Loxahatchee River District

Water Reclamation | Environmental Education | River Restoration

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D. Albrey Arrington, Ph.D., Executive Director

MEMORANDUM

TO: D. ALBREY ARRINGTON, Ph.D., Executive Director

FROM: CLINTON R. YERKES, Deputy Executive Director CY

DATE: November 12, 2015

SUBJECT: AUTHORIZE AWARD OF CONTRACT-Engineering Services
TURTLE CREEK PHASE 1

Several areas of Turtle Creek continue to use septic tanks for wastewater treatment. The areas consist of approximately 137 homes predominantly surrounding the golf course. The target date for Turtle Creek on the Neighborhood Sewering Schedule is 2016. However there are 5 distinct areas that will be addressed during this project.

The Phase 1 contract provides some specific cost estimates that can be provided to the residents during more detailed presentation of information. Phase 1 also includes the detailed design, permitting, bidding and construction services for an area that is clearly best suited for gravity sewers.

Upon completion of the Little Oaks/River Oaks project, and start-up of the Jupiter Inlet Colony, we will be prepared to move ahead to start construction of the Turtle Creek system, when feasible.

A suggested motion is:

"THAT THE DISTRICT GOVERNING BOARD authorize award of an Engineering Services contract to Holtz Consultant Engineers, Inc. for the Turtle Creek Phase 1 project in an amount not to exceed $119,223.00.

and

THAT THE DISTRICT GOVERNING BOARD authorize a contingency amount of $2,000.00"

Should you have any questions in regard to this matter please contact me or Kris Dean.

V:/cip/proj/TurtleCrk-Ph1/Eng/Board Memo

AGREEMENT BETWEEN
LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT AND
HOLTZ CONSULTING ENGINEERS, INC.
FOR PROFESSIONAL ENGINEERING SERVICES

TURTLE CREEK
PHASE I

WORK AUTHORIZATION: 2015-05

BACKGROUND

This Agreement is for the performance of engineering services by Holtz Consulting Engineers, Inc. (HCE) pursuant to the Continuing Contract for Professional Engineering Services between Loxahatchee River District (District) and HCE dated February 4, 2015, hereafter referred to as the Contract.

This project includes a preliminary design analysis for the Subsystem Areas 1 through 4 of the Turtle Creek Village service area as defined in the "Turtle Creek Area Sanitary Sewer Preliminary Engineering Report", dated May 2015 by others as well as the installation of gravity sewer in Subsystem 5 of Turtle Creek Village. Subsystem 5 is located in the eastern section of Turtle Creek Village and consists of lots numbered 10 through 18, 20 through 32, 34, 36, 38, 40, 42, 44 and 46 on S.E. Turtle Creek Drive and S.E. Tortoise Lane as reflected on the exhibits in the Preliminary Engineering Report. The proposed 10-inch gravity system will connect into an existing sanitary manhole at the intersection of S.E. Club Circle and S.E. Turtle Creek Drive.

The preliminary design analysis for Subsystem Areas 1 through 4 will include a comparative analysis of low-pressure and gravity sewer systems, including updating of cost estimates using recent bid tabulations. All results will be summarized in a technical memorandum submitted to the District.

The design elements for Subsystem 5 are assumed to include the following:

- Approximately 1,950 linear feet of 10-inch gravity sewer system per District standards to serve 29 properties on S.E. Tortoise Lane and S.E. Turtle Creek Drive. Final pipeline lengths may increase or decrease due to field conditions. The gravity sewer will discharge into an existing manhole located at the intersection of S.E. Club Circle and S.E. Turtle Creek Drive.
- Restoration of all affected areas to existing conditions or better.
- Obtain South Florida Water Management District (SFWMD) dewatering permit prior to construction and provide dewatering monitoring during construction.

