLACEMENT
C = NEEDS TO BE CLEARED O = OTHER

CONTROL TYPE CODES

1. SILT FENCE	10. STORM DRAIN INLET PROTECTION	19. REINFORCED SOIL RETAINING SYSTEM	28. TREE PROTECTION
2. EARTH DIKES	11. VEGETATIVE BUFFER STRIP	20. GABION	29. DETENTION POND
3. STRUCTURAL DIVISION	12. VEGETATIVE PRESERVATION AREA	21. SEDIMENT BASIN	30. RETENTION POND
4. SWALE	13. RETENTION POND	22. TEMPORARY SEED / SOD	31. WASTE DISPOSAL / HOUSEKEEPING
5. SEDIMENT TRAP	14. CONSTRUCTION ENTRANCE STABILIZATION	23. PERMANENT SEED / SOD	32. DAM
6. CHECK DAM	15. PERIMETER DITCH	24. MULCH	33. SAND BAG
8. PIPE SLOPE DRAIN	16. CURB AND GUTTER	25. HAY BALES	34. OTHER
9. LEVEL SPREADERS	17. PAVED ROAD SURFACE	26. GEOTEXTILE	
9. LEVEL SPREADERS	18. ROCK OUTLET PROTECTION	27. RIP-RAP	

INSPECTOR INFORMATION:

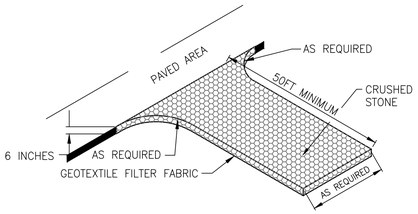
_____ _____ _____
NAME: QUALIFICATION DATE

THE ABOVE SIGNATURE ALSO SHALL CERTIFY THAT THIS FACILITY IS IN COMPLIANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN AND THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES IF THERE ARE NOT ANY INCIDENTS OF NON-COMPLIANCE IDENTIFIED ABOVE.

* * * * * *

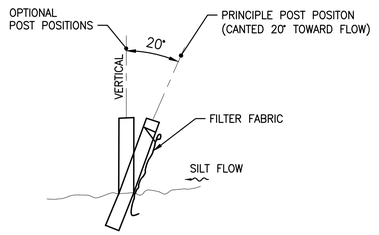
"I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE 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. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

_____ _____
NAME (RESPONSIBLE AUTHORITY) DATE

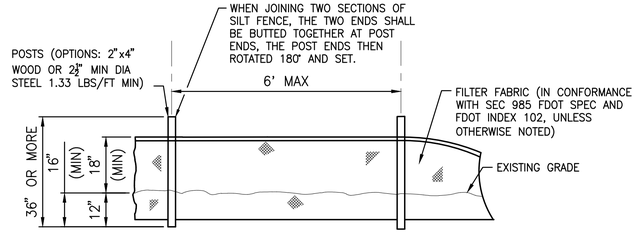


STABILIZED CONSTRUCTION ENTRANCE (Co)

NTS



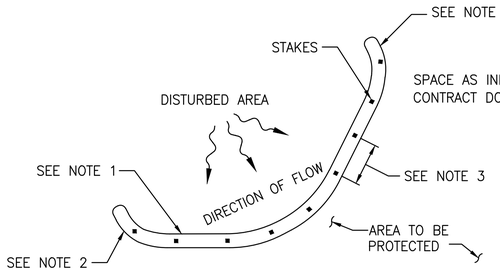
SECTION



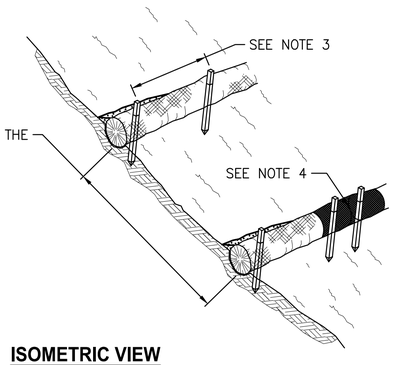
ELEVATION

TYPICAL SILT FENCE (Sd1)

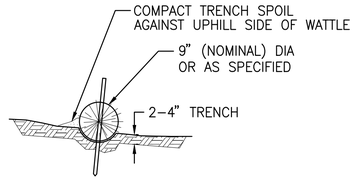
NTS



PLAN



ISOMETRIC VIEW



SIDE

NOTES:

1. INSTALL WATTLE ALONG CONTOUR OF SLOPE.
2. TURN ENDS OF WATTLE UPHILL TO PREVENT WATER FROM FLOWING AROUND ENDS.
3. SPACE STAKES AT 4 FT. MAX. INSTALL ADDITIONAL STAKES AS NECESSARY TO PREVENT MOVEMENT AND UNDERMINING.
4. ABUT ENDS OF ADJACENT WATTLES TIGHTLY. WRAP JOINT WITH 36 IN. WIDE SECTION OF SILT FENCE AND SECURE WITH STAKES.

WATTLE (Sd2)

NTS

60% SUBMITTAL

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED AGOODDEN
DRAWN JKRAMER
CHECKED WNICKEL

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

EROSION CONTROL DETAILS

APPROVED BY
AMY LIANE GOODDEN
P.E. # 60097

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: C10

GENERAL STRUCTURAL NOTES

GENERAL CONDITIONS

1. ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE MECHANICAL, CIVIL, ELECTRICAL, AND SHOP DRAWINGS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE WORK DEPICTED ON THE DRAWINGS. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE WORK.
3. FOR ALL ITEMS EMBEDDED IN OR PASSING THROUGH CONCRETE, THE CONTRACTOR SHALL INITIALLY REFER TO MECHANICAL FOR TYPE, SIZE, LOCATION, AND SPECIAL INSTALLATION REQUIREMENTS FOR THESE ITEMS.
4. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH A DEMOLITION, FOUNDATION EXCAVATIONS, AND OTHERS.
5. SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
6. ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

DESIGN CRITERIA

BUILDING CODES AND REFERENCES:

1. 2017 FLORIDA BUILDING CODE, 6TH EDITION (FBC)
2. REINFORCED CONCRETE:

   WATER RETAINING ENVIRONMENTAL STRUCTURES: ACI 350-06 "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES"

   ALL OTHER STRUCTURES: ACI 318-14 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
3. ALUMINUM: ADM1-2010, ALUMINUM DESIGN MANUAL
4. LIVE LOADS:

SLABS ON GRADE	300 PSF

5. WIND DESIGN CRITERIA:

RISK CATEGORY	III
ULTIMATE DESIGN WIND SPEED, V_{ULT}	154 MPH
NOMINAL DESIGN WIND SPEED, V_{ASD}	116 MPH
EXPOSURE CATEGORY	C
ENCLOSURE CLASSIFICATION	ENCLOSED

FOUNDATIONS

GEOTECHNICAL REPORT:

1. GEOTECHNICAL ENGINEERING SERVICES REPORT "FLATFORD SWAMP AQUIFER RECHARGE", PREPARED BY MC SQUARED, INC, PROJECT NO. T071726.162, DATED MAY 15, 2018. ANY INTERPRETATION OF THE CONTENTS OF THE GEOTECHNICAL REPORT IS THE RESPONSIBILITY OF THE CONTRACTOR.

FOUNDATION DESIGN PARAMETERS:

1. MAXIMUM ALLOWABLE BEARING PRESSURE.....2,000 PSF (NET)

CONCRETE (CAST-IN-PLACE)

1. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318 REQUIREMENTS.
2. ALL CONCRETE SHALL BE AIR-ENTRAINED WITH A MINIMUM OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS UNLESS OTHERWISE NOTED.
3. WATER REDUCING AGENT SHALL BE IN ACCORDANCE WITH ASTM C494.
4. ALL CONCRETE SURFACES EXPOSED TO AIR, UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS, SHALL BE TREATED WITH AN APPROPRIATE CURING COMPOUND AS SOON AS FINISHING IS COMPLETED OR FORMS ARE REMOVED.
5. ALL EXPOSED CORNERS SHALL HAVE A MINIMUM CHAMFER OF 3/4" UNLESS OTHERWISE NOTED.
6. THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR THE LOCATIONS OF CONSTRUCTION JOINTS THAT ARE NOT SHOWN ON THE DRAWINGS.

REINFORCING STEEL

1. REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 REQUIREMENTS. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A315 REQUIREMENTS. ALL ACCESSORIES SHALL BE IN CONFORMANCE WITH ACI 315 REQUIREMENTS.
2. REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR COVER UNLESS OTHERWISE NOTED:

   a. CONCRETE CAST AGAINST EARTH — 3"

   b. FORMED SURFACE IN CONTACT WITH SOIL, SEWAGE, WATER OR EXPOSED TO WEATHER — 2"
3. LAP SPLICES SHALL BE AS SHOWN ON THE DRAWINGS. FOR LAP SPLICES NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL OBTAIN ENGINEERS APPROVAL.
4. THE CONTRACTOR SHALL PREPARE PLACING DRAWINGS AND SCHEDULES IN CONFORMANCE WITH ACI 315 REQUIREMENTS.
5. UNLESS OTHERWISE NOTED, THE MINIMUM REINFORCING FOR WALLS AND SLABS SHALL BE AS FOLLOWS.

MINIMUM REINFORCING						
THICKNESS	6"	8"	10"	12" - 16"	18" - 22"	24"
REINF. EACH WAY	#4 @ 12"	#5 @12"	#5 @ 12"	#5 @ 12"	#6 @ 12"	#7 @ 12"
LOCATION	CTR	CTR	EF	EF	EF	EF

ALUMINUM

1. ALUMINUM DESIGN, DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO THE LATEST EDITION OF THE ALUMINUM DESIGN MANUAL.
2. ALUMINUM IN CONTACT WITH OR EMBEDDED IN CONCRETE OR MASONRY SURFACES SHALL BE COATED WITH A HEAVY COATING OF ALKALI RESISTANCE BITUMINOUS PAINT.
3. ALL BOLTS USED IN CONNECTIONS WITH ALUMINUM MEMBERS SHALL BE STAINLESS STEEL A316, UNLESS NOTED OTHERWISE.
4. ALL WELDING OF ALUMINUM STRUCTURES SHALL CONFORM TO "STRUCTURAL WELDING CODE - ALUMINUM", AWS D1.2, LATEST EDITION.

STAINLESS STEEL

1. STAINLESS STEEL PLATES, SHEETS AND STRUCTURAL SHAPES SHALL BE IN ACCORDANCE TO ASTM A240.
2. STAINLESS STEEL MATERIALS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

   a. EXTERIOR AND SUBMERGED USE: TYPE 316, TYPE 316L (WHERE WELDED)
3. ALL WELDING OF STRUCTURAL STAINLESS STEEL SHALL CONFORM TO "STRUCTURAL WELDING CODE - STAINLESS STEEL", ASW D1.6, LATEST EDITION.
4. STAINLESS STEEL BOLTS, NUTS AND WASHERS SHALL BE TYPE 316 IN ACCORDANCE TO ASTM F593 UNLESS NOTED OTHERWISE.

STRUCTURAL ABBREVIATIONS

&	AND	EXP	EXPANSION	PEMB	PRE-ENGINEERED METAL BUILDING
@	AT	FE	FIRE EXTINGUISHER	PERP	PERPENDICULAR
#	NUMBER	FF	FAR FACE, FINISHED FLOOR	PL	PLATE
ADDTL	ADDITIONAL	FG	FINISHED GRADE	PLF	POUND PER LINEAR FOOT
ALUM	ALUMINUM	FRP	FIBER REINFORCED PLASTIC	PT	PRESSURE TREATED
AEWS	AUTOMATIC END WELDED STUD(S)	FT	FOOT	PROJ	PROJECTION
ALT	ALTERNATE	FTG	FOOTING	PSF	POUNDS PER SQUARE FOOT
APROX	APPROXIMATE(LY)	FV	FIELD VERIFY	PSI	POUNDS PER SQUARE INCH
BLD	BUILDING	GA	GAGE	PVC	POLYVINYL CHLORIDE
BM	BEAM	GALV	GALVANIZED	R	RADIUS
BOT	BOTTOM	HK	HOOK	REINF	REINFORCING
CJ	CONTROL JOINT	HORIZ	HORIZONTAL	REQD	REQUIRED
CL	CENTER LINE	HSS	HOLLOW STRUCTURAL SECTION	RO	ROUGH OPENING
CLR	CLEAR	HP	HIGH POINT	SCHED	SCHEDULE(D)
CMU	CONCRETE MASONRY UNIT	ID	INSIDE DIAMETER	SIM	SIMILAR
COL	COLUMN	JT	JOINT	SJ	SAWCUT JOINT
CONC	CONCRETE	LB(S)	POUND(S)	SMS	SHEET METAL SCREW
CONN	CONNECTION	LONG	LONGITUDINAL	SPECS	SPECIFICATIONS
CONST JT	CONSTRUCTION JOINT	LP	LOW POINT	SQ	SQUARE
CONT	CONTINUOUS	MANUF	MANUFACTURER	SS	STAINLESS STEEL
DIA	DIAMETER	MATL	MATERIAL	STD	STANDARD
DEG	DEGREE(S)	MAX	MAXIMUM	STL	STEEL
DO	DITTO	MECH	MECHANICAL	T/	TOP OF
DWG	DRAWING	MFR	MANUFACTURER	TB	TIE BEAM
DWL	DOWEL(S)	MIN	MINIMUM	T&B	TOP AND BOTTOM
(E)	EXISTING	MISC	MISCELLANEOUS	THK	THICK
EA	EACH	MO	MASONRY OPENING	THRU	THROUGH
EF	EACH FACE	MTL	METAL	TOC	TOP OF CONCRETE
EJ	EXPANSION JOINT	NO	NUMBER	TOS	TOP OF STEEL
EL	ELEVATION	NTS	NOT TO SCALE	TYP	TYPICAL
ELEC	ELECTRICAL	OC	ON CENTER	UNO	UNLESS NOTED OTHERWISE
EMBED	EMBEDMENT	OD	OUTSIDE DIAMETER	VERT	VERTICAL
EOC	EDGE OF CONCRETE	OH	OPPOSITE HAND	WWF	WELDED WIRE FABRIC
EQ	EQUAL	OPNG	OPENING		
EW	EACH WAY	PCS	PIECES		
EXIST	EXISTING				

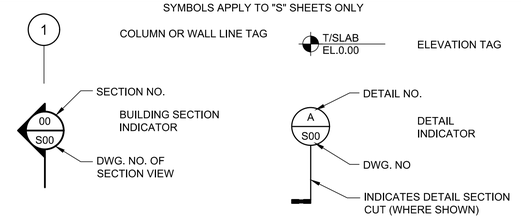
LEGEND

STRUCTURAL LEGEND APPLIES TO "S" SHEETS ONLY

- EARTH FILL
- UNDISTURBED EARTH
- COMPACTED GRANULAR FILL
- GROUT OR SAND (AS NOTED)
- GRATING
- CONCRETE
- EXISTING CONCRETE
- DEMOLITION
- STEEL
- PRECAST CONCRETE

SYMBOLS

SYMBOLS APPLY TO "S" SHEETS ONLY



60% SUBMITTAL

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FL ENG BUSINESS NO. 31920

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CHECKED D.MORRIS

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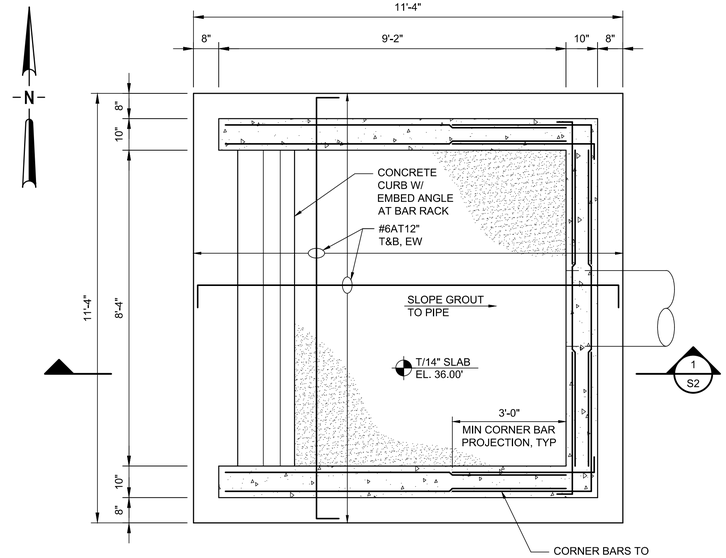
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

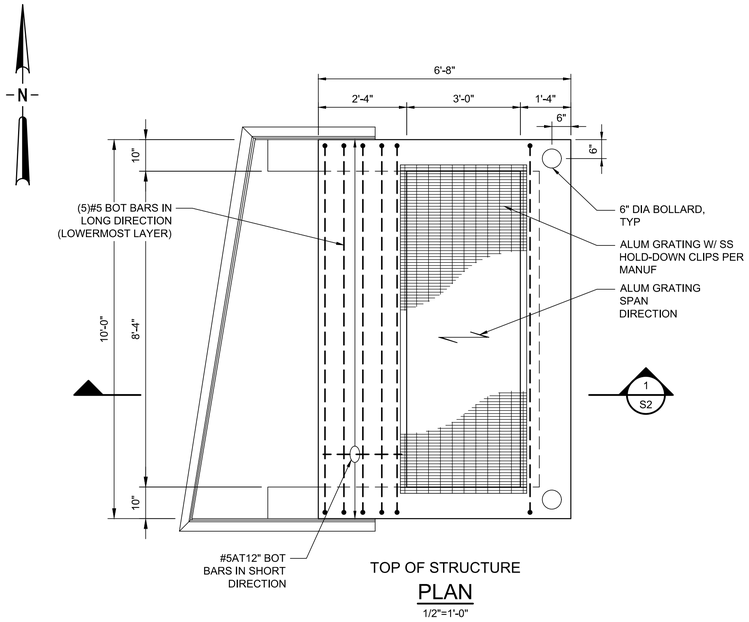
GENERAL STRUCTURAL NOTES, ABBREVIATIONS & SYMBOLS

APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

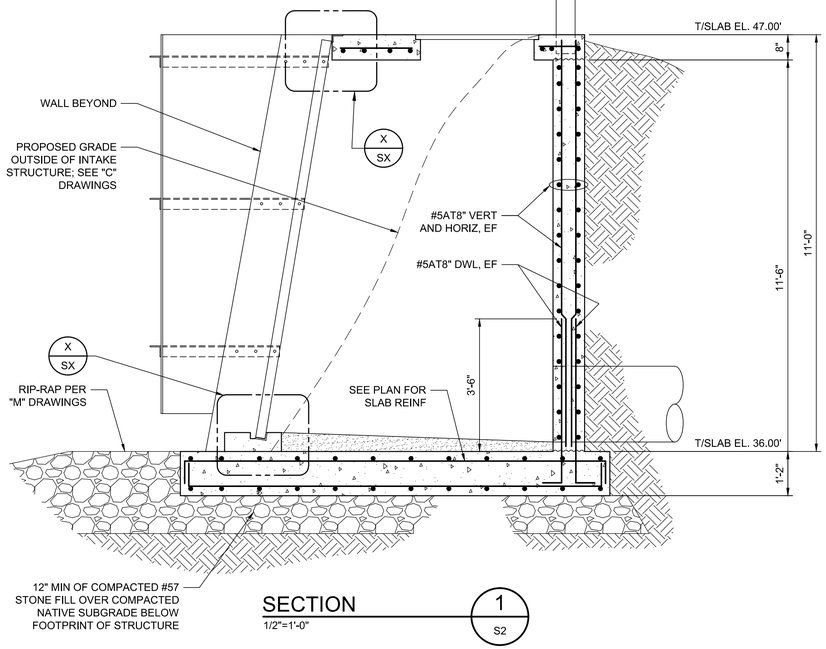
PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: S1



FOUNDATION
PLAN
1/2"=1'-0"



TOP OF STRUCTURE
PLAN
1/2"=1'-0"



SECTION
1/2"=1'-0"
1
S2

GRAPHIC SCALE
0 1 2 4 8
SCALE IN FEET

60% SUBMITTAL

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LTR.	DATE	REVISIONS	BY	APPRD.

