



Baytowne Homeowners Association
c/o Messler & Associates, Inc.
7741 North Military Trail, Suite 5
Palm Beach Gardens, Florida 33410

Attention: Mr. Tim Messler, P.E.

**ADDITIONAL PAVEMENT INVESTIGATION
BAY STREET PAVEMENT IMPROVEMENTS - BAYTOWNE @ JONATHAN'S LANDING
JUPITER, FLORIDA**

In accordance with your request and authorization, Ardaman & Associates, Inc. has completed an additional pavement investigation for the above referenced project. Our Firm previously performed asphalt cores and hand auger borings at 6 locations along Bay Street, and presented our findings and recommendations in a report dated October 10, 2005. The core boring logs from our previous exploration are attached to this report and the approximate test locations are shown on our Test Location Plan, Figure 1. In brief, the thickness of the concrete pavement section at the explored locations ranged from 4.5 to 5.75 inches, and the concrete was underlain by 10 to 12 inches of brown fine sand with small shell and rock fragments which constitutes a poor base fill, followed by brown and gray fine silica sands (natural deposits) reaching the termination depths of the borings at 4 feet below the pavement surface. A pavement improvement/replacement study was made by Messler & Associates, Inc. using the findings of our initial field exploration. The ensuing proposed roadway improvement involves the removal of the aging/deteriorated concrete pavement and its replacement with a new interlocking concrete paver pavement system. Additional explorations were requested to gather additional pavement and subsurface soil information to complement our initial investigation prior to finalizing the design of the new pavement system.

On December 3 and 4, 2007, representatives of our Firm cored holes through the concrete pavement at sixteen (16) additional locations along Bay Street, the approximate test locations are shown on Figure 1. Auger borings were performed through the core holes using a portable bucket auger to explore the shallow soils beneath the pavement. The hand auger borings were terminated at depths ranging from 4 to 10 feet below the pavement surface. The thickness of the concrete pavement, shallow subsurface profile and groundwater depth at each test location are presented in the attached core boring logs. In general, the concrete pavement ranges from 3.75 to 6 inches in thickness, with an average of 4.8 inches; and is underlain by 8 to 12 inches of brown fine sand with small rock and shell fragments, followed by brown and gray fine sands reaching the termination depths of our borings. Our boring CB-5, performed along the east side of the pool, encountered a layer of soft fibrous organics (peat) approximately 3 feet in thickness, starting at a depth of 6 feet below the pavement surface. In addition, our borings CB-9 and CB-11, performed within the southern half of the northern roundabout, encountered obstructions at depths of 6 to 6.5

feet, respectively, which could not be penetrated using our portable hand augering equipment; these obstructions appeared to be large wood pieces. It is likely that the peat layer found at the location of our boring CB-5 is present at other locations beneath the termination depths of our borings; particularly in the area of borings CB-9 and CB-11 where the encountered obstructions are likely large wood pieces at the top of the organic layer.

Based on the findings of our pavement investigation program, it is our opinion that the presence of organic soils beneath portions of the existing roadway likely contributed to the deterioration of the concrete pavement which is inherently susceptible to cracking damage resulting from ground settlement resulting from the consolidation/decomposition of the organic soils.

We have examined a set of plans prepared by Messler & Associates, Inc. and dated November 2005. Based on our review of the plans, we understand that the proposed new pavement section will consist of interlocking concrete pavers (2 $\frac{3}{8}$ " Holland Stones) placed atop a 1-inch layer of bedding sand, underlain by 4 inches of compacted base material (FDOT approved base rock), placed atop the recompacted existing soils. In our opinion, the recommended pavement section will be suitable for light-duty residential traffic. Furthermore, we believe that the proposed flexible interlocking paver system is better suited for this project than a concrete or asphalt pavement section as the pavers can withstand significantly larger settlements than concrete pavements, and should withstand a measure of possible additional settlements that could ensue from further consolidation/decomposition of the organic soils underlying parts of the roadway without major maintenance demands. Note that it is likely that the majority of the settlements due to the weight of the fill above the organics has occurred; future deep seated settlements due to the traffic of vehicles should be minimal.