SCOPE OF WORK

The District has requested comprehensive engineering services from HCE to provide preliminary design, surveying, geotechnical engineering, engineering design, permitting, bidding assistance, and services during construction related to areas within Turtle Creek Village. Specific tasks include the following:

1A. Preliminary Design for SE Turtle Creek Drive Lots 212 through 218 (Subsystem 1)
1B. Preliminary Design for SE Turtle Creek Drive Lots 188 through 210 (Subsystem 2)
1C. Preliminary Design for SE Turtle Creek Drive Lots 122 through 186 (Subsystem 3)
1D. Preliminary Design for SE Turtle Creek Drive Lots 1-7 and 51-120 (Subsystem 4)
2A. Survey Services for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)
2B. Geotechnical Engineering Services for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)
2C. Engineering Design Services for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)
2D. Permitting Services for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)
2E. Dewatering Permit for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)
2F. Bidding Services for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)
2G. Services During Construction for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)
2H. Utility Locates Allowance for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)

TASKS 1A THROUGH 1D – PRELIMINARY DESIGN FOR SUBSYSTEMS 1 TO 4

This task will include a preliminary design analysis for Subsystem Areas 1 through 4 as defined in the PER by others and will include a comparative analysis of low-pressure and gravity sewer systems, including updating of budgetary cost estimates using recent bid tabulations. An analysis of the systems that each of the proposed areas will tie-into will also be briefly reviewed for the ability to receive the additional flows without the need for any modifications. All results will be summarized in a technical memorandum submitted to the District. A draft submittal will be provided to the District, and upon review and addressing any comments, a final technical memorandum will be provided.

TASK 2A – SURVEYING SERVICES FOR SUBSYSTEM 5

HCE shall furnish the services of Lidberg Land Surveying, Inc. to provide survey services consisting of field topography and horizontal locations referenced by baseline stationing. Lidberg Land Surveying will prepare a route survey for the proposed gravity sewer main along S.E. Turtle Creek Drive and S.E. Tortoise Lane. The base file will be based on the recorded plats for Turtle Creek Village, recorded in Plat Book 4, Page 93, all in the Public Records of Martin County, Florida. The survey will be in State Plane Coordinates, North American Datum of 1983 and will locate the necessary pavement, driveways, sidewalks, curbs, walls, visible above ground utilities and large trees. Cross sections will be obtained at approximate 50 foot intervals, with additional elevations at any intermediate changes in grade, and will extend 10 feet

into the adjacent lots. Permanent benchmarks will be established at approximate 600 foot intervals and will be referenced to National Geodetic Vertical Datum of 1929 (NGVD 29). The survey will include the top and invert elevations for any storm drainage and sanitary sewer structure, along with their respective pipe sizes and materials.

TASK 2B – GEOTECHNICAL ENGINEERING SERVICES FOR SUBSYSTEM 5

HCE shall furnish the services of Anderson Andre Consulting Engineers to perform subsurface explorations and geotechnical studies to obtain subsurface soil information necessary for the proper design of the proposed gravity sewer main alignment. The work includes three (3) standard penetration tests to a depth of 15 feet. The borings will be performed in general accordance with procedures recommended in ASTM D-1586, using a truck-mounted drilling rig. A geotechnical report summarizing the results of the boring will be made available to potential bidders for informational purposes only. . The report will include the location and depth of the borings, visual classification of the recovered samples, and compressive strength test results on rock as necessary.

TASK 2C – DESIGN SERVICES FOR SUBSYSTEM 5

HCE shall prepare detailed plan drawings and specifications depicting the installation of the proposed 10-inch gravity sewer system starting at the cul-de-sac on S.E. Tortoise Lane and heading east to tie-into the existing sanitary manhole at the intersection of S.E. Club Circle and S.E. Turtle Creek Drive. Work will include the preparation of drawings and specifications for the construction of the work. HCE will coordinate a kick-off meeting, make site visits as necessary, and attend meetings as required. HCE shall prepare engineer's opinion of probable cost of construction at the 30% submittal and at the completion of the design.

