18 November 2013

City of New Orleans
Department of Public Works
Room 6W03
1300 Perdido Street
New Orleans, Louisiana 70112

Attention Ms. Jennifer Larmeu, P.E.
Email jjlarmeu@nola.gov

Ladies and Gentlemen:

Pavement Investigation
City of New Orleans
West End Neighborhood Area
Orleans Parish, Louisiana
City of New Orleans, Department of Public Works Purchase No. 2012-FEMA-1B-1
Eustis Engineering Project No. 22226

Transmitted is one bound copy of our engineering report covering a pavement investigation for the subject project. Electronic copies are also being provided to you, Mr. James Kapesis and Ms. Tacie Rabalais with the City of New Orleans, and Mr. Ed Green with Jacobs CSRS Consortium.

Thank you for asking us to perform these services.

Yours very truly,

EUSTIS ENGINEERING SERVICES, L.L.C.

BENJAMIN M. CODY, P.E.

BENJAMIN M. CODY
License No. 30292
PROFESSIONAL ENGINEER

C. S. Baldwin:jla/aln

GEOTECHNICAL INVESTIGATION

CITY OF NEW ORLEANS

WEST END NEIGHBORHOOD AREA

ORLEANS PARISH, LOUISIANA

CITY OF NEW ORLEANS, DEPARTMENT OF PUBLIC WORKS

PROJECT NO. 2012-FEM1B-1

EUSTIS ENGINEERING PROJECT NO. 22226

FOR
MS. JENNIFER LARMEU, P.E.
NEW ORLEANS, LOUISIANA

By
Eustis Engineering Services, L.L.C.
Metairie, Louisiana

18 NOVEMBER 2013

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PAVEMENT INVESTIGATION
CITY OF NEW ORLEANS
WEST END NEIGHBORHOOD AREA
ORLEANS PARISH, LOUISIANA
CITY OF NEW ORLEANS, DEPARTMENT OF PUBLIC WORKS
PROJECT NO. 2012-FEMA-1B-1
EUSTIS ENGINEERING PROJECT NO. 22226

INTRODUCTION

1. This report contains the results of a pavement investigation performed for the proposed pavement repairs in the West End Neighborhood area in New Orleans, Louisiana. The investigation was performed in general accordance with Eustis Engineering Services, L.L.C.'s proposal dated 29 May 2013, which was approved on 11 June 2013 by Mr. Mark D. Jernigan, P.E., LTC (Ret), Director, City of New Orleans, Department of Public Works, New Orleans, Louisiana. Jacobs Engineering/CSRS Consortium is the civil design engineering manager for the project.

2. This report has been prepared in accordance with generally accepted geotechnical engineering practice for the exclusive use of the City of New Orleans and Jacobs/CSRS for specific application to the subject site. In the event of any changes in the nature, design, or location of the proposed roadway improvements, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions of this report are modified and verified in writing. Should these data be used by anyone other than the City of New Orleans or Jacobs/CSRS, the user should contact Eustis Engineering for interpretation of data and to secure other information that may be pertinent to this project.

3. Recommendations and conclusions contained in this report are to some degree subjective. The report, in its entirety, should not be included in the contract plans and specifications. However, the results of the soil borings and laboratory tests contained in the Appendix of this report may be included in the plans and specifications.

4. The analyses and recommendations contained in this report are based in part on data obtained from the soil borings. The nature and extent of variations in existing pavement component thicknesses and subsoil conditions that may exist between and away from the boring locations may not become evident until construction. If variations then appear, it will be necessary to reevaluate the recommendations contained in this report.

SCOPE OF SERVICES

5. This investigation included the drilling of 43 soil test borings to determine pavement subsoil conditions and stratification, and to obtain samples of the various strata encountered. Soil mechanics laboratory tests, performed on samples obtained from the borings, were used to evaluate the physical properties. Engineering analyses, based on the soil borings and laboratory tests, were performed to develop recommendations regarding site preparation, thicknesses for flexible and rigid pavements, and requirements for the proposed pavement components and their construction.

SOIL BORINGS

6. General. Forty-three undisturbed soil test borings were made on 16 August through 3 October 2013 at the approximate locations shown on Figure 1. The borings, designated as B-1 through B-43, were each made with a truck mounted rotary type drill rig to a depth of 5 feet below the existing pavement. Borings B-7, B-

8, B-9, and B-18 were terminated at a depth of 3 feet due to underground obstructions. Cores were performed at each of the boring locations to assist our drilling operations through existing pavements. Eustis Engineering cored through the pavement using a concrete coring machine and 6-in. diameter drill bits. GPS coordinates of the boring locations were recorded using a handheld device and are shown in terms of latitude and longitude on the boring logs. Upon completion of drilling operations, the borings were backfilled and the pavement patched. Detailed descriptive logs of the borings are shown in both tabular and graphical form in the Appendix.

7. Undisturbed samples of cohesive or semi-cohesive subsoils were obtained at close intervals or changes in strata using a 3-in. diameter thinwall Shelby tube sampler. The samples were immediately extruded from the sampling barrel, inspected, and visually classified by Eustis Engineering's soil technician. Pocket penetrometer tests were performed on the soil samples to give a general indication of their shear strength and consistency. The results of these tests are shown on the logs of the borings under the column heading "PP." Representative samples were then promptly placed in moisture proof containers and sealed for preservation of their natural moisture content.

8. Samples of cohesionless and semi-cohesive materials were obtained during the performance of in situ Standard Penetration Tests. This test consists of driving a 2-in. diameter sampler 1 foot into the soil after first seating it 6 inches. A 140-lb weight dropped 30 inches is used to advance the sampler. The number of blows required to drive the sampler is indicative of the relative density of cohesionless soils and the consistency of cohesive soils. The results of the Standard Penetration Tests are shown on the boring logs under the column heading "SPT." The samples were inspected and visually classified by Eustis Engineering's soil technician before being placed and sealed in moisture proof containers for transportation to our laboratory.

LABORATORY TESTS

9. Soil mechanics laboratory tests, consisting of natural water content and classification, were performed on selected samples obtained from the borings. In addition, Atterberg liquid and plastic limits tests were performed on selected representative samples. The test establishing the percent passing the U. S. Standard No. 200 sieve was also performed on representative samples. These tests aid in the classification of the subsoils and provide an indication of their subgrade support. The results of these laboratory tests are tabulated on the boring logs in the Appendix.

DESCRIPTION OF SITE CONDITIONS

10. Site Conditions. The site consists of existing two-lane roadways located on Bellaire Drive and Pontchartrain Boulevard and on cross streets between Bellaire Drive and Pontchartrain Boulevard. The West End Neighborhood area is bounded by Breakwater Drive to the north, Pontchartrain Boulevard to the east, 10th Street to the south, and the 17th Street Canal to the west. However, our investigation was generally limited to the area between Veterans Boulevard and the New Orleans-Hammond Highway.

11. Stratigraphy. Review of the logs indicates the boring locations are mantled by 3 to 18 inches of asphalt and/or concrete surface paving generally overlying 1 to 3 feet of fill comprising soft to stiff reddish-brown, brown, tan, and gray clay, silty clay, silty sand, sandy silt, fine sand, clayey sand, and clayey silt with gravel, limestone, shell fragments, clayey sand pockets, silty sand pockets and lenses, sandy silt pockets, silt pockets, wood, and brick fragments. An exception was encountered at Borings B-3, B-4, B-8, B-11, B-27, B-34, and B-40, where soft to medium stiff dark brown, brown, and gray organic clay with silty sand pockets, fine sand pockets, shell fragments, silt pockets, and decayed wood was encountered to a depth of 1.5 to 3

feet below the pavement surface. Below the fill materials and organic clay, very soft to medium stiff dark brown, dark gray, brown, tan, and gray organic clay, humus, clay, and silty clay with shell fragments, silt pockets, decayed wood, roots, organic matter, and traces of fine sand and brick fragments continue to the borings' termination depth of 5 feet.