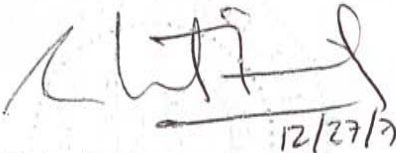
The approximately 8 to 12-inch thick layer of brown fine sand with small rock and shell fragments present directly beneath the existing concrete pavement does not appear to have sufficient stability for consideration as future pavement base material. Consequently, after removing the existing concrete pavement, the exposed surface will have to be cut as needed to accommodate a 4-inch layer of imported base material. The base material should consist of approved crushed limerock. Alternatively, consideration can be given to the use of a concrete reclamation procedure to crush the existing concrete pavement and subsequently use it as base material for the new pavement, thus avoiding the cost associated with its disposal. In any case, the base material should be well graded and should have a Limerock Bearing Ratio (LBR) value in excess of 100.

Once the pavement areas have been cut to the elevation of the bottom of the base course, the exposed surface should be compacted with a heavy vibratory roller so as to produce minimum dry densities of 98 percent of the Modified Proctor (ASTM D-1557 / AASHTO T-180) maximum dry density value of the subgrade soils to depths of 1 foot below the compacted surface. The base course can then be placed in a single lift, compacted with a vibratory roller to a minimum dry density of 98 percent of its Modified Proctor maximum dry density value. Subsequently, the interlocking concrete paver stones are to be placed atop a 1-inch layer of bedding sand, with their joints filled with sands. The pavement surface should be vibrated with a suitable vibratory plate compactor to properly set the pavers.

Our report has been prepared specifically for this project. It is intended for the exclusive use of the Baytowne Homeowners Association and their representatives. Our work has used methods and procedures consistent with local engineering practices. No other warranty, expressed or implied, is made. We do not guarantee project performance in any respect, only that our work meets normal standards of professional care.

It has been a pleasure to assist you on this phase of your project. Please contact us whenever we may be of service to you, and please call if you have any questions concerning this report.

ARDAMAN & ASSOCIATES, INC.



12/27/07

Roberto Fernandez, P.E.
Senior Project Engineer
Fla. Reg. No. 60070



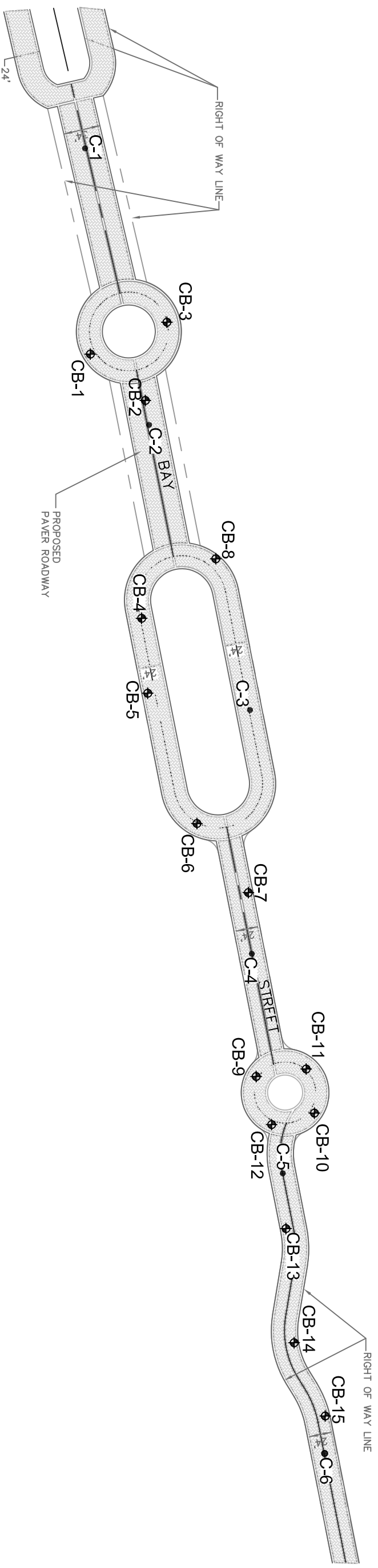
12/27/07

Roberto E. Balbis, P.E.
Principal
Fla. Reg. No. 15832

Attachments: Figure 1 - Test Location Plan
Core Boring Logs - December 2007 Exploration
Core Boring Logs - September 2005 Exploration

