



**STONEBROOK AT VENICE
COMMUNITY DISTRICT DEVELOPMENT**

STORMWATER EROSION REPORT

JUNE 2019

Prepared by:



Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS™



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Introduction

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STONEYBROOK AT VENICE COMMUNITY DEVELOPMENT DISTRICT

The following report contains information pertaining to related subjects of the Stoneybrook at Venice Surface Water Management System:

1. Stoneybrook at Venice Lake Bank Erosion, HOA Drainage Installations and Corrective Modifications, and Financial Impacts Spreadsheet
2. Stoneybrook at Venice Photos and Maps

Stoneybrook at Venice Community Development District (CDD) Staff has performed an assessment of current lake bank conditions within and abutting residential development including roadways and amenities, 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 (SFWMD) concerning eroded lake banks.

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. 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, and / or storm or disaster events along with drainage and rainwater leader installations within the lakes. The ground slope in the lake maintenance easements within many of the lakes are deteriorated, and have been compromised in some 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 the water's edge.

This report provides the linear footage per lake of the amount of lake bank (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. This report also contains the estimated fiscal impact to provide these lake improvements.

ERODED LAKE BANK SHORELINE RECONSTRUCTION

Lake bank shoreline erosion in numerous lakes within the Stoneybrook at Venice community can be addressed by three alternative methods. These options include importing and adding fill and regrading; excavating fill from the lakes with heavy equipment and regrading; and dredging (recovering) fill from the lakes 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 homeowners' 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 occur. These two options will fulfill the re-establishment of the lake bank slopes, but will not ensure the present erosion condition will not recur, 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 to 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 re-establish 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 dredged 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 the finish grading above and below the mean water level. Sodding of all disturbed areas above the water level will then be accomplished.

HOMEOWNERS ASSOCIATION DRAINAGE MODIFICATIONS

It is evident that certain HOA's have previously performed drainage modifications to some of the properties / lakes to address drainage concerns. The modifications include yard drains in front and rear yards, HDPE drain lines from rainwater gutters piped into and adjacent to the lake's water edge, and yard drains installed with HDPE piping into existing lakes. Some of the HDPE piping has been installed at improper elevations / locations and are adding to the erosion difficulties that presently exist. Also, some 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 and connecting directly 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 \$84.00 per cubic yd. Equipment \$165.00 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 = | \$1,156,690.00 |
| 5 ft. width enclosed woven Geo-Tube fabric installation with 3 ft. sacrificial bag = | \$1,343,810.00 |
| Littoral shelf wetland planting within lakes shoreline of Stoneybrook CDD = | \$96,000.00 |
| Capital Program administration / CEI inspection and Surveying requirements = | \$245,000.00 |
| Total Expenditures | \$2,841,500.00 |
| Lake banks adjacent to residential properties = | \$1,806,000.00 |
| Lake banks adjacent to non-residential properties = | \$694,500.00 |

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 |

STONEBROOK AT VENICE CDD

| <u>LAKE NUMBER</u> | <u>PRIORITY RATING</u> |
|--|------------------------|
| Lakes - 18, 35 | 5 |
| Lakes - 17, 23, 24, 27, 32, 40 | 4 |
| Lakes - 12, 14, 26,34 | 3 |
| Lakes - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 16, 25, 28, 31, 33, 37, 39 | 2 |
| Lakes - 15, 20, 21, 22, 29, 30, 36, 38 | 1 |
| Lake - 19 | 0 |

**Stoneybrook at Venice
Lake Bank Erosion, Bank
Slope Corrective
Modifications, and Financial
Impacts Spreadsheet**

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|--|--|
| | Lake Number 1 | Lake Number 2 |
| Lake Bank Conditions | 12" to 18" Drop-off to water Rating - 2 | 15" Drop-off to water Rating - 2 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Residential - 890 L.F. / Non - residential - 212 L.F. | Residential - 810 L.F. / Non - residential - 200 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 5 ft. bag width @ \$51.00 per ft. x 890 L.F. = \$45,390.00 Non-residential - 5 ft. bag width @ \$51.00 per ft. x 212 L.F. = \$10,812.00 | Residential - 5 ft. bag width @ \$51.00 per ft. x 810 L.F. = \$41,310.00 Non-residential - 5 ft. bag width @ \$51.00 per ft. x 200 L.F. = \$10,200.00 |
| Lake Bank Encroachment(s) | No encroachment | No encroachment |
| Existing HOA Drainage Installations | None identified | None identified |
| Square Feet of Lake | 72,035 sq. ft. or 1.7 acres | 47,132 sq. ft. or 1.1 acres |
| Subdivision Improvements Costs | \$56,202.00 | \$51,510.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|--|--|
| | Lake Number 3 | Lake Number 4 |
| Lake Bank Conditions | 12" to 18" Drop-off to water Rating - 2 | 18" Drop-off to water Rating - 2 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Residential - 1,242 L.F. / Non - residential - 490 L.F. | Residential - 1,300 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 5 ft. bag width @ \$51.00 per ft. x 1,242 L.F. = \$63,342.00 Non-residential - 5 ft. bag width @ \$51.00 per ft. x 490 L.F. = \$24,990.00 | Residential - 5 ft. bag width @ \$51.00 per ft. x 1,300 L.F. = \$66,300.00 |
| Lake Bank Encroachment(s) | No encroachment | No encroachment |
| Existing HOA Drainage Installations | None identified | None identified |
| Square Feet of Lake | 103,653 sq. ft. or 2.4 acres | 73,440 sq. ft. or 1.7 acres |
| Subdivision Improvements Costs | \$88,332.00 | \$66,300.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|--|--|
| | Lake Number 5 | Lake Number 6 |
| Lake Bank Conditions | 12" to 18" Drop-off to water Rating - 2 | 18" Drop-off to water Rating - 2 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Residential - 560 L.F. / Non - residential - 451 L.F. | Residential - 744 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 5 ft. bag width @ \$51.00 per ft. x 560 L.F. = \$28,560.00 Non-residential - 5 ft. bag width @ \$51.00 per ft. x 451 L.F. = \$23,000.00 | Residential - 5 ft. bag width @ \$51.00 per ft. x 744 L.F. = \$37,944.00 |
| Lake Bank Encroachment(s) | No encroachment | No encroachment |
| Existing HOA Drainage Installations | None identified | None identified |
| Square Feet of Lake | 34,690 sq. ft. or .8 acres | 34,531 sq. ft. or .8 acres |
| Subdivision Improvements Costs | \$51,561.00 | \$37,944.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

Lakes

Item

Lake Number 7

Lake Number 8

Lake Bank Conditions

12" to 15" Drop-off to water
Rating - 2

12" to 16" Drop-off to water
Rating - 2

Lake Bank Material (Rip-rap, Fill, Sod)

Fill - Sod

Fill - Sod

Lake Bank Linear Footage (L.F.) Requiring Repair

Residential - 264 L.F.

Non-residential - 1,062 L.F.

Method of Lake Bank Restoration

Dredging / recovery of lake material fill for Geo-tube installation
on lake bank slope

Dredging / recovery of lake material fill for Geo-tube
installation on lake bank slope

Cost per / ft. of Lake Bank Repair

Residential - 5 ft. bag width @ \$51.00 per ft. x 264 L.F. =
\$13,464.00

Residential - 5 ft. bag width @ \$51.00 per ft. x 1,062 L.F. =
\$54,162.00

Lake Bank Encroachment(s)

No encroachment

No encroachment

Existing HOA Drainage Installations

None identified

None identified

Square Feet of Lake

13,591 sq. ft. or .3 acres

91,960 sq. ft. or 2.1 acres

Subdivision Improvements Costs

\$13,464.00

\$54,162.00

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|--|--|
| | <p align="center">Lake Number 9</p> <p align="center">15" Drop-off to water Rating - 2</p> <p align="center">Fill - Sod</p> | <p align="center">Lake Number 10</p> <p align="center">12" to 18" Drop-off to water Rating - 2</p> <p align="center">Fill - Sod</p> |
| Lake Bank Conditions | | |
| Lake Bank Material (Rip-rap, Fill, Sod) | | |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Non-residential - 627 L.F. | Residential - 380 L.F. / Non-Residential - 367 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 5 ft. bag width @ \$51.00 per ft. x 627 L.F. = \$31,977.00 | Residential - 5 ft. bag width @ \$51.00 per ft. x 380 L.F. = \$19,380.00 Non-residential - 5 ft. bag width @ \$51.00 per ft. x 367 L.F. = \$18,717.00 |
| Lake Bank Encroachment(s) | No encroachment | No encroachment |
| Existing HOA Drainage Installations | None identified | None identified |
| Square Feet of Lake | 22,589 sq. ft. or .52 acres | 32,933 sq. ft. or .76 acres |
| Subdivision Improvements Costs | \$31,977.00 | \$38,097.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

Lakes

Item

Lake Number 11

Lake Number 12

Lake Bank Conditions

18" Drop-off to water
Rating - 3

12" to 24" Drop-off to water
Rating - 3

Lake Bank Material (Rip-rap, Fill, Sod)

Fill - Sod

Fill - Sod

Lake Bank Linear Footage (L.F.) Requiring Repair

Residential - 1,203 L.F. / Non-Residential - 840 L.F.

Residential - 738 L.F. / Non-Residential - 1,516 L.F.

Method of Lake Bank Restoration

Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope

Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope

Cost per / ft. of Lake Bank Repair

Residential - 5 ft. bag width @ \$51.00 per ft. x 1,203 L.F. = \$61,353.00
Non-residential - 5 ft. bag width @ \$51.00 per ft. x 840 L.F. = \$42,840.00

Residential - 7 ft. bag width @ \$60.00 per ft. x 738 L.F. = \$44,280.00
Non-residential - 7 ft. bag width @ \$60.00 per ft. x 1,516 L.F. = \$90,960.00

Lake Bank Encroachment(s)

No encroachment

No encroachment

Existing HOA Drainage Installations

None identified

None identified

Square Feet of Lake

143,524 sq. ft. or 3.3 acres

170,058 sq. ft. or 3.9 acres

Subdivision Improvements Costs

\$104,193.00

\$135,240.00

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|--|---|
| Lake Bank Conditions | <p>Lake Number 13</p> <p>12" to 18" Drop-off to water Rating - 2</p> <p>Fill - Sod</p> | <p>Lake Number 14</p> <p>18" Drop-off to water Rating - 2</p> <p>Fill - Sod</p> |
| Lake Bank Material (Rip-rap, Fill, Sod) | <p>Residential - 620 L.F. / Non-Residential - 158 L.F.</p> | |
| Lake Bank Linear Footage (L.F.) Requiring Repair | <p>Residential - 620 L.F. / Non-Residential - 158 L.F.</p> | |
| Method of Lake Bank Restoration | <p>Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope</p> | |
| Cost per / ft. of Lake Bank Repair | <p>Residential - 5 ft. bag width @ \$51.00 per ft. x 620 L.F. = \$31,620.00</p> <p>Non-residential - 5 ft. bag width @ \$51.00 per ft. x 158 L.F. = \$8,058.00</p> | <p>Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope</p> <p>Non-Residential - 7 ft. bag width @ \$60.00 per ft. x 762 L.F. = \$45,720.00</p> |
| Lake Bank Encroachment(s) | <p>No encroachment</p> | |
| Existing HOA Drainage Installations | <p>None identified</p> | |
| Square Feet of Lake | <p>22,836 sq. ft. or .5 acres</p> | <p>26,909 sq. ft. or .6 acres</p> |
| Subdivision Improvements Costs | <p>\$39,678.00</p> | <p>\$45,720.00</p> |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|--|--|
| | Lake Number 15 | Lake Number 16 |
| Lake Bank Conditions | 10" to 12" Drop-off to water Rating - 1 | 14" Drop-off to water Rating - 2 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Non-Residential - 730 L.F. | Residential - 326 L.F. / Non-Residential - 900 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Non-Residential - 5 ft. bag width @ \$51.00 per ft. x 730 L.F. = \$37,230.00 | Residential - 5 ft. bag width @ \$51.00 per ft. x 326 L.F. = \$16,626.00 Non-residential - 5 ft. bag width @ \$51.00 per ft. x 900 L.F. = \$45,900.00 |
| Lake Bank Encroachment(s) | No encroachment | No encroachment |
| Existing HOA Drainage Installations | None identified | None identified |
| Square Feet of Lake | 30,969 sq. ft. or .7 acres | 65,078 sq. ft. or 1.49 acres |
| Subdivision Improvements Costs | \$37,230.00 | \$62,526.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| | Lakes |
|--|--|
| Item | Lake Number 17 |
| Lake Bank Conditions | Lake Number 18 12" to 36" Drop-off to water Rating - 5 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Residential - 394 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 7 ft. bag width @ \$60.00 per ft. x 394 L.F. = \$23,640.00 |
| Lake Bank Encroachment(s) | No encroachment |
| Existing HOA Drainage Installations | None identified |
| Square Feet of Lake | 261,739 sq. ft. or 6 acres |
| Subdivision Improvements Costs | \$23,640.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|------------------------------------|--|
| | Lake Number 19 | Lake Number 20 |
| Lake Bank Conditions | 4" Drop-off to water Rating - 0 | 12" Drop-off to water Rating - 1 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | No repairs proposed | Residential - 366 L.F. |
| Method of Lake Bank Restoration | None | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | None | Residential - 5 ft. bag width @ \$51.00 per ft. x 366 L.F. = \$18,666.00 |
| Lake Bank Encroachment(s) | No encroachment | No encroachment |
| Existing HOA Drainage Installations | None identified | None identified |
| Square Feet of Lake | 66,394 sq. ft. or 1.5 acres | 8,300 sq. ft. or .2 acres |
| Subdivision Improvements Costs | \$0.00 | \$18,666.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|--|--|
| | Lake Number 21 | Lake Number 22 |
| Lake Bank Conditions | 12" Drop-off to water Rating - 1 | 12" Drop-off to water Rating - 1 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Residential - 141 L.F. | Non-Residential - 294 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 5 ft. bag width @ \$51.00 per ft. x 141 L.F. = \$7,191.00 | Non-Residential - 5 ft. bag width @ \$51.00 per ft. x 294 L.F. = \$14,994.00 |
| Lake Bank Encroachment(s) | No encroachment | No encroachment |
| Existing HOA Drainage Installations | None identified | None identified |
| Square Feet of Lake | 45,097 sq. ft. or 1 acre | 7,513 sq. ft. or .18 acres |
| Subdivision Improvements Costs | \$7,191.00 | \$14,994.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|--|--|
| | Lake Number 23 | Lake Number 24 |
| Lake Bank Conditions | 12" to 30" Drop-off to water Rating - 4 | 12" to 30" Drop-off to water Rating - 4 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Residential - 1,466 L.F. | Residential - 1,470 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 7 ft. bag width @ \$60.00 per ft. x 1,466 L.F. = \$87,960.00 | Residential - 7 ft. bag width @ \$60.00 per ft. x 1,470 L.F. = \$88,200.00 |
| Lake Bank Encroachment(s) | No encroachment | No encroachment |
| Existing HOA Drainage Installations | None identified | None identified |
| Square Feet of Lake | 99,458 sq. ft. or 2.28 acres | 152,459 sq. ft. or 3.5 acres |
| Subdivision Improvements Costs | \$87,960.00 | \$88,200.00 |

| Stoneybrook at Venice CDD | |
|--|--|
| Residential Lake Bank Investigation | |
| Item | Lakes |
| | Lake Number 25 |
| Lake Bank Conditions | 14" Drop-off to water Rating - 2 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Residential - 447 L.F. / Non-residential - 200 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 5 ft. bag width @ \$51.00 per ft. x 447 L.F. = \$22,797.00 Non-residential - 5 ft. bag width @ \$51.00 per ft. x 200 L.F. = \$10,200.00 |
| Lake Bank Encroachment(s) | No encroachment |
| Existing HOA Drainage Installations | None identified |
| Square Feet of Lake | 23,503 sq. ft. or .54 acres |
| Subdivision Improvements Costs | \$32,979.00 |
| | Lake Number 26 |
| Lake Bank Conditions | 12" to 24" Drop-off to water Rating - 3 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Residential - 1,520 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 7 ft. bag width @ \$60.00 per ft. x 1,520 L.F. = \$91,200.00 |
| Lake Bank Encroachment(s) | No encroachment |
| Existing HOA Drainage Installations | None identified |
| Square Feet of Lake | 135,851 sq. ft. or 3.1 acres |
| Subdivision Improvements Costs | \$91,200.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|--|--|
| | Lake Number 27 | Lake Number 28 |
| Lake Bank Conditions | 12" to 30" Drop-off to water Rating - 4 | 15" Drop-off to water Rating - 2 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Residential - 1,340 L.F. | Residential - 200 L.F. / Non-residential - 500 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 7 ft. bag width @ \$60.00 per ft. x 1,340 L.F. = \$80,400.00 | Residential - 5 ft. bag width @ \$51.00 per ft. x 200 L.F. = \$10,200.00 Non-residential - 5 ft. bag width @ \$51.00 per ft. x 500 L.F. = \$25,500.00 |
| Lake Bank Encroachment(s) | No encroachment | No encroachment |
| Existing HOA Drainage Installations | None identified | None identified |
| Square Feet of Lake | 86,964 sq. ft. or 2.0 acres | 22,589 sq. ft. or .52 acres |
| Subdivision Improvements Costs | \$80,400.00 | \$35,700.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|--|--|
| | Lake Number 29 | Lake Number 30 |
| Lake Bank Conditions | 12" Drop-off to water Rating - 1 | 12" Drop-off to water Rating - 1 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Residential - 364 L.F. | Residential - 442 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 5 ft. bag width @ \$51.00 per ft. x 364 L.F. = \$18,564.00 | Residential - 5 ft. bag width @ \$51.00 per ft. x 442 L.F. = \$22,541.00 |
| Lake Bank Encroachment(s) | No encroachment | No encroachment |
| Existing HOA Drainage Installations | None identified | None identified |
| Square Feet of Lake | 25,412 sq. ft. or .58 acres | 42,660 sq. ft. or 1 acre |
| Subdivision Improvements Costs | \$18,564.00 | \$22,541.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|--|--|
| Lake Bank Conditions | Lake Number 31 14" Drop-off to water Rating - 2 | Lake Number 32 12" to 28" Drop-off to water Rating - 4 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Residential - 1,448 L.F. | Residential - 1,628 L.F. / Non-residential - 1,884 |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 5 ft. bag width @ \$51.00 per ft. x 1,448 L.F. = \$73,848.00 | Residential - 7 ft. bag width @ \$60.00 per ft. x 1,628 L.F. = \$97,680.00 Non-residential - 5 ft. bag width @ \$51.00 per ft. x 1,884 L.F. = \$96,084.00 |
| Lake Bank Encroachment(s) | No encroachment | No encroachment |
| Existing HOA Drainage Installations | None identified | None identified |
| Square Feet of Lake | 159,403 sq. ft. or 3.7 acres | 233,759 sq. ft. or 5.4 acres |
| Subdivision Improvements Costs | \$73,848.00 | \$193,764.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|--|--|
| | Lake Number 33 | Lake Number 34 |
| Lake Bank Conditions | 14" Drop-off to water Rating - 2 | 12" to 24" Drop-off to water Rating - 3 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Residential - 382 L.F. | Residential - 1,438 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 5 ft. bag width @ \$51.00 per ft. x 382 L.F. = \$19,482.00 | Residential - 7 ft. bag width @ \$60.00 per ft. x 1,438 L.F. = \$86,280.00 |
| Lake Bank Encroachment(s) | No encroachment | No encroachment |
| Existing HOA Drainage Installations | None identified | None identified |
| Square Feet of Lake | 35,033 sq. ft. or .8 acres | 91,799 sq. ft. or 2.1 acres |
| Subdivision Improvements Costs | \$19,482.00 | \$86,280.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|--|--|
| | Lake Number 35 | Lake Number 36 |
| Lake Bank Conditions | 12" to 36" Drop-off to water Rating - 5 | 12" Drop-off to water Rating - 1 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Residential - 1,220 L.F. / Non-residential - 860 L.F. | Residential - 650 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 7 ft. bag width @ \$60.00 per ft. x 1,220 L.F. = \$73,200.00 Non-residential - 5 ft. bag width @ \$51.00 per ft. x 860 L.F. = \$43,860.00 | Residential - 5 ft. bag width @ \$51.00 per ft. x 650 L.F. = \$33,150.00 |
| Lake Bank Encroachment(s) | No encroachment | No encroachment |
| Existing HOA Drainage Installations | None identified | None identified |
| Square Feet of Lake | 202,780 sq. ft. or 4.7 acres | 31,336 sq. ft. or .72 acres |
| Subdivision Improvements Costs | \$117,060.00 | \$33,150.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes | |
|--|--|--|
| | Lake Number 37 | Lake Number 38 |
| Lake Bank Conditions | 12" to 18" Drop-off to water Rating - 2 | 12" Drop-off to water Rating - 1 |
| Lake Bank Material (Rip-rap, Fill, Sod) | Fill - Sod | Fill - Sod |
| Lake Bank Linear Footage (L.F.) Requiring Repair | Residential - 1,142 L.F. | Residential - 447 L.F. |
| Method of Lake Bank Restoration | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope | Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope |
| Cost per / ft. of Lake Bank Repair | Residential - 5 ft. bag width @ \$51.00 per ft. x 1,142 L.F. = \$58,242.00 | Residential - 5 ft. bag width @ \$51.00 per ft. x 447 L.F. = \$22,797.00 |
| Lake Bank Encroachment(s) | No encroachment | No encroachment |
| Existing HOA Drainage Installations | None identified | None identified |
| Square Feet of Lake | 93,481 sq. ft. or 2.1 acres | 47,412 sq. ft. or 1.1 acres |
| Subdivision Improvements Costs | \$58,242.00 | \$22,797.00 |

Stoneybrook at Venice CDD

Residential Lake Bank Investigation

| Item | Lakes |
|--|--|
| Lake Bank Conditions | <p>Lake Number 39</p> <p>12" to 14" Drop-off to water Rating - 2</p> <p>Fill - Sod</p> |
| Lake Bank Material (Rip-rap, Fill, Sod) | <p>Lake Number 40</p> <p>12" to 28" Drop-off to water Rating - 4</p> <p>Fill - Sod</p> |
| Lake Bank Linear Footage (L.F.) Requiring Repair | <p>Residential - 1,322 L.F.</p> |
| Method of Lake Bank Restoration | <p>Dredging / recovery of lake material fill for Geo-tube installation on lake bank slope</p> |
| Cost per / ft. of Lake Bank Repair | <p>Residential - 5 ft. bag width @ \$51.00 per ft. x 1,322 L.F. = \$67,422.00</p> <p>Residential - 7 ft. bag width @ \$60.00 per ft. x 1,640 L.F. = \$98,400.00</p> <p>Non-residential - 7 ft. bag width @ \$60.00 per ft. x 2,760 L.F. = \$165,600.00</p> |
| Lake Bank Encroachment(s) | <p>No encroachment</p> |
| Existing HOA Drainage Installations | <p>None identified</p> |
| Square Feet of Lake | <p>90,493 sq. ft. or 2.1 acres</p> <p>316,184 sq. ft. or 7.26 acres</p> |
| Subdivision Improvements Costs | <p>\$67,422.00</p> <p>\$264,000.00</p> |

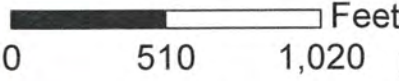


Stoneybrook
at Venice
Community Development District

**Stoneybrook at Venice
Water Bodies**

Legend

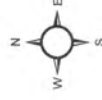
Water



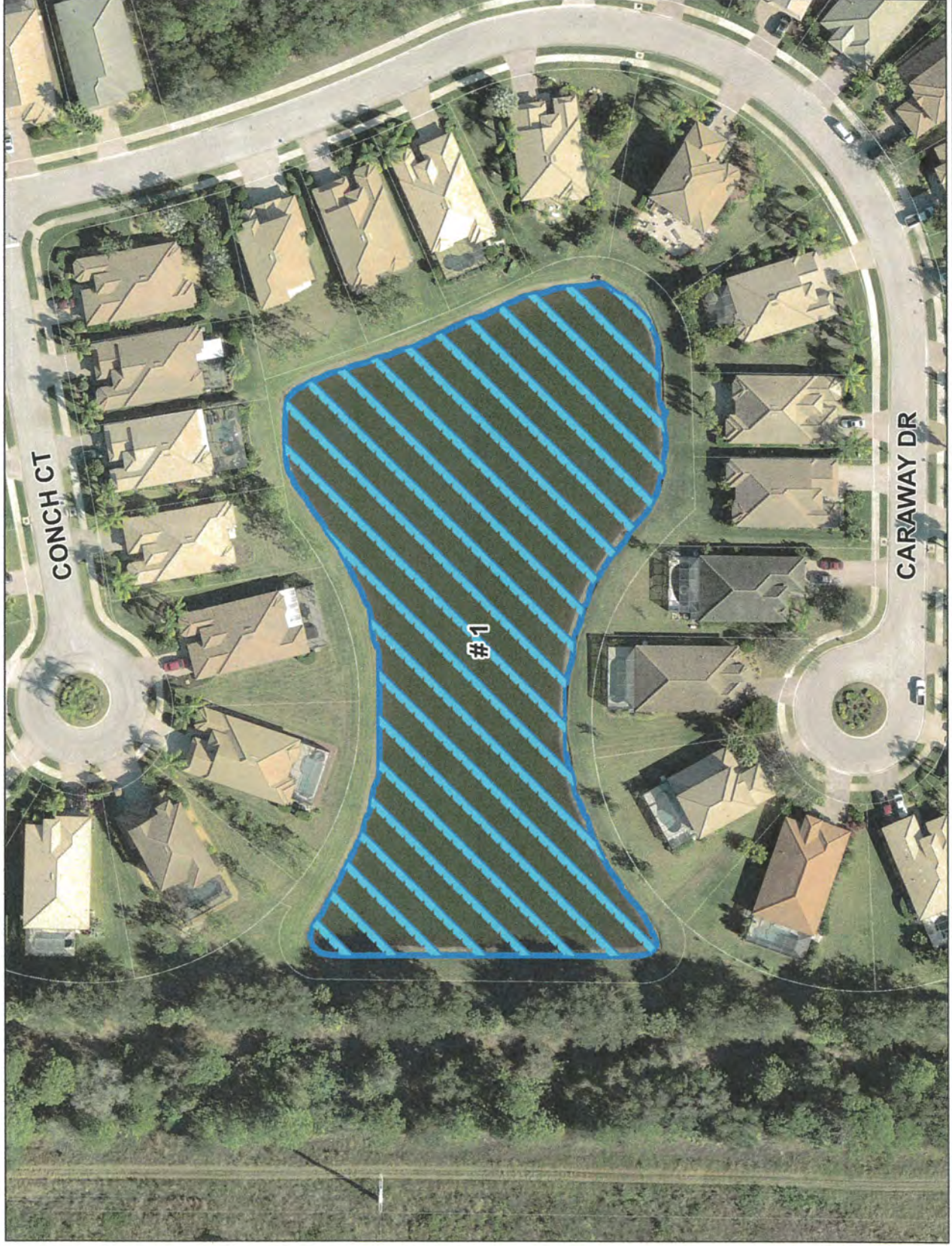
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Lake 1

Legend



Print Date: 5/23/2019



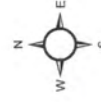




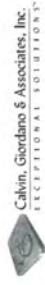


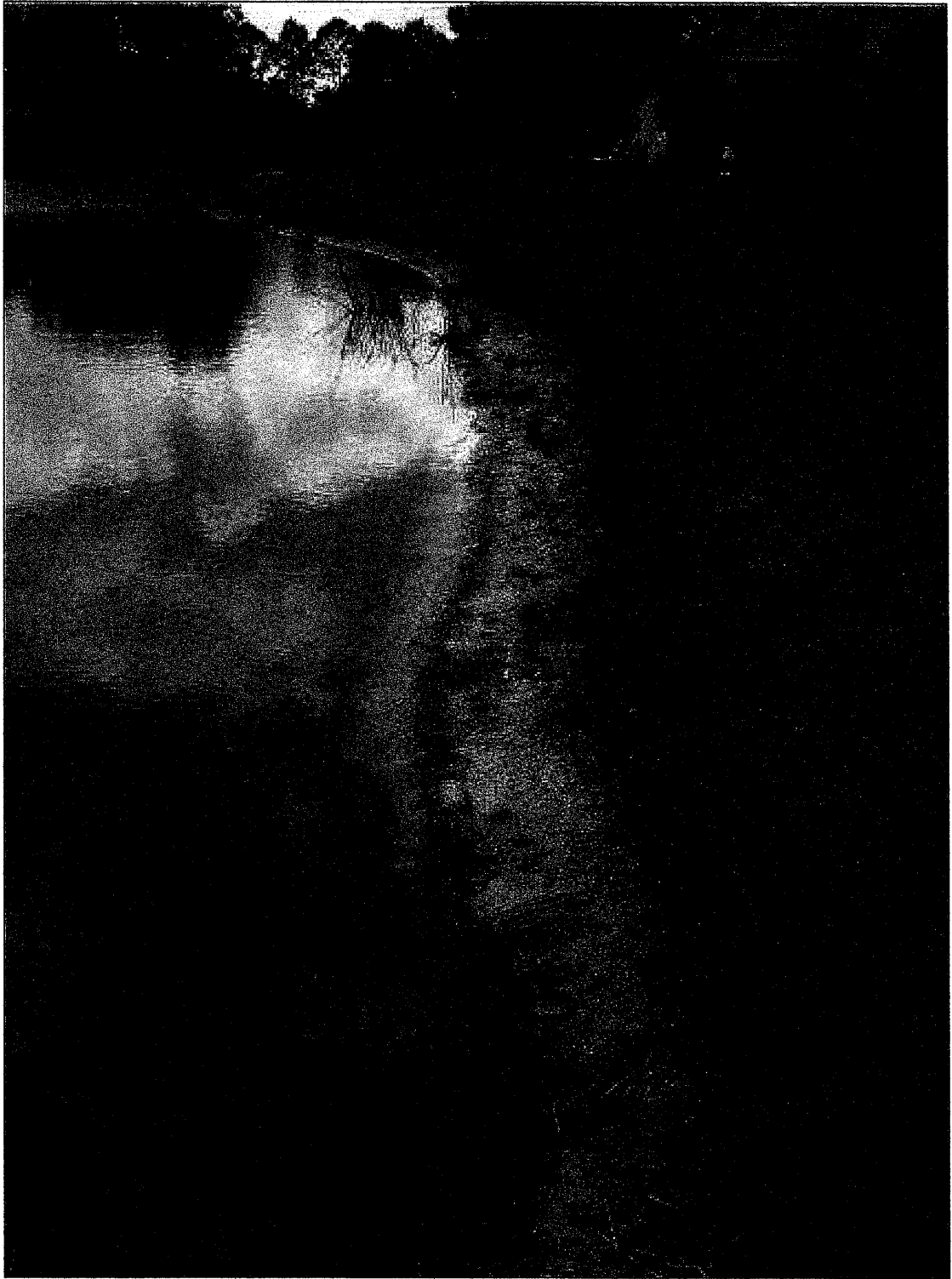


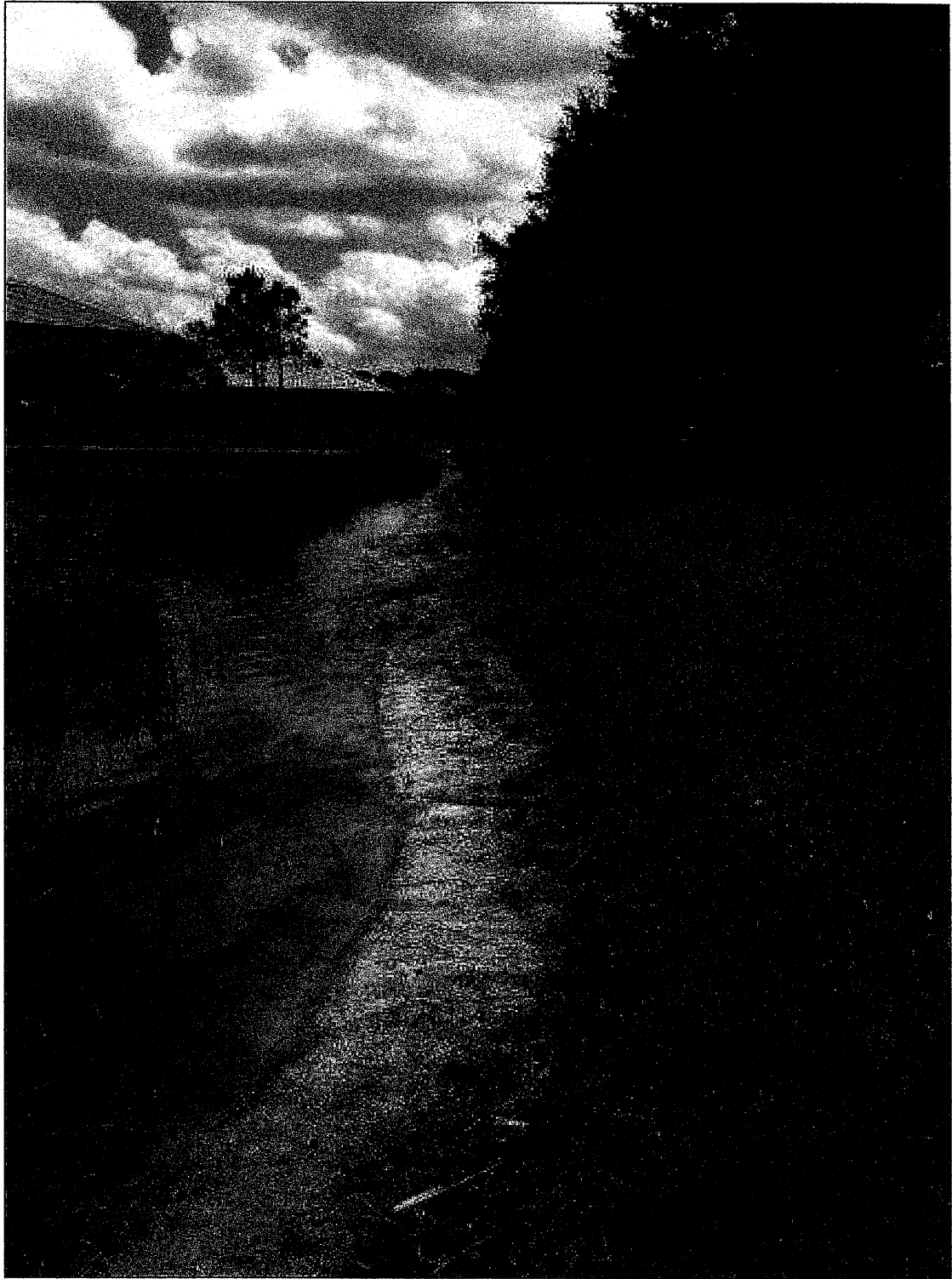
Lake 2



Print Date: 5/23/2019

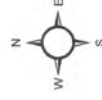




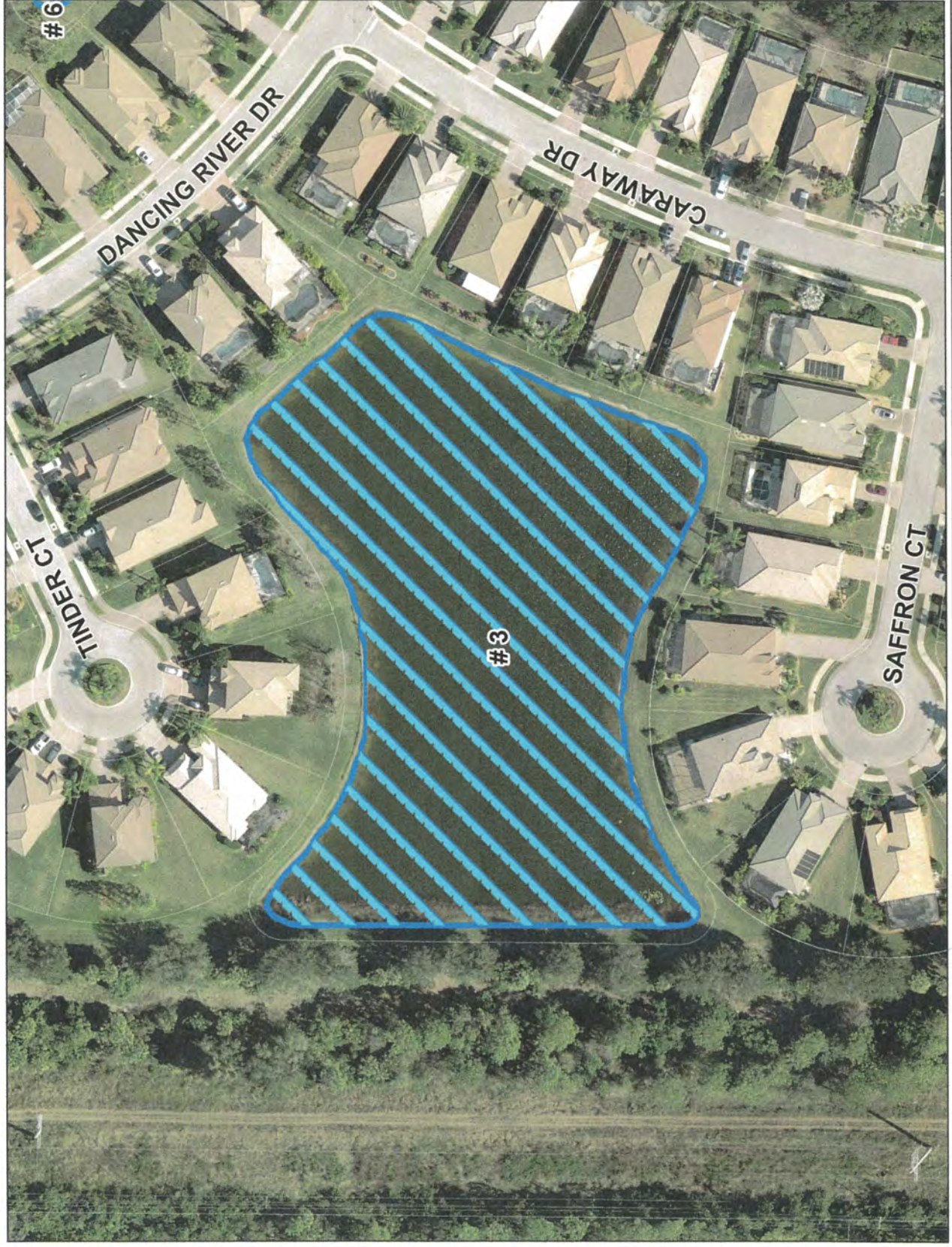
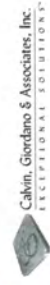




