

**SUMTER COUNTY BOARD OF COMMISSIONERS  
EXECUTIVE SUMMARY**

**SUBJECT:** Stormwater Management Program Support FY13 (Staff recommends approval)

**REQUESTED ACTION:** Approval

Work Session (Report Only)

**DATE OF MEETING:** 10/23/2012

Regular Meeting

Special Meeting

**CONTRACT:**  N/A

Vendor/Entity: AMEC

Effective Date: 10/23/2012

Termination Date: 6/30/2013

Managing Division / Dept:

Public Works Division/Engineering

**BUDGET IMPACT:** \$99,832 (budgeted in the FY13 Stormwater budget)

Annual

**FUNDING SOURCE:**

131 Stormwater

Capital

**EXPENDITURE ACCOUNT:**

131-399-538-3400

N/A

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**HISTORY/FACTS/ISSUES:**

In FY12, the Board approved funding for the Stormwater Program development, which included the creation of a GIS data base for assets related to stormwater, identifying existing basin and watershed studies in the County, identifying impacts of the changes to the DFIRMS, evaluating short and long term priorities for improvements, developing a drainage canal maintenance plan, and a cooperative funding application for SWFWMD. The Executive Summary from that effort is Exhibit 1.

In FY13, PWD plans to continue improving the stormwater program by the expansion of the GIS database, TV'ing (inspecting) pipes in certain urban areas, and developing the way ahead for TMDL-listed water bodies in the County. We will also consider another SWFWMD cooperative funding project. See attached proposal from AMEC for FY13.

PWD has programmed funds in the budget for FY13 to cover the proposal and recommends approval.

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## EXECUTIVE SUMMARY

The purpose of the Sumter County Stormwater Management Program Needs Assessment (Needs Assessment) is to provide a clear understanding of the County's current status of stormwater management practices and to present recommended actions for future improvements to Sumter County's program. Changes to state and federally mandated stormwater regulations are anticipated in the near future. By taking a proactive approach to stormwater management, Sumter County will be at an advantage when transitioning to future stormwater regulations.

The evaluation of current stormwater management practices involved a significant amount of data collection. In particular, an extensive effort was undertaken to collect field data related to stormwater infrastructure assets such as culverts, inlets, mitered end sections, and ditch blocks. Field data collection was conducted using customized software installed on smartphone devices to collect horizontal location, condition, size, material and a photograph. The global positioning system (GPS), camera, and text input features of the smartphones were utilized in the data collection process to generate spatially referenced data in a Geographical Information Systems (GIS) format. A combination of Real Time Kinematic (RTK) GPS instruments and traditional leveling survey was used to collect vertical location for roadway culverts. Similar stormwater infrastructure data is available in select locations throughout Sumter County from previous watershed study initiatives. The available data was collected within the Webster, Bushnell, Gant Lake, and Big Prairie Watersheds, however the format of these datasets are designed to expedite watershed modeling efforts and the data does not contain the same information provided by recent field data collection efforts. Initially data collection efforts were focused in the Gum Slough, Outlet River, and Little Withlacoochee River Watersheds which were prioritized based on the number of complaints logged in those watersheds. The County has issued a budget amendment to this project for data collection in the Withlacoochee River and Little Jones Creek watersheds. It is anticipated that field data collection efforts will continue until a complete countywide inventory is established, including incorporation of the Webster, Bushnell, Gant Lake, and Big Prairie Watershed data into the County's database. The completed inventory will become a valuable tool for cost-effective implementation of the County's stormwater infrastructure maintenance activities.

Other facets of the Needs Assessment involved review and mapping of previous basin studies within the County; development of a canal maintenance plan; preliminary canal inspections; review of maintenance and drainage easements; analysis of the floodplain boundaries as proposed by the Federal Emergency Management Agency (FEMA); comparison of Sumter County floodplain management regulations and FEMA requirements; evaluation of stormwater needs with respect to growth; and the identification of short term priorities for stormwater projects.

As a result of the Needs Assessment, several opportunities were identified that could facilitate Sumter County's stormwater management practices in the direction of a desirable future status. For the purpose of this report the "desirable status" consists of a comprehensive approach to stormwater management that is proactive and meets the requirements of state and federally mandated stormwater regulations. A recurring theme throughout the Stormwater Needs

Assessment is the necessity of watershed management planning. Key components of typical watershed management plans are detailed hydrologic and hydraulic modeling. Such modeling efforts can be very useful in identifying specific areas of concern related to flooding or stormwater quality. For areas within its jurisdiction, the Southwest Florida Water Management District (SWFWMD) has established a funding program to assist counties in developing watershed management plans. Due to the need for watershed planning throughout the County and the availability of funding, AMEC has recommended the development of the Jumper Creek Watershed Management Plan as a high-priority stormwater project. As part of the Stormwater Needs Assessment task, AMEC has coordinated with County and SWFWMD staff to complete and submit an application for cooperative funding assistance for this project which should be funded for the 2013 fiscal year.

