



WENTWORTH CDD

STORMWATER EROSION REPORT

MAY 2019

Prepared by:



Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS™

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Introduction

TREVISO BAY / WENTWORTH ESTATES COMMUNITY DEVELOPMENT DISTRICT

The following report contains information pertaining to related subjects of the Treviso Bay Surface Water Management System:

1. Treviso Bay South Florida Water Management District Permits
2. Treviso Bay Subdivision Lake Bank Erosion, HOA Drainage Installations and Corrective Modifications, and Financial Impacts Spreadsheet
3. Treviso Bay Subdivision Photos and Maps

The Treviso Bay / Wentworth Estates Community Development District (CDD) Staff has performed an assessment of current lake bank conditions, abutting residential / non-residential units / properties, completed field measurements, and prepared an analysis of corrective construction methods relevant to compliance of the CDD permits issued by the South Florida Water Management District.

In the Staff's investigation of the erosion of the existing lake banks, it is evident that both the Homeowner Associations' (HOA's) Lake Maintenance Easement (LME) and the Master HOA's maintenance responsibilities are recommended to be addressed over a reasonable period of time, to be determined, to comply with the various water management permits issued by the South Florida Water Management District (SFWMD). Significant lengths of the existing lake banks have been impacted, both above and below the mean water level (elevation), which are primarily a result of wind generated wave action, water level fluctuations, storm or disaster events, along with drainage and rain water leader installations within the lakes and ponds. The lake maintenance easement slopes within many of the communities have deteriorated and have been compromised in many instances by the installation of yard drains installed by various HOA contractor(s) as these installations are located at the top or within the lake bank slopes, or terminated at waters the edge.

This report provides the linear footage per subdivision of the amount of lake bank (residential or non-residential shoreline) that will require corrective action or reconstruction, an explanation as to the material required for correction of lake bank erosion, and method(s) to facilitate the corrections to the existing slopes to comply with current SFWMD permits. The report also contains the estimated fiscal impact to provide these community improvements.

Wentworth CDD
South Florida Water
Management Permits



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

November 27, 2007

V K Holdings Treviso Bay Development, L.L.C.
19275 West Capital Drive
Brookfield, WI 53045

Subject: Application No. 070702-1, **Treviso Bay Basin B**
Collier County, S30/T50S/R26E

Enclosed is a copy of the South Florida Water Management District's staff report covering the permit application referenced therein. It is requested that you read this staff report thoroughly and understand its contents. The recommendations as stated in the staff report will be presented to our Governing Board for consideration on **Thursday, December 13, 2007**.

Should you wish to object to the staff recommendation or file a petition, please provide written objections, petitions and/or waivers (refer to the attached "Notice of Rights") to:

Elizabeth Veguilla, Deputy Clerk
South Florida Water Management District
Post Office Box 24680
West Palm Beach, Florida 33416-4680

The "Notice of Rights" addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. You are advised, however, to be prepared to defend your position regarding the permit application when it is considered by the Governing Board for final agency action, even if you agree with the staff recommendation, as the Governing Board may take final agency action which differs materially from the proposed agency action.

Please contact the District if you have any questions concerning this matter.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the addressee this 27th of November, 2007 in accordance with Section 120.60 (3), Florida Statutes.

Sincerely,

A handwritten signature in black ink, appearing to read "Damon Meiers".

Damon Meiers, P.E., Deputy Director
Environmental Resource Regulation Department

DM/ja

CERTIFIED #7005 0390 0005 9817 2213
RETURN RECEIPT REQUESTED

NOTICE OF RIGHTS

As required by Sections 120.569(1), and 120.60(3), Fla. Stat., following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a District decision which does or may determine their substantial interests shall file a petition for hearing with the District Clerk within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: 1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or 2) within 14 days of service of an Administrative Order pursuant to Subsection 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of either written notice through mail, or electronic mail, or posting that the District has or intends to take final agency action, or publication of notice that the District has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

Filing Instructions

The Petition must be filed with the Office of the District Clerk of the SFWMD. Filings with the District Clerk may be made by mail, hand-delivery or facsimile. **Filings by e-mail will not be accepted.** Any person wishing to receive a clerked copy with the date and time stamped must provide an additional copy. A petition for administrative hearing is deemed filed upon receipt during normal business hours by the District Clerk at SFWMD headquarters in West Palm Beach, Florida. Any document received by the office of the SFWMD Clerk after 5:00 p.m. shall be filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the SFWMD Clerk, P.O. Box 24680, West Palm Beach, Florida 33416.
- Filings by hand-delivery must be delivered to the Office of the SFWMD Clerk. **Delivery of a petition to the SFWMD's security desk does not constitute filing. To ensure proper filing, it will be necessary to request the SFWMD's security officer to contact the Clerk's office.** An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by facsimile must be transmitted to the SFWMD Clerk's Office at (561) 682-6010. Pursuant to Subsections 28-106.104(7), (8) and (9), Fla. Admin. Code, a party who files a document by facsimile represents that the original physically signed document will be retained by that party for the duration of that proceeding and of any subsequent appeal or subsequent proceeding in that cause. Any party who elects to file any document by facsimile shall be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed with the clerk as a result. The filing date for a document filed by facsimile shall be the date the SFWMD Clerk receives the complete document.

Initiation of an Administrative Hearing

Pursuant to Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 and 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, District file number or any other SFWMD identification number, if known.
2. The name, address and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose to the extension. 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.

If the District's Governing Board takes action with substantially different impacts on water resources from the notice of intended agency decision, the persons who may be substantially affected shall have an additional point of entry pursuant to Rule 28-106.111, Fla. Admin. Code, unless otherwise provided by law.

Mediation

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401-.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Sections 120.60(3) and 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the SFWMD Clerk within 30 days of rendering of the final SFWMD action.



Last Date For Agency Action: 13-DEC-2007

INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: Treviso Bay Basin B

Permit No.: 11-02324-P

Application No.: 070702-1

Application Type: Environmental Resource (Conceptual Approval Modification And Construction/Operation Modification)

Location: Collier County, S30/T50S/R26E

Permittee : V K Holdings Treviso Bay Development L.L.C.

Operating Entity : Treviso Bay Property Owners Master Association, Inc

Project Area: 153.34 acres

Project Land Use: Residential

Drainage Basin: WEST COLLIER

Sub Basin: LELY MANOR CANAL

Receiving Body: TREVISO BAY WEST CANAL AND ONSITE WETLANDS

Class: CLASS III

Special Drainage District: NA

Mitigation Previously Permitted: Yes

Conservation Easement To District : No

Sovereign Submerged Lands: No

PROJECT PURPOSE:

This application is a request for a modification of an Environmental Resource Permit to authorize Construction and Operation of a surface water management system totaling 54.01 acres, part of a 153.34-acre project known as Treviso Bay Basin B, and Conceptual Authorization of a surface water management system serving the remaining 99.33-acre residential development with discharge into Treviso Bay West Canal and onsite wetlands.

PROJECT EVALUATION:**PROJECT SITE DESCRIPTION:**

The Treviso Bay (fka Wentworth Estates) development is located on the southwest side of Tamiami Trail (US 41), south of Thomasson Drive in Collier County. Basin B, proposed for modifications under this application, is located on the westernmost side of the Treviso Bay development plan. Location maps are attached as Exhibits 1A and 1B.

Construction and operation of the surface water management system totaling 49.53 acres and conceptual authorization of a surface water management system serving the remaining 103.81-acre residential development for the entire 153.34-acre Basin B of the Treviso Bay development was previously permitted under Permit Number 11-02324-P/ Application Number 060201-10. The surface water management system serving Basin B is designed to provide the required water quality volume and flood protection for developments within Basin B and to provide conveyance for Basins A and AA. The surface water management system serving this basin consists of interconnected wet detention lakes, totaling 18.42 acres and a 31.11-acre preserved area with four (4) control structures (CS-B4, CS-B5, CS-B6 and CS-B7) discharging to onsite wetlands and the Treviso Bay West Canal.

Conservation areas 13 and 14 are located onsite, which contain cypress and marsh areas and adjacent upland preserve areas. The conservation easement encompassing this area is 31.11 acres, and no changes to the preserve area are proposed. Conservation areas 13 and 14 will be incorporated into the surface water management system as previously permitted to maintain post-development hydrology in these wetland systems.

Conservation areas 11 and 12A (15.93 acres total) are located adjacent to and south of the Basin B boundary, conservation area 17 (63.03 acres) is located to the north and conservation area 15 (4.92 acres) is located to the east. No changes to the development footprint, mitigation areas or mitigation plan are proposed under this application.

PROPOSED PROJECT:

This application is a request to modify the surface water management system serving Basin B of the Treviso Bay development. The proposed modification is for changes in configurations of the previously permitted wet detention lakes and revision of storm sewer facilities to support the new lake configurations. The acreage of the total wet detention lakes increases from the previously permitted 18.42 acres to 22.90 acres. In addition to changes in configurations of the wet detention lakes, the land use assumptions for the future developments in the remaining 99.33-acres (requested for conceptual authorization) are modified under this application. The total impervious area (including building coverage) increases from 67.42 acres to 72.01 acres and pervious area decreases from 36.39 acres to 27.32 acres (see Land Use Table in the following section for more details). Surface water management plans and details are attached as Exhibits 2A-2I.

The surface water management system serving Basin B is designed to provide the required water quality volume and flood protection for developments within Basin B and to provide conveyance for Basins A and AA. The surface water management system serving this basin consists of interconnected wet detention lakes, totaling 22.90 acres and a 31.11-acre preserved area with four (4) control structures (CS-B4, CS-B5, CS-B6 and CS-B7) discharging to onsite wetlands and the Treviso Bay West Canal. The required treatment volume is based on the first inch (1") over the controlled drainage area totaling 153.34 acres with an additional 50% treatment volume.

With the proposed modifications to the surface water management system, the peak stage during the 25 year - 3 day storm event decreases from the peak stage of the previously permitted system (Application Number 060201-10), 5.50 ft NGVD to 5.35 ft NGVD. The peak discharge during the design storm event decreases from the peak discharge of the previously permitted system, 36.50 cfs to 35.42 cfs. The peak

stage during the 100 year - 3 day storm event with no offsite discharge decreases from the peak stage of the previously permitted system, 6.60 ft NGVD to 6.38 ft NGVD. However, no changes to the previously permitted minimum parking lot, road crown and finished floor elevations are proposed under this application.

The project is in substantial compliance with the original permit. No adverse water quality or quantity impacts are anticipated as a result from the proposed project.

LAND USE:

Conceptual:

		Area (ac)
Basin B	Building Coverage	41.67
	Pervious	27.32
	Impervious	30.34
Total:		99.33

**Construction:
Project:**

	Previously Permitted	This Phase	Total Project	
Building Coverage			41.67	acres
Impervious			30.34	acres
Lake	18.42	22.90	22.90	acres
Pervious			27.32	acres
Preserved	31.11	31.11	31.11	acres
Total:	49.53	54.01	153.34	

Basin : Basin B

	Previously Permitted	This Phase	Total Basin	
Building Coverage	33.81		41.67	acres
Impervious	33.61		30.34	acres
Lake	18.42	22.90	22.90	acres
Pervious	36.39		27.32	acres
Preserved	31.11	31.11	31.11	acres
Total:	153.34	54.01	153.34	

WATER QUANTITY :

Discharge Rate :

As a result of the proposed modification to the surface water management system, the peak discharge rate during the 25 year - 3 day storm event from the project decreases from 36.50 cfs (peak discharge from Basin B - Application Number 060201-10) to 35.42 cfs and is within the previously permitted allowable limit 40 cfs.

Discharge Storm Frequency : 25 YEAR-3 DAY

Design Rainfall : 12.8 inches

Basin	Allow Disch (cfs)	Method Of Determination	Peak Disch (cfs)	Peak Stage (ft, NGVD 29)
Basin B	40	Previously Permitted	35.42	5.35

Finished Floors :

Building Storm Frequency : 100 YEAR-3 DAY

Design Rainfall : 16 inches

Basin	Peak Stage (ft, NGVD 29)	Proposed Min. Finished Floors (ft, NGVD 29)	FEMA Elevation (ft, NGVD 29)
Basin B	6.38	9	8

Road Design :

Road Storm Frequency : 25 YEAR-3 DAY

Design Rainfall: 12.8 inches

Basin	Peak Stage (ft, NGVD 29)	Proposed Min. Road Crown (ft, NGVD 29)
Basin B	5.35	5.6

Parking Lot Design :

Parking Lot Storm Frequency : 25 YEAR-3 DAY

Design Rainfall 12.8 inches

Basin	Peak Stage (ft, NGVD 29)	Proposed Min. Parking Elev. (ft, NGVD 29)
Basin B	5.35	5.6

Control Elevation :

Basin	Area (Acres)	Ctrl Elev (ft, NGVD 29)	WSWT Ctrl Elev (ft, NGVD 29)	Method Of Determination
Basin B	153.34	3	3.00	Previously Permitted

WATER QUALITY :

As shown in the table below, the surface water management system provides the required water quality treatment for the future development within Basin B, based on one inch (1") water quality over the entire 153.34 controlled basin with an additional 50% treatment volume prior to discharging offsite to the Treviso Bay West Canal and onsite wetlands.

In addition to the required water quality, Urban Stormwater Management Program and Construction Pollution Prevention Plan specifications and guidelines have been incorporated into the Treviso Bay Property Owners Master Association document as part of the water quality assurances as required under Permit Number 11-02324-P/ Application Number 060201-10. A copy of the Treviso Bay Property

Owners Master Association documents (Declaration of Covenants, Conditions and Restrictions for Treviso Bay), recorded in official record of Collier County, is located within the permit file.

No adverse water quality impacts are anticipated as a result of the proposed project.

Basin	Treatment Method	Vol Req.d (ac-ft)	Vol Prov'd
Basin B	Treatment Wet Detention	19.2	19.2

WETLANDS:

Wetland Impacts:

No wetland impacts are proposed under this application, and no changes are proposed to the mitigation plan outlined in application numbers 030509-7 and 060201-10 (previous permits). Structural buffers will be installed, as depicted on the engineering plans, where sufficient natural upland buffers (15' minimum, 25' average) do not exist. Structural buffers will consist of native shrubs planted on 3' centers. Best management practices including double-row silt fences will be installed adjacent to all wetland areas once construction authorization is received. No adverse impacts are anticipated as a result of project construction.

Wildlife Issues:

Listed species and wetland-dependent wildlife concerns were addressed in the original permits for this development (particularly applications 030509-7 and 060201-10). The permittee shall comply with the provisions of the approved Big Cypress Fox Squirrel management plan and the Bald Eagle management plan approved under application 030509-7 and referenced in application 060201-10.

This permit does not relieve the applicant from complying with all applicable rules and any other agencies' requirements if, in the future, endangered/threatened species or species of special concern are discovered on the site.

CERTIFICATION AND MAINTENANCE OF THE WATER MANAGEMENT SYSTEM:

It is suggested that the permittee retain the services of a Professional Engineer registered in the State of Florida for periodic observation of construction of the surface water management (SWM) system. This will facilitate the completion of construction completion certification Form #0881 which is required pursuant to Section 10 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, and Rule 40E-4.361(2), Florida Administrative Code (F.A.C.).

Pursuant to Chapter 40E-4 F.A.C., this permit may not be converted from the construction phase to the operation phase until certification of the SWM system is submitted to and accepted by this District. Rule 40E-4.321(7) F.A.C. states that failure to complete construction of the SWM system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization unless a permit extension is granted.

For SWM systems permitted with an operating entity who is different from the permittee, it should be noted that until the permit is transferred to the operating entity pursuant to Rule 40E-1.6107, F.A.C., the permittee is liable for compliance with the terms of this permit.

The permittee is advised that the efficiency of a SWM system will normally decrease over time unless the system is periodically maintained. A significant reduction in flow capacity can usually be attributed to

partial blockages of the conveyance system. Once flow capacity is compromised, flooding of the project may result. Maintenance of the SWM system is required to protect the public health, safety and the natural resources of the state. Therefore, the permittee must have periodic inspections of the SWM system performed to ensure performance for flood protection and water quality purposes. If deficiencies are found, it is the responsibility of the permittee to correct these deficiencies in a timely manner.

RELATED CONCERNS:

Water Use Permit Status:

No irrigation water is required for this phase of construction. Due to salinity in the project vicinity, all lake excavations must be completed without dewatering (Special Condition 21).

The permittee shall apply and receive water use permits for irrigation water, if surface water lakes and/ or groundwater wells will be used as a source for irrigation water for any future facility. The permittee shall apply and receive water use permits for short-term dewatering, if dewatering during construction is required for utilities installation for any future construction.

This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation, unless the work qualifies for a No-Notice Short-Term Dewatering permit pursuant to Chapter 40E-20.302(3) or is exempt pursuant to Section 40E-2.051, FAC.

This project is in an area covered by water use restrictions pursuant to an Emergency Order issued by the Governing Board. Withdrawal of any previously unallocated water from a source subject to water use restrictions in an Emergency Order, whether an initial use in a new permit, or as an increased amount over the allocation in an existing permit that is being renewed or modified, is not authorized until the Governing Board rescinds the Emergency Order and lifts the water use restrictions in the area covering this project. Failure to comply with that Order constitutes a violation and pursuant to Rule 40E-1.609, Florida Administrative Code, the District may suspend or revoke any water use permits issued for dewatering or irrigation associated with this project. See Special Condition # 13.

CERP:

The proposed project is not located within or adjacent to a Comprehensive Everglades Restoration Project component.

Potable Water Supplier:

N/A

Waste Water System/Supplier:

N/A

Right-Of-Way Permit Status:

A Right-of-Way Permit is not required for this project.

DRI Status:

This project is not a DRI.

Historical/Archeological Resources:

The District has received correspondence from the Florida Department of State, Division of Historical Resources indicating that the agency has no objections to the issuance of this permit.

DCA/CZM Consistency Review:

The District has not received a finding of inconsistency from the Florida Department of Environmental Protection or other commenting agencies regarding the provisions of the federal Coastal Zone Management Plan.

Third Party Interest:

No third party has contacted the District with concerns about this application.

Enforcement:

There has been no enforcement activity associated with this application.

STAFF RECOMMENDATION:

The Staff recommends that the following be issued :

Construction and Operation of a surface water management system totaling 54.01 acres part of a 153.34-acre project known as Treviso Bay Basin B and Conceptual Authorization of a surface water management system serving the remaining 99.33-acre residential development with discharge into Treviso Bay West Canal and onsite wetlands.

Based on the information provided, District rules have been adhered to.

Staff recommendation is for approval subject to the attached General and Special Conditions.



STAFF REVIEW:

NATURAL RESOURCE MANAGEMENT DIVISION APPROVAL

ENVIRONMENTAL EVALUATION

Laura Layman
Laura Layman

SUPERVISOR
Edward Cronyn
Edward Cronyn

DIVISION DIRECTOR :

Anita R. Bain
Anita R. Bain

DATE: 11/20/07

SURFACE WATER MANAGEMENT DIVISION APPROVAL

ENGINEERING EVALUATION

Pakorn Sutitarnnontr
Pakorn Sutitarnnontr, P.E.

SUPERVISOR
William Foley, P.E.
William Foley, P.E.

DIVISION DIRECTOR :

Anthony M. Waterhouse, P.E.
Anthony M. Waterhouse, P.E.

DATE: 11/26/07

GENERAL CONDITIONS

1. All activities authorized by this permit shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit and Part IV, Chapter 373, F.S.
2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.
3. Activities approved by this permit shall be conducted in a manner which does not cause violations of State water quality standards. The permittee shall implement best management practices for erosion and pollution control to prevent violation of State water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. All practices shall be in accordance with the guidelines and specifications described in Chapter 6 of the Florida Land Development Manual; A Guide to Sound Land and Water Management (Department of Environmental Regulation, 1988), incorporated by reference in Rule 40E-4.091, F.A.C. unless a project-specific erosion and sediment control plan is approved as part of the permit. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.
4. The permittee shall notify the District of the anticipated construction start date within 30 days of the date that this permit is issued. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District an Environmental Resource Permit Construction Commencement Notice Form Number 0960 indicating the actual start date and the expected construction completion date.
5. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an annual status report form. Status report forms shall be submitted the following June of each year.
6. Within 30 days after completion of construction of the permitted activity, the permittee shall submit a written statement of completion and certification by a professional engineer or other individual authorized by law, utilizing the supplied Environmental Resource/Surface Water Management Permit Construction Completion/Certification Form Number 0881A, or Environmental Resource/Surface Water Management Permit Construction Completion Certification - For Projects Permitted prior to October 3, 1995 Form No. 0881B, incorporated by reference in Rule 40E-1.659, F.A.C. The statement of completion and certification shall be based on onsite observation of construction or review of as-built drawings for the purpose of determining if the work was completed in compliance with permitted plans and specifications. This submittal shall serve to notify the District that the system is ready for inspection. Additionally, if deviation from the approved drawings are discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. Both the original and revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawings. All surveyed dimensions and elevations shall be certified by a registered surveyor.
7. The operation phase of this permit shall not become effective: until the permittee has complied with the requirements of condition (6) above, and submitted a request for conversion of Environmental Resource Permit from Construction Phase to Operation Phase, Form No. 0920; the District determines the system to be in compliance with the permitted plans and specifications; and the entity

GENERAL CONDITIONS

approved by the District in accordance with Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, accepts responsibility for operation and maintenance of the system. The permit shall not be transferred to such approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall initiate transfer of the permit to the approved responsible operating entity if different from the permittee. Until the permit is transferred pursuant to Section 40E-1.6107, F.A.C., the permittee shall be liable for compliance with the terms of the permit.

8. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of the phase or portion of the system to a local government or other responsible entity.
9. For those systems that will be operated or maintained by an entity that will require an easement or deed restriction in order to enable that entity to operate or maintain the system in conformance with this permit, such easement or deed restriction must be recorded in the public records and submitted to the District along with any other final operation and maintenance documents required by Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit applications within the South Florida Water Management District, prior to lot or units sales or prior to the completion of the system, whichever comes first. Other documents concerning the establishment and authority of the operating entity must be filed with the Secretary of State, county or municipal entities. Final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local government entity. Failure to submit the appropriate final documents will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system and any other permit conditions.
10. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the District in writing of the changes prior to implementation so that a determination can be made whether a permit modification is required.
11. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40E-4 or Chapter 40E-40, F.A.C..
12. The permittee is hereby advised that Section 253.77, F.S. states that a person may not commence any excavation, construction, or other activity involving the use of sovereign 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 lease, license, easement, or other form of consent authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereignty lands or other state-owned lands.
13. The permittee must obtain a Water Use permit prior to construction dewatering, unless the work qualifies for a general permit pursuant to Subsection 40E-20.302(3), F.A.C., also known as the "No Notice" Rule.
14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal,

GENERAL CONDITIONS

abandonment or use of any system authorized by the permit.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding, unless a specific condition of this permit or a formal determination under Section 373.421(2), F.S., provides otherwise.
16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of a permitted system or the real property on which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rules 40E-1.6105 and 40E-1.6107, F.A.C.. The permittee transferring the permit shall remain liable for corrective actions that may be required as a result of any violations prior to the sale, conveyance or other transfer of the system.
17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.
18. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the appropriate District service center.
19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

SPECIAL CONDITIONS

1. The conceptual phase of this permit shall expire on December 13, 2009.
The construction phase of this permit shall expire on December 13, 2012.
2. Operation of the surface water management system shall be the responsibility of Treviso Bay Property Owners Master Association, Inc. Within one year of permit issuance or concurrent with the engineering certification of construction completion, whichever comes first, the permittee shall submit a copy of the recorded deed restrictions (or declaration of condominium, if applicable), a copy of the filed articles of incorporation, and a copy of the certificate of incorporation for the association.
3. Discharge Facilities: Through previously permitted facilities.
4. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.
5. Measures shall be taken during construction to insure that sedimentation and/or turbidity violations do not occur in the receiving water.
6. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.
7. Lake side slopes shall be no steeper than 4:1 (horizontal:vertical) to a depth of two feet below the control elevation. Side slopes shall be nurtured or planted from 2 feet below to 1 foot above control elevation to insure vegetative growth, unless shown on the plans.
8. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.
9. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.
10. The permittee shall provide routine maintenance of all of the components of the surface water management system in order to remove all trapped sediments/debris. All materials shall be properly disposed of as required by law. Failure to properly maintain the system may result in adverse flooding conditions.
11. This permit is issued based on the applicant's submitted information which reasonably demonstrates that adverse water resource related impacts will not be caused by the completed permit activity. Should any adverse impacts caused by the completed surface water management system occur, the District will require the permittee to provide appropriate mitigation to the District or other impacted party. The District will require the permittee to modify the surface water management system, if necessary, to eliminate the cause of the adverse impacts.
12. The permittee acknowledges, that pursuant to Rule 40E-4.101(2), F.A.C., a notice of Environmental Resource or Surface Water Management Permit may be recorded in the county public records. Pursuant to the specific language of the rule, this notice shall not be considered an encumbrance upon the property.
13. Pursuant to an Emergency Order of the Governing Board of the District, applications for water use permits for dewatering associated with the construction of the surface water management facilities proposed with this application will be considered on a case by case basis, and may or may not be issued prior to the Governing Board rescinding or modifying the Order. In addition, no irrigation with previously unallocated water may be conducted prior to the Governing Board rescinding or modifying the Order.
14. Minimum building floor elevation: 9.00 feet NGVD 29. (Basin B)
15. Minimum road crown elevation: 5.60 feet NGVD 29. (Basin B)

**Wentworth CDD Subdivision
Bank Erosion, HOA Drainage
Installations and Corrective
Modifications and Financial
Impacts Spreadsheet**

Eroded Lake Bank Shoreline Reconstruction

Lake bank shoreline erosion in numerous subdivisions within the Treviso Bay community can be addressed by three alternative methods. These options include importing and adding fill and regrading, excavating fill from lake with heavy equipment and regrading, and dredging fill from lake and regrading. All alternatives, once completed, will then require re-sodding of all disturbed areas including adjustments and/or repair of existing irrigation systems.

The first two options will require heavy equipment to be operated on homeowner's property(s) including stockpiling of fill material, placement of fill material, final grading of material and repair of irrigation systems as required. These operations would be disruptive to residents as far as noise and inconvenience while reconstruction of the lake banks occurs. These two options will fulfill the re-establishment of the lake slope banks, but will not ensure the present erosion condition will not re-occur, again over time.

The third option is dredging of the lakes to recover material to reconstruct the lake banks. This procedure will be the least intrusive on the residents with minor inconvenience during the final grading and sodding portion of the reconstruction. The dredging progression will also serve an additional objective which would be to re-distribute the lake bottom residue after ten to fifteen years of sedimentation. The dredging operation would be situated within the lakes and material pumped to the shoreline to reestablish the lake banks to proper slopes both above and below the mean water level elevation. The dredged material will be pumped into woven fabric material called Geo-tubes to establish a solid base at the established mean water level. An additional bag is then filled with the lake material and is placed on top of the bottom woven Geo-tube. This second bag is a sacrificial bag that is opened and used for fill to grade the lake bank slope. A coconut woven mat material is then installed over the fill to allow for sod installation to grow into the mat to secure the sod. Once the dredging activity is complete, the contractor will then complete finish grading above and below the mean water level. Sodding of all disturbed areas above the water level will be the HOA's responsibility.

Homeowners Association of Developer Drainage Modifications

Numerous subdivisions have previously installed drainage modifications to some or all properties to address drainage concerns. The installations include yard drains in front and rear yards, HDPE drain lines from rainwater gutters piped into and adjacent to the lakes water edge, and yard drains installed with HDPE piping into existing lakes. The majority of the HDPE piping has been installed at improper elevations / locations and are adding to the erosion difficulties that presently exist. Also, many of the yard drains were installed at the crest of the lake maintenance easement or within the lake easement, and have eroded the sodded lake bank slope.