Lake 3



Print Date: 5/23/2019





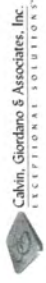


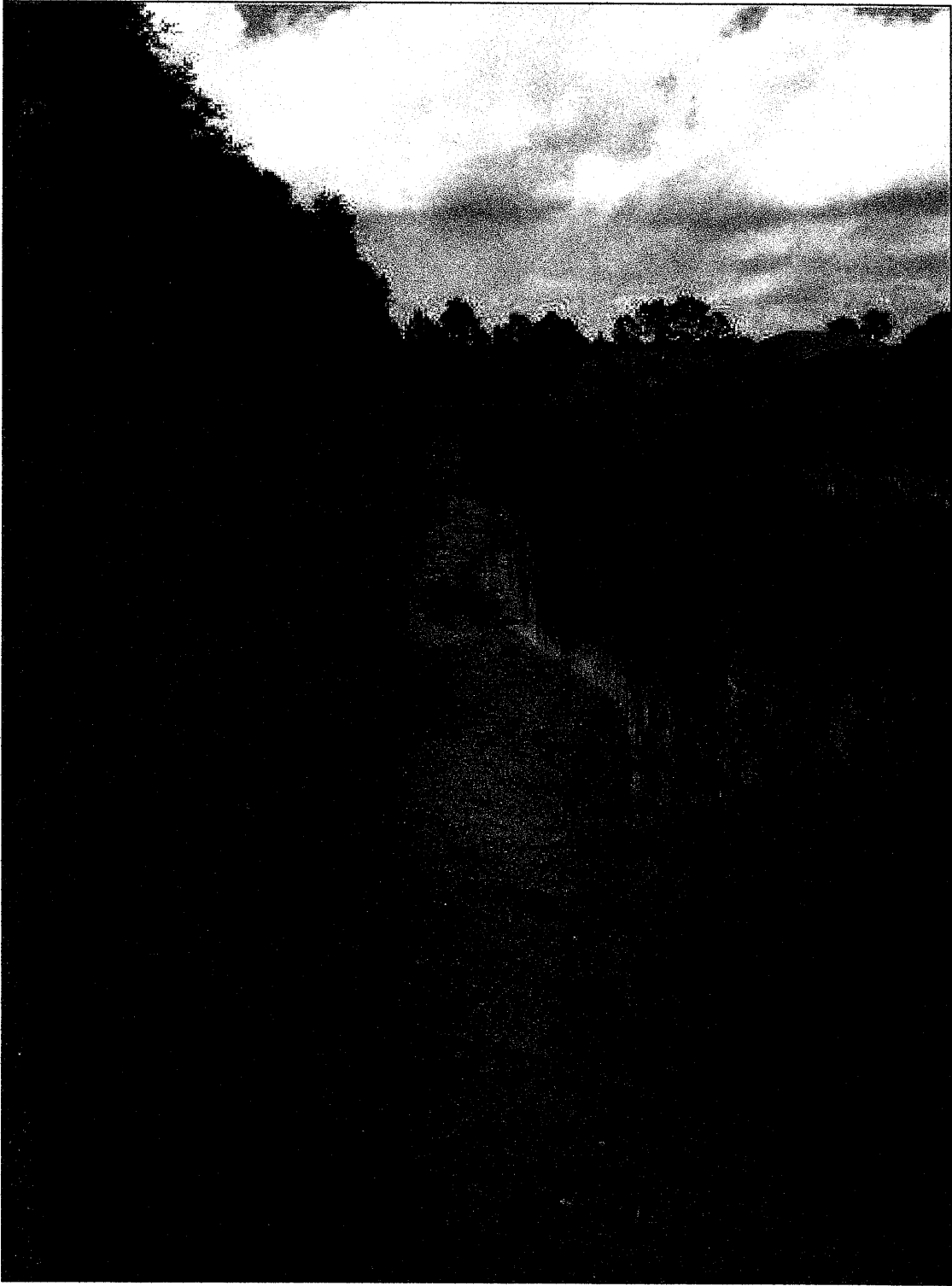


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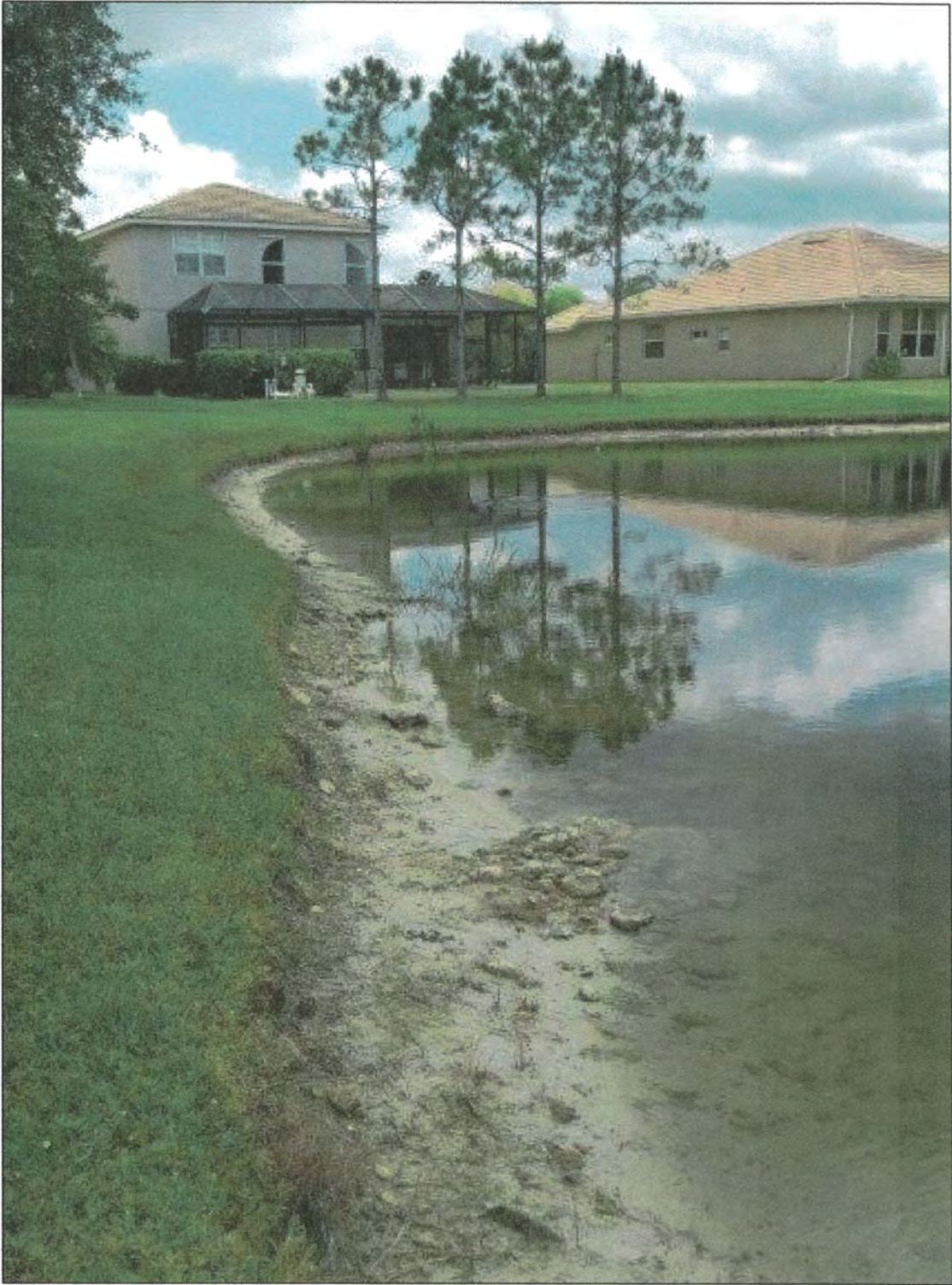


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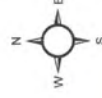








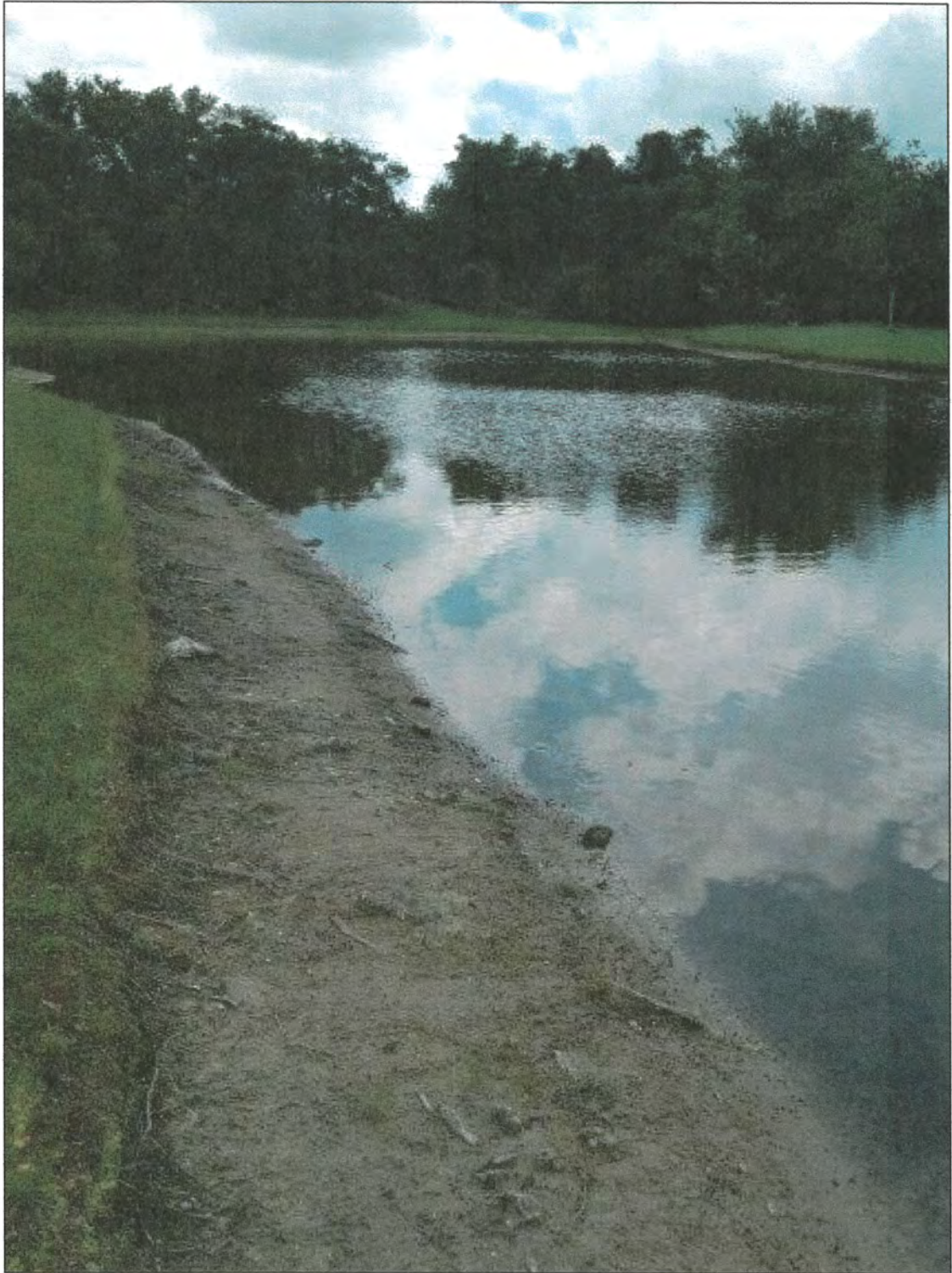
Lake 5

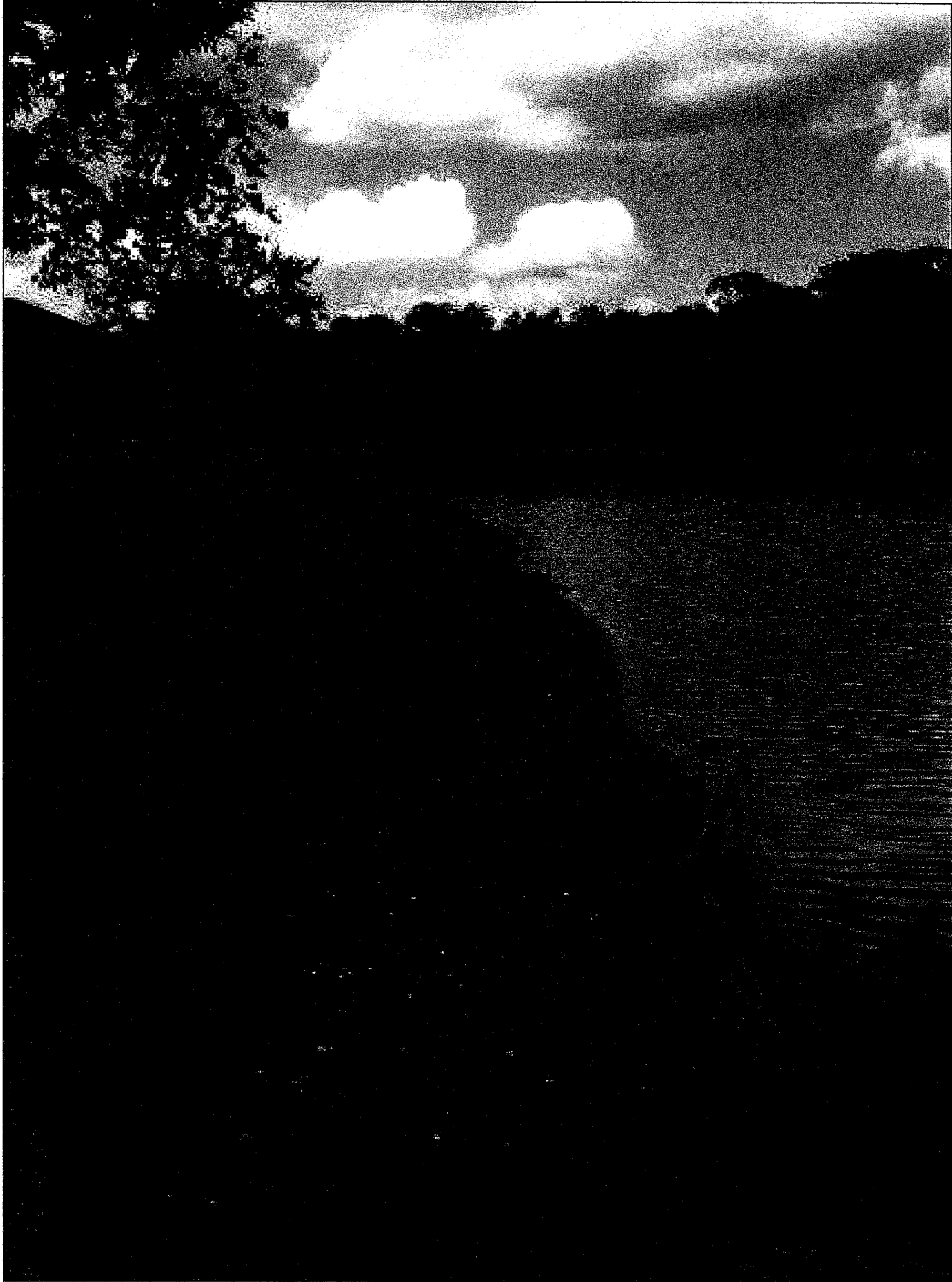


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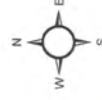






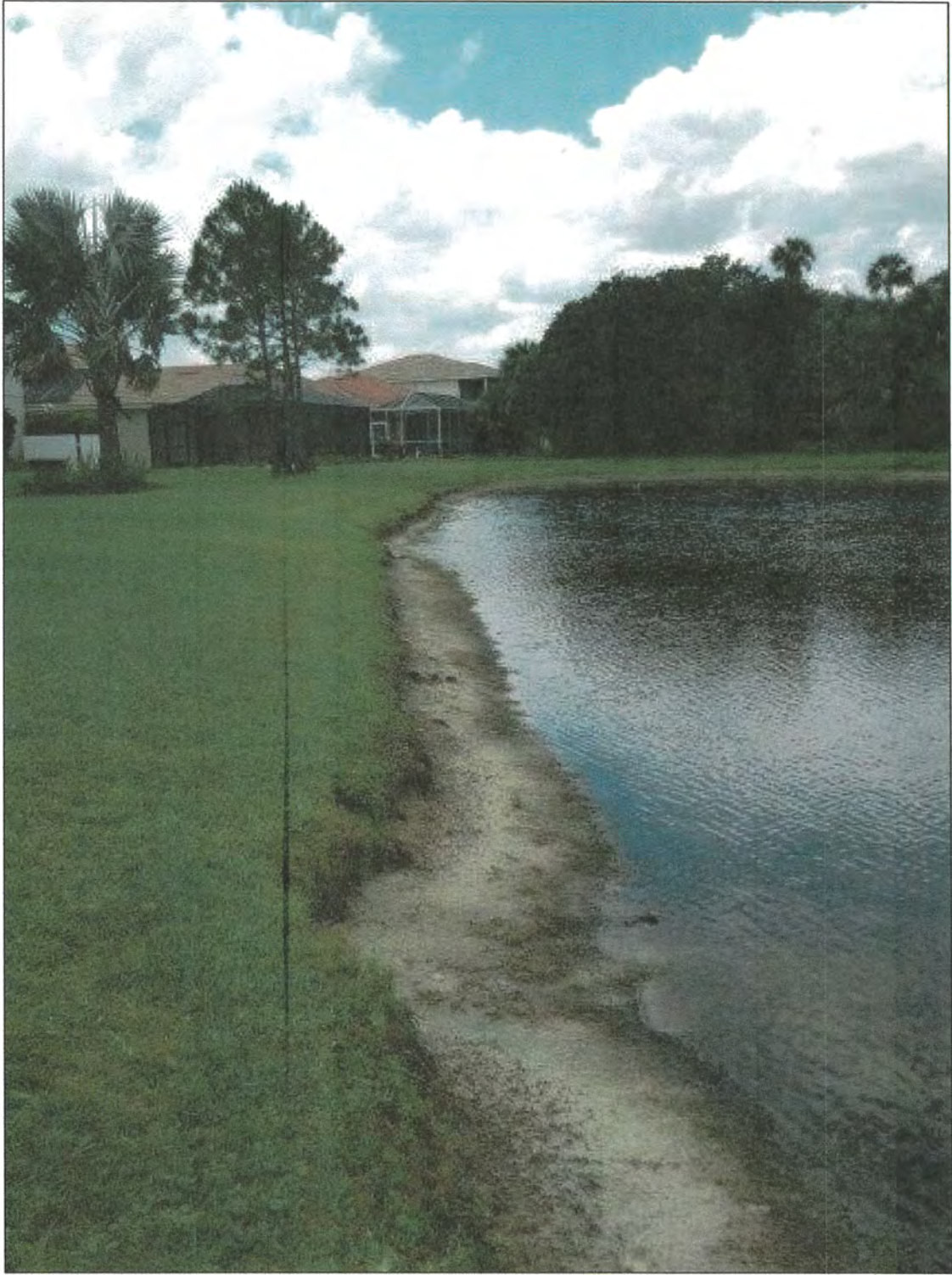


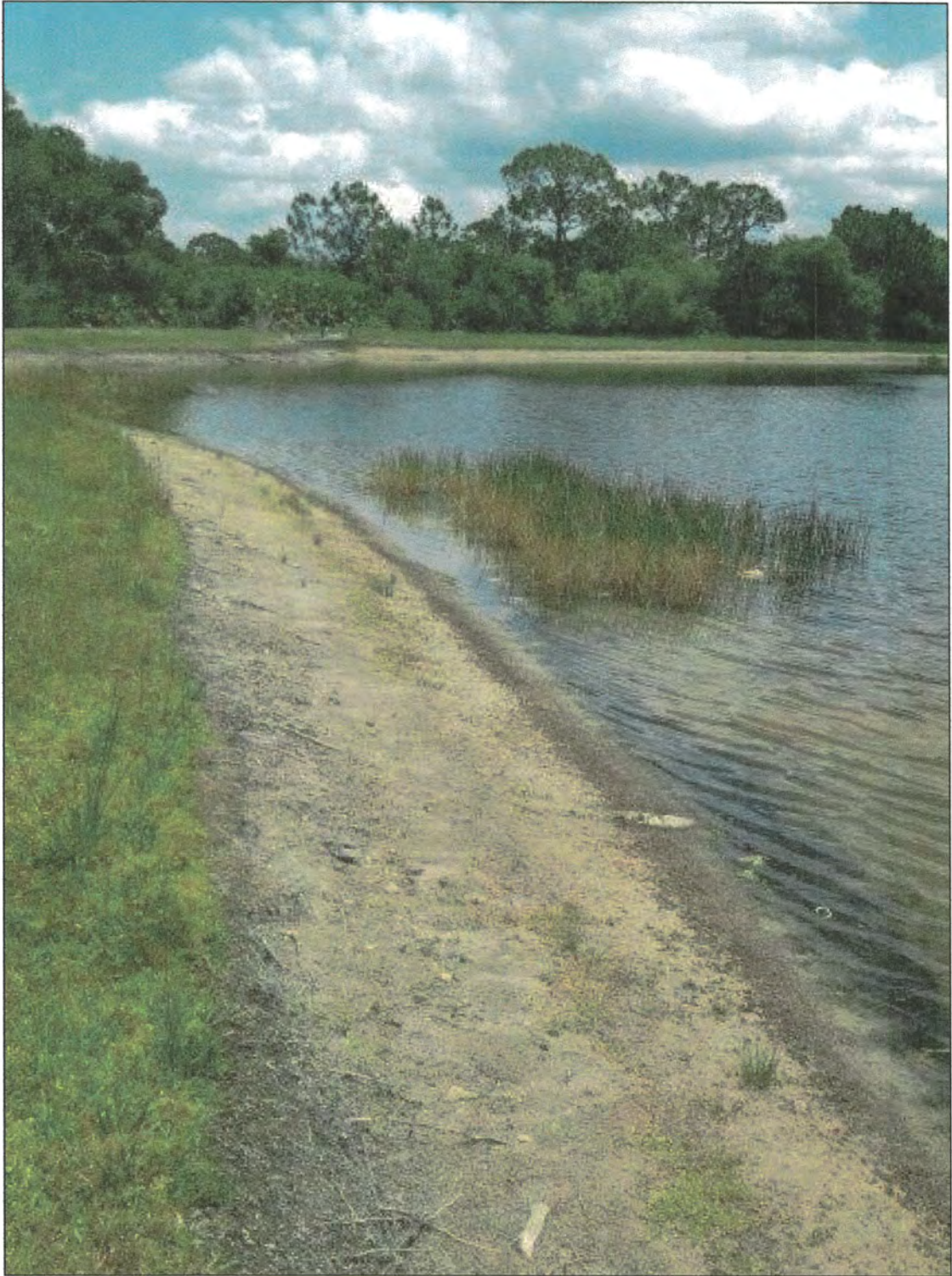
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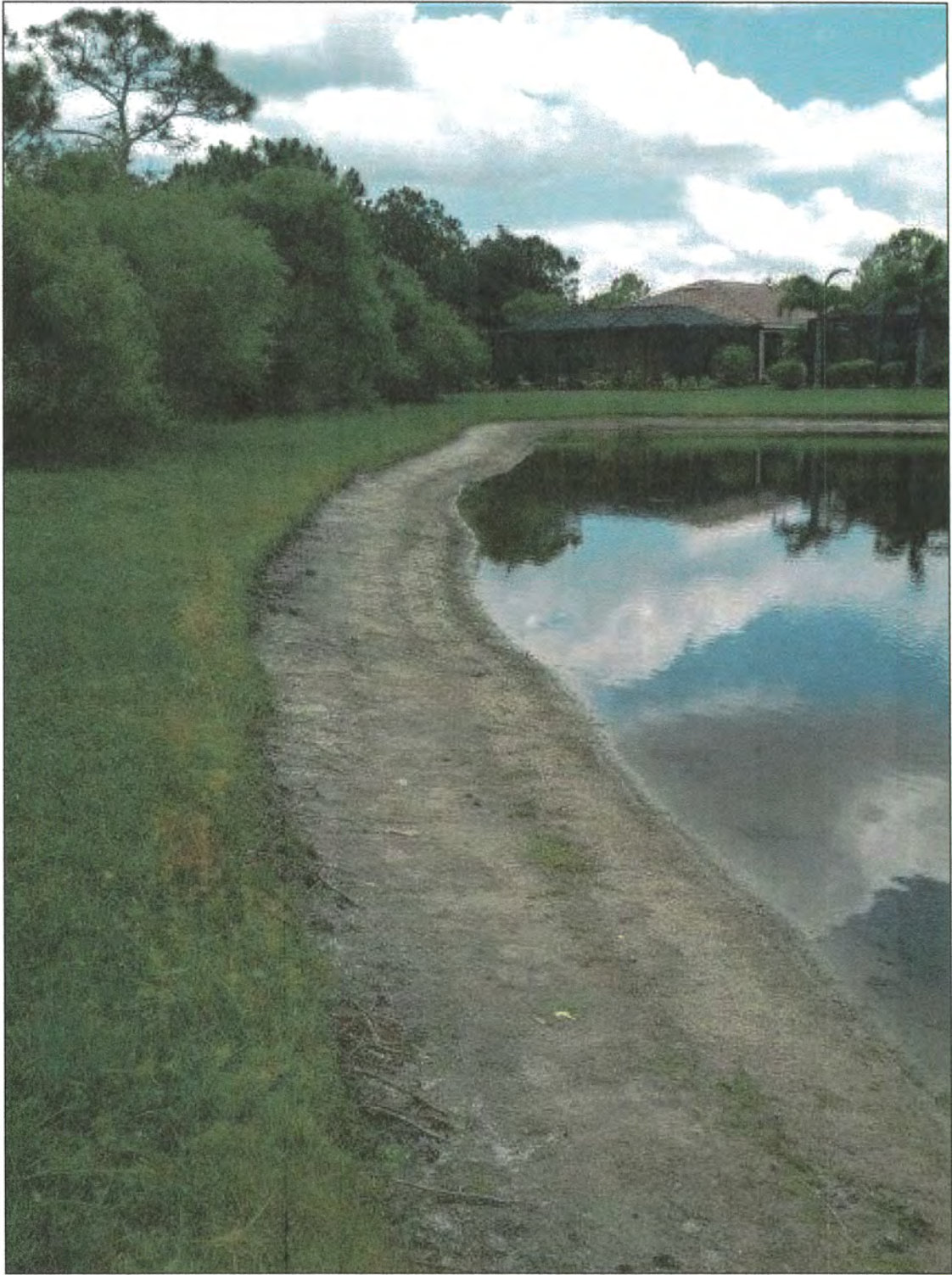


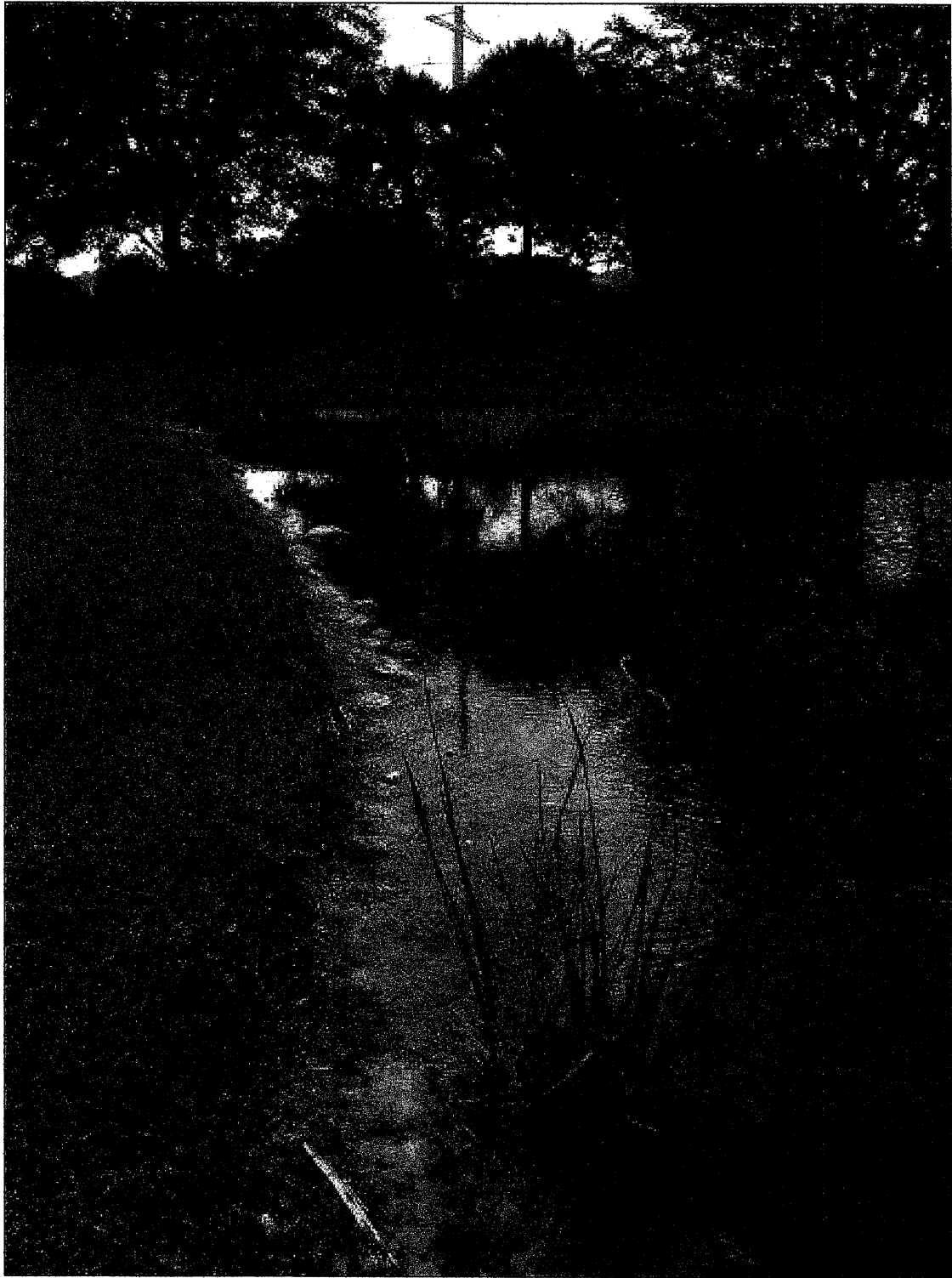
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Lake 7

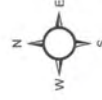


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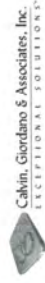


