

TOPICS

2007 ADS STORMWATER WORKSHOP

16. Drainage Well Geysering
17. Erosion of Soil around Manholes
18. Soil loss behind Sheet Pile Walls
19. Settlement of Uncompacted Sand Backfill around Structures
20. Failure of Clay Liner in Regional Stormwater Pond
21. Sinkhole Drying up Lake in Seminole County
22. Sinkholes in Stormwater Pond
23. Pipe Joint Opening due to Muck Subgrade
24. Clayey Pond Bottom causing Muddy Appearance in Wet Pond

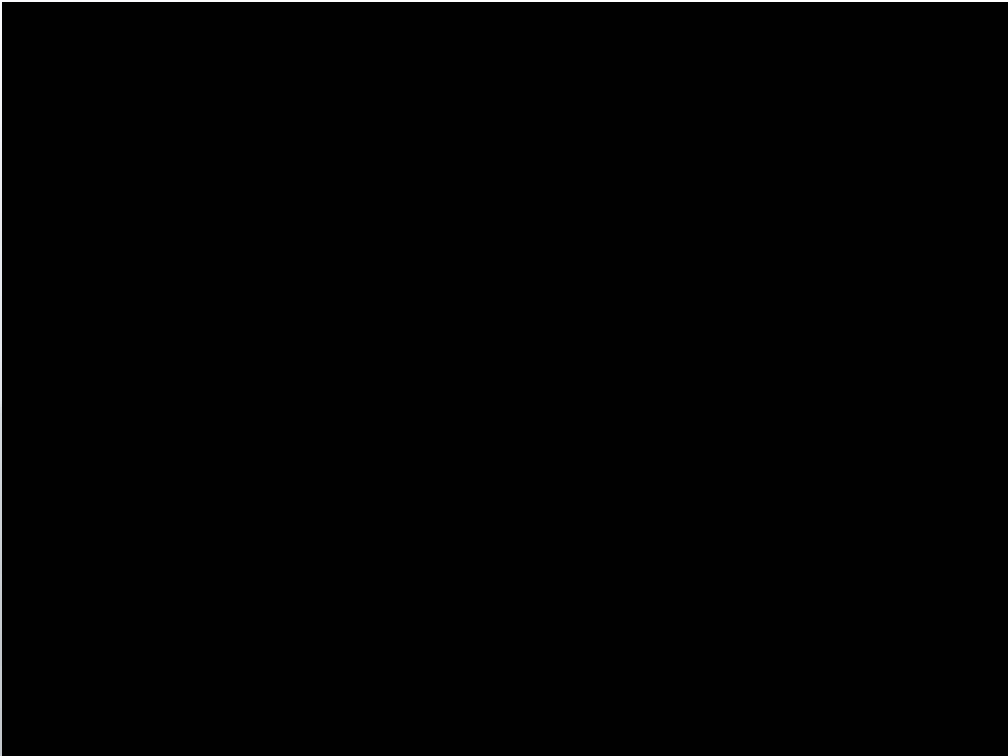
TOPICS

2007 ADS STORMWATER WORKSHOP

25. Seepage Slopes
26. Failure of Reno Mattresses on Canal Bank
27. Reclaimed Water Over-Irrigation
28. Pond NWL and Pavement Grade Separation Problem
29. Pond NWL Stabilizing Lower than Expected due to Perched Water Table
30. Pond NWL Stabilizing Lower than Expected Value
31. Scour under Slabs
32. Slow Recovery of Water Level in Lakes after Completion of Dewatering

Drainage well geysering - Keystone Well

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Drainage well geysering



Loss of soil around manholes - Lakeview Preserve

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Sand flowing into leaking manhole leading to loss of soil and "sinkhole"

Loss of soil around manholes - Lakeview Preserve

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Close-up view of "sinkhole"

Loss of soil around manholes - Lakeview Preserve

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Close-up view of “sinkhole”

Loss of soil around manholes - Lakeview Preserve

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Interior view of leaking manhole

Soil Loss Behind Sheet Pile Walls

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View of depression area after grouting, facing north

Soil Loss Behind Sheet Pile Walls

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Grout being pumped into injection point

Soil Loss Behind Sheet Pile Walls

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Injection point within depression

Soil Loss Behind Sheet Pile Walls

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Close-up view of grout loss

Soil Loss Behind Sheet Pile Walls

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Grout loss directly below angled sheet piles

Settlement of Loose Sand Backfill Around Sediment Removal Structure

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Installed structure in landscape strip