Approximately ten (10) design drawings will be provided for this project. Plan and profile sheets will be prepared at a 1"= 20' scale. The preliminary drawing list is as follows:

G-1 Cover and Index

G-2 Legend and General Notes

G-3 Key Sheet

C-1 Gravity Sewer Main Plan and Profile View Sheet 1

C-2 Gravity Sewer Main Plan and Profile View Sheet 2

C-3 Gravity Sewer Main Plan and Profile View Sheet 3

C-4 Details Sheet 1

C-5 Details Sheet 2

C-6 Details Sheet 3

C-7 Details Sheet 4

Engineer shall prepare the following submittals:

- 30% site plan and pipe layout for approval by LRD staff.
- 90% plan and profile plans and specifications incorporating LRD's comments on the 30% submittal.
- 100% plans and specifications incorporating LRD's comments on the 90% submittal for public bidding.
- Engineer's opinion of probable construction cost at the 30% submittal and at the 100% submittal based on the final bidding documents.

TASK 2D – PERMITTING SERVICES FOR SUBSYSTEM 5

HCE shall prepare permit applications for construction of the gravity sewer main for submittal to the following agencies at the same time as the 90% design submittal, after incorporating comments on the 30% submittal. Permit fees will be paid by LRD. HCE will respond to requests for information (RFIs) from the permitting agencies:

- Florida Department of Environmental Protection – Notification / Application for Constructing a Domestic Wastewater Collection / Transmission System

HCE will coordinate with the permitting agencies during the review process on a regular basis in an effort to keep the project on schedule and respond to their review comments.

TASK 2E – DEWATERING PERMIT AND MONITORING FOR SUBSYSTEM 5

HCE shall furnish the services of JLA Geosciences, Inc. (JLA) to provide hydrogeologic consulting services to prepare a South Florida Water Management District (SFWMD) dewatering permit application for gravity sewer installation and provide dewatering monitoring during construction. JLA will attend project design, permitting and progress meetings with HCE, LRD, and SFWMD. Meetings will include one (1) pre dewatering permit application, one (1) pre-bid meeting and one (1) pre-construction meeting. Prior to preparation of the Permit application, JLA will review historical information on file with SFMWD to identify existing wells in the vicinity of the project and review existing water use permits, if any; review water quality data from nearby monitor wells and river monitoring stations.

JLA will prepare a General Permit Application for Dewatering which will include the following:

a) Identify potential environmental impacts resulting from the allocation including, natural surface water bodies, and other environmental features dependent on the area water resources.

b) Evaluate if the allocation will cause significant movement of the existing saline water.

c) Address potential for the allocation to cause the movement of pollutants from known nearby sources of groundwater pollution, based on review of FDEP databases.

d) Address potential impact to offsite land uses that may be affected by the proposed allocation.

e) Evaluate if the proposed allocation would cause an adverse impact on existing legal users of the groundwater resource that is greater than is allowed by SFWMD criteria.

f) Prepare the water use permit application and supporting documentation.

g) Work with HCE and LRD to optimize dewatering discharge location and methods that are consistent with SFWMD criteria.

Note that the above evaluation of potential impacts will not include groundwater modeling to assess potential impacts from dewatering activities. The evaluation will rely upon proposed dewatering locations and anticipated dewatering depths and operations. This information will be assessed with respect to our understanding that LRD has performed dewatering operations for numerous projects similar if not identical to this one without causing adverse impacts pertinent to SFWMD permitting criteria. This includes a project at Turtle Creek, which based on preliminary review of project plans involved more extensive and apparently more complicated operations (with respect to potential environmental impacts). The previous Turtle Creek project apparently involved dewatering to deeper depths and at more locations closer to the Loxahatchee River. It was completed successfully without causing harm or adverse impacts to the water resource, the environment, or protected legal users. It is anticipated that the proposed project will involve dewatering operations comparable to those completed historically; consequently, we will cite the previous successful project completions without causing adverse impacts along with other SFWMD application materials to provide reasonable assurance that the proposed dewatering will not cause harm.