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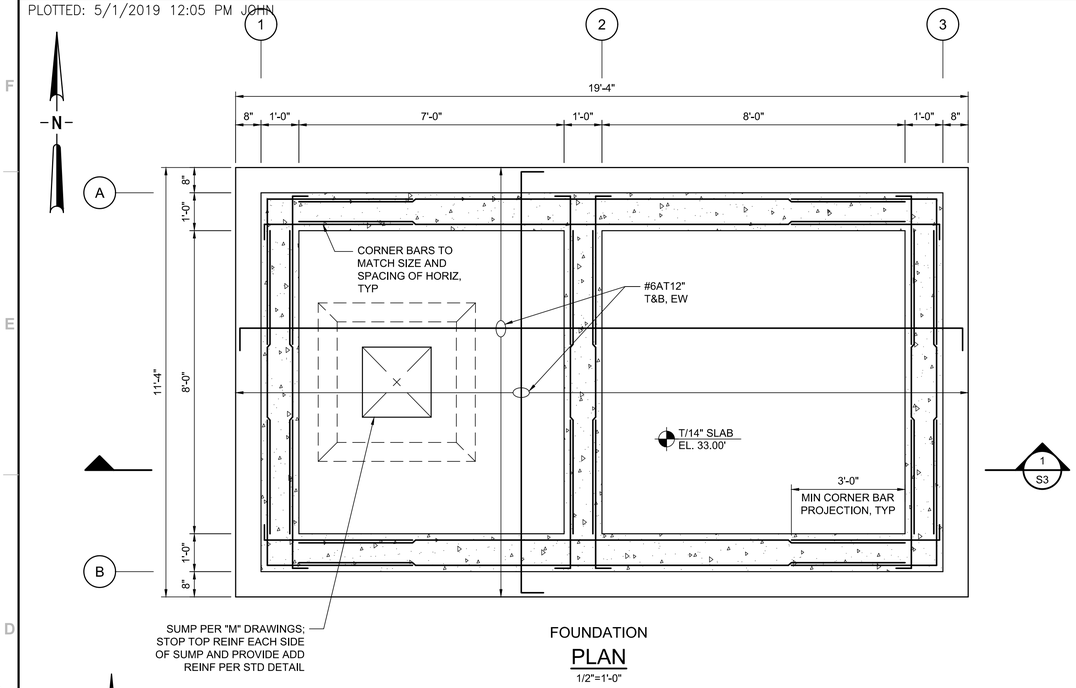
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

GRAVITY INTAKE STRUCTURE PLANS, SECTION AND DETAILS

APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: S2



FOUNDATION
PLAN
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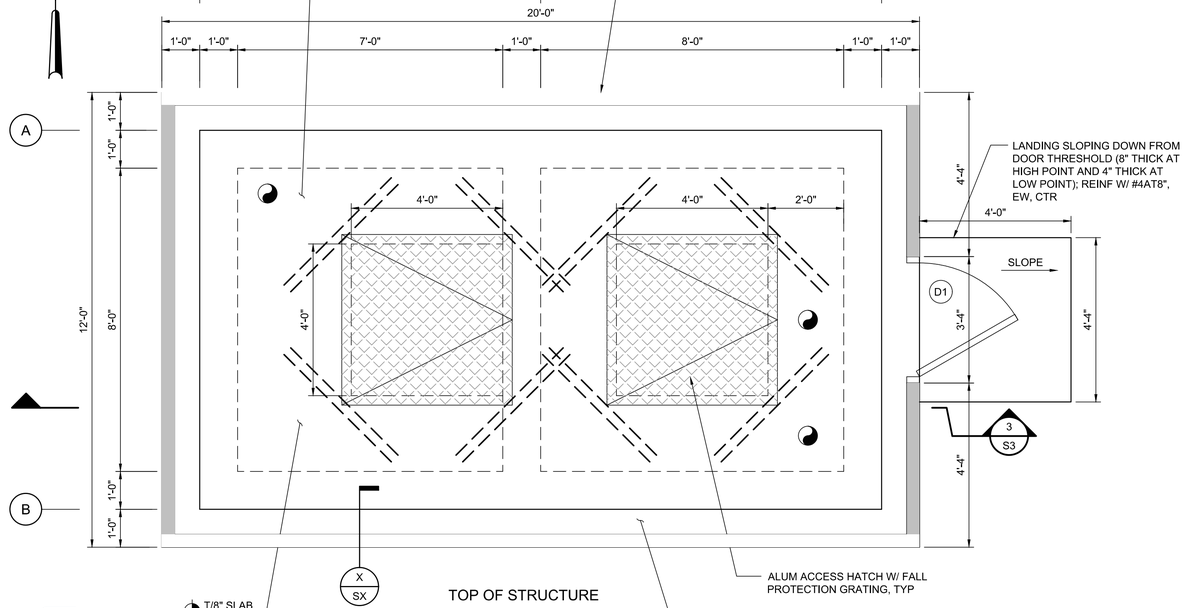
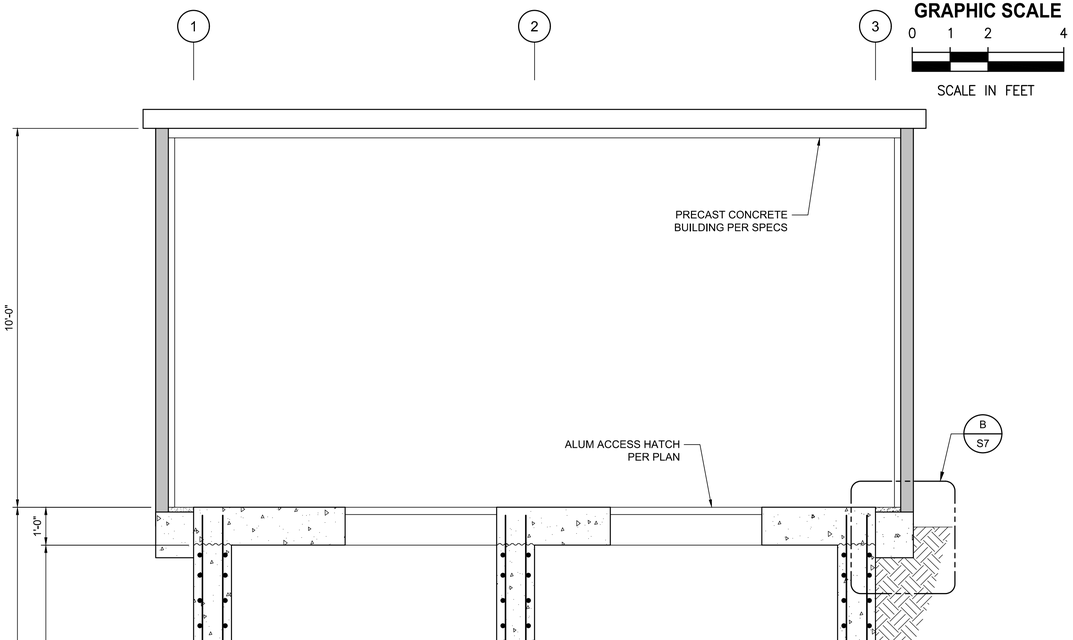


TOP OF STRUCTURE
PLAN
1/2"=1'-0"



SECTION
1/2"=1'-0"
1
S3

NOTES:
1. SEE SHEET S7 FOR DOOR SCHEDULE AND INTERIOR FINISH SCHEDULE FOR BUILDING.

60% SUBMITTAL

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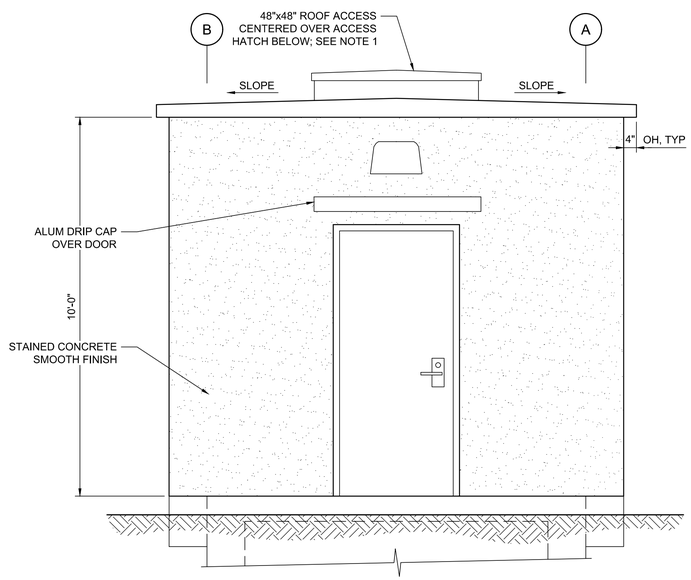
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

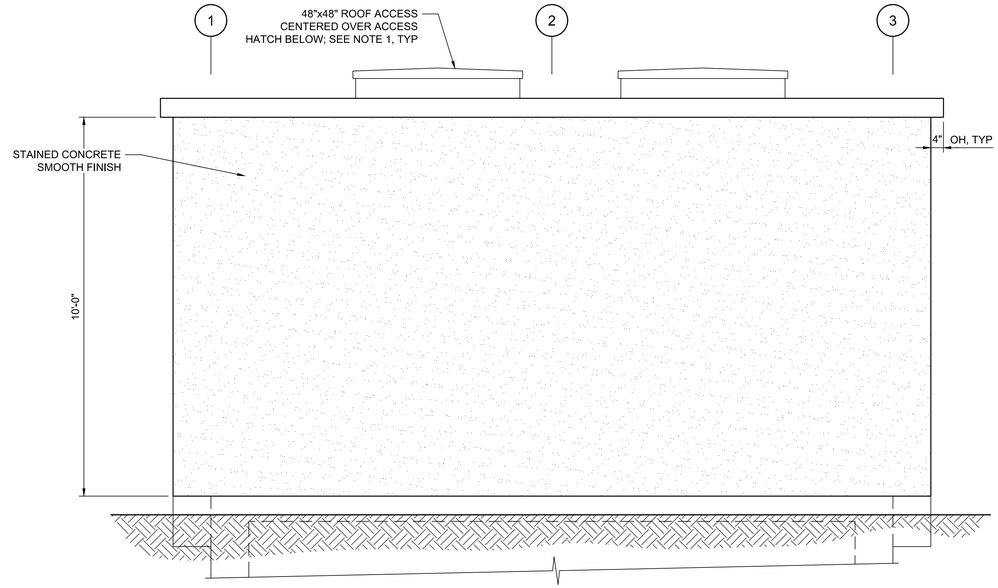
RECHARGE PUMP STATION PLANS AND SECTION

APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: S3



EAST
ELEVATION
1/2"=1'-0"

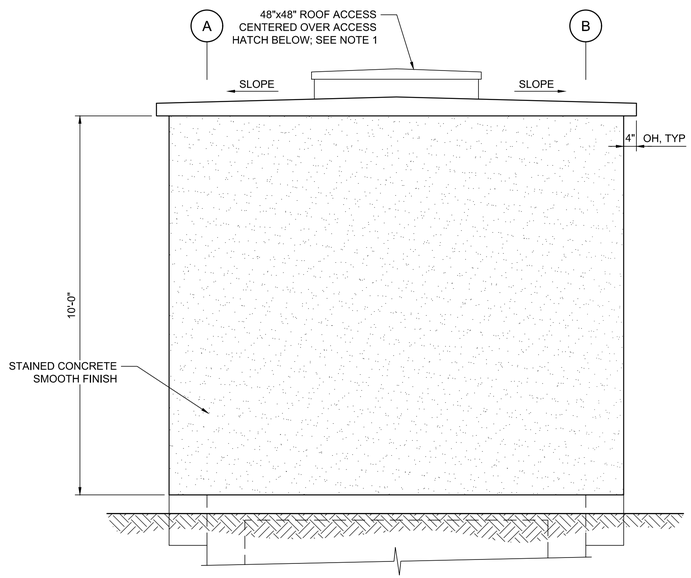


SOUTH
ELEVATION
1/2"=1'-0"

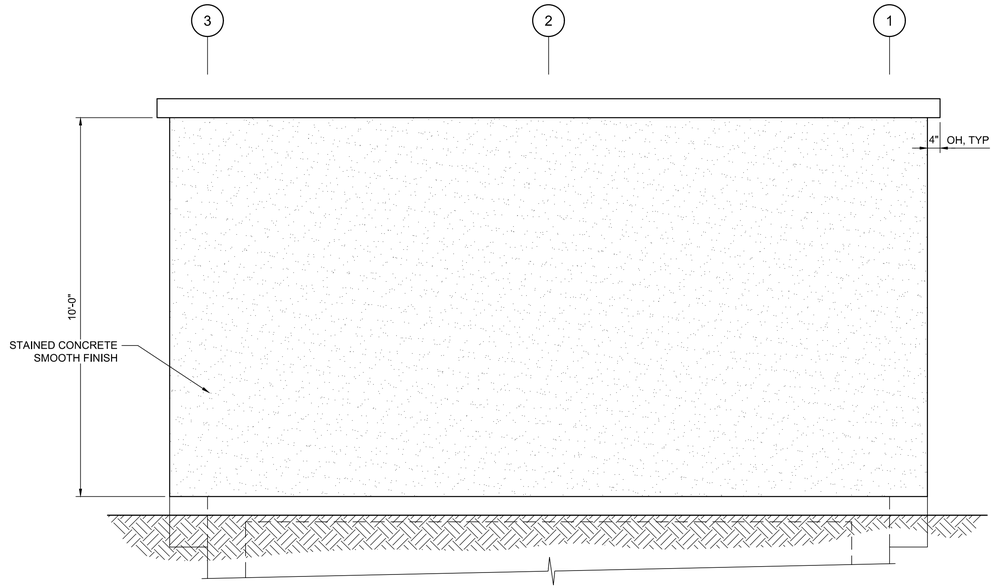
GRAPHIC SCALE

0 1 2 4 8

SCALE IN FEET



WEST
ELEVATION
1/2"=1'-0"



NORTH
ELEVATION
1/2"=1'-0"

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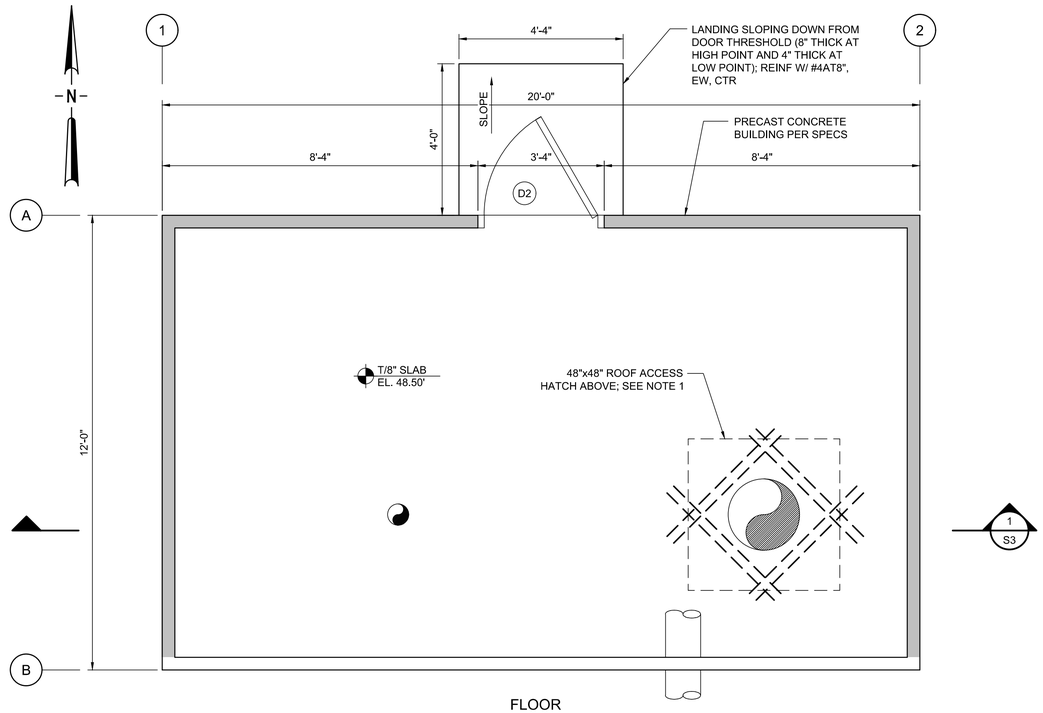
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

RECHARGE PUMP STATION BUILDING ELEVATIONS

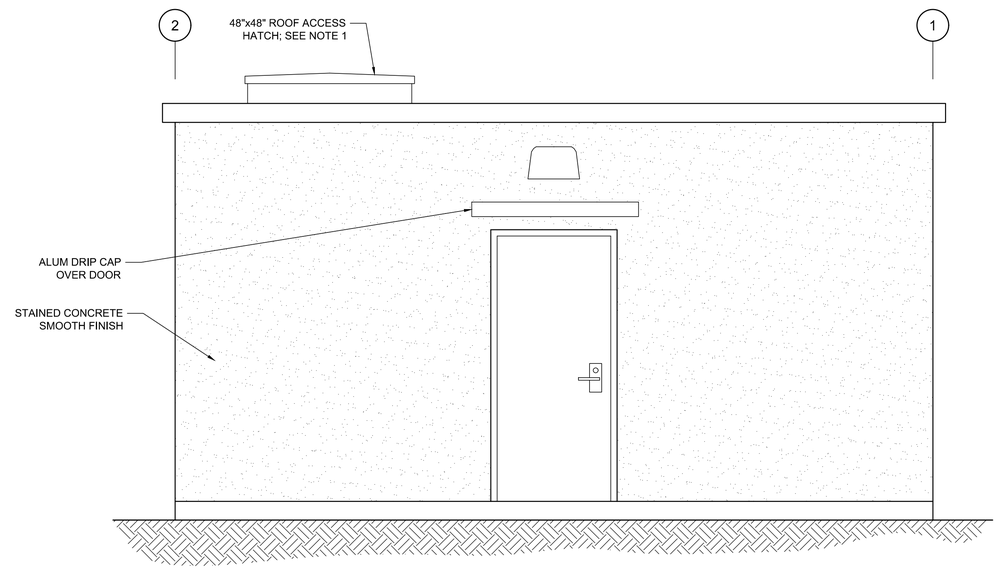
APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: S4

SAVED: 5/1/2019 11:57 AM JOHN P:\JONES EDMUNDS\18-135 FLATFORD SWAMP PUMP STATION\DRAWINGS\STRUCTURAL\S3.DWG



FLOOR
PLAN
1/2"=1'-0"

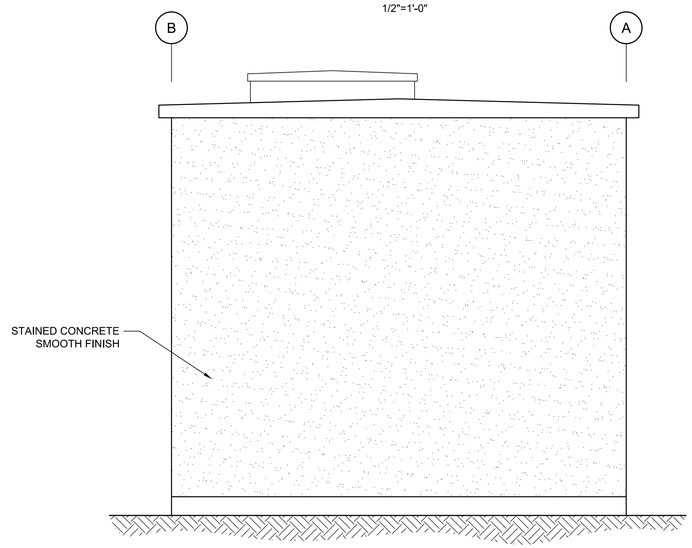


NORTH
ELEVATION
1/2"=1'-0"

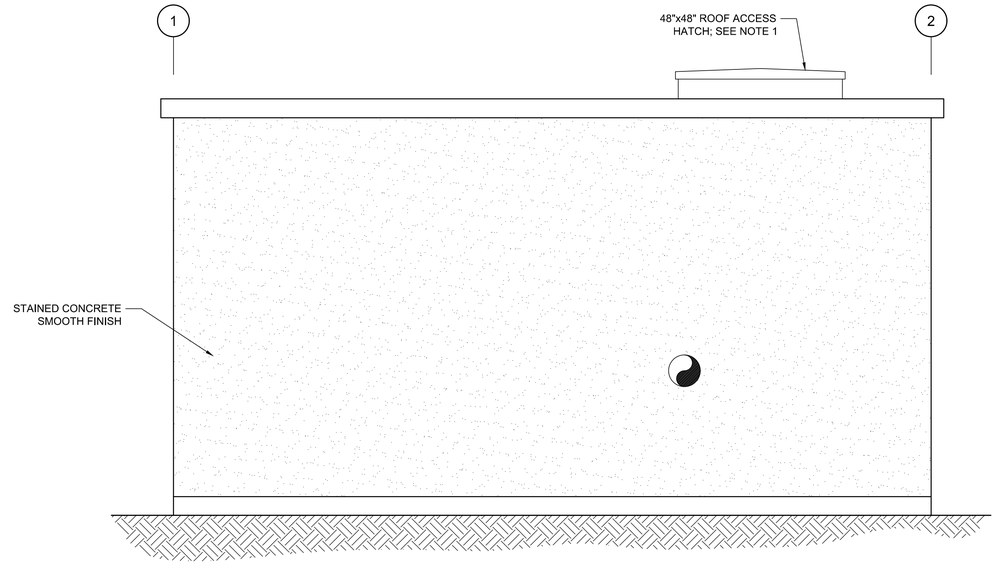
GRAPHIC SCALE

0 1 2 4

SCALE IN FEET



EAST (WEST SIMILAR)
ELEVATION
1/2"=1'-0"



SOUTH
ELEVATION
1/2"=1'-0"

NOTES:
1. SEE SHEET S7 FOR DOOR SCHEDULE AND INTERIOR FINISH SCHEDULE FOR BUILDING.