Ground Water

12. To determine ground water conditions at the time of the field investigation, Borings B-15 and B-20 were made without the addition of water to a depth of 6 feet. The water table was initially encountered at a depth of 5.5 to 6 feet in the bore holes. Further observations over five to eight hours indicated the bore holes were dry to the 6-ft depth. It should be noted the observation period was relatively short due to the limited time required to perform our field activities for this project. The depth to ground water will vary with climatic conditions, drainage improvements, water levels in the 17th Street Canal and Lake Pontchartrain, and other factors. The depth to ground water should be determined by those persons responsible for construction immediately prior to beginning work.

ENGINEERING ANALYSES

Furnished Information

13. Based on information provided by the City of New Orleans, Department of Public Works, we understand average daily traffic (ADT) for West Harrison Avenue, Lake Marina Drive, and Fleur De Lis Drive is 5,000 vehicles per day. The ADT for Pontchartrain Boulevard, Regent Street, and West Robert E. Lee Boulevard is 2,500 vehicles per day, and Bellaire Drive is 2,000 vehicles per day. The remaining streets in the West End Neighborhood area have a design ADT of 1,000 vehicles per day. Note, these ADT have no growth factor.

Site Preparation

14. Drainage. The initial step to prepare the site for construction should be establishing adequate temporary and permanent drainage to prevent ponding of water and ensure immediate runoff of rainfall. We recommend the contractor maintain adequate surface drainage away from all pavement areas during and after construction. This may be accomplished by setting grades to ensure positive drainage of water away from the pavement areas utilizing existing drainage features as necessary or adding edge drains or additional subsurface drainage. Sumps and pumps may be required to remove rainfall and ground water from shallow excavations opened for the new pavement sections. Deeper excavations for drainage structures may require a sheetpile cutoff or well point dewatering system. However, this investigation was limited to exploration to the 5-ft depth and does not address excavation requirements for features beyond the existing pavements. Throughout construction, the contractor should exercise caution during inclement weather to ensure subgrade support is not degraded by construction operations.

15. Removal of Existing Pavement and Base Material. The asphalt and concrete pavement thicknesses ranged from 3 to 18 inches at the core locations. The existing pavement should be completely demolished and removed in addition to undercutting the existing base and subgrade to a sufficient depth to construct the new pavement sections described later in this report. Pavement removal should comply with Section 509 of the Louisiana Standard Specifications for Roads and Bridges, 2006 edition (LSSRB). Concrete pavement removal should comply with Section 602 of the LSSRB. Removal and relocation of structures and obstructions should also comply with Section 202 of the LSSRB and Section C202 of the CNO General Specifications for Street Paving, 1999 edition (revised 1 October 2001). This publication will be referenced to in this report as CNO General Specifications.

16. Stripping. Construction of the new pavement sections may require the complete removal of existing pavements and at least partial removal of existing base course materials. Undercutting and replacement of soft or loose soils below the minimum depth of cut required to accommodate the proposed pavement section may also be necessary to meet compaction criteria. The existing pavement materials should be stripped from the roadway and then removed from the site. The exact depth of stripping should be determined during construction. Stripping should also comply with Section 201 of the LSSRB and Section C203 of the CNO General Specifications. Stripping operations should only be performed in dry weather.

17. If excessive moisture is a problem and degrades the subgrade during construction, several alternatives may be considered to improve the subgrade. These alternatives may include scarifying and recompacting the subgrade, overexcavating and replacing a portion of the subgrade, or reinforcement with a geogrid. Selection of a specific subgrade improvement technique will depend on weather and drainage conditions, as well as construction methods, and should be determined during construction. If these methods are required, Eustis Engineering should be contacted to develop recommendations for subgrade improvement prior to placement of subbase materials.

18. Proofrolling. After the stripping operations, the exposed subgrade should be proofrolled with several passes of a bulldozer or compactor exerting a ground pressure between 7 and 15 psi. The vibratory system on the compactor, if present, should not be used during proofrolling. All proofrolling operations should be observed by a representative of the geotechnical engineer. Alternative proofrolling equipment may be proposed by the contractor, though this equipment should be reviewed by Eustis Engineering prior to approval.

19. Subsequent to proofrolling, the exposed surface should be crowned and sealed to prevent infiltration of moisture. Any depressions or weak areas identified during

proofrolling should be thoroughly cleaned out to the surface of firm compacted fill or undisturbed soil, backfilled and compacted with either sand subbase or crushed stone base course material (defined subsequently in this report) placed and compacted under controlled conditions. For embankments or backfill beneath the subbase, the compactive effort may be reduced to produce a dry density of at least 92% of its maximum dry density in accordance with ASTM D 1557.

Pavements

20. Traffic Data and Methodology. Most of the streets in the neighborhood are two-way, two-lane streets, except for Pontchartrain Boulevard and Fleur De Lis Drive which are four-lane streets. For our analyses, the furnished ADT values were each divided by two for each directional lane of travel. The streets with furnished ADT counts of 5,000 vpd, 2,500 vpd, and 2000 vpd were classified as Collector Streets for these analyses. The streets with furnished ADT count of 1,000 vpd were classified as Residential Collector Streets. These classifications were made using the Portland Cement Association (PCA) guidelines for the Design of Concrete Pavements for City Streets (1974).

21. Design Assumptions. The PCA guidelines were also used to determine the traffic distribution for these street classifications. The Collector Streets (ADT=5,000, ADT=2,500, and ADT=2,000) were assumed to have 4% of its ADT composed of heavy commercial vehicles, either large multi-axle delivery trucks or garbage trucks. Residential Collector Streets were assumed to have 1% of their ADT composed of large commercial vehicles. Our analyses consider approximately 50% of the passenger vehicles on these streets will be automobiles and approximately 50% of the vehicles will be pickup trucks, vans, or sports utility vehicles. The assumed axle weights are shown in Table 1.

TABLE 1: SUMMARY OF TRAFFIC LOADS

TYPE OF VEHICLE	ASSUMED AXLE WEIGHT IN KIPS		
	FRONT	MIDDLE	REAR
Automobiles	2(S)	-	2(S)
Pickup Trucks, Vans, and Sports Utility Vehicles	2(S)	-	5(S)
Heavy Commercial Vehicles	20(S)	-	44(T)

(S) = Single axle, (T) = Tandem axle

22. These traffic data assumptions were converted to equivalent 18-kip single axle loads (E_{18}) using AASHTO equivalency factors for rigid and flexible pavements. A 20-year design life and a terminal serviceability index (P_t) of 2.0 were used for the analyses of rigid and flexible pavements. If traffic conditions are different than those presented, Eustis Engineering should be contacted to reevaluate the pavement recommendations contained in this report.

23. Subgrade Preparation. We have assumed the subgrade will be prepared and drained as previously described in this report. Grades should provide for adequate drainage to prevent saturation of the subgrade, subbase, and base course materials. Otherwise, subsurface drainage or edge drains should be provided. If the type and thickness of pavement components are changed, Eustis Engineering should be consulted to determine the suitability of the materials and the structural number (SN) of the pavement.