Additional short term stormwater management improvement projects related to roadway maintenance, administrative controls, canal maintenance, water quality monitoring, database maintenance, and watershed management planning are recommended. Several potential projects have been presented in this document to address these needs. Each project has been summarized and assigned a relative priority rating. High priority projects have been identified as: maintaining and updating stormwater infrastructure asset data; drainage canal access and maintenance easement acquisition; repairs to existing bridges located outside of the County roadway network; implementation of a canal maintenance plan; continuation of stormwater asset inventory field data collection efforts; development and implementation of a culvert maintenance and inspection plan; and updates to previously collected watershed management plan data. The estimated cost for addressing high priority projects is \$1.8 million.



September 10, 2012

Mr. Scott Cottrell  
Sumter County Public Works  
310 Anderson Avenue  
Bushnell, Florida 33513

VIA EMAIL: [scott.cottrell@sumtercountyfl.gov](mailto:scott.cottrell@sumtercountyfl.gov)

Re: Proposal for Professional Engineering Services  
Stormwater Program Support- Task Assignment 3  
Sumter County, Florida  
AMEC Project No. 600053.1

Dear Scott:

Sumter County (County) has requested AMEC Environment & Infrastructure, Inc. (AMEC) to provide professional engineering services for Stormwater Program Support - Task Assignment 3. This assignment includes completing the following tasks:

- Task 3.1 – Monthly Stormwater Meetings
- Task 3.2 – Stormwater Inventory
- Task 3.3 – Pipe TV
- Task 3.4 – Support for TMDL Listed Water Bodies

The tasks to accomplish this project are described in detail below:

**Task 3.1 BI-MONTHLY STORMWATER MEETINGS**

AMEC will attend bi-monthly meetings with Sumter County staff to provide an update for the status of project tasks for this assignment, update the County on any new regulatory developments from State or Federal agencies, and discuss ongoing and future stormwater program needs. Meeting minutes will be delivered within two days of the meeting for review and comment by all participants. A final copy of meeting minutes incorporating comments will be delivered for each meeting.

AMEC Environment & Infrastructure, Inc.  
2000 E. Edgewood Drive, Suite 215  
Lakeland, FL 33803  
Tel (863) 667-2345  
Fax (863) 667-2662

[www.amec.com](http://www.amec.com)

EXH. 2

### **Task 3.2      STORMWATER INVENTORY**

AMEC will perform an inventory of stormwater structures maintained by the County within The Villages Districts 1, 2, and 3 in addition to a few roadways adjacent to but outside the Villages. To scope this work, AMEC obtained stormwater master plan sheets from Arnett Environmental, LLC (see attached Exhibit 1, 2, and 3 for limits of The Villages Districts 1, 2, and 3). The master plan sheets show the planned layout of stormwater systems within the Villages, including pipe size and material, but no invert elevations. As-built plans have not been obtained. AMEC will collect information for all stormwater structures maintained by the County within the project limits described below.

The extents of District 1 are CR 466 on the south, San Pedro Drive on the east, North Morse Blvd. on the north, and Allende Avenue on the west. The extents of District 2 are District 1 to the south, U.S 441 to the east, the Sumter County boundary and El Camino Real to the north, and North Buena Vista Blvd. to the west. The extents of District 3 are CR 466 to the south, Buena Vista Blvd. to the east, Reston Drive to the north, and CR 101 to the west. The inventory will include swaled roadways north of Villages District 2, and rural County roads west of Villages District 3 including CR 209.

AMEC understands that within The Villages, the County maintains from back of curb to back of curb, or from edge of pavement to edge of pavement on County-maintained roadways. The County does not maintain the entire right of way along County roadways within The Villages.

#### The following data will be collected:

##### Urban Section Roadways:

Curb Inlets/Drop Inlets/Manholes – Determine X, Y, Z, pipe material and size, condition of structure and pipe (including erosion due to damaged sprinklers), and photograph. Manhole lids will be opened where possible, using standard hand tools. If unable to open a manhole lid, AMEC will measure down through the grate where possible for curb and drop inlets. AMEC will also note any depressions in the roadway adjacent to inlets.

##### Rural Section Roadways:

Culvert ends and Ditch Blocks on major and minor collectors – determine X, Y, size, condition, photograph.