60% SUBMITTAL

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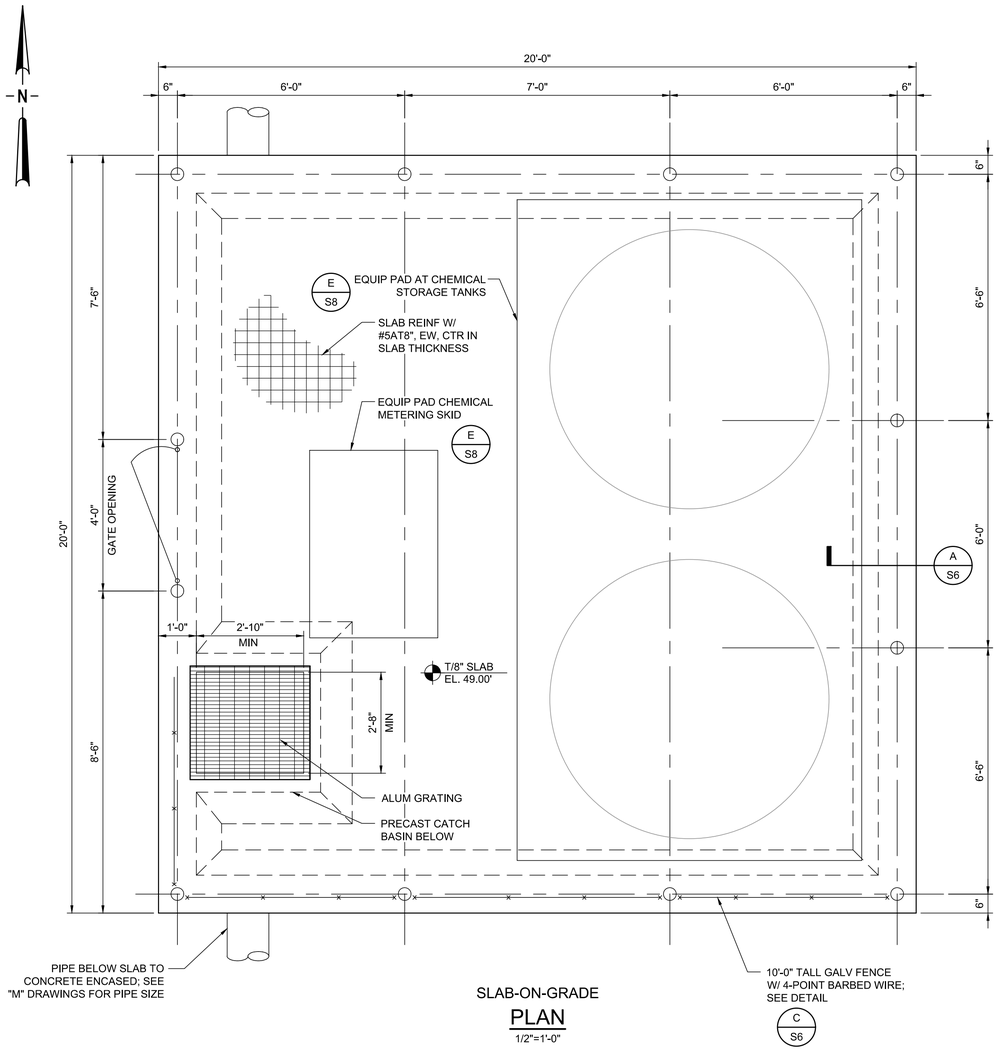
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

RECHARGE WELL BUILDING PLAN AND ELEVATIONS

APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

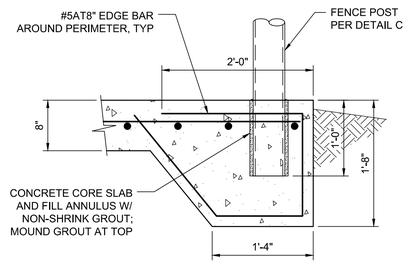
PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: S5



SLAB-ON-GRADE

PLAN

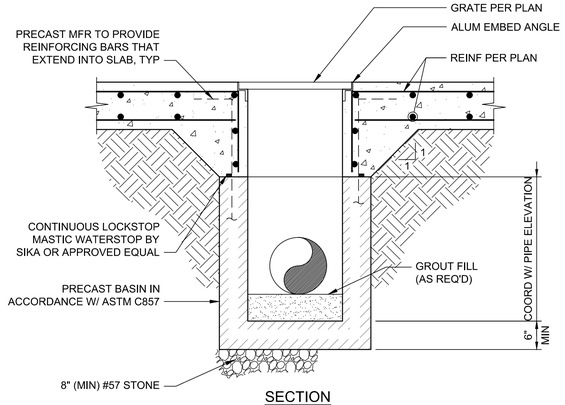
1/2"=1'-0"



THICKENED EDGE WITH FENCE POST

DETAIL — A / S6

1"=1'-0"



SECTION

CATCH BASIN

DETAIL — B / -

NTS

GRAPHIC SCALE

0 1 2 4

SCALE IN FEET

NOTES:

1. TRUSS BARS ARE REQUIRED FOR THE FIRST SPAN ON EACH SIDE OF A CORNER POST ONLY.
2. ALL COMPONENTS OF FENCE SHALL BE HOT-DIPPED GALVANIZED. POSTS TO BE GALVANIZED WITH MINIMUM OF 1.8 OUNCES PER SQUARE FOOT AND WIRE MESH SHALL BE GALVANIZED WITH MINIMUM OF 1.2 OUNCES PER SQUARE FOOT.
3. PROVIDE PVC OR NYLON SLATS OVER ENTIRETY OF FENCE. COLOR TO BE DARK GREEN.

CHAIN LINK FENCE

DETAIL — C / -

N.T.S.

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

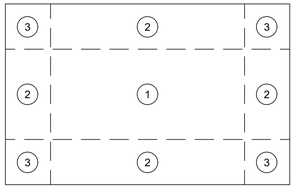
CHEMICAL FEED ENCLOSURE PLAN AND DETAILS

APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: S6

DESIGN WIND PRESSURES

(COMPONENTS AND CLADDING)



LOCATION	ZONE		P PSF	P PSF
ROOF	W/O OVERHANG	1	21.0	-51.8
		2	21..0	-86.9
		3	21.0	-130.7
WALLS	FIELD		47.4	-51.3
	CORNER*		47.4	-63.2

(*) CORNER ZONE WIDTH: 3'-0"
NEGATIVE SIGN INDICATES PRESSURE OUTWARD
ALL PRESSURES SHOWN CORRESPOND TO A COMPONENT W/ AREA <10FT^2.
WIND PRESSURES ARE CALCULATED USING THE ULTIMATE WIND SPEED.

DESIGN WIND PRESSURES

NTS

ROOM FINISH SCHEDULE

BUILDING	FLOOR	BASE	WALLS				CEILING	REMARKS
			NORTH	SOUTH	EAST	WEST		
PUMP/ELECTRICAL	F2	-	W1	W1	W1	W1	C3	-
RECHARGE WELL	F1	-	W1	W1	W1	W1	C3	-

NOTES:
1. F1 - CONCRETE FLOOR W/ STEEL TROWEL FINISH W/ CONCRETE SEAL ONLY.
2. F2 - CONCRETE FLOOR W/ STEEL TROWEL FINISH W/ EPOXY COATING
3. W1 - PRECAST CONCRETE WALL STAINED
4. W2 - GYPSUM BOARD PAINTED
5. C3 - PRECAST CONCRETE CEILING STAINED
6. C4 - GYPSUM BOARD PAINTED
7. ALL EXPOSED METAL PLATES ON PRECAST WALL TO BE PAINTED.

DOOR SCHEDULE

BUILDING	NUMBER	DOORS					FRAMES			DETAILS			FIRE RATING	HARD-WARE SET	DESIGN WIND PRESSURE (ASD)	NOTES
		WIDTH	HEIGHT	TYPE	MAT'L	FIN	TYPE	MAT'L	FIN	HEAD	JAMB	THRES-HOLD				
PUMP/ELECTRICAL	D1	3'-0"	8'-0"	F	AL	PTD	A	AL	PTD	A	A	A	-	HW-1	± 50 PSF	SEE BELOW
RECHARGE WELL	D2	3'-0"	8'-0"	F	AL	PTD	B	AL	PTD	A	A	A	-	HW-1	± 50 PSF	SEE BELOW

NOTES

DOOR HARDWARE:

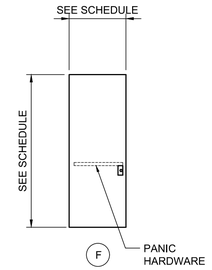
1. HANDLE: LINDSTRUM STAINLESS STEEL, 8-1/2" X 2", OR EQUAL.
2. LOCKSET: CAL-ROYAL LEVER LOCK, OR EASI-SETTM, OR EQUAL.
3. DEADBOLT: YALE OR EASI-SETTM STAINLESS STEEL KEYED OUTSIDE ONLY, OR EQUAL.
4. EXIT DEVICES: YALE 1800 SERIES, SURFACE VERTICAL ROD EXIT DEVICE, OR EQUAL.
5. HINGES: HAGAR STAINLESS STEEL FIVE KNUCKLE BALL BEARING WITH NON-REMOVABLE PINS, OR EQUAL.
6. THRESHOLD: HAGAR OR NATIONAL GUARD PRODUCTS EXTRUDED ALUMINUM WITH NEOPRENE SEAL, OR EQUAL.
7. OVERHEAD DOOR HOLDER: YALE SURFACE MOUNTED OVERHEAD SLIDE TYPE WITH SAFETY RELEASE, OR EQUAL
8. DRIP CAP: HAGER OR NATIONAL GUARD PRODUCTS ALUMINUM WITH STAINLESS STEEL SCREWS, OR EQUAL.
9. DOOR CLOSER: NORTON CE1604H OR YALE 4410 WITH HOLD OPEN, OR EQUAL. SURFACE BOLTS (UPPER AND LOWER): MAGNOKROM INC. 400-401 CADMIUM PLATED FINISH, OR EQUAL.
10. ASTRAGAL: GALVANIZED STEEL, SAME FINISH AND BRAND AS DOOR.
11. DOOR STOP: IVES 445B26D BRUSHED CHROME (INACTIVE LEAF ONLY), OR EQUAL.

DOORS

1. MAN DOORS TO HAVE INSULATED CORE AND A MINIMUM OF 18 GAUGE THICKNESS. FRAMES TO BE MINIMUM 16 GAUGE THICKNESS.
2. ALL DOORS SHALL HAVE A VALID FLORIDA PRODUCT APPROVAL NUMBER.

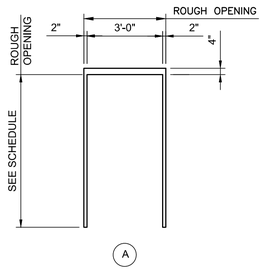
LIST OF ABBREVIATIONS:

AL = ALUMINUM SS = STAINLESS STEEL HM = HOLLOW METAL
STL = STEEL FRP = FIBER REINFORCED PLASTIC PTD = PAINTED



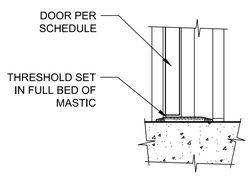
DOOR TYPES

NTS

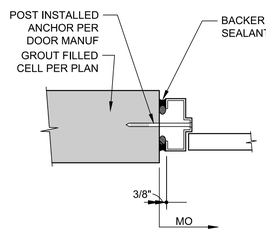


FRAME TYPES

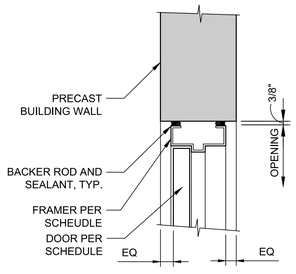
NTS



THRESHOLD



JAMB



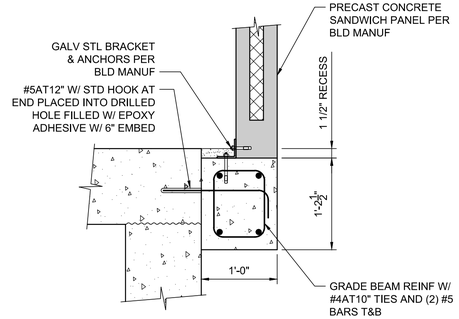
HEAD

NOTE:
1. GROUT FILL STEEL DOOR FRAMES.

DOOR DETAILS

DETAIL A

1"=1'-0"



PRECAST CONCRETE PANEL BASE CONNECTION

DETAIL B

1"=1'-0"

60% SUBMITTAL

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CHECKED D.MORRIS

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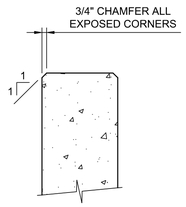
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

BUILDING
SCHEDULES AND DETAILS

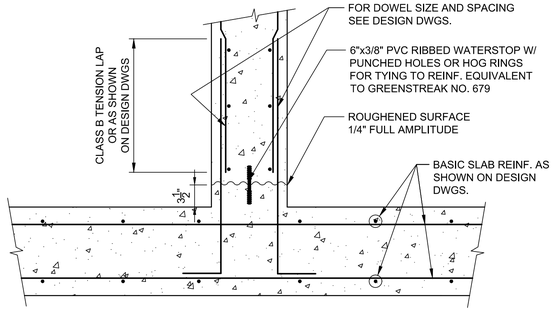
APPROVED BY
JOHN V. SOBCZAK
P.E. #71407

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: S7



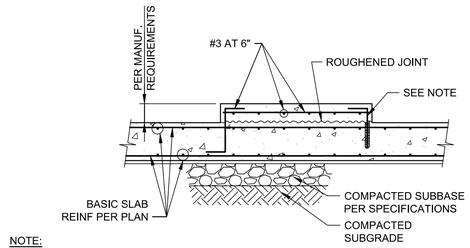
CHAMFER

DETAIL A
NTS



WALL BASE CONSTRUCTION JOINT

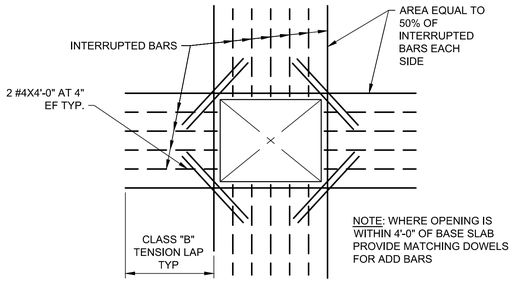
DETAIL B
NTS



NOTE:
1. FOR EXISTING CONCRETE SLAB DRILL AND EPOXY #5AT12" AROUND PERIMETER W/ 6" MIN EMBEDMENT.

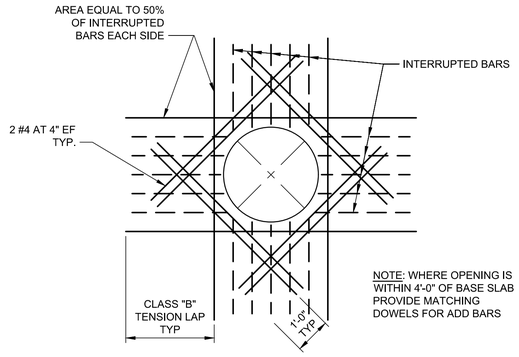
EQUIPMENT PAD

DETAIL E
NTS



REINF AT RECTANGULAR OPENINGS GREATER THAN 12"

DETAIL C
NTS



REINF AT CIRCULAR OPENINGS GREATER THAN 12"

DETAIL D
NTS

60% SUBMITTAL

WEKIVA ENGINEERING
711 N ORANGE AVE, STE A
WINTER PARK, FL 32789
PH: 321.972.4989
WEKIVA PROJ. NO. 18-135
FL ENG BUSINESS NO. 31920

LTR.	DATE	REVISIONS	BY	APPRD.

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CHECKED D.MORRIS

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

BUILDING
SCHEDULES AND DETAILS

APPROVED BY
JOHN V. SOBCZAK
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PROJECT NO: 19850-041-01
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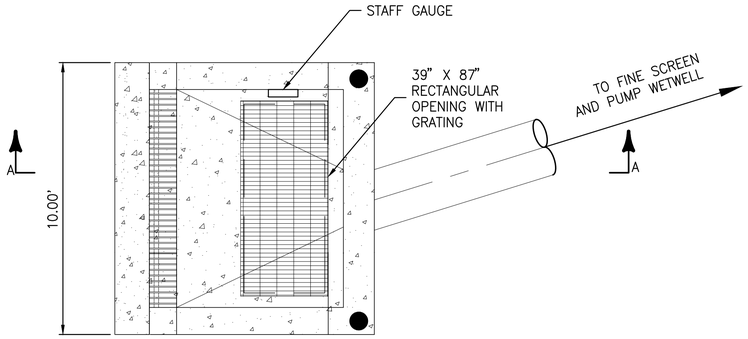
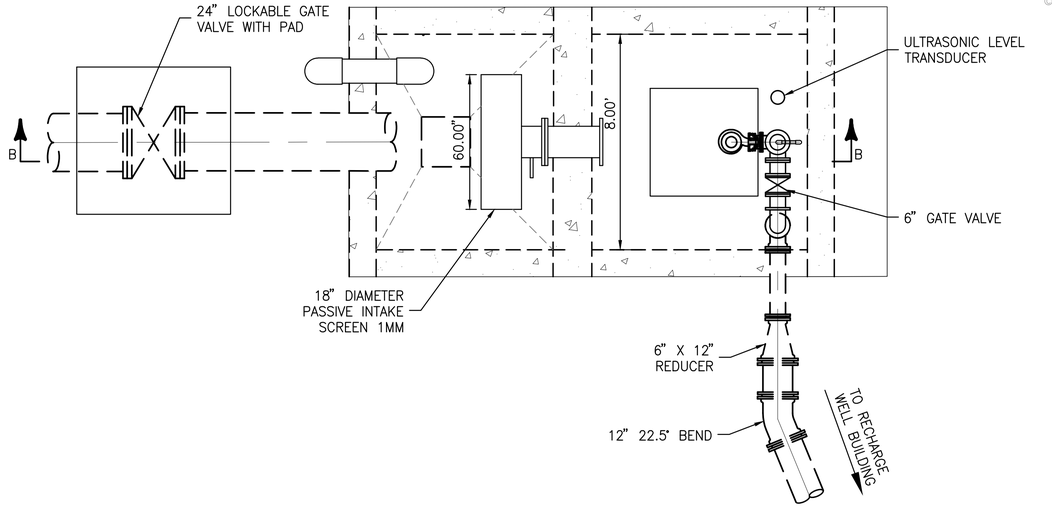


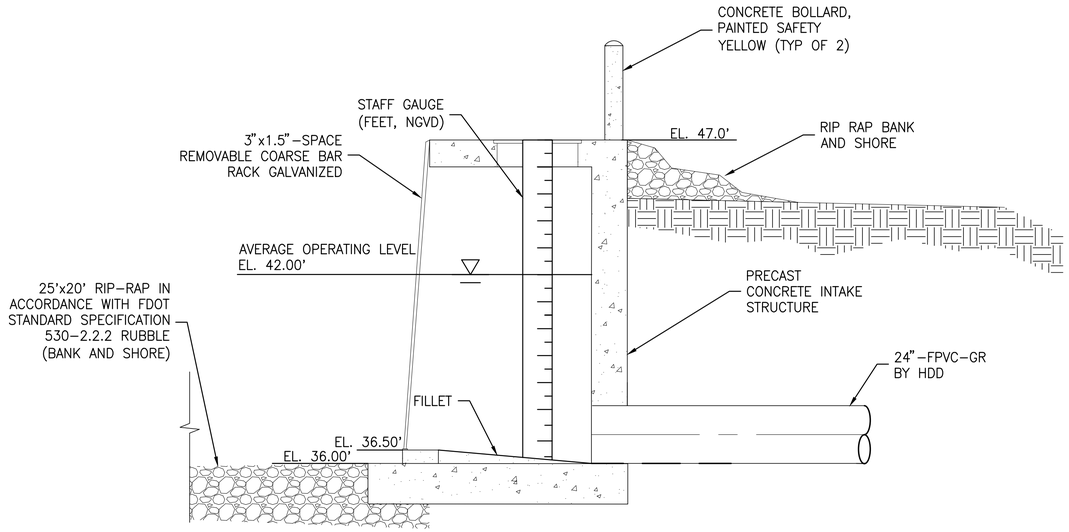
GRAVITY INTAKE STRUCTURE PLAN

NTS



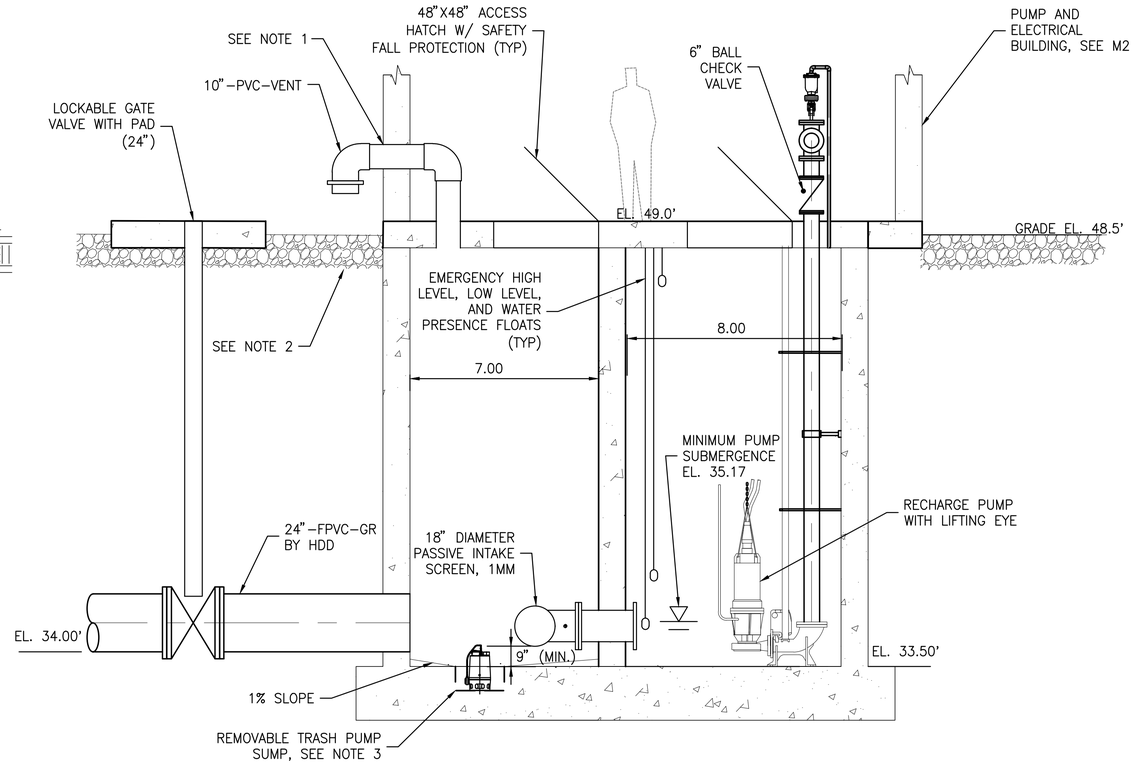
RECHARGE PUMP BUILDING PLAN

NTS



GRAVITY INTAKE STRUCTURE SECTION A-A

NTS



RECHARGE PUMP BUILDING SECTION B-B

NTS

NOTES:

1. SEAL WITH LINK-SEAL PER DETAIL 2 ON SHEET M6. TYPICAL FOR ALL PIPE PENETRATIONS.
2. ALL BUILDINGS AND ABOVEGROUND APPURTENANCES SHALL HAVE A 12-INCH THICK LAYER OF #57 STONE EXTENDING A MINIMUM OF 10 FEET FROM ANY ABOVEGROUND CONCRETE SURFACE. THE STONE SHALL BE RESTING ON FILTER FABRIC.
3. TRASH PUMP SHALL BE STORED IN THE RECHARGE WELL BUILDING WITH ELECTRICAL CONNECTION AND SUFFICIENT HOSE, SAFETY CABLE, AND ELECTRICAL CORD LENGTH, MINIMUM 25 FEET IN LENGTH, TO BE LOWERED INTO THE WET WELL SUMP. WET WELL SUMP DIMENSIONS SHALL BE 10.75-INCH BY 21.75 INCH BY 21.75 INCH. PUMP SHALL BE CAPABLE OF HANDLING AT LEAST 2-INCHES OF SOLIDS AND SHALL NOT EXCEED 30 LBS. PUMP SHALL BE GRUNDFOS MODEL UNILIFT AP50 OR ENGINEER APPROVED EQUAL.