24. Method of Analysis. The pavement components and thicknesses were determined using methods presented in the 1986 AASHTO Guide for Design of Pavement Structures. In addition, the resilient soil modulus (M_r) of the subgrade was estimated based on the type of soil, probable drainage conditions, and engineering experience.

25. Flexible Pavement. We estimate the new pavement sections must provide an SN of 6.93, 6.35, 6.17, and 4.70 for Collector Streets (ADT=5,000, ADT=2,500, and ADT=2,000), and Residential Collector Streets (ADT=1,000), respectively. Based on the required SNs, we have analyzed potential flexible pavement sections consisting of the components shown in Figure 2 (two sheets). It is important to note the adequacy of the recommended pavement sections is dependent upon the long term drainage conditions present within the base and subbase courses. We have assumed good drainage conditions will prevail in these layers during the design life of the pavement. Specifically, we have assumed the base and subbase courses can be fully drained within one day after inundation and the base and subbase courses will not be submerged more than 25% of the time during the service life of the pavement.

26. If the pavement cannot be drained as described, or if it will be subjected to prolonged periods of saturation, the pavement components shown will provide SNs that are inadequate to support the estimated traffic loads. In this case, the flexible pavement sections shown in Figure 3 (two streets) may be considered for pavements constructed using the existing soils as subgrade. Alternatively, an adequate SN for poor drainage conditions can also be met by adding 1 inch to the asphalt binder course of the pavement sections presented in Figure 2. Using these pavement sections, an adequate SN will be provided if either good or poor drainage conditions are present.

27. Eustis Engineering recommends flexible pavements consist of Type 3 asphaltic wearing course, Type 3 asphaltic binder course, crushed stone base, and sand subbase. The asphaltic concrete wearing course and binder course should conform to the material and construction requirements in Part V of the CNO General Specifications. The crushed stone base course should conform to the material requirements stated in Part III of the CNO General Specifications in Section C

302.03(e). The stone should be placed in loose lifts of 6 to 8 inches and compacted to a density corresponding to at least 95% of its maximum dry density as determined in accordance with ASTM D 1557.

28. Sand subbase should consist of a select granular structural fill classified as AASHTO A-3 material. Sand fill should be a non-plastic material free of roots, clay lumps, and other deleterious materials with no more than 10% by weight of material passing a U.S. Standard No. 200 mesh sieve. The select fill should have an organic content of 5% by weight or less. Prior to transporting structural fill on site, a sample of the borrow pit should be tested to verify its conformance to these recommendations. Structural fill should be spread in loose lift thicknesses of 6 to 8 inches, and each lift should be compacted to at least 95% of its maximum dry density at optimum water content in accordance with ASTM D 1557.

29. Material Separation. Once the roads to be reconstructed are cleared of all remnant pavements and debris, water, muck, and loose soil, we recommend material separation be provided between the sand subbase and the natural subgrade, and between the stone base and sand subbase. This may be accomplished with a geotextile stabilization fabric. The geotextile should meet or exceed the material requirements presented in Section 1019.01 of the LSSRB, 2006 edition. A Class D geotextile should be used in conjunction with a crushed stone base course and a Class C geotextile should be used with a sand subbase layer. The geotextile should be placed directly on the undisturbed soils in accordance with the manufacturer's construction recommendations. The geotextile should extend horizontally a minimum of 3 feet beyond the footprints of the pavement travel lanes.

30. Rigid Pavement. Using the same soil and traffic conditions, Eustis Engineering recommends rigid pavement thicknesses shown in Table 2. The roadways should consist of Portland Cement Concrete over a minimum of 8 inches of sand subbase. A geotextile fabric should be used for material separation between the sand

subbase and natural subgrade. Portland Cement Concrete should conform to the material requirements in Part VI of the CNO General Specifications. This concrete should have a 28-day compressive strength of 4,000 psi. The concrete pavement design should consider the need for reinforcement against the effects of temperature and shrinkage. The rigid pavement should be constructed in accordance with the provisions of the CNO General Specifications. The sand subbase should conform to the material and compaction requirements stated previously for sand subbase of flexible pavements.

TABLE 2: THICKNESSES FOR RIGID PAVEMENT BASED ON FURNISHED ADT

AVERAGE DAILY TRAFFIC (ADT)	PORTLAND CEMENT CONCRETE THICKNESS IN INCHES
5,000	10
2,500	9
2,000	9
1,000	7

31. Quality Control. Density tests should be performed on each lift of the compacted crushed stone base or sand subbase to determine if the contractor has achieved the recommended density. We recommend a minimum of one field density test per 300 feet of roadway per lift. All clearing, filling, and compaction operations should be accomplished only during periods of dry weather. Wheeled equipment should not be allowed on the subgrade once proofrolling operations are complete and the inspector has accepted the subgrade.

Vibrations

32. Pavement demolition, hauling of fill materials, and general construction traffic may cause vibrations that may affect nearby residences, structures, and utilities. These activities should be monitored with a seismograph at any structure of concern to record their magnitude of vibrations. Peak particle velocities of 0.25 in./sec, as

measured by a seismograph, are generally regarded as a vibration level uncomfortable to human perception. Peak particle velocities in excess of 0.5 in./sec may induce damage to structures or underground utilities. However, in tightly congested urban areas and where structures have already experienced distress, we recommend sustained peak particle velocities be limited to 0.25 in./sec measured at a structure of concern. Eustis Engineering should be notified of these levels, the operations generating these vibrations terminated, and consideration given to altering construction methods to minimize vibrations.