Cross Culverts – Determine X, Y, Z, size, material, condition, and photograph.

#### Survey Methods & Expected Accuracies:

AMEC surveyors will primarily use GPS in RTK mode operating with local Trimble VRS. The horizontal accuracy is expected to be  $\pm 0.1'$  to a well-defined point. The vertical accuracy in clear sky conditions is expected to be  $\pm 0.1'$  to  $0.2'$ . Where tree cover inhibits the GPS signal, differential leveling will be used to determine the Z value.

The datum for the proposed survey is NAD83/11 and NAVD 88.

AMEC will contact The Villages staff to gather information regarding pumping through County-maintained pipes for level control of stormwater ponds.

Deliverable: The existing Geo-database delivered during Task Assignment #2 will be updated with the data collected during Task 3.3. The updated Geo-database will be delivered to the County on a returnable external hard drive.

### **Task 3.3**      **PIPE TV**

AMEC will contract with Southeastern Surveying and Mapping, Inc. to provide the pipe TV inspection as follows.

Perform closed circuit televising (CCTV) of approximately 8,500 feet of various size storm pipes beginning with El Camino Real east of Buena Vista Boulevard, and continuing on Morse Boulevard north of CR 466 in the Villages Subdivision.

Deliverable: The final product will be a DVD/CD of the CCTV pipe televising as well as narrative Report.

We have assumed that no permitting or maintenance of traffic will be required for these inspections. We have not included jetting and cleaning of pipes prior to inspection. Some pipes within the project limits described may not be traversable with the CCTV equipment. Pipes in that condition will be noted and a list will be delivered to the County. Additionally, pipes that are completely full of water will not be traversable with the CCTV equipment, unless plugging and dewatering is included. These pipes will also be noted and a list will be delivered to the County.

### **Task 3.4**      **SUPPORT FOR TMDL-LISTED WATER BODIES**

The Total Maximum Daily Load (TMDL) program, which is mandated by the federal Clean Water Act, requires each state to identify the water bodies within its jurisdiction which are not currently meeting the state's water quality criteria. In Florida the TMDL program is administered by the Florida Department of Environmental Protection (FDEP). In order to implement the program, FDEP identifies water bodies that are not meeting State criteria and designates them as "water quality impaired". It then develops TMDLs or other water quality restoration plans for the impaired water bodies, whose purpose is to reduce pollutant loads to the impaired waters to the extent necessary to eliminate their impairments.

Within Sumter County FDEP has designated the Outlet River (WBID 1351A), which flows from Lake Panasoffkee to the Withlacoochee River, as impaired due to elevated nutrient and chlorophyll-*a* concentrations.

A TMDL has not yet been developed for the Outlet River. To assist the County in preparing for the eventual development of TMDLs or other water quality restoration plans, AMEC will coordinate with FDEP staff to identify options which may exist that would allow the impairments to be dealt with without the development of formal TMDLs. Some of these options (e.g., the development of reasonable assurance plans or nutrient management plans) may provide opportunities for the County to take a leading role in determining the scope and pace of future pollutant load reduction efforts.

AMEC will assist the County in identifying a project for funding under the SWFWMD Cooperative Funding Initiative (CFI), and will prepare the application to be submitted in October 2013. We have included time for attending up to two meetings with SWFWMD Board members and staff, which will most likely take place between November 2013 and March 2014.

The estimated budget for this project is listed by task below. The project will be billed as a lump sum project with monthly invoices based on percent complete.

#### BUDGET ESTIMATE

<b>Task</b>	<b>Description</b>	<b>Cost</b>
3.1	Monthly Stormwater Meetings	\$2,869
3.2	Stormwater Inventory	\$77,979
3.3	Pipe TV	\$14,981
3.4	Support for TMDL Listed Water Bodies	\$4,003
<b>Total</b>		<b>\$99,832</b>

We have provided the schedule below as an estimate of the time required to complete each task. We have assumed that we will receive a task assignment for this project by October 2012. We will prepare a more detailed work plan for delivery to the County upon receiving the task assignment.

#### SCHEDULE

<b>Task Description</b>	<b>Begin Task</b>	<b>Complete Task</b>
Monthly Stormwater Meetings	October 2012	September 2013
Stormwater Inventory	October 2012	March 2013
Pipe TV	October 2012	December 2012
Support for TMDL Listed Water Bodies	October 2012	March 2014

This proposal is valid for a period of 60 days. We appreciate this opportunity to work with Sumter County. If you have any questions please do not hesitate to contact me at 352-536-7126.