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

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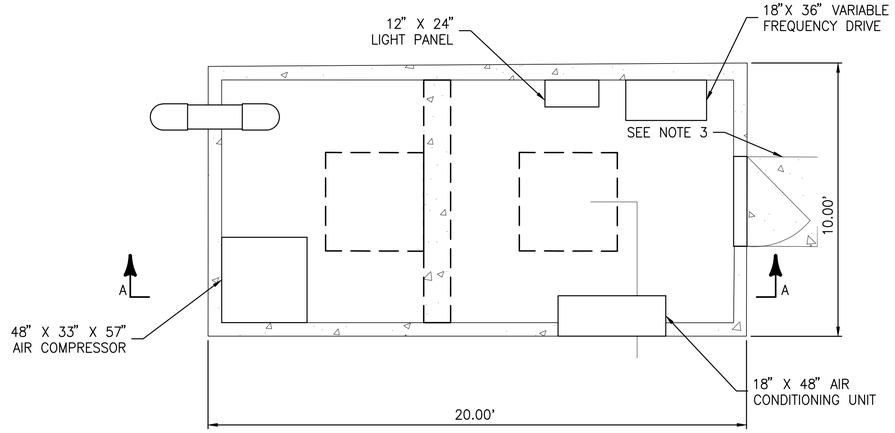
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

GRAVITY INTAKE STRUCTURE AND RECHARGE PUMP BUILDING PLANS AND SECTIONS

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

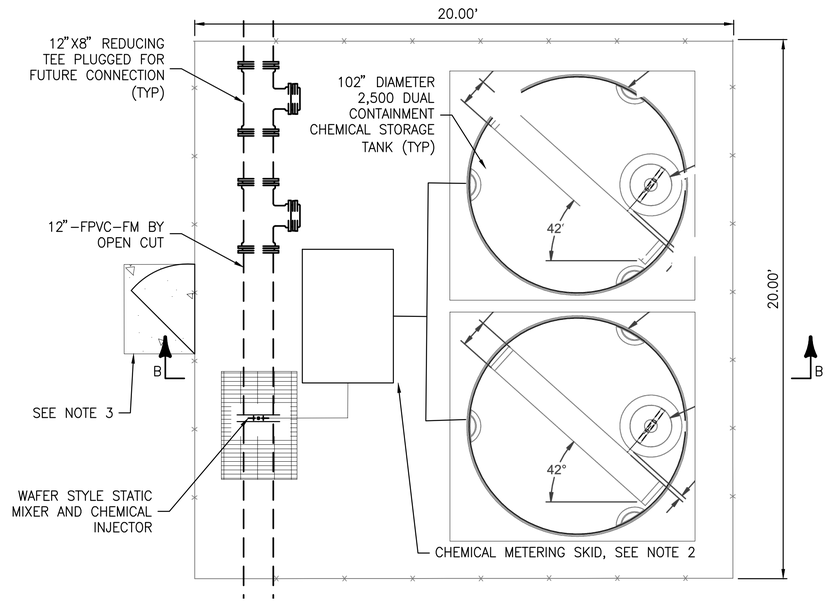
PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: M1

60% SUBMITTAL



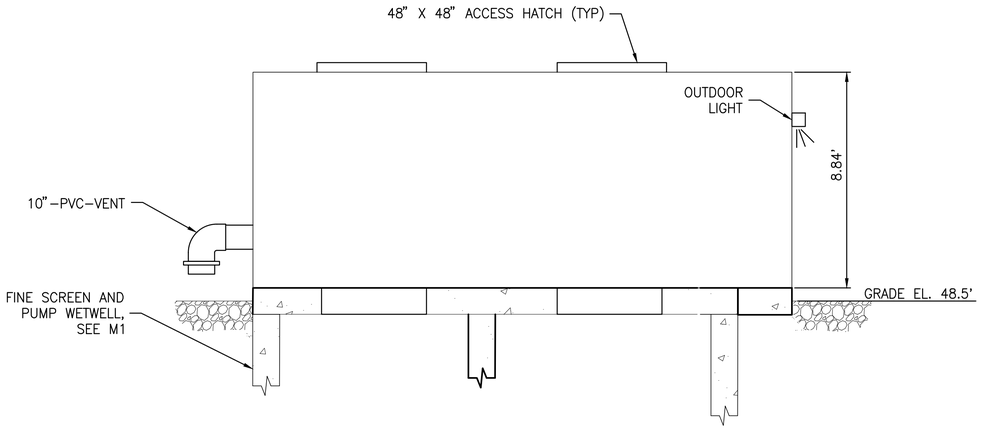
PUMP AND ELECTRICAL BUILDING PLAN

NTS



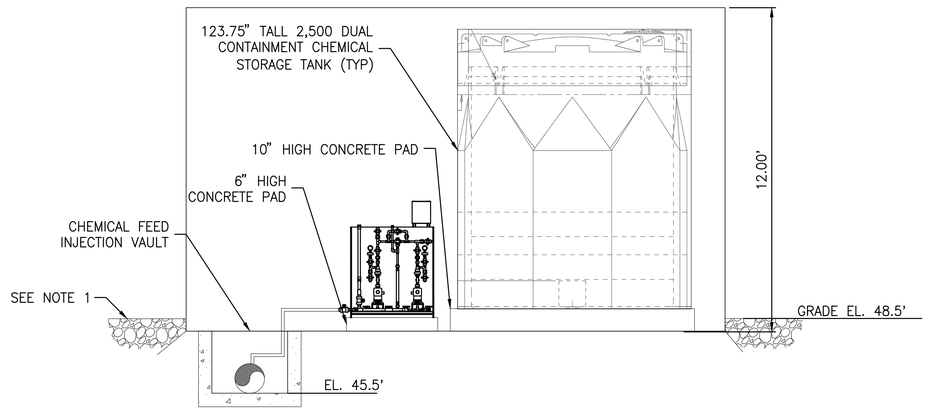
CHEMICAL FEED ENCLOSURE PLAN

NTS



PUMP AND ELECTRICAL BUILDING SECTION A-A

NTS



CHEMICAL FEED ENCLOSURE SECTION B-B

NTS

NOTES:

1. ALL BUILDINGS AND ABOVEGROUND APPURTENANCES SHALL HAVE A 12-INCH THICK LAYER OF #57 STONE EXTENDING A MINIMUM OF 10 FEET FROM ANY ABOVEGROUND CONCRETE SURFACE. THE STONE SHALL BE RESTING ON FILTER FABRIC.
2. TEMPORARY CHEMICAL FEED SYSTEM SHALL BE AS PROVIDED BY ODYSSEY MANUFACTURING. PUMP SKID SHALL BE ENCLOSED DUPLEX BLUE PLANET CONTAINING TWO PROMINENT PUMPS. THE PUMP SKID SHALL BE CONSTRUCTED OF WHITE WELDED PVC SHEETS. EACH PUMP SHALL CONTAIN A PULSE DAMPENER, BACKPRESSURE OR ANTI-SIPHON VALVE, PRESSURE RELIEF VALVE, INLET AND OUTLET FLUSHING CONNECTIONS, INLET AND OUTLET ISOLATION VALVES, A DISCHARGE PRESSURE GAUGE, AND AN INLET STRAINER. THE SKID SHALL CONTAIN A COMMON CALIBRATION COLUMN WHICH SHALL BE VENTED BACK TO THE STORAGE TANKS. ALL PIPING ON THE SKID SHALL BE 1/2" SCH 80 PVC EXCEPT FOR THE INLET HEADER WHICH SHALL BE 1".
3. CONCRETE SLAB SHALL EXTEND TO ACCOMMODATE DOOR ACCESS.

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED SMENARD
DRAWN JKRAMER
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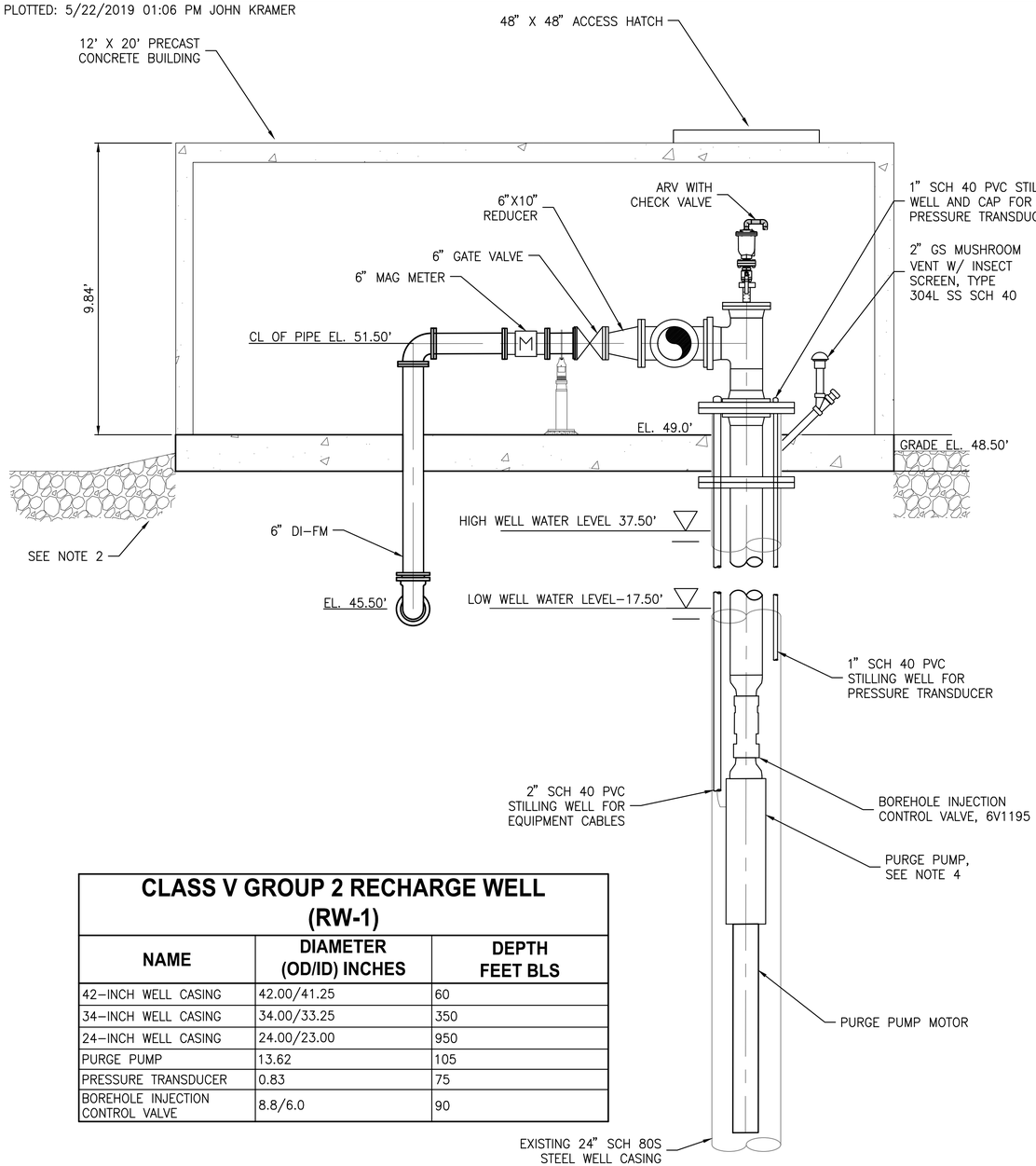
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

MECHANICAL PLANS AND SECTIONS

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: M2

60% SUBMITTAL

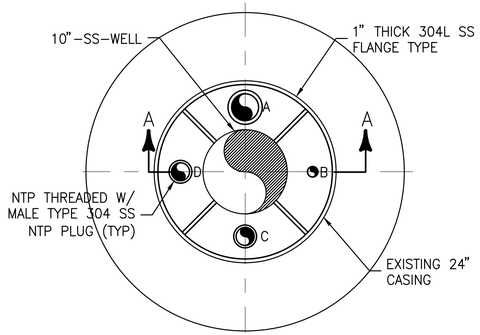


CLASS V GROUP 2 RECHARGE WELL (RW-1)		
NAME	**DIAMETER (OD/ID) INCHES**	**DEPTH FEET BLS**
42-INCH WELL CASING	42.00/41.25	60
34-INCH WELL CASING	34.00/33.25	350
24-INCH WELL CASING	24.00/23.00	950
PURGE PUMP	13.62	105
PRESSURE TRANSDUCER	0.83	75
BOREHOLE INJECTION CONTROL VALVE	8.8/6.0	90

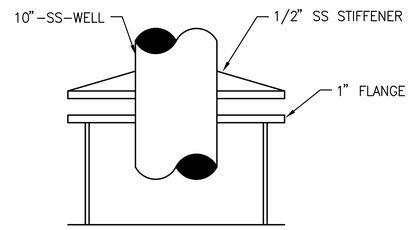
RECHARGE WELL BUILDING SECTION

NTS

NOTES:
1. CONTRACTOR TO STRAP HYDRAULIC HOSES TO PIPE COLUMN WITH NYLON STRAPS AT INTERVALS IN ACCORDANCE WITH MANUFACTURER INSTRUCTION
2. ALL BUILDINGS AND ABOVEGROUND APPURTENANCES SHALL HAVE A 12-INCH THICK LAYER OF #57 STONE EXTENDING A MINIMUM OF 10 FEET FROM ANY ABOVEGROUND CONCRETE SURFACE. THE STONE SHALL BE RESTING ON FILTER FABRIC.
3. CONCRETE SLAB SHALL EXTEND TO ACCOMMODATE DOOR ACCESS.
4. SUBMERSIBLE PURGE PUMP SHALL BE DESIGNED TO MEET A MINIMUM 4 MGD FLOW AT 81 FT TDH. PUMP SHALL BE PEERLESS MODEL 14HXB, SULZER MODEL JTS-20CC, OR ENGINEER APPROVED EQUAL.



PLAN

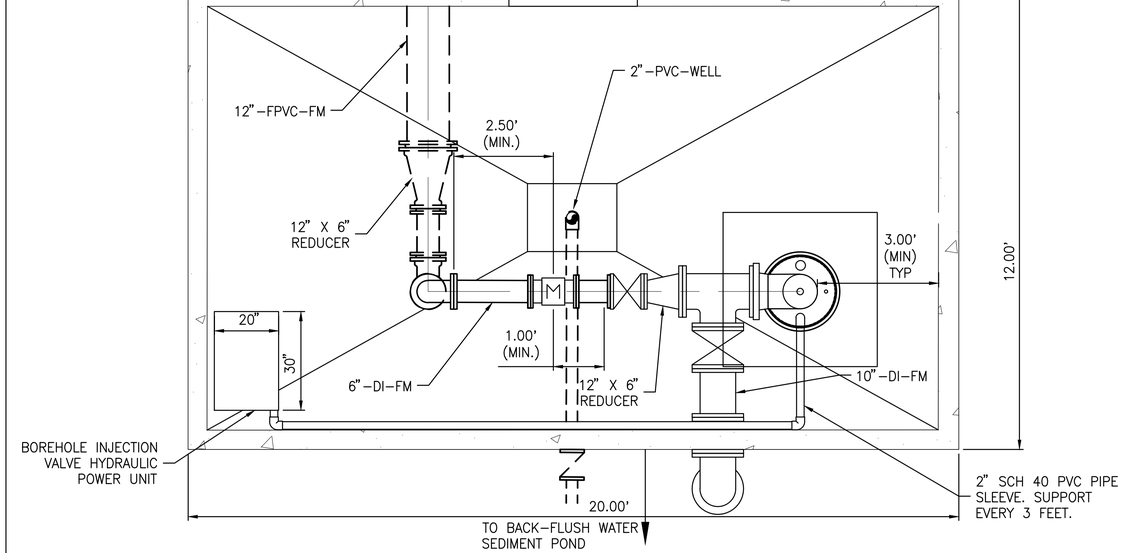


SECTION A-A

WELLHEAD SCHEDULE		
LETTER	**DIAMETER**	**PURPOSE**
A	3"	SPARE
B	1"	PRESSURE TRANSDUCER
C	2"	HYDRAULIC HOSE
D	2"	EQUIPMENT POWER CABLES

RECHARGE WELL HEAD DETAIL

NTS



RECHARGE WELL BUILDING PLAN

NTS

60% SUBMITTAL

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

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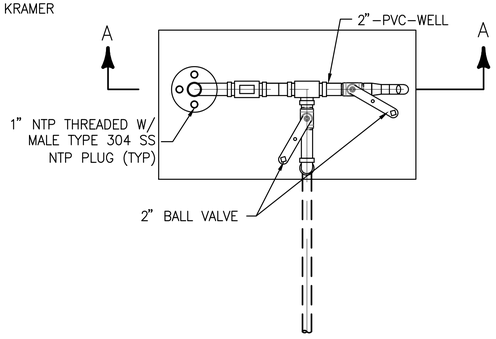
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

WELL BUILDING PLAN AND SECTION

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: M3



MONITORING WELL PLAN

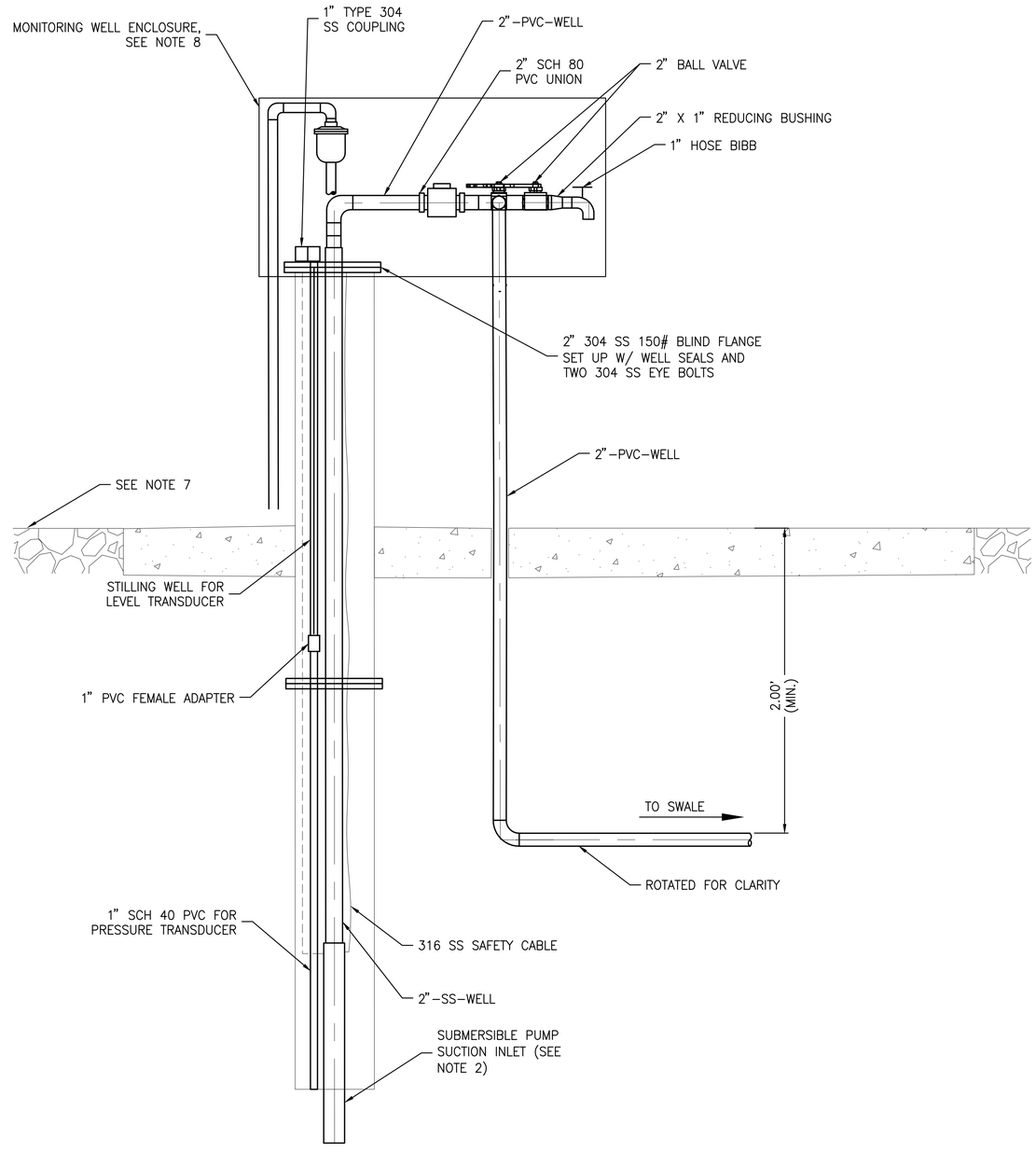
NTS

SLMW-1		
NAME	DIAMETER (OD/ID) INCHES	DEPTH FEET
20–INCH WELL CASING	20.00/19.25	60
14–INCH WELL CASING	14.00/13.25	350
6–INCH WELL CASING	6.625/6.065	450
PUMP	3.98	450
PRESSURE TRANSDUCER	0.83	100

RZMW-1		
NAME	DIAMETER (OD/ID) INCHES	DEPTH FEET
20–INCH WELL CASING	20.00/19.25	60
14–INCH WELL CASING	14.00/13.25	350
6–INCH WELL CASING	6.625/6.065	950
PUMP	3.98	950
PRESSURE TRANSDUCER	0.83	100

RZMW-2		
NAME	DIAMETER (OD/ID) INCHES	DEPTH FEET
20–INCH WELL CASING	20.00/19.25	60
14–INCH WELL CASING	14.00/13.25	350
6–INCH WELL CASING	6.625/6.065	950
PUMP	3.98	140
PRESSURE TRANSDUCER	0.83	100