Settlement of Loose Sand Backfill Around Sediment Removal Structure

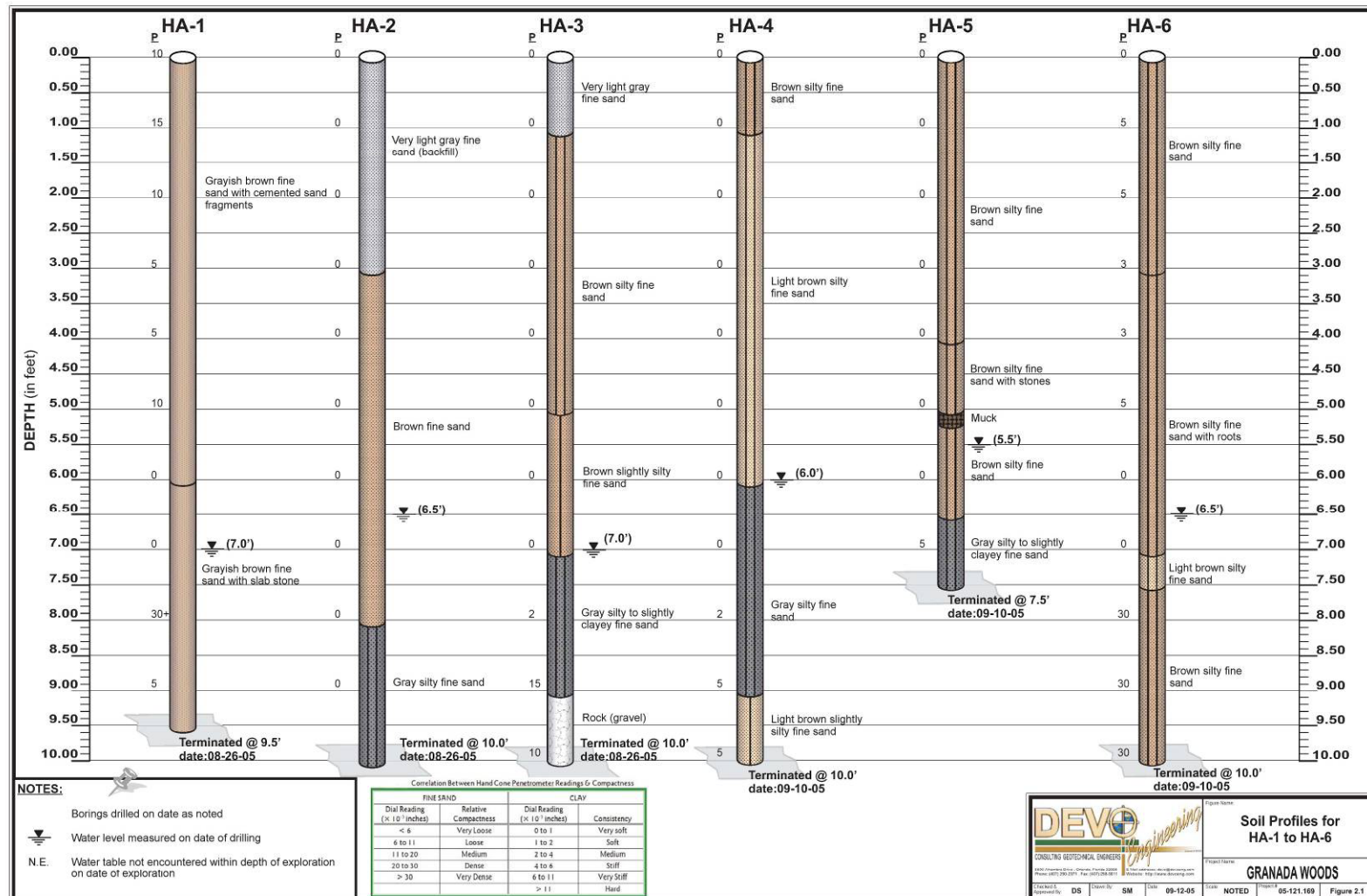
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Settlement of soil around structure

Settlement of Loose Sand Backfill Around Sediment Removal Structure

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Soil stratigraphy and compactness around structure

Settlement of Loose Sand Backfill Around Sediment Removal Structure

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Photos of installation

Settlement of Loose Sand Backfill Around Sediment Removal Structure

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Photos of installation

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Photos of installation

Settlement of Loose Sand Backfill Around Sediment Removal Structure

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Photos of installation

Failure of clay liner in wet pond - FSU Regional Stormwater Pond

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Sinkhole 1

Failure of clay liner in wet pond - FSU Regional Stormwater Pond

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RSF sinkholes

Sinkhole 1

Failure of clay liner in wet pond - FSU Regional Stormwater Pond

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RSF sinkholes

Sinkhole 1

Failure of clay liner in wet pond - FSU Regional Stormwater Pond

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RSF sinkholes

Sinkhole 1

Failure of clay liner in wet pond - FSU Regional Stormwater Pond

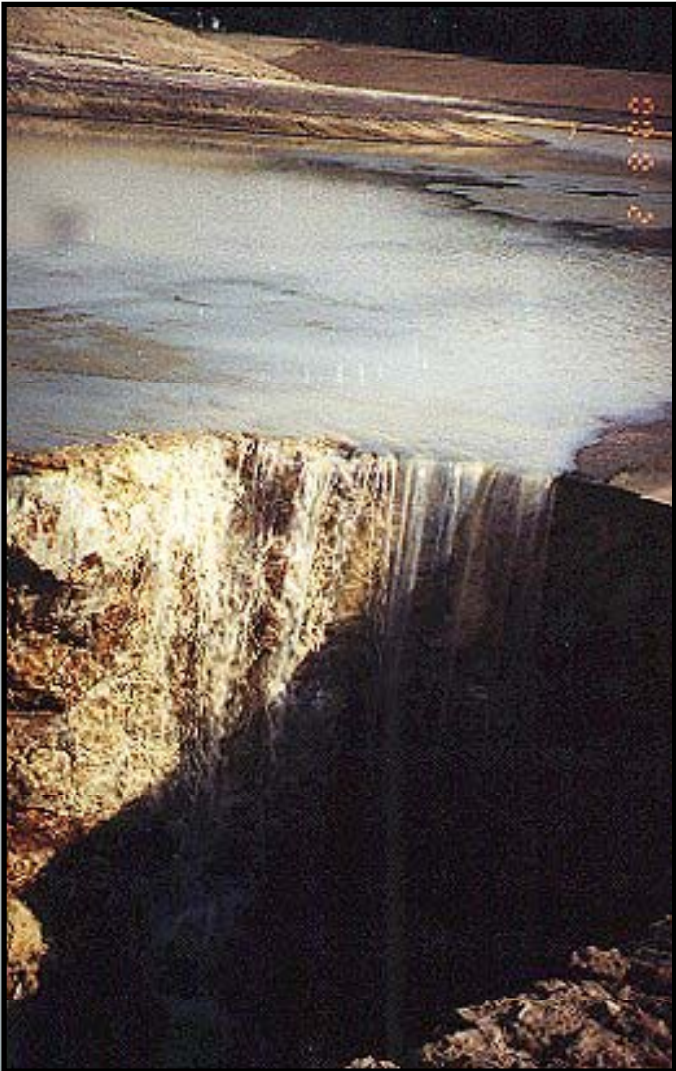
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Sinkhole 1