There are two options that can be entertained to lessen the erosion of the lake banks caused by the modifications both above and below the mean water level. These options include relocating yard drains from in or around lake maintenance easements, and redirecting the drains to front yards of these properties which will enable flow into the existing stormwater drainage systems, and installing / lowering HDPE piping from rainwater leaders and yard drains into the lake.

A cost estimate for lake bank restoration options and drainage modification are listed below:

Cost Estimate for Lake Bank Restoration Options and Drainage Modifications:

1. Dredging (in-water) of lake bank / Geo-tube installation and bank re-sloping	7 ft. width slope bag - \$60.00 per ft. 5 ft. width slope bag - \$51.00 per ft.
2. Dredging of lake bank with trackhoe and bobcat to regrade	Equipment \$310.00 per hr./ operator
3. Importing fill and regrading lake bank slopes with front-end loader and bobcat	Fill \$78.00 per cubic yd. Equipment \$145.00 per hr./ operator
4. HOA HDPE drainage piping modifications	\$22.00 per ft./ lot property \$46.00 per ft./ within lake

Proposed Capital Improvement Project Expenditures from 2020 through 2026

7 ft. width enclosed woven Geo-Tube fabric installation with 5 ft. sacrificial bag =	\$848,068.00
5 ft. width enclosed woven Geo-Tube fabric installation with 3 ft. sacrificial bag =	\$648,063.00
Littoral shelf wetland planting within lakes shoreline of Wentworth Estates CDD =	\$96,000.00
Capital program administration / CEI inspection and Surveying requirements =	\$163,775.00
Total Expenditures	\$1,775,906.00

Cost Estimate for CEI Services for Project:

Construction Administration / Inspection Services – 8.5% of construction costs for each individual project

Survey Functions – 2.5% of individual project costs for property line staking

Lake Bank Erosion Conditions Rating Evaluation

Rating	Vertical Slope Erosion / Benching
1. Minor	12” Bank Erosion
2. Moderate	12” to 18” Bank Erosion
3. Serious	12” to 24” Bank Erosion
4. Major	12” to 30” Bank Erosion
5. Severe	12” to 36” and above Bank Erosion

Treviso Bay
Wentworth CDD

<u>Subdivision</u>	<u>Priority Rating</u>
Avellino	5
Lipari, Pavia, Belle Firenze, Italia	4
Dinapoli, Via Veneto, Vercelli, Acqua, Casoria	3
Venezia, Giaveno, Piacera, Ponte Rialto	2
Trevi, Ponizane, Siracusa	1

Wentworth Estates C.D.D. Subdivision Residential Lake Bank Investigation	
Item	Subdivisions
	Giaveno
	Venezia
Lake Bank Conditions	(4) - Lake Bank Shorelines in the Subdivision Rating - 2
Lake Bank Material (Rip-rap, Fill, Sod)	Fill - Sod
Lake Bank Linear Footage (L.F.) Requiring Repair	1,078 L.F. - Residential
Method of Lake Bank Restoration	Dredging / recovery of lake material fill for Geo-tube installation of lake bank slope
Cost Per Ft. of Lake Bank Repair	7 ft. bag width @ \$60.00 per ft. x 492 ft. = \$29,520.00 5 ft. bag width @ \$51.00 per ft. x 586 ft. = \$29,886.00 5 ft. bag width @ \$51.00 per ft. x 341 ft. = \$17,391.00
Drainage Modifications Required to Minimize Run-Off	None identified
Lake Bank Encroachment(s)	No encroachment
Subdivision Improvements Costs	\$59,406.00
	\$17,391.00

Wentworth Estates C.D.D. Subdivision
Residential Lake Bank Investigation

Item	Subdivisions	
	Ponziane	Acqua
Lake Bank Conditions	(1) - Lake Bank Shorelines in the Subdivision Rating - 1	(3) - Lake Bank Shorelines in the Subdivision Rating - 3
Lake Bank Material (Rip-rap, Fill, Sod)	Fill - Sod	Fill - Sod
Lake Bank Linear Footage (L.F.) Requiring Repair	627 L.F. - Residential	1,566 L.F. - Residential
Method of Lake Bank Resoration	Dredging / recovery of lake material fill for Geo-tube installation of lake bank slope	Dredging / recovery of lake material fill for Geo-tube installation of lake bank slope
Cost Per Ft. of Lake Bank Repair	5 ft. bag width @ \$51.00 per ft. x 627 ft. = \$31,977.00	7 ft. bag width @ \$60.00 per ft. x 980 ft. = \$58,800.00 5 ft. bag width @ \$51.00 per ft. x 586 ft. = \$29,886.00
Drainage Modifications Required to Minimize Run-Off	None identified	None identified
Lake Bank Encroachment(s)	No encroachment	No encroachment
Subdivision Improvements Costs	\$31,977.00	\$88,686.00

**Wentworth Estates C.D.D. Subdivision
Residential Lake Bank Investigation**

Item	Subdivision
	Lipari
	Bella Firenze
Lake Bank Conditions	(2) - Lake Bank Shorelines in the Subdivision Rating - 4
Lake Bank Material (Rip-rap, Fill, Sod)	Fill - Sod
Lake Bank Linear Footage (L.F.) Requiring Repair	2,762 L.F. - Residential
Method of Lake Bank Resoration	Dredging / recovery of lake material fill for Geo-tube installation of lake bank slope
Cost Per Ft. of Lake Bank Repair	7 ft. bag width @ \$60.00 per ft. x 1,580 ft. = \$94,800.00 5 ft. bag width @ \$51.00 per ft. x 1,182 ft. = \$60,282.00
Drainage Modifications Required to Minimize Run-Off	None identified
Lake Bank Encroachment(s)	No encroachment
Subdivision Improvements Costs	\$155,082.00
	\$367,548.00

**Wentworth Estates C.D.D. Subdivision
Residential Lake Bank Investigation**

Item	Subdivision	
	Vercelli	Dinapoli
Lake Bank Conditions	(3) - Lake Bank Shorelines in the Subdivision Rating - 3	(4) - Lake Bank Shorelines in the Subdivision Rating - 3
Lake Bank Material (Rip-rap, Fill, Sod)	Fill - Sod	Fill - Sod
Lake Bank Linear Footage (L.F.) Requiring Repair	1,738 L.F. - Residential / 733 L.F. - Non-residential	2,687 L.F. - Residential
Method of Lake Bank Resoration	Dredging / recovery of lake material fill for Geo-tube installation of lake bank slope	Dredging / recovery of lake material fill for Geo-tube installation of lake bank slope
Cost Per Ft. of Lake Bank Repair	7 ft. bag width @ \$60.00 per ft. x 2,138 ft. = \$128,280.00 5 ft. bag width @ \$51.00 per ft. x 333 ft. = \$16,983.00	7 ft. bag width @ \$60.00 per ft. x 1,438 ft. = \$86,280.00 5 ft. bag width @ \$51.00 per ft. x 1,249 ft. = \$63,699.00
Drainage Modifications Required to Minimize Run-Off	None identified	None identified
Lake Bank Encroachment(s)	No encroachment	No encroachment
Subdivision Improvements Costs	\$145,263.00	\$149,979.00

**Wentworth Estates C.D.D. Subdivision
Residential Lake Bank Investigation**

Item	Subdivision	
	Via Veneto	Piacere
Lake Bank Conditions	(2) - Lake Bank Shorelines in the Subdivision Rating - 3	(1) - Lake Bank Shorelines in the Subdivision Rating - 2
Lake Bank Material (Rip-rap, Fill, Sod)	Fill - Sod	Fill - Sod
Lake Bank Linear Footage (L.F.) Requiring Repair	862 L.F. - Residential	956 L.F. - Residential
Method of Lake Bank Resoration	Dredging / recovery of lake material fill for Geo-tube installation of lake bank slope	Dredging / recovery of lake material fill for Geo-tube installation of lake bank slope
Cost Per Ft. of Lake Bank Repair	7 ft. bag width @ \$60.00 per ft. x 452 ft. = \$27,120.00 5 ft. bag width @ \$51.00 per ft. x 410 ft. = \$20,910.00	5 ft. bag width @ \$51.00 per ft. x 956 ft. = \$48,756.00
Drainage Modifications Required to Minimize Run-Off	None identified	None identified
Lake Bank Encroachment(s)	No encroachment	No encroachment
Subdivision Improvements Costs	\$48,030.00	\$48,756.00

**Wentworth Estates C.D.D. Subdivision
Residential Lake Bank Investigation**

Item	Subdivision
Lake Bank Conditions	<p style="text-align: center;">Italia</p> <p>(2) - Lake Bank Shorelines in the Subdivision Rating - 4</p>
Lake Bank Material (Rip-rap, Fill, Sod)	<p style="text-align: center;">Ponte Rialto</p> <p>(2) - Lake Bank Shorelines in the Subdivision Rating - 2</p>
Lake Bank Linear Footage (L.F.) Requiring Repair	<p style="text-align: center;">Fill - Sod</p> <p style="text-align: center;">1,675 L.F. - Residential / 687 L.F. - Non-residential</p>
Method of Lake Bank Restoration	<p style="text-align: center;">Fill - Sod</p> <p style="text-align: center;">1,529 L.F. - Residential</p>
Cost Per Ft. of Lake Bank Repair	<p style="text-align: center;">Dredging / recovery of lake material fill for Geo-tube installation of lake bank slope</p> <p style="text-align: center;">Dredging / recovery of lake material fill for Geo-tube installation of lake bank slope</p> <p style="text-align: center;">7 ft. bag width @ \$60.00 per Ft. x 1240 ft. = \$74,400.00 5 ft. bag width @ \$51.00 per ft. x 1122 ft. = \$57,222.00</p> <p style="text-align: center;">5 ft. bag width @ \$51.00 per ft. x 1529 = \$77,979.00</p>
Drainage Modifications Required to Minimize Run-Off	<p style="text-align: center;">None identified</p> <p style="text-align: center;">None identified</p>
Lake Bank Encroachment(s)	<p style="text-align: center;">No encroachment</p> <p style="text-align: center;">No encroachment</p>
Subdivision Improvements Costs	<p style="text-align: center;">\$131,622.00</p> <p style="text-align: center;">\$77,979.00</p>

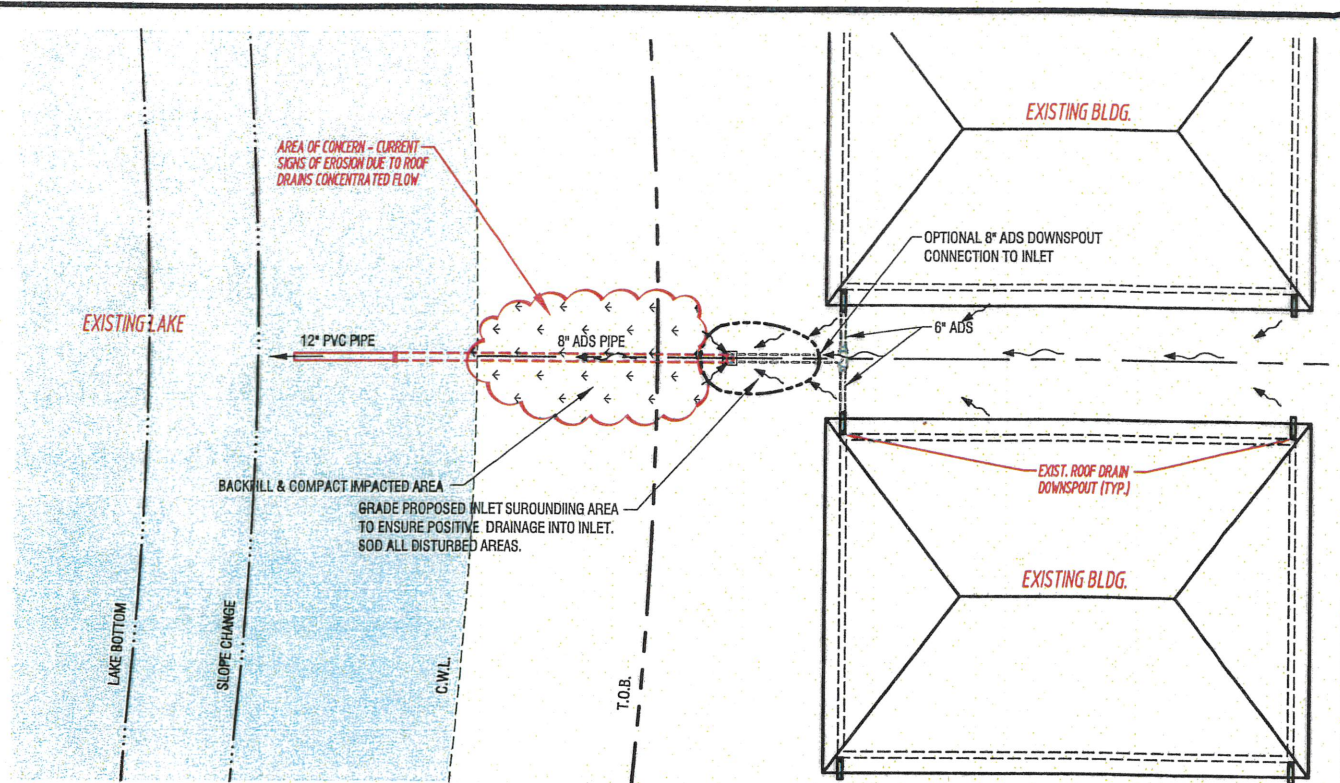
**Wentworth Estates C.D.D. Subdivision
Residential Lake Bank Investigation**

Item	Subdivision	
	Casoria	Avellino
Lake Bank Conditions	(1) - Lake Bank Shorelines in the Subdivision Rating - 3	(3) - Lake Bank Shorelines in the Subdivision Rating - 5
Lake Bank Material (Rip-rap, Fill, Sod)	Fill - Sod	Fill - Sod
Lake Bank Linear Footage (L.F.) Requiring Repair	1,644 L.F. - Residential	3,051 L.F. - Residential
Method of Lake Bank Restoration	Dredging / recovery of lake material fill for Geo-tube installation of lake bank slope	Dredging / recovery of lake material fill for Geo-tube installation of lake bank slope
Cost Per Ft. of Lake Bank Repair	7 ft. bag width @ \$60.00 per ft. x 1,012 ft. = \$60,720.00 5 ft. bag width @ \$51.00 per ft. x 632 ft. = \$32,232.00	7 ft. bag width @ \$60.00 per ft. x 2,240 ft. = \$134,400.00 5 ft. bag width @ \$51.00 per ft. x 811 ft. = \$41,361.00
Drainage Modifications Required to Minimize Run-Off	None identified	None identified
Lake Bank Encroachment(s)	No encroachment	No encroachment
Subdivision Improvements Costs	\$92,952.00	\$175,761.00

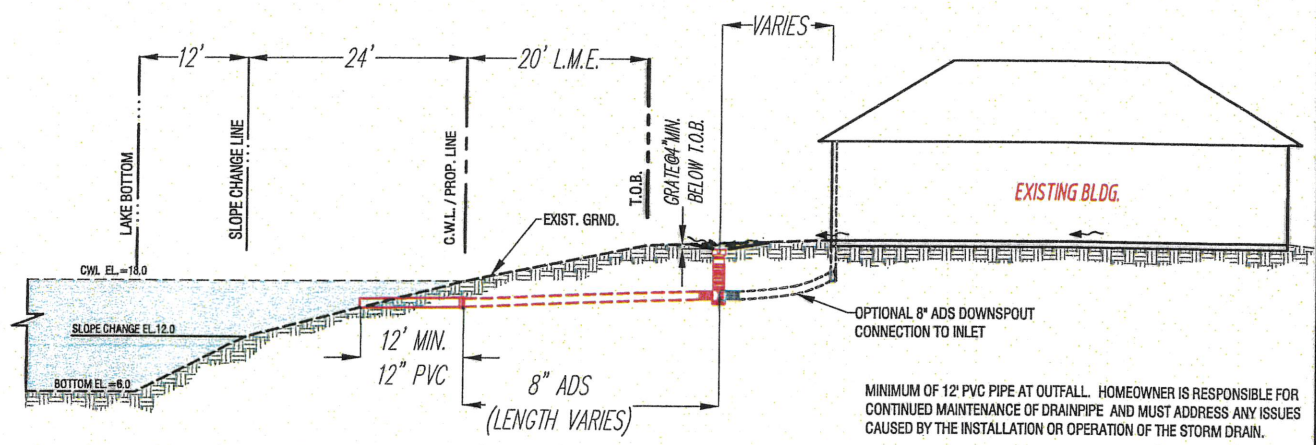
Wentworth Estates C.D.D. Subdivision Residential Lake Bank Investigation	
Item	Subdivision
	Trevi
	Siracusa
Lake Bank Conditions	(1) - Lake Bank Shorelines in the Subdivision Rating - 1
Lake Bank Material (Rip-rap, Fill, Sod)	Fill - Sod
Lake Bank Linear Footage (L.F.) Requiring Repair	821 L.F. - Residential / 350 - Non -residential
Method of Lake Bank Restoration	Dredging / recovery of lake material fill for Geo-tube installation of lake bank slope
Cost Per Ft. of Lake Bank Repair	5 ft. bag width @ \$51.00 per ft. x 1,171 = \$59,721.00
Drainage Modifications Required to Minimize Run-Off	None identified
Lake Bank Encroachment(s)	No encroachment
Subdivision Improvements Costs	\$59,721.00
	\$13,005.00

Wentworth Estates C.D.D. Subdivision Residential Lake Bank Investigation	
Item	Subdivision
	Pavia
Lake Bank Conditions	(1) - Lake Bank Shorelines in the Subdivisions Rating - 4
Lake Bank Material (Rip-rap, Fill,Sod)	Fill - Sod
Lake Bank Linear Footage (L.F.) Requiring Repair	787 L.F.- Residential
Method of Lake Bank Restoration	Dredging / recovery of lake material fill for Geo-tube installation of lake bank slope
Cost Per Ft. of Lake Bank Repair	7 ft. bag width @ \$60.00 per ft. x 512 ft. = \$30,720.00 5 ft. bag width @ \$51.00 per ft. x 275 ft. = \$14,025.00
Drainage Modifications Required to Minimize Run-Off	None identified
Lake Bank Encroachment(s)	No encroachment
Subdivision Improvements Costs	\$44,745.00

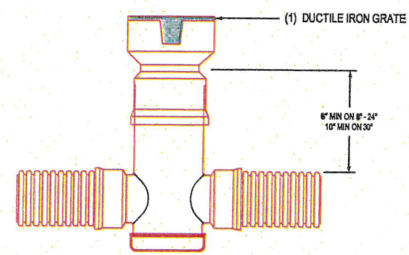
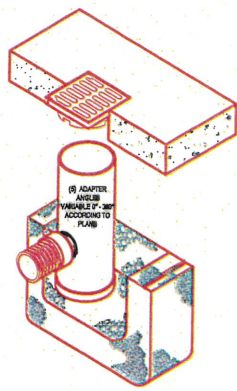
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PLAN



SECTION



Nyloplast
 3130 VERONA AVE
 BUFORD, GA 30518
 PHN (770) 932-2443
 FAX (770) 932-2490
 www.nyloplast-us.com

INLET

- 1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05, WITH THE EXCEPTION OF THE BRONZE GRATE.
- 2 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
- 5 - DIMENSIONS ARE FOR REFERENCE ONLY ACTUAL DIMENSIONS MAY VARY

NOTES

- 1. TYPE OF INLET CONNECTION, GRATE & DIMENSION VARY. REFER TO MANUFACTURER'S SPECS FOR OPTIONAL PRODUCTS AND INSTALATION DETAILS.
- 2. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR ENGINEER'S REVIEW AND APPROVAL.

MINIMUM OF 12" PVC PIPE AT OUTFALL. HOMEOWNER IS RESPONSIBLE FOR CONTINUED MAINTENANCE OF DRAINPIPE AND MUST ADDRESS ANY ISSUES CAUSED BY THE INSTALLATION OR OPERATION OF THE STORM DRAIN.