Areal Subsidence

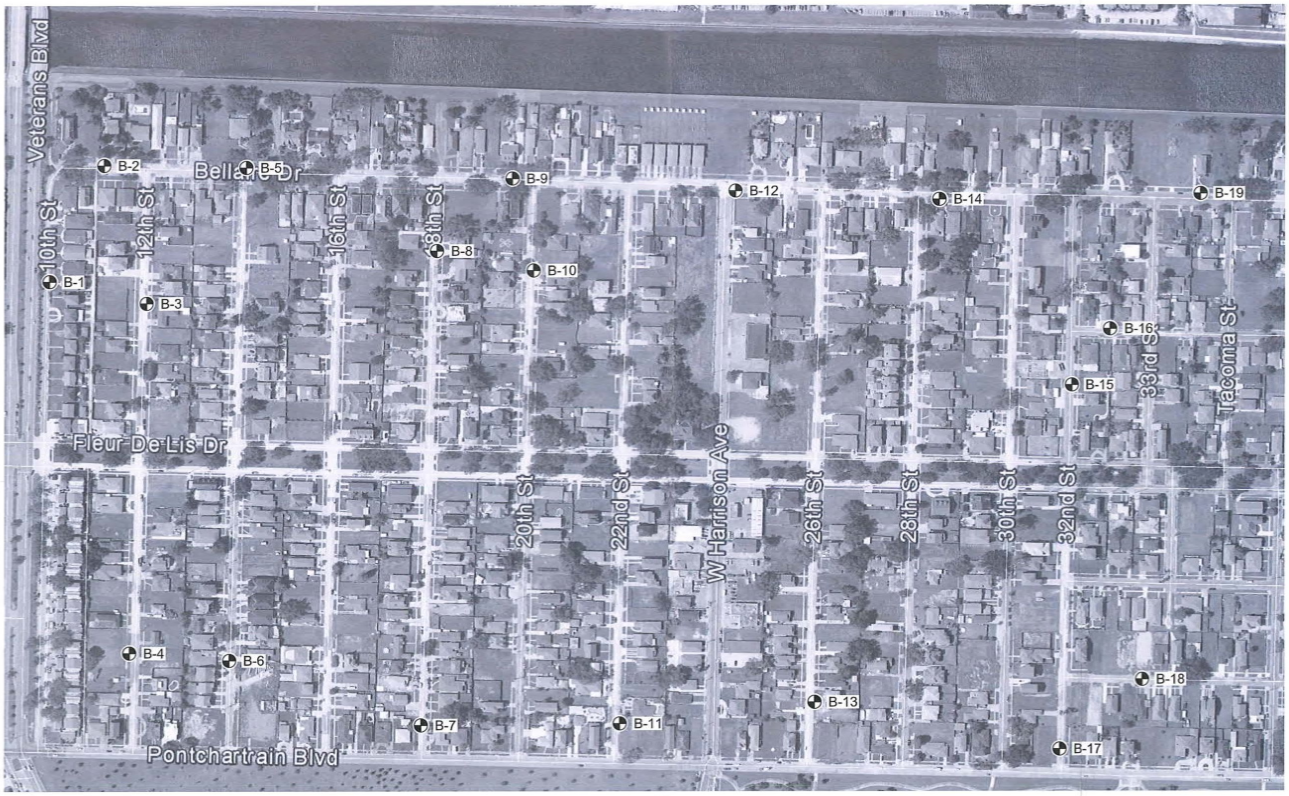
33. Even if existing grades are not raised, the proposed pavements will experience settlements as a result of areal subsidence. Areal subsidence is an ongoing process that is the result of ground water lowering due to area drainage, natural seasonal fluctuations in ground water levels, filling, biodegradation of near surface organic soils, or a combination of these factors. The amount of future areal subsidence cannot be estimated from information developed for this report. Settlement of pavements due to subsidence can be several inches and differential over short lengths and with respect to pile supported structures. Natural fluctuations in the ground water levels are typically a seasonal occurrence; therefore, the observed subsidence may be concentrated due to these seasonal variations.

ADDITIONAL GEOTECHNICAL SERVICES

34. To provide continuity among the investigation, design, and construction phases, Eustis Engineering should be retained to review plans and specifications developed for the project. Eustis Engineering should also be retained to provide additional services. These services may include approval testing of proposed pavement materials, field density tests on compacted fill, onsite testing and inspection of concrete or asphalt placement, vibration monitoring, and any other soils or materials

testing services which will provide quality control during construction and conformance to design specifications.

35. In summary, Eustis Engineering should be retained to monitor all geotechnical related work performed by the contractor. If any construction problems arise, Eustis Engineering should be notified immediately so appropriate action can be taken. Such notification permits the geotechnical engineer to be available quickly to evaluate unanticipated conditions, conduct additional tests if required, and formulate alternative solutions to problems when necessary. This is recommended to avoid construction cost overruns or disputes on the project.



DENOTES LOCATION OF UNDISTURBED SOIL BORINGS DRILLED: 16 AUGUST THROUGH 3 OCTOBER 2013

300 0 300

SCALE: 1" = 300'

EUSTIS ENGINEERING SERVICES, L.L.C.

GEOTECHNICAL ENGINEERS

3011 28TH STREET METAIRIE, LOUISIANA

BORING LOCATION PLAN

CITY OF NEW ORLEANS
PAVEMENT INVESTIGATION
WEST END NEIGHBORHOOD AREA
ORLEANS PARISH, LOUISIANA

DRAWN BY: J.L.S.	PLOT DATE: 1 NOV 13	CADD FILE: LOCATION PLAN.DGN
CHECKED BY: C.S.B.	JOB NO.: 22226	FIGURE 1 (SHEET 1 OF 2)

DENOTES LOCATION OF UNDISTURBED SOIL BORINGS DRILLED: 16 AUGUST THROUGH 3 OCTOBER 2013

300 0 300

SCALE: 1" = 300'

EUSTIS ENGINEERING SERVICES, L.L.C.

GEOTECHNICAL ENGINEERS

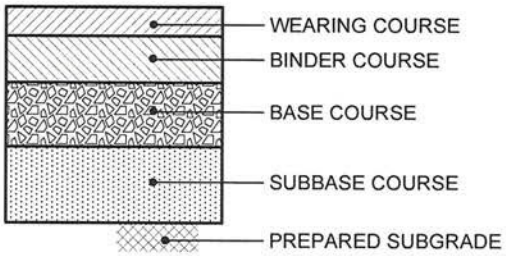
3011 28TH STREET METAIRIE, LOUISIANA

BORING LOCATION PLAN

CITY OF NEW ORLEANS
PAVEMENT INVESTIGATION
WEST END NEIGHBORHOOD AREA
ORLEANS PARISH, LOUISIANA

DRAWN BY: J.L.S.	PLOT DATE: 1 NOV 13	CADD FILE: LOCATION PLAN.DGN
CHECKED BY: C.S.B.	JOB NO.: 22226	FIGURE 1 (SHEET 2 OF 2)

FLEXIBLE PAVEMENT SECTION



FLEXIBLE PAVEMENT COMPONENT	ASSUMED LAYER STRUCTURAL COEFFICIENT	ASSUMED DRAINAGE COEFFICIENT[1]	COMPONENT THICKNESS IN INCHES	STRUCTURAL NUMBER PROVIDED
Collector Streets (ADT = 5,000)[2]				
Type 3 Wearing Course	0.42	1.0	2.0	0.84
Type 3 Binder Course	0.42	1.0	9.0	3.78
Crushed Stone Base	0.14	1.0	9.0	1.26
Sand Subbase	0.11	0.8	12.0	1.06
Total for Pavement (Good Drainage, As Shown)			32.0	6.94
Total for Pavement (Poor Drainage)				6.54[1]
Collector Streets (ADT = 2,500)[3]				
Type 3 Wearing Course	0.42	1.0	2.0	0.84
Type 3 Binder Course	0.42	1.0	8.0	3.36
Crushed Stone Base	0.14	1.0	8.0	1.12
Sand Subbase	0.11	0.8	12.0	1.06
Total for Pavement (Good Drainage, As Shown)			30.0	6.38
Total for Pavement (Poor Drainage)				5.98[1]

[1]See text for discussion of pavement drainage conditions and the influence of these conditions upon selection of a design alternative.
[2]Structural number required to resist furnished traffic loading is estimated to be 6.93
[3]Structural number required to resist furnished traffic loading is estimated to be 6.35

EUSTIS ENGINEERING SERVICES, L.L.C.
GEOTECHNICAL ENGINEERS
3011 28th STREET METAIRIE, LOUISIANA

PAVEMENT DESIGN FOR FLEXIBLE PAVEMENTS
GOOD DRAINAGE CONDITIONS

CITY OF NEW ORLEANS
PAVEMENT INVESTIGATION
WEST END NEIGHBORHOOD AREA
ORLEANS PARISH, LOUISIANA

DRAWN BY: C.S.B.	DATE: 7 NOV. 2013	FILENAME: FIG 2
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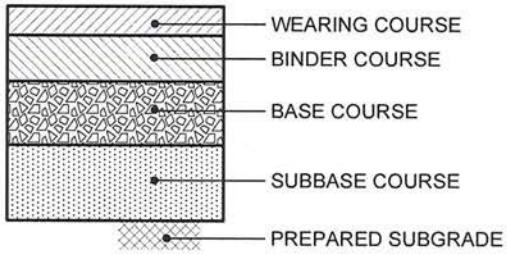
FLEXIBLE PAVEMENT SECTION