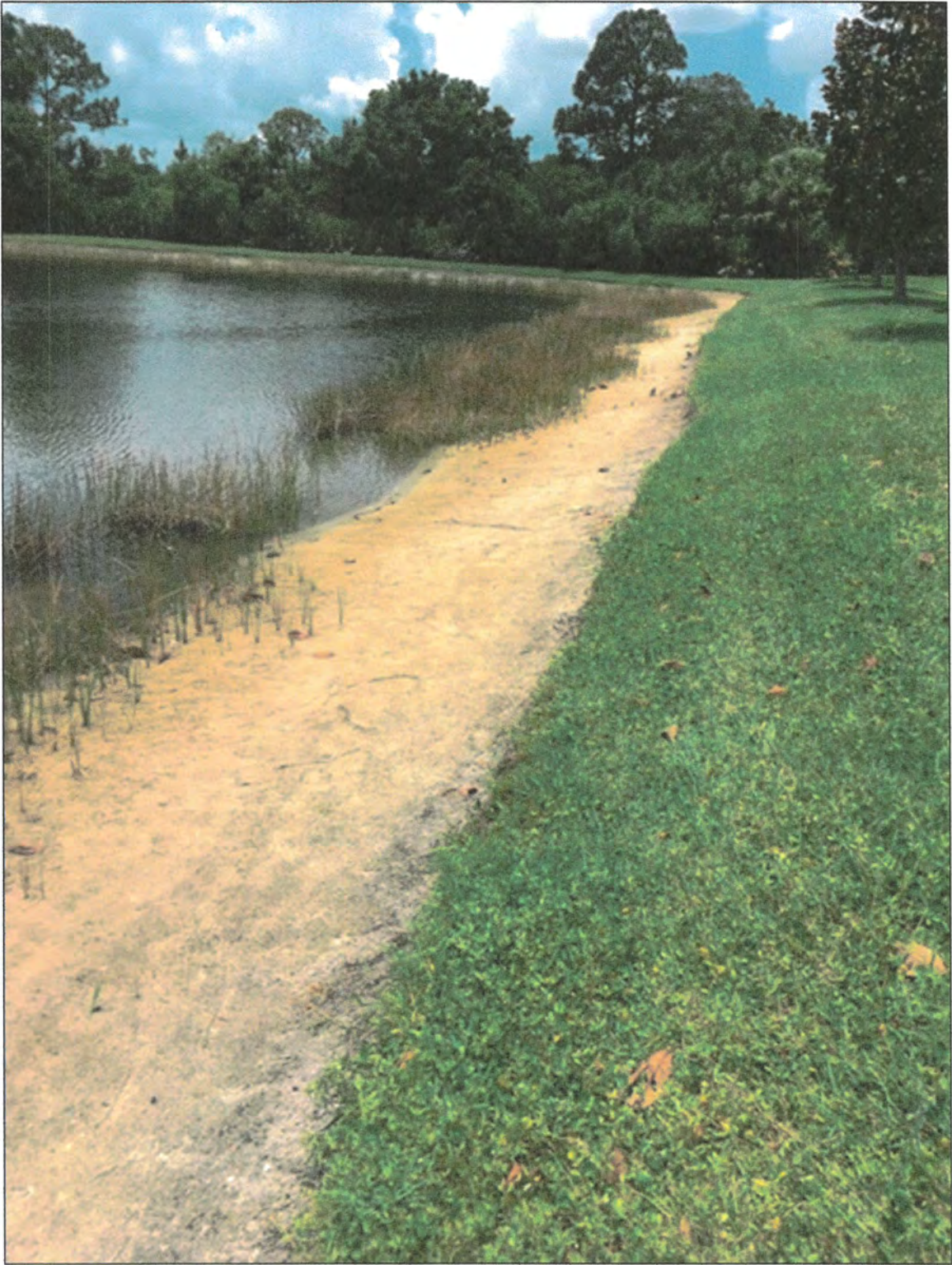


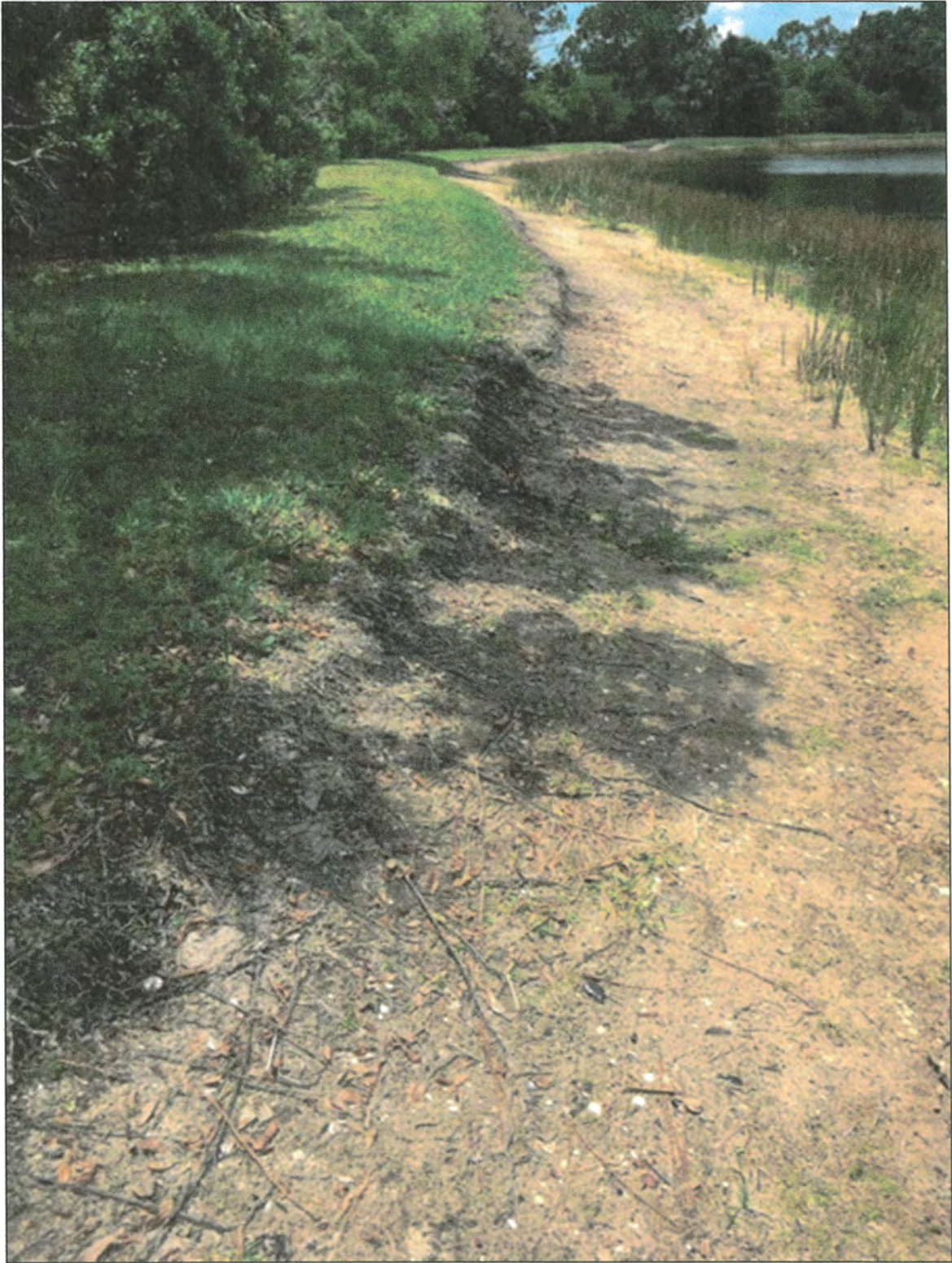
Lake 8



Print Date: 5/23/2019







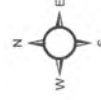


Lake 9

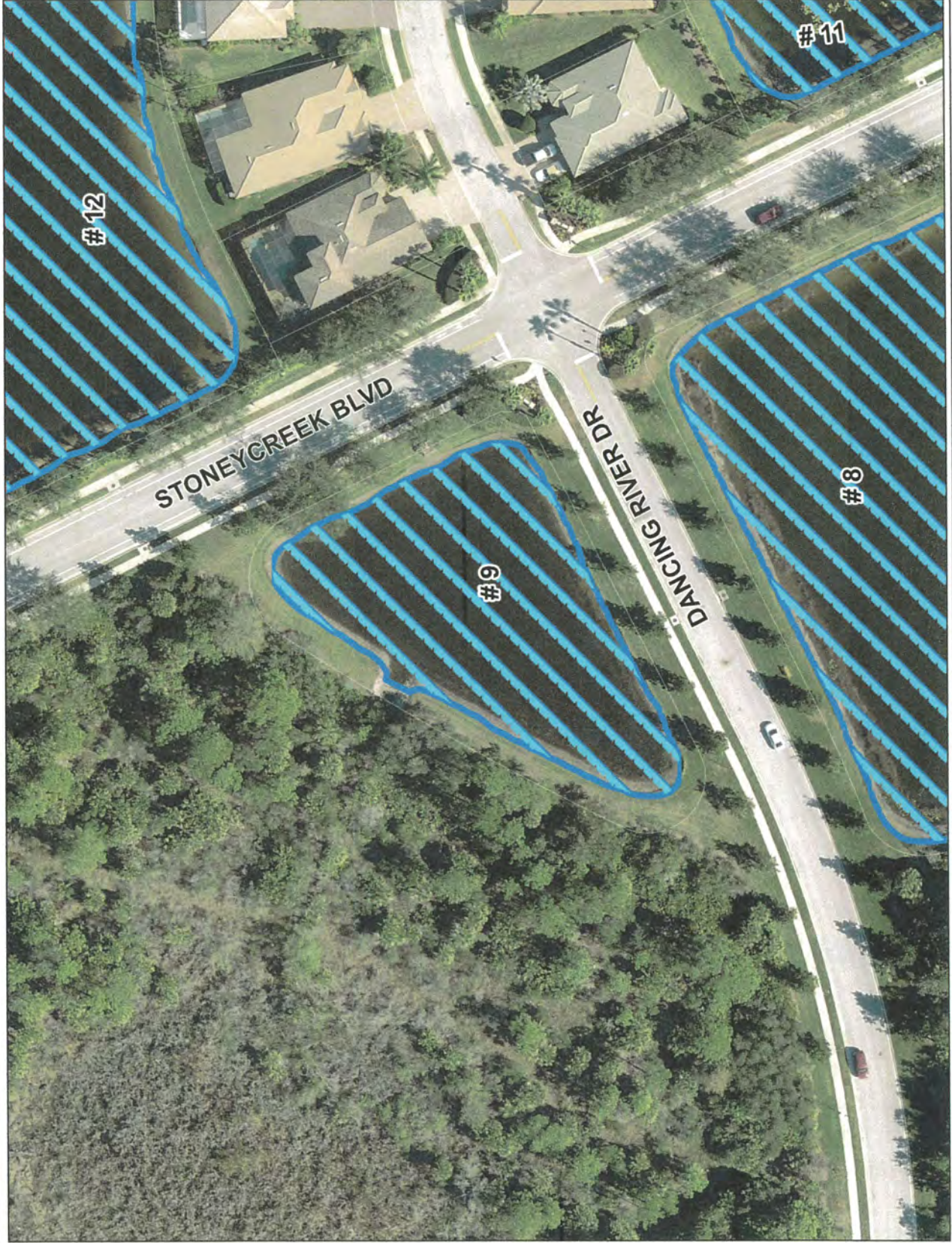
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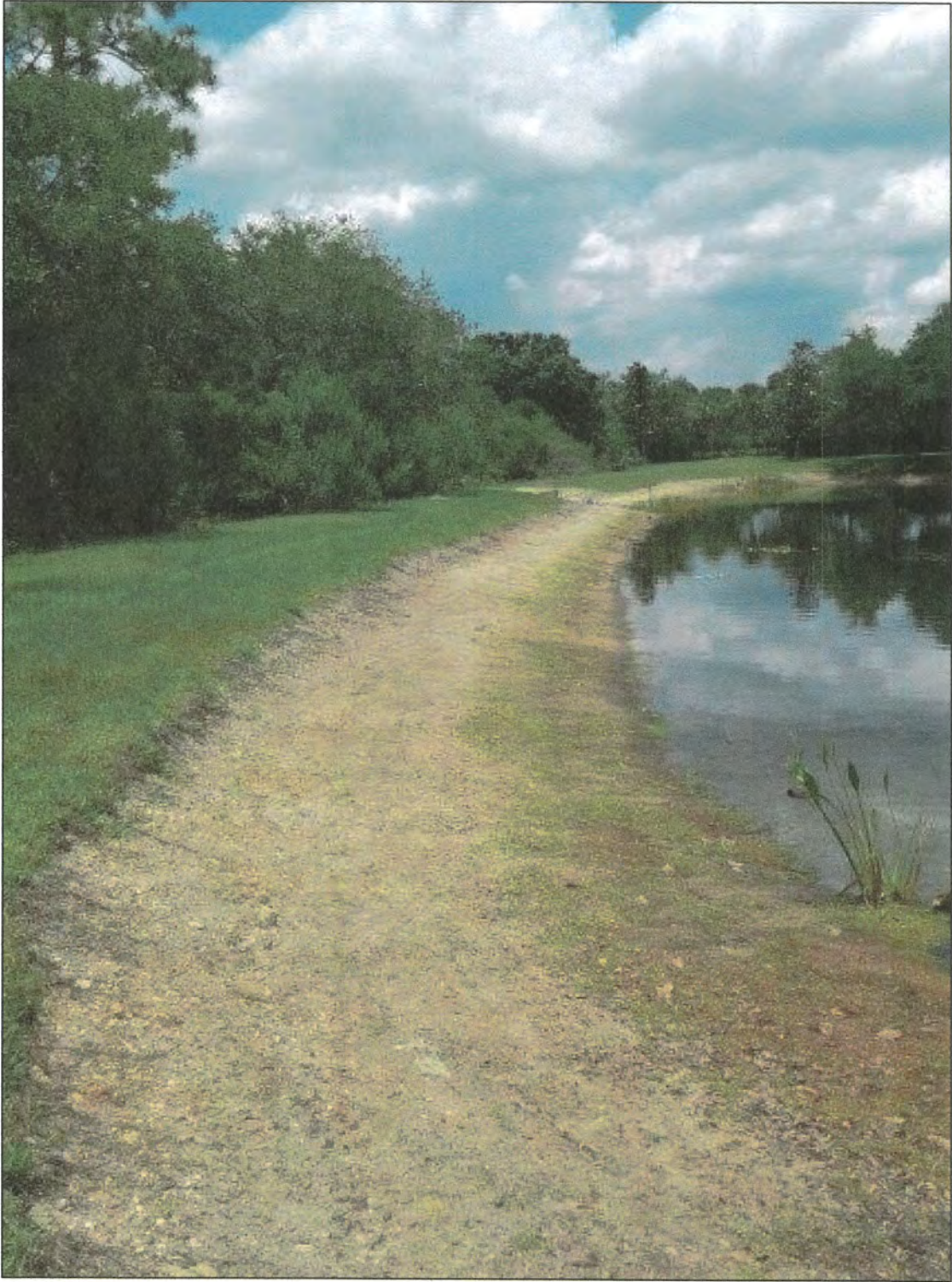


Water



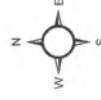
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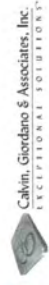




Lake 10



Print Date: 5/23/2019







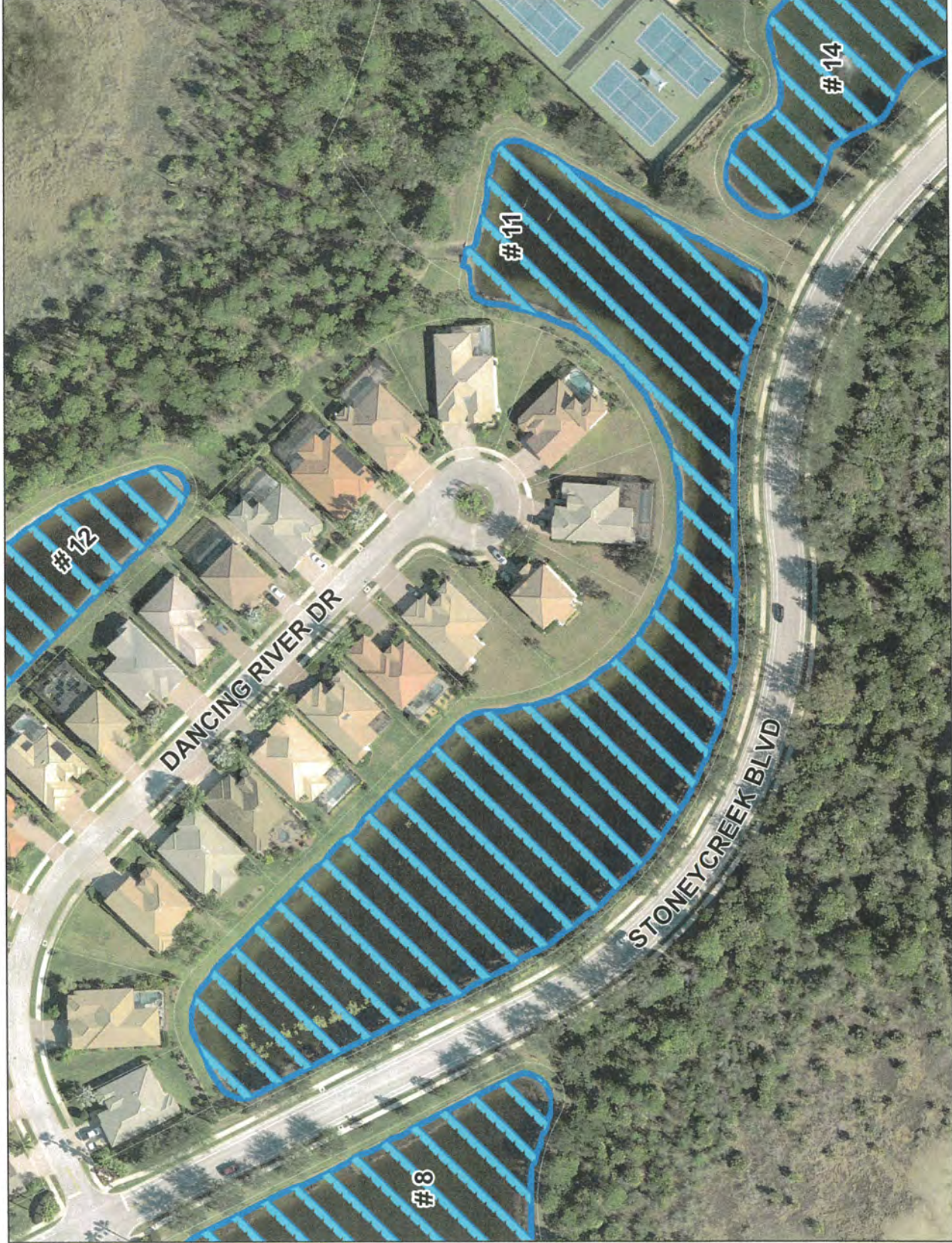


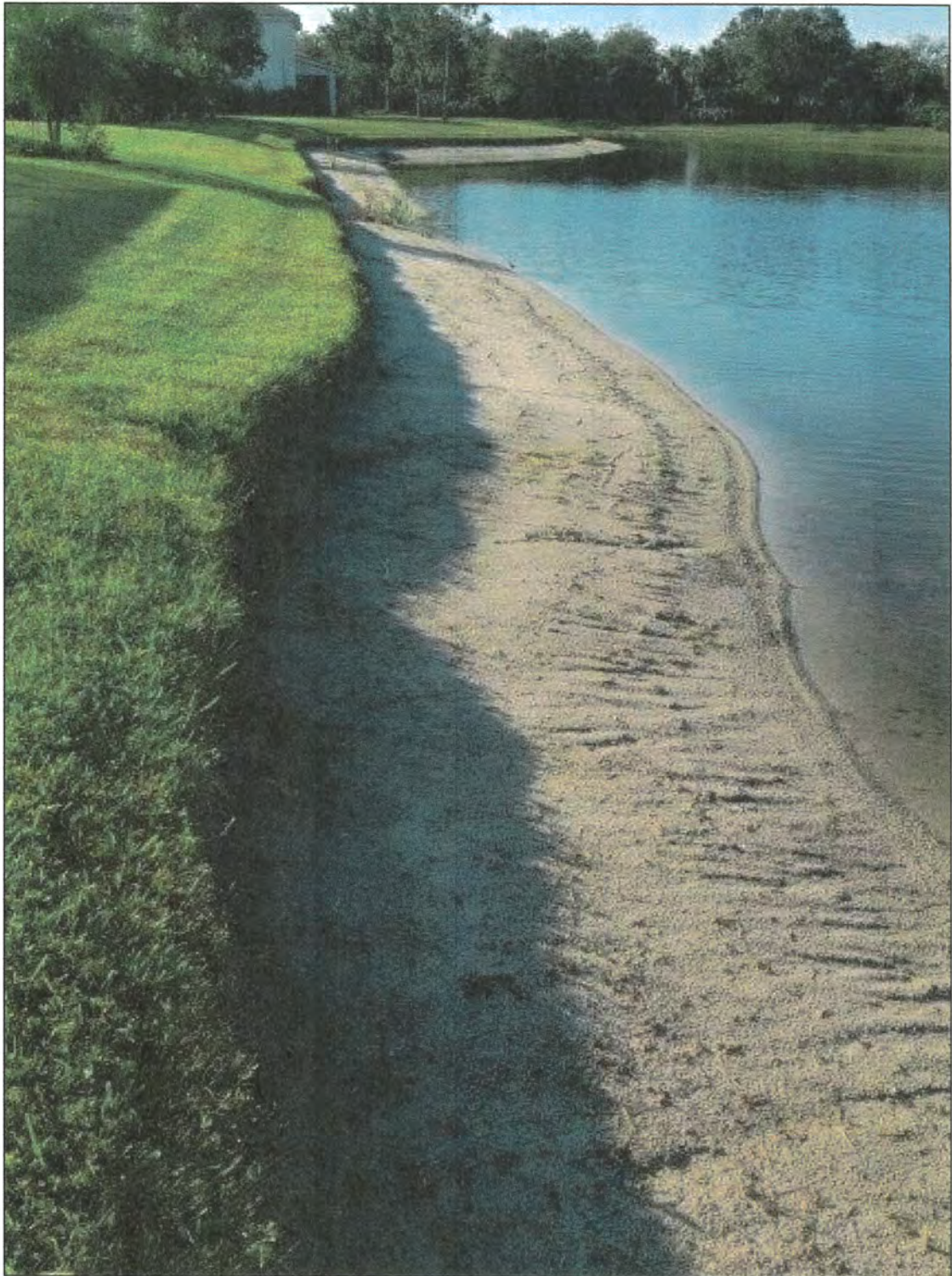
Lake 11

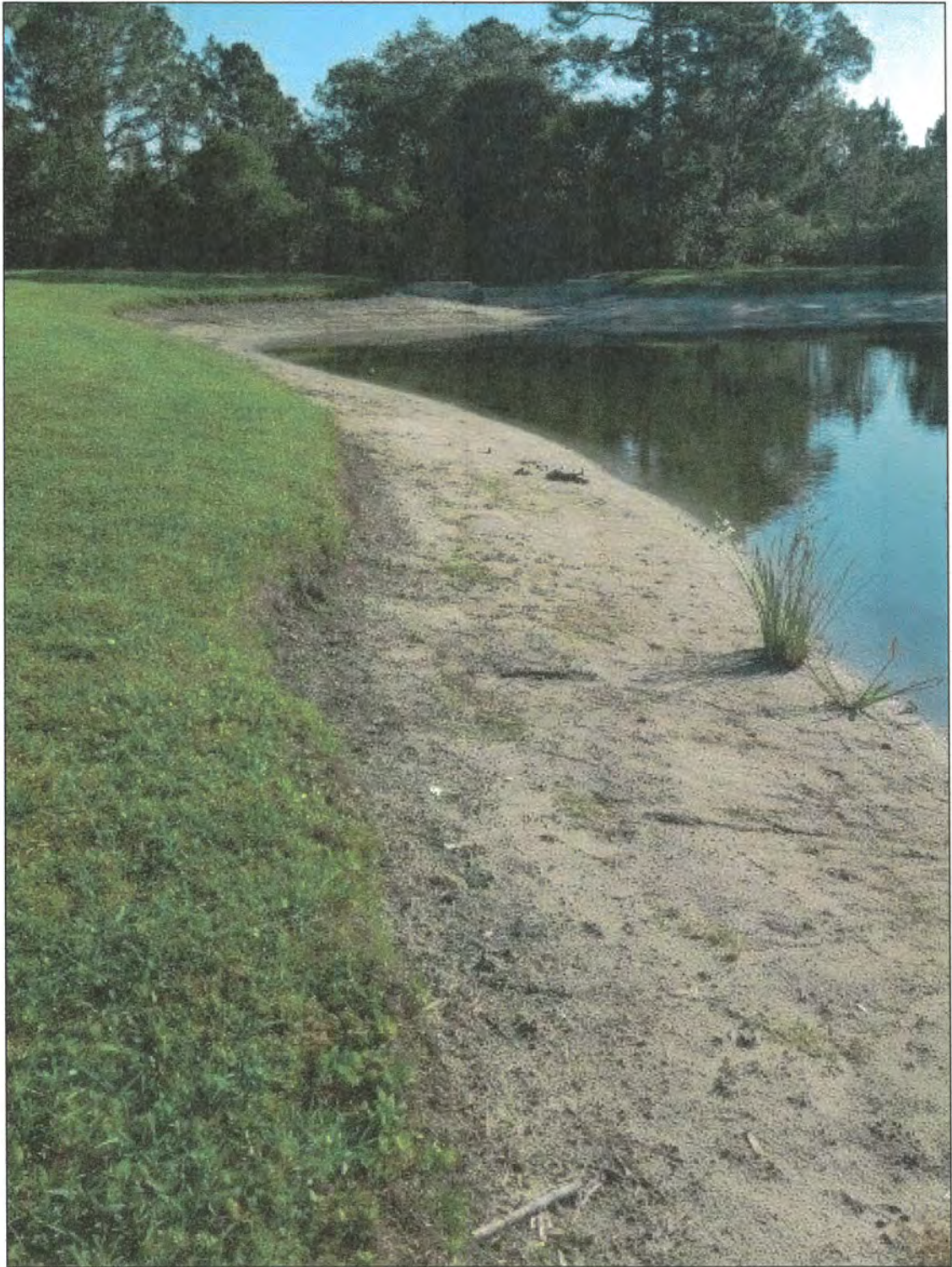
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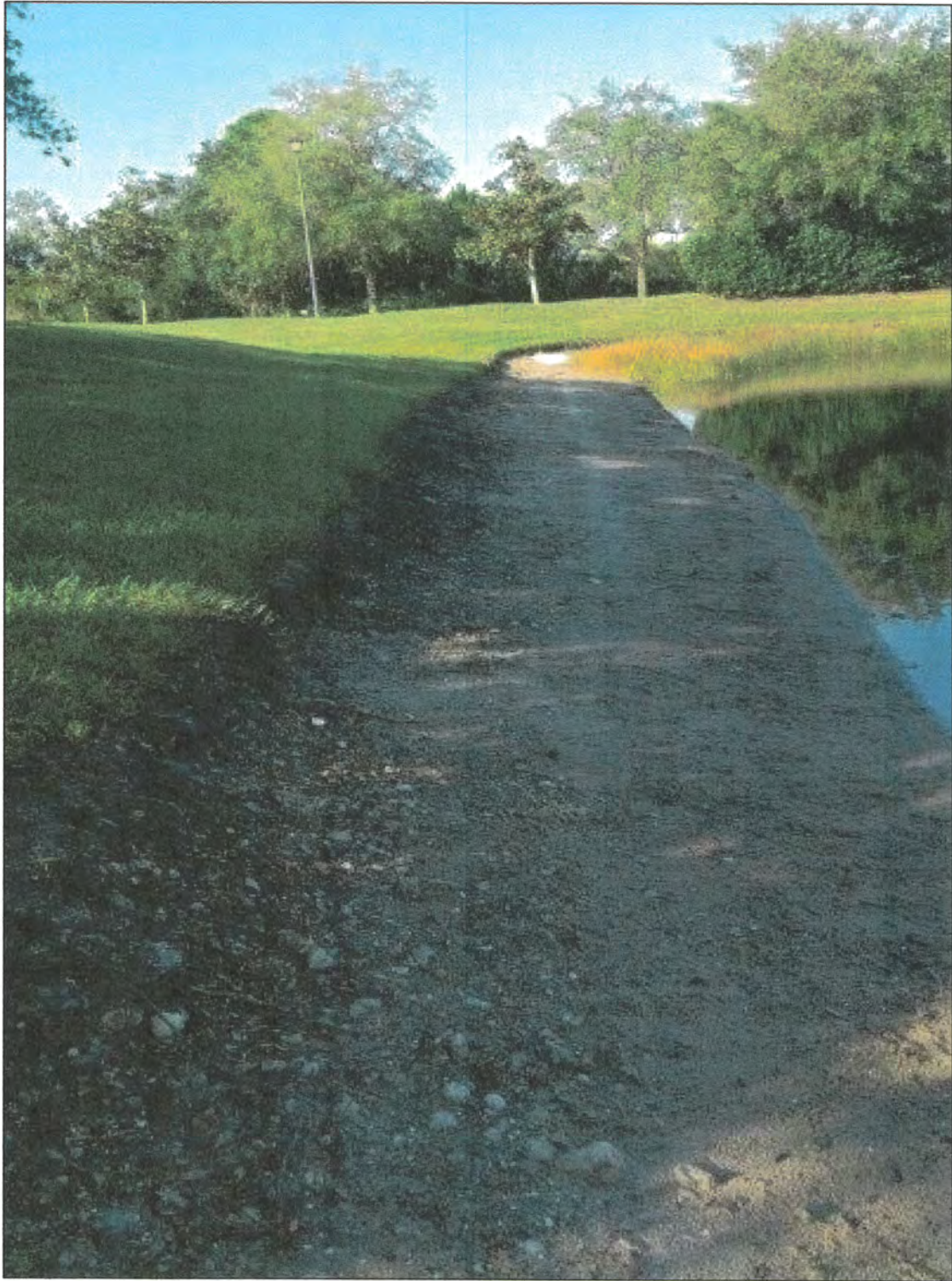


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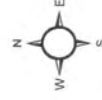






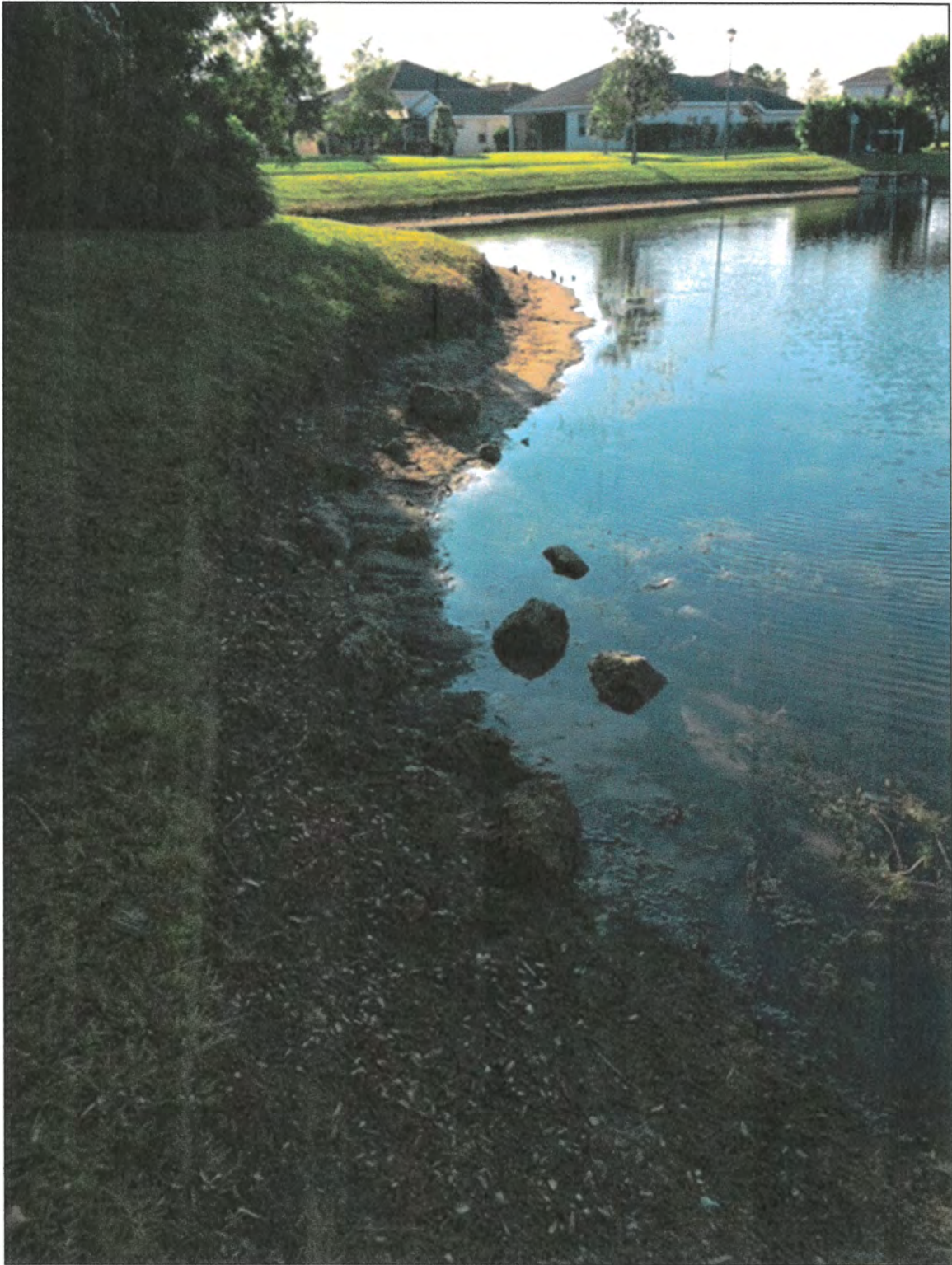


Lake 12



Print Date: 5/23/2019









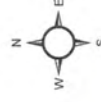


Lake 13

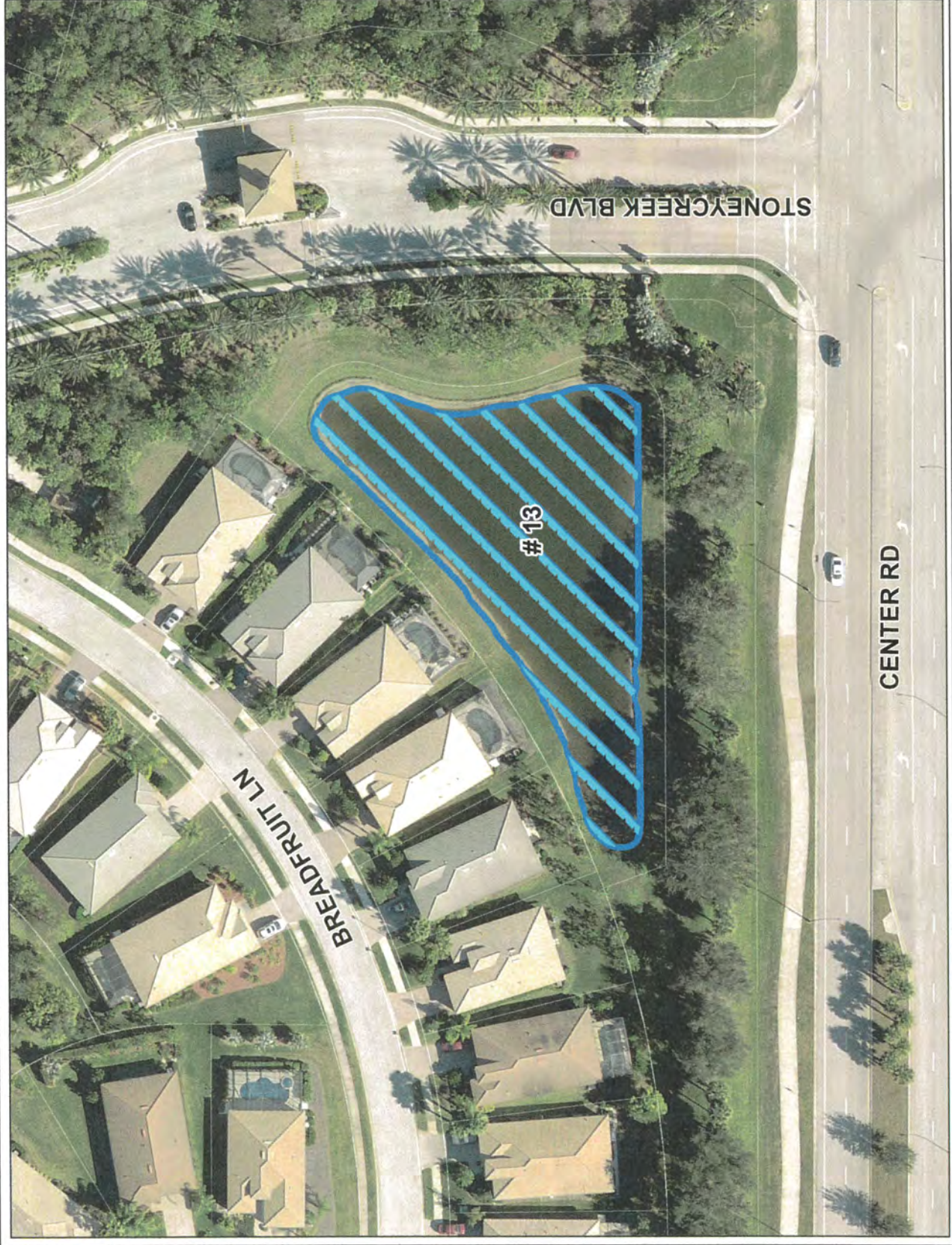
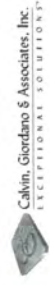
Legend