NOTES:
1. CONTRACTOR TO FIELD VERIFY ALL MEASUREMENTS AND ELEVATIONS.
2. THE SUBMERSIBLE SAMPLING PUMP SHALL BE 450' BLS FOR SLMW–1 AND 950' BLS FOR RZMW–1 AND RZMW–2.
3. FIELD VERIFY PUMP CABLE LENGTH FROM MOTOR TO JUNCTION BOX PRIOR TO INSTALLATION (NO SPLICES WILL BE ACCEPTED).
4. STRAP PUMP CABLE TO PIPE COLUMN AT 5' INTERVALS WITH NYLON STRAPS.
5. PROVIDE 1" HEX SHOULDER STILL COCK HOSE BIBB WITH A TEE HANDLE.
6. ENSURE WATER TIGHT SEALING. PROVIDE STRAIGHT MALE CORD CONNECTOR.
7. ALL MONITORING WELLS SHALL HAVE A 12–INCH THICK LAYER OF #57 STONE EXTENDING A MINIMUM OF 10 FEET FROM ANY ABOVEGROUND CONCRETE SURFACE. THE STONE SHALL BE RESTING ON FILTER FABRIC.
8. MONITORING WELL ENCLOSURE SHALL BE PER THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT STANDARDS. CONTRACTOR SHALL COORDINATE WITH DISTRICT–SUPPLIED CONTACT THAT CAN BE REACHED AT:



MONITORING WELL SECTION A-A

NTS

60% SUBMITTAL

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED SMENARD
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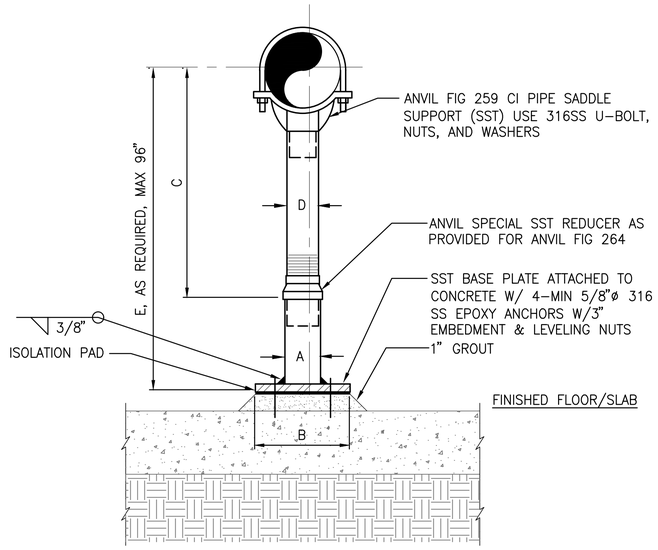
AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

MONITORING WELL PLAN AND SECTION

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850–041–01
DATE: MAY 2019
INDEX NO:
DWG NO: M4

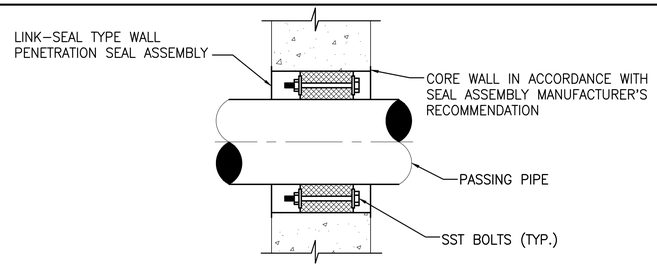


TYPICAL PIPE SUPPORT DIMENSION TABLE

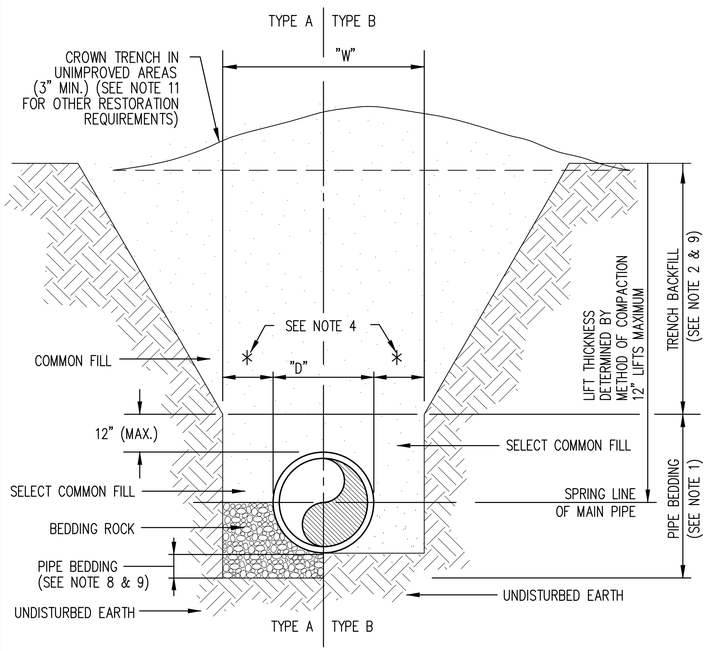
PIPE SIZE	A	B	C		D
			MIN	MAX	
INCHES					
6	4	9	10 1/2	15 1/4	3
12	4	9	15	19 3/4	3
24	6	13 1/2	23 3/4	28 1/4	4

NOTES:
1. SST (304 TYP) PIPE SUPPORT AND SST (304 TYP) BASE PLATE (WITH STAINLESS STEEL FASTENING HARDWARE).
2. ALL HARDWARE SHALL BE 316 SS.
3. PROVIDE NEOPRENE WAFFLE ISOLATION PAD, KORFUND KORPAD 40 UNDER SUPPORT FOOT WHEN PIPING IS ISOLATED OR SUPPORT IS ADJACENT TO MECHANICAL EQUIPMENT.
4. FOR BASE, AND COMPONENT DIMENSIONS, SEE PIPE SUPPORT DIMENSION TABLE ABOVE. ALL DIMENSIONS IN INCHES.
5. SEE PLANS AND SECTIONS FOR PIPE CENTERLINE ELEVATION REQUIREMENTS (DIMENSION "E").
6. BASE PLATES SHALL BE SQUARE AND BE (SST) 1/2-INCH THICK FOR PIPE SIZES THROUGH 10-INCH. FOR ALL LARGER PIPES BEING SUPPORTED, THE BASE PLATES SHALL BE 3/4-INCH (SST) THICK OR USE COMPANION FLANGE THREADED TO PIPE (SST).
7. FOR PIPE SUPPORTS 2 1/2", 3", AND 3 1/2" USE ANVIL FIG 191. USE 3X 3X 3/8 WASHER W/ 3/4" HOLE AND BOTTOM SECTION OF TYPICAL PIPE SUPPORT.
8. THE ANVIL MODEL NUMBERS PROVIDE THE QUALITY AND SIZING OF THE REQUIRED SUPPORTS, BUT NOT THE MATERIAL. THE MATERIAL IS TO BE 304 OR 316 STAINLESS STEEL. SUPPORTS SHALL BE FABRICATED OF SST AS REQUIRED AND THIS IS TYPICAL FOR ALL SUPPORTS AND HANGERS SHOWN IN THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

STANCHION TYPE SUPPORT DETAIL 1
NTS

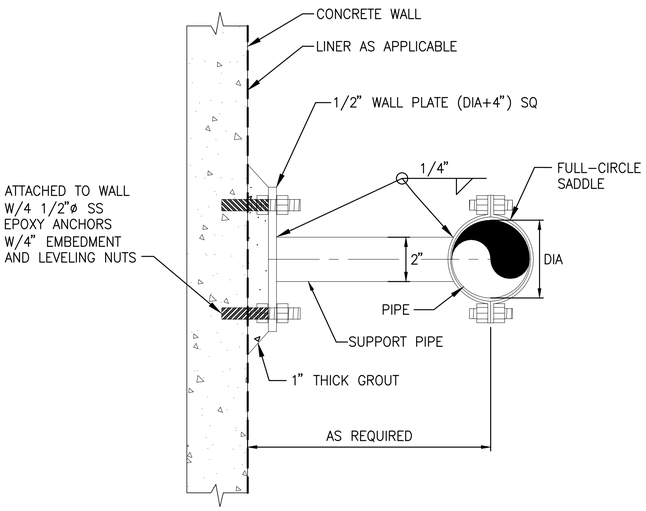


CONCRETE PENETRATION / SEAL DETAIL 2
NTS



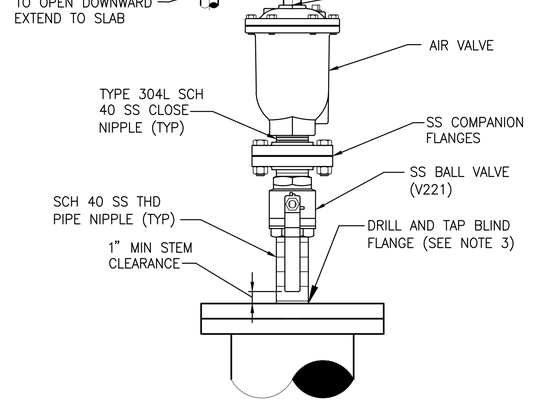
BEDDING AND TRENCHING DETAIL 3
NTS

BEDDING & TRENCHING NOTES:
1. PIPE BEDDING: SELECT COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180. COMPACTION SHALL BE 98% WITHIN 2' OF FINISHED ELEVATION UNDER ALL ROADWAYS, AND TO 2 LF BEHIND CONCRETE CURBS OR THE EDGE OF PAVEMENT.
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180. COMPACTION SHALL BE 98% WITHIN 2' OF FINISHED ELEVATION UNDER ALL ROADWAYS, AND TO 2 LF BEHIND CONCRETE CURBS OR THE EDGE OF PAVEMENT.
3. USE TYPE A BEDDING TO BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER.
4. 15" MAX. FOR PIPE DIAMETER LESS THAN 24", AND 24" MAX. FOR PIPE DIAMETER 24" AND LARGER.
5. ALL NECESSARY MEASURES SHALL BE TAKEN TO KEEP THE TRENCH AS DRY AS POSSIBLE DURING CONSTRUCTION.
6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
7. REFER TO LAND DEVELOPMENT CODE FOR SHEETING AND BRACING IN EXCAVATIONS.
8. GRAVITY PIPING SHALL UTILIZE TYPE A BEDDING. BEDDING DEPTH SHALL BE 4" MINIMUM FOR PIPE DIAMETER LESS THAN 15", AND 6" MINIMUM FOR PIPE DIAMETER 16" AND LARGER.
9. THE ENGINEER MAY APPROVE ALTERNATE METHODS OF TRENCH BACKFILL COMPACTION ON A CASE BY CASE SITUATION.
10. DEPTH FOR REMOVAL OF UNSUITABLE MATERIAL SHALL GOVERN DEPTH OF BEDDING ROCK BELOW THE PIPE. THE CITY SHALL DETERMINE IN THE FIELD REQUIRED REMOVAL OF UNSUITABLE MATERIAL TO REACH SUITABLE FOUNDATION.
11. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN THE COUNTY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF RIGHT-OF-WAY UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.



NOTES:
1. ALL HARDWARE, PLATE, SADDLE, PIPE SUPPORT, ETC, SHALL BE 316 SERIES SS.
2. SUPPORT PIPE SHALL BE SCH 40.

WALL-MOUNTED PIPE SUPPORT DETAIL 4
NTS



NOTES:
1. AIR VALVE INLET DIAMETER IS SPECIFIED ON THE DRAWINGS.
2. BALL VALVE AND NIPPLES SHALL HAVE THE SAME DIAMETER AS THE AIR VALVE INLET.
3. VERIFY SIZE OF VALVE PRIOR TO ORDERING ANCILLARY PARTS, DRILLING OR TAPPING.
4. EXTEND VENT TO 6" AFF, PROVIDE SS BUG SCREEN, AND S.S. UNI-STRUT SUPPORT, FOR WASTEWATER SERVICE EXTEND VENT TO WET WELL AS SHOWN.

AIR RELEASE VALVE DETAIL 5
NTS

60% SUBMITTAL

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED SMENARD
DRAWN JKRAMER
CHECKED DYONGE

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CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

MECHANICAL DETAILS

APPROVED BY
THOMAS W. FRIEDRICH
P.E. 61281

PROJECT NO: 19850-041-01
DATE: MAY 2019
INDEX NO:
DWG NO: M5

ABBREVIATION LEGEND

A	AMPS	LT	LEVEL TRANSDUCER
AFF	ABOVE FINISHED FLOOR	MCB	MAIN CIRCUIT BREAKER
AIC	AMPERE INTERRUPTING CURRENT	MCC	MOTOR CONTROL CENTER
A/C	AIR CONDITIONING	MCP	MASTER CONTROL PANEL
BIV	BOREHOLE INJECTION CONTROL VALVE	MFR	MANUFACTURER
CV	CONTROL VALVE	MLO	MAIN LUGS ONLY
CAH	CONDUCTIVITY ALARM HIGH	MOV	MOTOR OPERATED VALVE
CB	CIRCUIT BREAKER	MSB	MAIN SWITCHBOARD
DN	DOWN	MTD	MOUNTED
EG	EQUIPMENT GROUND	NS	VIBRATION SWITCH
EWH	ELECTRIC WATER HEATER	O.C.	ON CENTER
EX	EXISTING	P	POLE
FCV	FLOW CONTROL VALVE	PT	PRESSURE TRANSDUCER
FE	FLOW ELEMENT	PLC	PROGRAMMABLE LOGIC CONTROLLER
FIT	FLOW INDICATING TRANSMITTER	PS	PRESSURE SWITCH
FOC	FIBER OPTIC CONVERTER	PM	POWER MONITOR
FS	FLOW SWITCH	R	RELOCATED
FV	FLOW VALVE	REM	REMOTE
GALV	GALVANIZED	RIO	REMOTE INPUT/OUTPUT CABINET
GC	GROUND CONDUCTOR	RTD	RESISTANCE TEMPURATURE SWITCH
GF	GROUND FAULT	SS	STAINLESS STEEL
GND	GROUND	SI	SHAFT TACHOMETER SENSOR
HOA	HAND OFF AUTOMATIC	SPD	SURGE PROTECTION DEVICE
HP	HORSE POWER	SWS	SEAL WATER SOLENOID
HTR	HEATER	TSP	TWISTED SHIELDED PAIR
I/O	INPUT/OUTPUT	UPS	UNINTERRUPTABLE POWER SOURCE
JB	JUNCTION BOX	VFD	VARIABLE FREQUENCY DRIVES
LCP	LOCAL CONTROL PANEL	WP	WEATHER PROOF
LOC	LOCAL	LE	LEVEL ELEMENT
LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS GROUND FAULT PROTECTION FEATURES	LIT	LEVEL INDICATING TRANSMITTER
LSH	LEVEL SWITCH HIGH		
LSL	LEVEL SWITCH LOW		

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	MOUNTING
	POWER PANELBOARD, VOLTAGE AS NOTED	M.H. 6'–6" MIN. TO TOP
	BRANCH PANEL	M.H. 6'–6" MIN. TO TOP
	EQUIPMENT CONTROL PANEL	M.H. 6'–6" MIN. TO TOP
S	SINGLE POLE SWITCH (20A, 120/277)	M.H. 40" MIN. TO BOTTOM
S_3	THREE WAY SWITCH (20A, 120/277)	M.H. 40" MIN. TO BOTTOM
	DUPLEX RECEPTACLE (20A, 125V)	M.H. 18" TO CENTERLINE
	RACEWAY CONCEALED IN WALL OR ABOVE CEILINGS	SEE SPECIFICATIONS
	RACEWAY CONCEALED UNDER FLOOR OR BELOW GRADE	SEE SPECIFICATIONS
	RACEWAY EXPOSED ON WALL OR CEILING	SEE SPECIFICATIONS
L1A–1,3	HOMERUN TO PANEL, LETTERS INDICATE PANEL, NUMBERS INDICATE CIRCUIT. NOTE: ANY CIRCUIT WITHOUT FURTHER DESIGNATION INDICATES A TWO WIRE CIRCUIT. A GREATER NUMBER OF WIRES IS INDICATED AS SHOWN: EG (3 WIRES & EQUIPMENT GROUND), (4 WIRES & EQUIPMENT GROUND), ETC.	SEE SPECIFICATIONS
UP DN	RACEWAY RISER, UP OR DOWN AS NOTED.	SEE SPECIFICATIONS
	JUNCTION BOX OR OUTLET BOX, 4"x2 1/8" DEEP BOX UNLESS OTHERWISE NOTED	SEE SPECIFICATIONS
	MOTOR, NUMERAL INDICATES HORSEPOWER	BY OTHER DIVISION
	NON–FUSIBLE SAFETY SWITCH	SEE SPECIFICATIONS
T	DRY TYPE TRANSFORMER	FLOOR OR AS NOTED

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE RUBBER MATS AND PLYWOOD COVERS FOR ALL OWNERS EQUIPMENT SUSCEPTIBLE TO DAMAGE.
2. ALL WORK SHALL BE PERFORMED DURING TIME PERIODS ACCEPTABLE TO THE OWNER. SCHEDULE ALL WORK WITH THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING.
3. THE CONTRACTOR SHALL PERFORM ALL TEMPORARY WORK NECESSARY TO MAINTAIN CONTINUITY OF ELECTRICAL SERVICE WHEN CONNECTION IS MADE TO EXISTING SYSTEMS AND FACILITIES. EXISTING SERVICE SHALL NOT BE INTERRUPTED WITHOUT PRIOR CONSENT OF THE OWNER'S REPRESENTATIVE AND MAY BE INTERRUPTED ONLY AT AND FOR THE SPECIFIED TIME DESIGNATED BY OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL BE GUIDED BY THE OWNER'S REPRESENTATIVE AT ALL TIMES IN MATTERS AFFECTING THE EXISTING FACILITIES.
4. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL ENSURE THAT ALL SYSTEMS OPERATE AS DESIGNED AND REQUIRED AND SHALL REVIEW THEIR OPERATION WITH THE OWNER. COMPLETE SET OF AS–BUILT DRAWINGS SHALL BE COMPILED (BY THE CONTRACTOR) AND ISSUED (1 EACH) TO THE ENGINEER AND BUILDING MAINTENANCE PERSONNEL UPON COMPLETION OF CONSTRUCTION AND TESTING.
5. ALL ELECTRICAL AND INSTRUMENTATION WIRING AND CONDUIT SHALL BE INSTALLED BELOW GRADE AND SHALL NOT CROSS SIDEWALKS OR WALKWAYS. ABOVE GRADE WHERE POSSIBLE.

GENERAL DEMOLITION NOTES:

1. REMOVE AND/OR RELOCATE ALL CONDUIT WIRE, OUTLET BOXES, ETC. WHICH ARE MADE UNNECESSARY BECAUSE OF DEMOLITION/NEW CONSTRUCTION. VERIFY LOCATIONS AND QUANTITIES OF ELECTRICAL EQUIPMENT AND WIRING AT THE SITE. CONDUIT TO BE REMOVED OR ABANDONED SHALL BE REMOVED COMPLETELY IF POSSIBLE. WHERE (ABOVE GRADE) REMOVAL IS NOT POSSIBLE, CONDUIT SHALL BE CAPPED AND TAGGED AS SPARE. WHERE (BELOW GRADE) REMOVAL IS NOT POSSIBLE, CONDUIT SHALL BE CUT BELOW THE SURFACE AND CAPPED. ALL MATERIALS REMOVED SHALL BE DISPOSED OF BY THE CONTRACTOR. PATCH CONCRETE FLOOR TO MATCH EXISTING.
2. ANY DEMOLITION OR REMOVAL INDICATED IS SHOWN TO PROVIDE THE GENERAL EXTENT OF DEMOLITION. THIS INFORMATION IS NOT A RECORD DRAWING OF EXISTING CONDITIONS.
3. ANY DEMOLITION OF EXISTING ELECTRICAL EQUIPMENT (AS INDICATED IN NOTES 1 & 2 ABOVE) SHALL BE CONFIRMED AND APPROVED BY OWNER BEFORE EXISTING EQUIPMENT IS DISCONNECTED AND REMOVED.

LIGHTNING PROTECTION SYSTEM

CONTRACTOR SHALL FURNISH AND INSTALL CLASS I LIGHTNING PROTECTION SYSTEM ON PUMP BUILDING, CHEMICAL FEED BUILDING AND RECHARGE WELL BUILDING. ALL MATERIALS SHALL BE COPPER. SYSTEM SHALL COMPLY WITH ALL UL & NFPA REQUIREMENTS AND OBTAIN A UL "MASTER LABEL" CERTIFICATION.

60% SUBMITTAL

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LTR.	DATE	REVISIONS	BY	APPRD.