FLEXIBLE PAVEMENT COMPONENT	ASSUMED LAYER STRUCTURAL COEFFICIENT	ASSUMED DEAINAGE COEFFICIENT[1]	COMPONENT THICKNESS IN INCHES	STRUCTURAL NUMBER PROVIDED
Collector Streets (ADT = 2,000)[2]				
Type 3 Wearing Course	0.42	1.0	2.0	0.84
Type 3 Binder Course	0.42	1.0	7.0	2.94
Crushed Stone Base	0.14	1.0	10.0	1.40
Sand Subbase	0.11	0.8	12.0	1.06
Total for Pavement (Good Drainage, As Shown)			31.0	6.24
Total for Pavement (Poor Drainage)				5.84[1]
Collector Streets (ADT = 1,000)[3]				
Type 3 Wearing Course	0.42	1.0	2.0	0.84
Type 3 Binder Course	0.42	1.0	5.0	2.10
Crushed Stone Base	0.14	1.0	8.0	1.12
Sand Subbase	0.11	0.8	8.0	0.70
Total for Pavement (Good Drainage, As Shown)			23.0	4.76
Total for Pavement (Poor Drainage)				4.50[1]

[1]See text for discussion of pavement drainage conditions and the influence of these conditions upon selection of a design alternative.
[2]Structural number required to resist furnished traffic loading is estimated to be 6.17
[3]Structural number required to resist furnished traffic loading is estimated to be 4.70

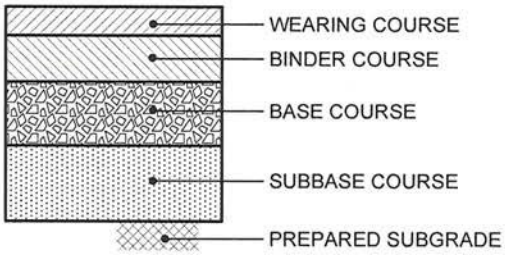
EUSTIS ENGINEERING SERVICES, L.L.C.
GEOTECHNICAL ENGINEERS
3011 28th STREET METAIRIE. LOUISIANA

PAVEMENT DESIGN FOR FLEXIBLE PAVEMENTS
GOOD DRAINAGE CONDITIONS

CITY OF NEW ORLEANS
PAVEMENT INVESTIGATION
WEST END NEIGHBORHOOD AREA
ORLEANS PARISH, LOUISIANA

DRAWN BY: C.S.B.	DATE: 7 NOV. 2013	FILENAME: FIG 2
CHECKED: B.M.C.	JOB NO. 22226	FIGURE NO. 2 (Sheet 2)

FLEXIBLE PAVEMENT SECTION



FLEXIBLE PAVEMENT COMPONENT	ASSUMED LAYER STRUCTURAL COEFFICEINT	ASSUMED DRAINAGE COEFFICIENT[1]	COMPONENT THICKNESS IN INCHES	STRUCTURAL NUMBER PROVIDED
Collector Streets (ADT = 5,000)[2]				
Type 3 Wearing Course	0.42	1.0	2.0	0.84
Type 3 Binder Course	0.42	1.0	9.0	3.78
Crushed Stone Base	0.14	1.0	9.0	1.26
Sand Subbase	0.11	0.5	19.0	1.05
Total for Pavement (Poor Drainage, As Shown)			39.0	6.93
Collector Streets (ADT = 2,500)[3]				
Type 3 Wearing Course	0.42	1.0	2.0	0.84
Type 3 Binder Course	0.42	1.0	9.0	3.78
Crushed Stone Base	0.14	1.0	8.0	1.12
Sand Subbase	0.11	0.5	12.0	0.66
Total for Pavement (Poor Drainage, As Shown)			31.0	6.40

[1]See text for discussion of pavement drainage conditions and the influence of these conditions upon selection of a design alternative.
[2]Structural number required to resist furnished traffic loading is estimated to be 6.93
[3]Structural number required to resist furnished traffic loading is estimated to be 6.35

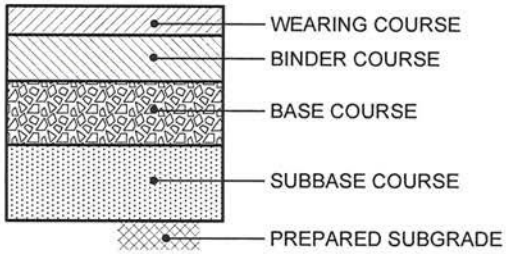
EUSTIS ENGINEERING SERVICES, L.L.C.
GEOTECHNICAL ENGINEERS
3011 28th STREET METAIRIE. LOUISIANA

PAVEMENT DESIGN FOR FLEXIBLE PAVEMENTS
POOR DRAINAGE CONDITIONS

CITY OF NEW ORLEANS
PAVEMENT INVESTIGATION
WEST END NEIGHBORHOOD AREA
ORLEANS PARISH, LOUISIANA

DRAWN BY: C.S.B.	DATE: 7 NOV. 2013	FILENAME: FIG 3
CHECKED: B.M.C.	JOB NO. 22226	FIGURE NO. 3 (Sheet 1)

FLEXIBLE PAVEMENT SECTION



FLEXIBLE PAVEMENT COMPONENT	ASSUMED LAYER STRUCTURAL COEFFICIENT	ASSUMED DRAINAGE COEFFICIENT[1]	COMPONENT THICKNESS IN INCHES	STRUCTURAL NUMBER PROVIDED
Collector Streets (ADT = 2,000)[2]				
Type 3 Wearing Course	0.42	1.0	2.0	0.84
Type 3 Binder Course	0.42	1.0	8.0	3.36
Crushed Stone Base	0.14	1.0	10.0	1.40
Sand Subbase	0.11	0.5	12.0	0.66
Total for Pavement (Poor Drainage, As Shown)			32.0	6.26
Collector Streets (ADT = 1,000)[3]				
Type 3 Wearing Course	0.42	1.0	2.0	0.84
Type 3 Binder Course	0.42	1.0	6.0	2.52
Crushed Stone Base	0.14	1.0	8.0	1.12
Sand Subbase	0.11	0.5	8.0	0.44
Total for Pavement (Poor Drainage, As Shown)			24.0	4.92

[1]See text for discussion of pavement drainage conditions and the influence of these conditions upon selection of a design alternative.
[2]Structural number required to resist furnished traffic loading is estimated to be 6.17
[3]Structural number required to resist furnished traffic loading is estimated to be 4.70

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PAVEMENT DESIGN FOR FLEXIBLE PAVEMENTS
POOR DRAINAGE CONDITIONS

CITY OF NEW ORLEANS
PAVEMENT INVESTIGATION
WEST END NEIGHBORHOOD AREA
ORLEANS PARISH, LOUISIANA

DRAWN BY: C.S.B.	DATE: 7 NOV. 2013	FILENAME: FIG 3
CHECKED: B.M.C.	JOB NO. 22226	FIGURE NO. 3 (Sheet 2)

APPENDIX

LEGEND AND NOTES FOR
LOG OF BORING AND TEST RESULTS

PP Pocket penetrometer: Resistance in tons per square foot

SPT Standard Penetration Test: Number of blows of a 140-lb hammer dropped 30 inches required to drive 2-in. O.D., 1.4-in. I.D. sampler a distance of 1 foot into the soil after first seating it 6 inches