Failure of clay liner in wet pond - FSU Regional Stormwater Pond

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Sinkhole 2



Sinkholes in lakes - Grace Lake in Seminole County

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Lake Level Approx 7ft - June 27, 2003

Sinkholes in lakes - Grace Lake in Seminole County

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Lake Levels Just Under Peak Stage - August 26, 2003

Sinkholes in lakes - Grace Lake in Seminole County

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Looking East From I-4 Towards Lake - August 26, 2003

Sinkholes in lakes - Grace Lake in Seminole County

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Receded Lake - Nov 29, 2003

Sinkholes in lakes - Grace Lake in Seminole County

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Sinkhole Nov 30, 2003

Sinkholes in ponds - Spring Vista Drive in Debarry

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South Pond

Sinkholes in ponds - Spring Vista Drive in Debarry

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South Pond

Sinkholes in ponds - Spring Vista Drive in Debarry

2007 ADS Stormwater Workshop



South Pond

Sinkholes in ponds - Spring Vista Drive in Debary

2007 ADS Stormwater Workshop



South Pond

Sinkholes in ponds - Spring Vista Drive in Debarry

2007 ADS Stormwater Workshop



North Pond

Sinkholes in ponds - Spring Vista Drive in Debarry

2007 ADS Stormwater Workshop



North Pond

Sinkholes in ponds - Spring Vista Drive in Debarry

2007 ADS Stormwater Workshop



North Pond

Sinkholes in ponds - Spring Vista Drive in Debary

2007 ADS Stormwater Workshop



North Pond

Sinkholes in ponds - Spring Vista Drive in Debarry

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North Pond

Pipe joint opening due to muck subgrade

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Loss of soil & settlement distress at pipe crossing

Pipe joint opening due to muck subgrade

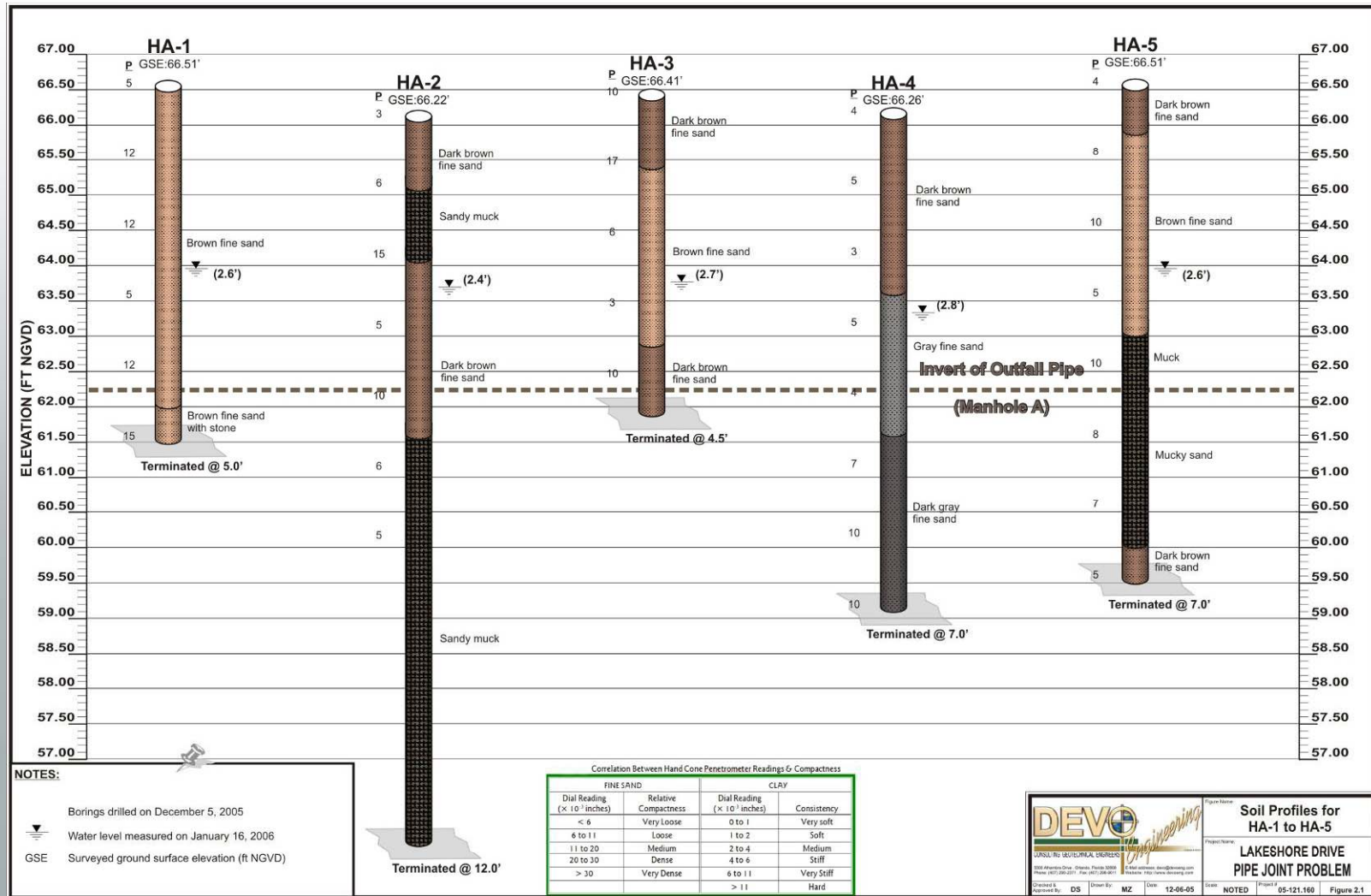
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Pavement reinstated after settlement