EXISTING DRAINAGE IMPROVEMENTS
ROOF DRAIN EROSION REPAIR DETAIL
 ROOF DRAIN INLET / LAKE OUTFALL DRAINAGE CONNECTION



6200 Whiskey Creek Drive
 Fort Myers, FL 33919
 Phone: (239) 985-1200
 Florida Certificate of
 Authorization No.1772

DRAWING CURRENT AS OF 10/16/14
DRAWING:
 LAKE BANK EROSION
 PREVENTION DETAIL
SHEET NO.:
 1

October 16, 2014

Treviso Bay Subdivisions

Photos and Maps

Giaveno

Venezia

Ponziane

Acqua

Lipari

Bella Firenze

Vercelli

Dinapoli

Via Veneto

Piacere

Italia

Ponte Rialto

Casoria

Avellino

Trevi




Siracusa

Pavia

Giaveno

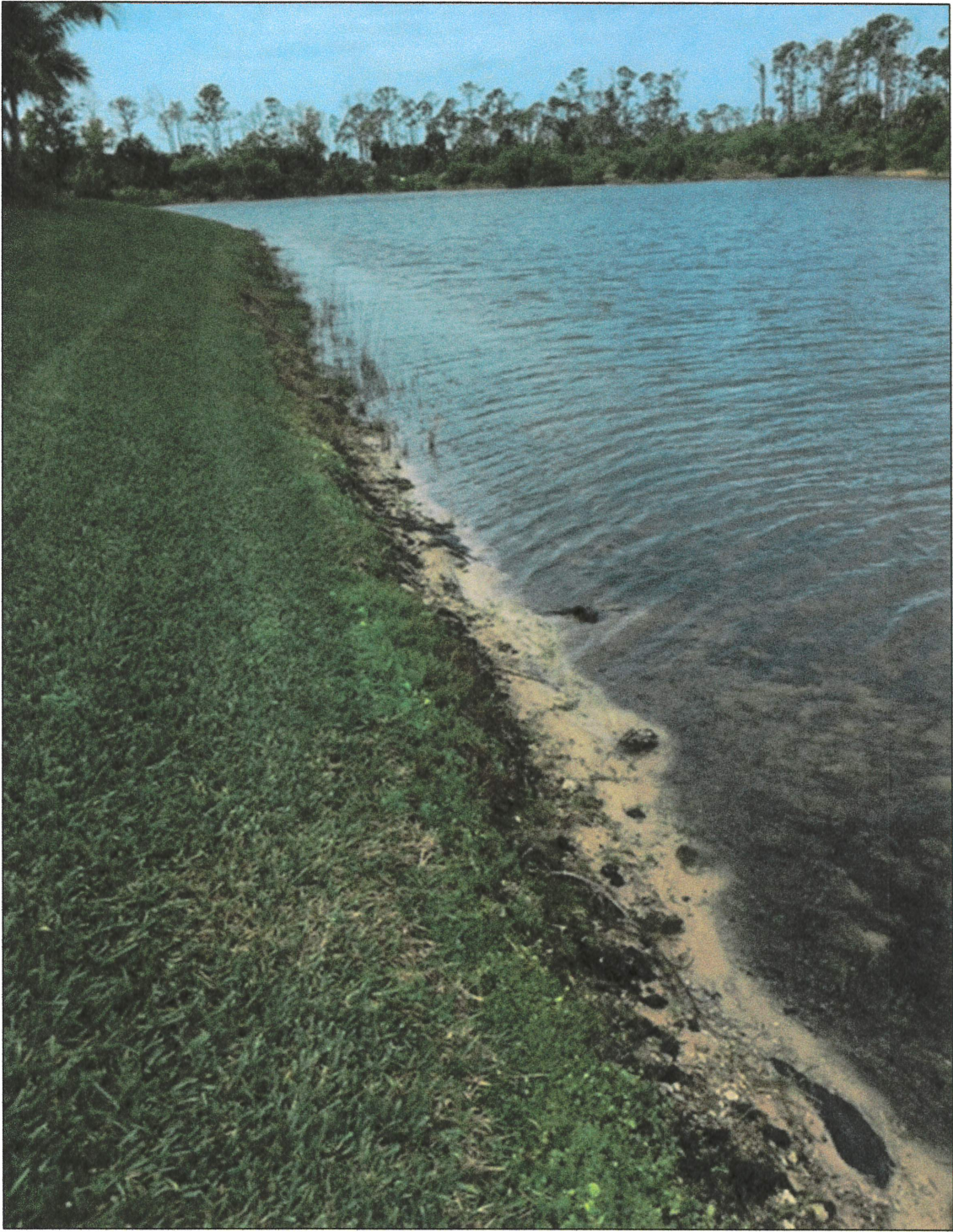


Legend

-  GIAVENO
-  Parcels
-  Lakes

Treviso Bay Giaveno Subdivision











Venezia



Venezia CIR

Treviso Bay Venezia Subdivision

Legend

- VENEZIA
- Parcels
- Lakes








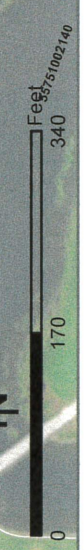
Ponziane



Legend

-  PONZIANE
-  Parcels
-  Lakes

Treviso Bay Ponziane Subdivision

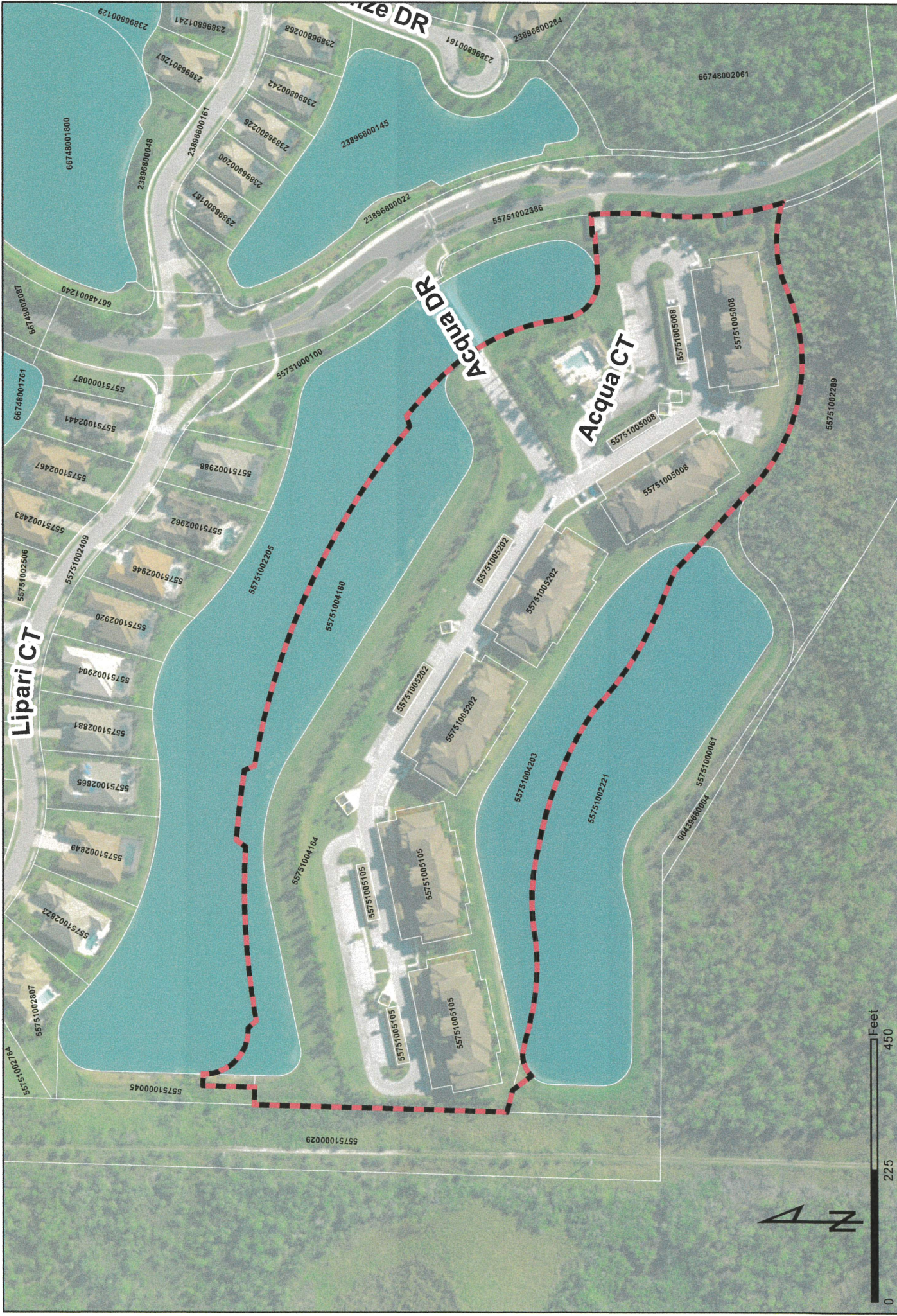


Month





Acqua



Treviso Bay Acqua Subdivision

Legend

- ACQUA
- Lakes
- Parcels
- Lakes



Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS™

Print Date: 4/15/2019










Lipari



Treviso Bay Lipari Subdivision



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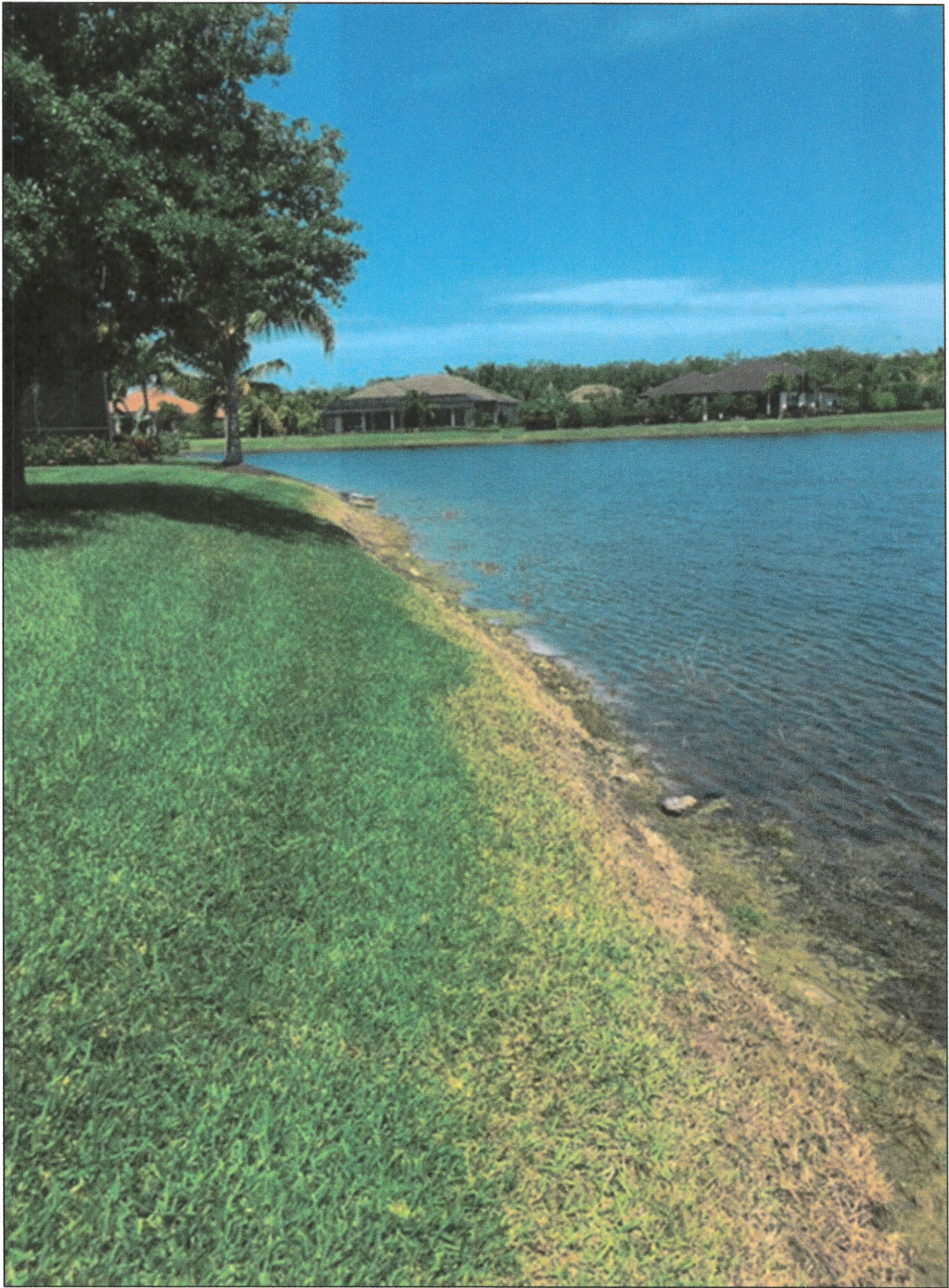
-  LIPARI
-  Parcels
-  Lakes

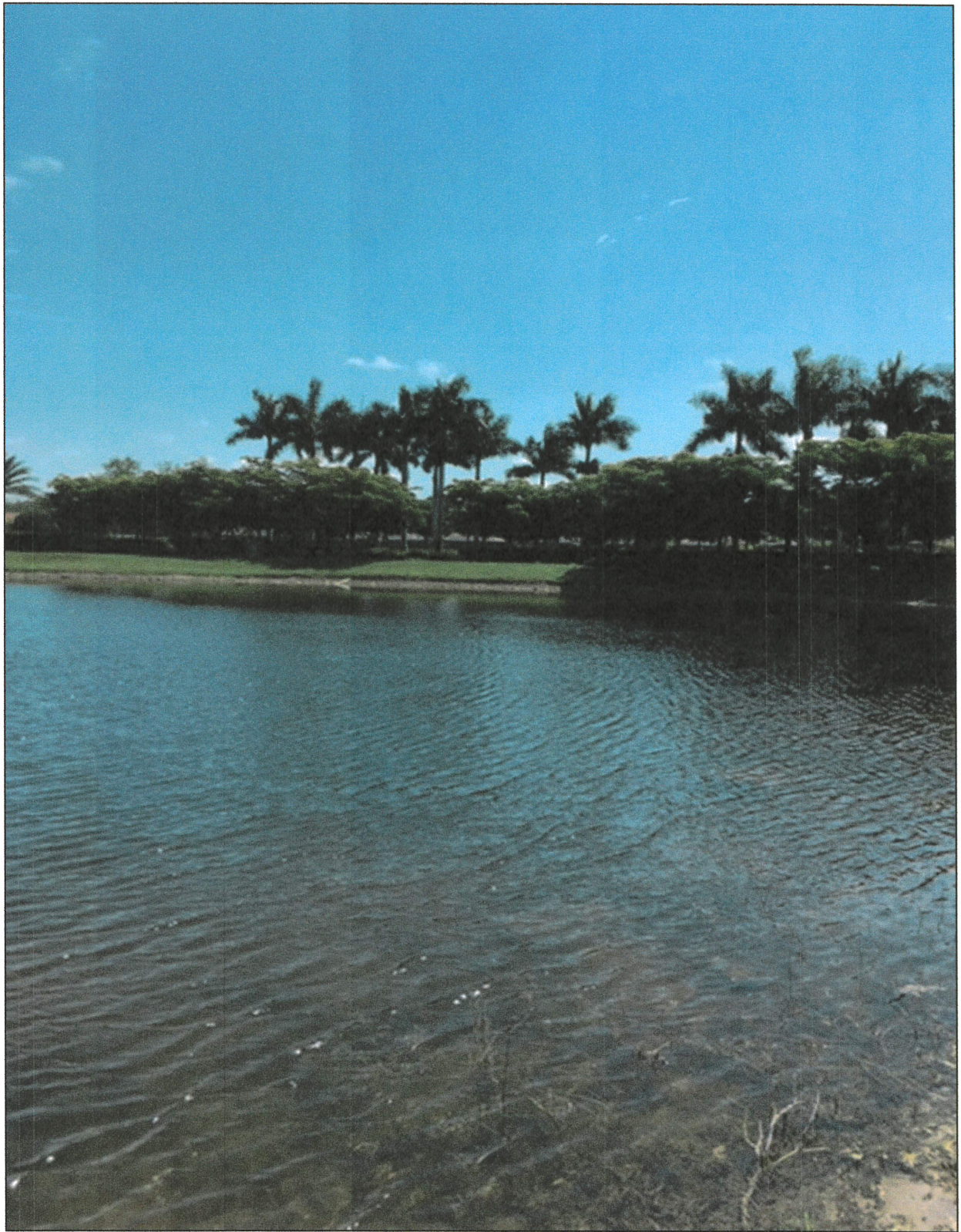


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Print Date: 4/15/2019











Bella Firenze



66748001240

66748002045

66748002061



Treviso Bay Bella Firenze Subdivision

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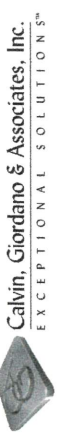


BELLA FIRENZE

Parcels



Lakes



Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS™

Print Date: 4/15/2019















Ponte Rialto



Casoria CT

Rialto DR



Legend

- PONTE RIALTO
- Lakes
- Parcels

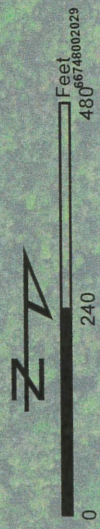
Treviso Bay Ponte Rialto Subdivision







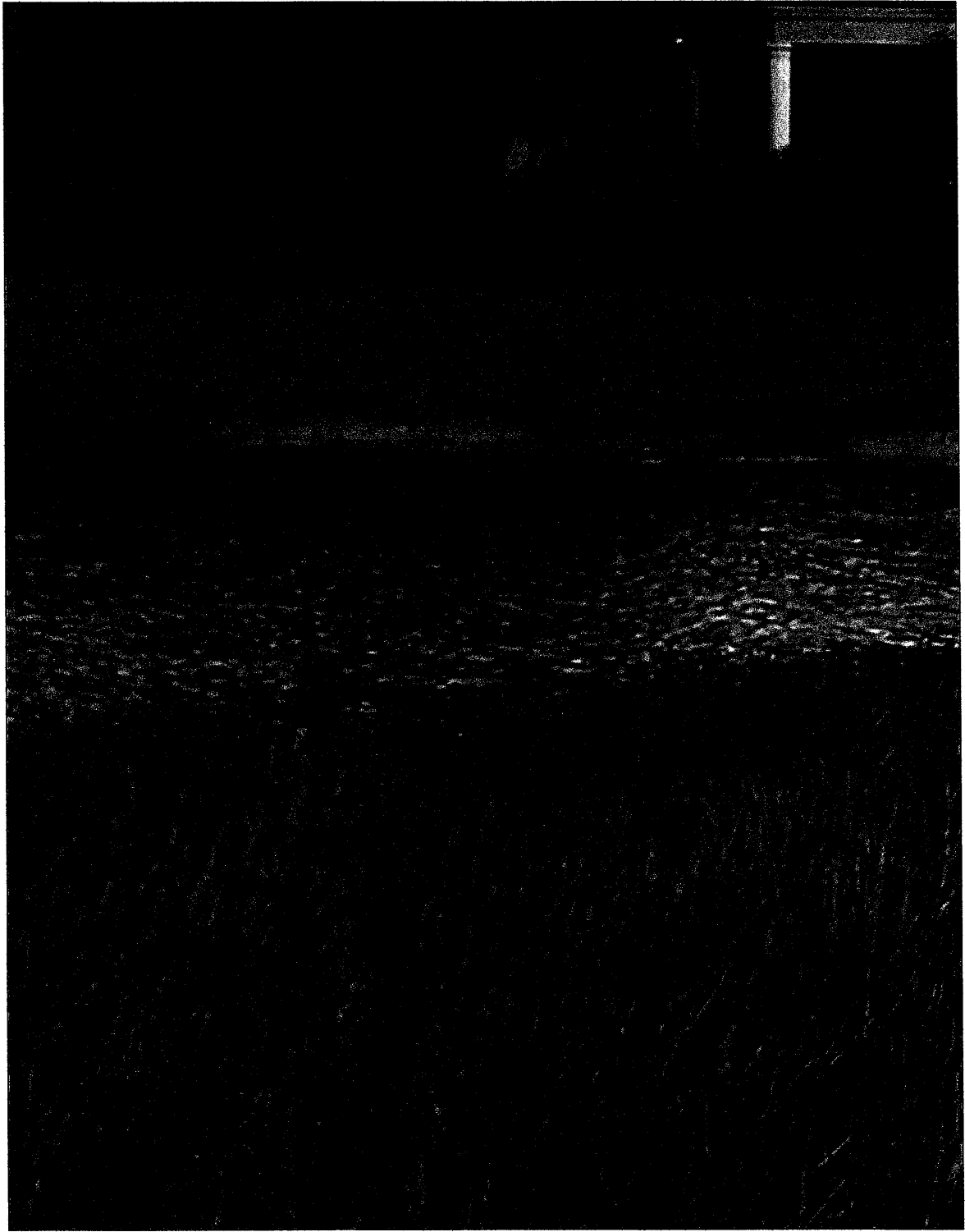
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Treviso Bay Italia Subdivision