SPLR Type of Sampling  Shelby  SPT  Auger  No sample

SYMBOL Clay  Silt  Sand  Peat/Humus  Shells  Stone/Gravel 

Predominant type shown heavy; Modifying type shown light

USC Unified Soil Classification

DENSITY Unit weight in pounds per cubic foot

SHEAR TESTS

TYPE

- UC Unconfined compression shear
- OB Unconsolidated undrained triaxial compression shear on one specimen confined at the approximate overburden pressure
- UU Unconsolidated undrained triaxial compression shear
- CU Consolidated undrained triaxial compression shear
- DS Direct shear

Ø Angle of internal friction in degrees

c Cohesion in pounds per square foot

ATTERBERG LIMITS

- LL Liquid Limit
- PL Plastic Limit
- PI Plasticity Index

OTHER TESTS

- CON Consolidation
- PD Particle size distribution (sieve and/or hydrometer)
- k Coefficient of permeability in centimeters per second
- SP Swelling pressure in pounds per square foot

Other laboratory test results reported on separate figures

GENERAL NOTES

(1) If a ground water depth is shown on the boring log, these observations were made at the time of drilling and were measured below the existing ground surface. These observations are shown on the boring logs. However, ground water levels may vary due to seasonal fluctuations and other factors. If important to construction, the depth to ground water should be determined by those persons responsible for construction immediately prior to beginning work.

(2) While the individual logs of borings are considered to be representative of subsurface conditions at their respective locations on the dates shown, it is not warranted that they are representative of subsurface conditions at other locations and times.

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City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/16/2013

LOG OF BORING AND TEST RESULTS

B-1

Latitude: 30.00011
Longitude: -90.12084

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0		39			4" Asphalt Stiff brown silty clay w/trace of shell fragments	CL	1	0.5	16										
							2	2											
					Soft dark brown silty clay w/shell fragments & trace of decayed wood	CL													
5							3	4	46										
10																			
15																			
20																			
25																			

NOTES:

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/16/2013

LOG OF BORING AND TEST RESULTS

B-2

Latitude: 30.00062
Longitude: -90.12197

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					6" Asphalt, 6" Concrete														
		4			Soft brown silty clay w/gravel & shell fragments	CL	1	1	34										
					Medium stiff gray clay w/trace of shell fragments, trace of brick fragments, & trace of fine sand pockets	CH	2	3	72										
5					Soft gray clay w/roots & shell fragments	CH	3	4	68										
10																			
15																			
20																			
25																			

NOTES:

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City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/16/2013

LOG OF BORING AND TEST RESULTS

B-3

Latitude: 30.00093
Longitude: -90.12058

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	SPLR	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					1" Asphalt, 5" Concrete														
		2			Medium stiff brown & gray organic clay w/shell fragments	OH	1	0.5	79										
					Soft brown & gray silty clay w/trace of organic matter & trace of roots	CL	2	2	36										
					Soft brown & gray organic clay w/trace of shell fragments	OH	3	4	76						107	56	51		
5																			
10																			
15																			
20																			
25																			

NOTES:

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/16/2013

LOG OF BORING AND TEST RESULTS

B-4

Latitude: 30.00067
Longitude: -90.11715

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					1" Asphalt, 4" Concrete														
		2			Soft brown & gray organic clay w/silt pockets & decayed wood	OH	1	0.5	132										
					Soft dark gray organic clay w/trace of roots	OH	2	2	103						163	58	105		
5					Soft gray & brown organic clay w/silt pockets & trace of roots	OH	3	4	128										
10																			
15																			
20																			
25																			

NOTES:

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/16/2013

LOG OF BORING AND TEST RESULTS

B-5

Latitude: 30.00183
Longitude: -90.12188

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					6" Concrete														
		11			Loose brown & gray crushed stone & shell fragments w/clayey sand pockets & wood	GP	1	0.5	27										
					Soft dark gray organic clay w/organic matter, trace of decayed wood, & trace of roots	OH	2	2	131										
5					Soft gray organic clay w/silt pockets, trace of roots, & trace of shell fragments	OH	3	4	112										
10																			
15																			
20																			
25																			

NOTES:

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/26/2013

LOG OF BORING AND TEST RESULTS

B-6

Latitude: 30.00152
Longitude: -90.11703

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0		13			3" Asphalt Medium dense gray shells	SI	1	0											
	0.25				Soft gray organic clay w/silt pockets & trace of roots	OH	2	2	123						149	39	110		
5	0.25				Soft dark gray organic clay w/silt pockets	OH	3	4	72										
10																			
15																			
20																			
25																			

NOTES:

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 09/30/2013

LOG OF BORING AND TEST RESULTS

B-7

Latitude: 30.00313
Longitude: -90.11632

Water Depth: See Text
Total Depth: 3.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					18" Concrete														
		11			Soft gray & tan silty clay w/shell fragments & tarce of gravel	CL	1	1.5	47										
	0.25				Soft gray organic clay w/shell fragments	OH	2	2	88						107	41	66		
5																			
10																			
15																			
20																			
25																			

NOTES: The boring could not be advanced below 3 feet due to an obstruction.

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/20/2013

LOG OF BORING AND TEST RESULTS

B-8

Latitude: 30.00344
Longitude: -90.12098

Water Depth: See Text
Total Depth: 3.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					7.5" Concrete														
		3			Soft dark brown organic clay w/shell fragments	OH	1	0	74										
	0.25				Soft gray organic clay w/silt pockets & trace of shell fragments	OH	2	2	101										
5																			
10																			
15																			
20																			
25																			

NOTES: The boring could not be advanced below 3 feet due to an obstruction.

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/26/2013

LOG OF BORING AND TEST RESULTS

B-9

Latitude: 30.00410
Longitude: -90.12167

Water Depth: See Text
Total Depth: 3.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					6" Concrete														
		16			Medium dense gray shells	SI	1	0											
	2.00				Medium stiff gray organic clay w/brick fragments, silty sand pocktes, & trace of shell fragments	OH	2	2	91										
5																			
10																			
15																			
20																			
25																			

NOTES: The boring could not be advanced below 3 feet due to an obstruction.

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/21/2013

LOG OF BORING AND TEST RESULTS

B-10

Latitude: 30.00425
Longitude: -90.12075

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0		6			7" Concrete														
					Medium stiff dark brown organic clay w/trace of shell fragments	OH	1	0	37										
					Soft gray & brown organic clay w/trace of decayed wood	OH													
	0.25				Soft dark brown & gray organic clay	OH	2	2	150						152	35	117		
	0.25						3	3	191										
5							4	4											
10																			
15																			
20																			
25																			

NOTES:

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/21/2013

LOG OF BORING AND TEST RESULTS

B-11

Latitude: 30.00483
Longitude: -90.11625

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0		3			7" Concrete														
					Soft brown organic clay	OH	1	0	94										
					Soft brown & gray humus w/decayed wood & roots	Pt													
	0.25						2	2	246						272	77	195		
	0.25						3	3	235										
	0.25						4	4											
5																			
10																			
15																			
20																			
25																			

NOTES:

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City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/26/2013

LOG OF BORING AND TEST RESULTS

B-12

Latitude: 30.00600
Longitude: -90.12145

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					2" Asphalt, 6" Concrete														
		2			Soft brown & gray clay w/silt pockets, trace of organic matter, & trace of shell fragments	CH	1	0	57										
	0.50				Soft dark gray & tan organic clay	OH	2	2	97										
	1.25				Soft gray silty clay w/organic matter & trace of shell fragments	CL	3	4	42										
5																			
10																			
15																			
20																			
25																			