Sincerely,



Terry Dykehouse, P.E.  
Senior Project Manager



David W. Butcher PE, LEED AP  
Office Manager

TD: tjm

cc: Christopher Wert

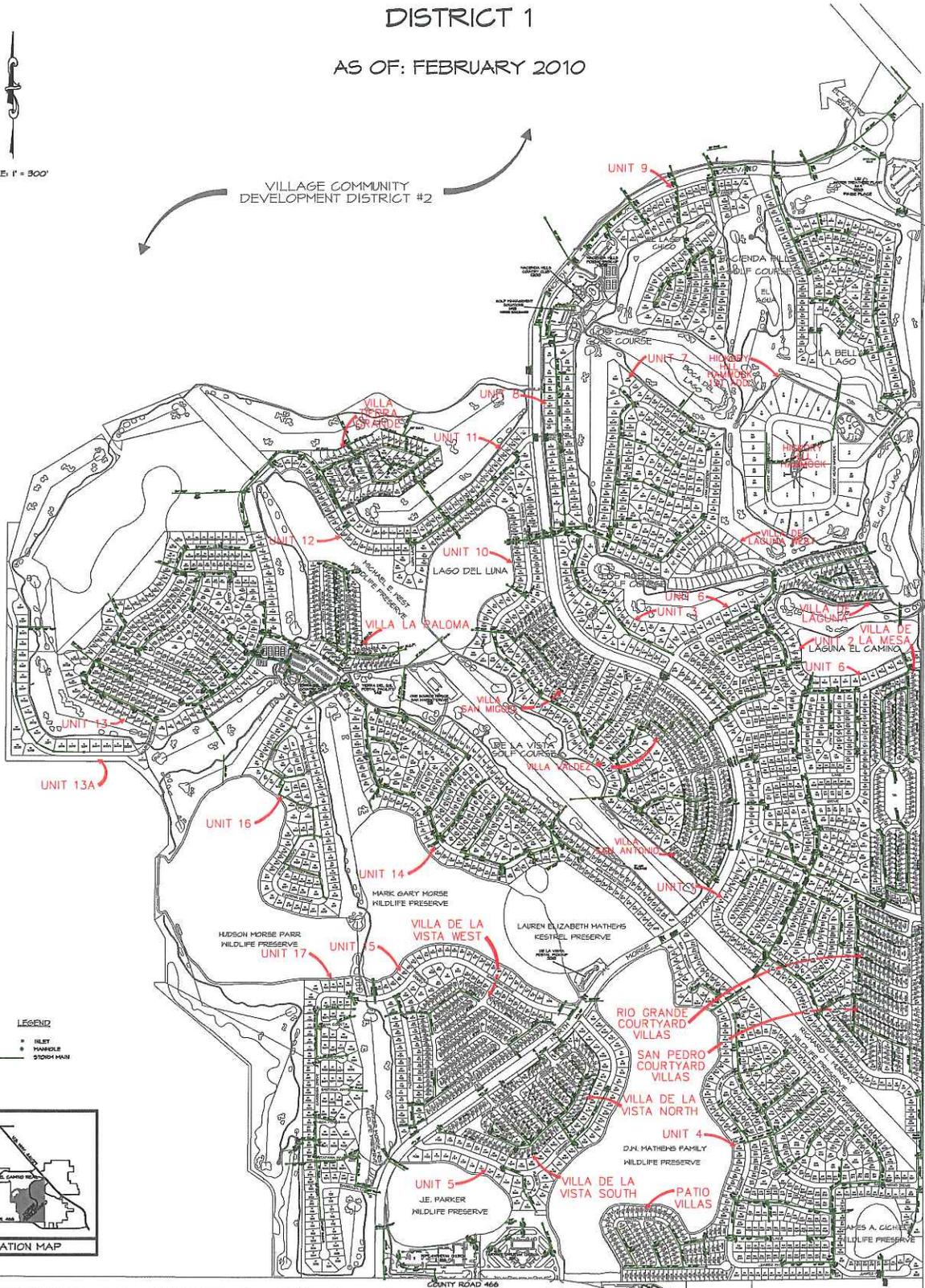
# The Villages

## STORM DRAINAGE DISTRIBUTION MAP DISTRICT 1

AS OF: FEBRUARY 2010

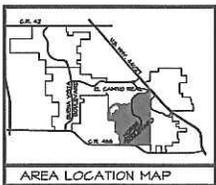
SCALE: 1" = 500'

VILLAGE COMMUNITY  
DEVELOPMENT DISTRICT #2



### LEGEND

- ISLET
- MANHOLE
- STORM MAIN



**Arnett**  
Environmental, LLC

1030 Lake Sunset Landing, The Villages, FL 32162  
Phone: 352.375.4147 Fax: 352.375.4249  
Certificate of Administrator Number: 23400