Pipe joint opening due to muck subgrade

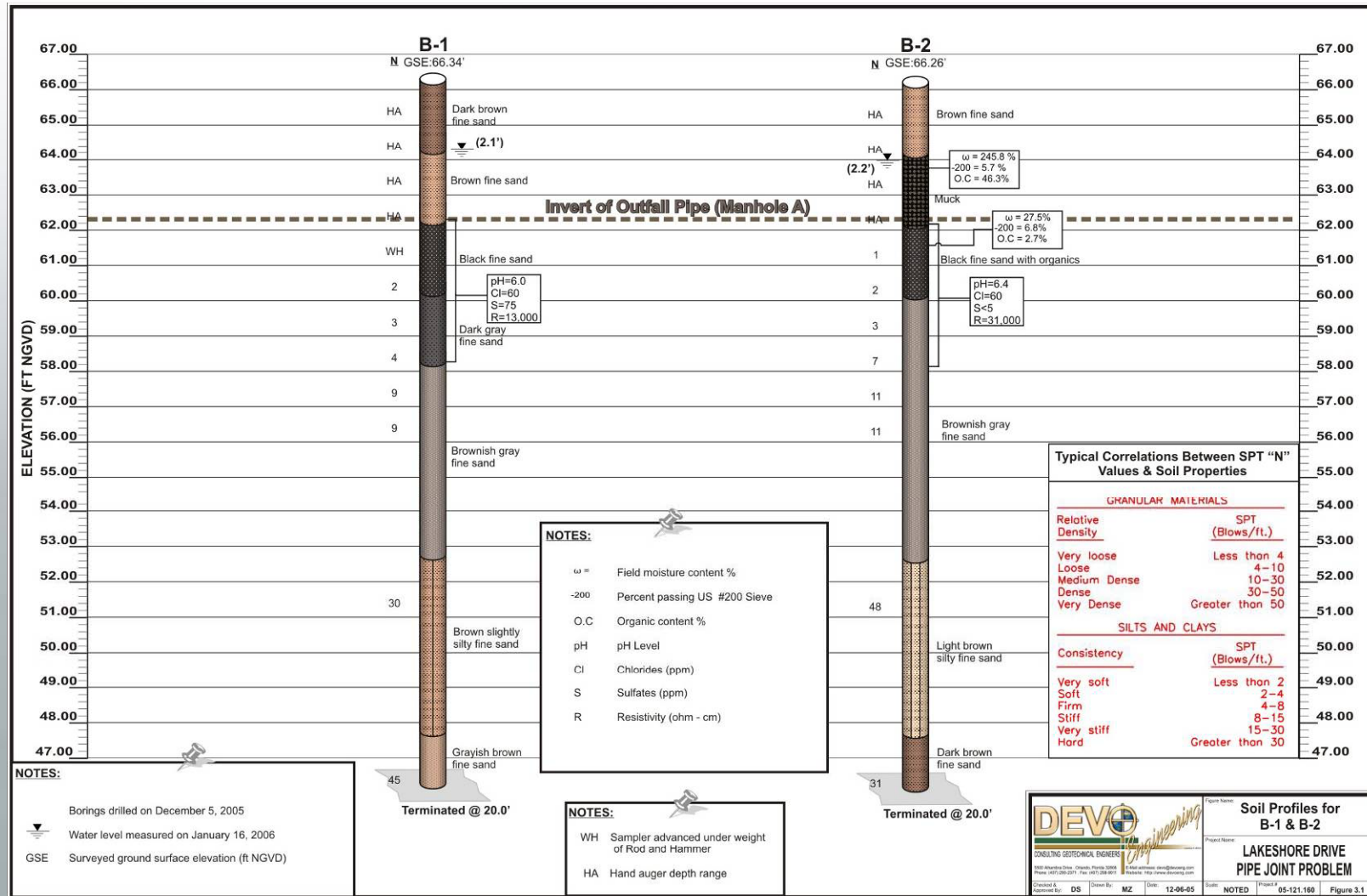
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Pipe joints separated due to differential settlement

Pipe joint opening due to muck subgrade

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Pipe invert on muck

Clayey pond bottom causing Muddy Appearance in Wet Ponds - Tesoro

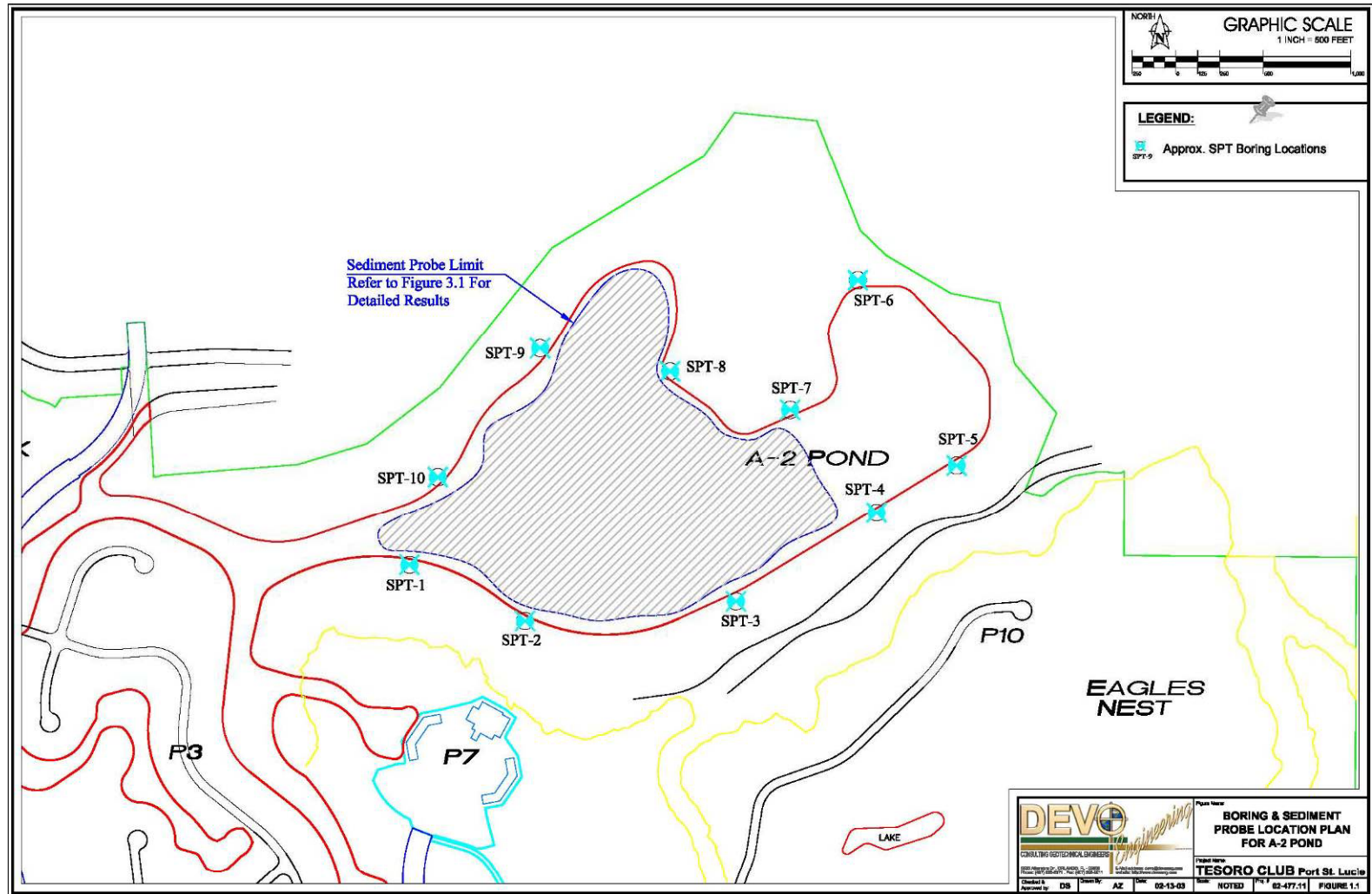
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Client complains about muddy water appearance in regional stormwater pond