NOTES:

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/21/2013

LOG OF BORING AND TEST RESULTS

B-13

Latitude: 30.00650
Longitude: -90.11638

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0		7			6.5" Concrete														
					Loose gray shell fragments w/silty clay	Sl	1	0	16										
					Soft dark gray humus w/decayed wood	Pt													
	0.25						2	2	261										
	0.25						3	3	276						306	124	182		
	0.25						4	4											
5																			
10																			
15																			
20																			
25																			

NOTES:

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/26/2013

LOG OF BORING AND TEST RESULTS

B-14

Latitude: 30.00773
Longitude: -90.12128

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					6" Concrete														
		4			Soft dark brown silty clay w/organic matter, trace of brick fragments, & trace of shell fragments	CL	1	0	40										
	0.50				Medium stiff brown & gray clay w/silt pockets & trace of organic matter	CH	2	2	86										
5					Soft gray clay w/silt pockets & decayed wood	CH	3	4	54						57	30	27		
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/12/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/21/2013

LOG OF BORING AND TEST RESULTS

B-15

Latitude: 30.00880
Longitude: -90.11940

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					2" Asphalt, 6" Concrete														
		7			Loose black silty sand w/trace of clay pockets & gravel	SM	1	0	10										
					Soft dark gray humus	Pt													
	0.25						2	2	149						195	73	122		
					Soft gray silty clay w/trace of decayed wood	CL	3	3	43										
							4	4											
5																			
10																			
15																			
20																			
25																			

NOTES:

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 09/30/2013

LOG OF BORING AND TEST RESULTS

B-16

Latitude: 30.00915
Longitude: -90.11993

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					6" Concrete, 2" Asphalt														
		17			Loose to medium dense gray shells w/clay pockets	Sl	1	0.7	8										
							2	2	11										
					Soft dark brown humus w/roots	Pt	3	3	310						442	346	96		
					Soft brown organic clay	OH	4	4	228										
5																			
10																			
15																			
20																			
25																			

NOTES:

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/23/2013

LOG OF BORING AND TEST RESULTS

B-17

Latitude: 30.00857
Longitude: -90.11582

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					1" Asphalt, 7" concrete														
		3			Soft brown clay w/silt pockets, trace of gravel, & trace of brick fragments	CH	1	0	62										
	0.25				Medium stiff brown humus w/decayed wood	Pt	2	1.5	326						407	166	241		
	0.25						3	3	335										
5																			
10																			
15																			
20																			
25																			

NOTES:

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/23/2013

LOG OF BORING AND TEST RESULTS

B-18

Latitude: 30.00930
Longitude: -90.11647

Water Depth: See Text
Total Depth: 3.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					1" Asphalt, 6" Concrete														
		7			Medium stiff brown silty clay w/gravel & shell fragments	CL	1	0	35										
	0.25				Soft brown organic clay w/trace of gravel, trace of shell fragments, & glass	OH	2	1.5	106						108	58	50		
5																			
10																			
15																			
20																			
25																			

NOTES: The boring could not be advanced below 3 feet due to an obstruction.

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 09/30/2013

LOG OF BORING AND TEST RESULTS

B-19

Latitude: 30.00996
Longitude: -90.12122

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					2" Asphalt, 6" Concrete														
		13			Medium dense crushed stone w/clayey sand pockets	GP	1	0.7	20										
	0.25				Soft gray organic clay w/silt pockets, shell fragments, & trace of roots	OH	2	2											
	0.25						3	3	118										
	0.25				Soft brown humus	Pt	4	4	237										
5																			
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/27/2013

LOG OF BORING AND TEST RESULTS

B-20

Latitude: 30.01082
Longitude: -90.11732
Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0		3			6" Asphalt, 6" Concrete														
					Loose gray silty sand w/gravel, shell fragments, & clay pockets	SM	1	0	22										
	0.25				Medium stiff brown humus w/decayed wood	Pt	2	2	265						311	121	190		
	0.25				Soft gray silty clay w/decayed wood & organic matter	CH	3	4	54										
5																			
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/27/2013

LOG OF BORING AND TEST RESULTS

B-21

Latitude: 30.01164
Longitude: -90.11630

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					2" Asphalt, 6" Concrete														
		8			Medium stiff gray & brown silty clay w/shell fragments & gravel	CL	1	0	22										
					Soft dark brown humus w/trace of shell fragments	Pt	2	2	205										
5	0.25						3	4	272						338	144	194		
10																			
15																			
20																			
25																			

NOTES:

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 09/30/2013

LOG OF BORING AND TEST RESULTS

B-22

Latitude: 30.01222
Longitude: -90.11559

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					6" Asphalt														
		12			Medium dense brown clayey sand w/trace of gravel & trace of shell fragments	SC	1	0.5	16										
	0.50				Medium stiff brown silty clay w/shell fragments	CL	2	2	27										
	0.50				Medium stiff dark brown & gray organic clay w/organic matter	OH	3	3	54						69	30	39		
	0.25																		
5																			
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 10/3/2013

LOG OF BORING AND TEST RESULTS

B-23

Latitude: 30.01230
Longitude: -90.11763

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					4" Asphalt, 6" Concrete														
		2			Loose brown sandy silt w/crushed limestone	ML	1	0.8	5										
					Medium stiff brown & gray clay w/silt pockets	CH	2	2	48						88	21	67		
5					Medium stiff gray & tan clay w/silt pockets	CH	3	4	43										
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/13/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/22/2013

LOG OF BORING AND TEST RESULTS

B-24

Latitude: 30.01210
Longitude: -90.11877

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0		7			3.5" Asphalt, 7.5" Concrete														
					Loose tan fine sand w/gravel & clay pockets	SP	1	0	13										
					Loose tan fine sand w/silt, shell fragments, gravel, & trace of clay pockets	SP-SM	2	2											-#200 = 11.8%
5					Loose tan & gray clayey sand w/shell fragments & gravel	SC	3	4	31										
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/13/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/22/2013

LOG OF BORING AND TEST RESULTS

B-25

Latitude: 30.01243
Longitude: -90.11965

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					3" Asphalt, 6" Concrete														
					Loose tan shell fragments w/trace of clay pockets	SI	1	0	11										
	0.25				Loose reddish-brown clayey silt w/shell fragments & brick fragments	ML	2	1.5	29						29	24	5		
	0.25				Medium stiff brown clay w/silt pockets	CH	3	3	104										
5																			
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/22/2013

LOG OF BORING AND TEST RESULTS

B-26

Latitude: 30.01248
Longitude: -90.12088

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0		6			1.5" Asphalt, 5" Concrete														
					Stiff dark gray silty clay w/shell fragments	CL	1	0	23										
					Loose gray shells w/silty clay pockets	SI	2	1.5	8										
5					Stiff gray & brown silty clay w/silty sand pockets & trace of organic matter	CL	3	3	12										
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/22/2013

LOG OF BORING AND TEST RESULTS

B-27

Latitude: 30.01341
Longitude: -90.12055

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					2" Asphalt, 6" Concrete														
		3			Soft gray & brown organic clay w/silty sand pockets	OH	1	0	111										
	0.25						2	1.5	96										
	0.25						3	3	224										
5					Medium stiff brown humus	Pt													
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/22/2013