Water



Print Date: 5/23/2019







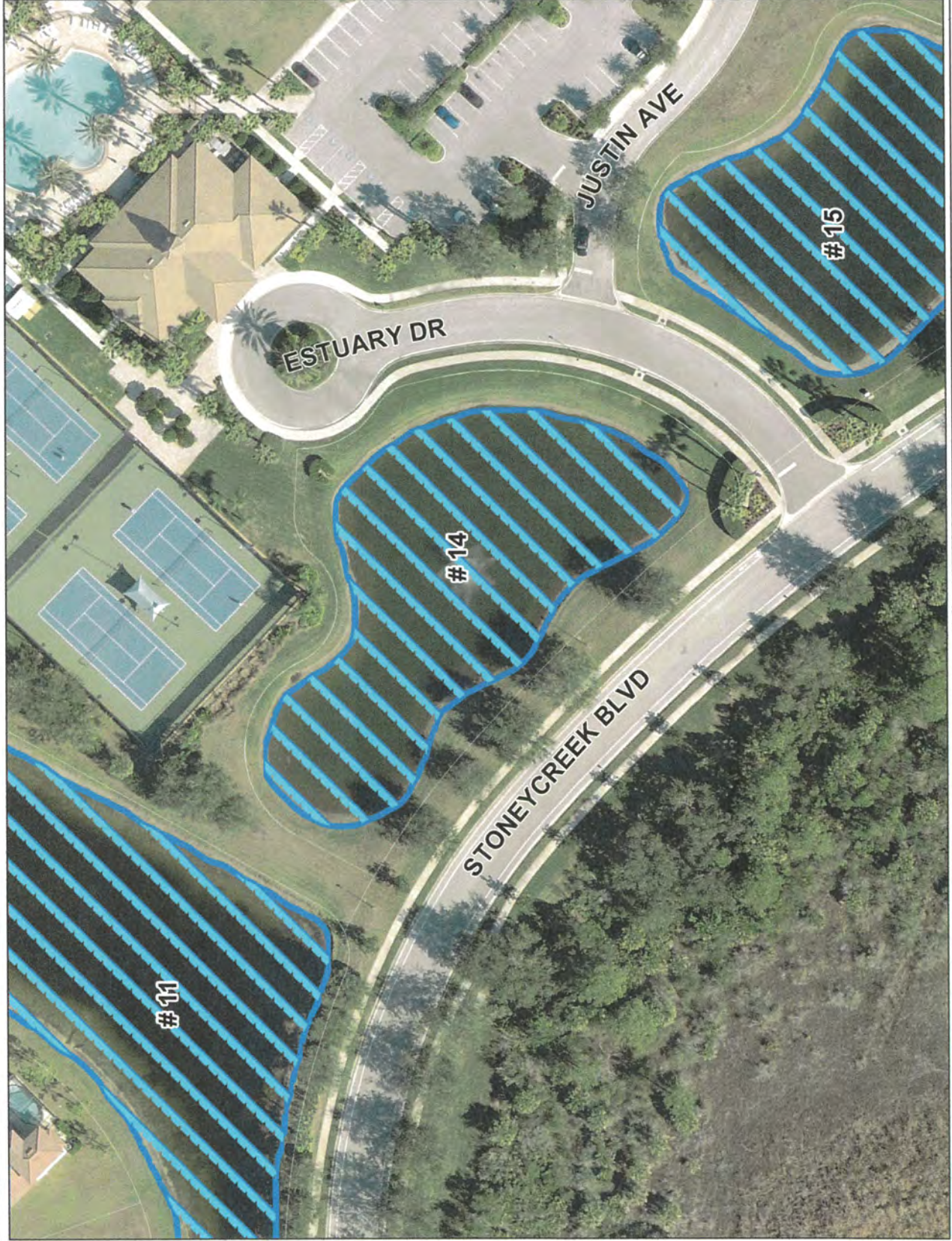


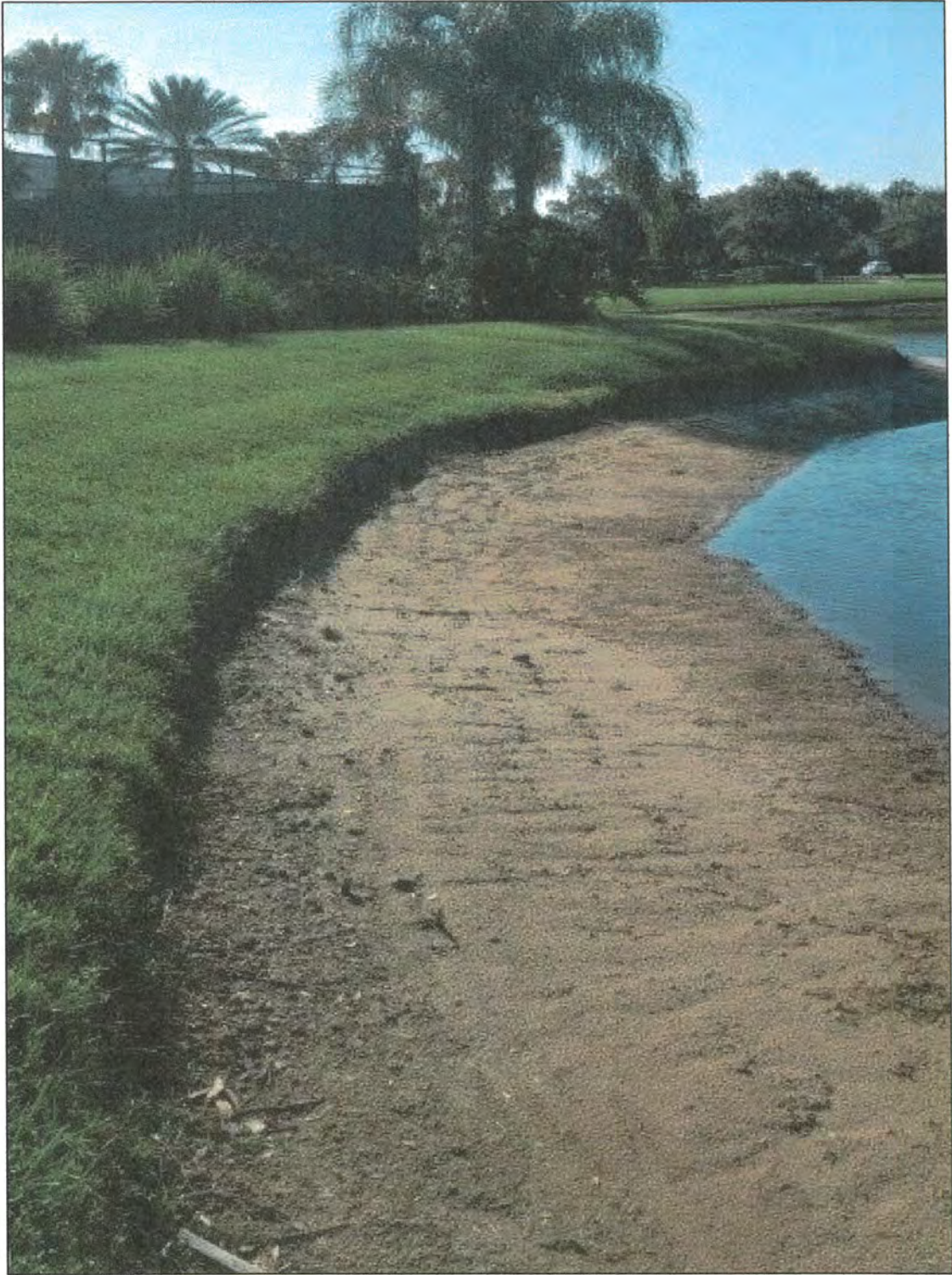
Lake 14

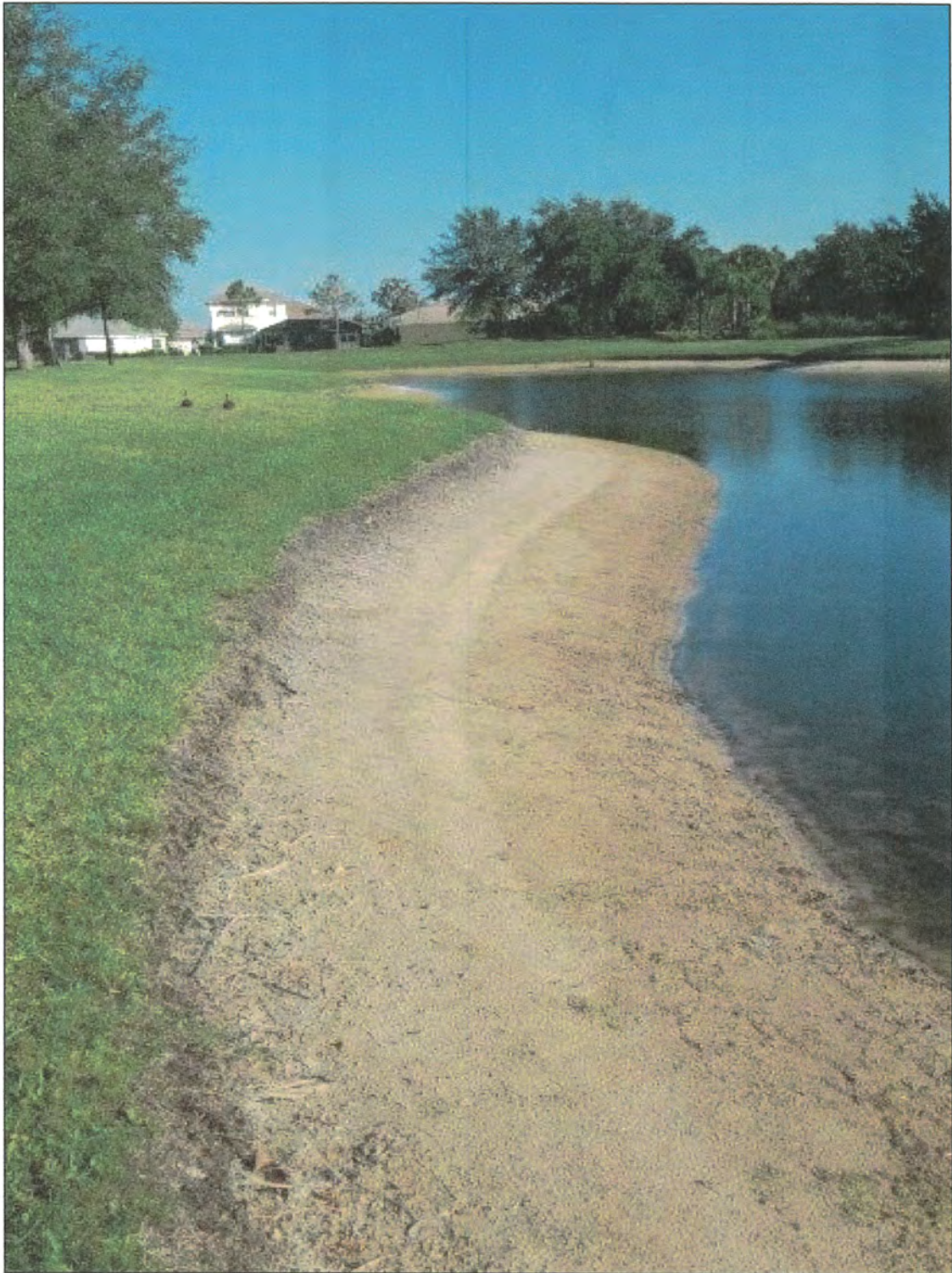
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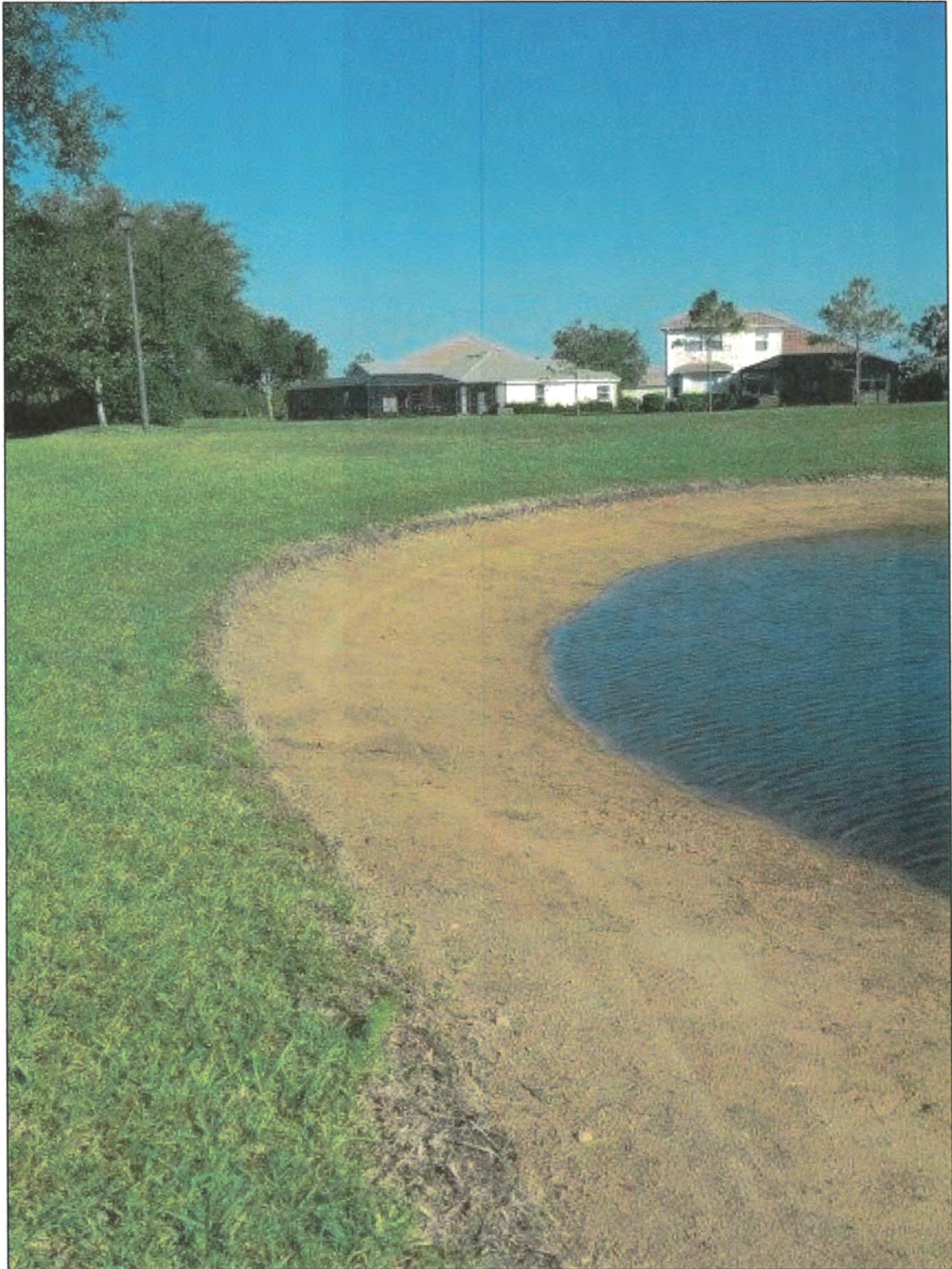


Print Date: 5/23/2019









Lake 15

Legend

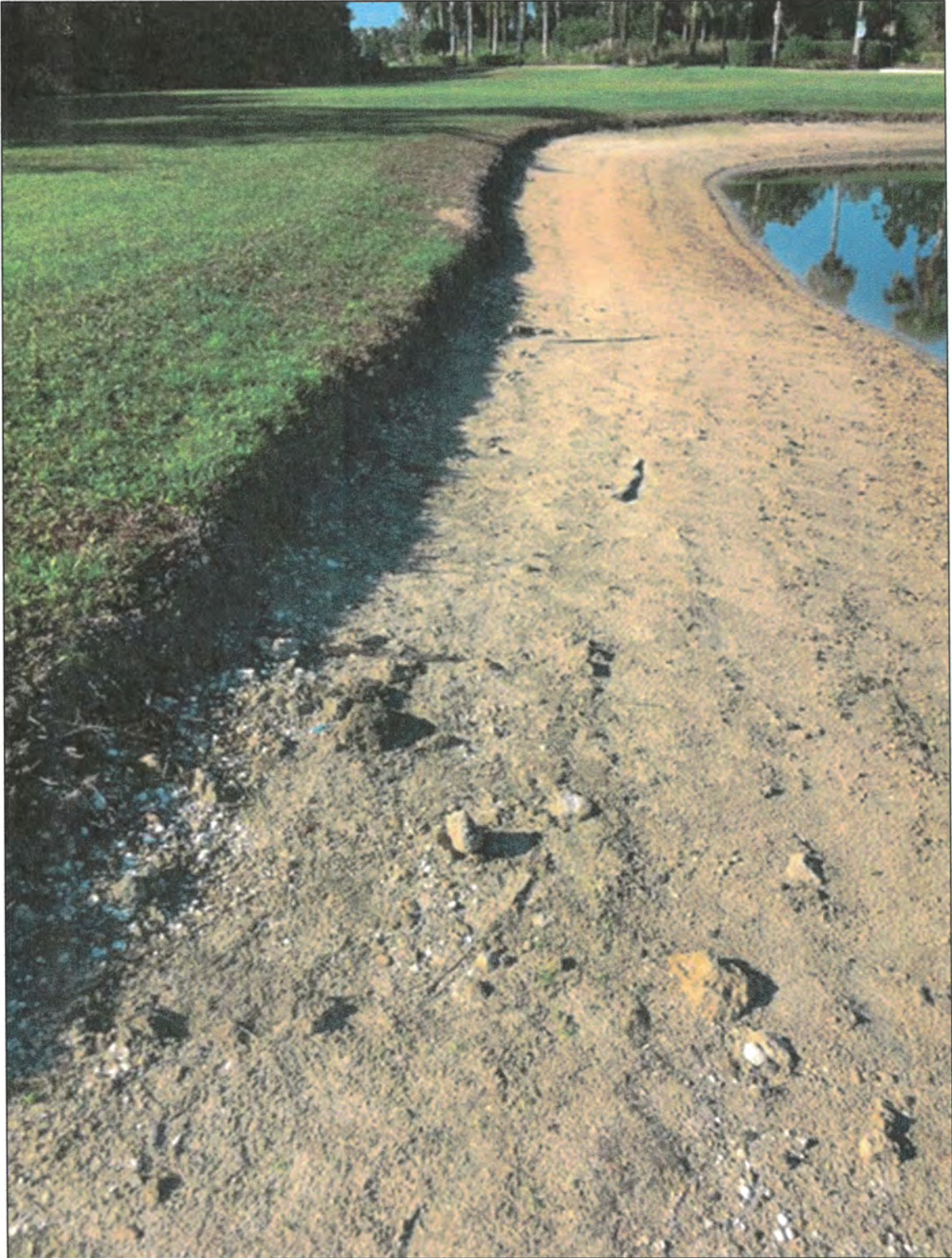


Water

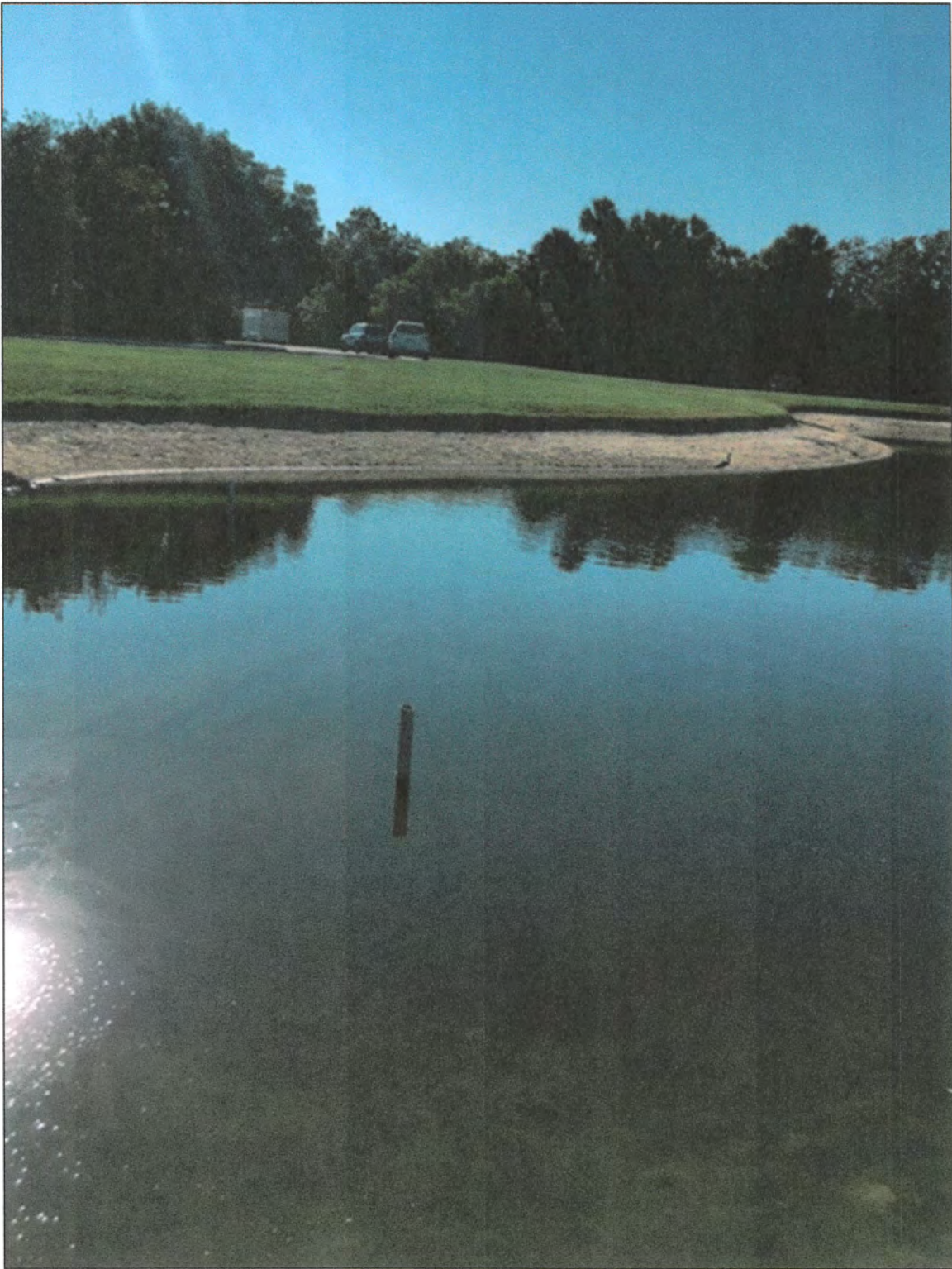


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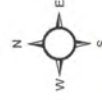








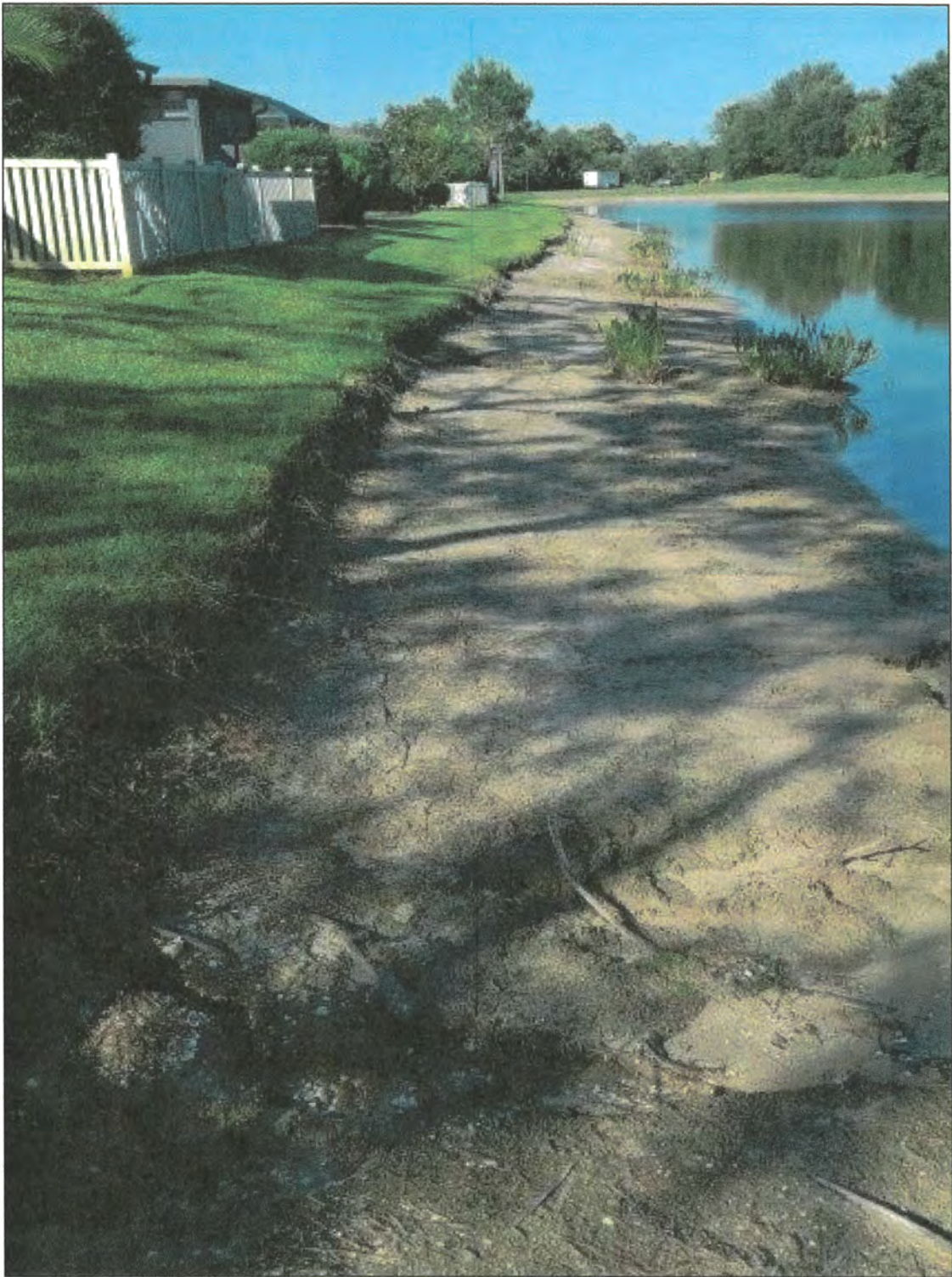
Lake 16

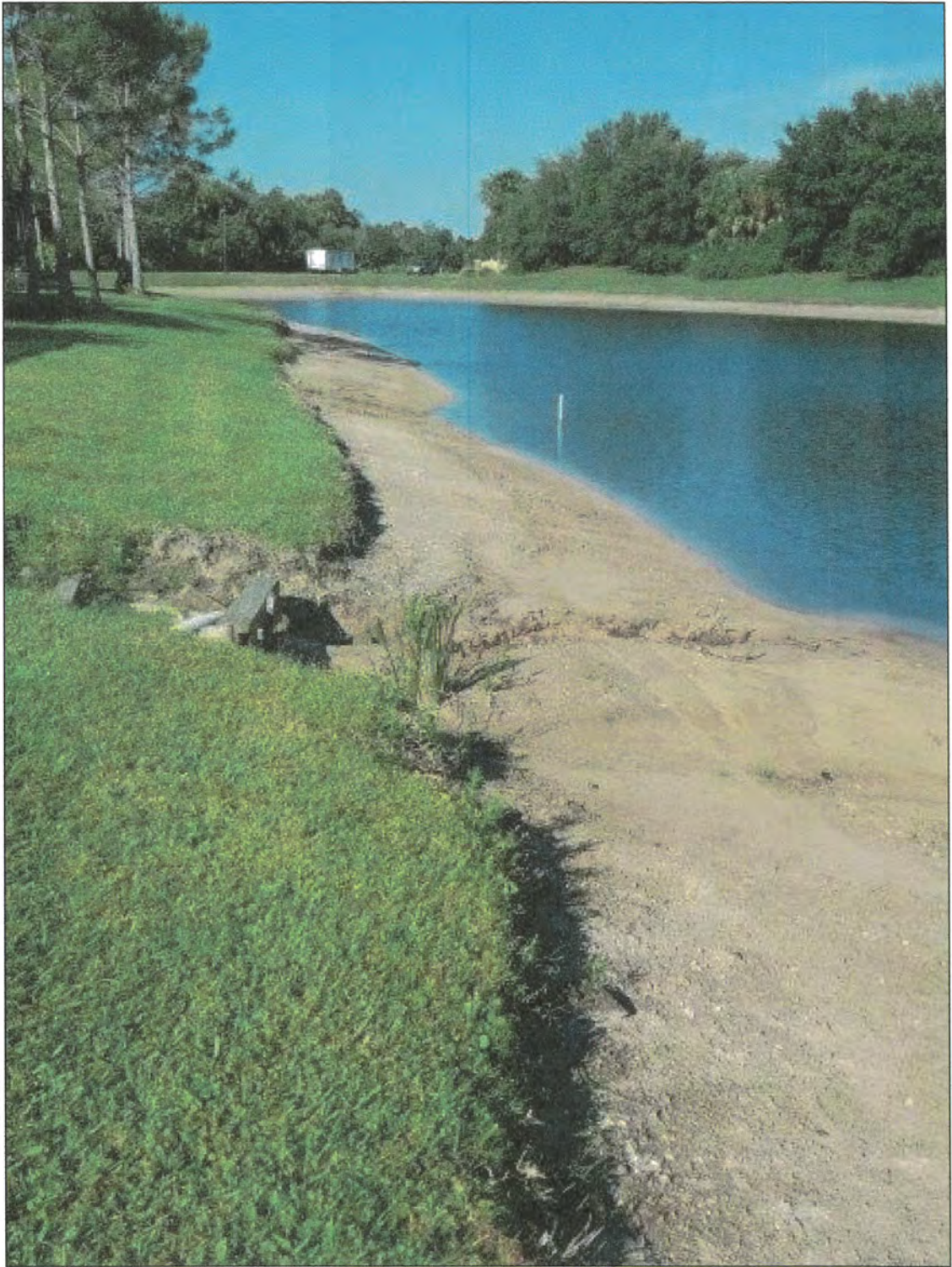


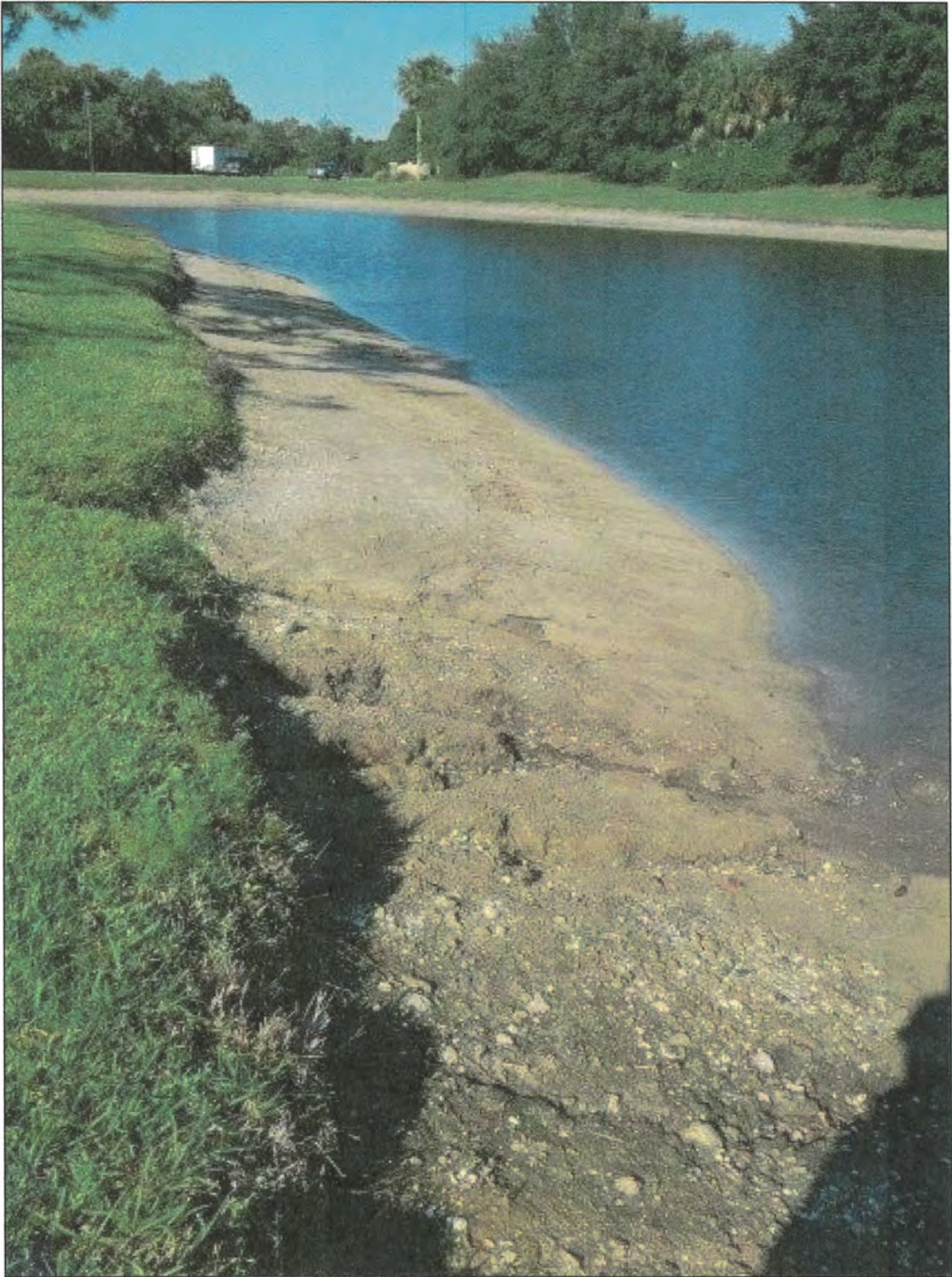
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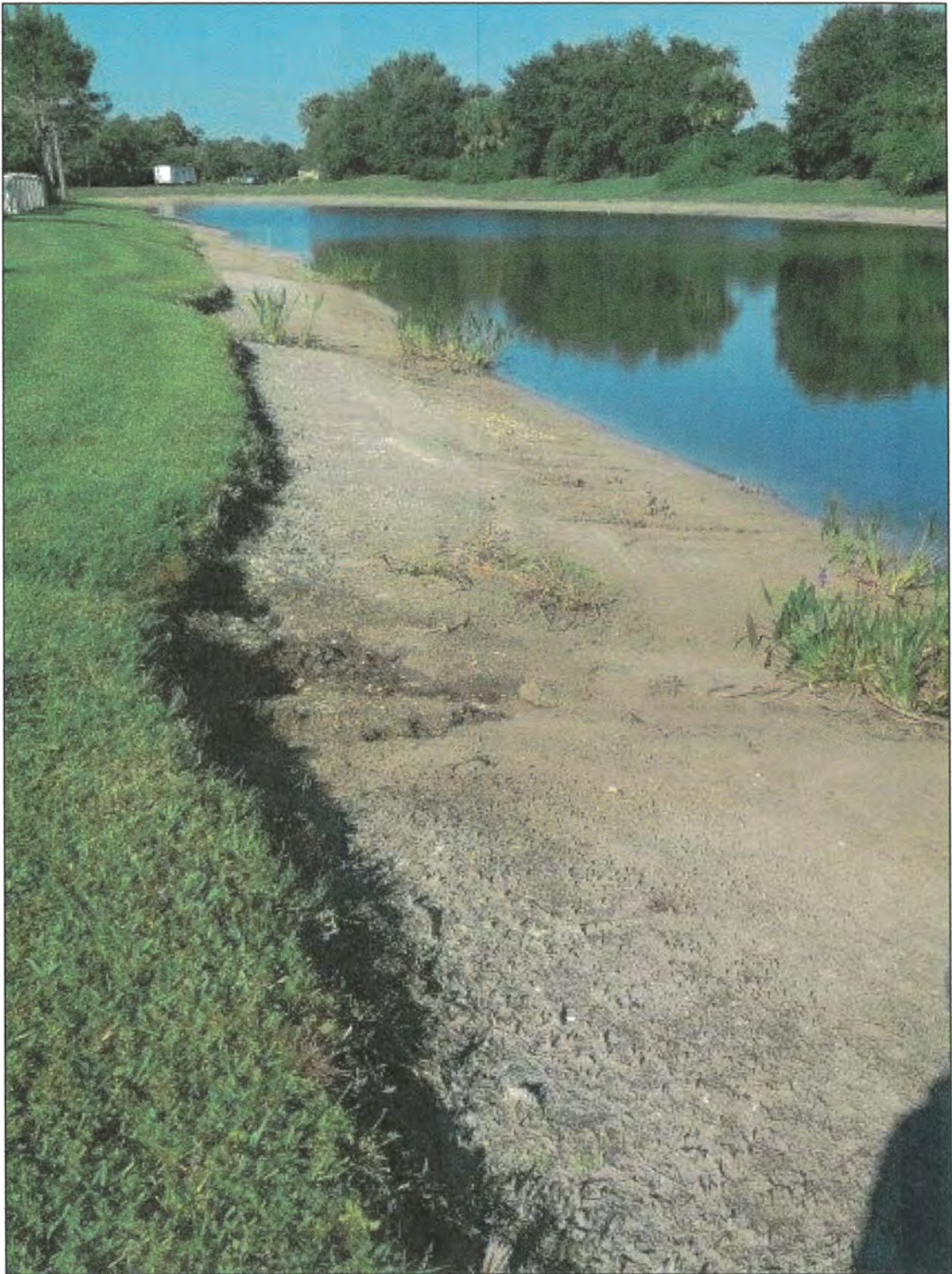


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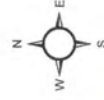






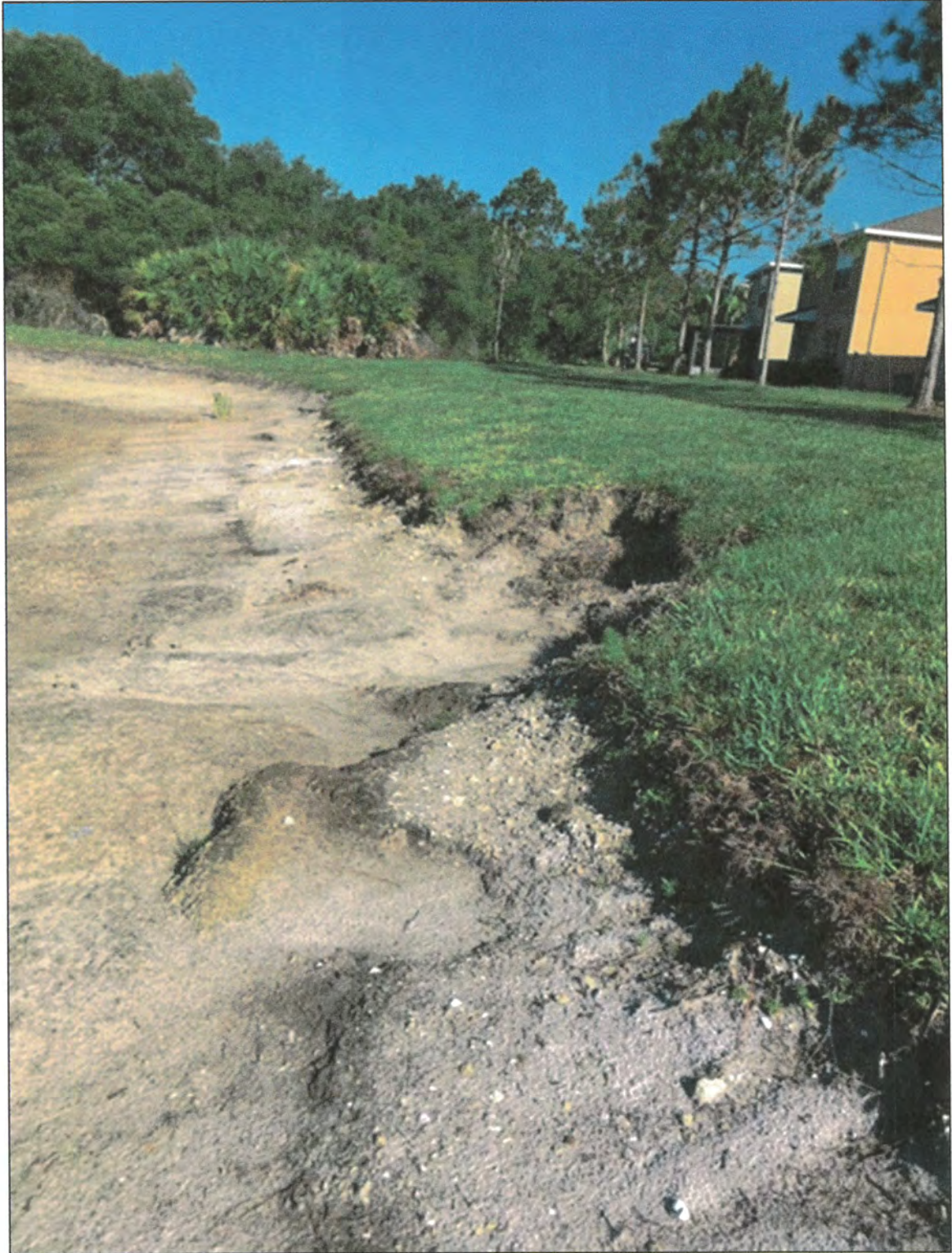


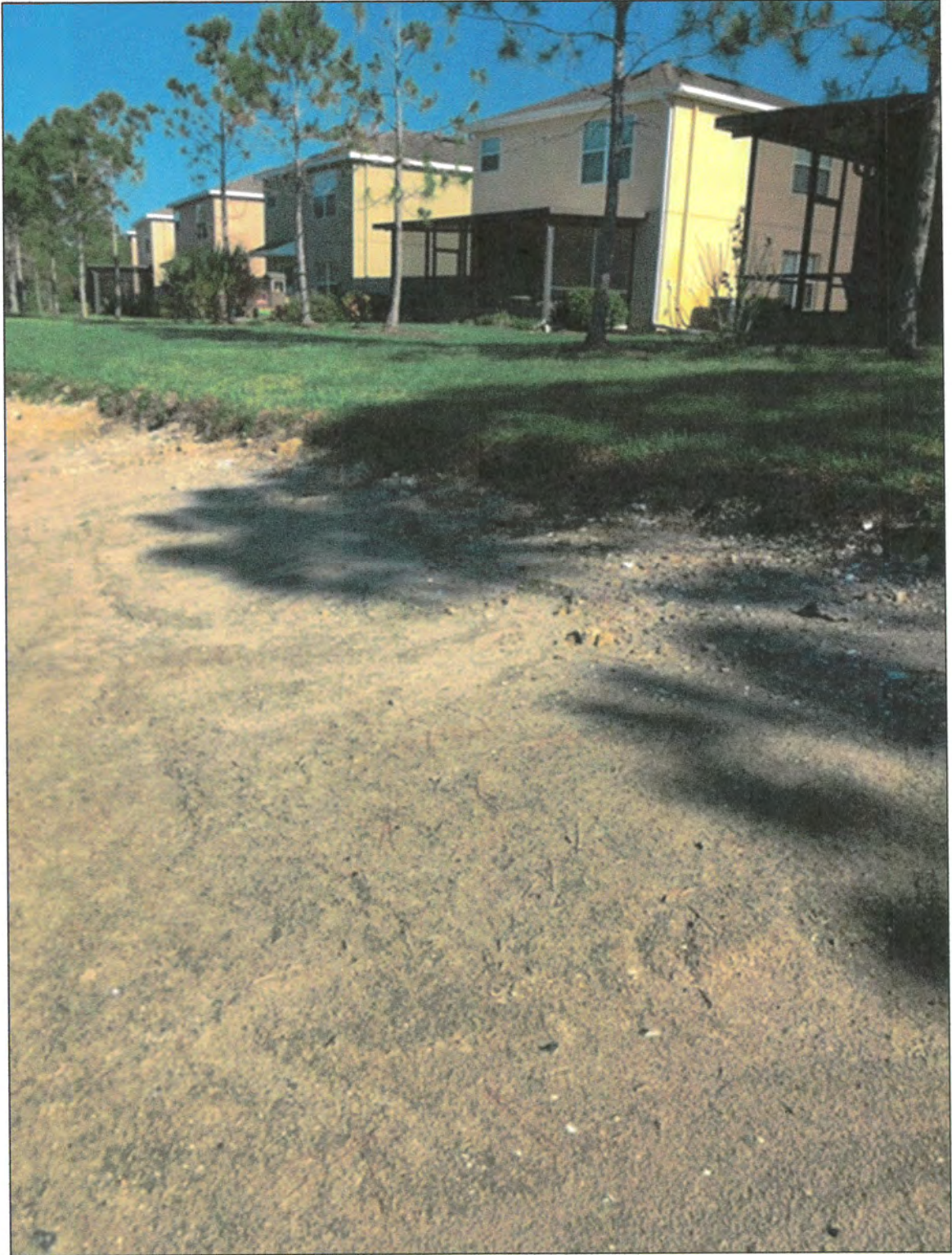
Lake 17



Print Date: 5/23/2019

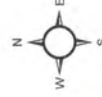






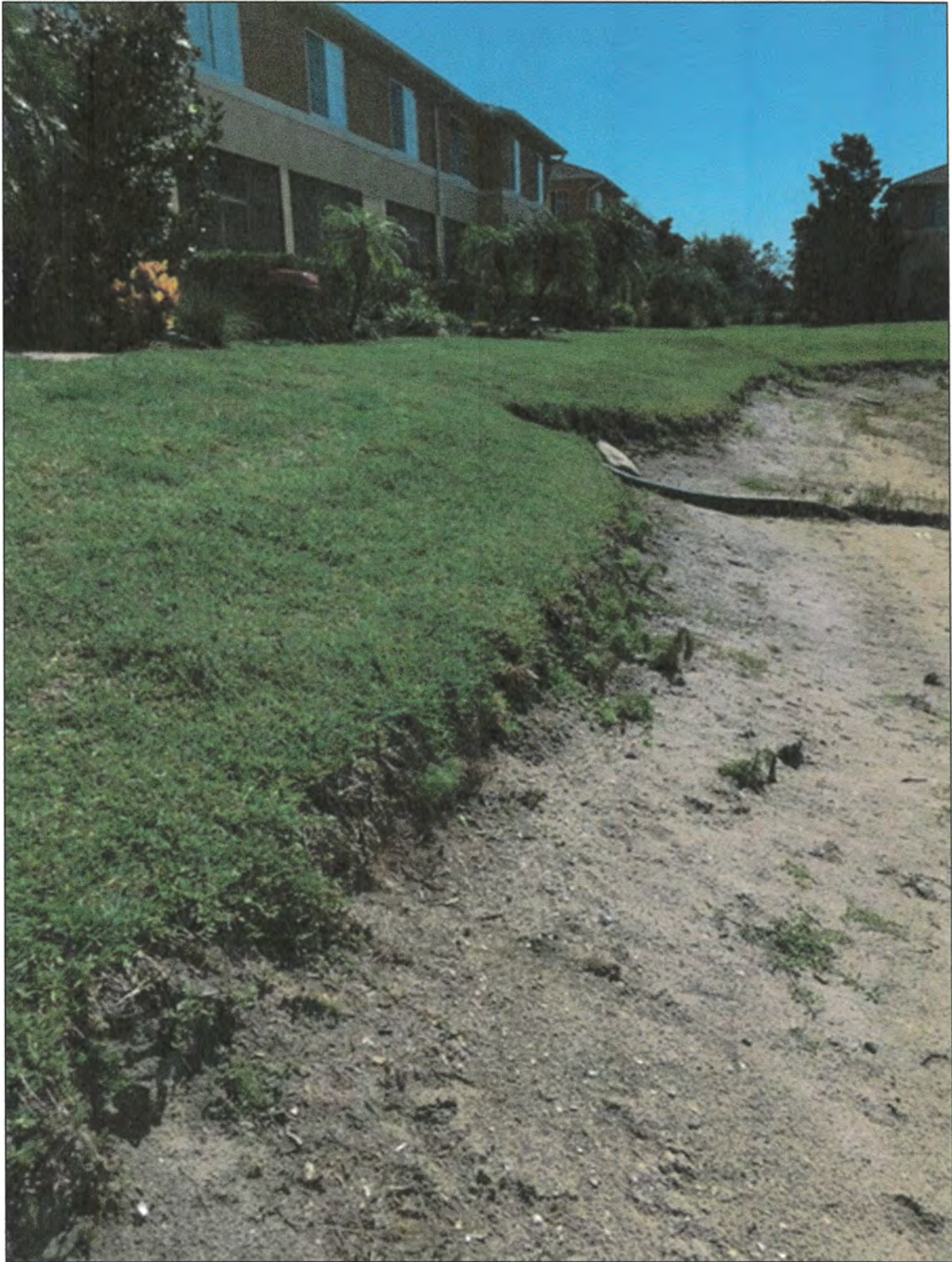


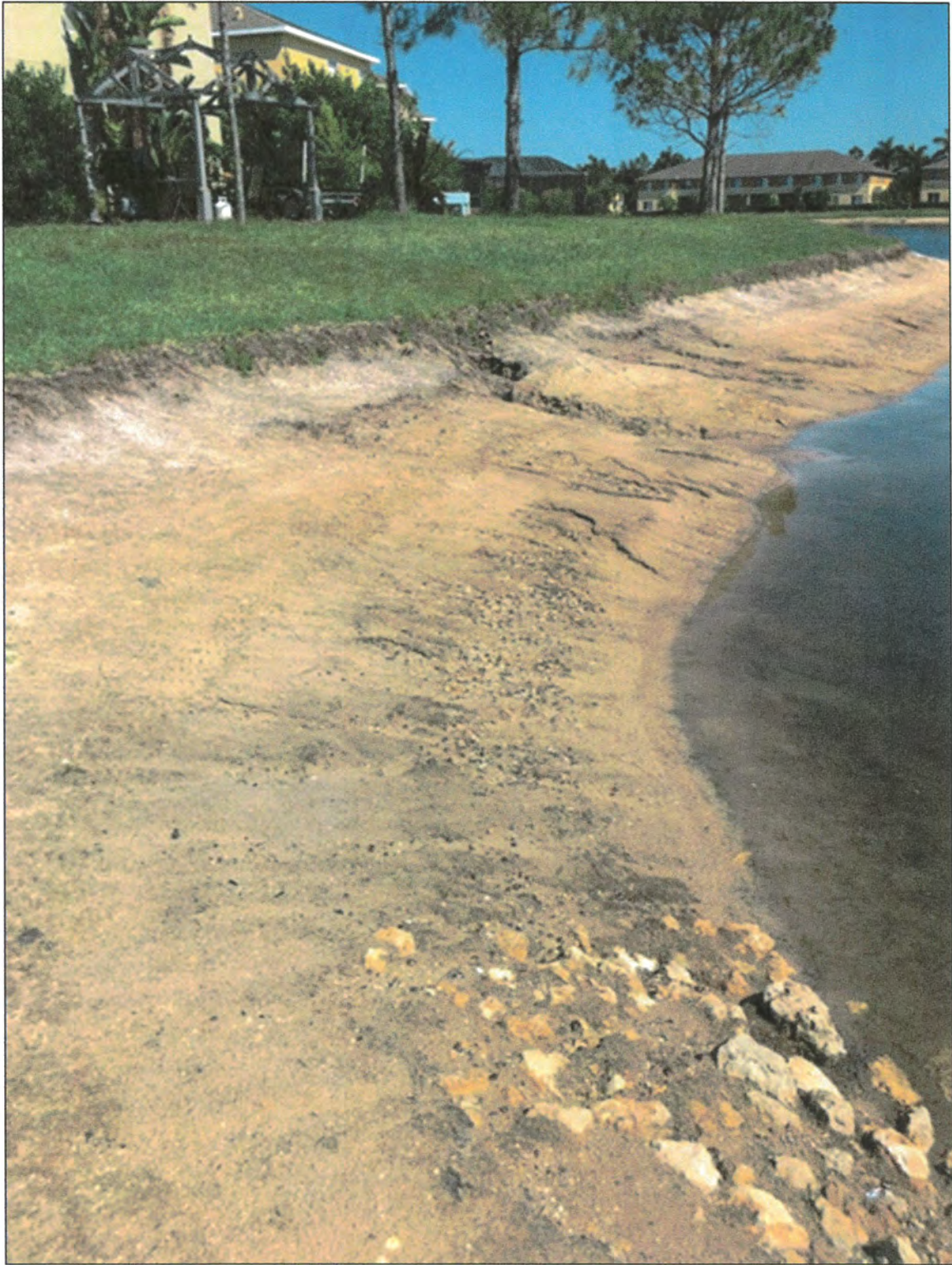
Lake 18

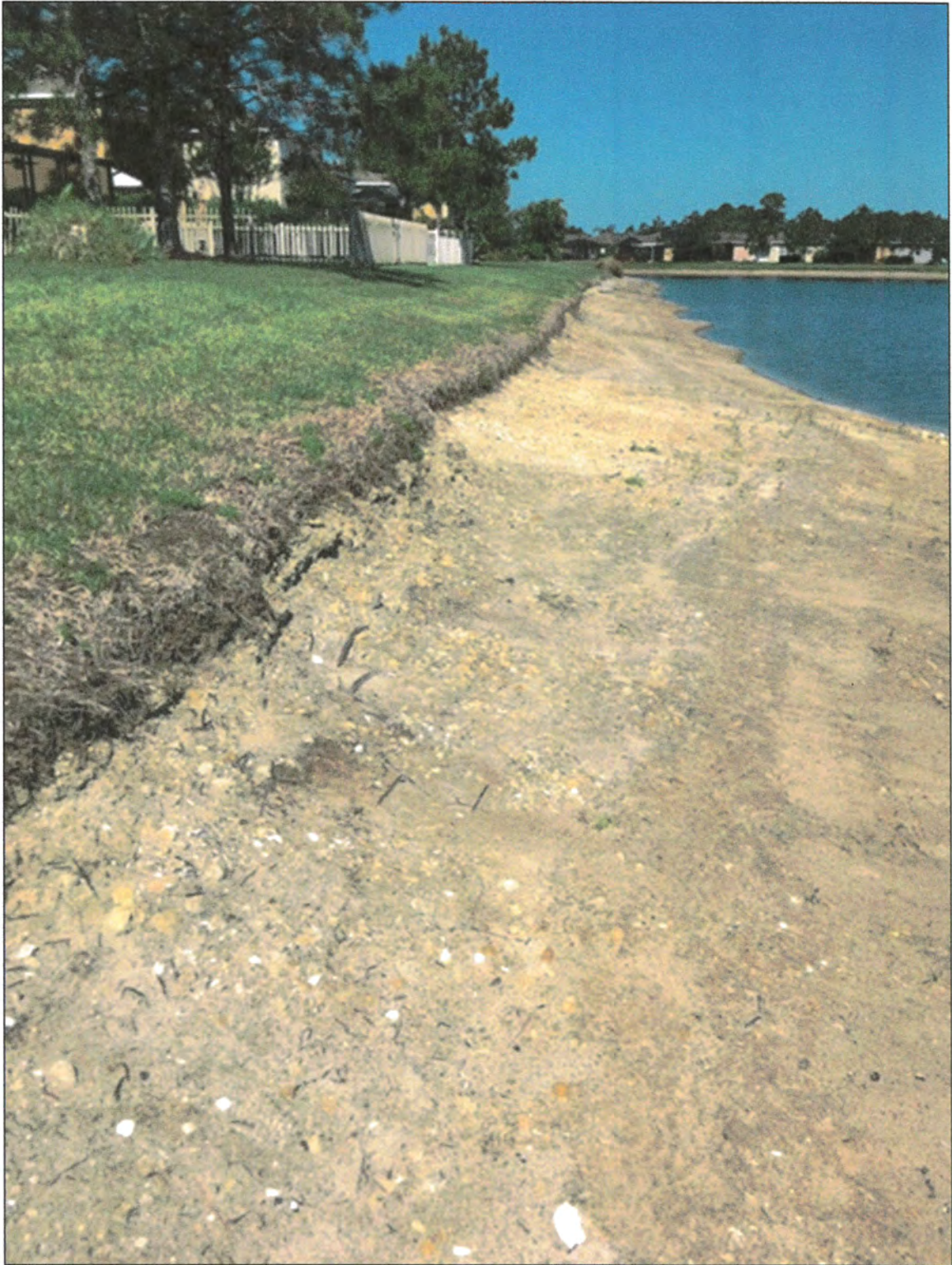


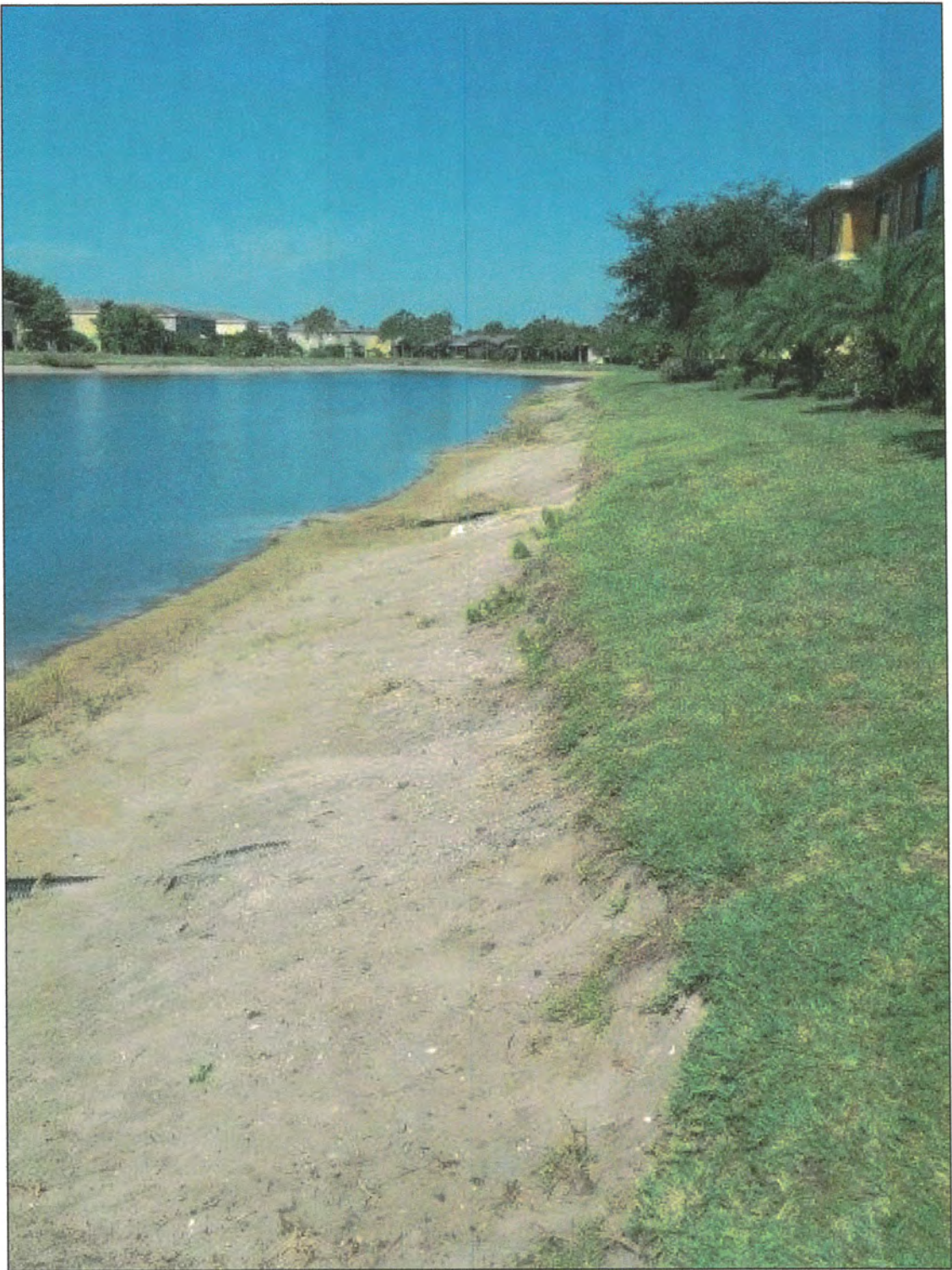
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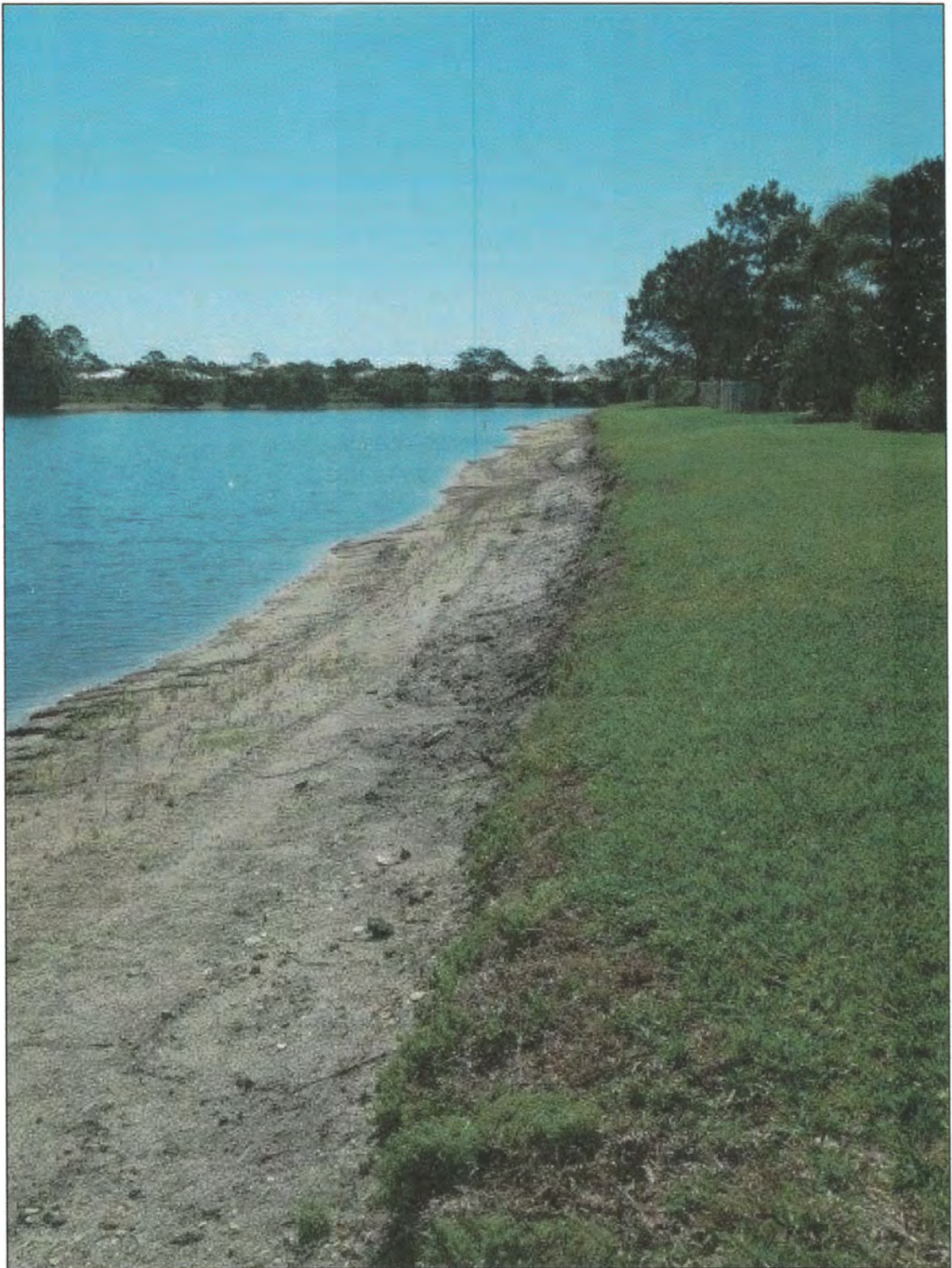












Lake 19

Legend



Water



Print Date: 5/23/2019

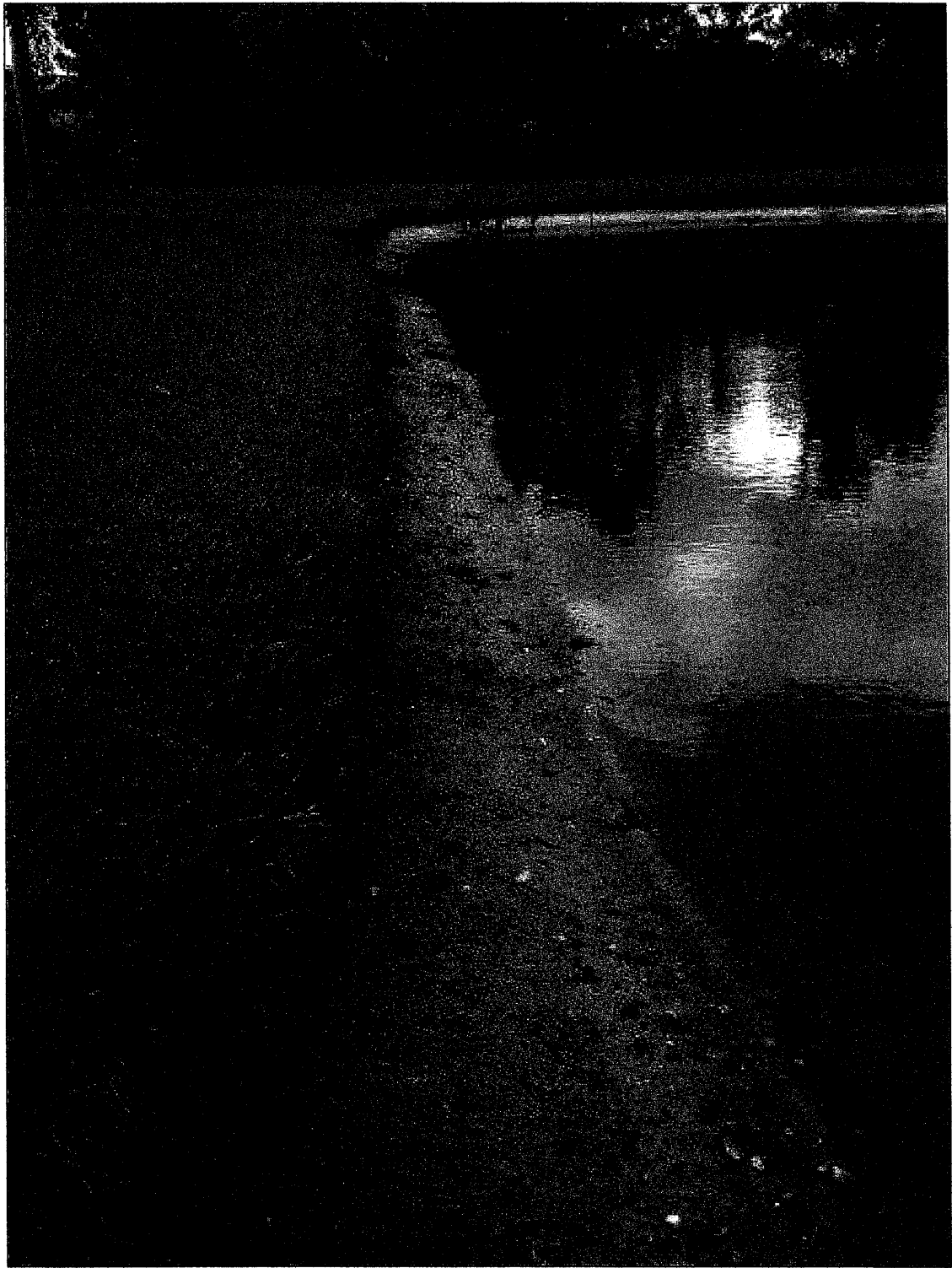


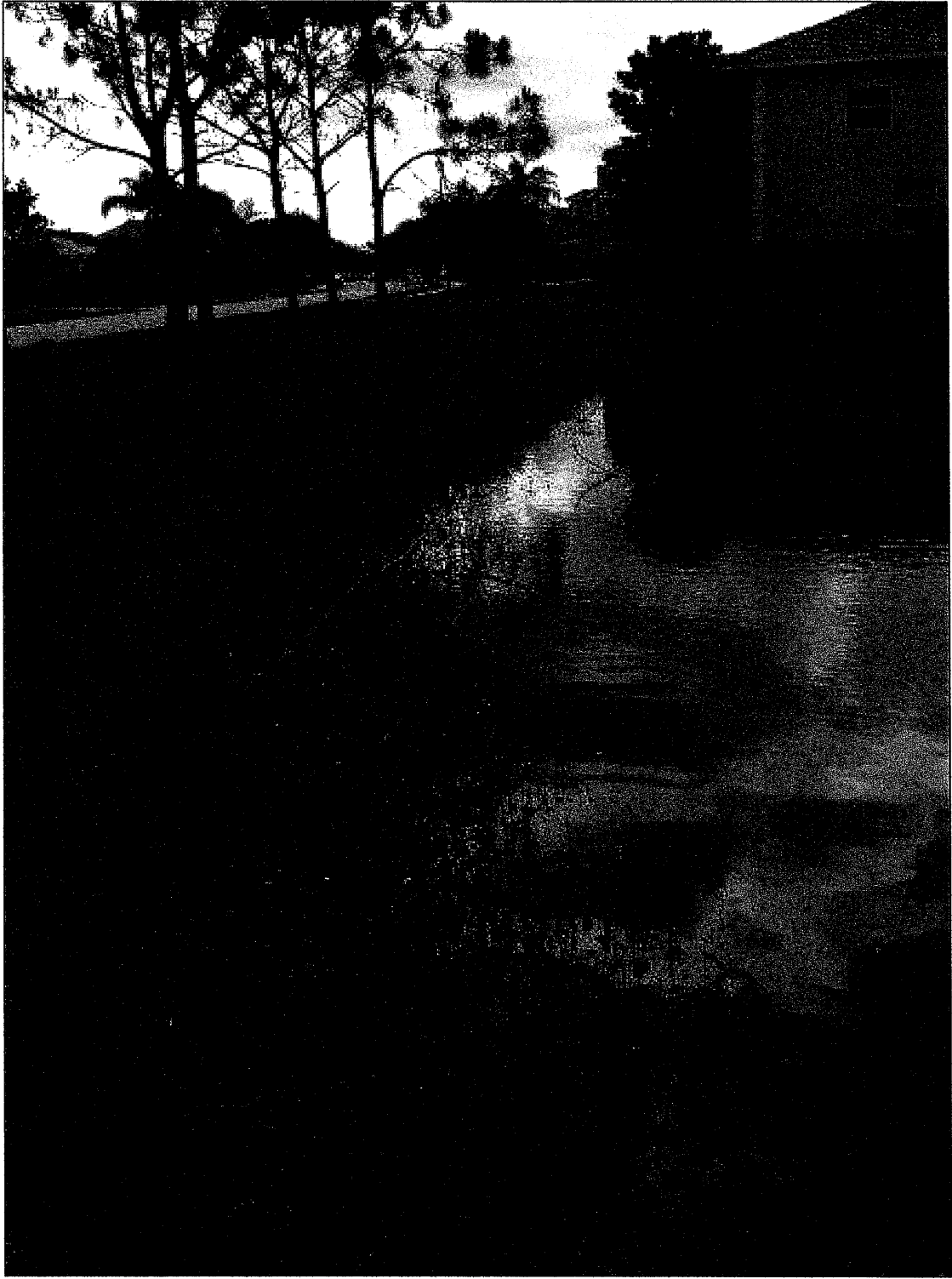
Lake 20



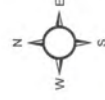
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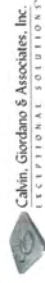


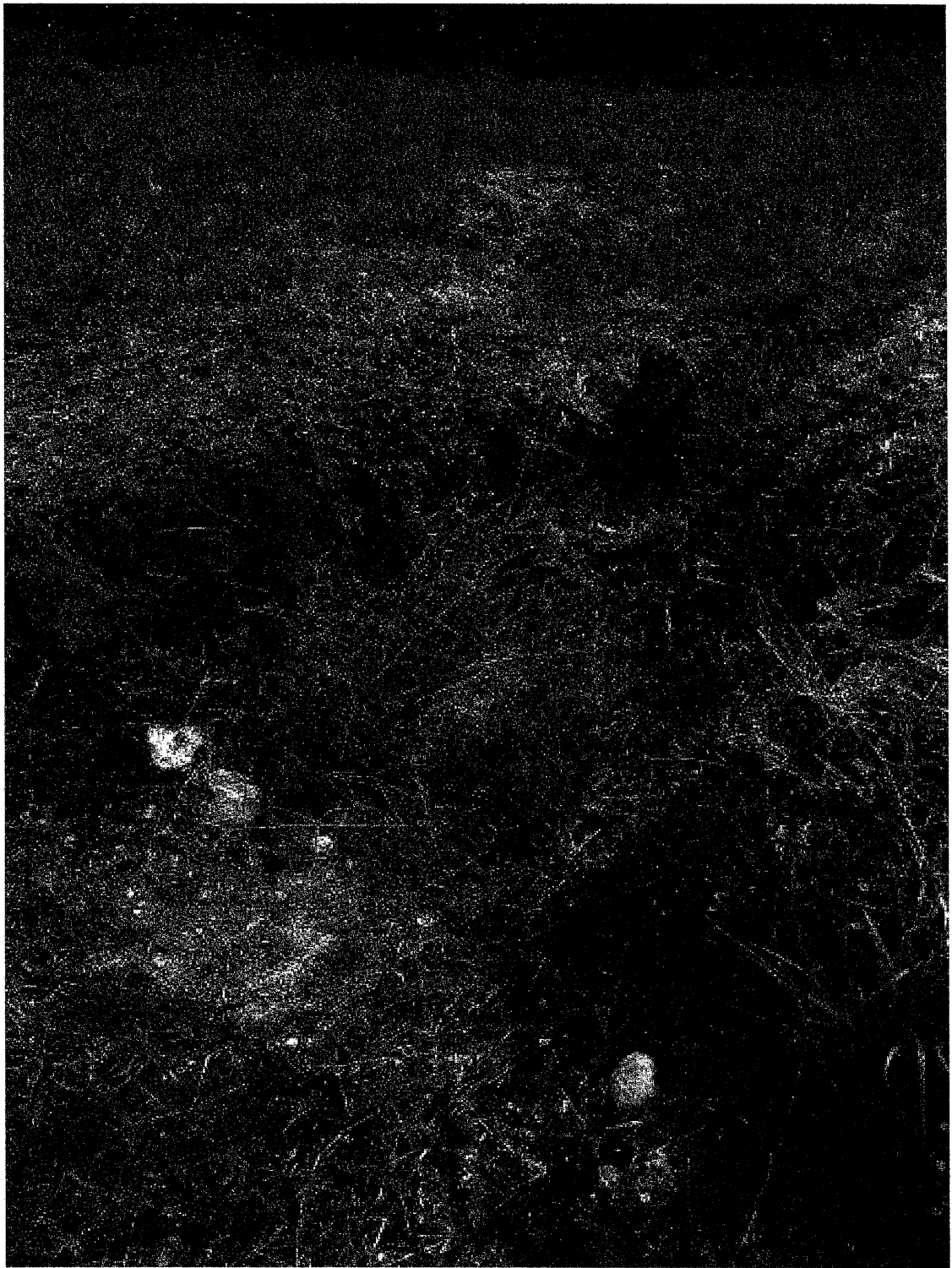


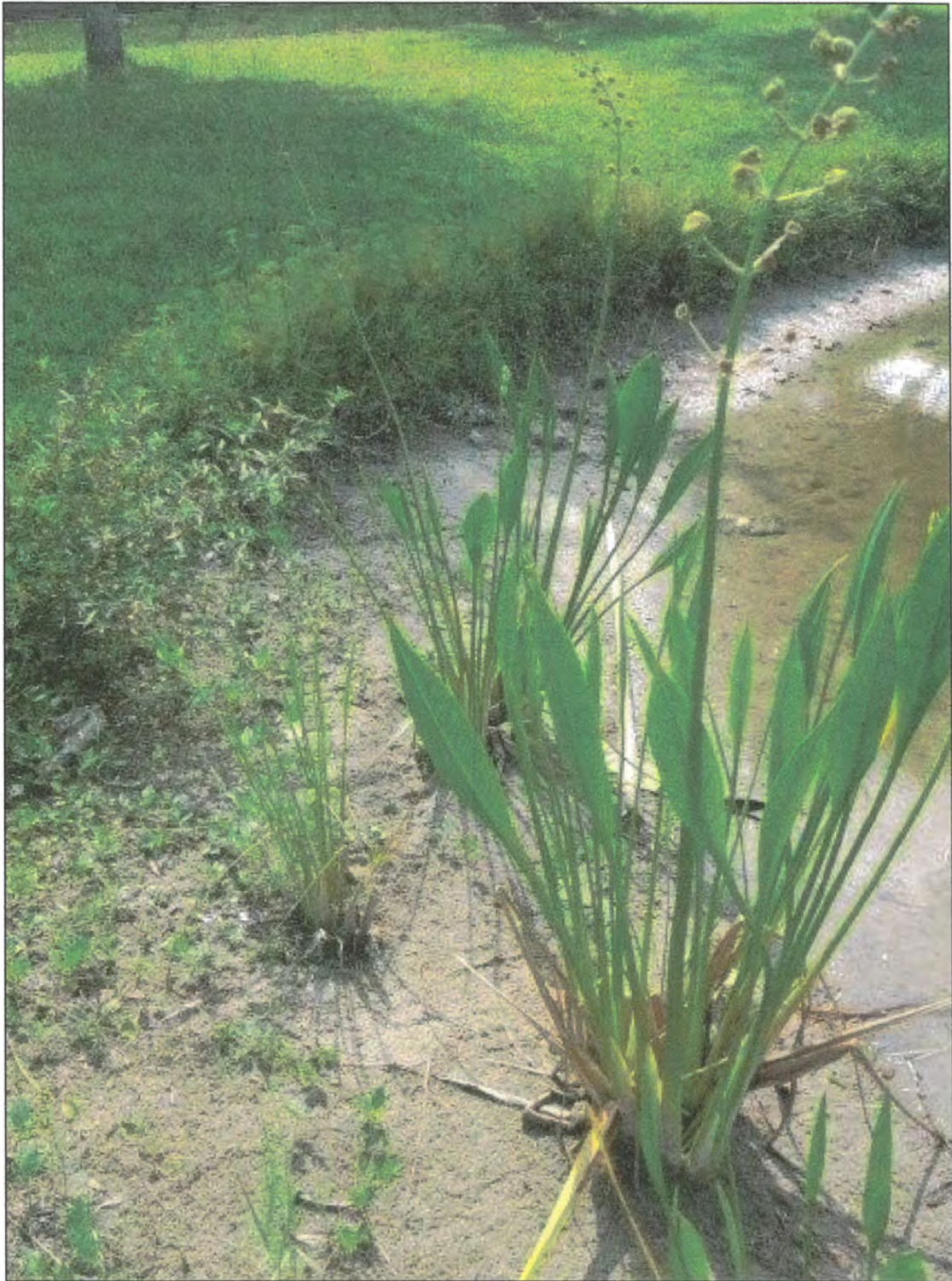
Lake 21



Print Date: 5/23/2019





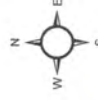


Lake 22

Legend



Water



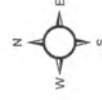
Print Date: 5/23/2019







Lake 23



Print Date: 5/23/2019





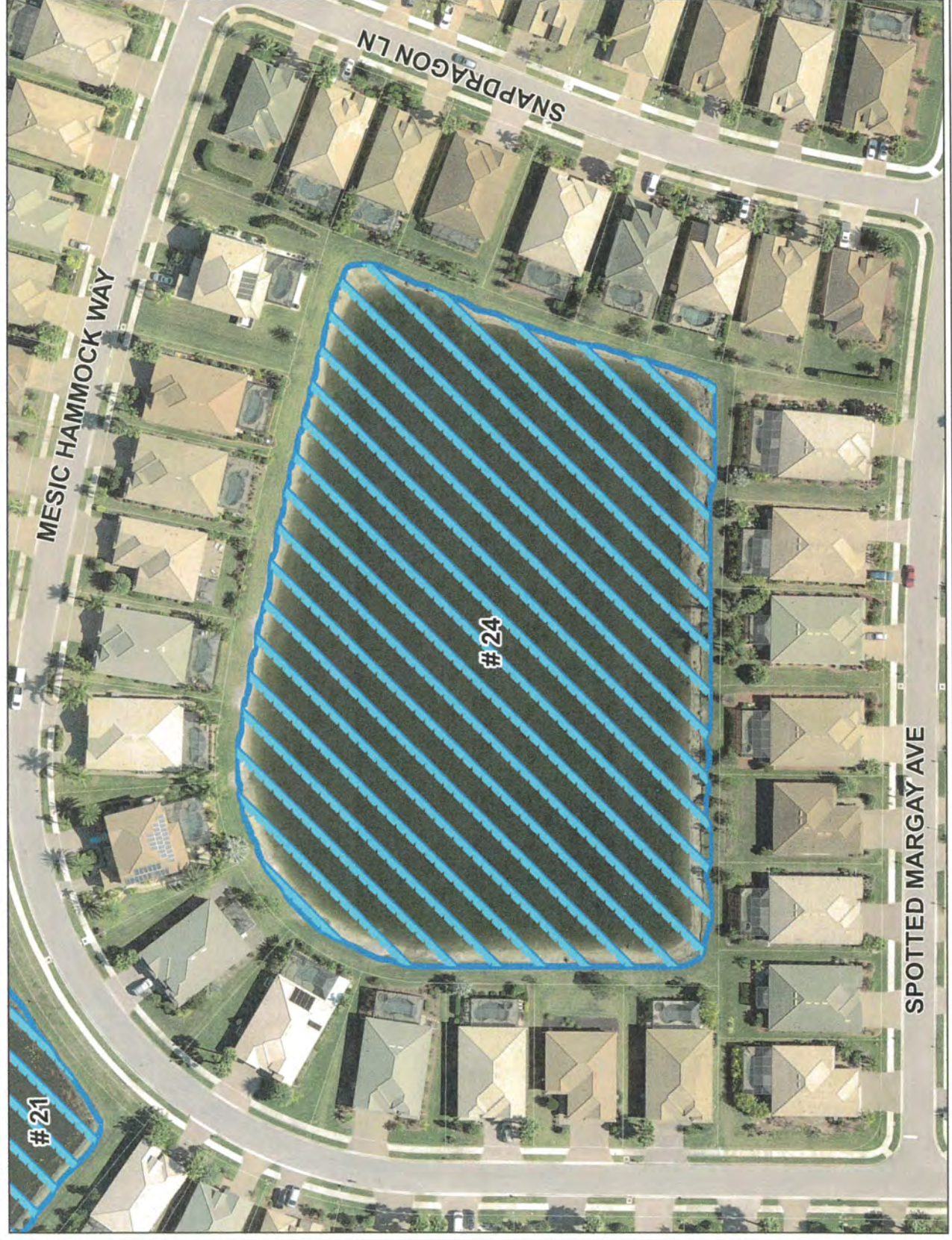


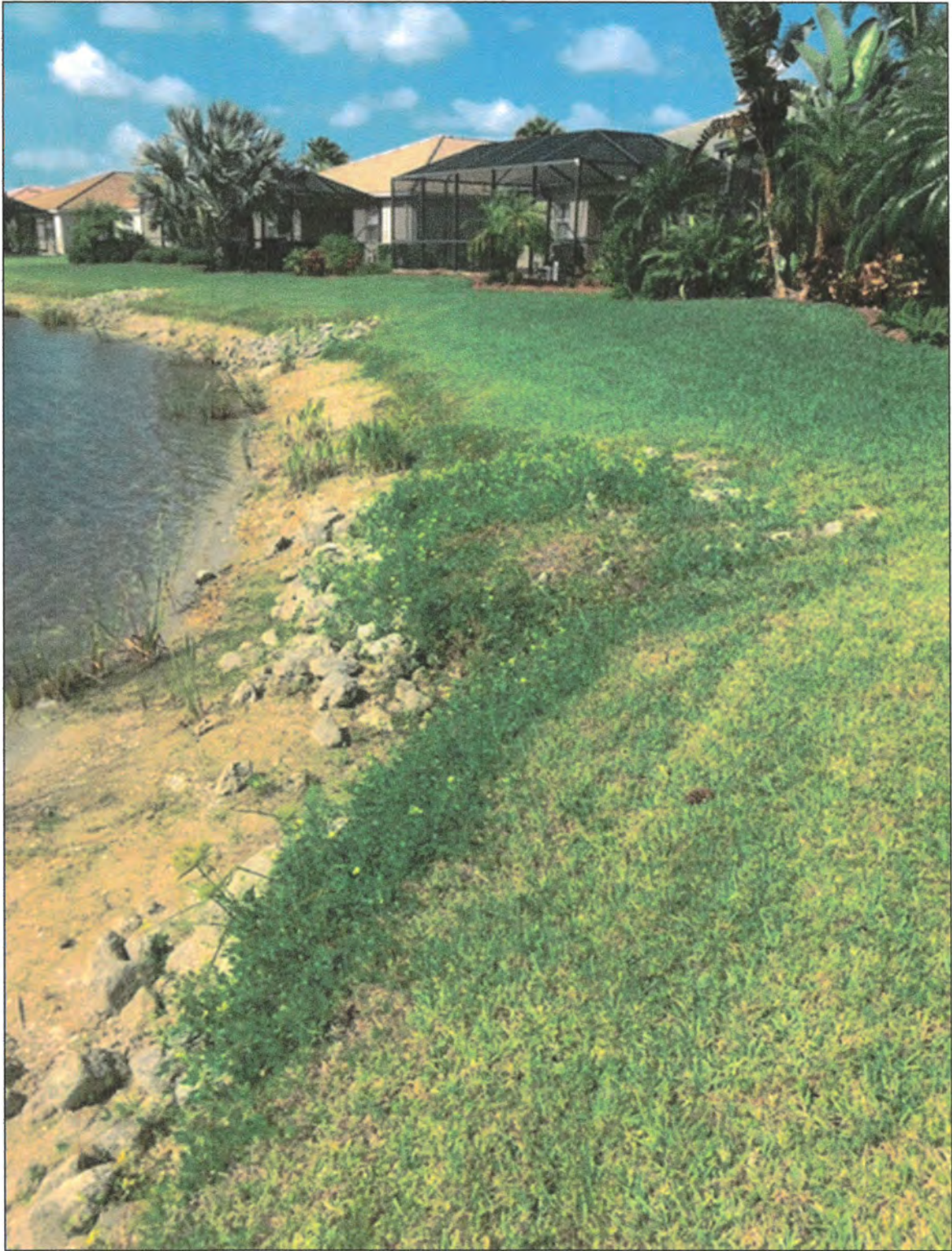


Lake 24



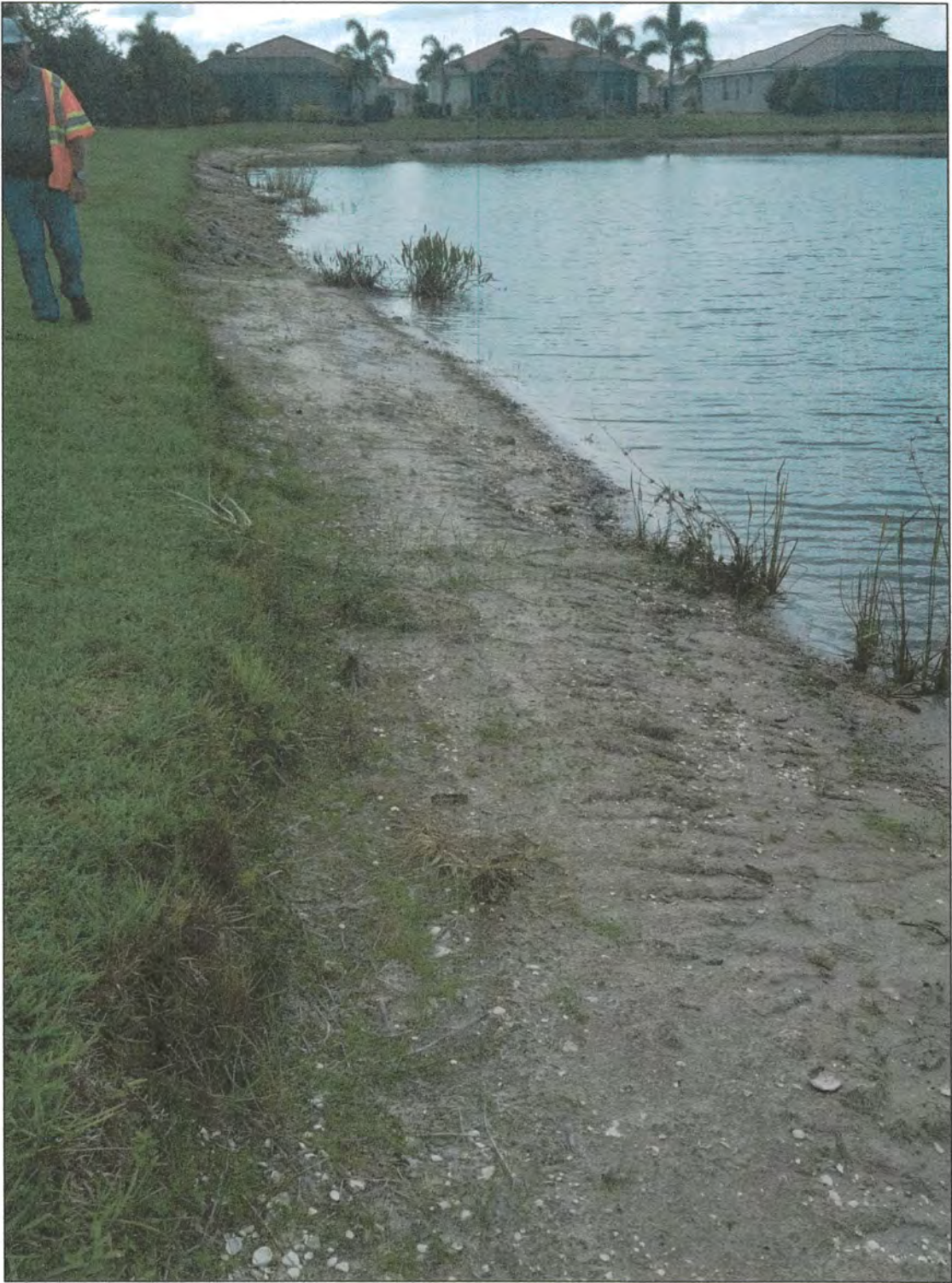
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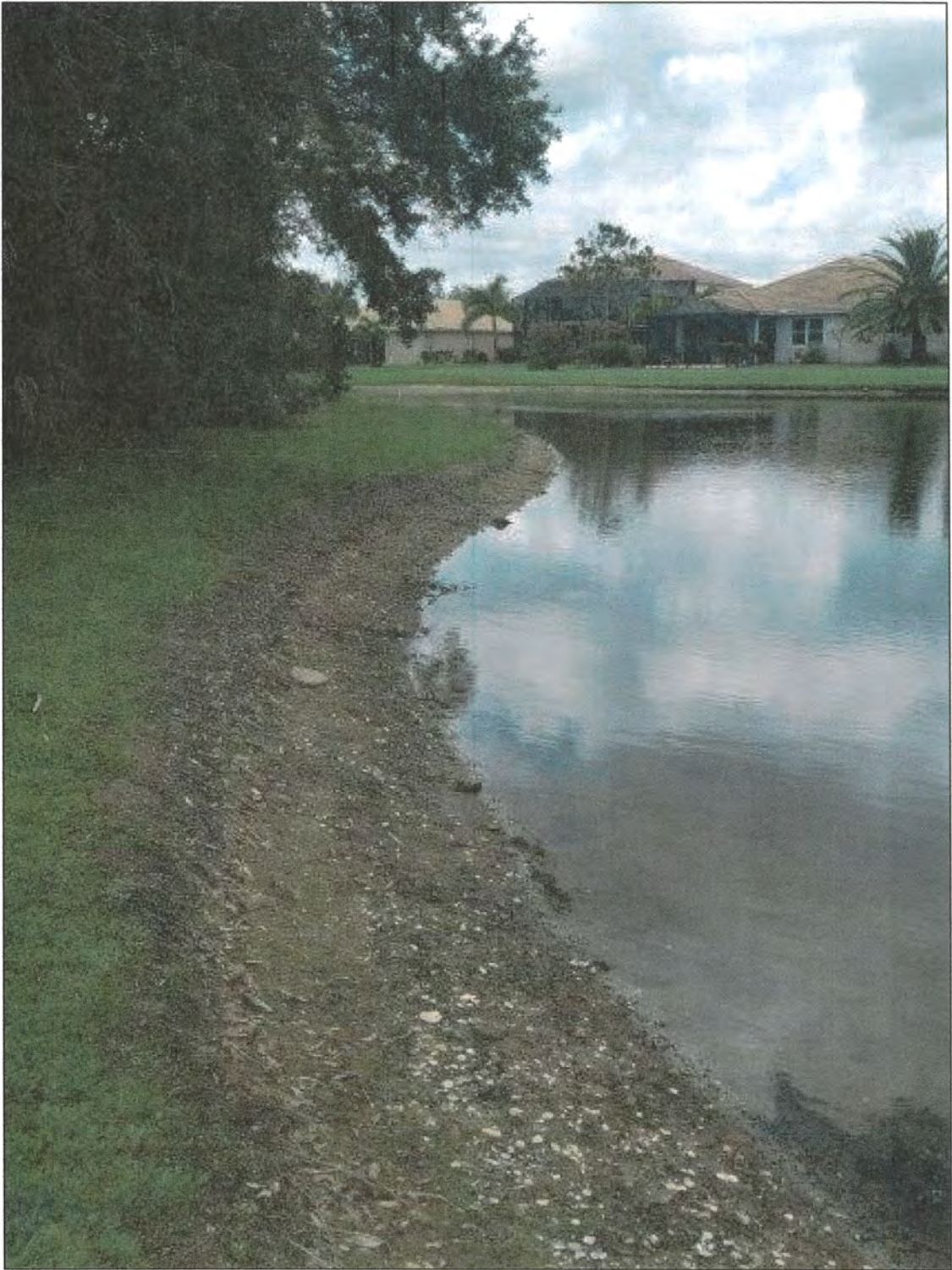










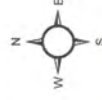


Lake 25

Legend

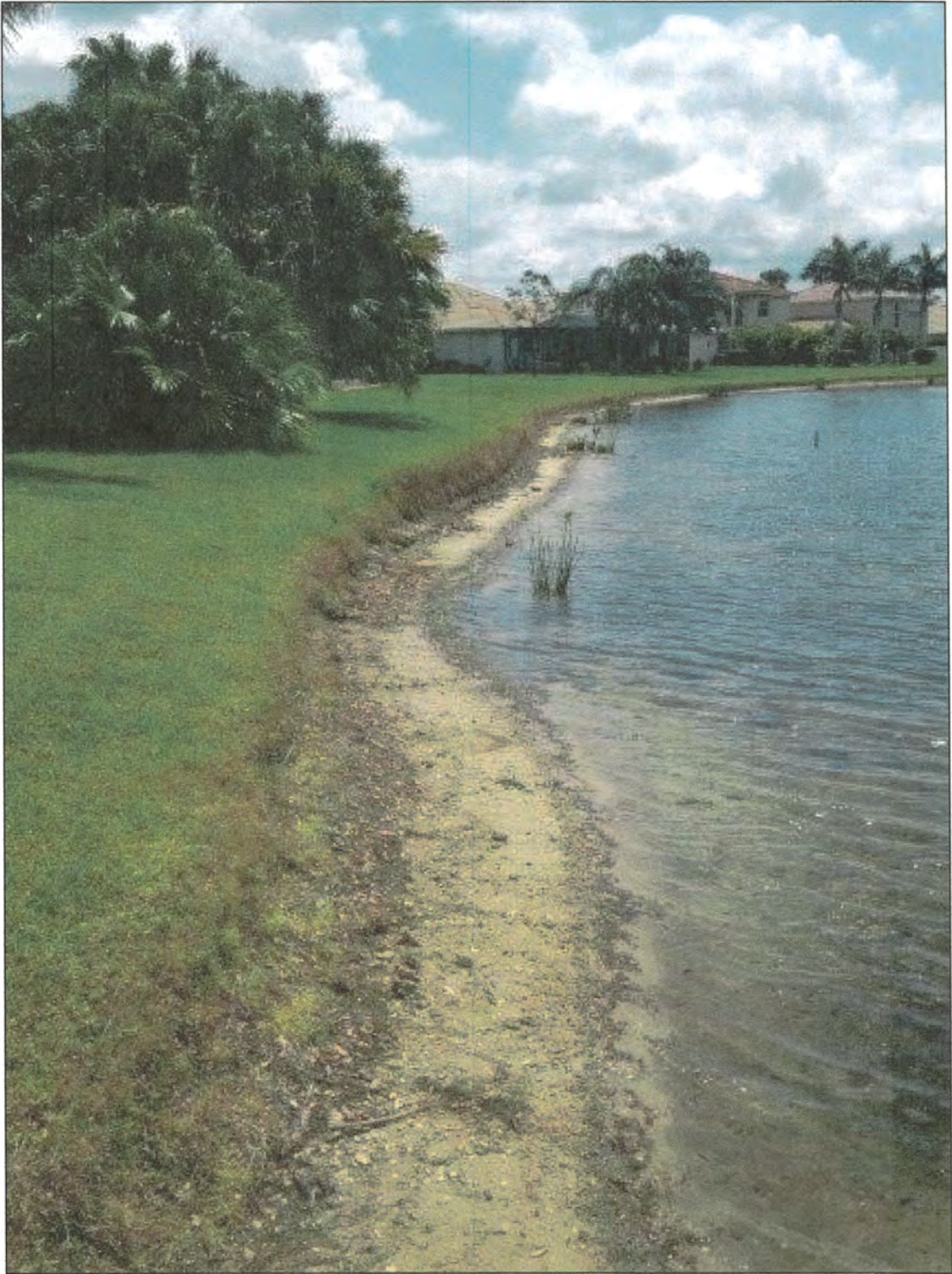


Water

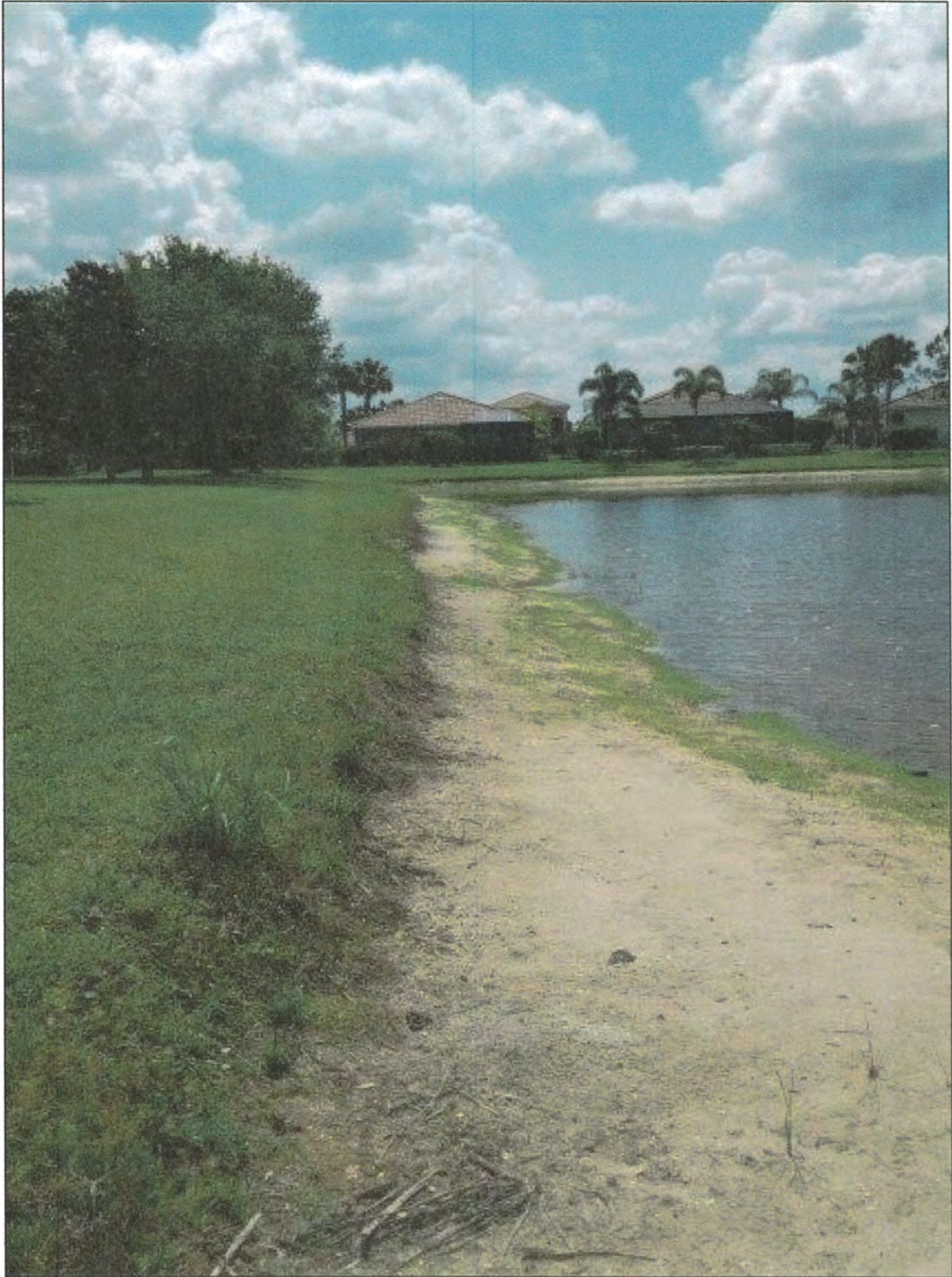


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Lake 26

Legend



Water



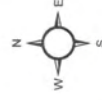
Print Date: 5/23/2019







Lake 27



Print Date: 5/23/2019









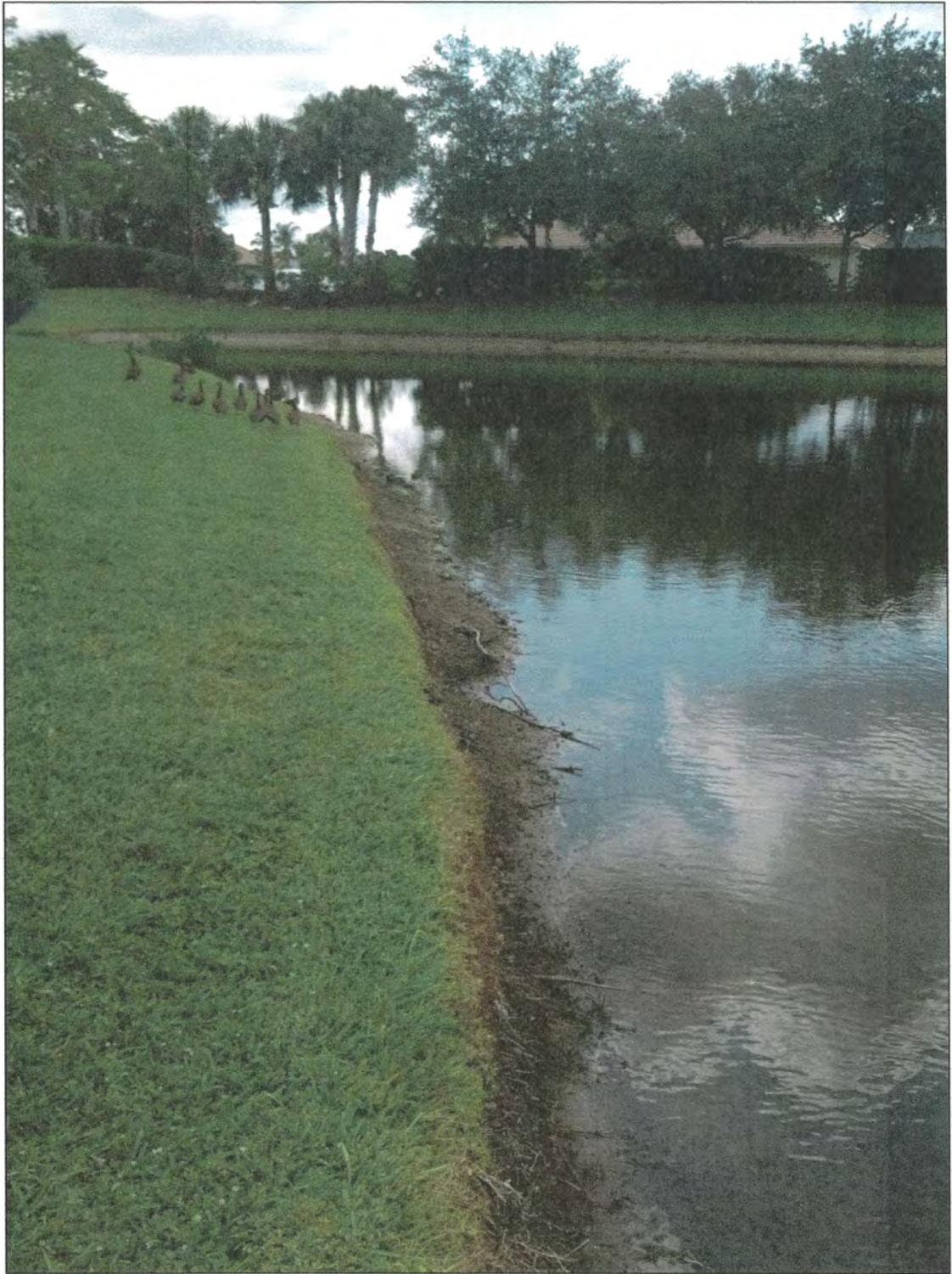
Lake 28



Print Date: 5/23/2019

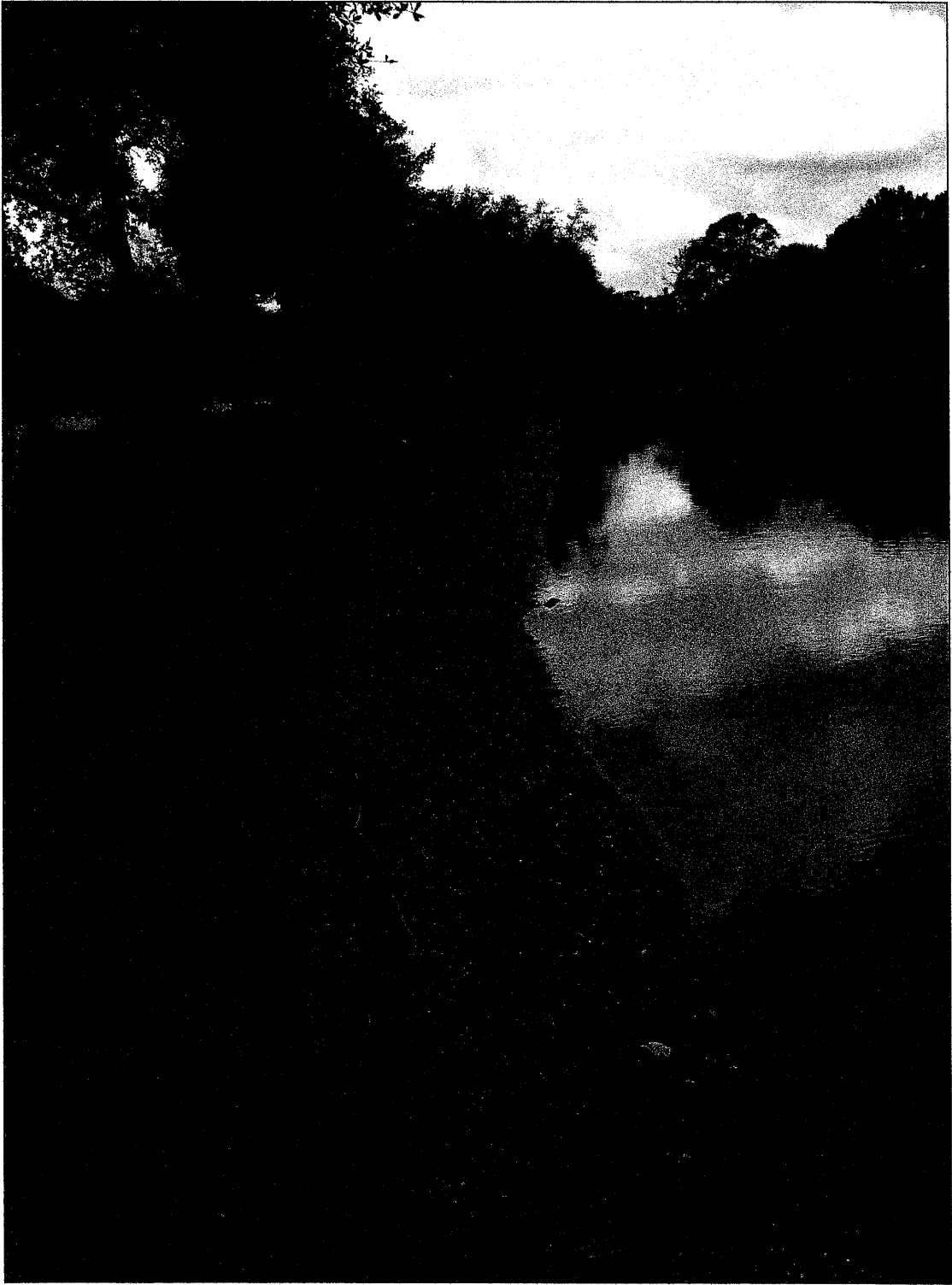










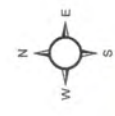


Lake 29

Legend



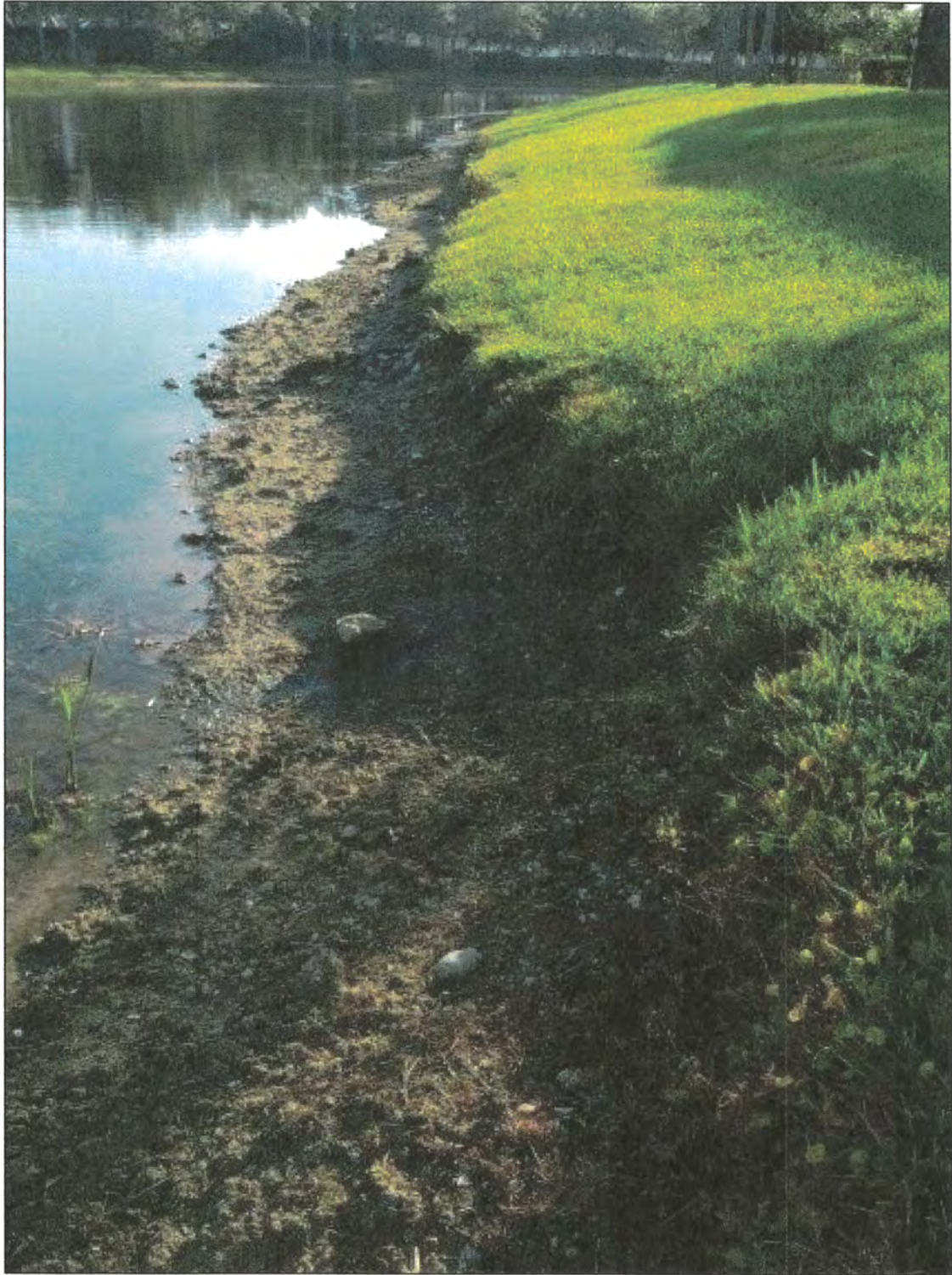
Water



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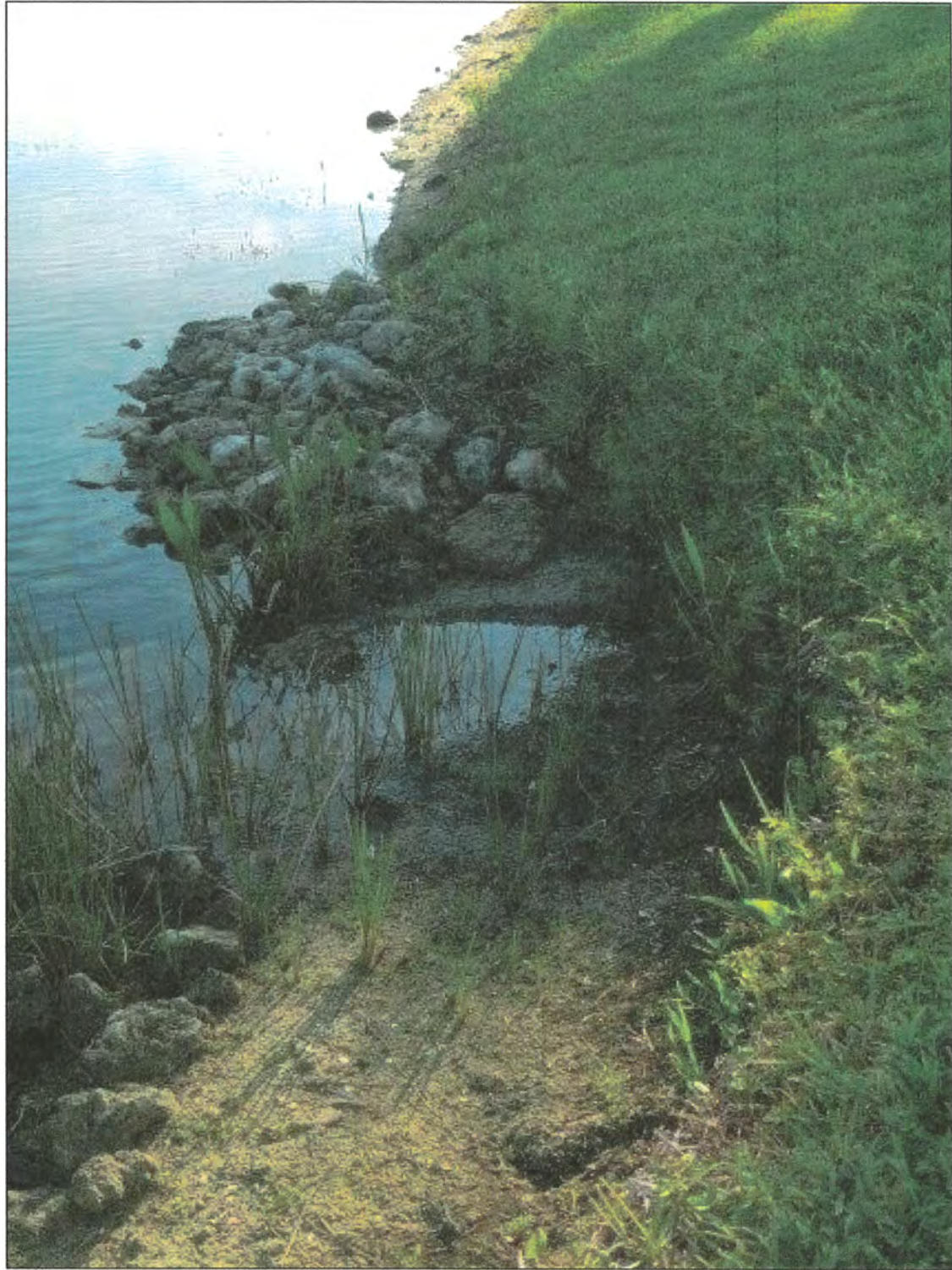