RF/REB:rf



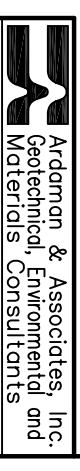


LEGEND:

- C-# Core borings performed in September 2005
- ◆ CB-# Core borings performed in December 2007



TEST LOCATION PLAN



PAVEMENT INVESTIGATION
 BAY STREET
 BAYTOWNE AT JONATHAN'S LANDING
 JUPITER, FLORIDA

FILE NO. 05-2209	BY: RF	FIGURE NO.: 1
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CORE BORING LOG

BORING CB-1

PROJECT: Baytown Pavement Improvements
Jupiter, Florida














FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH 60 inches

DATE DRILLED: 12/3/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (3.75")	
10		Brown fine sand with rock and shell fragments (12")	
20		Light brown fine sand	
30		Light brown fine sand	
40		Light brown fine sand	
50		Very light brown fine sand	
60		Water observed at depth 60 inches	
70		Light brown fine sand	
80		Dark reddish brown fine sand	
90		Dark reddish brown fine sand	
100		Dark reddish brown fine sand	
110		Dark reddish brown fine sand	
120		Dark reddish brown fine sand	

NOTES: Boring terminated at a depth of 7 feet below the pavement surface



CORE BORING LOG

BORING CB-2

PROJECT: Baytown Pavement Improvements
Jupiter, Florida














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BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH Greater than 48 inches

DATE DRILLED: 12/3/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (6")	
10		Brown fine sand with shell and rock fragments (10")	
20		Light brown fine sand	
30			
40			
50			
60			
70			
80			
90			
100			
110			
120			

NOTES: Boring terminated at a depth of 4 feet below the pavement surface



CORE BORING LOG

BORING CB-3

PROJECT: Baytown Pavement Improvements
Jupiter, Florida














FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH Greater than 48 inches

DATE DRILLED: 12/3/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (5.25")	
10		Brown fine sand with shell and rock fragments (10")	
20		Very light brown to white fine sand	
30			
40			
50			
60			
70			
80			
90			
100			
110			
120			

NOTES: Boring terminated at a depth of 4 feet below the pavement surface



CORE BORING LOG

BORING CB-4

PROJECT: Baytown Pavement Improvements
Jupiter, Florida














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BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH 66 inches

DATE DRILLED: 12/3/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (4.5")	
10		Brown fine sand with shell and rock fragments (10")	
20		Very light brown fine sand	
30		Light brown fine sand	
40		Light brown fine sand	
50		Light brown fine sand	
60		Light brown fine sand	
70		Brown fine sand with traces of organics	
80		Brown fine sand	
90		Brown fine sand	
100		Brown fine sand	
110		Brown fine sand	
120		Brown fine sand	

NOTES: Boring terminated at a depth of 7 feet below the pavement surface



CORE BORING LOG

BORING CB-5

PROJECT: Baytown Pavement Improvements
Jupiter, Florida

FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH 66 inches

DATE DRILLED: 12/3/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (5")	
5		Brown fine sand with shell and rock fragments (10")	
15		Brownish gray fine sand	
25		Dark brownish gray fine sand	
50		Brownish gray fine sand	
66			
72		Dark brown fibrous peat	
110		Dark brown fine sand	
120			

NOTES: Boring terminated at a depth of 10 feet below the pavement surface



CORE BORING LOG

BORING CB-6

PROJECT: Baytown Pavement Improvements
Jupiter, Florida














FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH 66 inches

DATE DRILLED: 12/3/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (4.5")	
10		Brown fine sand with shell and rock fragments (11")	
20		Brown fine sand	
30		Reddish brown fine sand	
40		Brownish gray fine sand	
50		Very light gray fine sand	
60		Brown fine sand	
70			
80			
90			
100			
110			
120			

NOTES: Boring terminated at a depth of 7 feet below the pavement surface



CORE BORING LOG

BORING CB-7

PROJECT: Baytown Pavement Improvements
Jupiter, Florida

FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH 60 inches

DATE DRILLED: 12/4/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (5.5")	
10		Brown fine sand with shell and rock fragments (12")	
20		Brown fine sand	
30			
40			
50			
60			
70			
80		Dark brown fine sand	
90			
100			
110			
120			