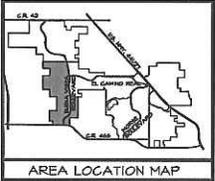
# The Villages

## STORM SEWER DISTRIBUTION MAP DISTRICT 3

AS OF: AUGUST 2007

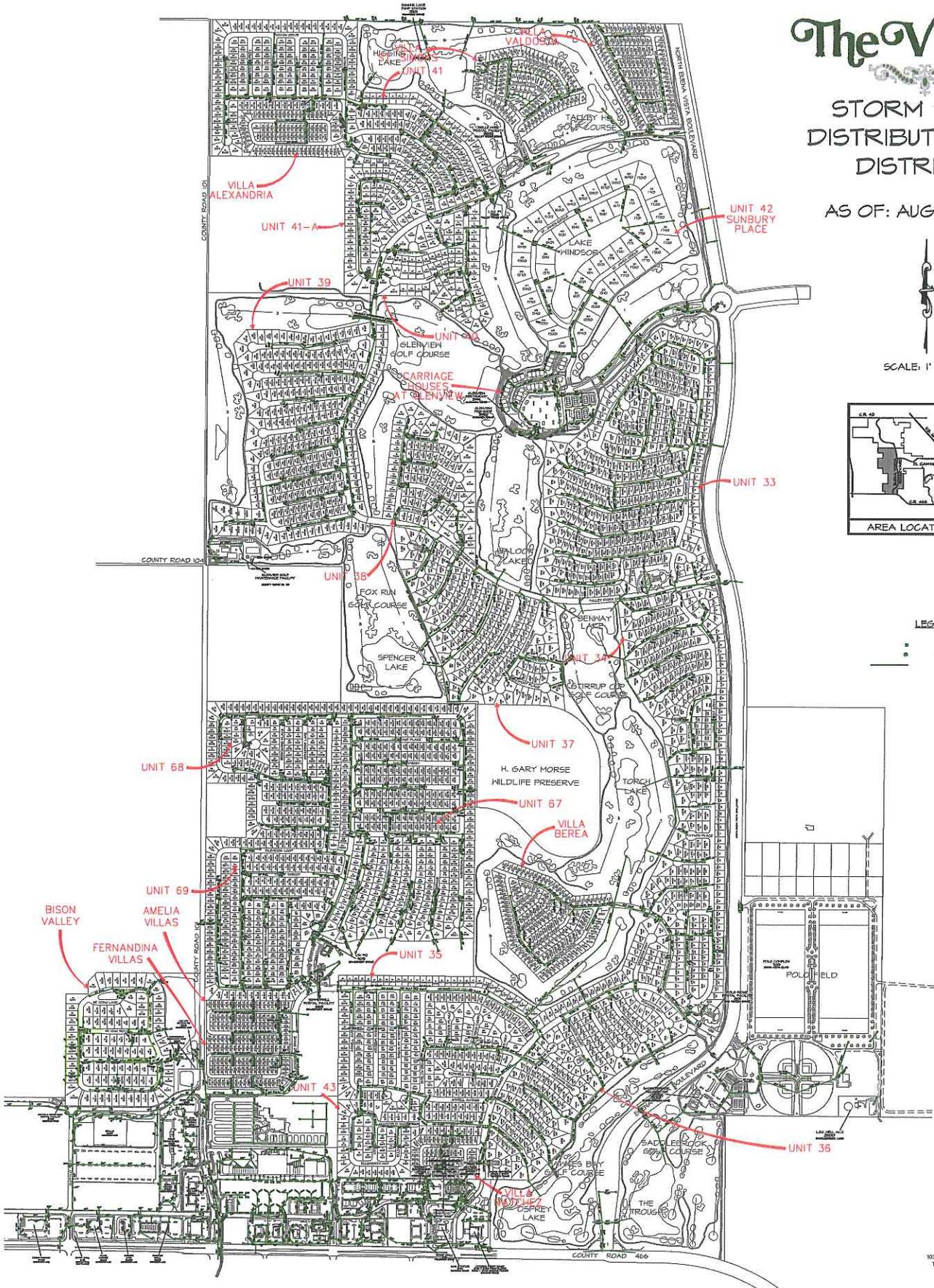


SCALE: 1" = 300'



### LEGEND

- INLET
- MANHOLE
- STORM MAIN



**Arnett**  
Environmental, LLC

1038 Lake Santee Lane, The Villages, FL 32162  
Tel No: (352)334-4141 Fax No: (352)334-0255  
Certificate of Authorization Number: 27410