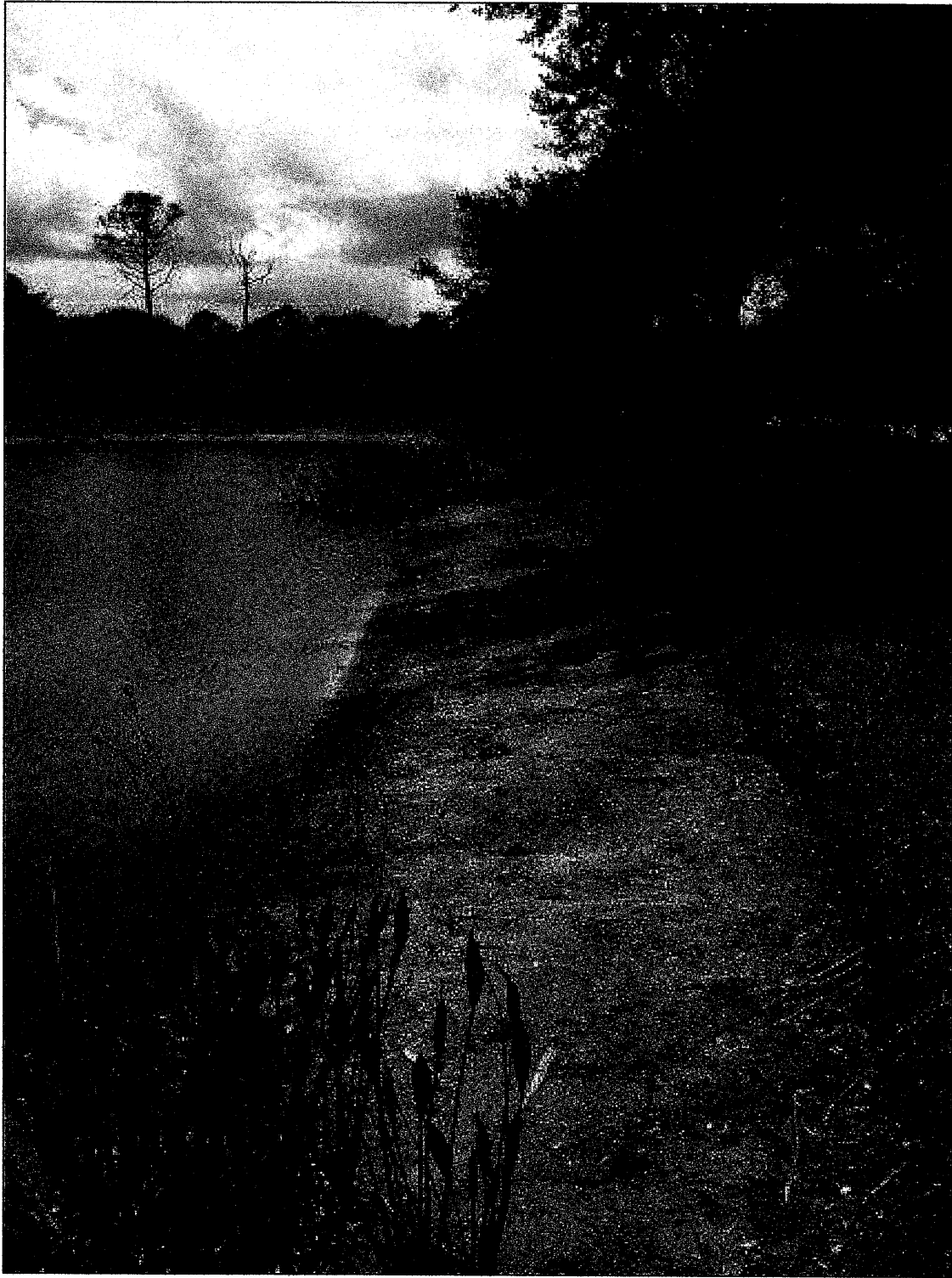










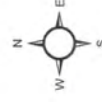


Lake 30

Legend

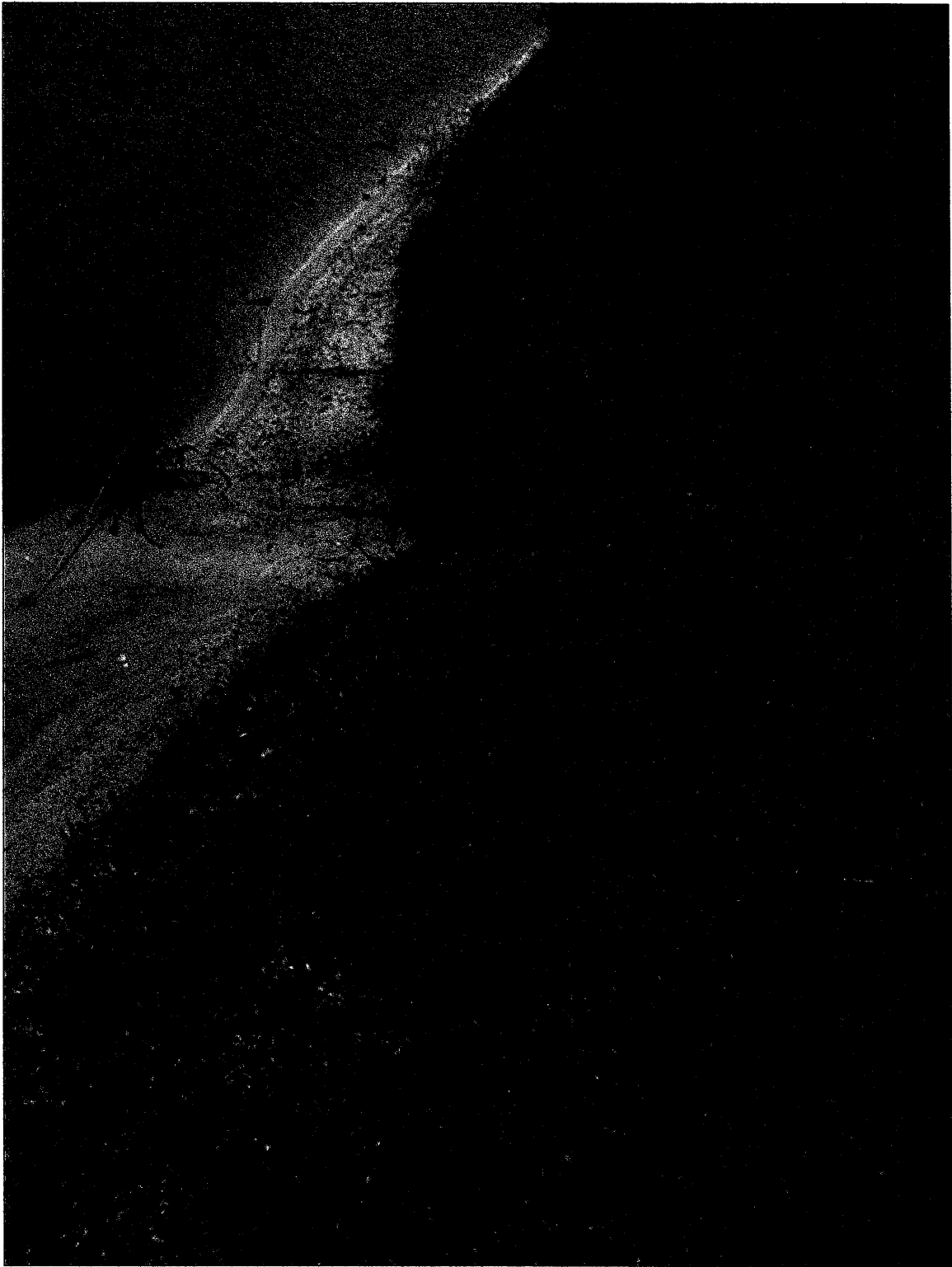


Water



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Lake 31

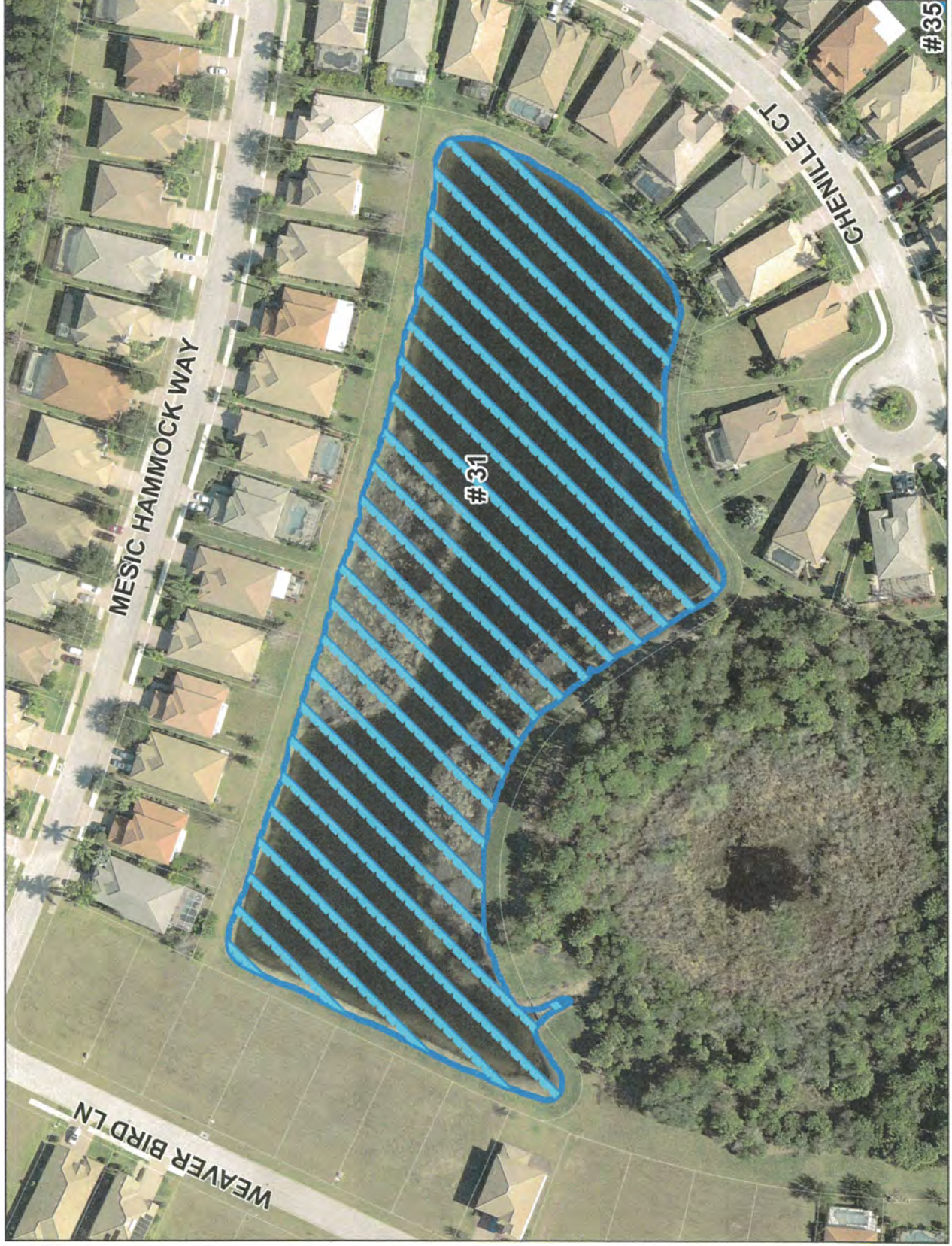
Legend



Water

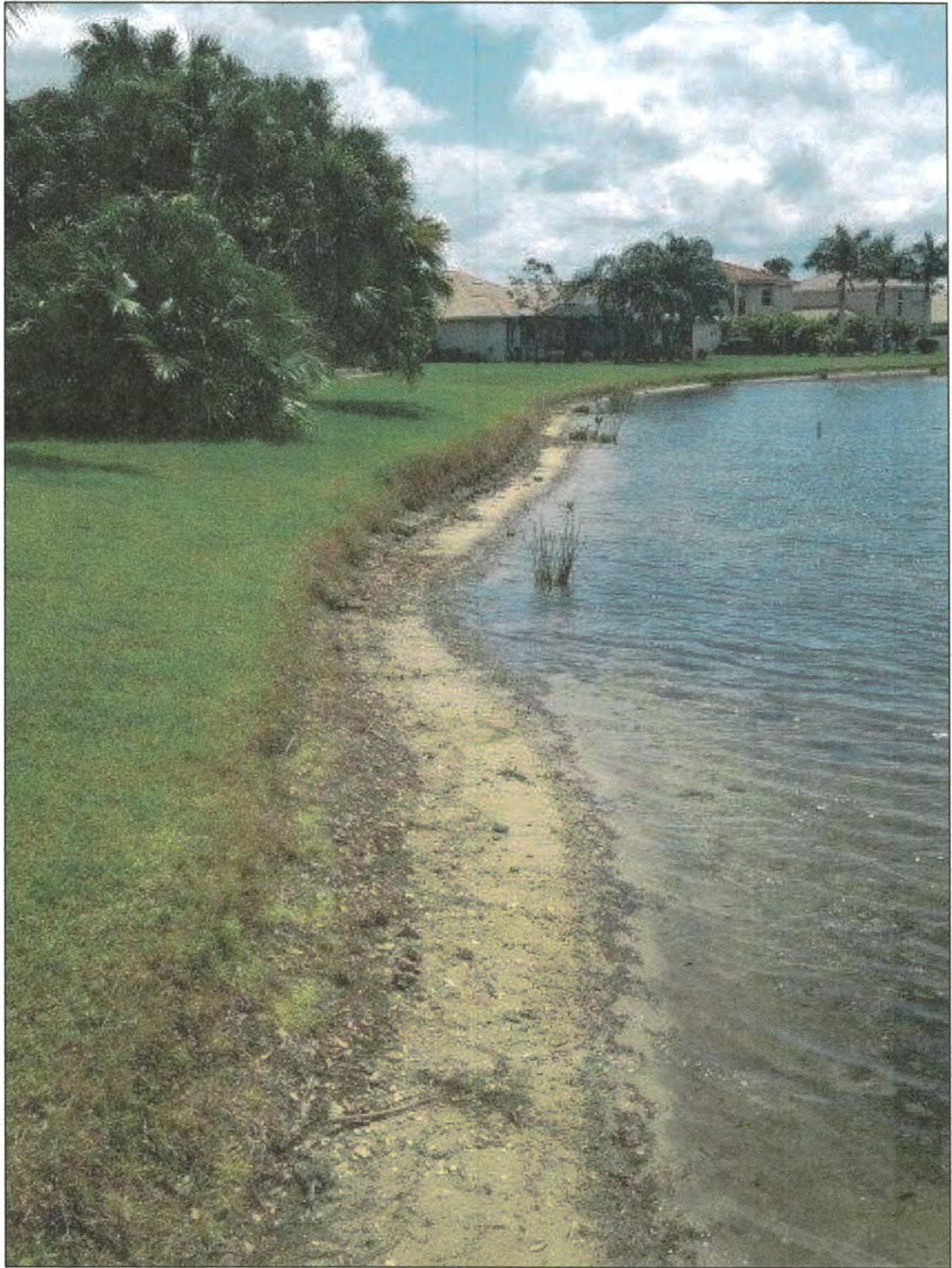


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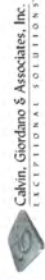




Lake 32

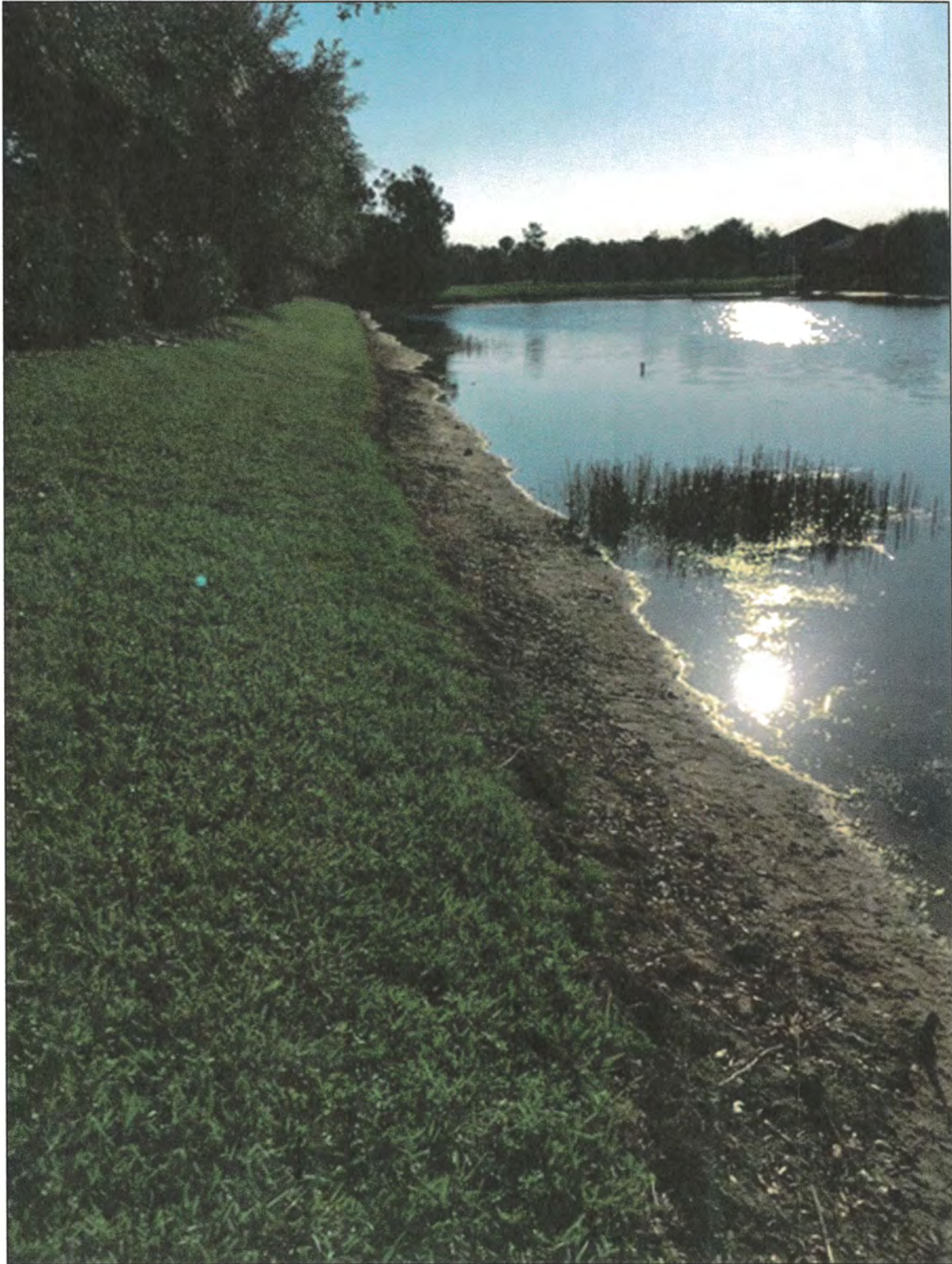


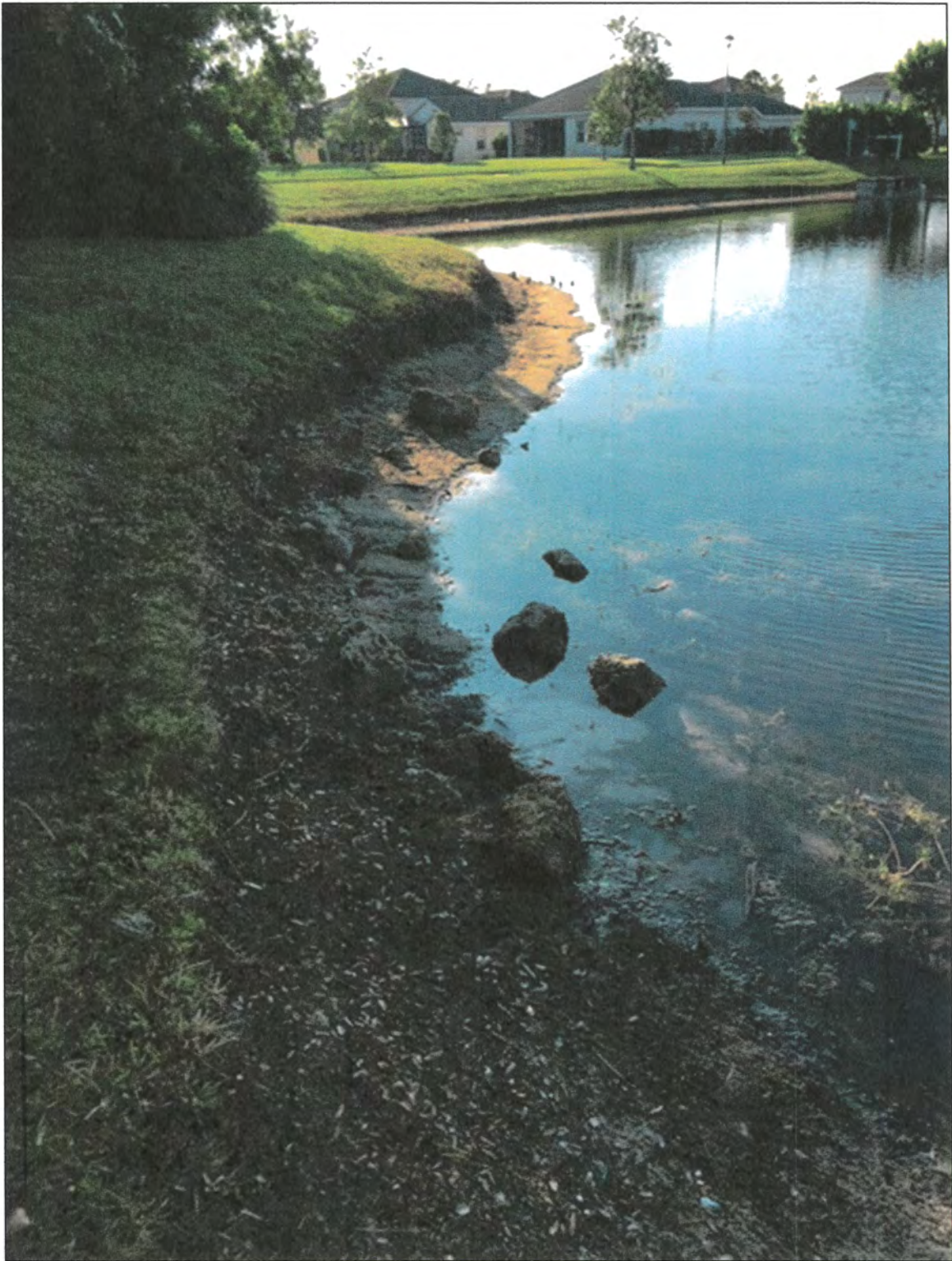
Print Date: 5/23/2019

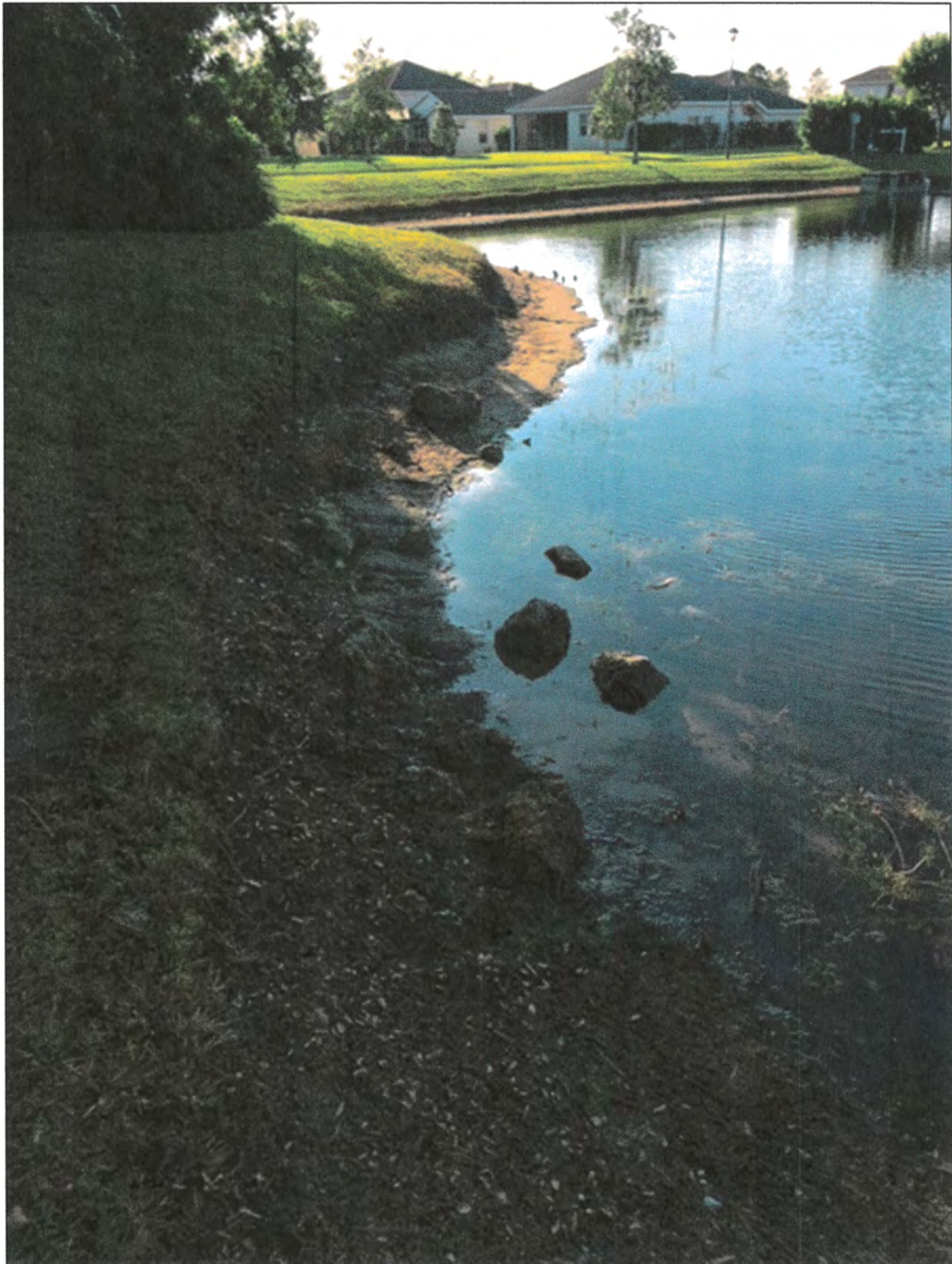










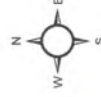


Lake 33

Legend

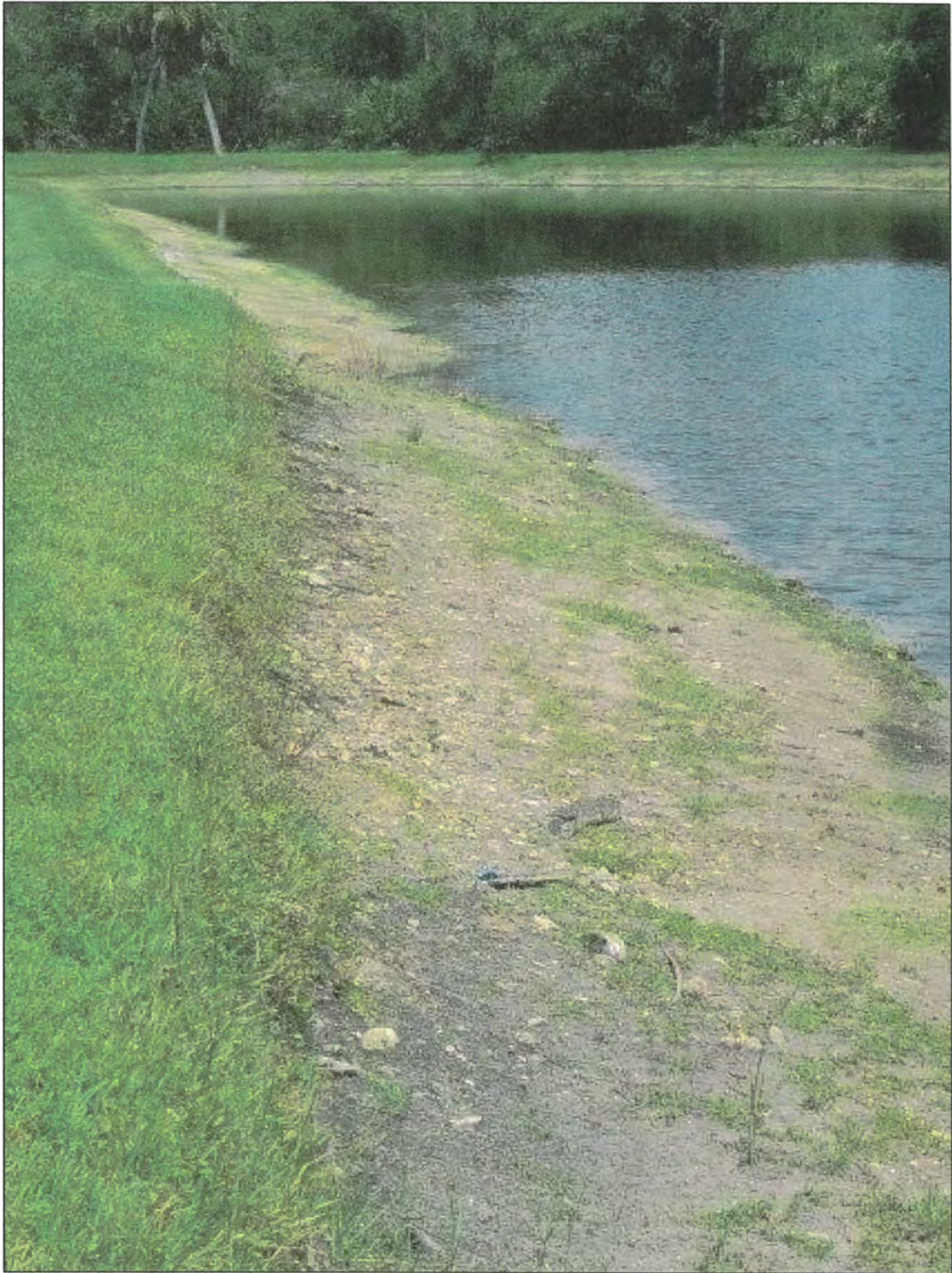


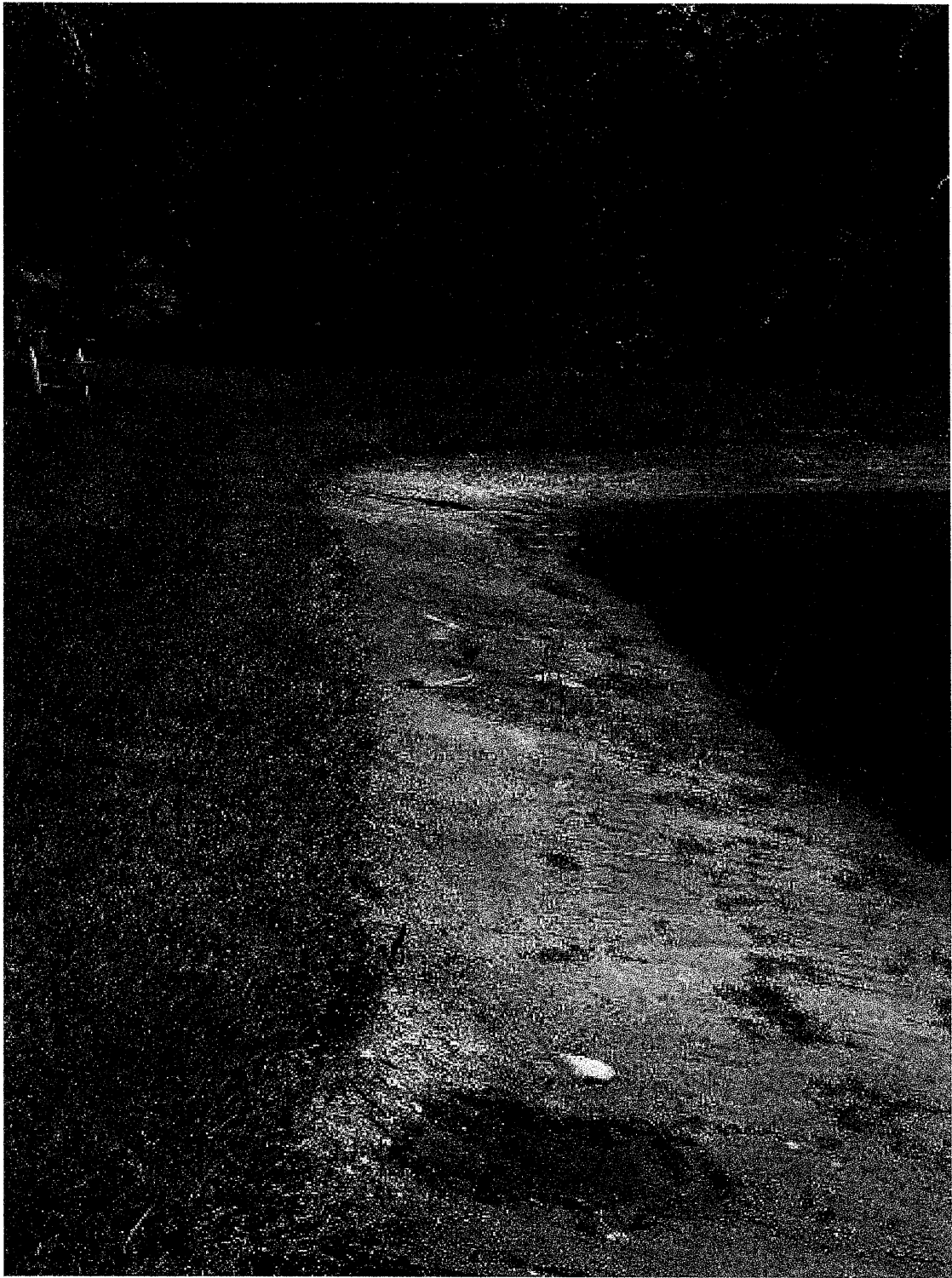
Water



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Lake 34

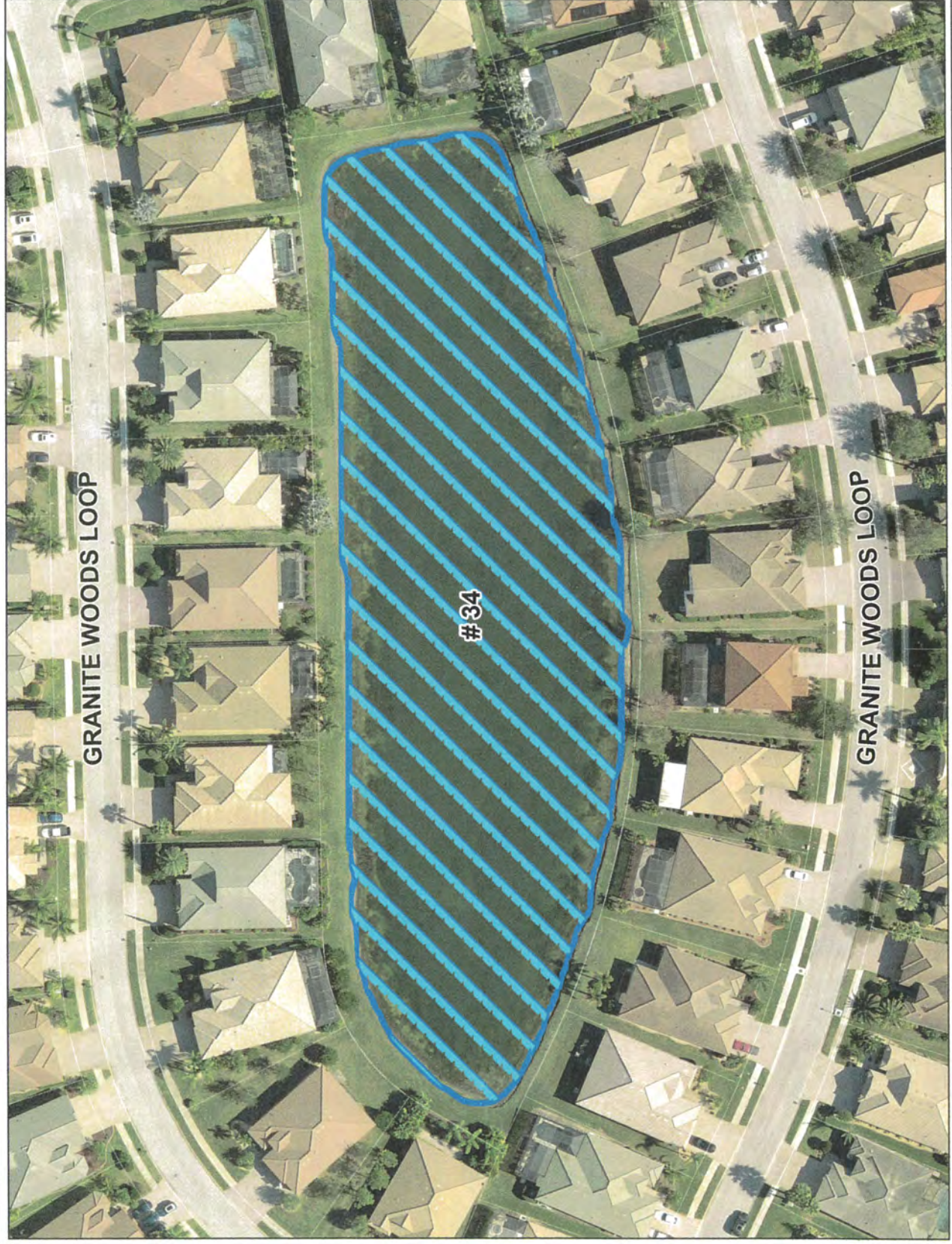
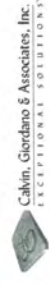
Legend