LOG OF BORING AND TEST RESULTS

B-28

Latitude: 30.01498
Longitude: -90.12072

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0		3			7" Asphalt														
					Loose tan fine sand	SP	1	0	13										
					Soft dark brown & brown organic clay	OH	2	1.5	189										
					Soft gray silty clay w/trace of roots	CL	3	3	44						49	22	27		
5																			
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/26/2013

LOG OF BORING AND TEST RESULTS

B-29

Latitude: 30.01283
Longitude: -90.11713

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					2" Asphalt, 6" Concrete														
		5			Medium stiff brown silty clay w/wood	CL	1	0	36										
	0.75				Medium stiff gray silty clay	CL	2	2	31										
5	0.25				Soft gray silty clay w/trace of organic matter	CL	3	4	41										
10																			
15																			
20																			
25																			

NOTES:

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/26/2013

LOG OF BORING AND TEST RESULTS

B-30

Latitude: 30.01287
Longitude: -90.11617

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					2" Asphalt, 6" Concrete														
		2			Loose gray clayey silt w/gravel	ML	1	0	18										
	0.25				Soft black humus	Pt	2	2	199						284	99	185		
	0.50				Soft gray silty clay w/gravel	CL	3	4	45										
5																			
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/23/2013

LOG OF BORING AND TEST RESULTS

B-31

Latitude: 30.01525
Longitude: -90.11605

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					1" Asphalt, 6" Concrete														
		4			Medium stiff brown silty clay w/shell fragments	CL	1	0.5	26										
	0.75				Soft brown clay w/shell fragments, gravel, & organic matter	CH	2	2.5	66										
	0.25				Soft brown & gray organic clay w/trace of decayed wood	OH	3	4	148										
5																			
10																			
15																			
20																			
25																			

NOTES:

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/22/2013

LOG OF BORING AND TEST RESULTS

B-32

Latitude: 30.01647
Longitude: -90.12062

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					3" Asphalt, 3" Concrete														
		13	X		Medium dense gray shells w/silty clay pockets	Sl	1	0	13										
					Medium stiff brown humus	Pt	2	1.5	263						389	175	214		
5					Soft dark brown humus	Pt	3	3	301										
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/23/2013

LOG OF BORING AND TEST RESULTS

B-33

Latitude: 30.01753
Longitude: -90.12052

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	SPLR	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					7" Concrete														
		3			Loose gray crushed limestone w/clayey silt pockets	GP	1	0	6										
	0.25				Medium stiff dark brown humus	Pt	2	2	422										
	0.25						3	3	250						243	87	156		
5	0.25						4	4											
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/22/2013

LOG OF BORING AND TEST RESULTS

B-34

Latitude: 30.01685
Longitude: -90.11843

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0		3			1.5" Asphalt, 5" Concrete														
					Very soft dark brown organic clay w/fine sand pockets	OH	1	0	81										
					Very soft dark brown humus	Pt	2	1.5	140						289	176	113		
5					Very soft gray clay w/silty sand pockets & trace of organic matter	CH	3	3	75										
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/13/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/27/2013

LOG OF BORING AND TEST RESULTS

B-35

Latitude: 30.01768
Longitude: -90.11859

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0		6			6" Asphalt, 4" Concrete														
					Soft brown silty clay w/gravel & shell fragments	CL	1	0	22										
	0.25				Soft gray clay w/silt pockets, organic matter, & trace of shell fragments	CH	2	2	35						53	21	32		
					Soft gray silty clay w/shell fragments	CL													
	0.25						3	4	48										
5																			
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/23/2013

LOG OF BORING AND TEST RESULTS

B-36

Latitude: 30.01665
Longitude: -90.11537

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					1" Asphalt, 6" Concrete														
		4			Soft dark brown silty clay w/organic matter	CL	1	0.6	129										
	0.25				Soft brown clay w/silt pockets & organic matter	CH													
					Soft gray clay w/silt pockets & trace of decayed wood	CH	2	2.5	47						55	21	34		
5							3	4	54										
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/13/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/23/2013

LOG OF BORING AND TEST RESULTS

B-37

Latitude: 30.01825
Longitude: -90.11508

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	SPLR	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					3" Asphalt & Concrete														
		7			Loose gray shells w/gravel	SI	1	0.5											
	0.25				Soft dark gray organic clay	OH	2	2	11										
					Soft dark brown humus w/roots	Pt	3	4	239						266	77	189		
5																			
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/23/2013

LOG OF BORING AND TEST RESULTS

B-38

Latitude: 30.01860
Longitude: -90.12022

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0		4			Soft brown silty clay w/gravel & trace of shell fragments	CL	1	0	21										
					Medium stiff dark brown organic clay w/trace of gravel	OH	2	1.5	128						179	112	67		
					Soft dark brown humus	Pt	3	3	247										
5																			
10																			
15																			
20																			
25																			

NOTES: The core was crushed during retrieval. The thickness of the pavement surface could not be determined.

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/23/2013

LOG OF BORING AND TEST RESULTS

B-39

Latitude: 30.01877
Longitude: -90.12042

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0		28			7" Concrete														
					Medium dense gray crushed limestone w/shell fragments	GP	1	0	6										
					Medium stiff dark brown humus	Pt	2	1.5	244										
					Soft dark gray & brown humus	Pt	3	3	279						231	68	163		
5																			
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/18/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/23/2013

LOG OF BORING AND TEST RESULTS

B-40

Latitude: 30.01885
Longitude: -90.11880

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					7" Concrete														
		10			Medium stiff dark brown organic clay w/wood & shell fragments	OH	1	0	120										
					Soft dark brown humus	Pt	2	1.5	172						253	77	176		
							3	2.5	88										
5					Soft dark brown & gray organic clay w/trace of shell fragments & trace of roots	OH													
10																			
15																			
20																			
25																			

NOTES:

EUSTIS GINT LIBRARY\04102013.GLB EE STANDARD BORING LOG 22226.GPJ EE STANDARD DATATEMPLATE.GDT 11/13/13

EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/23/2013

LOG OF BORING AND TEST RESULTS

B-41

Latitude: 30.01868
Longitude: -90.11673

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					3" Asphalt														
		7			Stiff brown silty clay w/shell fragments	CL	1	0.5	10										
					Soft gray humus w/decayed wood	Pt	2	2.5	217						297	182	115		
					Soft brown & gray humus w/decayed wood	Pt	3	4	201										
5																			
10																			
15																			
20																			
25																			

NOTES:

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/23/2013

LOG OF BORING AND TEST RESULTS

B-42

Latitude: 30.01858
Longitude: -90.11580

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					2" Asphalt														
		17			Medium dense gray crushed limestone	GP	1	0.5											
	0.25				Soft dark gray humus	Pt	2	2.5	250						344	120	224		
5							3	4	207										
10																			
15																			
20																			
25																			

NOTES:

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EUSTIS ENGINEERING

City of New Orleans
Pavement Investigation
West End Neighborhood Area
Orleans Parish, Louisiana
Project No: 22226
Date: 08/23/2013

LOG OF BORING AND TEST RESULTS

B-43

Latitude: 30.02105
Longitude: -90.11448

Water Depth: See Text
Total Depth: 5.0 ft

Scale in Feet	PP	SPT	S P L R	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests ϕ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI		Other Tests
0					7" Concrete & Asphalt														
		13			Medium dense tan fine sand w/trace of silt	SP	1	0.5											-#200=3.8%
					Medium stiff gray clay	CH	2	2.5	67										
	0.25				Medium stiff gray silty clay w/clay layers	CL	3	4	29										
5																			
10																			
15																			
20																			
25																			

NOTES:

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