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

ELECTRICAL SYMBOL LEGEND, ABBREVIATION LEGEND AND LUMINAIRE SCHEDULE

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850–041–01
DATE: JAN 2019
INDEX NO:
DWG NO: E1

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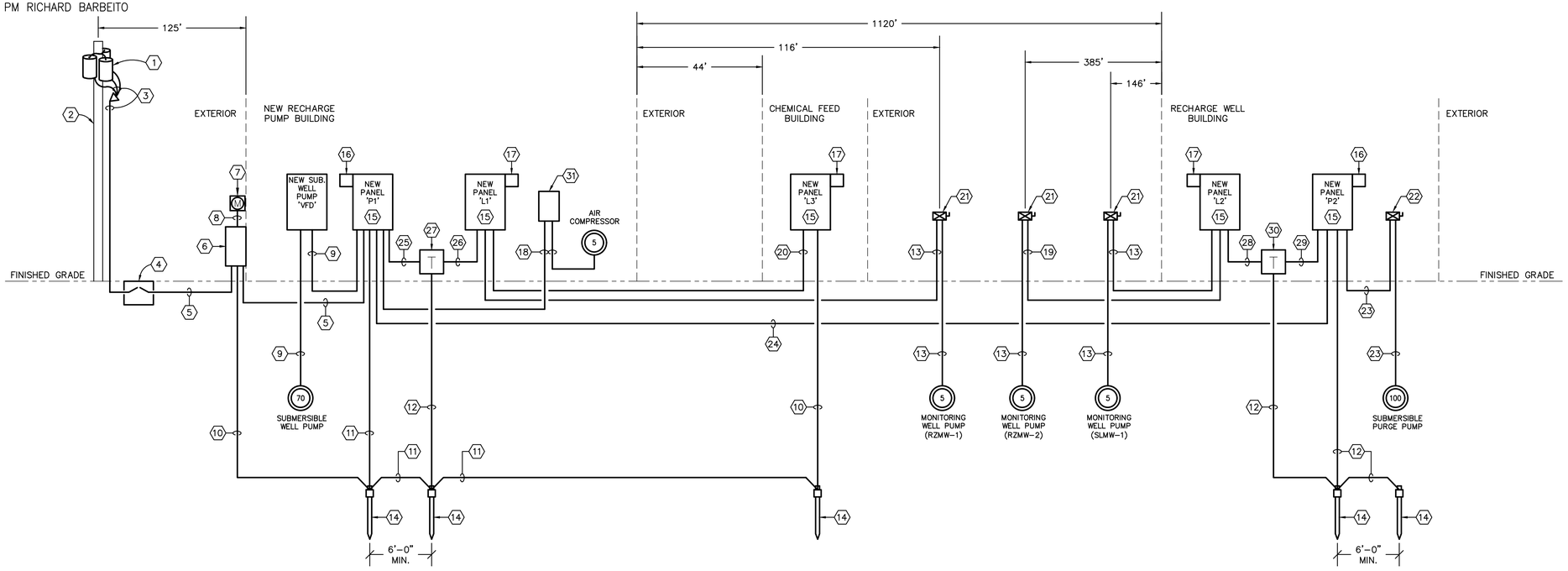

POWER ONE-LINE DIAGRAM

NOTES:

1. PEACE RIVER ELECTRIC TRANSFORMERS WITH 480/277., 3ø, 4W. SECONDARY SCA: 18,042 AMPS. COORDINATE SERVICE WITH KENDELL COKER AT (863) 767–4660.
2. NEW PEACE RIVER ELECTRIC POWER POLE.
3. SECONDARY CONDUCTORS AND CONDUIT BY PEACE RIVER ELECTRIC.
4. FLUSH AT–GRADE HANDHOLE PER PEACE RIVER ELECTRIC'S REQUIREMENTS. COORDINATE WITH PEACE RIVER ELECTRIC. HANDHOLE IS OWNERSHIP LINE. PEACE RIVER ELECTRIC WILL MAKE CONNECTIONS.
5. 2 SETS OF 4–350 MCM – 3 1/2"C.
6. CT METERING CABINET.
7. METER SOCKET AND CAN PER PEACE RIVER ELECTRIC'S REQUIREMENTS
8. 1" EMPTY CONDUIT.
9. 3 NO. 1 AND 1 NO. 6 E.G. – 1 1/2"C.
10. NO. 6 AWG COPPER GROUND CONDUCTOR.
11. NO. 2/0 AWG COPPER GROUND CONDUCTOR.
12. NO. 4 AWG COPPER GROUND CONDUCTOR.
13. 3 NO. 10 AND 1 NO. 10 E.G. – 3/4"C.
14. 3/4" X 20'–0" COPPERWELD GROUND ROD.
15. NEMA 4X (316 STAINLESS STEEL). SEE PANEL SCHEDULES.
16. NEW SURGE PROTECTION DEVICE (PQ PROTECTION # PQC200) 480/277V., 3ø, 4W. OR PRE–APRPROVED EQUIVALENT. CONNECT WITH 4 NO. 10 AND 1 NO. 10 E.G. – 3/4" C. MAX LENGTH 18" WITH NO SHARP BENDS.
17. NEW SURGE PROTECTION DEVICE (PQ PROTECTION # PQC100) 120/240V., 3ø, 4W. OR PRE–APRPROVED EQUIVALENT. CONNECT WITH 4 NO. 10 AND 1 NO. 10 E.G. – 3/4" C. MAX LENGTH 18" WITH NO SHARP BENDS.
18. 3 NO. 12 AND 1 NO. 12 E.G. – 3/4"C.
19. 3 NO. 6 AND 1 NO. 8 E.G. – 1"C.
20. 4 NO. 6 AND 1 NO. 6 E.G. – 1 1/2"C.
21. NEW 30A, 3P, SIZE 0, COMBINATION MOTOR STARTER IN NEMA 4X (316 STAINLESS STEEL) ENCLOSURE.
22. NEW SIZE 4, COMBINATION MOTOR STARTER IN NEMA 4X (316 STAINLESS STEEL) ENCLOSURE.
23. 3 NO. 2/0 AND 1 NO. 4 E.G. – 2"C.
24. 2 SETS OF 4–300 MCM AND 1 NO 1 E.G. – 3 1/2"C.
25. 3 NO. 4 AND 1 NO 4 G.C. – 1 1/4"C.
26. 4 NO. 2/0 AND 1 NO 4 E.G. – 2"C.
27. 45KVA, 480–120/240V, 3ø, 4W., NEMA 3R DRY TYPE TRANSFORMER.
28. 3 NO. 6 AND 1 NO 6 G.C. – 1"C.
29. 4 NO. 2 AND 1 NO 6 E.G. – 1 1/2"C.
30. 30KVA, 480–120/240V, 3ø, 4W., NEMA 3R DRY TYPE TRANSFORMER.
31. NEW AIR COMPRESSOR CONTROL PANEL WITH MOTOR STARTER IN NEMA 4X (316 STAINLESS STEEL) ENCLOSURE.

60% SUBMITTAL

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LTR.	DATE	REVISIONS	BY	APPRD.

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

POWER ONE-LINE DIAGRAM

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850–041–01
DATE: JAN 2019
INDEX NO:
DWG NO: E2

GRAPHIC SCALE

0 50 100 200

SCALE IN FEET

N

NOTES:

1. NEW OVERHEAD PRIMARY UTILITY CONDUCTORS BY PEACE RIVER ELECTRIC.
2. NEW UNDERGROUND SECONDARY UTILITY CONDUCTORS BY PEACE RIVER ELECTRIC.
3. NEW UNDERGROUND CONDUIT AND CONDUCTORS FROM PUMP AND ELECTRICAL BUILDING (PANEL 'L1') TO CHEMICAL FEED BUILDING (PANEL 'L3').
4. NEW UNDERGROUND CONDUIT AND CONDUCTORS FROM PUMP AND ELECTRICAL BUILDING (PANEL 'L1') TO MONITORING WELL RZMW–1.
5. NEW UNDERGROUND CONDUIT AND CONDUCTORS FROM RECHARGE WELL BUILDING (PANEL 'L2') TO MONITORING WELL RZMW–2.
6. NEW UNDERGROUND CONDUIT AND CONDUCTORS FROM RECHARGE WELL BUILDING (PANEL 'L2') TO MONITORING WELL SLMW–1.
7. NEW UNDERGROUND CONDUIT AND CONDUCTORS FROM PUMP AND ELECTRICAL BUILDING (PANEL 'P1') TO RECHARGE WELL BUILDING (PANEL 'P2').
8. SEE POWER ONE–LINE DIAGRAM ON SHEET E2 FOR CONDUIT AND CONDUCTOR SIZES.
9. NEW UNDERGROUND 2"C. WITH NEW 12 PAIR FIBER OPTIC CABLE FROM PUMP AND ELECTRICAL BUILDING (CONTROL PANEL 'CP1') TO CHEMICAL FEED BUILDING (CONTROL PANEL 'CP3').
10. NEW UNDERGROUND 2"C. WITH NEW 12 PAIR FIBER OPTIC CABLE FROM PUMP AND ELECTRICAL BUILDING (CONTROL PANEL 'CP1') TO CHEMICAL FEED BUILDING (CONTROL PANEL 'CP2').
11. NEW OVERHEAD UTILITY POLE WITH ABOVE GROUND TRANSFORMERS BY PEACE RIVER ELECTRIC.
12. NEW UTILITY HANDHOLE.
13. SEE MONITORING WELL DETAIL ON SHEET E7.

60% SUBMITTAL

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ELECTRICAL SITE PLAN

SCALE: 1"=100'–0"

LTR.	DATE	REVISIONS	BY	APPRD.

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

ELECTRICAL SITE PLAN

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850–041–01
DATE: JAN 2019
INDEX NO:
DWG NO: E3

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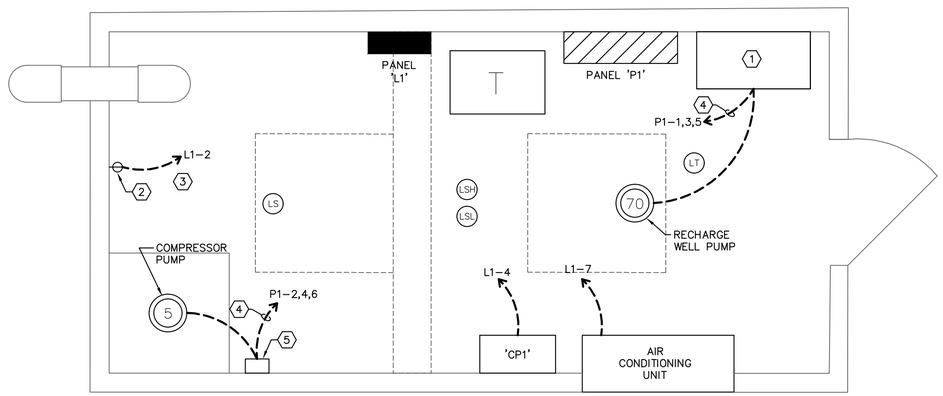
GRAPHIC SCALE

0 1 2 4

SCALE IN FEET
1/2"=1'-0"

-N-



PUMP AND ELECTRICAL BUILDING POWER PLAN

SCALE: 1/2"=1'-0"

NOTES:

1. 460 VOLT, 18-PULSE, NEMA 4X (316 STAINLESS STEEL) VFD DRIVE FOR SUBMERSIBLE WELL PUMP.
2. 50A., 5-50R RECEPTACLE FOR PORTABLE TRASH PUMP. PORTABLE TRASH PUMP TO INCLUDE 5-50P PLUG. COORDINATE EXACT ELECTRICAL REQUIREMENTS WITH PUMP MANUFACTURER.
3. 2 NO. 10 AND 1 NO. 10 E.G. - 3/4"C.
4. AIR COMPRESSOR CONTROL PANEL. SEE POWER ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PUMP AND ELECTRICAL BUILDING POWER PLAN

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850-041-01
DATE: JAN 2019
INDEX NO:
DWG NO: E4

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GRAPHIC SCALE

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SCALE IN FEET
1/2"=1'-0"

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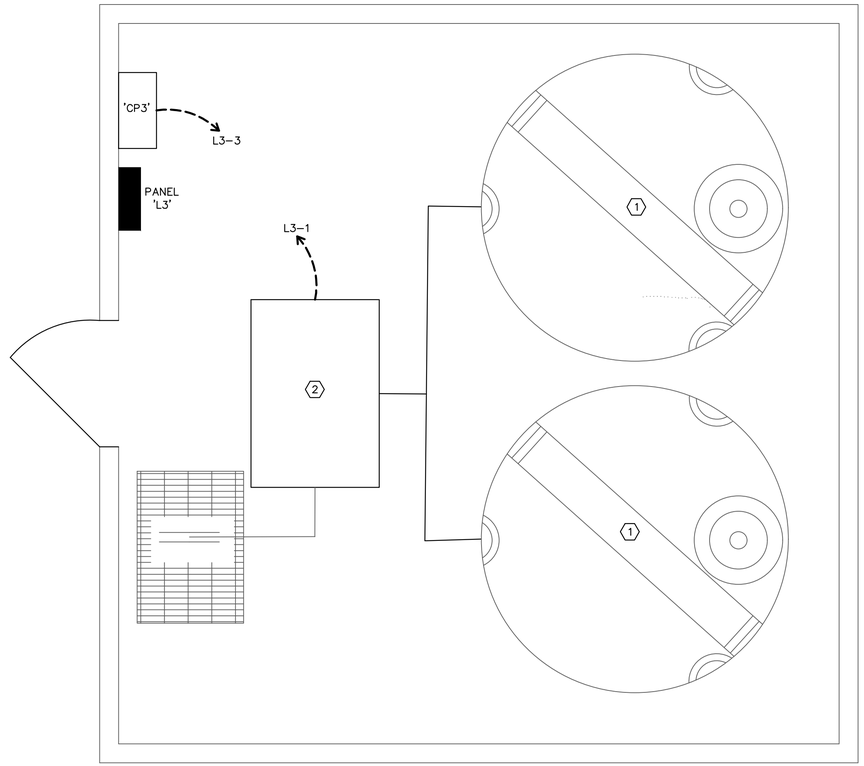

CHEMICAL FEED BUILDING POWER PLAN

SCALE: 1/2"=1'-0"

NOTES:

1. DUAL CONTAINMENT CHEMICAL STORAGE.
2. CHEMICAL FEED METERING SKID.

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

CHEMICAL FEED BUILDING POWER PLAN

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850-041-01
DATE: JAN 2019
INDEX NO:
DWG NO: E5

GRAPHIC SCALE

0 1 2 4

SCALE IN FEET
1/2"=1'-0"

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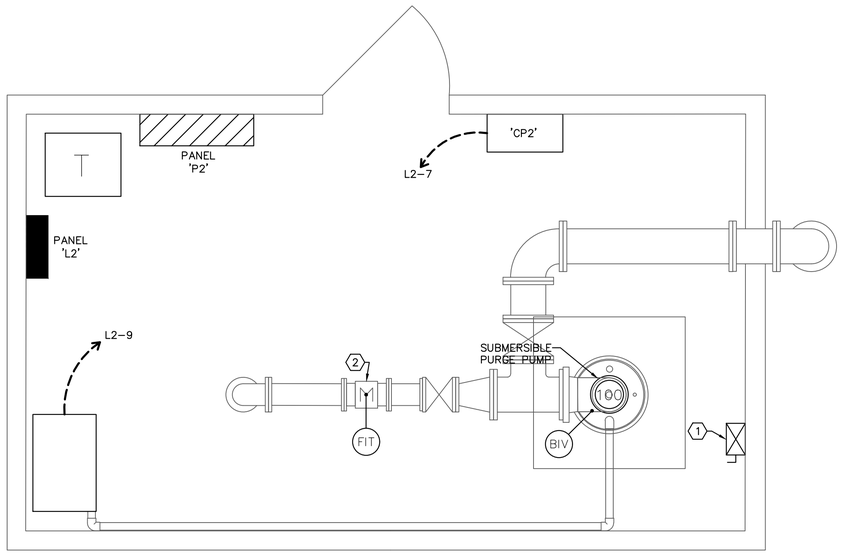

RECHARGE WELL BUILDING POWER PLAN

SCALE: 1/2"=1'-0"

NOTES:

1. COMBINATION MOTOR STARTER FOR SUBMERSIBLE PURGE PUMP.
2. FLOW INDICATING TRANSMITTER.

60% SUBMITTAL

LTR.	DATE	REVISIONS	BY	APPRD.

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AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

RECHARGE WELL BUILDING
POWER PLAN

APPROVED BY
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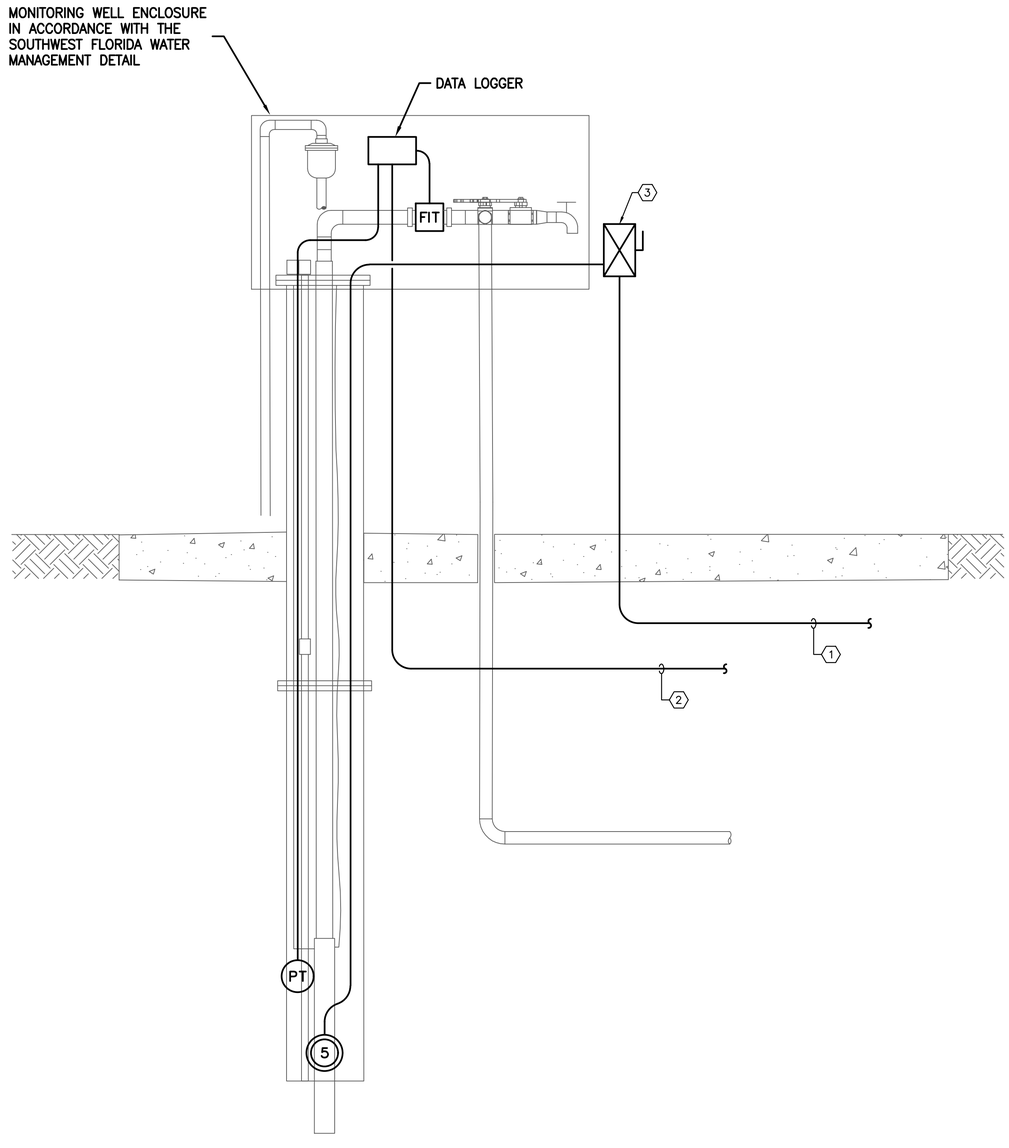
P.E. # 45830

PROJECT NO: 19850-041-01
DATE: JAN 2019
INDEX NO:
DWG NO: E6



GENERAL NOTES:

1. COORDINATE EXACT ELECTRICAL REQUIREMENTS WITH 'SWFWMD TYPICAL DATA GROUND SITE INSTALLATION DIAGRAM'.

NOTES:

1. SEE POWER ONE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR SIZES.
2. TO NEAREST CONTROL PANEL 'CP1' OR 'CP2'.
3. SEE POWER ONE-LINE DIAGRAM FOR DISCONNECT SWITCH SIZE.

MONITORING WELL DETAIL - ELECTRICAL

60% SUBMITTAL

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LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED
DRAWN
CHECKED

AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

MONITORING WELL DETAIL - ELECTRICAL

PROJECT NO: 19850-041-01
DATE: JAN 2019
INDEX NO:
DWG NO: E7

PANELBOARD: **P1**

SERVICE: 277 / 480 V, 3Φ, 4W | MAIN: 600 A MCB | FEED THRU LUGS: NO | MOUNT: SURFACE | ENCLOSURE: NEMA 4X (316 STAINLESS STEEL) | AIC: 42,000

CKT NUM	DESCRIPTION	CODE	BREAKER A	BREAKER P	CONNECTED LOAD (KVA) A	B	C	A	B	C	BREAKER A	BREAKER P	CODE	DESCRIPTION	CKT NUM
1	RECHARGE WELL PUMP (70 HP)	MTR	175	3	24.98			3.54			20	3	MTR	AIR COMPRESSOR CONTROL PANEL	2
3	I I	MTR	I	I		24.98			3.54		I	I	MTR	I I	4
5	↓ ↓	MTR	↓	↓			24.98			3.54	↓	↓	MTR	↓ ↓	6
7	SPACE	--	--	1							--	1	--	SPACE	8
9	SPACE	--	--	1							--	1	--	SPACE	10
11	SPACE	--	--	1							--	1	--	SPACE	12
13	SPACE	--	--	1							--	1	--	SPACE	14
15	SPACE	--	--	1							--	1	--	SPACE	16
17	SPACE	--	--	1							--	1	--	SPACE	18
19	SPACE	--	--	1							--	1	--	SPACE	20
21	SPACE	--	--	1							--	1	--	SPACE	22
23	SPACE	--	--	1							--	1	--	SPACE	24
25	SPACE	--	--	1							--	1	--	SPACE	26
27	SPACE	--	--	1							--	1	--	SPACE	28
29	SPACE	--	--	1							--	1	--	SPACE	30
31	L1	PNL	70	3	7.18						--	1	--	SPACE	32
33	I I	PNL	I	I		4.42					--	1	--	SPACE	34
35	↓ ↓	PNL	↓	↓			2.02				--	1	--	SPACE	36
37	SPD (SURGE PROTECTION DEVICE)	--	30	3				38.13			400	3	PNL	P2	38
39	I I	--	I	I					38.13		I	I	PNL	I I	40
41	↓ ↓	--	↓	↓						37.02	↓	↓	PNL	↓ ↓	42

TOTAL KVA Phase A 73.83 Phase B 71.07 Phase C 67.6

	CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	MIN NEC LOAD (KVA)	MIN NEC LOAD (AMPS)	
LIGHTING (LTG)	0.0	1.25	0.0	0.0		* PER NEC 215.3
RECEPTACLES (REC)	2.8	*	2.8	2.8		* PER NEC 220.44
AC (NON COINCID)(AC NC)	1.2	1.0	1.2	1.2		* PER NEC 220.60
HEAT (NON COINCID)(H NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HVAC (COINCID)(HVAC C)	0.0	1.0	0.0	0.0		
EQUIPMENT (EQ)	0.0	1.0	0.0	0.0		
MOTORS (MTR)	103.74	1.0	103.7	103.7		
LARGEST MOTOR	98.76	1.25	98.8	123.5		* PER NEC 430.24
MISCELLANEOUS (MISC)	6.0	1.0	6.0	6.0		
EXISTING DEMAND (NEC 220.87)	N/A		0.0	0.0		
TOTAL	212.5		212.5	237.2	**285.2** AMPS	