Clayey pond bottom causing Muddy Appearance in Wet Ponds - Tesoro

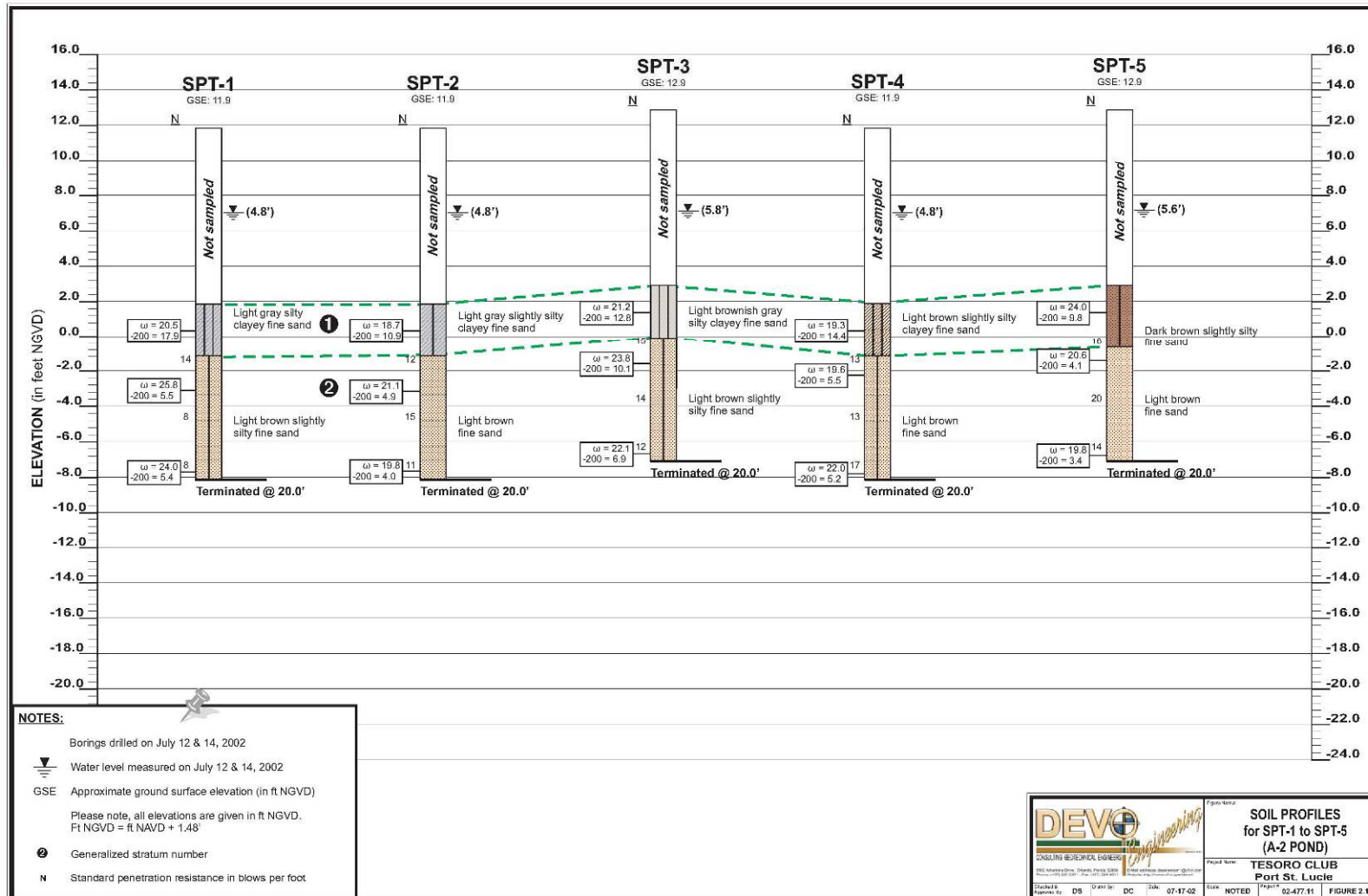
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Test location plan

Clayey pond bottom causing Muddy Appearance in Wet Ponds - Tesoro

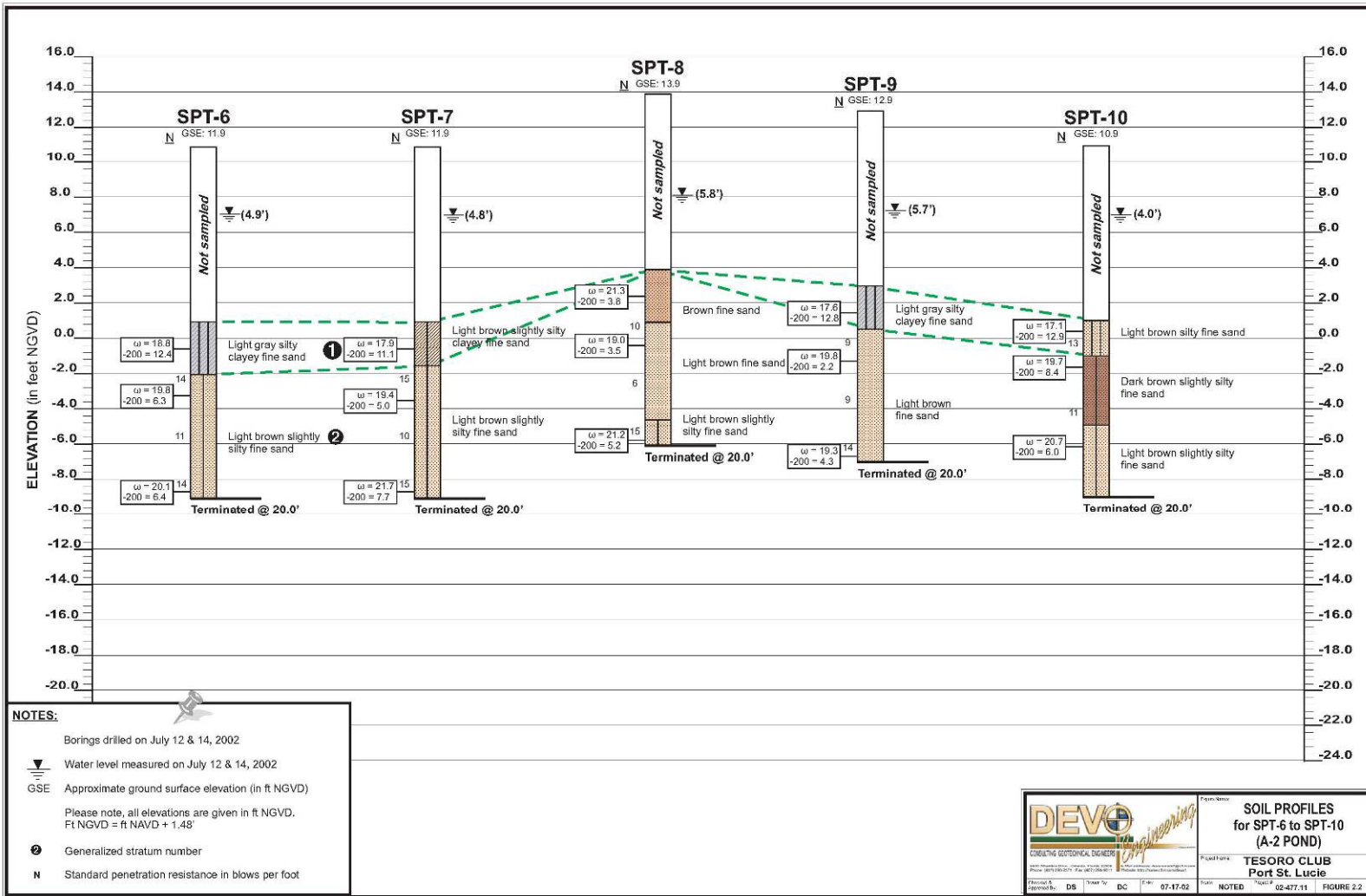
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Pond bottom elevation intersects clayey sand (STRATUM 1)

Clayey pond bottom causing Muddy Appearance in Wet Ponds - Tesoro

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Pond bottom elevation intersects clayey sand layer (STRATUM 1)

Seepage Slopes - Wolfbranch Road

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Cumulative Seepage Flow Contribution From Wendell Lane

Seepage Slopes - Wolfbranch Road

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Cummulative Seepage Flow Contribution From Wolf Branch Road

Seepage Slopes - Wolfbranch Road

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Typical Seepage Face Along the Eastern Slope of Wendell Lane

Seepage Slopes - Wolfbranch Road

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Seepage from Wolf Branch Road Subgrade, Just South of Cumulative Drainage Confluence Point

Failure of Reno mattress on canal bank - Boggy Creek at Florida Mall

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No anchorage of reno mattress on steep slope

Failure of Reno mattress on canal bank - Boggy Creek at Florida Mall

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Slippage of reno mattress due to lack of anchorage on steep slope

Failure of Reno mattress on canal bank - Boggy Creek at Florida Mall

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Slippage of reno mattress due to lack of anchorage on steep slope

Failure of Reno mattress on canal bank - Boggy Creek at Florida Mall

2007 ADS Stormwater Workshop



Slippage of reno mattress due to lack of anchorage on steep slope

Failure of Reno mattress on canal bank - Boggy Creek at Florida Mall

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Slope erosion due to runoff

Failure of Reno mattress on canal bank - Boggy Creek at Florida Mall

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Movement of reno mattress on steep canal slope

Failure of Reno mattress on canal bank - Boggy Creek at Florida Mall

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Slipping of reno mattress on steep canal slope