JLA will also conduct dewatering monitoring during construction which will include the following:

a) Attend monthly construction progress meetings at LRD offices with HCE, LRD, and SFWMD (4 total).

b) Coordinate surface water sample collection by LRD during dewatering activities and review results weekly.

c) Maintain communications with SFWMD inspector as needed.

d) Visit the site periodically (at least once monthly) over the four month project period to confirm that the Contractor understands and complies with the SFWMD permit.

e) Water sample collection, turbidity, chloride, and specific conductance analyses will be performed by LRD staff. Water samples will likely be required to be collected daily from each off site dewatering discharge point and from the surface water background location were surface water discharge is permitted. Provide weekend backup for sampling. JLA will

review data collected by LRD.

f) Dewatering water quality reporting and submittal will be electronic format and emailed to HCE monthly (4 submittals).

TASK 2F – BIDDING SERVICES FOR SUBSYSTEM 5

HCE will perform, as required by LRD, the following services during the bidding or negotiating phase of the Project:

1. Prepare bid documents.
2. Conduct a pre-bid meeting and site visit and issue meeting minutes to all plan holders.
3. Respond to questions bidders may have concerning the bid documents and issue addenda as necessary to clarify the bid documents.
4. Attend the bid opening and prepare the bid tabulation form.
5. Evaluate bids and prepare a recommendation of award.

TASK 2G – ENGINEERING SERVICES DURING CONSTRUCTION FOR SUBSYSTEM 5

During the construction phase of the Project, HCE will provide the following services:

1. Conduct the pre-construction meeting with the Contractor, and other interested parties, and issue meeting minutes.
2. Review and comment on submittals submitted by the Contractor.
3. Provide the Contractor with clarifications concerning questions about the Contract Documents and respond to requests for information.
4. Review quantities and payment application after review and approval by the field inspector and make the recommendations necessary for the approval or rejection of the Contractor's monthly payment applications. A total of four requests are assumed.
5. Review contractor's claims and prepare change orders as necessary.
6. Review and comment on the Record Drawings submitted by the Contractor.
7. Provide full time construction observation to determine that the project is being constructed in substantial conformance with the permitted drawings to certify completion of construction to the FDEP and evaluate the Contractor's compliance with the Contract Documents (approximately 16 weeks of actual construction and 40 hours per week of construction observation and inspection by the Engineer to monitor compliance with the design intent, permit, and contract requirements).
8. Verify that the work has progressed to the substantial completion point in accordance with the Contract Documents. The Engineer will inspect the completed work in a project walk-through and prepare a punch list of items remaining to be completed which will be attached

to the certificate of substantial completion.

9. Verify that the work items identified on the punch list prepared under Item 8 above and all other Work identified as being incomplete have been completed in accordance with the Contract Documents. The Engineer will ensure all final punch lists are satisfactorily completed prior to approval of the Contractor's Final Payment Request.
10. Submit the required information for the closing out of the permits.

TASK 2H – UTILITY LOCATES ALLOWANCE FOR SE TURTLE CREEK DRIVE LOTS 10 THROUGH 46 (SUBSYSTEM 5)

Lidberg Land Surveying will contract with Ground Hound Detection Services for the existing buried utilities marked and flagged. Surface excavations will be conducted in order to obtain depth, diameter and material information of the existing buried utilities

DELIVERABLES

TASK	DELIVERABLE	QUANTITY
Tasks 1A through 1D – Preliminary Design	Technical Memorandum	2 Hard Copies and One Electronic Copy for both draft and final submittals
Task 2C – Engineering Design Services	30% Plans 90% Plans & Specifications 100% Plans & Specifications Construction Cost Estimates	2 Sets or each (24" x 36" Plans) 2 Sets (24" x 36" Plans) 2 Sets (24" x 36" Plans) 2 Copies
Task 2D and 2E – Permitting Services	Permit Applications (FDEP)	2 Sets of each Permit Application
Task 2F – Bidding Services	Bidding Documents Addendum	2 Sets (24" x 36" Plans) and Full Size PDF. Word and PDF of Contract Documents As Required
Task 2G – Engineering Services during Construction	Contract Documents	2 Sets (24" x 36" Plans) and PDF for LRD 3 Sets (24" x 36" Plans) and PDF for the Contractor

TIME OF COMPLETION

HCE shall complete the project as outlined below in the project schedule.

- Tasks 1A through 1D – Preliminary Design – 6 weeks from Notice to Proceed (NTP)
- Task 2A- Survey – 6 weeks from Notice to Proceed (NTP)
- Task 2B – Geotechnical Engineering - 6 weeks from Notice to Proceed (NTP)
- Task 2C – Engineering Design Services
    - 30% plans – 4 weeks from receipt of Survey.

- 90% plans and specifications – 6 weeks from receipt of comments from LRD staff on the 30% submittal.
- 100% plans and specifications – 2 weeks from receipt of comments from LRD staff on the 90% submittal.

- Task 2D – Permitting Services – 6 weeks from receipt of comments from LRD staff on the 30% submittal.
- Task 2E – Dewatering Permit and Monitoring - 6 weeks from receipt of comments from LRD staff on the 30% submittal. Monitoring for 15 weeks of dewatering.
- Task 2F – Bidding Services – 2 months from advertisement.
- Task 2G – 16 weeks from Contractor's NTP.

SCHEDULE OF FEES

Proposed labor costs for engineering services (Time & Expense, Not To Exceed (NTE)) are tabulated below and detailed in Attachment A.

TASK	ENGINEERING FEE
1A. Preliminary Design for SE Turtle Creek Drive Lots 212 through 218 (Subsystem 1)	$885
1B. Preliminary Design for SE Turtle Creek Drive Lots 188 through 210 (Subsystem 2)	$1,350
1C. Preliminary Design for SE Turtle Creek Drive Lots 122 through 186 (Subsystem 3)	$1,720
1D. Preliminary Design for SE Turtle Creek Drive Lots 1-7 and 51-120 (Subsystem 4)	$1,945
Subtotal – Tasks 1A through 1D – Preliminary Design	**$5,900**
2A. Survey Services for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)	$5,790
2B. Geotechnical Engineering Services for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)	$2,120
2C. Engineering Design Services for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)	$20,728
2D. Permitting Services for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)	$1,495
2E. Dewatering Permit and Monitoring for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)	$9,323
2F. Bidding Services for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)	$2,862
2G. Services During Construction for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)	$68,115
2H. Utility Locates Allowance for SE Turtle Creek Drive Lots 10 through 46 (Subsystem 5)	$2,890
Subtotal – Tasks 2A through 2G– Subsystem 5	**$113,323**
TOTAL TIME & EXPENSE, NOT TO EXCEED (NTE)	**$119,223**

ASSUMPTIONS

1. All permit fees will be paid for by LRD.
2. Construction compaction and materials testing shall be the responsibility of the Contractor.

This Authorization is accepted, subject to the terms, conditions and obligations of the aforementioned Contract.

LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT

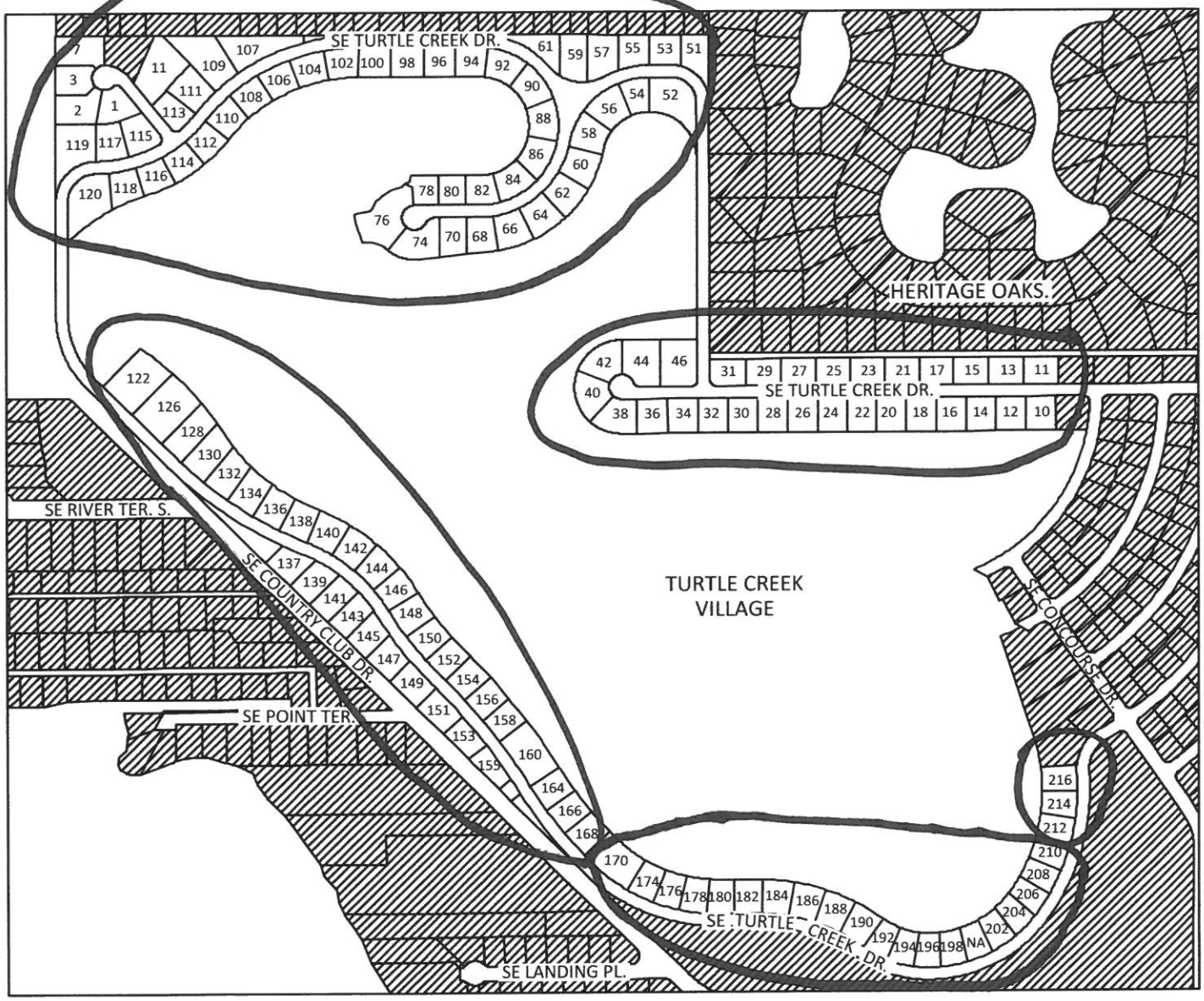
By: _____ _____
D. Albrey Arrington Ph.D., Executive Director Date

HOLTZ CONSULTING ENGINEERS, INC.

By: _____ _____
David Holtz, PE, Vice President Date

EXHIBIT "A"
TURTLE CREEK
GRAVITY SEWER SYSTEM
ASSESSMENT AREA

N.T.S.



LEGEND

NOT IN ASSESSMENT AREA

TEQUESTA, FLORIDA

08-18-2015

TURTLE CREEK EXH-A