PANELBOARD: **L1**

SERVICE: 120 / 240 V, 3Φ, 4W | MAIN: 150 A MCB | FEED THRU LUGS: NO | MOUNT: SURFACE | ENCLOSURE: NEMA 4X (316 STAINLESS STEEL) | AIC: 10,000

CKT NUM	DESCRIPTION	CODE	BREAKER A	BREAKER P	CONNECTED LOAD (KVA) A	B	C	A	B	C	BREAKER A	BREAKER P	CODE	DESCRIPTION	CKT NUM
1	MONITORING WELL PUMP 'RZMW-1' (5 HP)	MTR	35	3	2.02			2.76			20	1	REC	RECEPTACLE - PORTABLE TRASH PUMP	2
3	I I	MTR	I	I		2.02			1.20		20	1	MISC	CONTROL PANEL 'CP1'	4
5	↓ ↓	MTR	↓	↓			2.02				--	1	--	SPACE	6
7	AIR CONDITIONING UNIT	AC NC	20	1	1.20						--	1	--	SPACE	8
9	SPACE	--	--	1							--	1	--	SPACE	10
11	SPACE	--	--	1							--	1	--	SPACE	12
13	SPACE	--	--	1							--	1	--	SPACE	14
15	SPACE	--	--	1							--	1	--	SPACE	16
17	SPACE	--	--	1							--	1	--	SPACE	18
19	SPACE	--	--	1							--	1	--	SPACE	20
21	SPACE	--	--	1							--	1	--	SPACE	22
23	SPACE	--	--	1							--	1	--	SPACE	24
25	SPACE	--	--	1							--	1	--	SPACE	26
27	SPACE	--	--	1							--	1	--	SPACE	28
29	SPACE	--	--	1							--	1	--	SPACE	30
31	SPACE	--	--	1							--	1	--	SPACE	32
33	SPACE	--	--	1							--	1	--	SPACE	34
35	SPACE	--	--	1							--	1	--	SPACE	36
37	L3	PNL	100	3	1.20						30	3	--	SPD (SURGE PROTECTION DEVICE)	38
39	I I	PNL	I	I		1.20					I	I	--	I I	40
41	↓ ↓	PNL	↓	↓			0.00				↓	↓	--	↓ ↓	42

TOTAL KVA Phase A 7.18 Phase B 4.42 Phase C 2.0

	CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	MIN NEC LOAD (KVA)	MIN NEC LOAD (AMPS)	
LIGHTING (LTG)	0.0	1.25	0.0	0.0		* PER NEC 215.3
RECEPTACLES (REC)	2.8	*	2.8	2.8		* PER NEC 220.44
AC (NON COINCID)(AC NC)	1.2	1.0	1.2	1.2		* PER NEC 220.60
HEAT (NON COINCID)(H NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HVAC (COINCID)(HVAC C)	0.0	1.0	0.0	0.0		
EQUIPMENT (EQ)	0.0	1.0	0.0	0.0		
MOTORS (MTR)	0.00	1.0	0.0	0.0		
LARGEST MOTOR	6.06	1.25	6.1	7.6		* PER NEC 430.24
MISCELLANEOUS (MISC)	3.6	1.0	3.6	3.6		
EXISTING DEMAND (NEC 220.87)	N/A		0.0	0.0		
TOTAL	13.6		13.6	15.1	**36.4** AMPS	

PANELBOARD: **L3**

SERVICE: 120 / 240 V, 3Φ, 4W | MAIN: 100 A MCB | FEED THRU LUGS: NO | MOUNT: SURFACE | ENCLOSURE: NEMA 4X (STAINLESS STEEL) | AIC: 10,000

CKT NUM	DESCRIPTION	CODE	BREAKER A	BREAKER P	CONNECTED LOAD (KVA) A	B	C	A	B	C	BREAKER A	BREAKER P	CODE	DESCRIPTION	CKT NUM
1	CHEMICAL METERING PUMP SKID	MISC	20	1	1.20						--	1	--	SPACE	2
3	CONTROL PANEL 'CP3'	MISC	20	1		1.20					--	1	--	SPACE	4
5	SPACE	--	--	1							--	1	--	SPACE	6
7	SPACE	--	--	1							--	1	--	SPACE	8
9	SPACE	--	--	1							--	1	--	SPACE	10
11	SPACE	--	--	1							--	1	--	SPACE	12
13	SPACE	--	--	1							--	1	--	SPACE	14
15	SPACE	--	--	1							--	1	--	SPACE	16
17	SPACE	--	--	1							--	1	--	SPACE	18
19	SPACE	--	--	1							--	1	--	SPACE	20
21	SPACE	--	--	1							--	1	--	SPACE	22
23	SPACE	--	--	1							--	1	--	SPACE	24
25	SPACE	--	--	1							--	1	--	SPACE	26
27	SPACE	--	--	1							--	1	--	SPACE	28
29	SPACE	--	--	1							--	1	--	SPACE	30
31	SPACE	--	--	1							--	1	--	SPACE	32
33	SPACE	--	--	1							--	1	--	SPACE	34
35	SPACE	--	--	1							--	1	--	SPACE	36
37	SPACE	--	--	1							30	3	--	SPD (SURGE PROTECTION DEVICE)	38
39	SPACE	--	--	1							I	I	--	I I	40
41	SPACE	--	--	1							↓	↓	--	↓ ↓	42

TOTAL KVA Phase A 1.20 Phase B 1.20 Phase C 0.0

	CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	MIN NEC LOAD (KVA)	MIN NEC LOAD (AMPS)	
LIGHTING (LTG)	0.0	1.25	0.0	0.0		* PER NEC 215.3
RECEPTACLES (REC)	0.0	*	0.0	0.0		* PER NEC 220.44
AC (NON COINCID)(AC NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HEAT (NON COINCID)(H NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HVAC (COINCID)(HVAC C)	0.0	1.0	0.0	0.0		
EQUIPMENT (EQ)	0.0	1.0	0.0	0.0		
MOTORS (MTR)	0.00	1.0	0.0	0.0		
LARGEST MOTOR	0.00	1.25	0.0	0.0		* PER NEC 430.24
MISCELLANEOUS (MISC)	2.4	1.0	2.4	2.4		
EXISTING DEMAND (NEC 220.87)	N/A		0.0	0.0		
TOTAL	2.4		2.4	2.4	**5.8** AMPS	

NOTES:

1. CIRCUIT BREAKER TO INCLUDE TERMINATION LUGS TO SUPPORT LARGER CONDUCTORS. SEE POWER ONE-LINE DIAGRAM.

CARASTRO & ASSOCIATES, INC.
CONSULTING ENGINEERS EB-0001160
2609 W. DE LEON STREET TAMPA, FLORIDA 33609
TELEPHONE: (813) 874-9494 WWW.CARASTRO.COM

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED RFB
DRAWN AN
CHECKED PSC

AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PANEL SCHEDULES

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850-041-01
DATE: JAN 2019
INDEX NO:
DWG NO: E8

60% SUBMITTAL

SAVED: 1/29/2019 4:38 PM RICHARD.BARBEITO P:\-6299\6231\ELEC\6231-E8.DWG

PANELBOARD: **P2**

SERVICE: 277 / 480 V, 3Φ, 4W | MAIN: 400 A MCB (1) | FEED THRU LUGS: NO | MOUNT: SURFACE | ENCLOSURE: NEMA 4X (316 STAINLESS STEEL) | AIC: 42,000

CKT NUM	DESCRIPTION	CODE	BREAKER A	BREAKER P	CONNECTED LOAD (KVA) A	B	C	A	B	C	BREAKER A	BREAKER P	CODE	DESCRIPTION	CKT NUM
1	SUBMERSIBLE PURGE PUMP (100 HP)	MTR	225	3	32.89						--	1	--	SPACE	2
3	〃	MTR	〃	〃		32.89					--	1	--	SPACE	4
5	↓	MTR	↓	↓			32.98				--	1	--	SPACE	6
7	SPACE	--	--	1							--	1	--	SPACE	8
9	SPACE	--	--	1							--	1	--	SPACE	10
11	SPACE	--	--	1							--	1	--	SPACE	12
13	SPACE	--	--	1							--	1	--	SPACE	14
15	SPACE	--	--	1							--	1	--	SPACE	16
17	SPACE	--	--	1							--	1	--	SPACE	18
19	SPACE	--	--	1							--	1	--	SPACE	20
21	SPACE	--	--	1							--	1	--	SPACE	22
23	SPACE	--	--	1							--	1	--	SPACE	24
25	SPACE	--	--	1							--	1	--	SPACE	26
27	SPACE	--	--	1							--	1	--	SPACE	28
29	SPACE	--	--	1							--	1	--	SPACE	30
31	SPACE	--	--	1							--	1	--	SPACE	32
33	SPACE	--	--	1							--	1	--	SPACE	34
35	SPACE	--	--	1							--	1	--	SPACE	36
37	L2	PNL	50	3	5.24						30	3	--	SPD (SURGE PROTECTION DEVICE)	38
39	〃	PNL	〃	〃		5.24					〃	〃	--	〃	40
41	↓	PNL	↓	↓			4.04				↓	↓	--	↓	42

TOTAL KVA Phase A 38.13 Phase B 38.13 Phase C 37.0

	CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	MIN NEC LOAD (KVA)	MIN NEC LOAD (AMPS)	
LIGHTING (LTG)	0.0	1.25	0.0	0.0		* PER NEC 215.3
RECEPTACLES (REC)	0.0	*	0.0	0.0		* PER NEC 220.44
AC (NON COINCID)(AC NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HEAT (NON COINCID)(H NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HVAC (COINCID)(HVAC C)	0.0	1.0	0.0	0.0		
EQUIPMENT (EQ)	0.0	1.0	0.0	0.0		
MOTORS (MTR)	12.12	1.0	12.1	12.1		
LARGEST MOTOR	98.76	1.25	98.8	123.5		* PER NEC 430.24
MISCELLANEOUS (MISC)	2.4	1.0	2.4	2.4		
EXISTING DEMAND (NEC 220.87)	N/A		0.0	0.0		
TOTAL	113.3		113.3	138.0	**166.0** AMPS	

PANELBOARD: **L2**

SERVICE: 120 / 240 V, 3Φ, 4W | MAIN: 100 A MCB | FEED THRU LUGS: NO | MOUNT: SURFACE | ENCLOSURE: NEMA 4X (316 STAINLESS STEEL) | AIC: 10,000

CKT NUM	DESCRIPTION	CODE	BREAKER A	BREAKER P	CONNECTED LOAD (KVA) A	B	C	A	B	C	BREAKER A	BREAKER P	CODE	DESCRIPTION	CKT NUM
1	MONITORING WELL PUMP 'RZMW-2' (5 HP)	MTR	35	3	2.02			2.02			35	3	MTR	SPACE	2
3	〃	MTR	〃	〃		2.02			2.02		〃	〃	MTR	〃	4
5	↓	MTR	↓	↓			2.02			2.02	↓	↓	MTR	↓	6
7	CONTROL PANEL 'CP2'	MISC	20	1	1.20						--	1	--	SPACE	8
9	BOREHOLE INJ. VALVE CONTROL PANEL	MISC	20	1		1.20					--	1	--	SPACE	10
11	SPACE	--	--	1							--	1	--	SPACE	12
13	SPACE	--	--	1							--	1	--	SPACE	14
15	SPACE	--	--	1							--	1	--	SPACE	16
17	SPACE	--	--	1							--	1	--	SPACE	18
19	SPACE	--	--	1							--	1	--	SPACE	20
21	SPACE	--	--	1							--	1	--	SPACE	22
23	SPACE	--	--	1							--	1	--	SPACE	24
25	SPACE	--	--	1							--	1	--	SPACE	26
27	SPACE	--	--	1							--	1	--	SPACE	28
29	SPACE	--	--	1							--	1	--	SPACE	30
31	SPACE	--	--	1							--	1	--	SPACE	32
33	SPACE	--	--	1							--	1	--	SPACE	34
35	SPACE	--	--	1							--	1	--	SPACE	36
37	SPD (SURGE PROTECTION DEVICE)	--	30	3							--	1	--	SPACE	38
39	〃	--	〃	〃							--	1	--	SPACE	40
41	↓	--	↓	↓							--	1	--	SPACE	42

TOTAL KVA Phase A 5.24 Phase B 5.24 Phase C 4.0

	CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	MIN NEC LOAD (KVA)	MIN NEC LOAD (AMPS)	
LIGHTING (LTG)	0.0	1.25	0.0	0.0		* PER NEC 215.3
RECEPTACLES (REC)	0.0	*	0.0	0.0		* PER NEC 220.44
AC (NON COINCID)(AC NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HEAT (NON COINCID)(H NC)	0.0	1.0	0.0	0.0		* PER NEC 220.60
HVAC (COINCID)(HVAC C)	0.0	1.0	0.0	0.0		
EQUIPMENT (EQ)	0.0	1.0	0.0	0.0		
MOTORS (MTR)	6.06	1.0	6.1	6.1		
LARGEST MOTOR	6.06	1.25	6.1	7.6		* PER NEC 430.24
MISCELLANEOUS (MISC)	2.4	1.0	2.4	2.4		
EXISTING DEMAND (NEC 220.87)	N/A		0.0	0.0		
TOTAL	14.5		14.5	16.0	**38.6** AMPS	

NOTES:

(1) CIRCUIT BREAKER TO INCLUDE TERMINATION LUGS TO SUPPORT LARGER CONDUCTORS. SEE POWER ONE-LINE DIAGRAM.

60% SUBMITTAL

CARASTRO & ASSOCIATES, INC.
CONSULTING ENGINEERS EB-0001160
2609 W. DE LEON STREET TAMPA, FLORIDA 33609
TELEPHONE: (813) 874-9494 WWW.CARASTRO.COM

LTR.	DATE	REVISIONS	BY	APPRD.

DESIGNED RFB
DRAWN AN
CHECKED PSC

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

AQUIFER RECHARGE AT FLATFORD SWAMP
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PANEL SCHEDULES

APPROVED BY
PAUL S. CARASTRO
P.E. # 45830

PROJECT NO: 19850-041-01
DATE: JAN 2019
INDEX NO:
DWG NO: E9

SAVED: 1/29/2019 4:40 PM RICHARD.BARBEITO P:\-6299\6231\ELEC\6231-E9.DWG

Attachment 4

Wetland Monitoring Plan

FLATFORD SWAMP AQUIFER RECHARGE WETLAND MONITORING PLAN

Jaime Swindasz

Staff Environmental Scientist

SWIM Program

Southwest Florida Water Management District

TABLE OF CONTENTS

1 INTRODUCTION

This plan will involve monitoring of wetland conditions in Flatford Swamp, located in eastern Manatee County within the Southern Water Use Caution Area (SWUCA). The District owns approximately 2,357 acres of Flatford Swamp, which was once a primarily forested system. Over time, the Swamp has converted to a mostly herbaceous wetland (Coastal Environmental, 1998).

It has been determined that Flatford Swamp's hydroperiod has been impacted due to land use changes and excess water from upstream. This excess water and altered hydroperiod has led to native wetland tree die-off. The District will be implementing a pilot aquifer recharge project that will divert excess water from the Myakka River to Floridan aquifer recharge well. The District is constructing the exploratory recharge well and associated monitoring wells, permitted through UIC permit 334918-01-UC-RW-1. Jones Edmunds is designing an intake to divert approximately 2 MGD of water from Myakka River to use for cycle testing the UIC well. Well construction is planned to be completed February 2019, with construction of the diversion following. This monitoring is focused on the wetland health of Flatford Swamp, due to the permitted diversion and recharge wells.

The goal of this plan is to monitor the wetland for any potential changes or impacts that may be related to the recharge project. Regular monitoring is expected to be required for the Department of Environmental Protection (DEP) and United Sates Army Corp of Engineers (USACE). This monitoring will be critical to determine the effectiveness of the diversion and recharge and this information will be valuable in assisting with the determination to implement additional projects to improve the health of Flatford Swamp.

2 WETLAND MONITORING PLAN

The Wetland Monitoring Plan (WMP) will provide the evaluation and assessment of the wetlands pursuant to agency requirements. The purpose of the WMP is to determine if Flatford Swamp is being adversely impacted due to the pilot aquifer recharge project. The WMP will consist of the establishment of three (3) transects and the following data collection:

a) Hydrologic Monitoring
b) Vegetation Monitoring
c) Photographic
d) Climatic
e) Wildlife

2.1 Transect Establishment

Three (3) transects will be selected and established for recurring monitoring. Monitoring locations will be selected, flagged, and recorded via a GPS unit with sub-decimeter post-processing capabilities. At the beginning of each transect, a permanent marker will be installed; such as 5-foot tall, 1-inch PVC pipe. One of the transects will be established upstream of the intake, this transect will act as a reference transect to monitor potential wetland changes, unrelated to the recharge project. A final site map with locations of selected Monitoring/Transect locations will be created.

2.2 Hydrologic Monitoring

Water level data from staff gauges and monitoring wells will be collected. A porcelain-enameled iron Style C staff gauge attached to a 2-inch by 4-inch by 8-ft long pressure-treated post will be installed at each staff gauge location, one upstream and one downstream of the intake. The staff gauges enable measuring stage heights in feet and tenths of feet. Survey data will be included in future monitoring reports.

Multiple wetland indicators will be identified along the transects, including moss collars, lichen lines, adventitious roots, stain lines, etc. The elevation in relation to the water level will be recorded to help provide additional information regarding the vegetative changes due to hydrology.

2.3 Vegetation Monitoring

Along each transect, various vegetation characteristics will be monitored, such as: species, percent cover, signs of new tree recruitment, signs of stress or death of desirable species, percent standing dead trees, successional/zonation comments, distribution of tree species (at wetland edge, in middle of transect, beyond transect), etc.

2.4 Photographic

Various photographs will be taken along the transects to help capture the condition of the wetland at the time of the monitoring visit. Photographs at the beginning of the transect will help monitor the wetland edge and photographs at the end of the transect will help monitor the interior of the wetland. Additional photographs can be taken to help provide a record, such as additional photographs of any identified wetland indicators or noteworthy observations of wildlife or vegetation characteristics.

2.5 Climatic

Rainfall data can be collected from the nearest atmospheric site – SWFWMD SID 25802 Flatford Swamp. Rainfall totals will be calculated for the week, month, and six months prior to each sampling event to provide context for what the wetland evaluator might see onsite. Rainfall will also be evaluated against the well hydrograph for the monitoring period.

2.6 Wildlife

Any wildlife observations will be documented, such as: species, quantities, activity, hog damage, etc.

3 MONITORING FREQUENCY

3.1 Pre-well Operation

Approximately four (4) baseline assessments will be conducted prior to the operation and testing of the Aquifer Recharge System, scheduled for late 2020.

3.2 During Operation

Assessments will be conducted approximately every-other-month during the operation and testing of the Aquifer Recharge System. Ideally, this monitoring frequency will result in two (2) wet and two (2) dry monitoring events.

3.3 Post-Operation

After reviewing the data collected, it will be determined if additional monitoring will be needed.

4 POST-MONITORING

After each monitoring event, the required materials and monitoring report will be submitted to the appropriate regulatory agencies.

A draft report will be produced that summarizes the results of the wetland monitoring in a concise and simple manner. The report will discuss any conclusions regarding wetland health including hydrology and succession. The report will include color maps of Flatford Swamp, the location of the Recharge System, and location(s) of monitoring transects, as appropriate. The draft report will be submitted to the regulatory agencies for review.

5 REFERENCES

Coastal Environmental, June 1998. *Tree Mortality Assessment of the Upper Myakka River Watershed.* St. Petersburg, FL.

FLATFORD SWAMP AQUIFER RECHARGE PROJECT NOTICE OF INENT TO USE AN ENVIRONMENTAL RESOURCE GENERAL PERMIT FOR ENVIRONMENTAL RESTORATION OR ENHANCEMENT

Submitted to:

Florida Department of Environmental Protection

Southwest District Office

13051 Telecom Pkwy N.

Temple Terrace, Florida 33637

Prepared for:

Southwest Florida Water Management District

2379 Broad Street

Brooksville, Florida 34604

Prepared by:

Jones Edmunds & Associates, Inc.

730 NE Waldo Road

Gainesville, Florida 33641

Certificate of Engineering Authorization #1841

Certificate of Geological Authorization #133

June 2019

TABLE OF CONTENTS

PERMIT APPLICATION

NARRATIVE

ATTACHMENTS

Notice of Intent to Use an Environmental Resource General Permit

Instructions: This form is for projects that qualify for a General Permit in accordance with Chapter 62-330 F.A.C. General Permits (GP) are provided for certain activities that have been determined to have minimal impacts to the water resources of the state when conducted in compliance with the terms and conditions of the general permit. Complete and submit this form to the appropriate agency as identified in Part 3 below.

If activity is located on, or has the potential to be located on, state-owned sovereignty submerged lands (SSL), the reviewing Agency will begin processing the request for state-owned sovereignty submerged lands authorization. If you know that your project is located on SSL, (i.e., waterward of the line of mean or ordinary high water of rivers, streams, bays, bayous, sounds, the Gulf of Mexico, the Atlantic Ocean, or certain natural lakes, we recommend completing Section F of the Environmental Resource Permit Application. You are not required to complete Section F to receive a General Permit, but it will help the agency process the SSL authorization. Both authorizations are required prior to construction on SSL.

Part 1: General Information

A. Rule section number of the GP or which you are applying: 62-330. 485 **, F.A.C.**

We recommend contacting your local Corps district office if your project does not qualify for the State Programmatic General Permit (SPGP) and you are not sure whether the project requires separate Corps authorization. If Corps authorization is required, you will need to submit the appropriate federal application form separately to the Corps. Corps contact information may be found online at the Jacksonville District Regulatory Division website.