Infrastructure failure from reclaimed water overirrigation - Country Club

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Leaching Over Curb

Infrastructure failure from reclaimed water overirrigation - Country Club

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Leaching Over Curb

Infrastructure failure from reclaimed water overirrigation - Country Club

2007 ADS Stormwater Workshop



Leaching Over Curb

Infrastructure failure from reclaimed water overirrigation - Country Club

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Leaching Over Curb

Infrastructure failure from reclaimed water overirrigation - Country Club

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Leaching Over Curb

Infrastructure failure from reclaimed water overirrigation - Country Club

2007 ADS Stormwater Workshop



Leaching Over Curb

Infrastructure failure from reclaimed water overirrigation - Country Club

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Leaching Over Curb

Infrastructure failure from reclaimed water overirrigation - Country Club

2007 ADS Stormwater Workshop



Leaching Over Curb

Infrastructure failure from reclaimed water overirrigation - Country Club

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Leaching Over Curb

Infrastructure failure from reclaimed water overirrigation - Country Club

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Limerock Pumping From Base

Infrastructure failure from reclaimed water overirrigation - Country Club

2007 ADS Stormwater Workshop



Limerock Pumping From Base

Infrastructure failure from reclaimed water overirrigation - Country Club

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Limerock Pumping From Base

Infrastructure failure from reclaimed water overirrigation - Country Club

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Limerock Pumping From Base

Infrastructure failure from reclaimed water overirrigation - Country Club

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Limerock Pumping From Base

Infrastructure failure from reclaimed water overirrigation - Country Club

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Limerock Pumping From Base

Infrastructure failure from reclaimed water overirrigation - Country Club

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Pavement Distress

Infrastructure failure from reclaimed water overirrigation - Country Club

2007 ADS Stormwater Workshop



Pavement Distress

Infrastructure failure from reclaimed water overirrigation - Country Club

2007 ADS Stormwater Workshop



Pavement Distress

Infrastructure failure from reclaimed water overirrigation - Country Club

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Pavement Distress

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Pavement Distress

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Pavement Distress

Infrastructure failure from reclaimed water overirrigation - Country Club

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Pavement Distress

Infrastructure failure from reclaimed water overirrigation - Country Club

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Structure Settlement

Pond NWL and Pavement Grade Separation - Waterford Chase

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Pond NWL and Pavement Grade Separation - Waterford Chase

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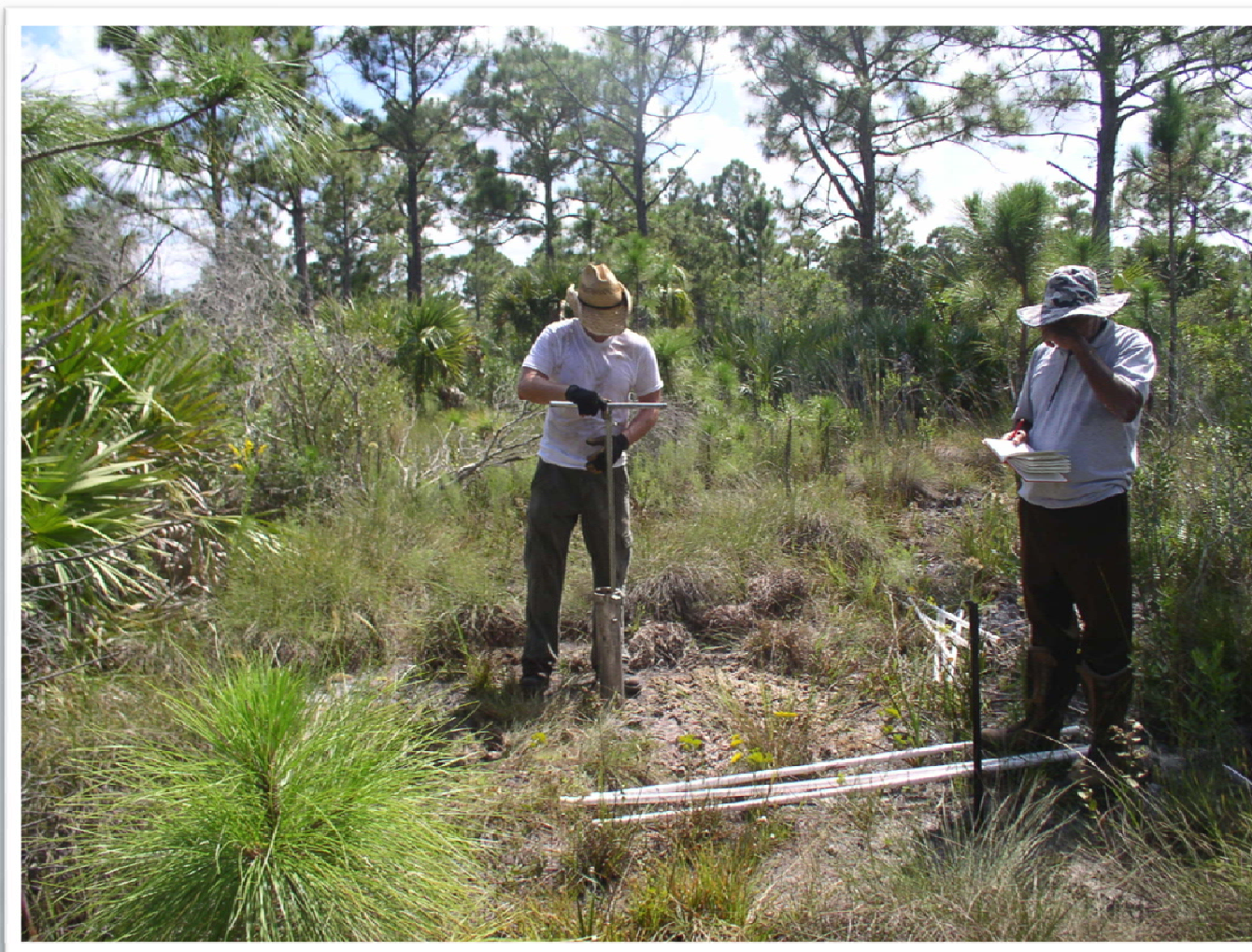
Pond NWL and Pavement Grade Separation - Waterford Chase