NOTES: Boring terminated at a depth of 7 feet below the pavement surface



CORE BORING LOG

BORING CB-8

PROJECT: Baytown Pavement Improvements
Jupiter, Florida

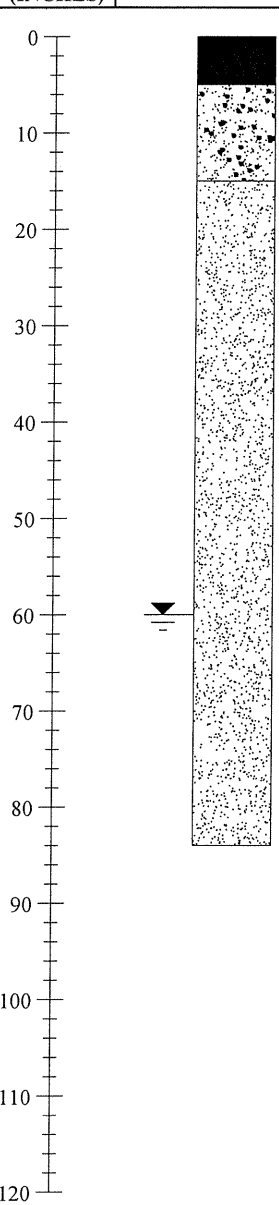
FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH 60 inches

DATE DRILLED: 12/4/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (5")	
10		Brown fine sand with shell and rock fragments (10")	
20		Light brown fine sand	
30			
40			
50			
60			
70			
80			
90			
100			
110			
120			

NOTES: Boring terminated at a depth of 7 feet below the pavement surface



CORE BORING LOG

BORING CB-9

PROJECT: Baytown Pavement Improvements
Jupiter, Florida














FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH 60 inches

DATE DRILLED: 12/4/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (4.5")	
10		Brown fine sand with shell and rock fragments and some wood (mulch) fragments (10")	
20		Dark brown fine sand	
30			
40			
50			
60		Dark gray fine sand with wood fragments	
70		Refusal (large wood piece)	
80			
90			
100			
110			
120			

NOTES: Boring terminated at a depth of 6 feet below the pavement surface



CORE BORING LOG

BORING CB-10

PROJECT: Baytown Pavement Improvements
Jupiter, Florida














FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH 60 inches

DATE DRILLED: 12/4/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (4")	
10		Brown fine sand with shell and rock fragments (10")	
20		Brown fine sand	
30			
40		Gray fine sand	
50			
60			
70			
80			
90			
100			
110			
120			

NOTES: Boring terminated at a depth of 7 feet below the pavement surface



CORE BORING LOG

BORING CB-11

PROJECT: Baytown Pavement Improvements
Jupiter, Florida


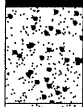
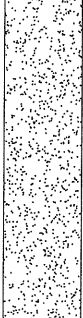




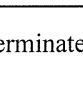
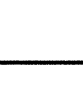

FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH 60 inches

DATE DRILLED: 12/4/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (4.5")	
10		Brown fine sand with shell and rock fragments (10")	
20		Brown fine sand	
30		Light brown fine sand	
40		Brown fine sand with wood fragments	
50		Refusal (large wood piece)	
60			
70			
80			
90			
100			
110			
120			

NOTES: Boring terminated at a depth of 6.5 feet below the pavement surface



CORE BORING LOG

BORING CB-12

PROJECT: Baytown Pavement Improvements
Jupiter, Florida














FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH 60 inches

DATE DRILLED: 12/4/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (3.75")	
10		Brown fine sand with shell and rock fragments (8")	
20		Brown fine sand	
30			
40			
50			
60			
70			
80			
90			
100			
110			
120			

NOTES: Boring terminated at a depth of 7 feet below the pavement surface



CORE BORING LOG
BORING CB-13

PROJECT: Baytown Pavement Improvements
Jupiter, Florida














FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH 60 inches

DATE DRILLED: 12/4/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (5")	
10		Brown fine sand with shell and rock fragments (12")	
20		Reddish brown fine sand	
30		Brown fine sand	
40		Brownish gray fine sand	
50			
60			
70			
80			
90			
100			
110			
120			