Legend

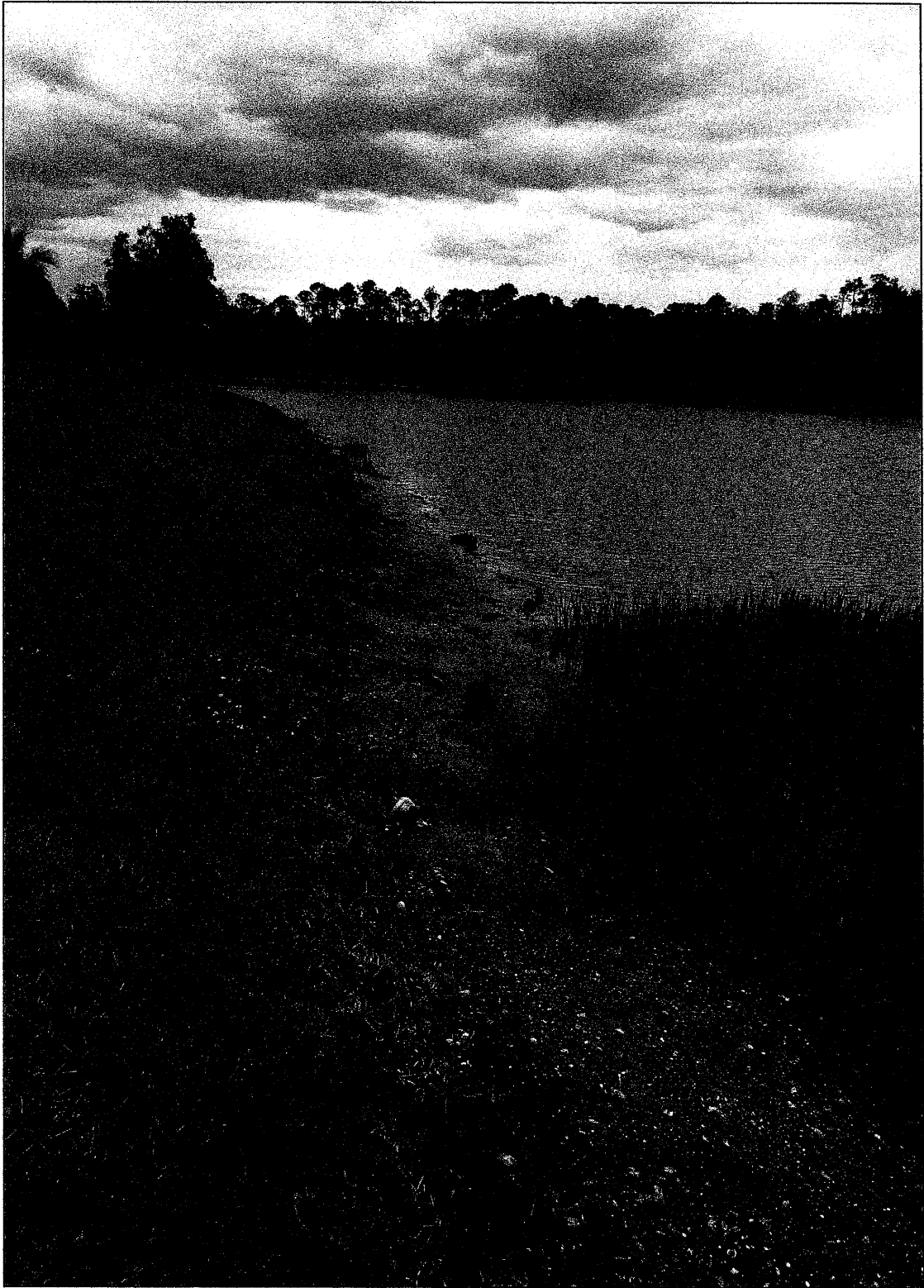
-  ITALIA
-  Parcels
-  Lakes



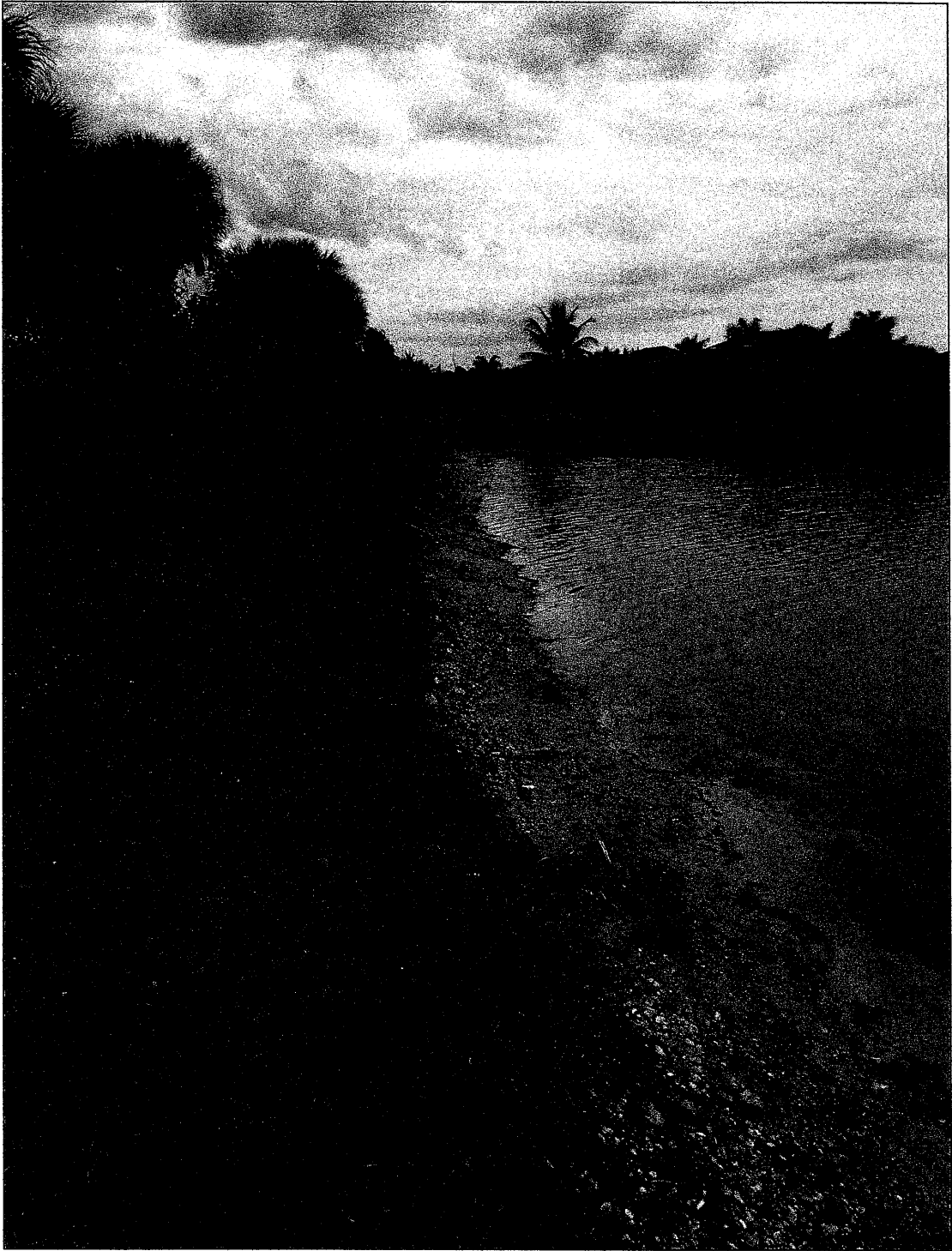




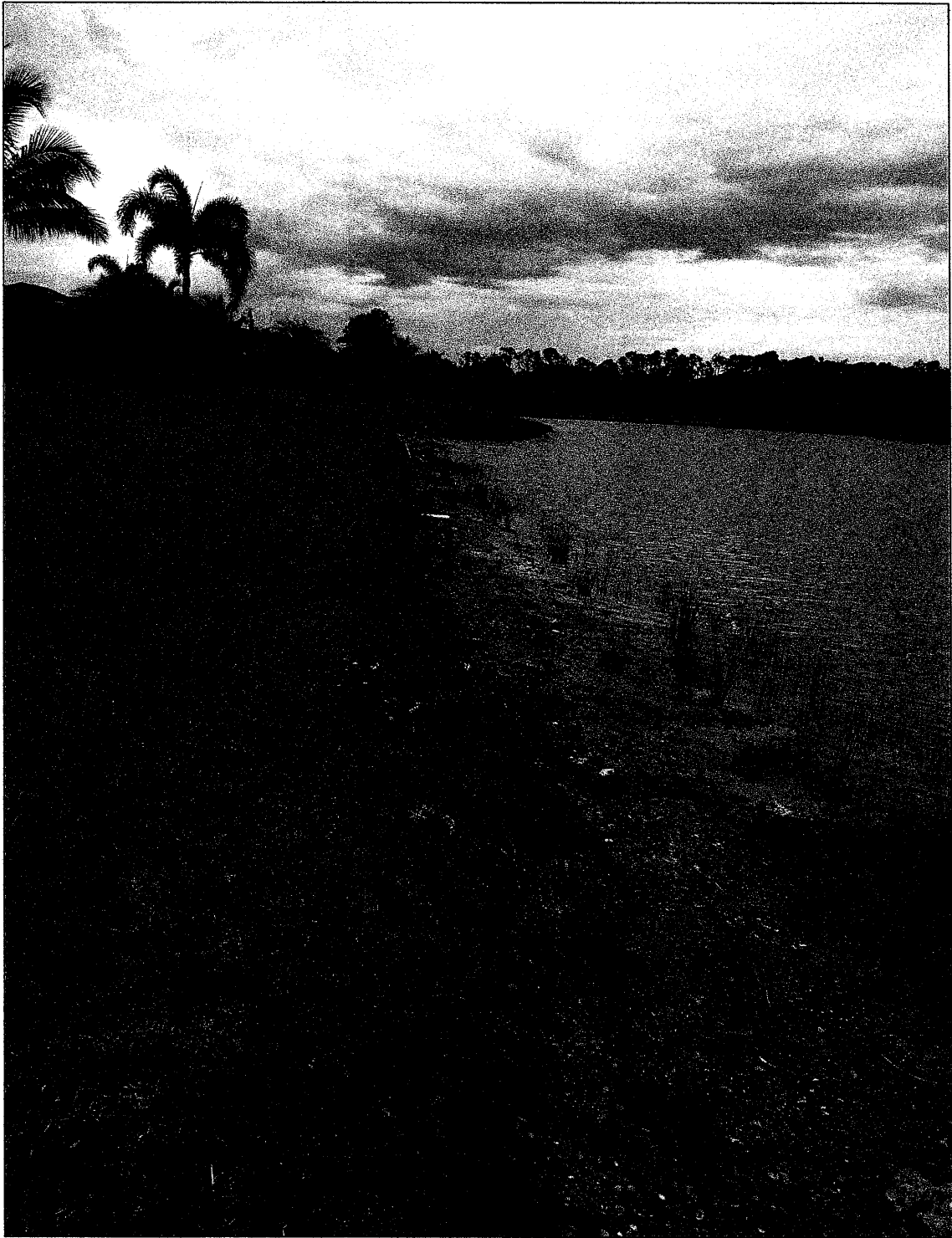












Piacere







Piacere Way

Treviso Bay DR

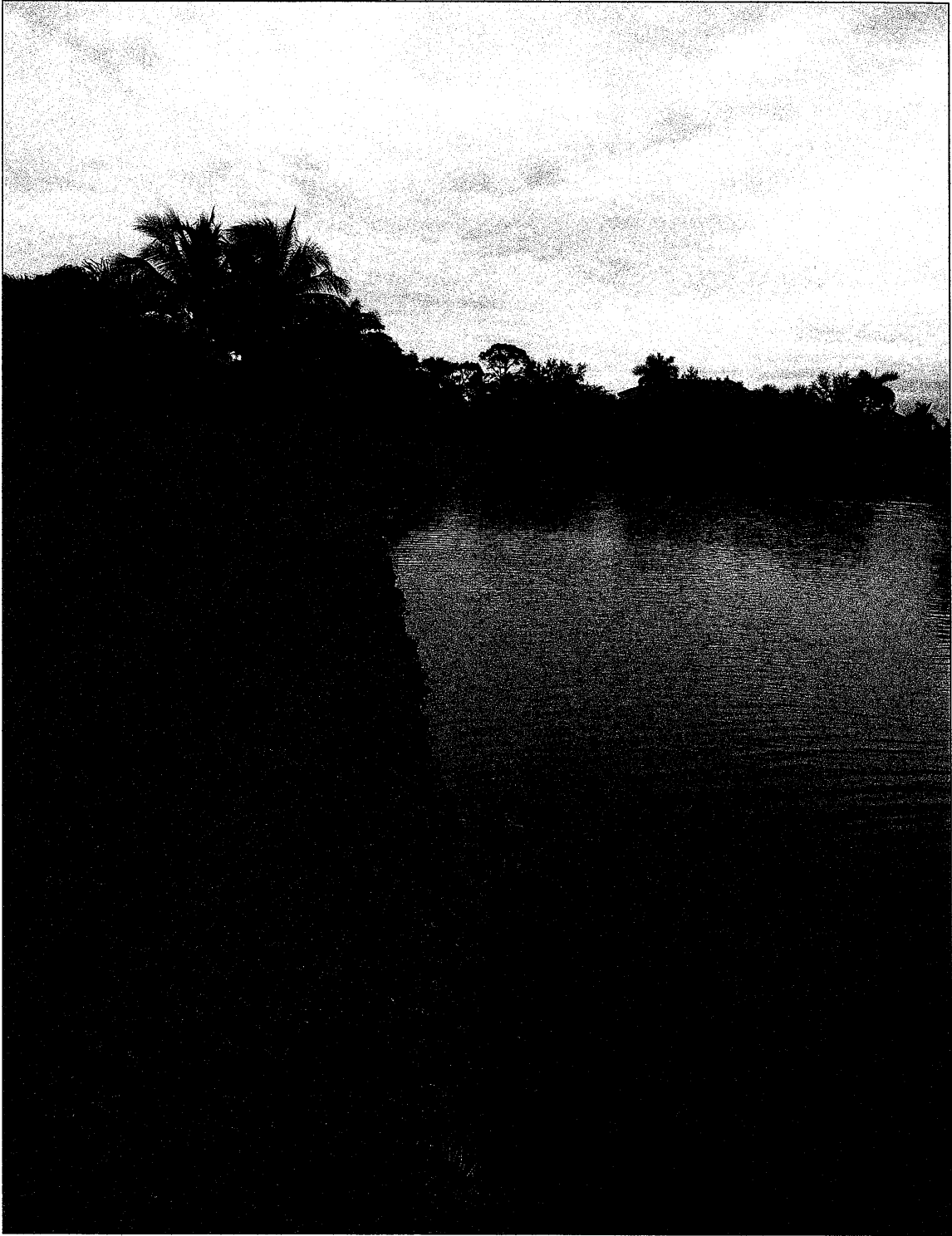
Treviso



Legend

-  Piacere
-  Lakes
-  Parcels
-  Lakes

Treviso Bay Piacere Subdivision

















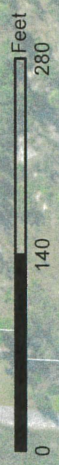


Via Veneto



Print

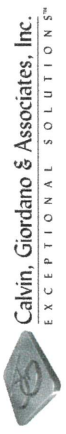
Veneto PL



Legend

- VIA VENETO
- Parcels
- Lakes

Treviso Bay Via Veneto Subdivision



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Print Date: 4/12/2019



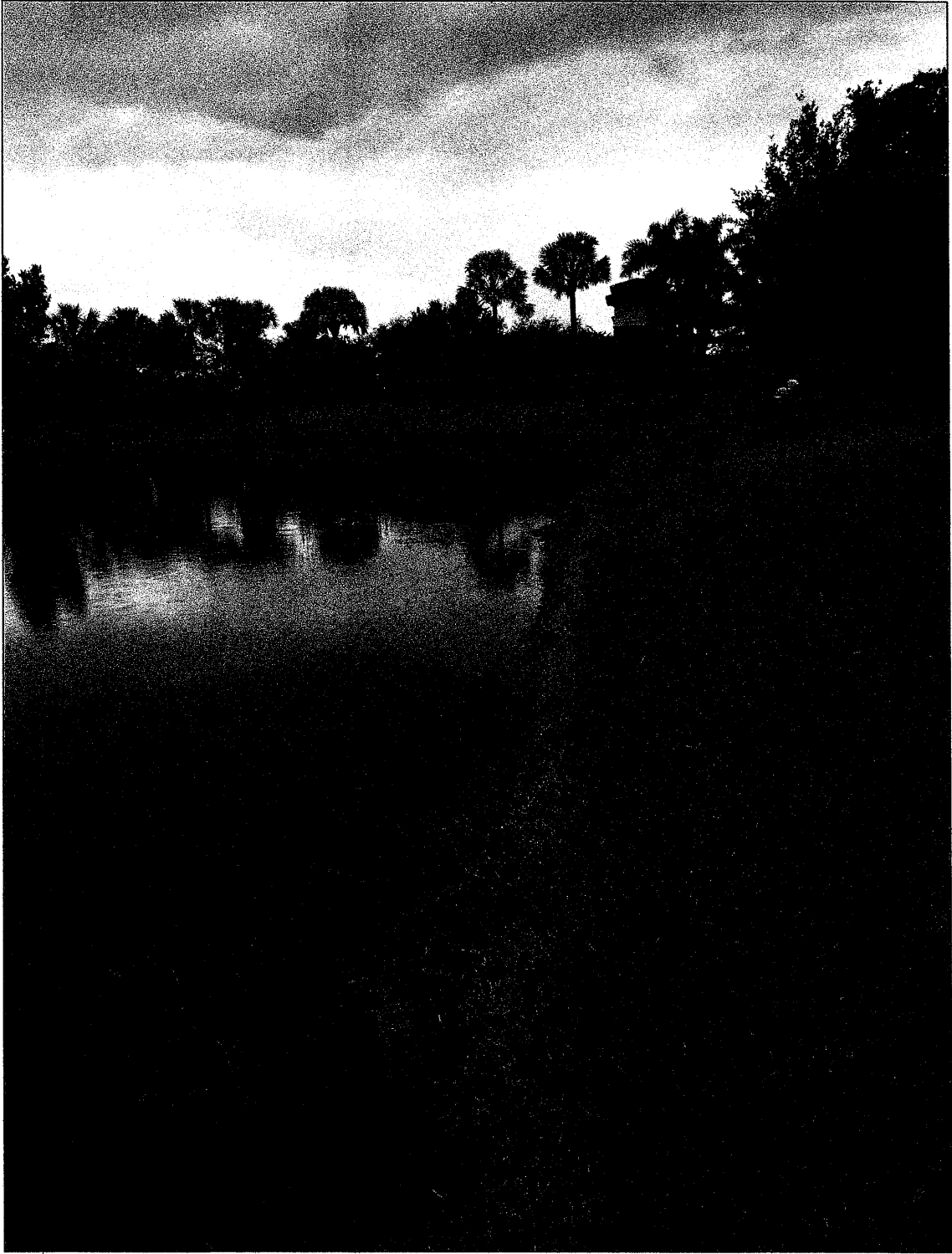






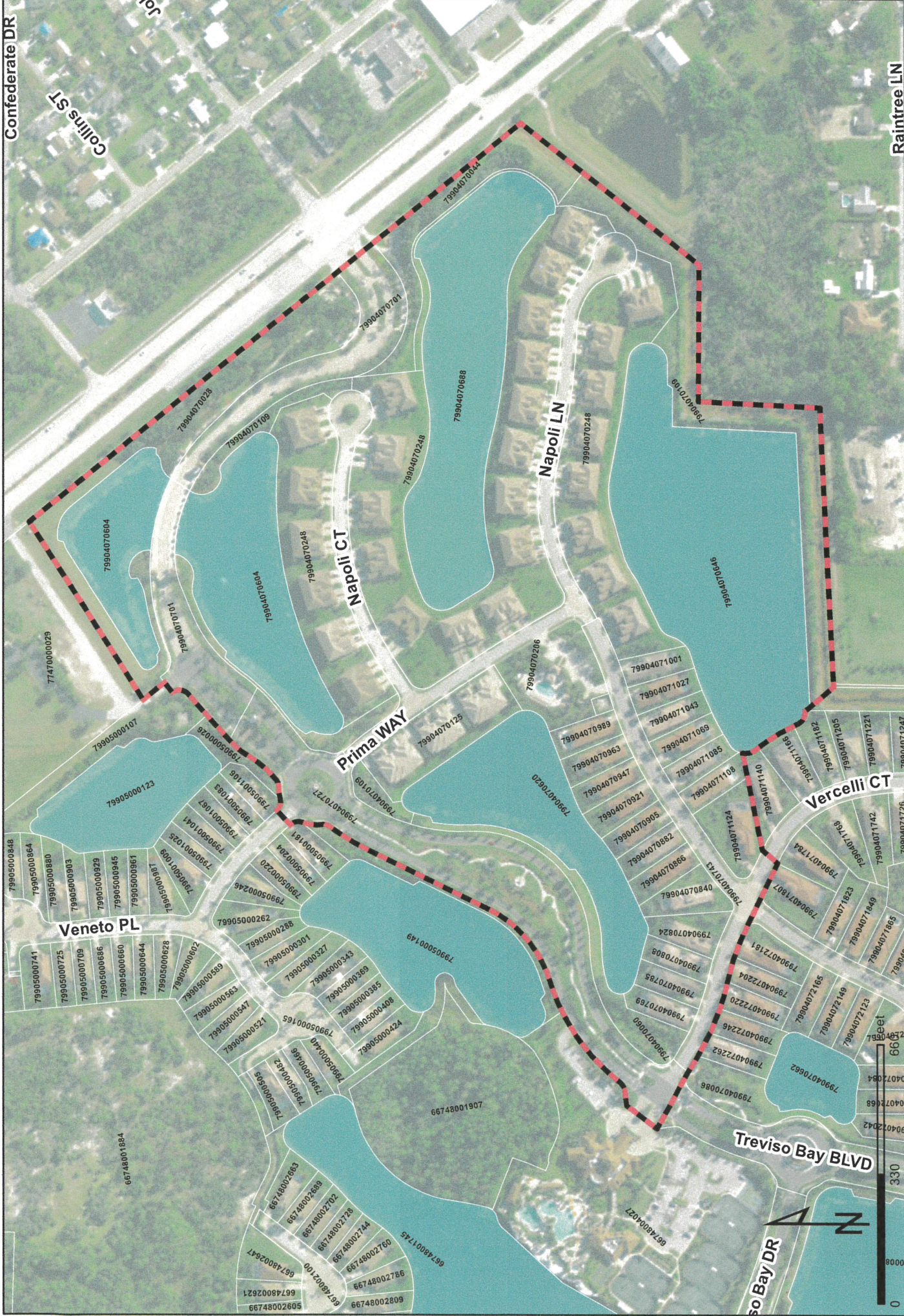








Dinapoli



Confederate DR
Collins ST

Raintree LN



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Legend

- DINAPOLI
- Parcels
- Lakes

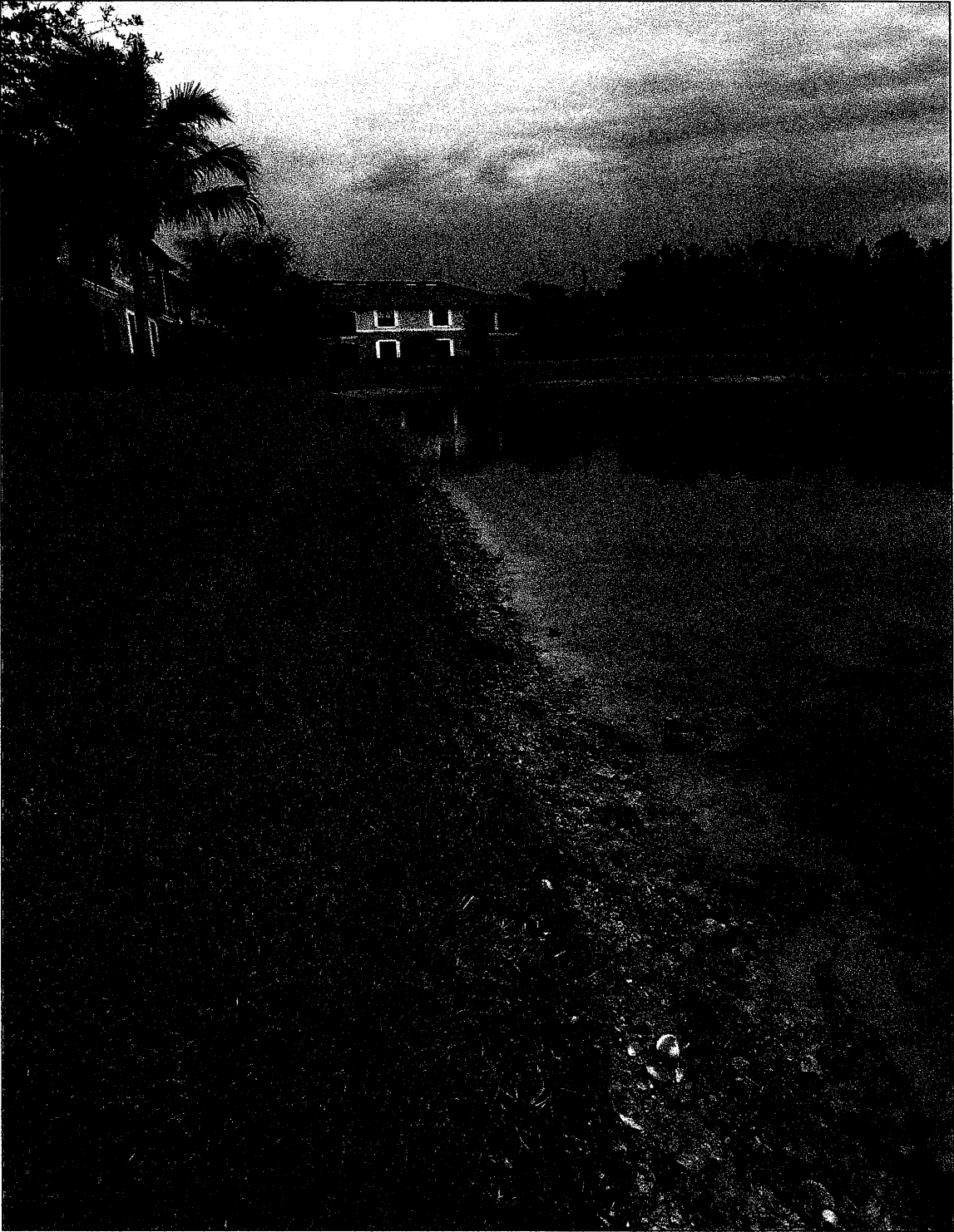
Treviso Bay Dinapoli Subdivision





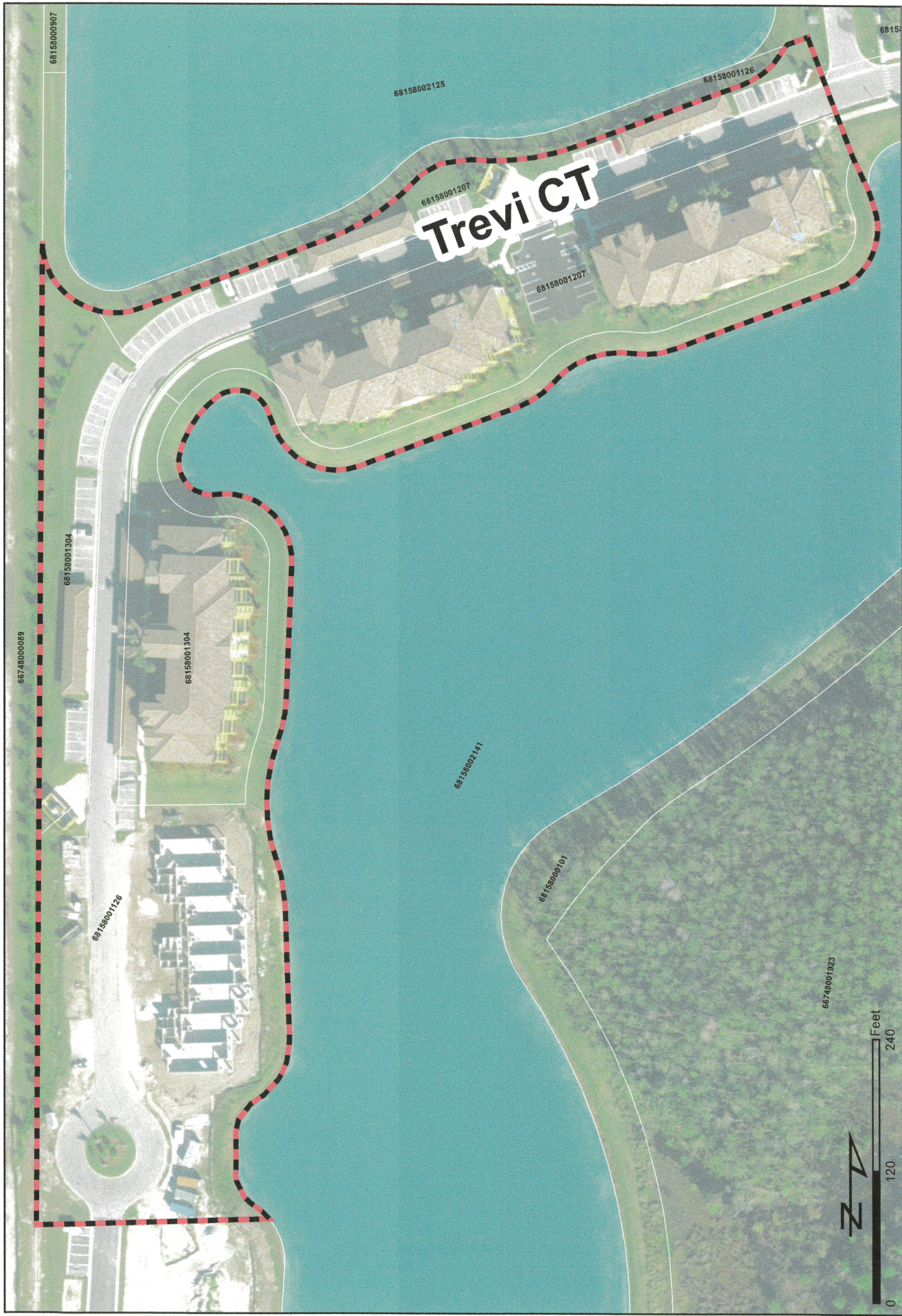




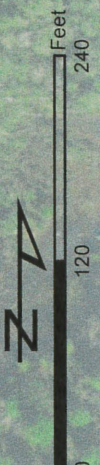




Trevi



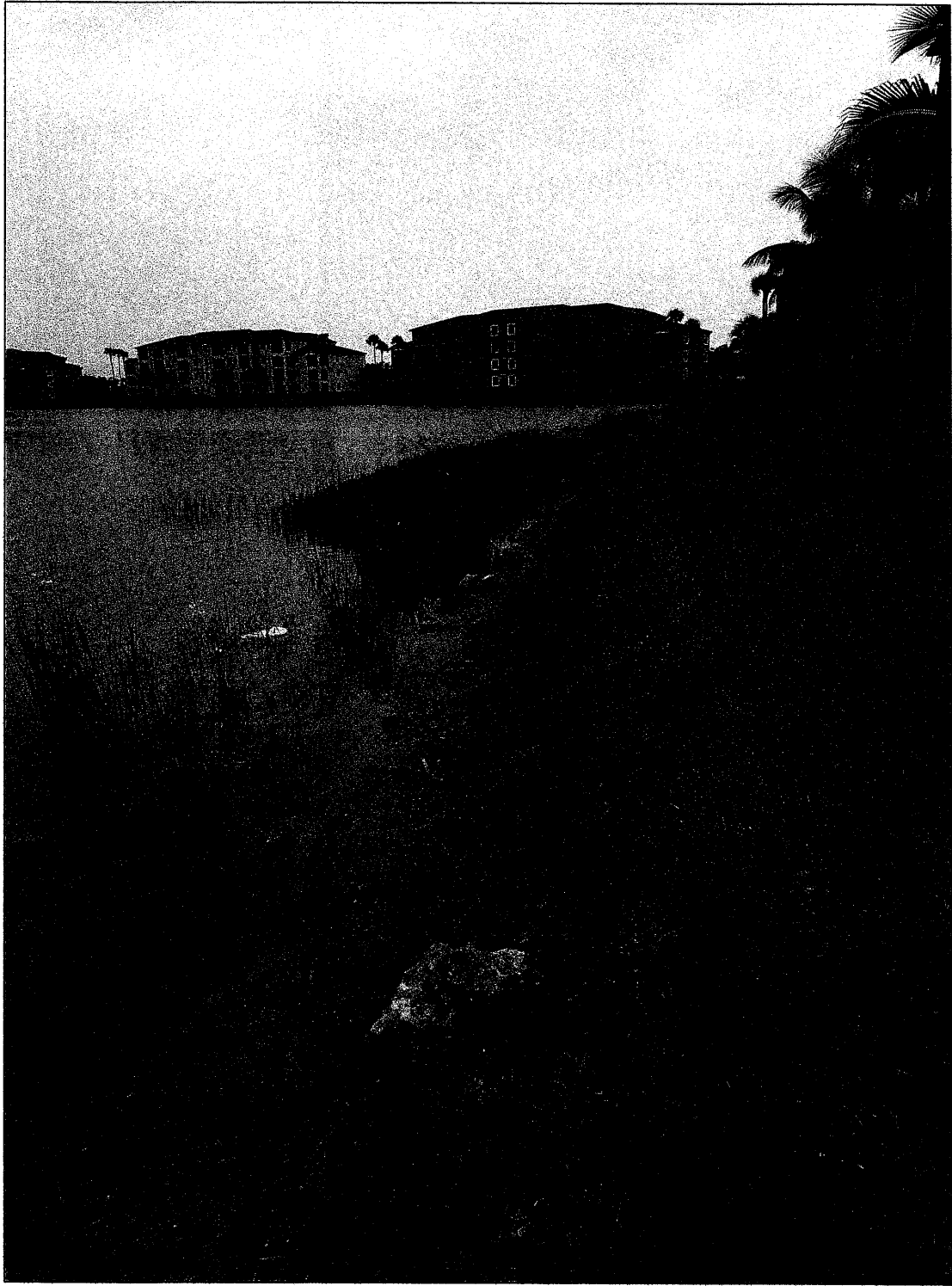
Trevi CT



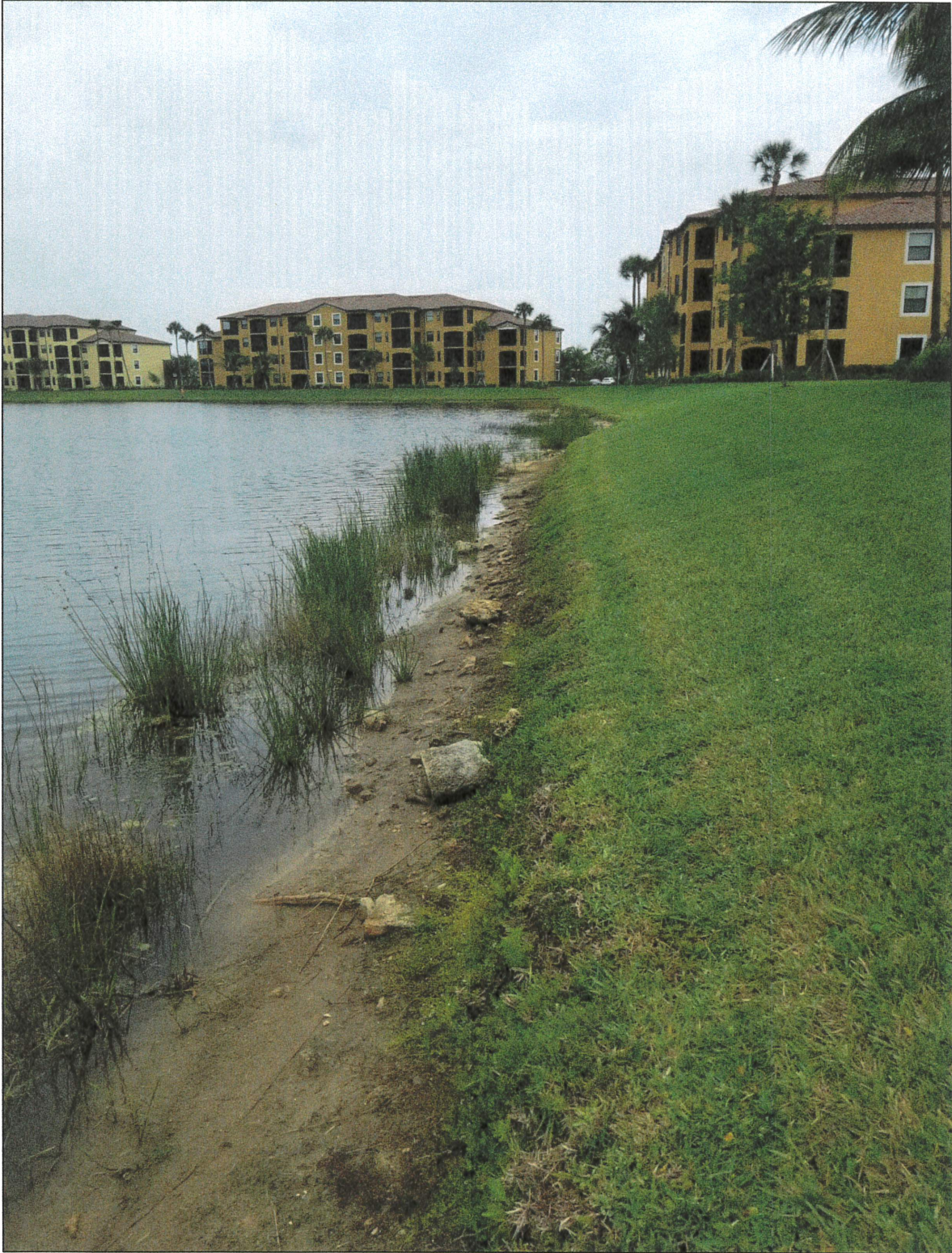
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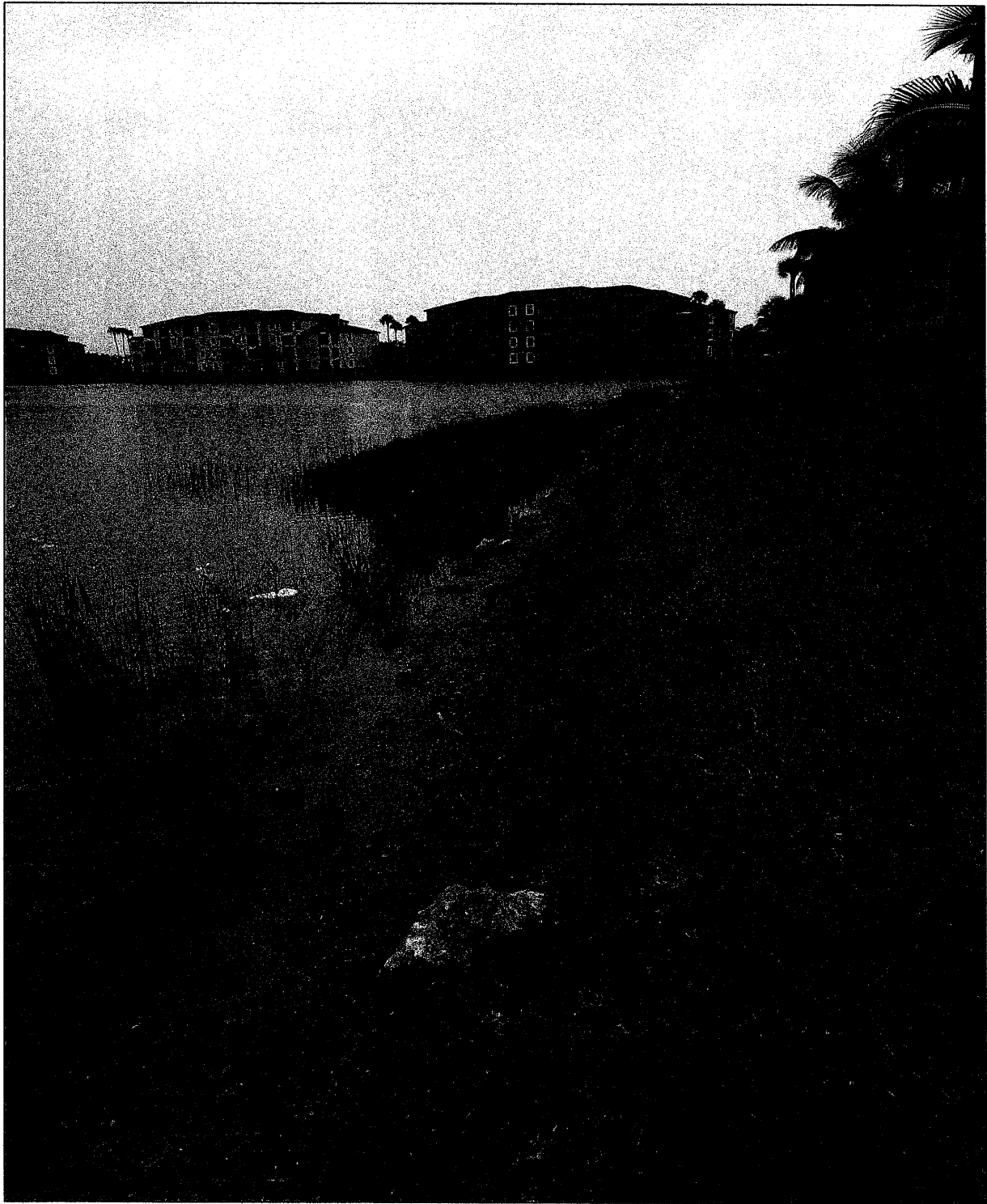
- TREVI
- Parcels
- Lakes

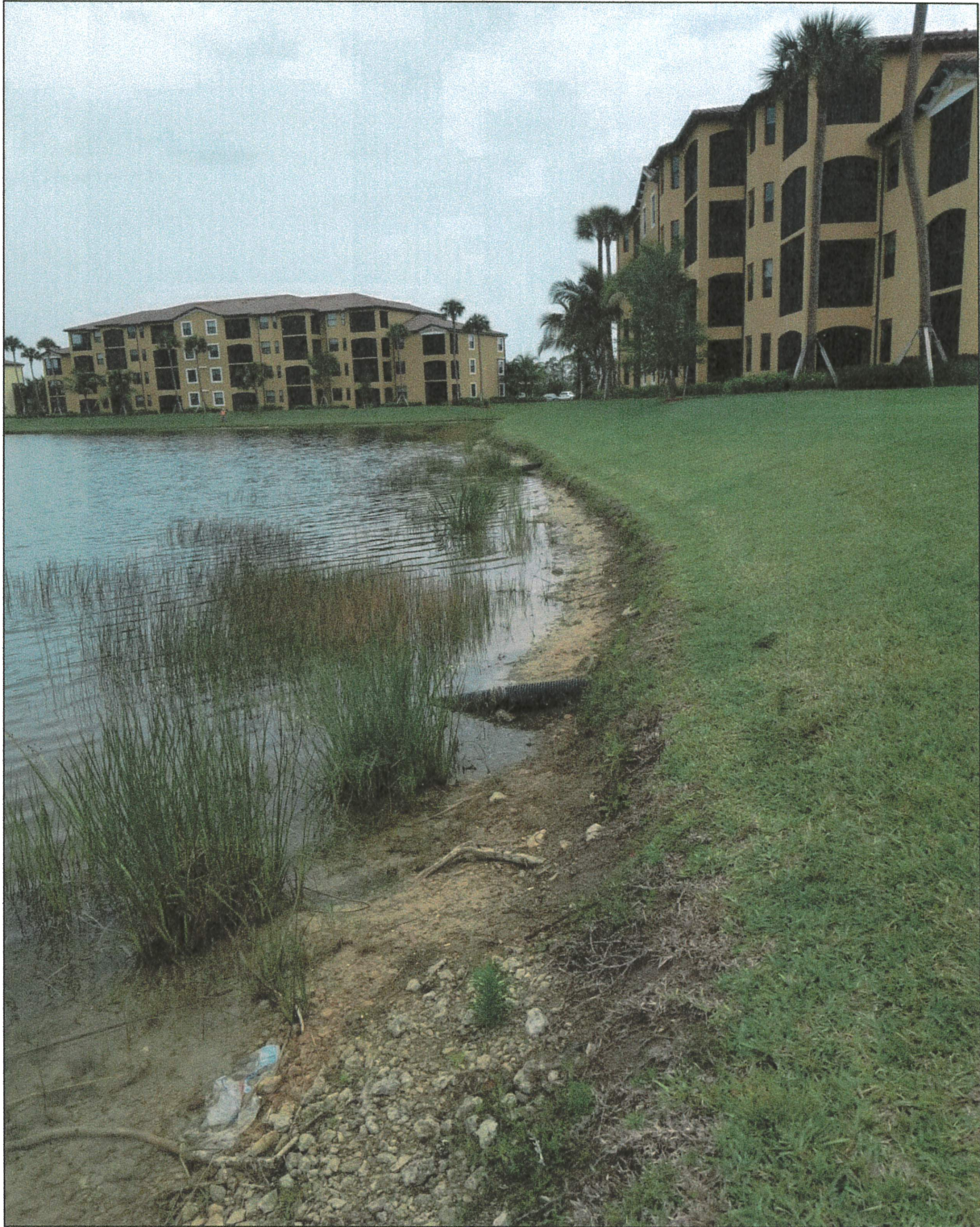
Treviso Bay Trevi Subdivision









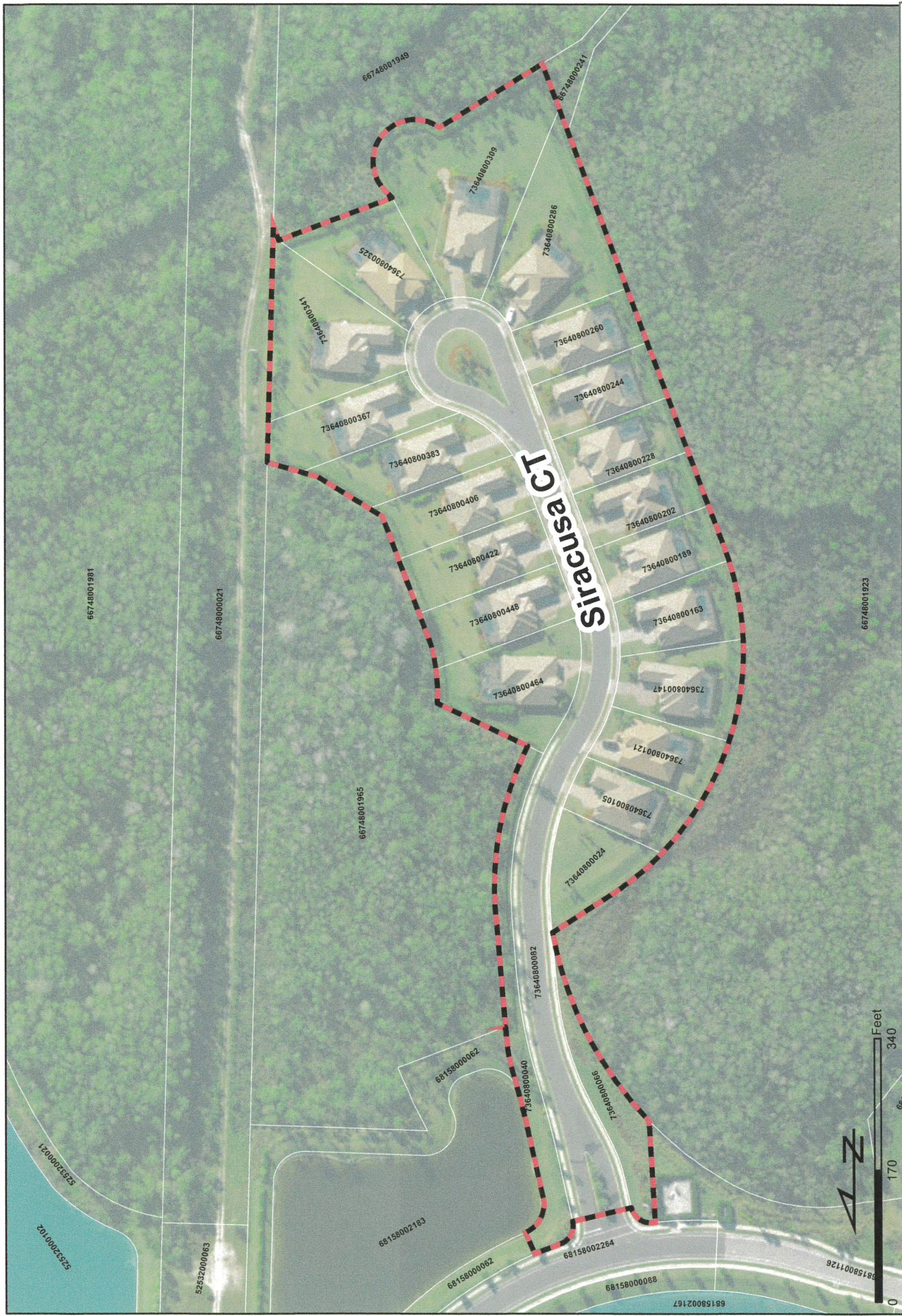











Siracusa



Legend

-  SIRACUSA
-  Parcels
-  Lakes

Treviso Bay Siracusa Subdivision



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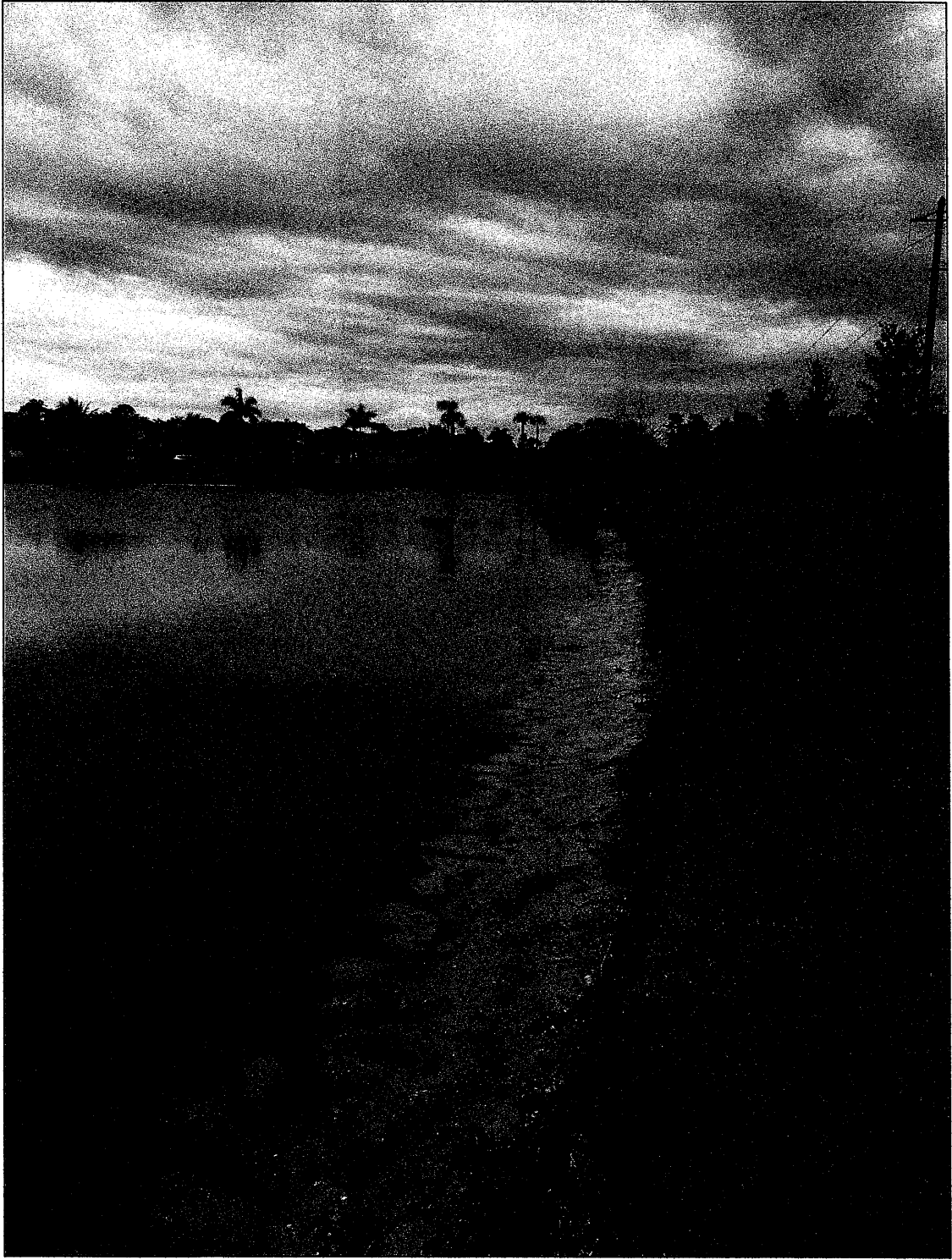
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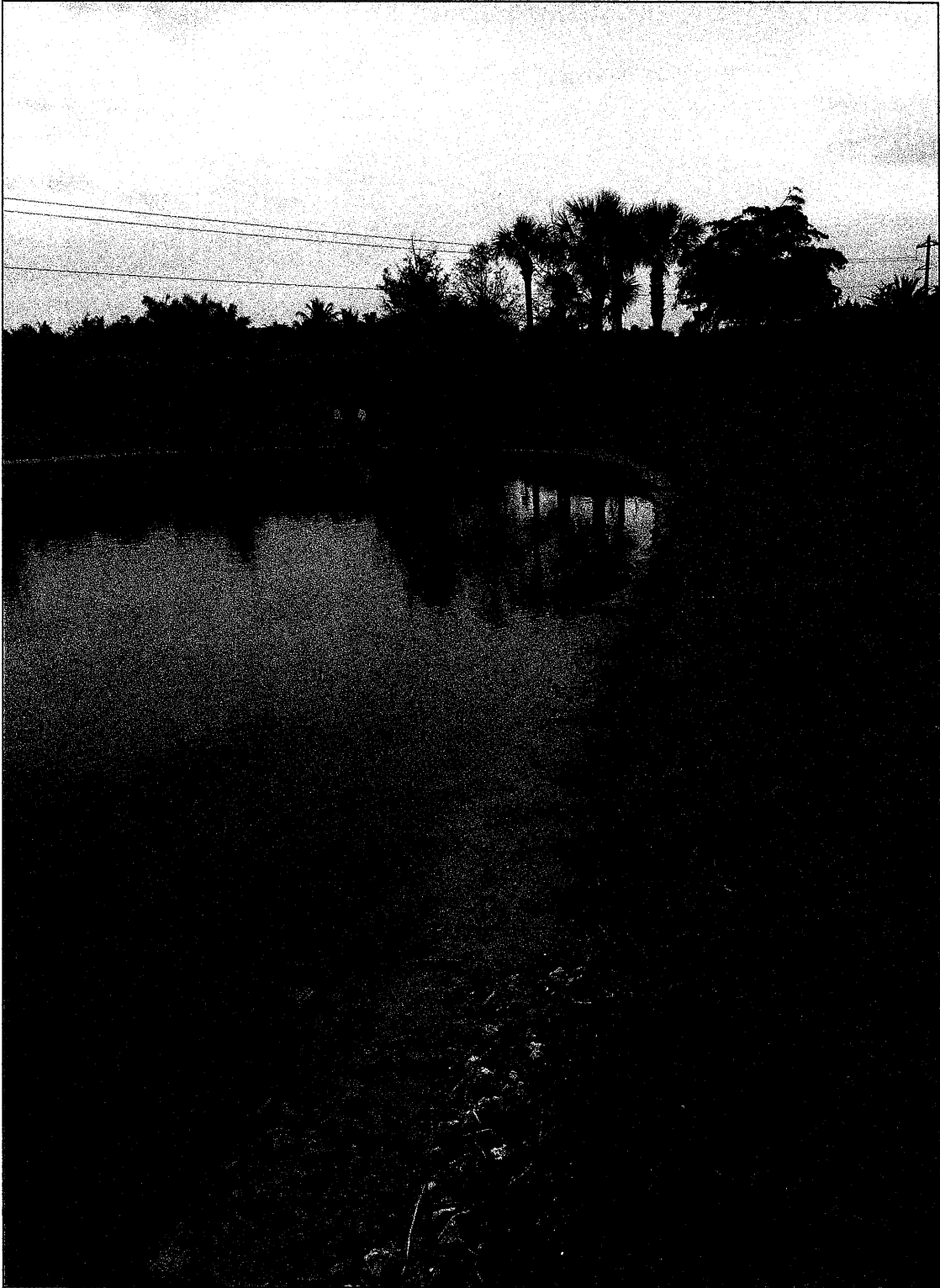
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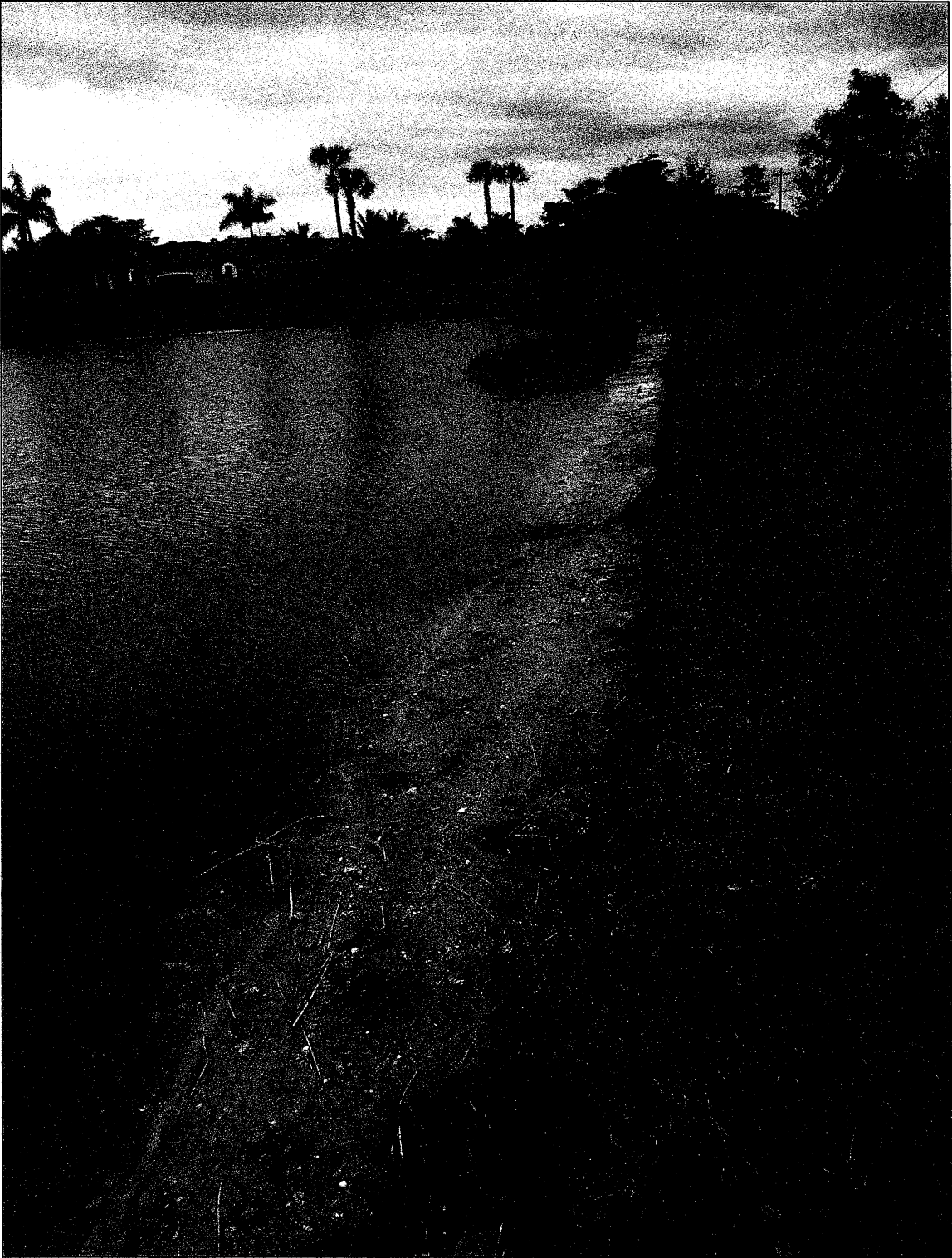














Casoria



Treviso Bay Casoria Subdivision

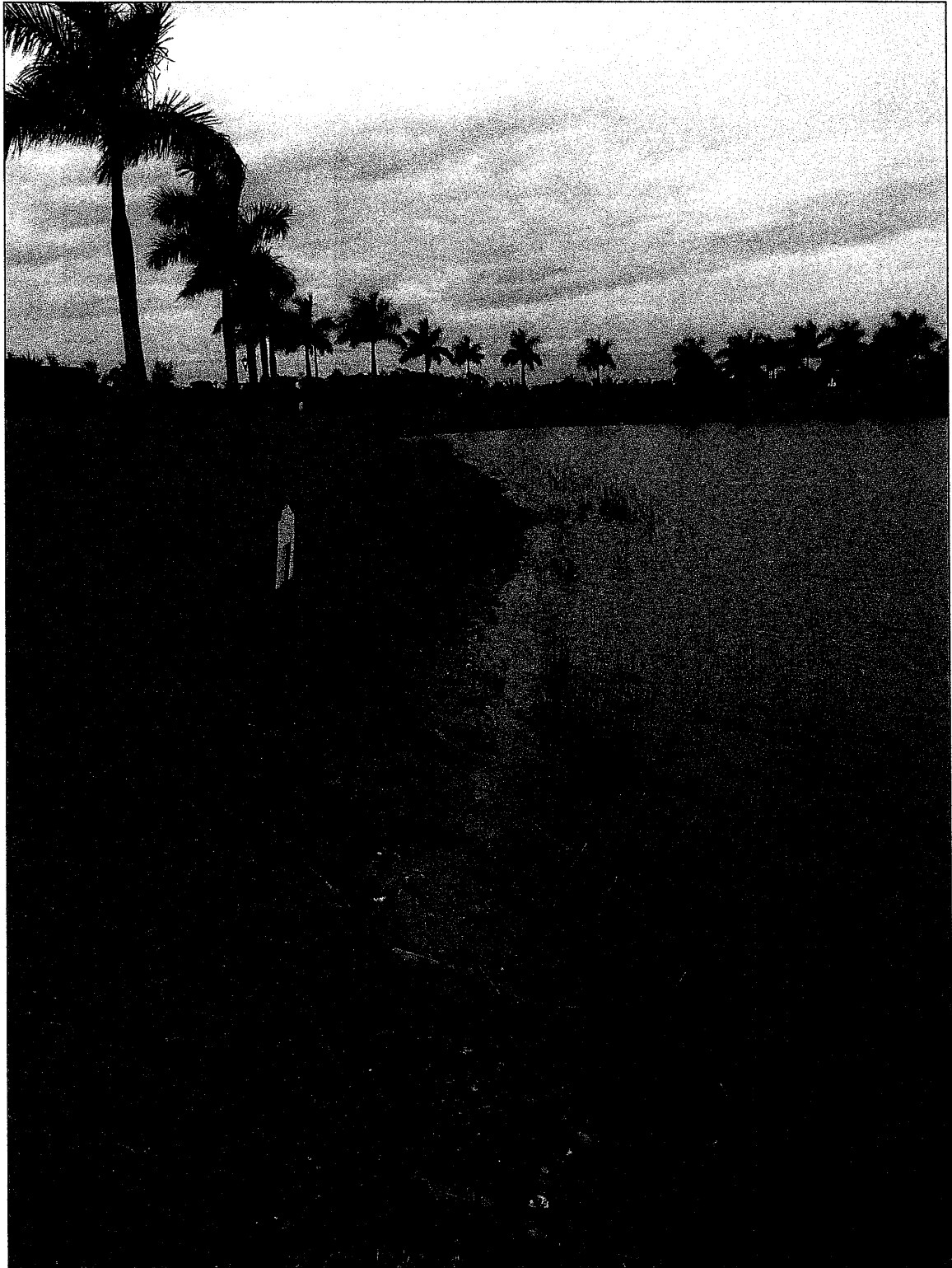
Legend

-  CASORIA
-  Parcels
-  Lakes



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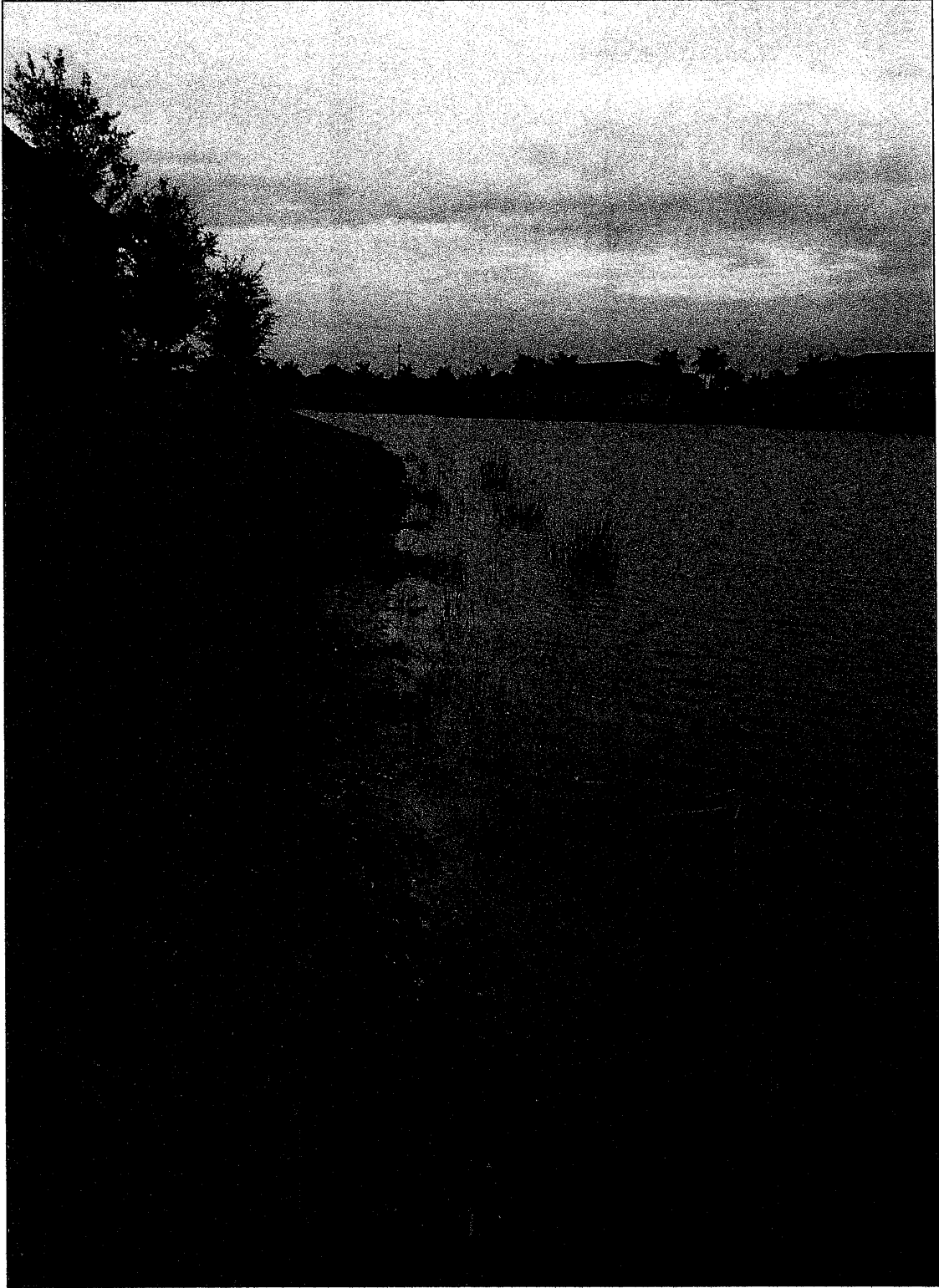






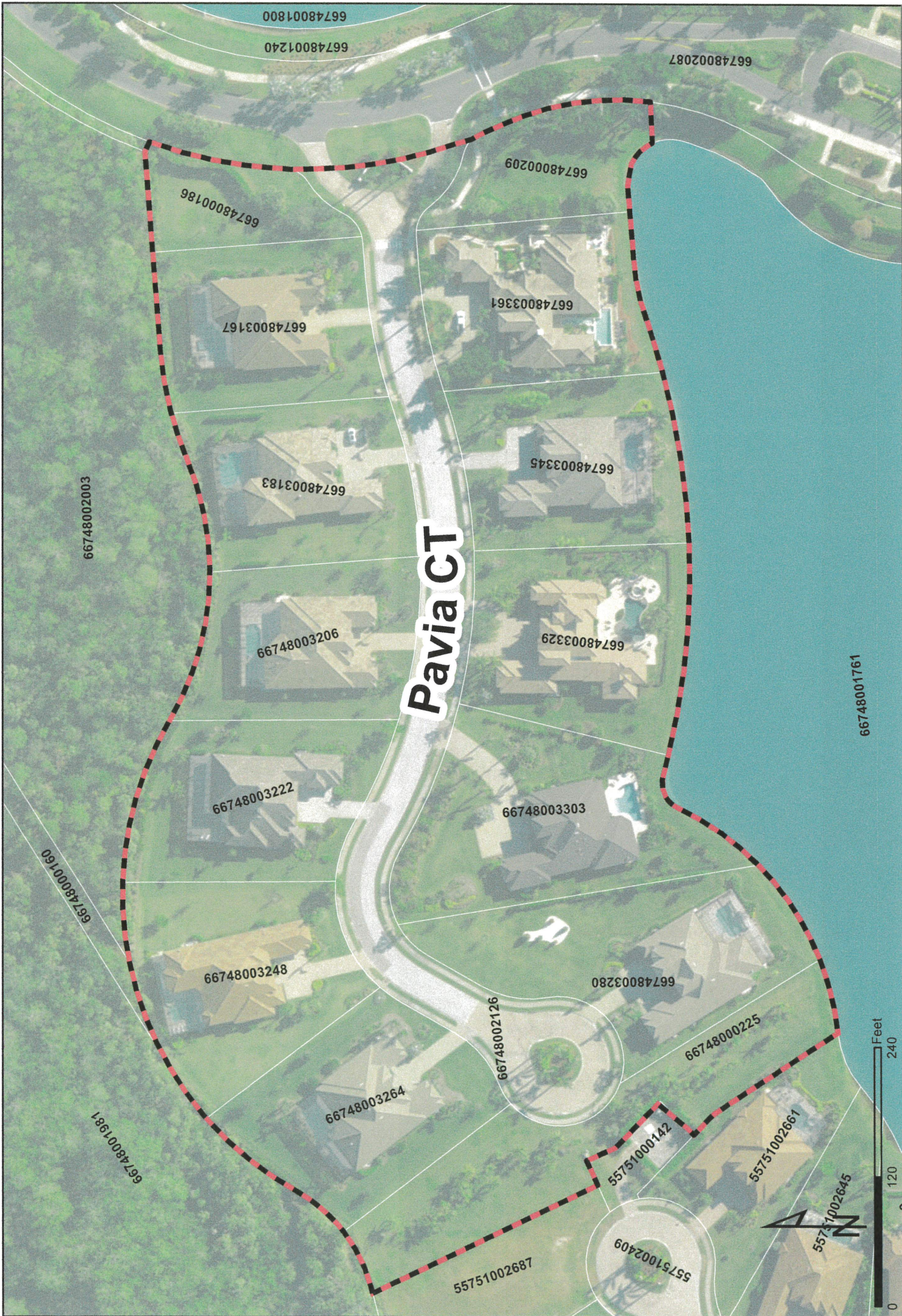








Pavia



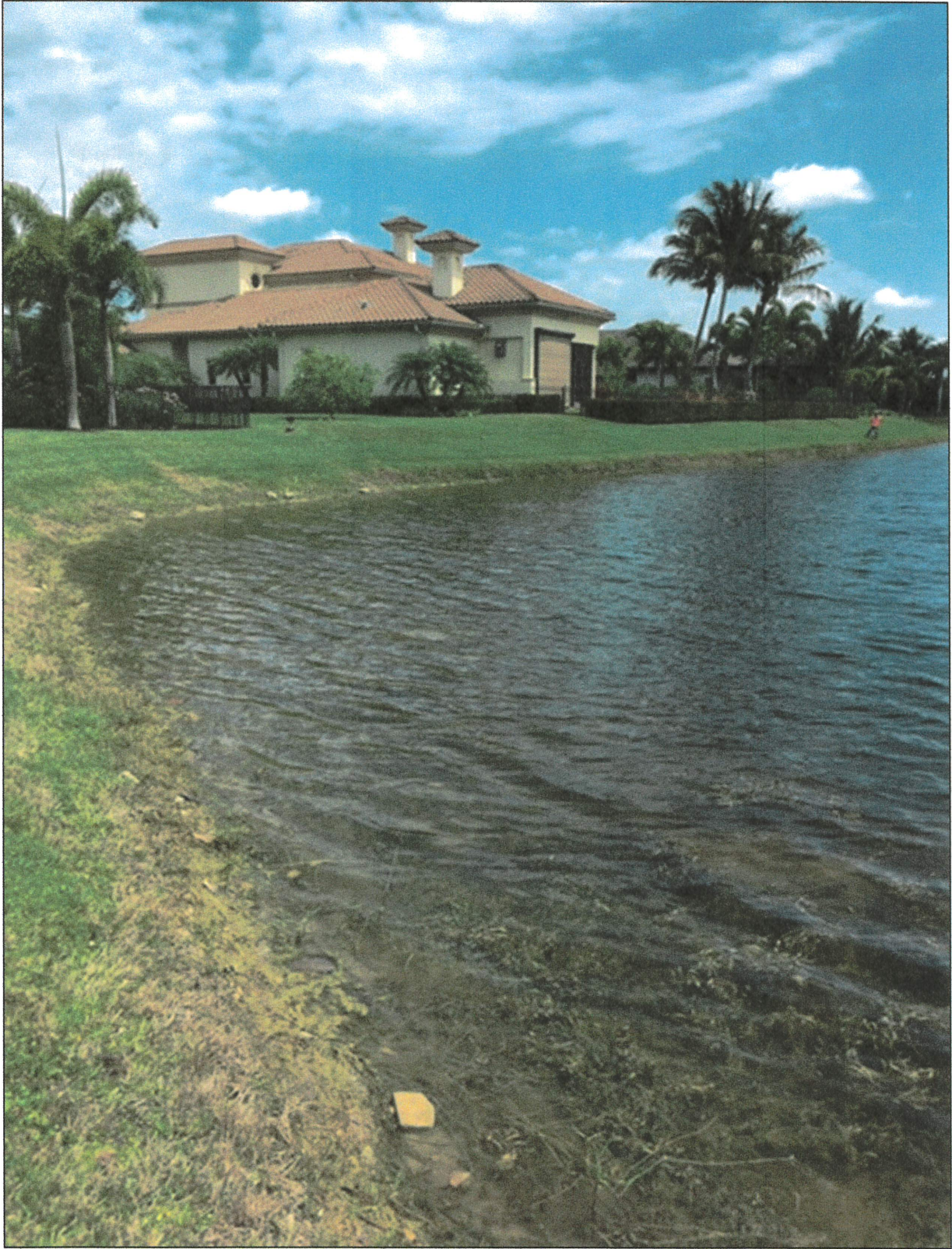
Treviso Bay Pavia Subdivision

Legend

-  PAVIA
-  Parcels
-  Lakes







Avellino



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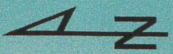
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Treviso Bay Avellino Subdivision

Legend

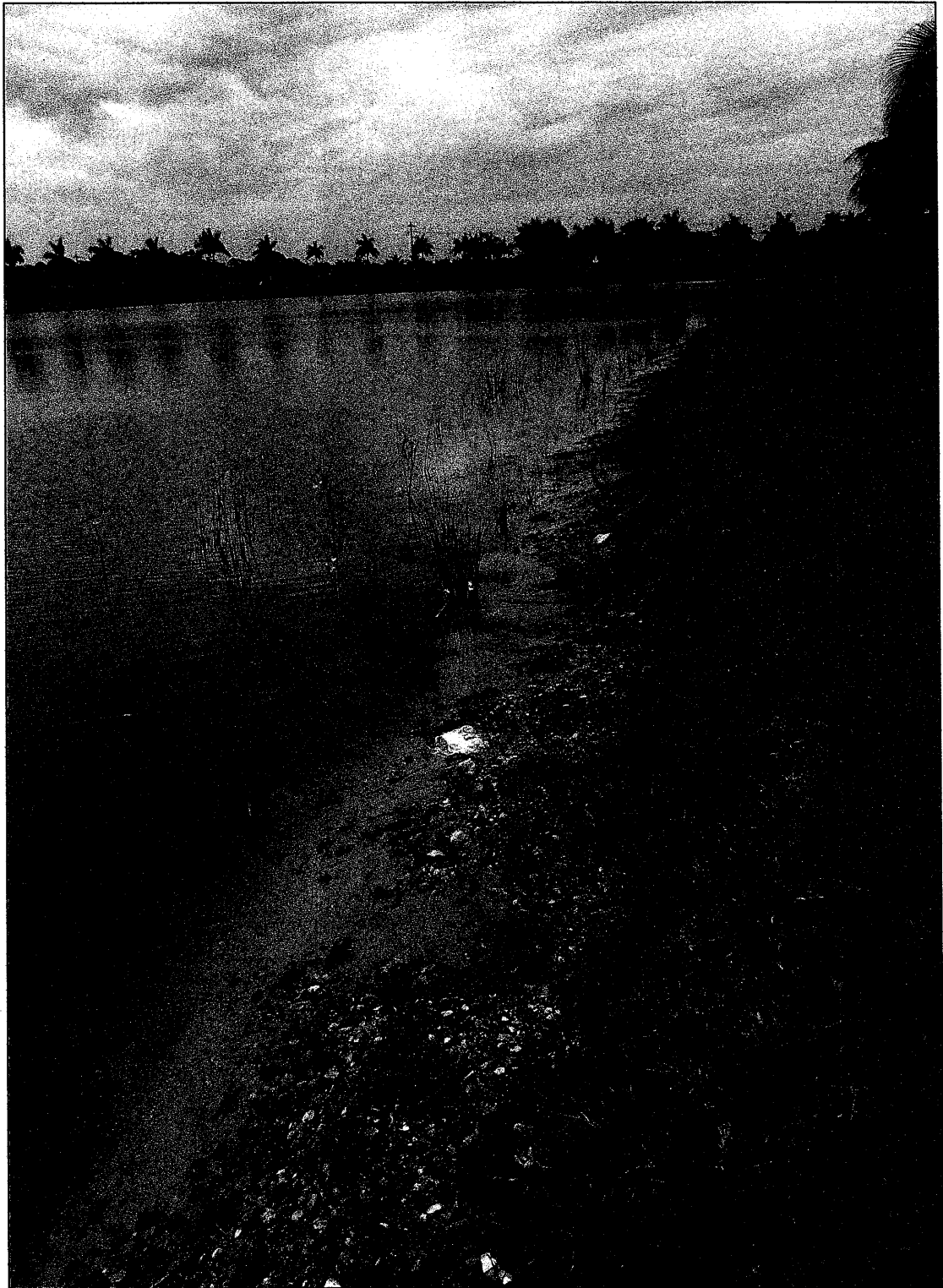
- AVELLINO
- Parcels
- Lakes

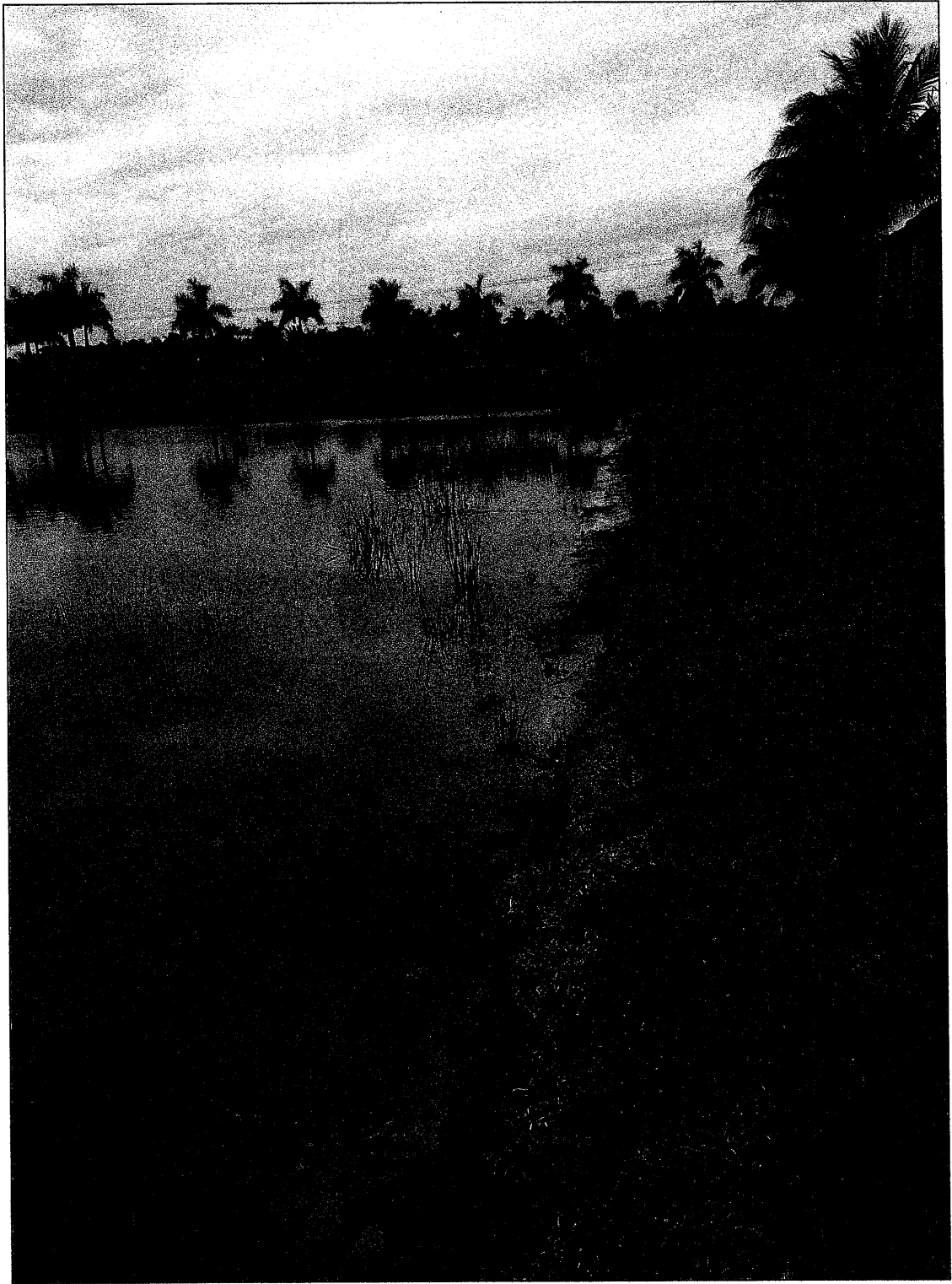


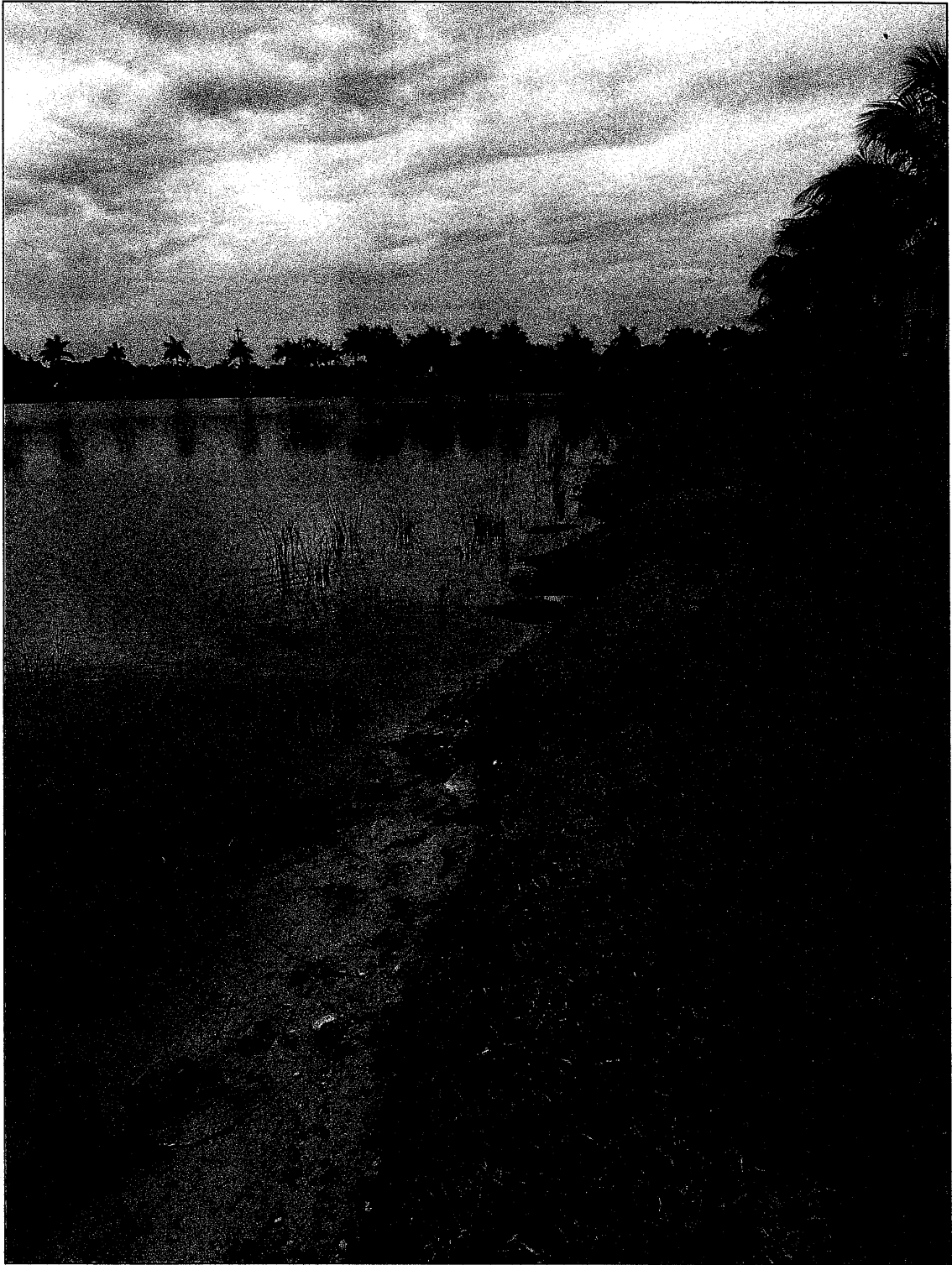
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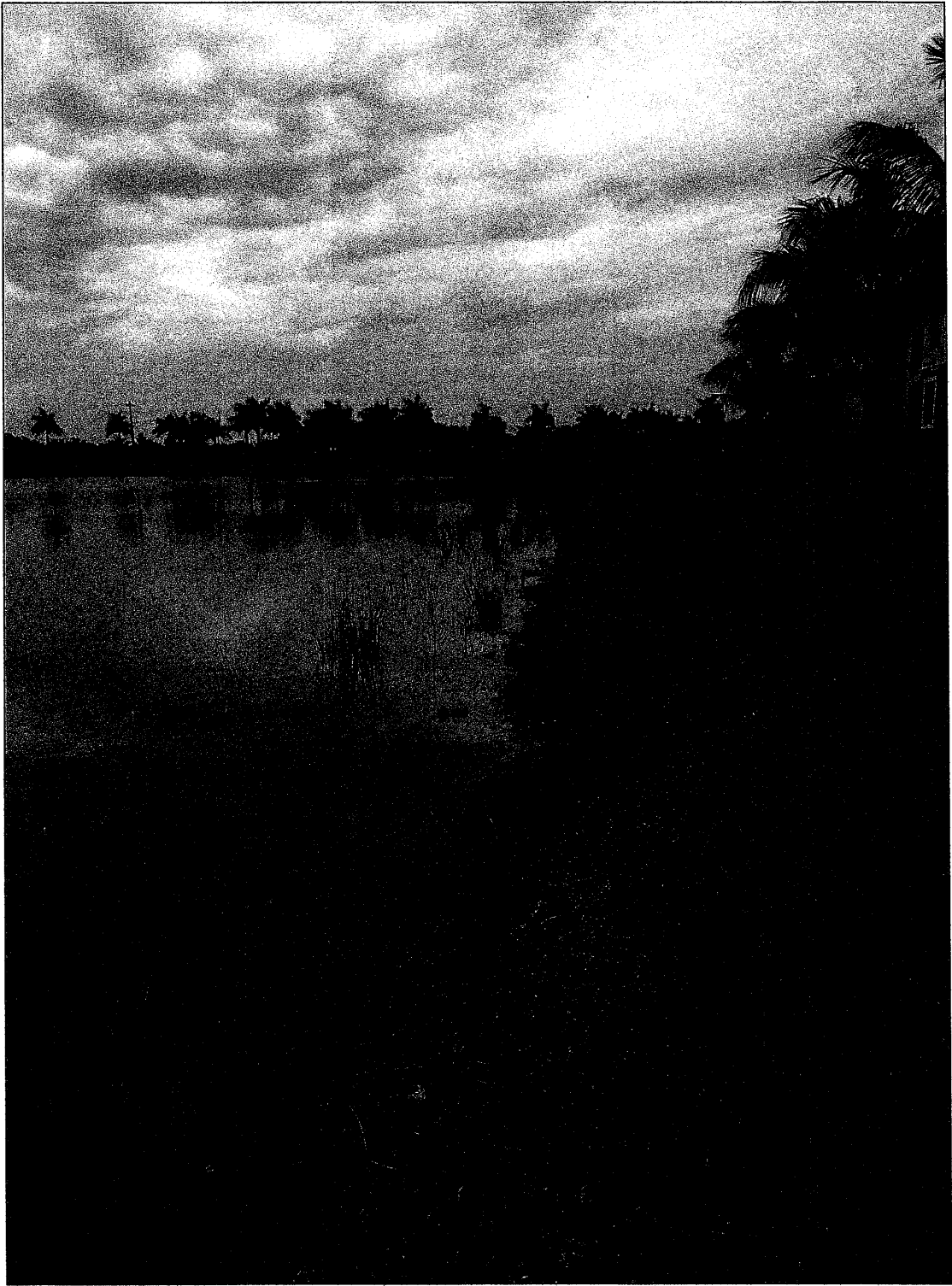
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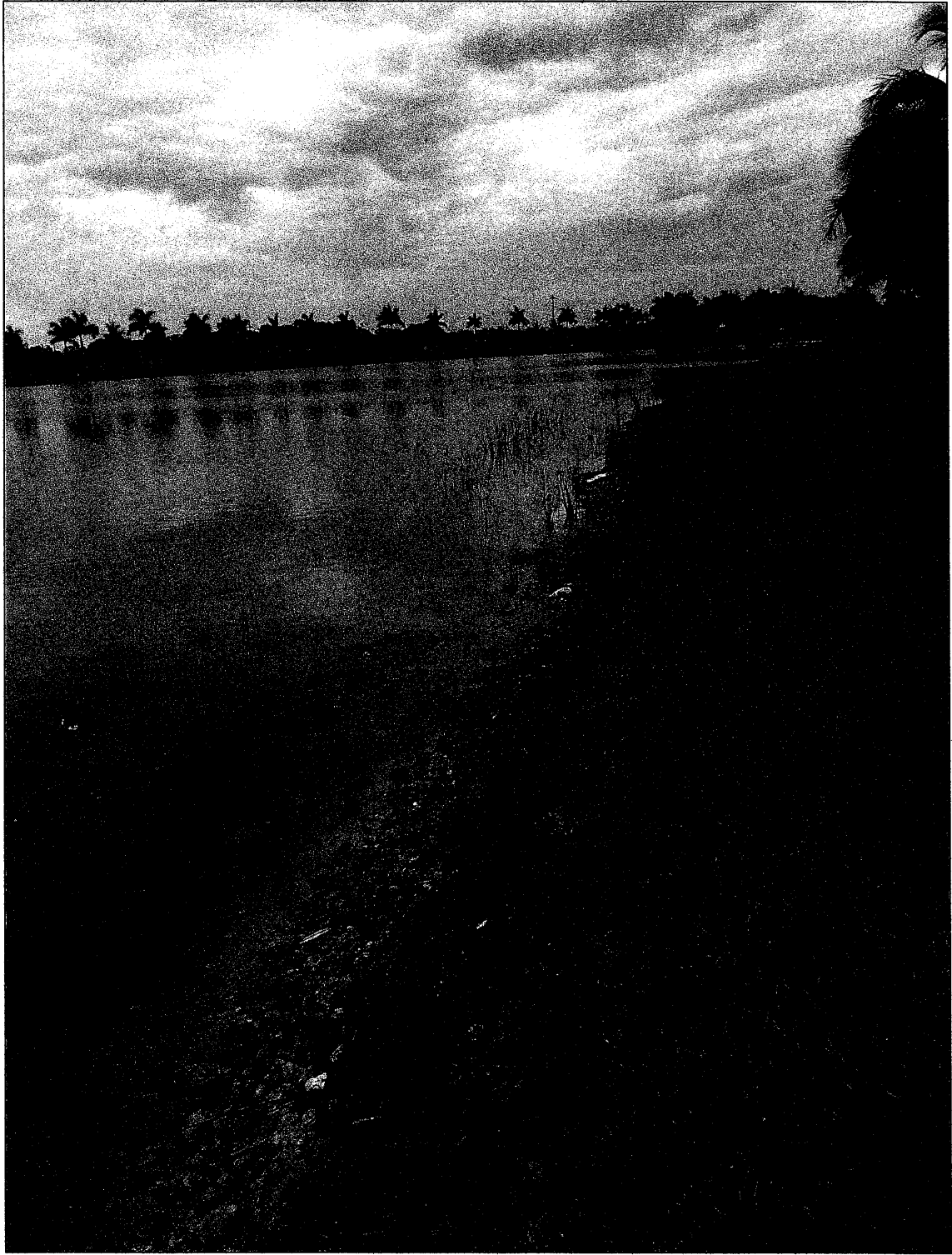