B. Applicant ☐ **This is a Contact Person for Additional Information**

Name: Last: Seachrist First: Jennette Middle: M

Title: Resource Management Division Director Company: SWFWMD

Address: 7601 US-301

City: Tampa State: FL Zip: 33637

Home Telephone: Work Telephone: 813-985-7481

Cell Phone:

E-mail Address: jennette.seachrist@swfwmd.state.fl.us

Correspondence will be sent via email, unless you check here to receive it via ☐ US Mail

C. Consultant/Agent ■ **This is a Contact Person for Additional Information**

Name: Last: Hays First: Michelle Middle: Hays

Title: Project Scientist Company: Jones Edmunds & Associates

Address: 730 NE Waldo Road

City: Gainesville State: FL Zip: 32641

Home Telephone: 352-258-9575 Work Telephone: 352-377-5821

Cell Phone: 352-258-9575

E-mail Address: mhays@jonesedmunds.com

Correspondence will be sent via email, unless you check here to receive it via ☐ US Mail

D. Land Owner(s) (If Different or in Addition to Applicant Identified Above)

Name: Last: First: Middle:

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. Location of proposed activities:

Tax Parcel Identification Number: Parcel ID 62700109

Address: 39450 Taylor Road

City: Myakka City County: Manatee Zip: 34251

Latitude (DMS) 27 º 25 ’ 20 ” Longitude (DMS) 82 º 08 ’ 17.5 ”

F. Date activity is proposed: To Commence: 11/1/2019 To be Completed: 7/30/2020

G. Describe in general terms the proposed project, system, or activity:

Project to construct an intake and pump station to divert up to 2.0 MGD from the Myakka River to an exploratory recharge well (see attached project narrative).

H. Describe wetland and aquatic habitats to be affected:

Approximately 400 SF (0.01 acres) of rip rap will be placed in the river bed to minimize erosion of the stream channel and reduce intake clogging (see attached project narrative for additional information).

I. Construction methods and schedule:

Pipeline from intake to recharge well will be constructed via directional drill to avoid wetland impacts (see attached project narrative for additional information).

J. Additional information that demonstrates that you qualify for the general permit, addressing all the parameters, thresholds, and conditions required in the general permit.

Part 2: Certification

I hereby certify I have read and will conduct the above activities in accordance with the criteria, limitations, and specific conditions of the general permit identified in Part 1 Section A, and in accordance with the general conditions of Rule 62-330.405, F.A.C. Unless otherwise provided in Chapter 62-330, F.A.C., activities conducted pursuant to the above general permit may commence thirty (30) days after providing written notice to the Department of Environmental Protection or the Water Management District, along with any required additional documentation which may be required to fulfill the requirements of the general permit, unless the Agency responds that the proposed work does not qualify for a general permit.

I understand I may have to provide any additional information/data that may be necessary to provide reasonable assurance or evidence that the proposed project will comply with the applicable state water quality standards or other environmental standards both before construction and after the process is completed.

I further acknowledge that work done under this general permit may also require the review and approval of other federal, state, or local agencies, and that commencement of construction before such federal, state, or local agency approvals or permits are obtained may subject me to enforcement action and fines or penalties by such agencies. Further, the work shall be conducted in a manner that does not violate applicable water quality standards.

Jennette Seachrist — Jennette Seachrist 6/26/19

Typed/Printed Name of Applicant or Agent | Signature of Applicant or Agent | Date

An Agent May Sign Above If Applicant Completes the Following:
I hereby designate and authorize the agent listed in Item Part 1 Section C to act on my behalf as my agent in the processing of this permit application and to furnish on request, supplemental information in support of the application.

Typed/Printed Name of Applicant (And corporate title, if applicable) | Signature of Applicant | Date

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. 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, I agree to provide entry to the project site for such agents or personnel to monitor and inspect permitted work if a permit is granted.

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 access, inspect, and sample the property as described above.

Jennette Seachrist — Jennette Seachrist 6/26/19

Typed/Printed Name of Applicant (And corporate title, if applicable) | Signature of Applicant | Date

Part 3: Submittal

In addition to the information described in this form, any Notice of Intent to use a General Permit must also include the following, as described in Section 4.2.2 of the Applicant's Handbook, Volume I:

- Location map(s) of sufficient detail to allow someone who is unfamiliar with the site to travel to and locate the specific site of the activity.
- One set of plans and drawings, calculations, environmental information, and other supporting documents that clearly and legibly depict and describe the proposed activities in sufficient detail to demonstrate that the work qualifies for the specified General Permit.
- The required fee, made payable to the appropriate agency.

Fees for the appropriate agency are established in the rules adopted in subsection 62-330.071(1), F.A.C., as listed below:

Rule 62-4.050, F.A.C. (Department of Environmental Protection or the Northwest Florida Water Management District)
Rule 40B-1.706, F.A.C. (Suwannee River Water Management District)
Rule 40C-1.603, F.A.C. (St. Johns River Water Management District)
Rule 40D-1.607, F.A.C. (Southwest Florida Water Management District)
Rule 40E-1.607, F.A.C. (South Florida Water Management District)

Operating Agreements between the Department and the water management districts specify which agency will process any given application. For copies of the operating agreements, go to https://floridadep.gov/ogc/ogc/content/operating-agreements

This application form may be submitted online; to do so, follow the on-line submittal requirements of the agency:

- **Florida Department of Environmental Protection: http://www.fldepportal.com/go/**
- **Northwest Florida Water Management District: https://permitting.sjrwmd.com/nwepermitting/jsp/start.jsp**
- **Suwannee River Water Management District: https://permitting.sjrwmd.com/srepermitting/jsp/start.jsp**
- **St. Johns River Water Management District: https://permitting.sjrwmd.com/epermitting/jsp/AccountOverview.do?command=init**
- **Southwest Florida Water Management District: http://www.swfwmd.state.fl.us/permits/epermitting/**
- **South Florida Water Management District: http://my.sfwmd.gov/ePermitting/MainPage.do**

If submitting a paper application, please see Appendix A of Applicant's Handbook, Volume I for submittal locations.

FLATFORD SWAMP AQUIFER RECHARGE PROJECT NARRATIVE FOR NOTICE OF INTENT TO USE AN ENVIRONMENTAL RESOURCE GENERAL PERMIT FOR ENVIRONMENTAL RESTORATION OR ENHANCEMENT

PROJECT OBJECTIVE

The goal of this project is to recharge the Upper Floridan Aquifer to prevent or slow salt water intrusion and improve natural water systems through managed Aquifer Recharge (AR). This application is for General Permit to the Department and Water Management Districts for Environmental Restoration or Enhancement under Chapter 62-330.485. The following presents background information and details the proposed project and environmental benefits.

PROJECT HISTORY

Flatford Swamp is in east Manatee County in the Southern Water Use Caution Area (SWUCA) approximately 3 miles east of the Most Impacted Area (MIA) of the SWUCA. Excess water from upstream farms and other land use changes have impacted the Swamp's hydroperiod. In 2017, the Southwest Florida Water Management District (SWFWMD) completed a Feasibility Study that evaluated the use of an AR program to intercept surface water and divert it to recharge wells that would recharge the UFA, with the goals to prevent/slow salt water intrusion and improve natural water systems in the area through a managed AR while minimizing arsenic mobilization, maximizing micro-organism die-off, and minimizing well fouling. The Feasibility Study considered diversions from three locations where rivers/streams enter the Swamp (Maple Creek, Myakka River at Taylor Road, and Coker/Ogleby Creek). The Feasibility Study recommended implementing a test well by constructing an exploratory well at the Myakka River site.

The Florida Department of Environmental Protection (FDEP) Underground Injection Control (UIC) Department issued a Permit to Construct and Test a Class V exploratory well (UIC Permit No. 344918-001-UC/1R) and associated monitoring wells on February 27, 2017 (Attachment 1). Construction of the exploratory recharge well RW-1, monitoring wells, and temporary roads began in February 2018. In September 25, 2018, the SWFWMD Governing Board approved funding for the construction and testing of the proposed system. Attachment 2 includes the meeting agenda, which is publicly noticed on SWFWMD's website. The approved budget showing the allocation of public funds for the project can be viewed on the SWFWMD website at: https://www.swfwmd.state.fl.us/sites/default/files/medias/documents/Fiscal%20Year%202019%20Annual%20Service%20Budget%20%28October%201%2C%202018%29_1.pdf

PROJECT LOCATION

The site is in east Manatee County approximately 6 miles north of Myakka City, Florida, in Section 19, Township 35 South, Range 22 East. The site entrance is approximately 1,500 feet west of the intersection of Wauchula Road and Taylor Road. The intake location will be near where Taylor Road crosses the Myakka River. Figure 1 shows the location of the project site.

PROJECT DESCRIPTION

The proposed project is to construct the surface facilities necessary to route excess surface water from the Myakka River to RW-1 to operationally test the well. Figure 2 shows the major components of the Myakka River AR surface facilities, which include:

- An intake structure with coarse screening (1-1/2-inch spacing) within a natural deep pool at the Myakka Bypass Canal bridge crossing at Taylor Road.
- The approach to the screens in the deep pool lined with a rip rap blanket to reduce soil erosion and reduce vegetative growth in front of the screen.
- A gravity fusible polyvinylchloride (FPVC) pipe from the intake to the fine screen/pump wetwell installed using horizontal directional drill (HDD) construction methods to minimize dewatering and disturbance of wetlands.
- A wetwell in the upland area, adjacent to the access road. The wetwell has a fine screening system that is self-cleaning to prevent well clogging and a pumping system to convey screened surface water into the recharge well.
- A sediment basin next to the wetwell that can periodically be used to clean sediment and organic matter accumulation from the wet well.
- A pumping and transmission pipe design that allows for variable operating flow rates and minimizes air entrainment into the AR well.
- A chemical feed system for storage and injection of oxygen scavengers to reduce dissolved oxygen (DO) in the surface water for recharge.
- A sediment basin next to RW-1 that will allow the recharge well to be backflushed periodically to prevent well clogging.

Figure 2 shows the proposed intake structure, wetwell, sediment basins, exploratory recharge well (RW-1), Recharge Zone Monitoring Wells (RZMW-1 and RZMW-2), and the Suwannee Limestone Monitoring Well (SLMW-1). RZMW-1 and RZMW-2 will monitor the horizontal movement of the water near the property boundary and downgradient of RW-1. Attachment 3 includes the 60% design drawings.

WETLANDS AND SURFACE WATERS

Approximately 400 square feet (0.01 acre) of construction work will occur in surface waters associated with the proposed intake structure. In this area, approximately 18 inches of soil (600 cubic feet/22 cubic yards) will be removed and replaced with rip rap to reduce soil erosion and vegetative growth in front of the intake screen.

Figure 1 Upper Myakka Watershed and Flatford Swamp Location Map

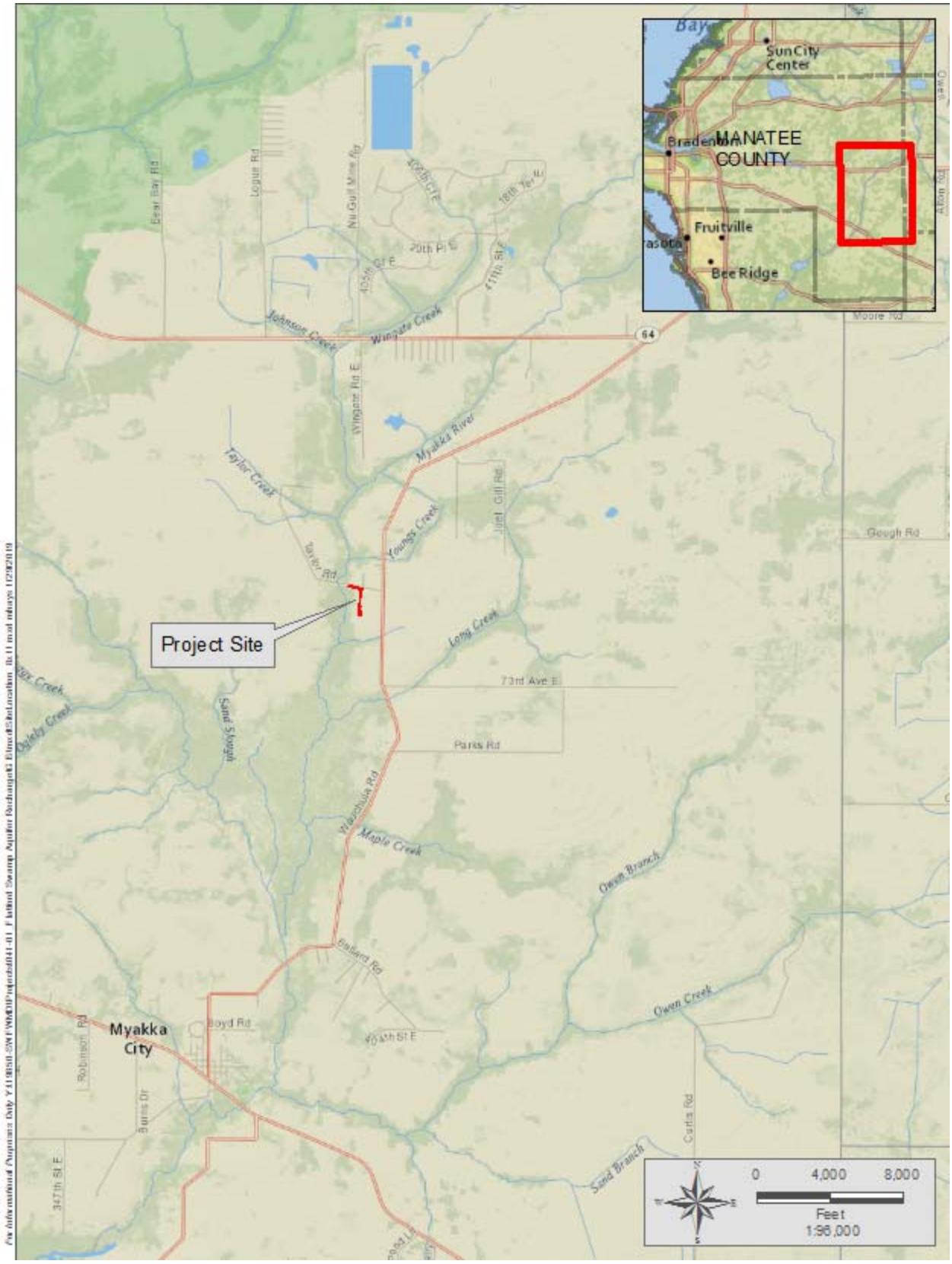
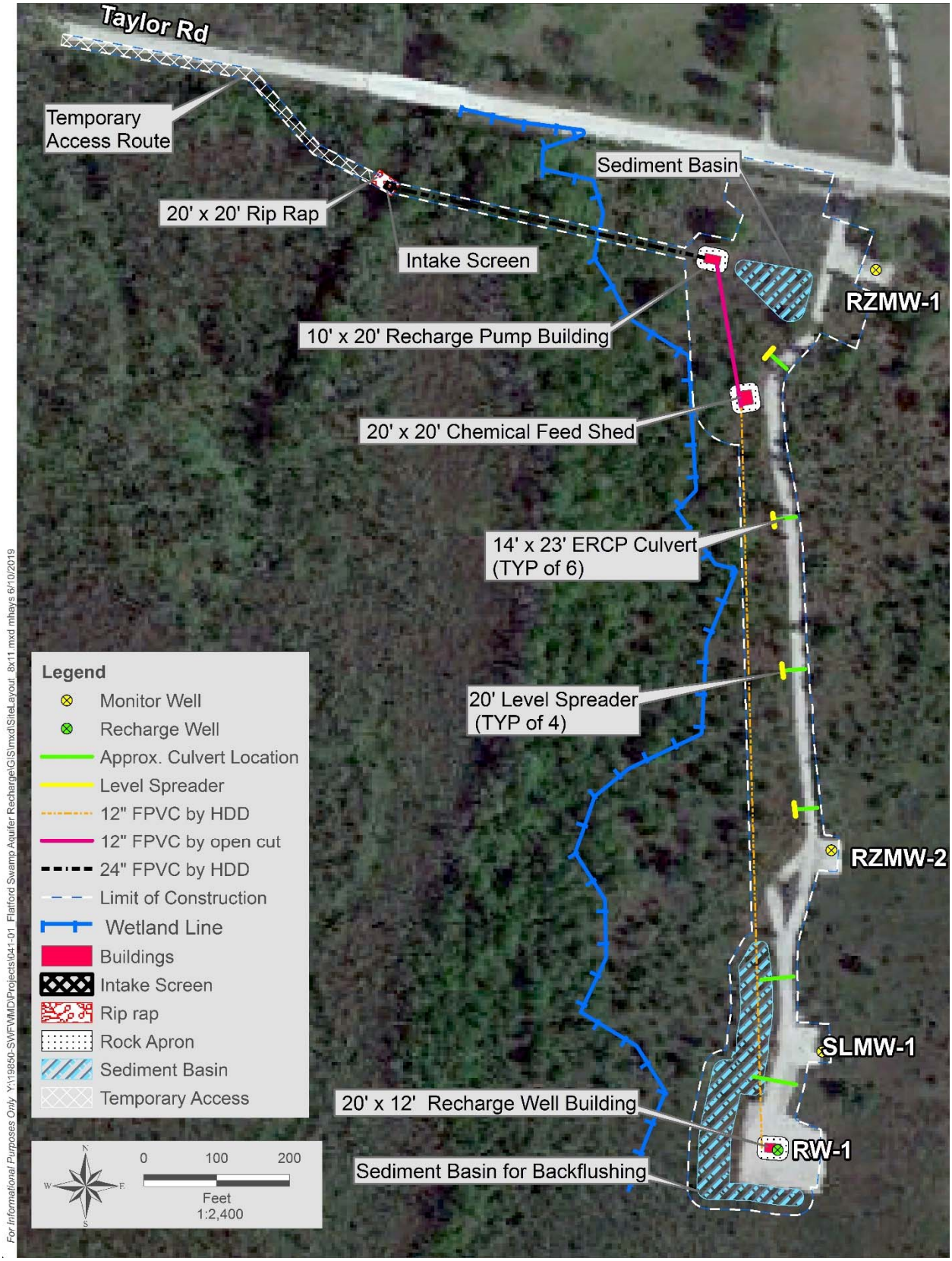


Figure 2 Proposed Site Layout



The work also includes excavating four 20-foot long level spreader swales, one swale, and two sediment ponds that are in the uplands. The pipeline leading from the wetwell to the intake will be constructed using HDD methods to minimize wetland impacts to this area. Temporary stabilization (matting) will be used along the temporary access to prevent rutting and minimize the impact to wetland soils. No wetland or surface water impacts are associated with the pump building, wetwell, and roadway, which are in the uplands.

Total wetland and surface water impacts for the project consist of 0.01 acre, including:

- 400 square feet of soils removed from surface waters.
- 400 square feet of rip rap to replace the excavated soils.

PROJECT BENEFITS

Hydrologic alterations and excess water have resulted in environmental damage (i.e., tree mortality) within the Swamp, resulting in conversion of a once primarily forested system to a mostly herbaceous wetland (Coastal Environmental, 1998). Hydrologic modeling studies conducted as part of the Myakka River Watershed Initiative determined that the depth and duration of inundation have increased from historical conditions throughout the Swamp. The modeling presented in Singhofen & Associates (2011) included diversion of flows from all three locations in the Feasibility Study (Maple Creek, Myakka River at Taylor Road, and Coker/Ogleby Creek). The modeling results indicated that the proposed interception flows would best approximate the historical hydroperiod by significantly reducing peak (90^{th} percentile) stages while considerably reducing water depths during average (50^{th} percentile) periods (wet season). Reducing the duration of peak stages is expected to limit further tree mortality and allow regrowth of trees.

Previous studies by Interflow Engineering, Inc. (2008) used a MIKE SHE/MIKE 11 model of the Upper Myakka River Watershed to simulate historical, existing, and proposed hydrologic restoration scenario conditions. The intent of this modeling effort was to identify the restoration scenario that would best approximate the historical hydroperiod. Results of the Singhofen & Associates (2011) modeling indicated that the average monthly quantities summarized in the table below are available for AR at the proposed Myakka River site. The average diversion flows range from 1.62 to 11.59 million gallons per day (MGD), with a yearly average of 4.7 MGD.

Month	Average Intercept Flow (MGD)	Month	Average Intercept Flow (MGD)
January	2.68	July	10.80
February	2.56	August	11.23
March	1.79	September	11.59
April	1.67	October	4.26
May	1.62	November	1.85
June	3.75	December	2.60

The current project is for operational testing of a pilot AR well (RW-1) at the Myakka River Taylor Road site, with a potential recharge volume of up to approximately 2 MGD. The proposed diversion of 2 MGD is roughly half the annual available intercept flow estimated for the Myakka River site and does not include recharge at the Maple Creek or Coker/Ogleby Creek sites. Therefore, we expect that the changes to the wetland health will be minimal and the main environmental benefit will be the recharge to the UFA. Although recharge of 2 MGD may not produce a measurable rise at the SWFWMD Salt Water Intrusion Minimum Aquifer Level (SWIMAL) monitor wells, most of the agricultural wells in the area withdraw from the UFA. Any recharge to the UFA will help offset local withdrawals, slowing the salt water intrusion. Additionally, the successful demonstration of the pilot project will pave the way for developing additional AR sites with the potential for SWIMAL recovery and improvements to the wetland health.

MONITORING

The wells at the site include two storage zone monitoring wells (RZMW-1 and RZMW-2), and the Suwannee Limestone Monitoring Well (SLMW-1). RZMW-1 and RZMW-2 will monitor the horizontal movement of the water near the property boundary and downgradient of RW-1. The goal of SLMW-1 is to monitor compliance with groundwater discharge standards as the recharge fluids potentially migrate upward within a G-II aquifer (recharge zone). Sampling of the monitoring wells will be completed in accordance with the UIC permit conditions.

Additionally, SWFWMD has developed a Wetland Monitoring Plan (WMP) to monitor any changes in the wetland that may be related to the recharge project. The WMP will consist of establishing three transects and the following data collection:

- Hydrologic Monitoring
- Vegetation Monitoring
- Photographic
- Climatic
- Wildlife

Figure 3 shows the locations of the proposed transects. Attachment 4 is the proposed WMP.

REFERENCES

Coastal Environmental, June 1998. *Tree Mortality Assessment of the Upper Myakka River Watershed*. St. Petersburg, FL.

Interflow Engineering, LLC., 2008. *Myakka River Watershed Initiative – Task 2.2.8 – Historical and Future Conditions Modeling Technical Memorandum.* Prepared for Singhofen and Associates, Inc.

Signhofen & Associates, Inc. 2011. *Myakka River Watershed Initiative Flatford Swamp restoration: conceptual scenario refinement and evaluation.* Prepared for the Southwest Florida Water Management District. Brooksville, FL.

Figure 4 Proposed Wetland Monitoring Transects