Water



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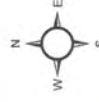






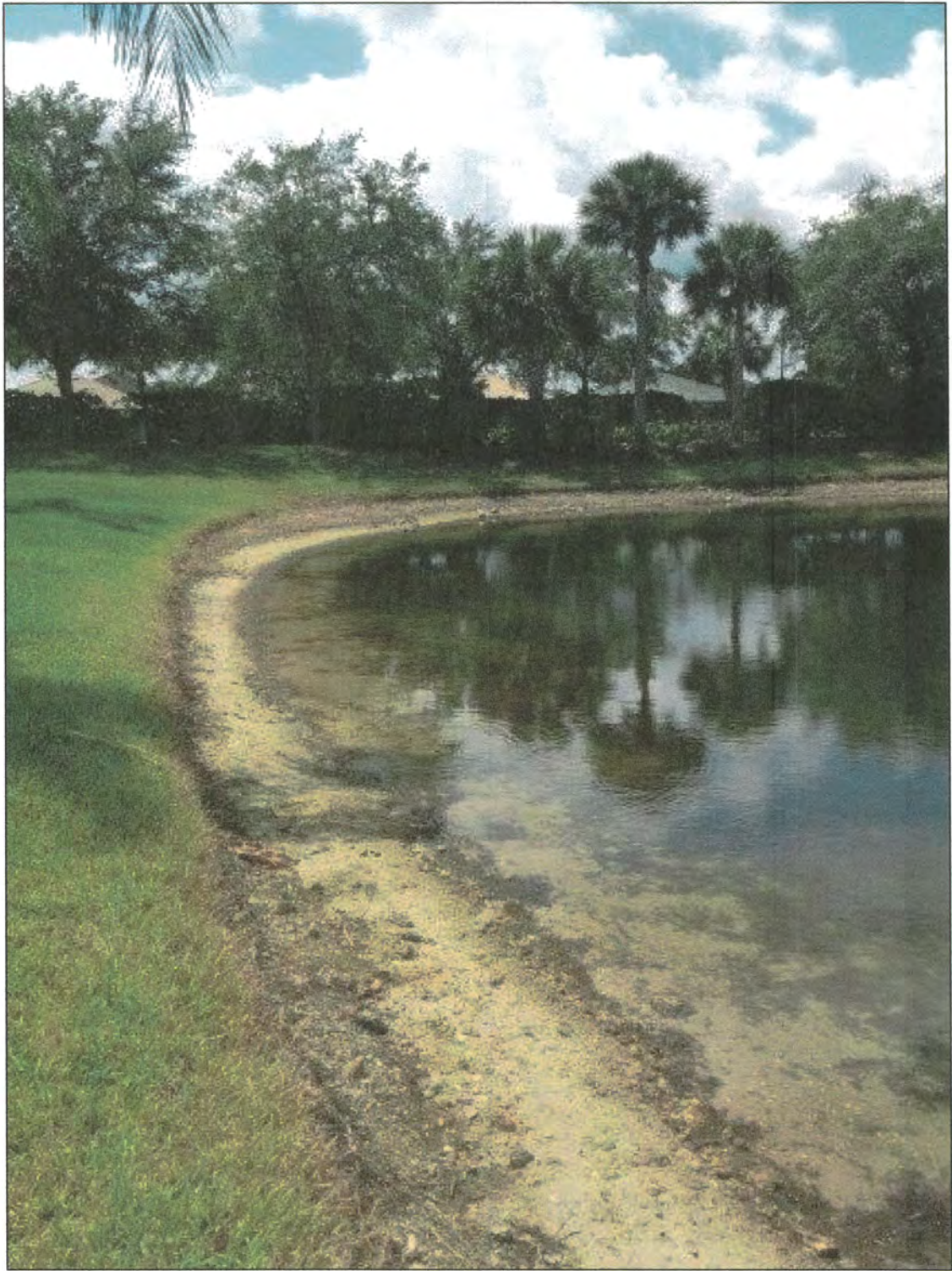


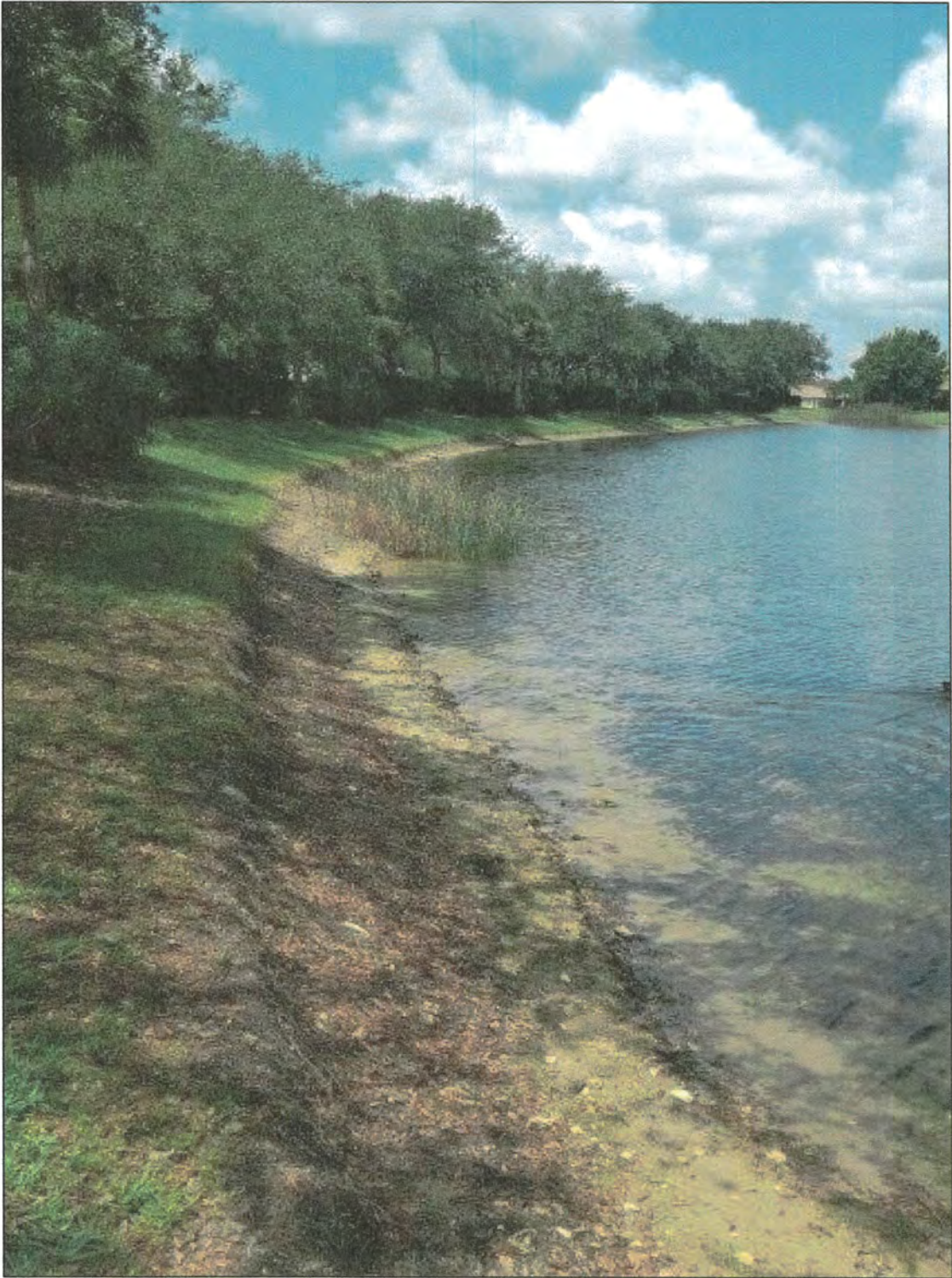
Lake 35

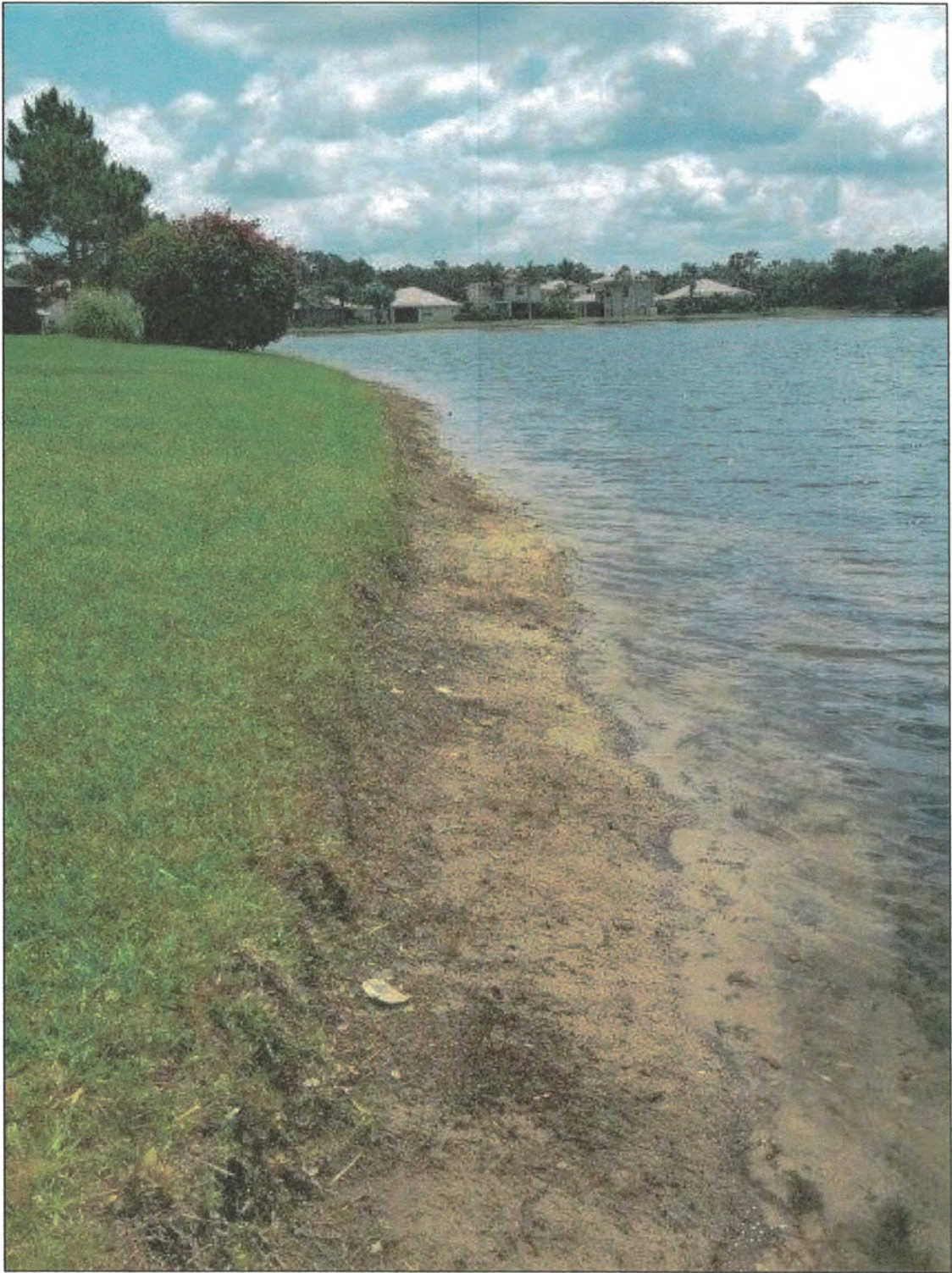


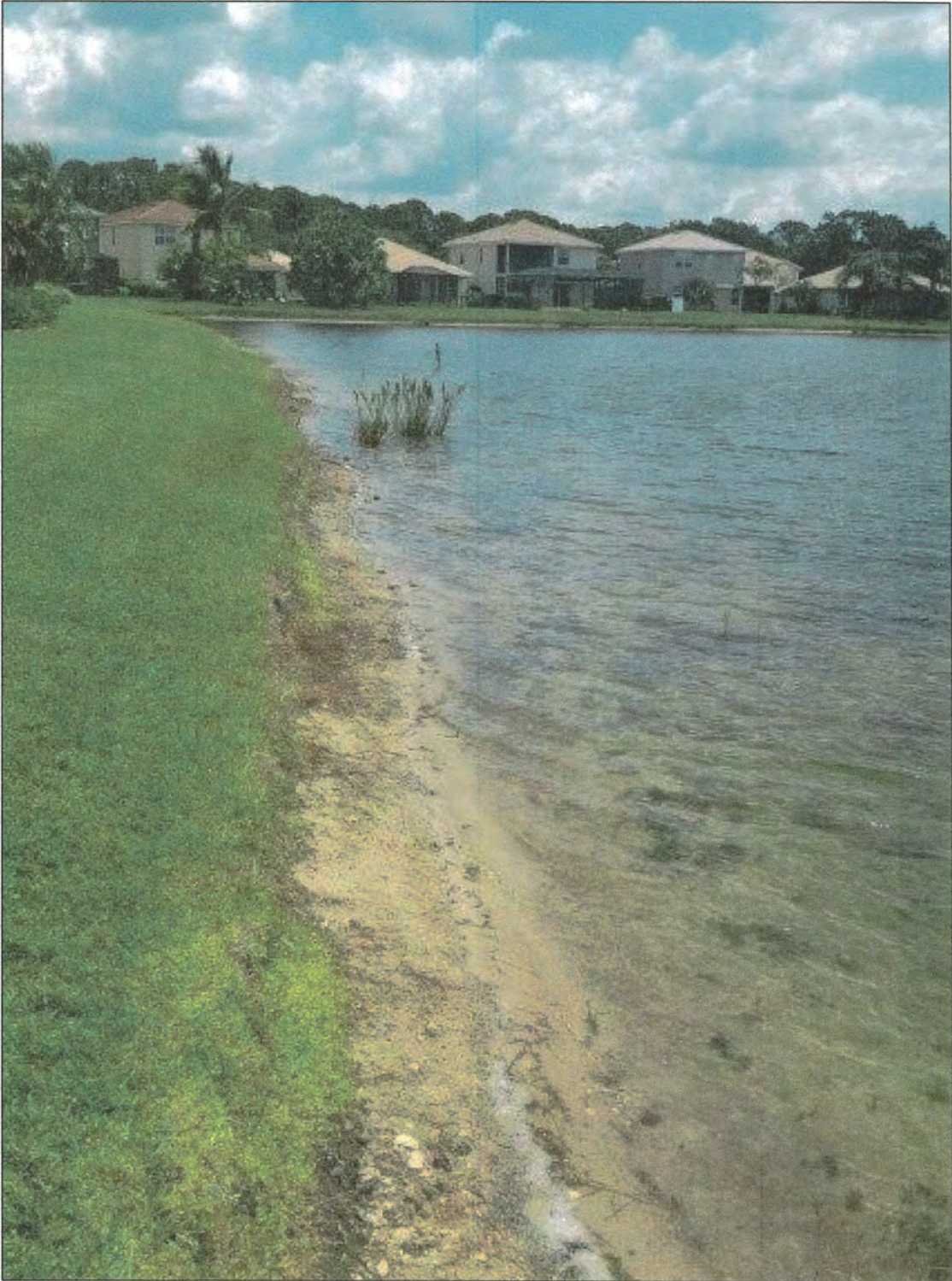
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Lake 36

Legend

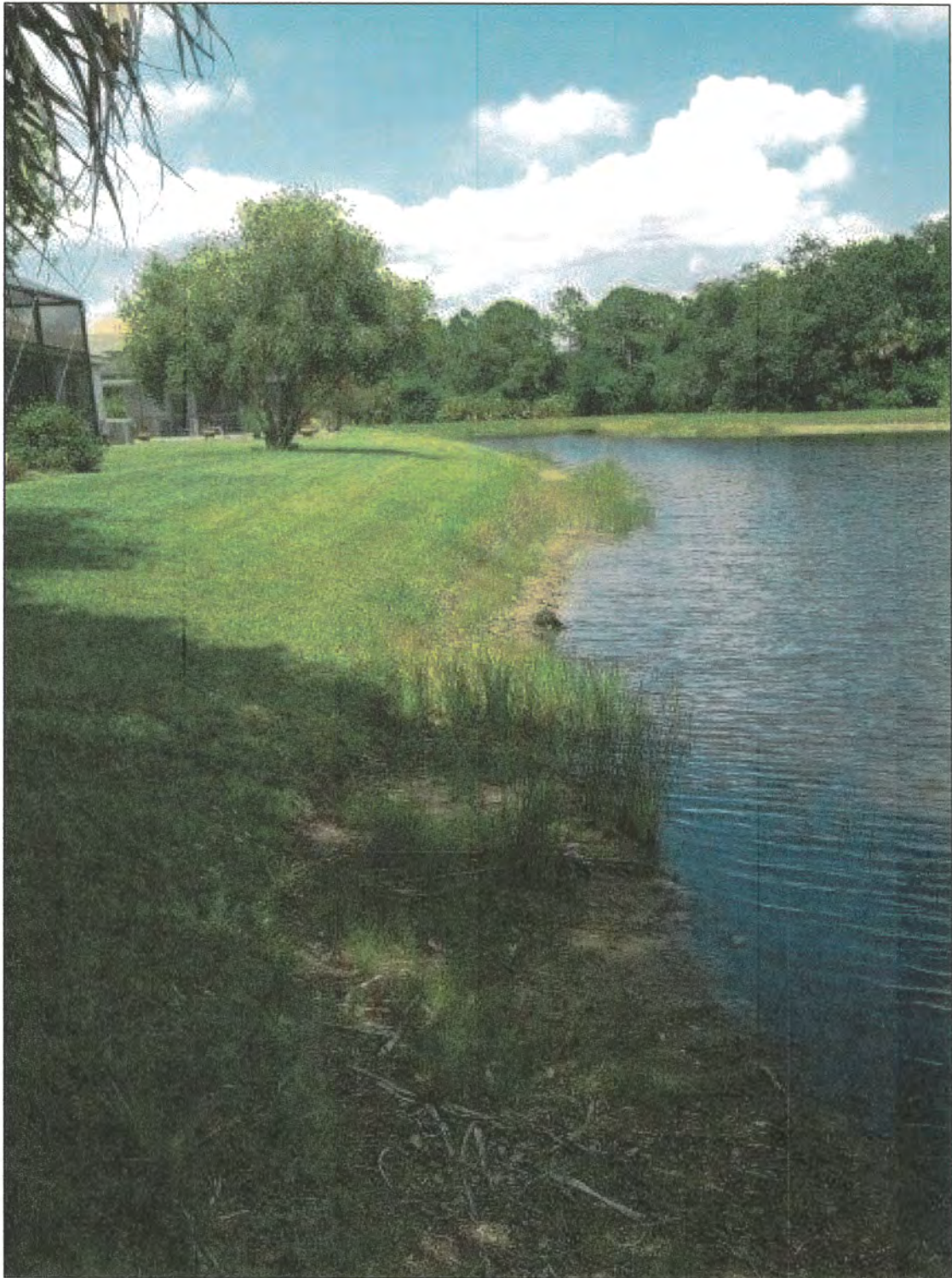


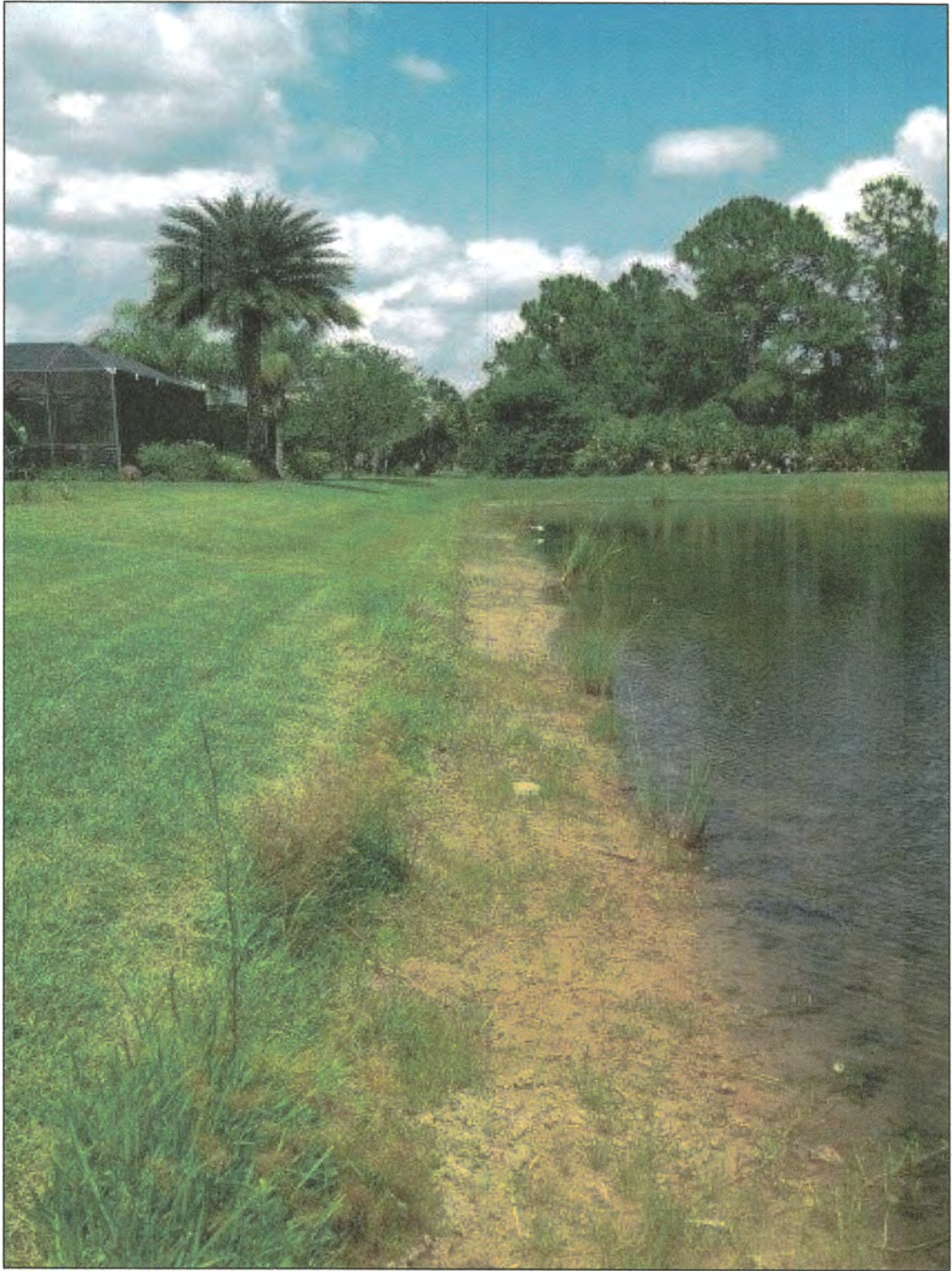
Water



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Lake 37

Legend



Water



Print Date: 5/23/2019

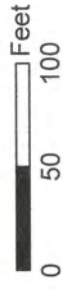
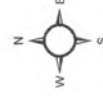




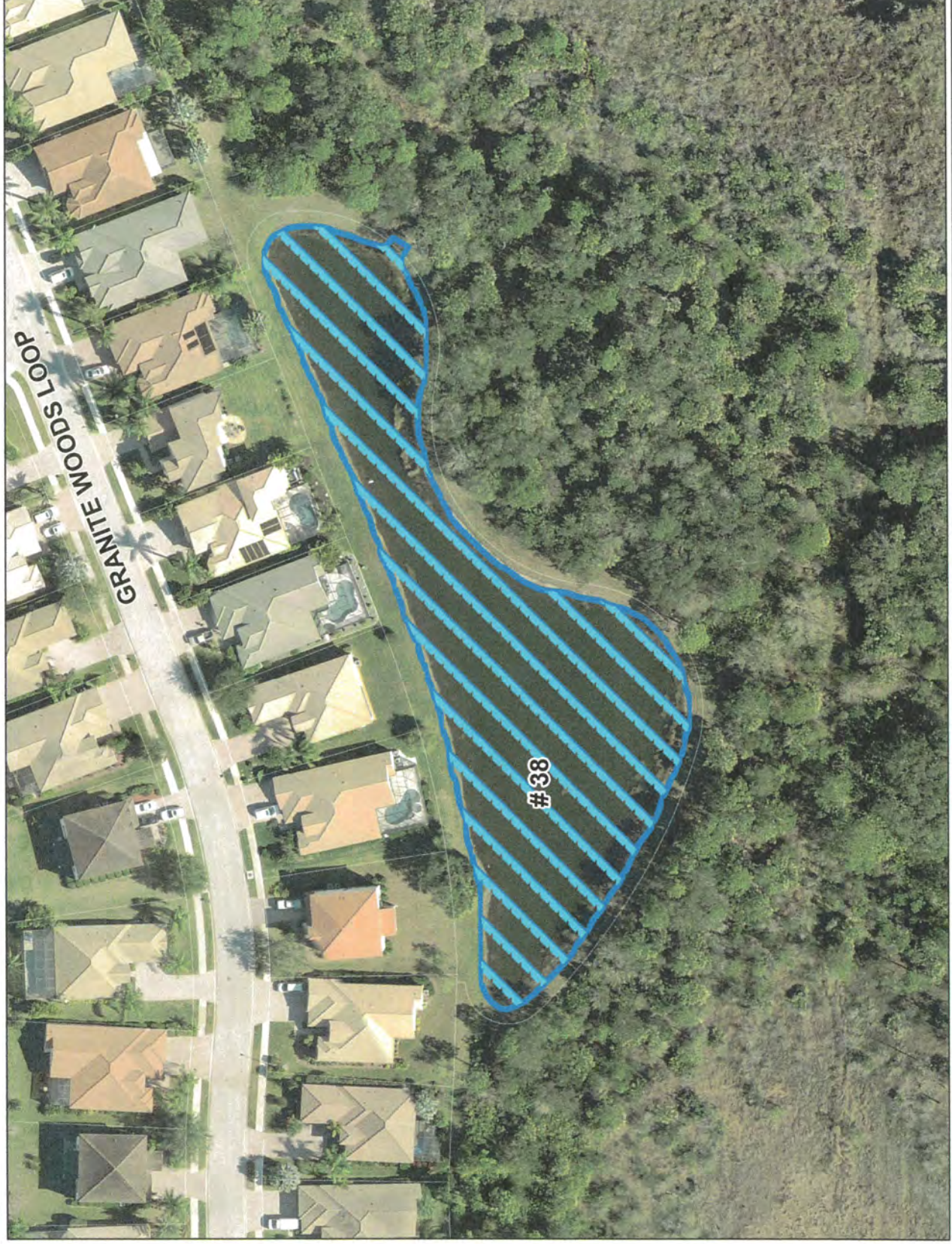
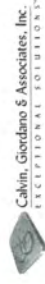


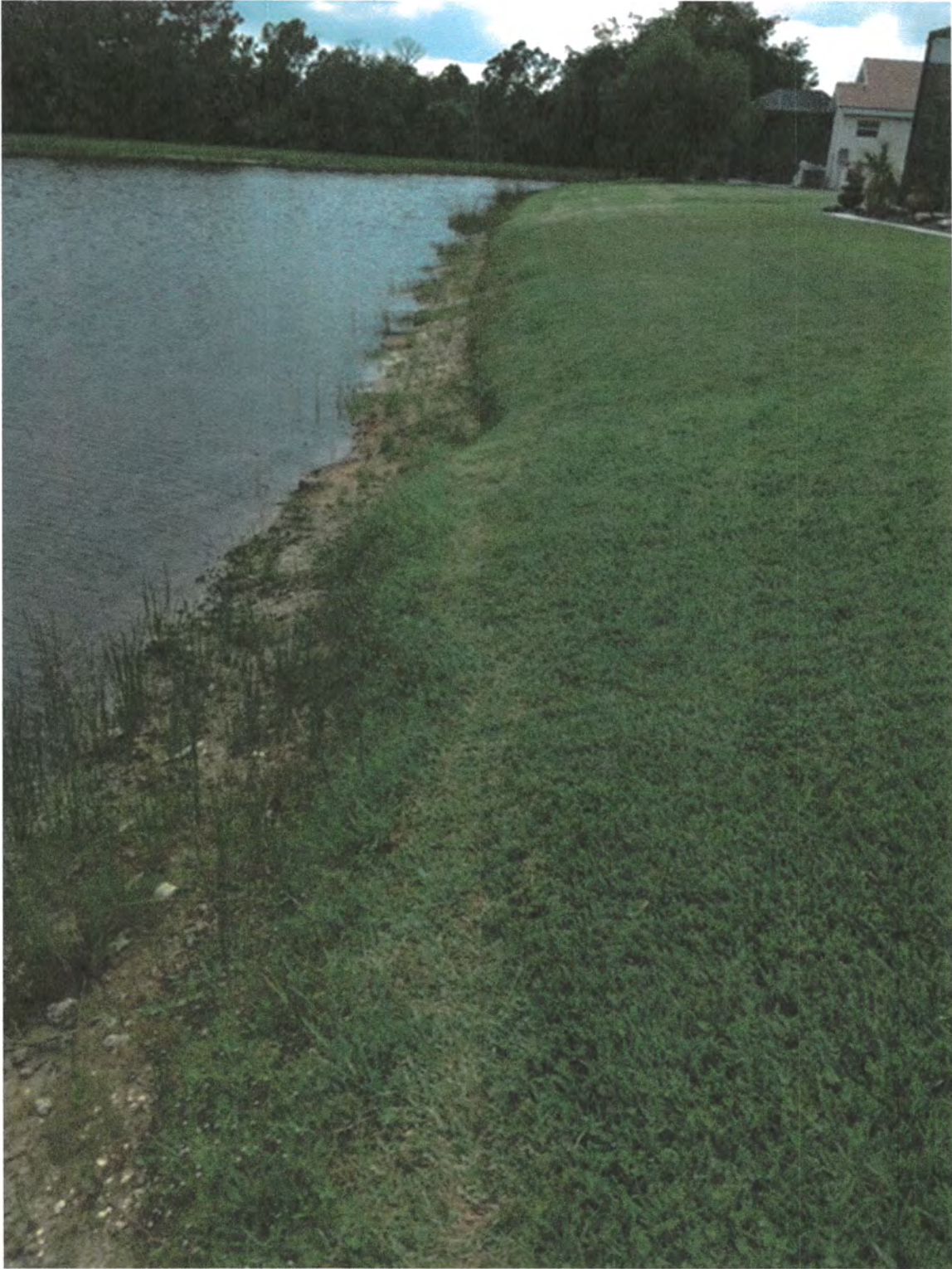


Lake 38



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Lake 39

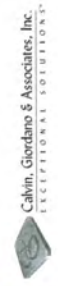
Legend



Water

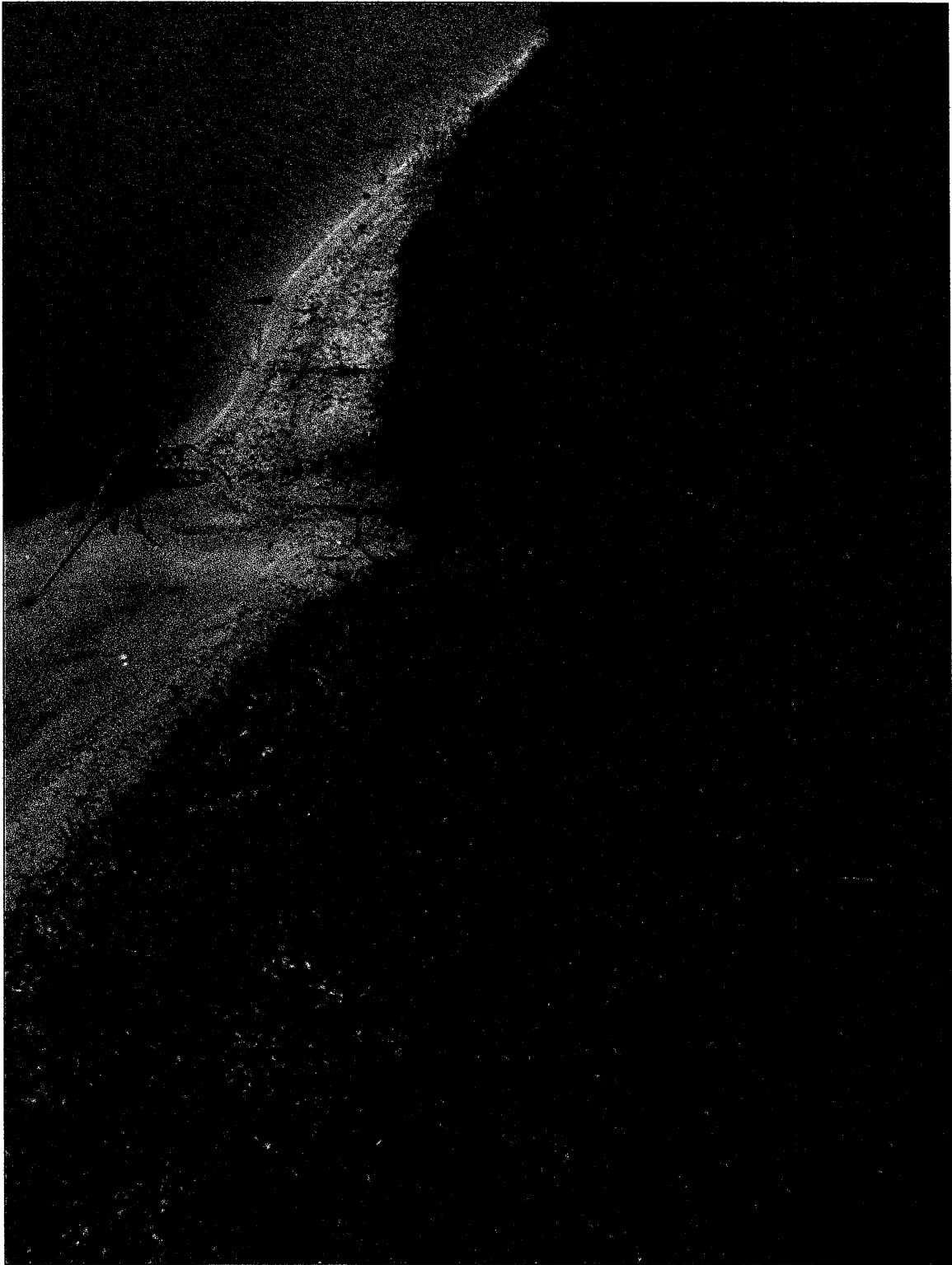


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Lake 40



Print Date: 5/23/2019