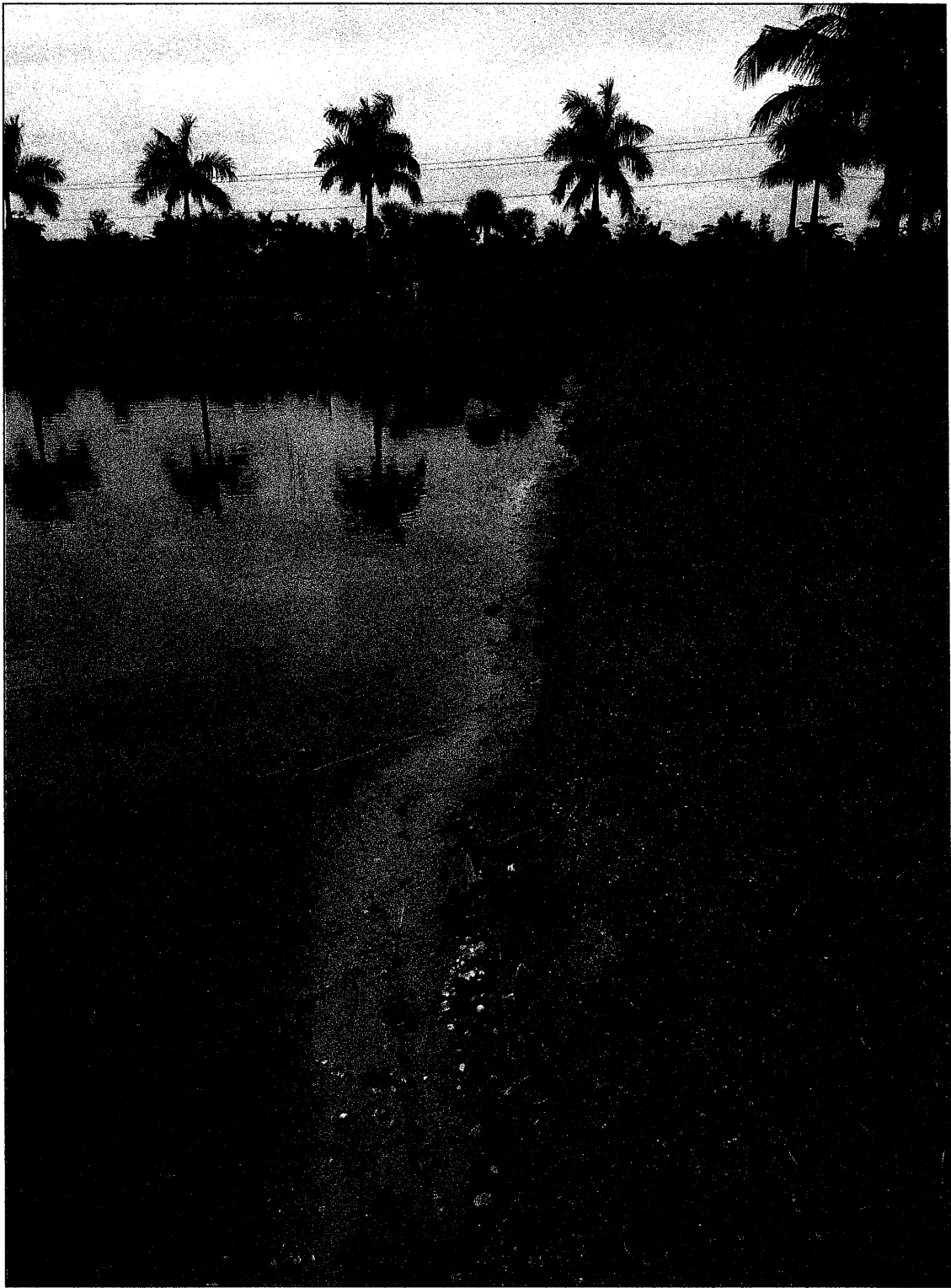


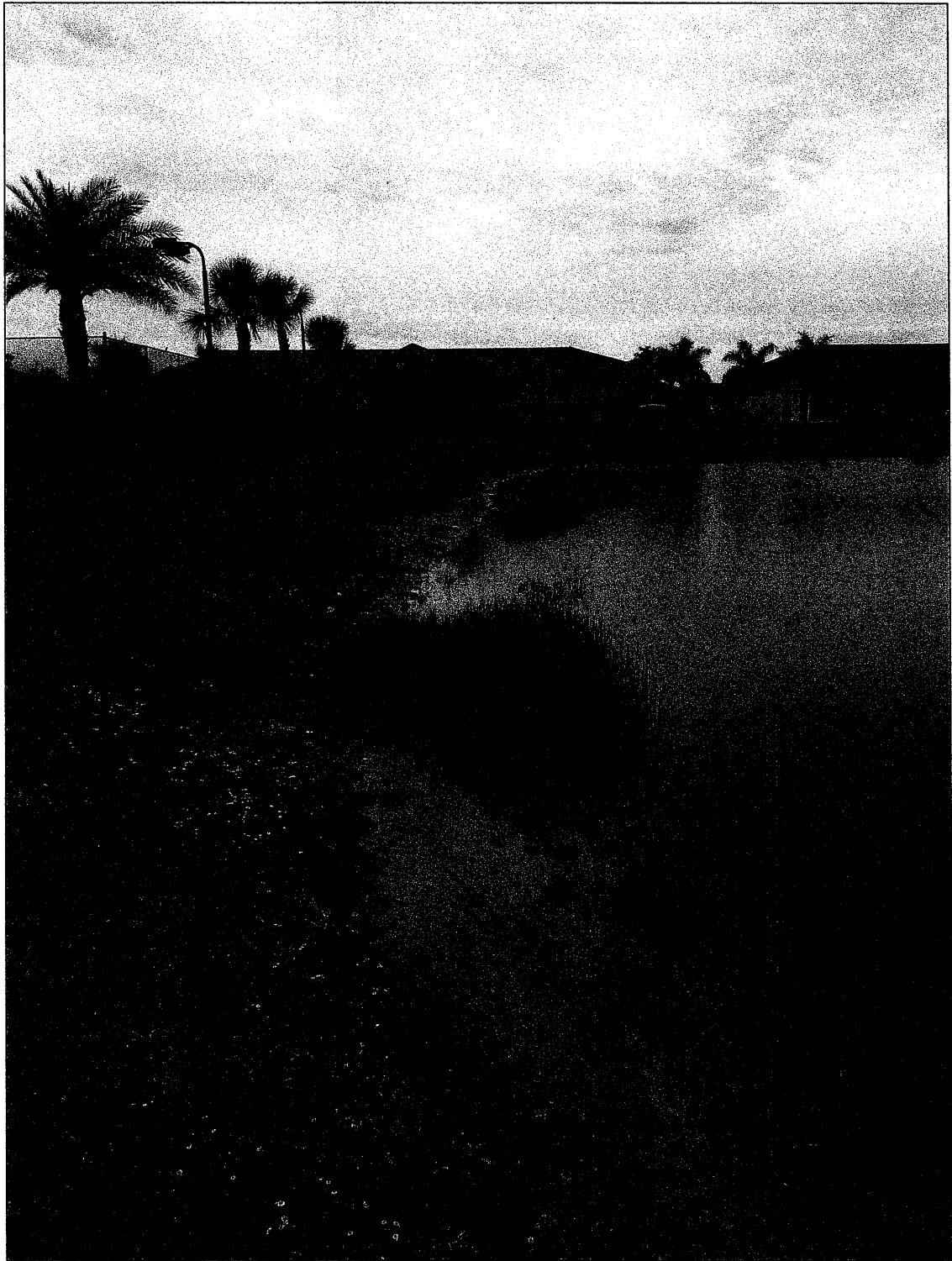


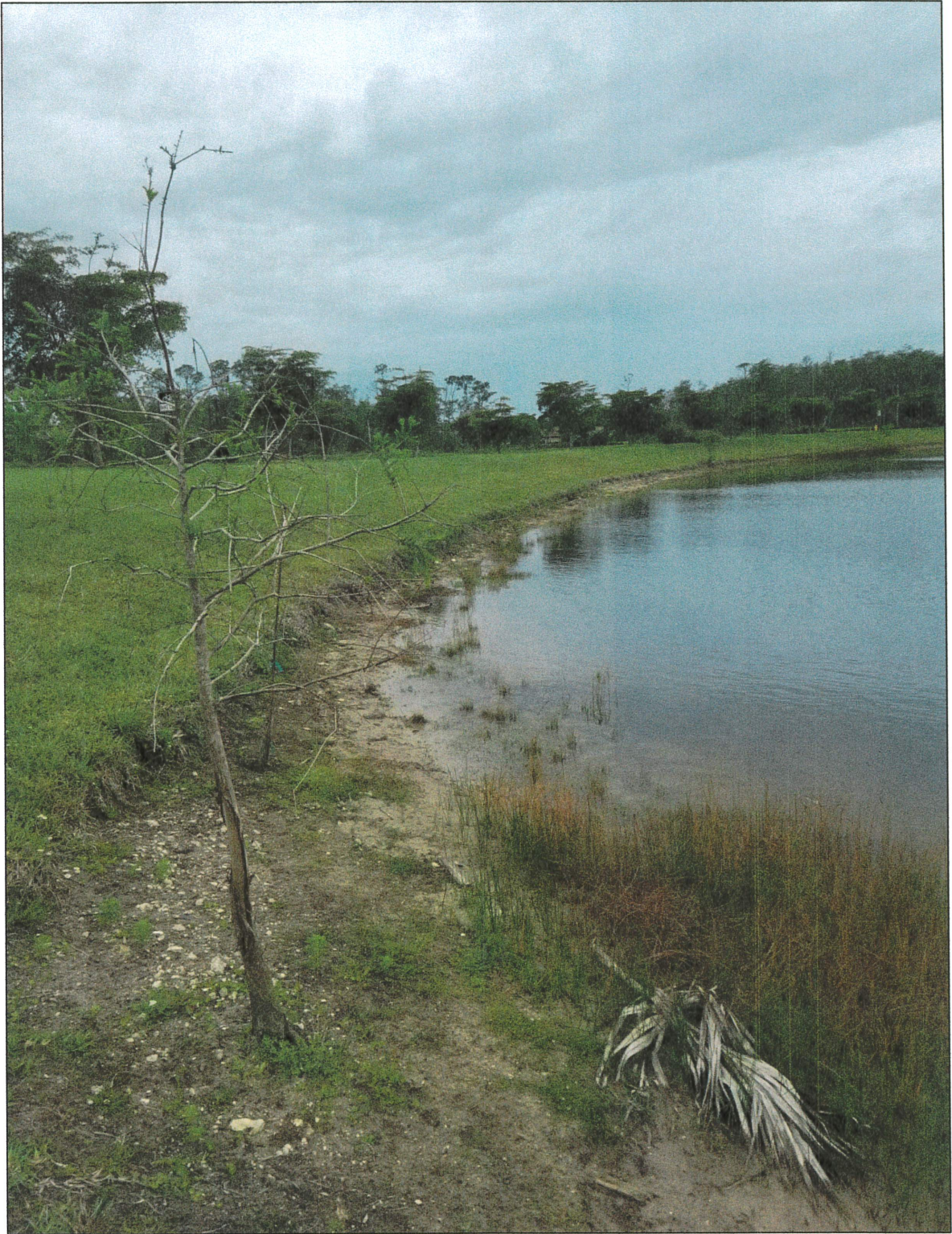


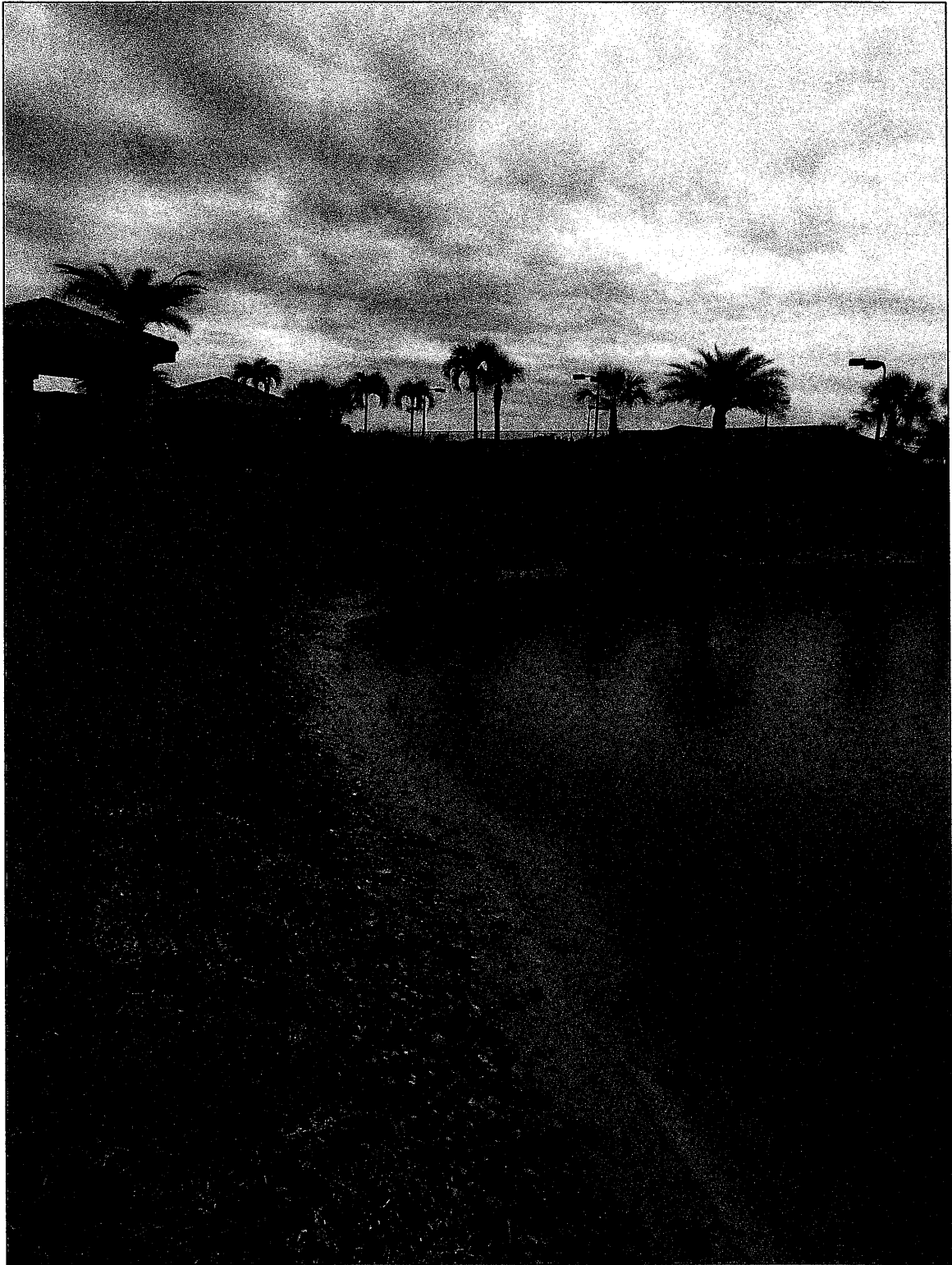




















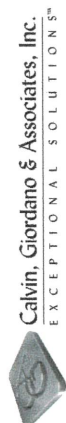
Vercelli



Treviso Bay Vercelli Subdivision

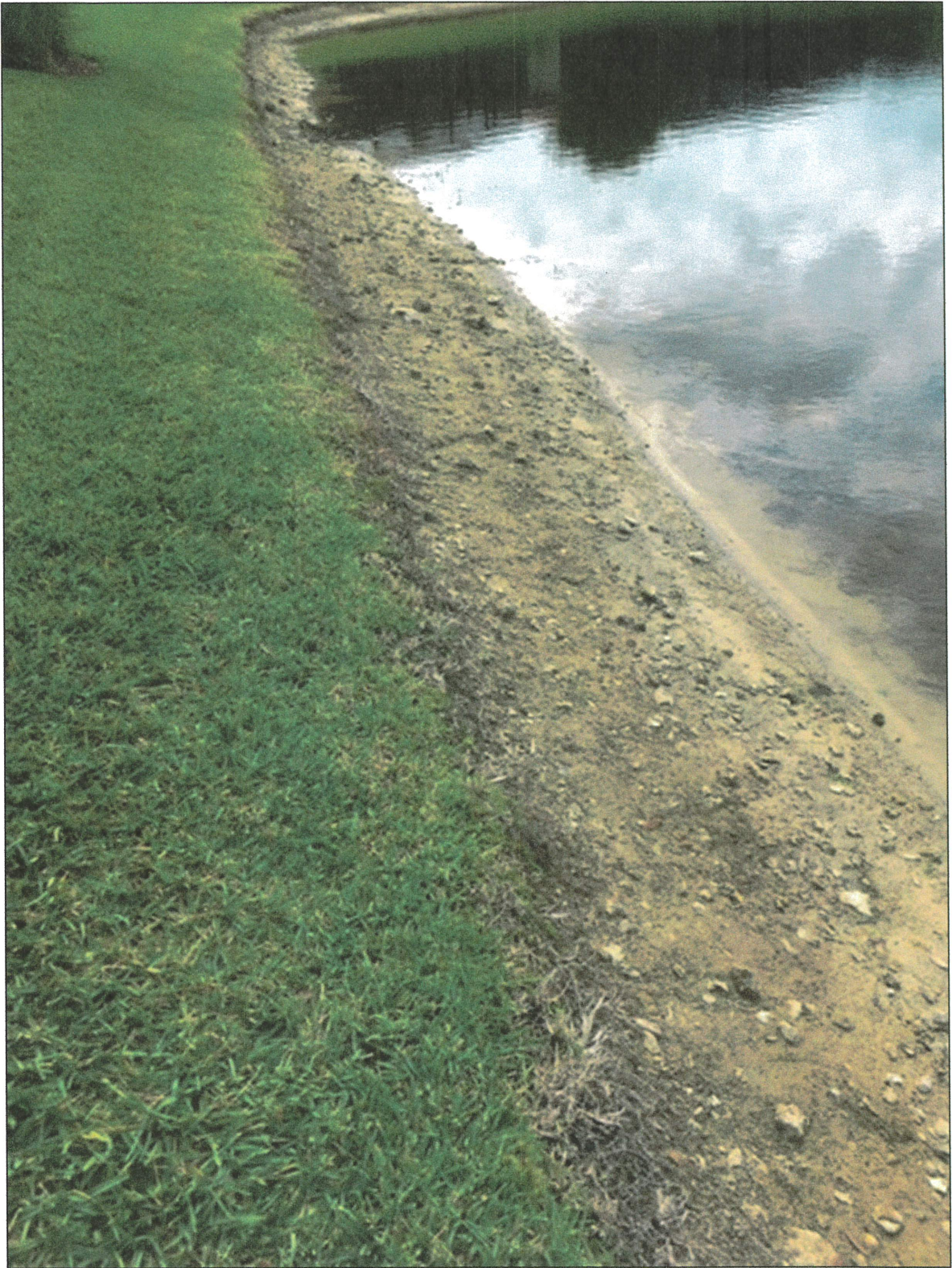
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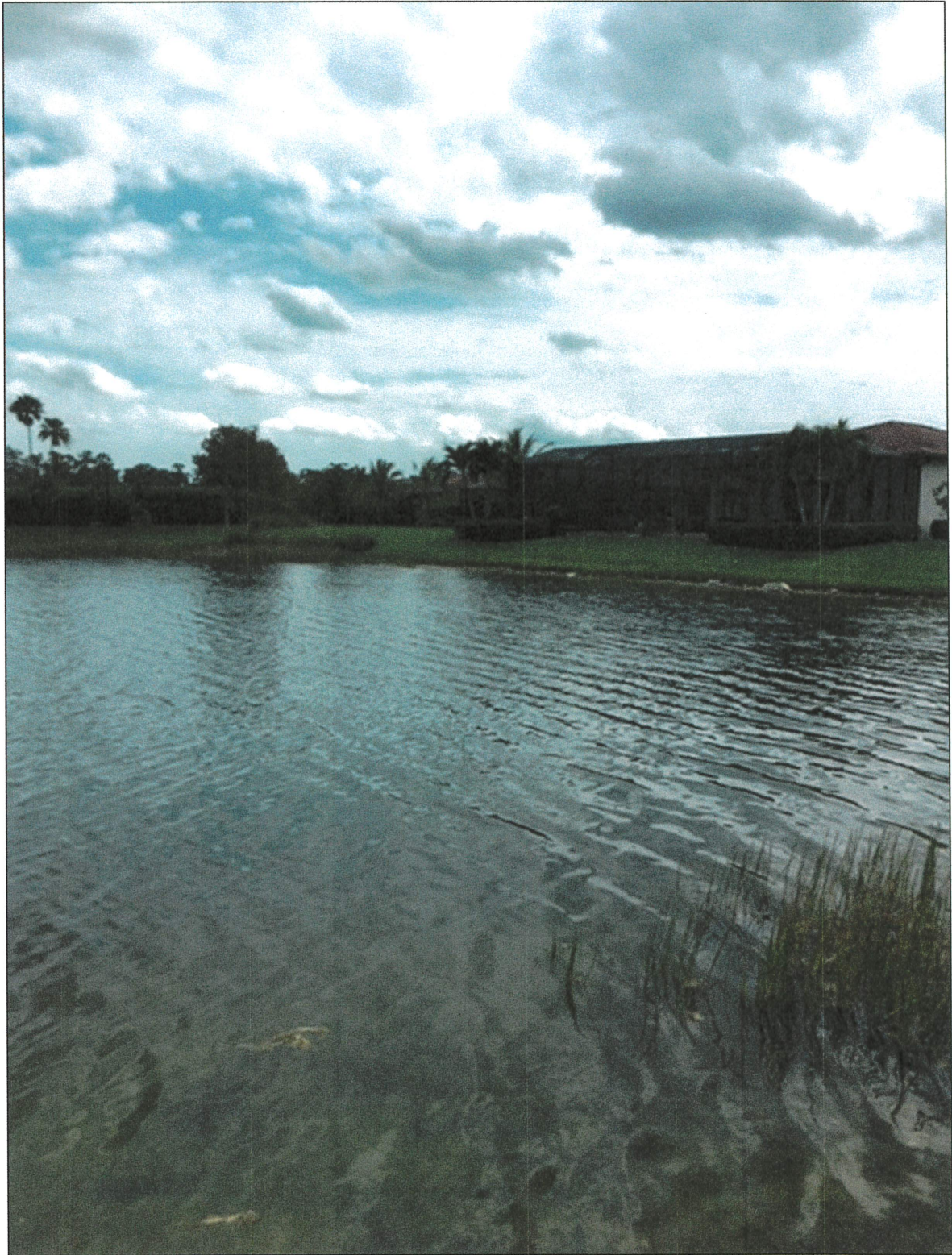
-  VERCELLI
-  Lakes
-  Parcels
-  Lakes



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Littoral Shelf Plantings and Lake Barriers

Wentworth Estates - Via Veneto Subdivision, Residential

Priority Rating: 3

Control Elevation: 4.0' NGVD, Basin AA

Wentworth Estates Littoral Planting Chart Via Veneto Subdivision, Residential					
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity
<i>Canna flaccida</i>	Yellow Canna	4.0	3' o.c.	B.R.	50
<i>Sagittaria latifolia</i>	Duck Potato	4.0 to 3.0	3' o.c.	B.R.	138
<i>Pontederia cordata</i>	Pickrel Weed	4.0 to 3.0	3' o.c.	B.R.	138
<i>Eleocharis spp.</i>	Spikerush	3.5 to 1.5	3' o.c.	B.R.	138
<i>Thalia geniculata</i>	Fire Flag	3.5 to 1.5	3' o.c.	B.R.	138
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	3.5 to 1.5	3' o.c.	B.R.	138
<i>Juncus effusus</i>	Soft Rush	3.5 to 1.5	3' o.c.	B.R.	138
<i>Nymphaea odorata</i>	Fragrant waterlily	1.5 to -1.5	3' o.c.	B.R.	6
Total Plants					884

Total Linear Feet of Erosion	862
Total Square Feet of Planting Area	6896
Total Plants Needed	884

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Via Veneto Subdivision, Residential

Priority Rating: 3

Control Elevation: 4.0' NGVD, Basin AA

Wentworth Estates Littoral Planting Chart Via Veneto Subdivision, Residential							Unit Cost	Product
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Installed	Cost	
<i>Canna flaccida</i>	Yellow Canna	4.0	3' o.c.	B.R.	50	\$2.50	\$125.00	
<i>Sagittaria latifolia</i>	Duck Potato	4.0 to 3.0	3' o.c.	B.R.	138	\$2.50	\$345.00	
<i>Pontederia cordata</i>	Pickereel Weed	4.0 to 3.0	3' o.c.	B.R.	138	\$2.50	\$345.00	
<i>Eleocharis</i> spp.	Spikerush	3.5 to 1.5	3' o.c.	B.R.	138	\$2.50	\$345.00	
<i>Thalia geniculata</i>	Fire Flag	3.5 to 1.5	3' o.c.	B.R.	138	\$2.50	\$345.00	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	3.5 to 1.5	3' o.c.	B.R.	138	\$2.50	\$345.00	
<i>Juncus effusus</i>	Soft Rush	3.5 to 1.5	3' o.c.	B.R.	138	\$2.50	\$345.00	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.5 to -1.5	3' o.c.	B.R.	6	\$2.50	\$15.00	
Total Cost for Plant purchase and Installation								\$2,195.00

Wentworth Estates - Vercelli Subdivision, Residential

Priority Rating: 3

Control Elevation: 3.5' NGVD, Basin A

Wentworth Estates Littoral Planting Chart Vercelli Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	
<i>Canna flaccida</i>	Yellow Canna	3.5	3' o.c.	B.R.	50	
<i>Sagittaria latifolia</i>	Duck Potato	3.5 to 2.5	3' o.c.	B.R.	288	
<i>Pontederia cordata</i>	Pickrel Weed	3.5 to 2.5	3' o.c.	B.R.	288	
<i>Eleocharis spp.</i>	Spikerush	3.5 to 2.5	3' o.c.	B.R.	288	
<i>Thalia geniculata</i>	Fire Flag	3.0 to 1.5	3' o.c.	B.R.	288	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	3.0 to 1.5	3' o.c.	B.R.	288	
<i>Juncus effusus</i>	Soft Rush	3.0 to 1.5	3' o.c.	B.R.	288	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.5 to -1.5	3' o.c.	B.R.	5	
Total Plants					1,783	

Total Linear Feet of Erosion	1738
Square Feet of Planting Area	13904
Total Plants Needed	1783

8
7.8

Bare Root planting material will be installed 3 feet on center
 Planting will occur from the MHWL for distance of 8 ft out into the Water
 At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2' to 2.5' water depth

Wentworth Estates - Vercelli Subdivision, Residential

Priority Rating: 3

Control Elevation: 3.5' NGVD, Basin A

Wentworth Estates Littoral Planting Chart Vercelli Subdivision, Residential							Unit Cost	Product
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Installed	Cost	
<i>Canna flaccida</i>	Yellow Canna	3.5	3' o.c.	B.R.	50	\$2.50	\$125.00	
<i>Sagittaria latifolia</i>	Duck Potato	3.5 to 2.5	3' o.c.	B.R.	288	\$2.50	\$720.00	
<i>Pontederia cordata</i>	Pickereel Weed	3.5 to 2.5	3' o.c.	B.R.	288	\$2.50	\$720.00	
<i>Eleocharis</i> spp.	Spikerush	3.5 to 2.5	3' o.c.	B.R.	288	\$2.50	\$720.00	
<i>Thalia geniculata</i>	Fire Flag	3.0 to 1.5	3' o.c.	B.R.	288	\$2.50	\$720.00	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	3.0 to 1.5	3' o.c.	B.R.	288	\$2.50	\$720.00	
<i>Juncus effusus</i>	Soft Rush	3.0 to 1.5	3' o.c.	B.R.	288	\$2.50	\$720.00	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.5 to -1.5	3' o.c.	B.R.	5	\$2.50	\$12.50	
Total Cost for Plant purchase and Installation								\$4,445.00

1,783

Wentworth Estates - Vercelli Subdivision, Non-Residential

Priority Rating: 3

Control Elevation: 3.5' NGVD, Basin A

Wentworth Estates Littoral Planting Chart Vercelli Subdivision, Non-Residential					
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity
<i>Canna flaccida</i>	Yellow Canna	3.5	3' o.c.	B.R.	24
<i>Sagittaria latifolia</i>	Duck Potato	3.5 to 2.5	3' o.c.	B.R.	121
<i>Pontederia cordata</i>	Pickereel Weed	3.5 to 2.5	3' o.c.	B.R.	121
<i>Eleocharis spp.</i>	Spikerush	3.5 to 2.5	3' o.c.	B.R.	121
<i>Thalia geniculata</i>	Fire Flag	3.0 to 1.5	3' o.c.	B.R.	121
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	3.0 to 1.5	3' o.c.	B.R.	121
<i>Juncus effusus</i>	Soft Rush	3.0 to 1.5	3' o.c.	B.R.	121
<i>Nymphaea odorata</i>	Fragrant waterlily	1.5 to -1.5	3' o.c.	B.R.	2
Total Plants					752

Total Linear Feet of Erosion	733
Square Feet of Planting Area	5864
Total Plants Needed	752

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2' to 2.5' water depth

Wentworth Estates - Vercelli Subdivision, Non-Residential

Priority Rating: 3

Control Elevation: 3.5' NGVD, Basin A

Wentworth Estates Littoral Planting Chart Vercelli Subdivision, Non-Residential							
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed	Product Cost
<i>Canna flaccida</i>	Yellow Canna	3.5	3' o.c.	B.R.	24	\$2.50	\$60.00
<i>Sagittaria latifolia</i>	Duck Potato	3.5 to 2.5	3' o.c.	B.R.	121	\$2.50	\$302.50
<i>Pontederia cordata</i>	Pickerel Weed	3.5 to 2.5	3' o.c.	B.R.	121	\$2.50	\$302.50
<i>Eleocharis spp.</i>	Spikerush	3.5 to 2.5	3' o.c.	B.R.	121	\$2.50	\$302.50
<i>Thalia geniculata</i>	Fire Flag	3.0 to 1.5	3' o.c.	B.R.	121	\$2.50	\$302.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	3.0 to 1.5	3' o.c.	B.R.	121	\$2.50	\$302.50
<i>Juncus effusus</i>	Soft Rush	3.0 to 1.5	3' o.c.	B.R.	121	\$2.50	\$302.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.5 to -1.5	3' o.c.	B.R.	2	\$2.50	\$5.00
Total Cost for Plant purchase and Installation							\$1,875.00

Wentworth Estates - Venezia Subdivision, Residential

Priority Rating: 2

Control Elevation: 3.0' NGVD, Basin D

Wentworth Estates Littoral Planting Chart Venezia Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	6	
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	57	
<i>Pontederia cordata</i>	Pickrel Weed	3.0 to 2.0	3' o.c.	B.R.	57	
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	57	
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	57	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	57	
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	57	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	2	
Total Plants					350	

Total Linear Feet of Erosion	341
Total Square Feet of Planting Area	2728
Total Plants Needed	350

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Venezia Subdivision, Residential

Priority Rating: 2

Control Elevation: 3.0' NGVD, Basin D

Wentworth Estates Littoral Planting Chart Venezia Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	6	\$2.50
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	57	\$2.50
<i>Pontederia cordata</i>	Pickrel Weed	3.0 to 2.0	3' o.c.	B.R.	57	\$2.50
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	57	\$2.50
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	57	\$2.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	57	\$2.50
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	57	\$2.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	2	\$2.50
Total Cost for Plant purchase and Installation						\$870.00

Wentworth Estates - Trevi Subdivision, Residential

Priority Rating: 1

Control Elevation: 3.0' NGVD, Basin B

Wentworth Estates Littoral Planting Chart Trevi Subdivision, Residential					
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	24
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	136
<i>Pontederia cordata</i>	Pickereel Weed	3.0 to 2.0	3' o.c.	B.R.	136
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	136
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	136
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	136
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	136
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	2
Total Plants					842

Total Linear Feet of Erosion	821
Total Square Feet of Planting Area	6568
Total Plants Needed	842

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Trevi Subdivision, Residential

Priority Rating: 1

Control Elevation: 3.0' NGVD, Basin B

Wentworth Estates Littoral Planting Chart Trevi Subdivision, Residential							Unit Cost	Product
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Installed	Cost	
<i>Canna flaccida</i>	Yellow Cannas	3.0	3' o.c.	B.R.	24	\$2.50	\$60.00	
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	136	\$2.50	\$340.00	
<i>Pontederia cordata</i>	Pickerel Weed	3.0 to 2.0	3' o.c.	B.R.	136	\$2.50	\$340.00	
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	136	\$2.50	\$340.00	
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	136	\$2.50	\$340.00	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	136	\$2.50	\$340.00	
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	136	\$2.50	\$340.00	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	2	\$2.50	\$5.00	
Total Cost for Plant purchase and Installation								\$2,100.00

Wentworth Estates - Trevi Subdivision, Non-Residential

Priority Rating: 1

Control Elevation: 3.0' NGVD, Basin B

Wentworth Estates Littoral Planting Chart Trevi Subdivision, Non-Residential					
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	10
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	58
<i>Pontederia cordata</i>	Pickereel Weed	3.0 to 2.0	3' o.c.	B.R.	58
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	58
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	58
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	58
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	58
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	1
Total Plants					359

Total Linear Feet of Erosion	350
Total Square Feet of Planting Area	2800
Total Plants Needed	359

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Trevi Subdivision, Non-Residential

Priority Rating: 1

Control Elevation: 3.0' NGVD, Basin B

Wentworth Estates Littoral Planting Chart Trevi Subdivision, Non-Residential							Unit Cost	Product
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Installed	Cost	
<i>Canna flaccida</i>	Yellow Cannas	3.0	3' o.c.	B.R.	10	\$2.50	\$25.00	
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	58	\$2.50	\$145.00	
<i>Pontederia cordata</i>	Pickrel Weed	3.0 to 2.0	3' o.c.	B.R.	58	\$2.50	\$145.00	
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	58	\$2.50	\$145.00	
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	58	\$2.50	\$145.00	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	58	\$2.50	\$145.00	
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	58	\$2.50	\$145.00	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	1	\$2.50	\$2.50	
Total Cost for Plant purchase and Installation								\$895.00

Wentworth Estates - Siracusa Subdivision, Residential

Priority Rating: 1

Control Elevation: 3.0' NGVD, Basin B

Wentworth Estates Littoral Planting Chart Siracusa Subdivision, Residential					
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	20
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	40
<i>Pontederia cordata</i>	Pickereel Weed	3.0 to 2.0	3' o.c.	B.R.	40
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	40
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	40
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	40
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	40
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	2
Total Plants					262

Total Linear Feet of Erosion	255
Total Square Feet of Planting Area	2040
Total Plants Needed	262

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Siracusa Subdivision, Residential
Priority Rating: 1

Control Elevation: 3.0' NGVD, Basin B

Wentworth Estates Littoral Planting Chart Siracusa Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed
<i>Canna flaccida</i>	Yellow Cannas	3.0	3' o.c.	B.R.	20	\$2.50
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	40	\$2.50
<i>Pontederia cordata</i>	Pickrel Weed	3.0 to 2.0	3' o.c.	B.R.	40	\$2.50
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	40	\$2.50
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	40	\$2.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	40	\$2.50
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	40	\$2.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	2	\$2.50
Total Cost for Plant purchase and Installation						\$650.00

Wentworth Estates - Ponziane Subdivision, Residential
Priority Rating: 1

Control Elevation: 3.0' NGVD, Basin D

Wentworth Estates Littoral Planting Chart Ponziane Subdivision, Residential					
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	11
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	105
<i>Pontederia cordata</i>	Pickrel Weed	3.0 to 2.0	3' o.c.	B.R.	105
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	105
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	105
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	105
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	105
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	2
Total Plants					643

Total Linear Feet of Erosion	627
Total Square Feet of Planting Area	5016
Total Plants Needed	643

Bare Root planting material will be installed 3 feet on center
 Planting will occur from the MHWL for distance of 8 ft out into the Water
 At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Ponziane Subdivision, Residential

Priority Rating: 1

Control Elevation: 3.0' NGVD, Basin D

Wentworth Estates Littoral Planting Chart Ponziane Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	11	\$2.50
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	105	\$2.50
<i>Pontederia cordata</i>	Pickereel Weed	3.0 to 2.0	3' o.c.	B.R.	105	\$2.50
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	105	\$2.50
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	105	\$2.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	105	\$2.50
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	105	\$2.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	2	\$2.50
Total Cost for Plant purchase and Installation						\$1,602.50

Wentworth Estates - Ponte Rialto Subdivision, Residential

Priority Rating: 2

Control Elevation: 3.0' NGVD, Basin B

Wentworth Estates Littoral Planting Chart Ponte Rialto Subdivision, Residential					
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	50
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	252
<i>Pontederia cordata</i>	Pickrel Weed	3.0 to 2.0	3' o.c.	B.R.	252
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	252
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	252
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	252
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	252
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	6
Total Plants					1,568

Total Linear Feet of Erosion	1529
Total Square Feet of Planting Area	12232
Total Plants Needed	1568

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Ponte Rialto Subdivision, Residential

Priority Rating: 2

Control Elevation: 3.0' NGVD, Basin B

Wentworth Estates Littoral Planting Chart Ponte Rialto Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed
<i>Canna flaccida</i>	Yellow Cannas	3.0	3' o.c.	B.R.	50	\$2.50
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	252	\$2.50
<i>Pontederia cordata</i>	Pickerel Weed	3.0 to 2.0	3' o.c.	B.R.	252	\$2.50
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	252	\$2.50
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	252	\$2.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	252	\$2.50
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	252	\$2.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	6	\$2.50
Total Cost for Plant purchase and Installation						\$3,905.00

1,568

Wentworth Estates - Piacere Subdivision, Residential

Priority Rating: 2

Control Elevation: 4.0' NGVD, Basin AA

Wentworth Estates Littoral Planting Chart Piacere Subdivision, Residential					
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity
<i>Canna flaccida</i>	Yellow Canna	4.0	3' o.c.	B.R.	51
<i>Sagittaria latifolia</i>	Duck Potato	4.0 to 3.0	3' o.c.	B.R.	154
<i>Pontederia cordata</i>	Pickereel Weed	4.0 to 3.0	3' o.c.	B.R.	154
<i>Eleocharis spp.</i>	Spikerush	3.5 to 1.5	3' o.c.	B.R.	154
<i>Thalia geniculata</i>	Fire Flag	3.5 to 1.5	3' o.c.	B.R.	154
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	3.5 to 1.5	3' o.c.	B.R.	154
<i>Juncus effusus</i>	Soft Rush	3.5 to 1.5	3' o.c.	B.R.	154
<i>Nymphaea odorata</i>	Fragrant waterlily	1.5 to -1.5	3' o.c.	B.R.	6
Total Plants					981

Total Linear Feet of Erosion	956
Total Square Feet of Planting Area	7648
Total Plants Needed	981

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Piacere Subdivision, Residential

Priority Rating: 2

Control Elevation: 4.0' NGVD, Basin AA

Wentworth Estates Littoral Planting Chart Piacere Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed
<i>Canna flaccida</i>	Yellow Canna	4.0	3' o.c.	B.R.	51	\$2.50
<i>Sagittaria latifolia</i>	Duck Potato	4.0 to 3.0	3' o.c.	B.R.	154	\$2.50
<i>Pontederia cordata</i>	Pickerel Weed	4.0 to 3.0	3' o.c.	B.R.	154	\$2.50
<i>Eleocharis spp.</i>	Spikerush	3.5 to 1.5	3' o.c.	B.R.	154	\$2.50
<i>Thalia geniculata</i>	Fire Flag	3.5 to 1.5	3' o.c.	B.R.	154	\$2.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	3.5 to 1.5	3' o.c.	B.R.	154	\$2.50
<i>Juncus effusus</i>	Soft Rush	3.5 to 1.5	3' o.c.	B.R.	154	\$2.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.5 to -1.5	3' o.c.	B.R.	6	\$2.50
Total Cost for Plant purchase and Installation						\$2,437.50

Wentworth Estates - Pavia Subdivision, Residential

Priority Rating: 4

Control Elevation: 3.0' NGVD, Basin C

Wentworth Estates Littoral Planting Chart Pavia Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	13	
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	132	
<i>Pontederia cordata</i>	Pickereel Weed	3.0 to 2.0	3' o.c.	B.R.	132	
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	132	
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	132	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	132	
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	132	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	2	
Total Plants					807	

Total Linear Feet of Erosion	787
Total Square Feet of Planting Area	6296
Total Plants Needed	807

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Pavia Subdivision, Residential

Priority Rating: 4

Control Elevation: 3.0' NGVD, Basin C

Wentworth Estates Littoral Planting Chart Pavia Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	13	\$2.50
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	132	\$2.50
<i>Pontederia cordata</i>	Pickerel Weed	3.0 to 2.0	3' o.c.	B.R.	132	\$2.50
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	132	\$2.50
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	132	\$2.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	132	\$2.50
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	132	\$2.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	2	\$2.50
Total Cost for Plant purchase and Installation						\$2,012.50

Wentworth Estates - Lipari Subdivision, Residential

Priority Rating: 4

Control Elevation: 3.0' NGVD, Basin C

Wentworth Estates Littoral Planting Chart Lipari Subdivision, Residential					
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	24
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	468
<i>Pontederia cordata</i>	Pickereel Weed	3.0 to 2.0	3' o.c.	B.R.	468
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	468
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	468
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	468
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	468
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	2
Total Plants					2,834

Total Linear Feet of Erosion	2762
Total Square Feet of Planting Area	22096
Total Plants Needed	2833

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Lipari Subdivision, Residential

Priority Rating: 4

Control Elevation: 3.0' NGVD, Basin C

Wentworth Estates Littoral Planting Chart Lipari Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed
<i>Canna flaccida</i>	Yellow Cannas	3.0	3' o.c.	B.R.	24	\$2.50
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	468	\$2.50
<i>Pontederia cordata</i>	Pickerel Weed	3.0 to 2.0	3' o.c.	B.R.	468	\$2.50
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	468	\$2.50
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	468	\$2.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	468	\$2.50
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	468	\$2.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	2	\$2.50
Total Cost for Plant purchase and Installation						\$7,080.00

2,834

Wentworth Estates - Italia Subdivision, Residential

Priority Rating: 4

Control Elevation: 3.5' NGVD, Basin A

Wentworth Estates Littoral Planting Chart Italia Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	
<i>Canna flaccida</i>	Yellow Canna	3.5	3' o.c.	B.R.	50	
<i>Sagittaria latifolia</i>	Duck Potato	3.5 to 2.5	3' o.c.	B.R.	277	
<i>Pontederia cordata</i>	Pickrel Weed	3.5 to 2.5	3' o.c.	B.R.	277	
<i>Eleocharis spp.</i>	Spikerush	3.5 to 2.5	3' o.c.	B.R.	277	
<i>Thalia geniculata</i>	Fire Flag	3.0 to 1.5	3' o.c.	B.R.	277	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	3.0 to 1.5	3' o.c.	B.R.	277	
<i>Juncus effusus</i>	Soft Rush	3.0 to 1.5	3' o.c.	B.R.	277	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.5 to -1.5	3' o.c.	B.R.	6	
Total Plants					1,718	

Total Linear Feet of Erosion	1675
Square Feet of Planting Area	13400
Total Plants Needed	1718

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2' to 2.5' water depth

Wentworth Estates - Italia Subdivision, Residential

Priority Rating: 4

Control Elevation: 3.5' NGVD, Basin A

Wentworth Estates Littoral Planting Chart Italia Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed
<i>Canna flaccida</i>	Yellow Cannas	3.5	3' o.c.	B.R.	50	\$2.50
<i>Sagittaria latifolia</i>	Duck Potato	3.5 to 2.5	3' o.c.	B.R.	277	\$2.50
<i>Pontederia cordata</i>	Pickerel Weed	3.5 to 2.5	3' o.c.	B.R.	277	\$2.50
<i>Eleocharis spp.</i>	Spikerush	3.5 to 2.5	3' o.c.	B.R.	277	\$2.50
<i>Thalia geniculata</i>	Fire Flag	3.0 to 1.5	3' o.c.	B.R.	277	\$2.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	3.0 to 1.5	3' o.c.	B.R.	277	\$2.50
<i>Juncus effusus</i>	Soft Rush	3.0 to 1.5	3' o.c.	B.R.	277	\$2.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.5 to -1.5	3' o.c.	B.R.	6	\$2.50
Total Cost for Plant purchase and Installation						\$4,280.00

1,718

Wentworth Estates - Italia Subdivision, Non-Residential

Priority Rating: 4

Control Elevation: 3.5' NGVD, Basin A

Wentworth Estates Littoral Planting Chart Italia Subdivision, Non-Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	
<i>Canna flaccida</i>	Yellow Canna	3.5	3' o.c.	B.R.	36	
<i>Sagittaria latifolia</i>	Duck Potato	3.5 to 2.5	3' o.c.	B.R.	111	
<i>Pontederia cordata</i>	Pickrel Weed	3.5 to 2.5	3' o.c.	B.R.	111	
<i>Eleocharis spp.</i>	Spikerush	3.5 to 2.5	3' o.c.	B.R.	111	
<i>Thalia geniculata</i>	Fire Flag	3.0 to 1.5	3' o.c.	B.R.	111	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	3.0 to 1.5	3' o.c.	B.R.	111	
<i>Juncus effusus</i>	Soft Rush	3.0 to 1.5	3' o.c.	B.R.	111	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.5 to -1.5	3' o.c.	B.R.	3	
Total Plants					705	

Total Linear Feet of Erosion	687
Square Feet of Planting Area	5496
Total Plants Needed	705

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2' to 2.5' water depth

Wentworth Estates - Italia Subdivision, Non-Residential

Priority Rating: 4

Control Elevation: 3.5' NGVD, Basin A

Wentworth Estates Littoral Planting Chart Italia Subdivision, Non-Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed
<i>Canna flaccida</i>	Yellow Canna	3.5	3' o.c.	B.R.	36	\$2.50
<i>Sagittaria latifolia</i>	Duck Potato	3.5 to 2.5	3' o.c.	B.R.	111	\$2.50
<i>Pontederia cordata</i>	Pickerel Weed	3.5 to 2.5	3' o.c.	B.R.	111	\$2.50
<i>Eleocharis spp.</i>	Spikerush	3.5 to 2.5	3' o.c.	B.R.	111	\$2.50
<i>Thalia geniculata</i>	Fire Flag	3.0 to 1.5	3' o.c.	B.R.	111	\$2.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	3.0 to 1.5	3' o.c.	B.R.	111	\$2.50
<i>Juncus effusus</i>	Soft Rush	3.0 to 1.5	3' o.c.	B.R.	111	\$2.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.5 to -1.5	3' o.c.	B.R.	3	\$2.50
Total Cost for Plant purchase and Installation						\$1,755.00

Wentworth Estates - Giaveno Subdivision, Residential

Priority Rating: 2

Control Elevation: 3.0' NGVD, Basin D

Wentworth Estates Littoral Planting Chart Giaveno Subdivision, Residential					
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	48
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	174
<i>Pontederia cordata</i>	Pickernel Weed	3.0 to 2.0	3' o.c.	B.R.	174
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	174
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	174
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	174
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	174
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	14
Total Plants					1,106

Total Linear Feet of Erosion	1078
Total Square Feet of Planting Area	8624
Total Plants Needed	1106

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Giaveno Subdivision, Residential

Priority Rating: 2

Control Elevation: 3.0' NGVD, Basin D

Wentworth Estates Littoral Planting Chart Giaveno Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	48	\$2.50
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	174	\$2.50
<i>Pontederia cordata</i>	Pickerel Weed	3.0 to 2.0	3' o.c.	B.R.	174	\$2.50
<i>Eleocharis</i> spp.	Spikerush	2.5 to 1.0	3' o.c.	B.R.	174	\$2.50
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	174	\$2.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	174	\$2.50
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	174	\$2.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	14	\$2.50
Total Cost for Plant purchase and Installation						\$2,730.00

Wentworth Estates - Dinapoli Subdivision, Residential

Priority Rating: 3

Control Elevation: 3.5' NGVD, Basin A

Wentworth Estates Littoral Planting Chart Dinapoli Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	
<i>Canna flaccida</i>	Yellow Canna	3.5	3' o.c.	B.R.	148	
<i>Sagittaria latifolia</i>	Duck Potato	3.5 to 2.5	3' o.c.	B.R.	432	
<i>Pontederia cordata</i>	Pickereel Weed	3.5 to 2.5	3' o.c.	B.R.	432	
<i>Eleocharis spp.</i>	Spikerush	3.5 to 2.5	3' o.c.	B.R.	432	
<i>Thalia geniculata</i>	Fire Flag	3.0 to 1.5	3' o.c.	B.R.	432	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	3.0 to 1.5	3' o.c.	B.R.	432	
<i>Juncus effusus</i>	Soft Rush	3.0 to 1.5	3' o.c.	B.R.	432	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.5 to -1.5	3' o.c.	B.R.	16	
Total Plants					2,756	

Total Linear Feet of Erosion	2687
Square Feet of Planting Area	21496
Total Plants Needed	2756

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2' to 2.5' water depth

Wentworth Estates - Dinapoli Subdivision, Residential

Priority Rating: 3

Control Elevation: 3.5' NGVD, Basin A

Wentworth Estates Littoral Planting Chart Dinapoli Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed
<i>Canna flaccida</i>	Yellow Cannas	3.5	3' o.c.	B.R.	148	\$2.50
<i>Sagittaria latifolia</i>	Duck Potato	3.5 to 2.5	3' o.c.	B.R.	432	\$2.50
<i>Pontederia cordata</i>	Pickrel Weed	3.5 to 2.5	3' o.c.	B.R.	432	\$2.50
<i>Eleocharis spp.</i>	Spikerush	3.5 to 2.5	3' o.c.	B.R.	432	\$2.50
<i>Thalia geniculata</i>	Fire Flag	3.0 to 1.5	3' o.c.	B.R.	432	\$2.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	3.0 to 1.5	3' o.c.	B.R.	432	\$2.50
<i>Juncus effusus</i>	Soft Rush	3.0 to 1.5	3' o.c.	B.R.	432	\$2.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.5 to -1.5	3' o.c.	B.R.	16	\$2.50
Total Cost for Plant purchase and Installation						\$6,850.00

2,756

Wentworth Estates - Casoria Subdivision, Residential

Priority Rating: 3

Control Elevation: 3.0' NGVD, Basin B

Wentworth Estates Littoral Planting Chart Casoria Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	50	
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	272	
<i>Pontederia cordata</i>	Pickerel Weed	3.0 to 2.0	3' o.c.	B.R.	272	
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	272	
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	272	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	272	
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	272	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	4	
Total Plants					1,686	

Total Linear Feet of Erosion	1644
Total Square Feet of Planting Area	13152
Total Plants Needed	1686

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Casoria Subdivision, Residential

Priority Rating: 3

Control Elevation: 3.0' NGVD, Basin B

Wentworth Estates Littoral Planting Chart Casoria Subdivision, Residential							Unit Cost	Product
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Installed	Cost	
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	50	\$2.50	\$125.00	
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	272	\$2.50	\$680.00	
<i>Pontederia cordata</i>	Pickereel Weed	3.0 to 2.0	3' o.c.	B.R.	272	\$2.50	\$680.00	
<i>Eleocharis</i> spp.	Spikerush	2.5 to 1.0	3' o.c.	B.R.	272	\$2.50	\$680.00	
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	272	\$2.50	\$680.00	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	272	\$2.50	\$680.00	
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	272	\$2.50	\$680.00	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	4	\$2.50	\$10.00	
Total Cost for Plant purchase and Installation								\$4,205.00

1,686

Wentworth Estates - Bella Firenze Subdivision, Residential

Priority Rating: 4

Control Elevation: 3.0' NGVD, Basin C

Wentworth Estates Littoral Planting Chart Bella Firenze Subdivision, Residential					
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	51
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	532
<i>Pontederia cordata</i>	Pickeral Weed	3.0 to 2.0	3' o.c.	B.R.	532
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	532
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	532
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	532
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	532
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	8
Total Plants					3,251

Total Linear Feet of Erosion	3170
Total Square Feet of Planting Area	25360
Total Plants Needed	3251

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Bella Firenze Subdivision, Residential

Priority Rating: 4

Control Elevation: 3.0' NGVD, Basin C

Wentworth Estates Littoral Planting Chart Bella Firenze Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	51	\$2.50
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	532	\$2.50
<i>Pontederia cordata</i>	Pickereel Weed	3.0 to 2.0	3' o.c.	B.R.	532	\$2.50
<i>Eleocharis</i> spp.	Spikerush	2.5 to 1.0	3' o.c.	B.R.	532	\$2.50
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	532	\$2.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	532	\$2.50
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	532	\$2.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	8	\$2.50
Total Cost for Plant purchase and Installation						\$8,107.50

Wentworth Estates - Bella Firenze Subdivision, Non-Residential

Priority Rating: 4

Control Elevation: 3.0' NGVD, Basin C

Wentworth Estates Littoral Planting Chart Bella Firenze Subdivision, Non-Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	49	
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	530	
<i>Pontederia cordata</i>	Pickereel Weed	3.0 to 2.0	3' o.c.	B.R.	530	
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	530	
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	530	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	530	
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	530	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	10	
Total Plants					3,239	

Total Linear Feet of Erosion	3158
Total Square Feet of Planting Area	25264
Total Plants Needed	3239

Bare Root planting material will be installed 3 feet on center
 Planting will occur from the MHWL for distance of 8 ft out into the Water
 At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Bella Firenze Subdivision, Non-Residential

Priority Rating: 4

Control Elevation: 3.0' NGVD, Basin C

Wentworth Estates Littoral Planting Chart Bella Firenze Subdivision, Non-Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	49	\$2.50
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	530	\$2.50
<i>Pontederia cordata</i>	Pickerel Weed	3.0 to 2.0	3' o.c.	B.R.	530	\$2.50
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	530	\$2.50
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	530	\$2.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	530	\$2.50
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	530	\$2.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	10	\$2.50
Total Cost for Plant purchase and Installation						\$8,072.50

Wentworth Estates - Avellino Subdivision, Residential

Priority Rating: 5

Control Elevation: 3.0' NGVD, Basin B

Wentworth Estates Littoral Planting Chart Avellino Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	36	
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	515	
<i>Pontederia cordata</i>	Pickereel Weed	3.0 to 2.0	3' o.c.	B.R.	515	
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	515	
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	515	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	515	
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	515	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	3	
Total Plants					3,129	

Total Linear Feet of Erosion	3051
Total Square Feet of Planting Area	24408
Total Plants Needed	3129

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Avellino Subdivision, Residential

Priority Rating: 5

Control Elevation: 3.0' NGVD, Basin B

Wentworth Estates Littoral Planting Chart Avellino Subdivision, Residential							Unit Cost	Product
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Installed	Cost	
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	36	\$2.50	\$90.00	
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	515	\$2.50	\$1,287.50	
<i>Pontederia cordata</i>	Pickereel Weed	3.0 to 2.0	3' o.c.	B.R.	515	\$2.50	\$1,287.50	
<i>Eleocharis</i> spp.	Spikerush	2.5 to 1.0	3' o.c.	B.R.	515	\$2.50	\$1,287.50	
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	515	\$2.50	\$1,287.50	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	515	\$2.50	\$1,287.50	
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	515	\$2.50	\$1,287.50	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	3	\$2.50	\$7.50	
Total Cost for Plant purchase and Installation								\$7,815.00

3,129

Wentworth Estates - Acqua Subdivision, Residential

Priority Rating: 3

Control Elevation: 3.0' NGVD, Basin C

Wentworth Estates Littoral Planting Chart Acqua Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	40	
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	260	
<i>Pontederia cordata</i>	Pickeral Weed	3.0 to 2.0	3' o.c.	B.R.	260	
<i>Eleocharis spp.</i>	Spikerush	2.5 to 1.0	3' o.c.	B.R.	260	
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	260	
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	260	
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	260	
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	6	
Total Plants					1,606	

Total Linear Feet of Erosion	1566
Total Square Feet of Planting Area	12528
Total Plants Needed	1606

Bare Root planting material will be installed 3 feet on center

Planting will occur from the MHWL for distance of 8 ft out into the Water

At a 4:1 slope it is anticipated plants will be installed from control elevation to approximately 2 to 2.5' water depth

Wentworth Estates - Acqua Subdivision, Residential

Priority Rating: 3

Control Elevation: 3.0' NGVD, Basin C

Wentworth Estates Littoral Planting Chart Acqua Subdivision, Residential						
Scientific Name	Common Name	Elevation NGVD	Spacing	Specification	Quantity	Unit Cost Installed
<i>Canna flaccida</i>	Yellow Canna	3.0	3' o.c.	B.R.	40	\$2.50
<i>Sagittaria latifolia</i>	Duck Potato	3.0 to 2.0	3' o.c.	B.R.	260	\$2.50
<i>Pontederia cordata</i>	Pickereel Weed	3.0 to 2.0	3' o.c.	B.R.	260	\$2.50
<i>Eleocharis</i> spp.	Spikerush	2.5 to 1.0	3' o.c.	B.R.	260	\$2.50
<i>Thalia geniculata</i>	Fire Flag	2.5 to 1.0	3' o.c.	B.R.	260	\$2.50
<i>Schoenoplectus tabernaemontani</i>	Softstem bullrush	2.5 to 0.5	3' o.c.	B.R.	260	\$2.50
<i>Juncus effusus</i>	Soft Rush	2.5 to 0.5	3' o.c.	B.R.	260	\$2.50
<i>Nymphaea odorata</i>	Fragrant waterlily	1.0 to -1.0	3' o.c.	B.R.	6	\$2.50
Total Cost for Plant purchase and Installation						\$4,000.00

1,606