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Pond NWL Below Expected Due to Perched - Becker Commons

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BECKER COMMONS - Perched Water Table-Note Sleeve Required for Shallow Borings

Pond NWL Below Expected Due to Perched - Becker Commons

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BECKER COMMONS- True Water Table

Pond NWL Stabilizing Below Expected Level - Westlake

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WESTLAKE-Resulting Cascading Outfall to Pond

Pond NWL Stabilizing Below Expected Level - Westlake

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WESTLAKE-Scour And Erosion @ Storm Inlet to Pond

Pond NWL Stabilizing Below Expected Level - Westlake

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WESTLAKE-Seepage Face Resulting From Deep Cut Into the Natural Water Table

Pond NWL Stabilizing Below Expected Level - Westlake

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WESTLAKE-Seepage of Groundwater Resulting in Saturation and Sloughing of Slopes

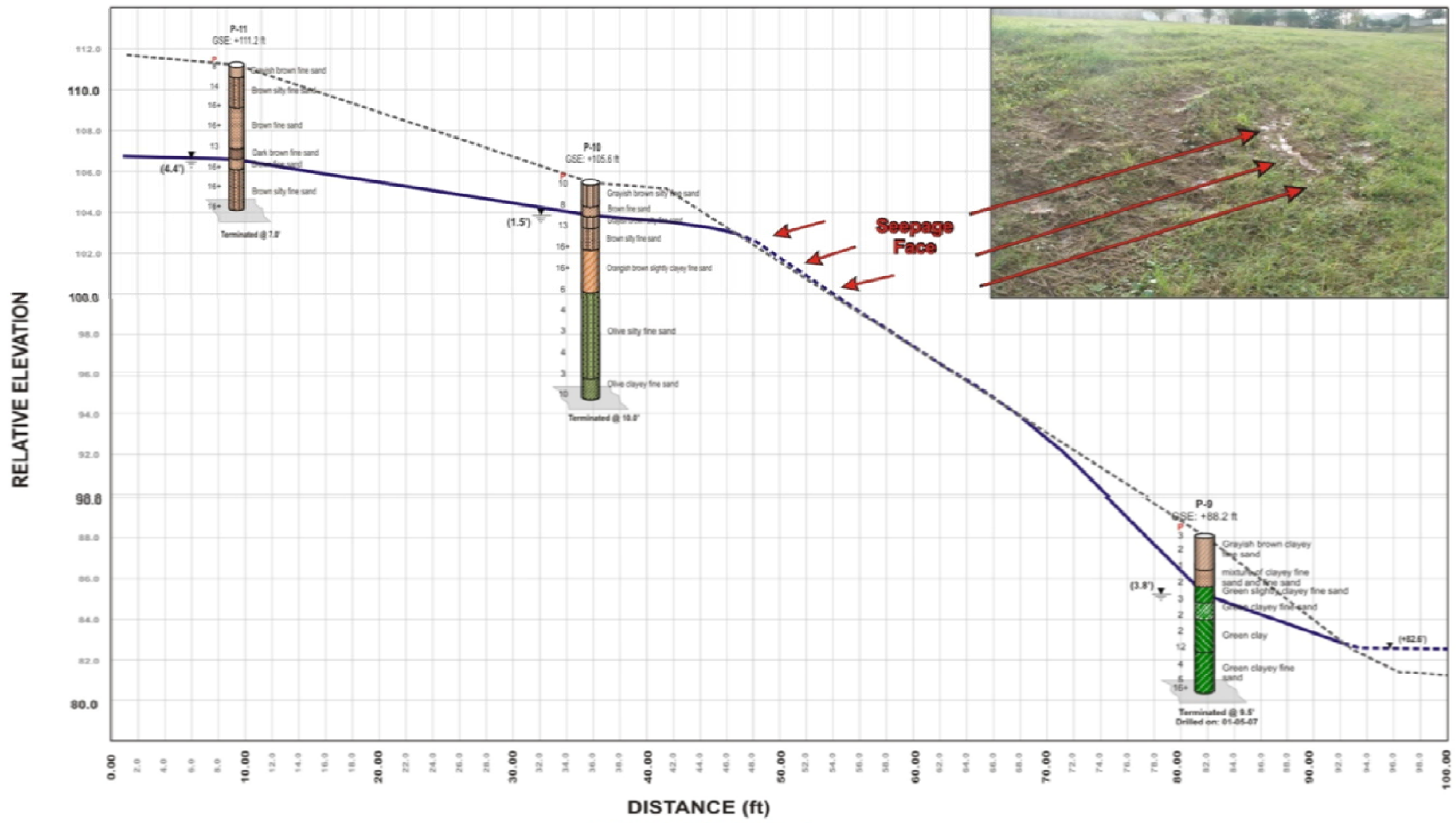
Pond NWL Stabilizing Below Expected Level - Westlake

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Pond NWL Stabilizing Below Expected Level - Westlake

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NOTES:

- Borings drilled on January 09, 2007, unless otherwise noted
- Water level measured on January 16, 2007
- GSE Ground Surface Elevation

LEGEND:

- Existing Ground Profile
- Estimated Water Table Profile

<p>DEVO CONSULTING GEOTECHNICAL ENGINEERS</p>	<p>CROSS SECTION A-A</p>
	<p>WESTLAKE POND</p>
<p>05 02 01-17-07 NTS 87-121.206</p>	<p>FIGURE 2</p>

Scour - Reunion Bridge

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REUNION BRIDGE- Initiation of Underscour of the Approach Slab

Scour - Reunion Bridge

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REUNION BRIDGE-Major Scour and Erosion of Approach Slab Resulting From Uncontrolled Surface Flow

Slow Recovery of Lake - New Subdivision in Kissimmee

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Slow Recovery of Lake - New Subdivision in Kissimmee

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Slow Recovery of Lake - New Subdivision in Kissimmee

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Slow Recovery of Lake - New Subdivision in Kissimmee

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