NOTES: Boring terminated at a depth of 7 feet below the pavement surface



CORE BORING LOG

BORING CB-14

PROJECT: Baytown Pavement Improvements
Jupiter, Florida















FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH 60 inches

DATE DRILLED: 12/4/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (5.5")	
10		Brown fine sand with shell and rock fragments and some wood (mulch) fragments (12")	
20		Brown fine sand	
30			
40			
50			
60	 		
70			
80			
90			
100			
110			
120			

NOTES: Boring terminated at a depth of 7 feet below the pavement surface



CORE BORING LOG

BORING CB-15

PROJECT: Baytown Pavement Improvements
Jupiter, Florida


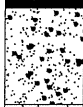


FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH 60 inches

DATE DRILLED: 12/4/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (5")	
10		Brown fine sand with shell and rock fragments (10")	
20		Brown fine sand	
30			
40			
50			
60			
70			
80			
90			
100			
110			
120			

NOTES: Boring terminated at a depth of 7 feet below the pavement surface



CORE BORING LOG

BORING CB-16

PROJECT: Baytown Pavement Improvements
Jupiter, Florida






FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: RC/AR

WATER OBSERVED AT DEPTH Greater than 48 inches

DATE DRILLED: 12/3/2007

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (5")	
10		Brown fine sand with shell and rock fragments (12")	
20		Brown fine sand	
30		Light brown fine sand	
40		Dark reddish brown fine sand Light gray fine sand	
50			
60			
70			
80			
90			
100			
110			
120			

NOTES: Boring terminated at a depth of 4 feet below the pavement surface



CORE BORING LOG

BORING C-1

PROJECT: Baytown Pavement Improvements
Jupiter, Florida




FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: DG/JH

WATER OBSERVED AT DEPTH N/A

DATE DRILLED: 09/16/05

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (5.5")	
10		Brown fine sand w. shell and rock fragments (12")	
20		Gray to dark gray fine sand	
50		End of boring	
60			
70			
80			
90			
100			
110			
120			

NOTES:



CORE BORING LOG

BORING C-2

PROJECT: Baytown Pavement Improvements
Jupiter, Florida


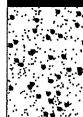
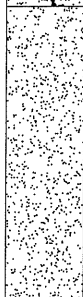
FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: DG/JH

WATER OBSERVED AT DEPTH N/A

DATE DRILLED: 09/16/05

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (5.25")	
10		Brown fine sand w. shell and rock fragments (12")	
20		Light gray fine sand	
50		End of boring	
60			
70			
80			
90			
100			
110			
120			

NOTES:



CORE BORING LOG

BORING C-3

PROJECT: Baytown Pavement Improvements
Jupiter, Florida














FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: DG/JH

WATER OBSERVED AT DEPTH N/A

DATE DRILLED: 09/16/05

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (5.25")	
10		Brown fine sand w. shell and rock fragments (12")	
20		Brown to gray fine sand, traces of shell	
30			
40			
50		End of boring	
60			
70			
80			
90			
100			
110			
120			

NOTES:



CORE BORING LOG

BORING C-4

PROJECT: Baytown Pavement Improvements
Jupiter, Florida


FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: DG/JH

WATER OBSERVED AT DEPTH N/A

DATE DRILLED: 09/16/05

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0 10 20 30 40 50 60 70 80 90 100 110 120		Concrete (4.5") Brown fine sand w. shell and rock fragments (12") Brown fine sand End of boring	

NOTES:



**CORE BORING LOG
BORING C-5**

PROJECT: Baytown Pavement Improvements
Jupiter, Florida





FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: DG/JH

WATER OBSERVED AT DEPTH N/A

DATE DRILLED: 09/16/05

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0		Concrete (5.75")	
10		Brown fine sand w. shell and rock fragments (10")	
20		Reddish brown to dark gray fine sand	
50		End of boring	
120			

NOTES:



CORE BORING LOG

BORING C-6

PROJECT: Baytown Pavement Improvements
Jupiter, Florida


FILE No.: 05-2269

BORING LOCATION: As per plan

DRILL CREW: DG/JH

WATER OBSERVED AT DEPTH N/A

DATE DRILLED: 09/16/05

DEPTH (INCHES)	SYMBOLS	SOIL DESCRIPTION	SAMPLE No.
0 10 20 30 40 50 60 70 80 90 100 110 120		Concrete (4.75") Brown fine sand w. shell and rock fragments (12") Brown to reddish brown fine sand End of boring	

NOTES: