



~ Geotechnical Evaluations ~ Construction Materials Testing ~ Geosciences ~ Infrastructure Management Services ~

**GEOTECHNICAL REPORT
RESURFACING AND WIDENING
EZRA TRICE BOULEVARD
ALABAMA STATE PORT AUTHORITY
MOBILE, ALABAMA**

Professional Services Since 1974

904 Butler Drive, Mobile, AL 36693

251.666.7197 FAX: 251.666.7380

www.geoengr.com

Geotechnical Engineering-Testing, Inc.

PROFESSIONAL ENGINEERS

Geotechnical Evaluations - Geosciences - Construction Materials - Pavement Management

June 21, 2024

Kyle Strachan, P.E.
Facilities Engineer
Alabama Port Authority

Email: kyle.strachan@alports.com

Re: Proposed Resurfacing and Widening of a Portion of Ezra Trice Boulevard in Mobile, Alabama

Dear Mr. Strachan:


Geotechnical Engineering-Testing, Inc. (GET) is pleased to submit this report of our soils explorations and geotechnical engineering evaluations for the proposed resurfacing and widening of approximately 1750 to 2000 ft of Ezra Trice Boulevard extending from the south end of the bridge over the railroad tracks to the south and east. This report includes the results of the soils explorations program and our recommendations for site preparations and pavement recommendations.

The recommendations provided in the attached report are based in part on the project information provided to GET and only apply to the specific project and site discussed in the report.

Please call Curt Doyle, P.E. if you have any questions regarding this report.

Sincerely,

GEOTECHNICAL ENGINEERING-TESTING, INC.


Curt Doyle, P.E.
Principal Engineer
Alabama License No. 25733
Date: 6/21/2024

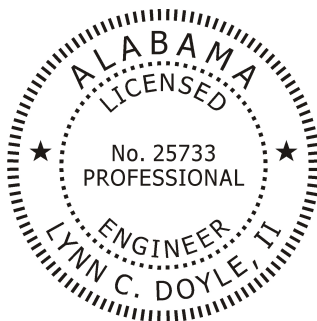


TABLE OF CONTENTS

	page
INTRODUCTION.....	1
PROJECT DESCRIPTION.....	1
GENERAL SUBSURFACE CONDITIONS.....	2
PAVEMENT RECOMMENDATIONS.....	2
Traffic Data.....	2
ESAL Range.....	3
Subgrade Soil Resilient Modulus.....	3
Pavement Section Design.....	3
Recommended Pavement Buildup.....	4
Planing.....	5
Spot Patching and Spot Leveling.....	5
RECOMMENDED PAY ITEMS.....	5
SOIL SURVEY.....	6
Field Investigation.....	6
Laboratory Testing.....	7
BASIS OF REPORT.....	8
LIMITATIONS.....	8

FIGURES

HIGHWAY LOCATION MAP.....	Figure 1
----------------------------------	-----------------

APPENDICES

DARWIN PAVEMENT DESIGNS.....	A
BORING LOCATION PLAN.....	B
TABLE OF ASPHALT MEASUREMENTS.....	C
LOGS OF BORING.....	D
LABORATORY TEST RESULTS.....	E

INTRODUCTION

Geotechnical Engineering-Testing, Inc. (GET) has completed the soil explorations and geotechnical engineering studies that were proposed for this project. The soils survey for the proposed resurfacing and widening of Ezra Trice Boulevard has included coring the existing pavements, soil test borings and laboratory tests performed on selected soil samples recovered from the boring operations. The engineering study has included the planning, coordination, and supervision of the soils explorations program, evaluations of the results of the soils explorations, development of recommendations, and the preparation of this report. These services were performed in general accordance with our proposal dated April 30, 2024. Our professional services for this project have been performed, findings obtained, and recommendations prepared in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties, either expressed or implied.

PROJECT DESCRIPTION

The project will include the resurfacing of Ezra Trice Boulevard extending from the south end of the bridge over the railroad tracks south and eastward for a distance of about 1750 to 2000 ft. Additionally, approximately 600 ft of the roadway will be widened on the west side by 15 ft, approximately 600 ft of the roadway will be widened on the east side by 4 ft. After the roadway turns east, about 400 ft of the roadway will be widened 6 ft on the south side of the road with two smaller areas of widening on the north side. A current aggregate surfaced truck turn around area west of the Ezra Trice-Yeend Street crossover will also be paved. The planned areas to be widened were provided to us by Mr. Kyle Strachan, P.E. of the Alabama State Port Authority (ASPA), on April 22, 2024 and May 7, 2024.

The general project location is identified on a Highway Location map included as Figure 1 of this report.

GENERAL SUBSURFACE CONDITIONS

The existing roadway was cored in 6 locations. The cores indicated that the existing pavement thickness varies between 5.1 to in excess of 15 inches (length of the core barrel) in thickness with an average of about 10.6 inches. In the locations where coring extended through the asphalt pavement surface, 8 to 9 inches of crushed stone or oyster shell base materials were encountered.

A visual pavement condition survey was performed by GET engineers of the roadway. The pavements generally showed signs of significant block cracking and minor rutting. In isolated locations, rutting appeared to be approximately 1 to 2 inches. At this time, alligator cracking was minor indicating that there was no major areas of base failure, however the previously mentioned block cracking will generally lead to alligator cracking especially after water seeps through the cracks to the underlying base and subgrade materials. For the Component Analysis Method for overlay design, we recommend using about 70 percent of the coefficient values for in-place asphalt layers.

Soil borings performed adjacent the roadway in areas to be widened generally indicated that the underlying subgrade materials encountered along the existing roadway generally consist of at least 10 ft of firm silty sand (A-2-4) materials. Groundwater was encountered at a depth of about 3 ft below ground surface in several of the borings.

PAVEMENT RECOMMENDATIONS

Traffic Data

Based upon information received from Mr. Marcus Coleman, P.E. of the ASPA, we understand that approximately 1300 trucks per day enter/exit the APM terminal facility 5 days per week. We have estimated that an additional 500 trucks per week pass over the road for other facilities and weekend use of the APM facility. Based upon this traffic data and an estimated 2.0 percent per year annual growth rate, the total number of equivalent single axle loads, ESALs, over the standard 12-year design life is about 5,000,000. Loads from light trucks and passenger vehicles are negligible and have not been included in this count.

ESAL Range

Based upon the traffic data provided, an ESAL Range C/D asphalt mix is required for this project per Alabama Department of Transportation. ALDOT, guidelines. However, due to the extensive cracking and rutting that has occurred in the existing roadway due to the heavy truck traffic, we recommend that a different asphalt mix be utilized for this project. We recommend the use of an ESAL Range E mix. This is a polymer modified mix that is designed for high truck volume roadways and is more durable than an A/B or C/D mixes. It will reduce the damage caused by high truck volumes and extend the life of the overlay.

Subgrade Soil Resilient Modulus

Based upon the soils encountered in the borings performed and our past experience, we estimate that the resilient modulus of the well-compacted A-2-4 subgrade soils to be about 9,000 psi.

Pavement Section Design

The 1993 AASHTO Pavement Design Procedure (DARWin Pavement Design and Analysis System) was used to compute the pavement section design for this project. The average effective Structural Number, SN_{eff} , was determined using the core data obtained during our investigation and a visual pavement condition survey. This was utilized in the determining the required overlay utilizing the component analyses method in the DARWin software program.

Based upon the traffic data for this project, the estimated design subgrade soil strength, the required Structural Number, SN_{req} , was computed to be 5.65 for the roadway for a standard 12 year design period. The effective Structural Number, SN_{eff} , after milling was determined to be 3.39, therefore the required overlay Structural Number, SN_{ol} , was 2.26. Based upon the required overlay Structural Number, a wearing surface and upper binder layer will be required to meet the design requirements. Details of the overlay pavement section are shown on the DARWin Pavement Designs in Appendix A of this report. The details of the requirements for the full buildup of travel lanes based upon the traffic data and subgrade soils has also been included in Appendix A.

Recommended Pavement Buildup

The recommended pavement buildup for the roadway sections are as follows:

- **Resurfacing**

Pay Item 424A-280: Superpave Bituminous Concrete Wearing Surface Layer, 1/2" Maximum Aggregate Size Mix, ESAL Range E (225 Lb/SY)

Pay Item 424B-281: Superpave Bituminous Concrete Upper Binder Layer, 1" Maximum Aggregate Size Mix, ESAL Range E (250 Lb/SY)

Pay Item 408A-052: Planing Existing Pavement (Approximately 1.1" Thru 2.0") (Plane 2.0")

Although the required structural value for the roadway indicates that a full buildup should require two lower binder layers in addition to the upper binder and wearing layers for travel lanes, it is our opinion that this may be modified for the widening areas that will not receive all of the design truck traffic. Therefore, in the areas to be widened, we recommend the following pavement buildup:

- **Widening**

Pay Item 424A-280: Superpave Bituminous Concrete Wearing Surface Layer, 1/2" Maximum Aggregate Size Mix, ESAL Range E (225 Lb/SY)

Pay Item 424B-281: Superpave Bituminous Concrete Upper Binder Layer, 1" Maximum Aggregate Size Mix, ESAL Range E (250 Lb/SY)

Pay Item 424B-581: Superpave Bituminous Concrete Lower Binder Layer, 1" Maximum Aggregate Size Mix, ESAL Range E (250 Lb/SY)

Pay Item 401A-000: Bituminous Treatment A

Pay Item 301A-012: Crushed Aggregate Base Course, Type B, Plant Mixed, 6" Compacted Thickness

Pay Item 230A-000: Roadbed Processing

Note 1: **Pay Item 301A-012** should extend one (1) ft beyond the limits of the overlying Lower Binder Layer.

Note 2: **Pay Item 230A-000** should extend one (1) ft beyond the limits of the overlying Crushed Aggregate Base Layer.

Note 3: In the areas where widening will be less than 6 ft, compaction requirements for the Lower Binder Layer will be waived.

Note 4: In areas where the widening will be less than 6 ft, roadbed processing will be waived and the top 6 inches of the soils shall be compacted to the satisfaction of a representative of the geotechnical engineer.

Planing

Due to the significant block cracking and areas of rutting observed, we recommend that the roadway be planed 2.0 inches. After planing, the Upper Binder layer and Wearing layer should be placed.

Spot Patching

After planing, some minor areas may need additional remediation. In these areas, it is recommended that additional planing be performed at the direction of a representative of the geotechnical engineer and/or ASPA personnel. In these areas, the following Pay Item may be utilized.

- Patching: Pay Item 424B-285: Superpave Bituminous Concrete Upper Binder Layer, Patching, 1" Maximum Aggregate Size Mix, ESAL Range E

RECOMMENDED PAY ITEMS

- 210A-000** Unclassified Excavation
- 210D-012** Borrow Excavation (A-2-4(0) Or A-4(0)).
- 230A-000** Roadbed Processing
- 301A-012** Crushed Aggregate Base Course, Type B, Plant Mix, 6" Compacted Thickness
- 405A-000** Tack Coat
- 408A-052** Planing Existing Pavement (Approximately 1.10" Thru 2.0" Thick)

- 424A-280 Superpave Bituminous Concrete Wearing Surface Layer, 1/2" Maximum Aggregate Size Mix, ESAL Range E
- 424B-281 Superpave Bituminous Concrete Upper Binder Layer, 1" Maximum Aggregate Size Mix, ESAL Range E
- 424B-285 Superpave Bituminous Concrete Upper Binder Layer, Patching, 1" Maximum Aggregate Size Mix, ESAL Range E
- 424B-581 Superpave Bituminous Concrete Lower Binder Layer, 1" Maximum Aggregate Size Mix, ESAL Range E

SOIL SURVEY

Field Investigation

The existing roadway within the project limits was cored at 6 locations and soil borings were performed within areas to be widened in 7 locations. The locations were selected and marked in the field by GET engineers. GPS engineers utilized a submeter GPS to determine the approximate locations of each core in the field. The approximate core and boring locations are shown on the boring location plan that has been included in Appendix B of this report.

At the core locations, base materials were sampled with a hand auger. A table of asphalt measurements and photographs of the cores collected during this investigation have been included in Appendix C of this report.

The soil borings were made with a trailer-mounted CME-45 drill rig. The boreholes were advanced using solid-stem augers. Standard penetration tests were performed, and split spoon soil samples were collected continuously to a depth of 6 ft and then at 5 ft center-to-center intervals to the boring termination depths of 10 ft.

The samples collected during the boring operations were visually described and logged in the field, placed in moisture tight plastic bags and were transported to GET's soils laboratory. At the laboratory the samples were visually examined to confirm or adjust the field classifications and representative samples were selected for laboratory testing.

The depths where samples were collected and the results of the laboratory classification tests are shown on the Logs of Boring included in Appendix D of this report. Logs have also been prepared for the core and base samples collected.

The soil borings provided with this report are representative of subsurface conditions at their respective locations and for their respective vertical reaches. However, local variations characteristic of the subsurface materials of the region are anticipated and may be encountered during construction. The boring logs and related information are based on the driller's logs and visual examination of selected samples in the laboratory. The delineation between soil types shown on the logs is approximate and the description represents the interpretation of subsurface conditions at the designated boring locations on the particular date drilled.

Groundwater elevations shown on the boring logs represent groundwater surfaces encountered on the dates shown. The absence of groundwater measurements indicates that no measurements were made before backfilling the borings. Fluctuations in water table levels should be anticipated throughout the year.

Laboratory Testing

The materials study included natural moisture content, % passing the #200 sieve and Atterberg limits on selected samples to determine classification of the existing subgrade soils. These tests were performed in accordance with applicable soil mechanics test standards. Soil samples, on which applicable tests were performed, were classified in accordance with the AASHTO System. Results of the laboratory tests have been presented on the Logs of Boring and in the Summary of Laboratory Test Results in Appendix E of this report.

BASIS OF REPORT

The evaluations and recommendations submitted in this report are based on the data obtained from the field explorations and selected laboratory testing performed and the project information provided to us by the project designer. Our evaluations for the project roadways were based upon conversations with Mr. Pete Olivero, P.E. and Mr. Strachan, P.E. of the ASPA and the drawings and other information provided. Additional assumptions have been outlined in the discussions contained in previous sections of this report.

LIMITATIONS

The recommendations only apply to the specific project and site discussed in this report. If the project information section in this report contains incorrect information or if additional or revised information is available, correct or additional information should be conveyed to GET for review. We can then modify our recommendations, if they are inappropriate for the project.

We have completed the services identified herein in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality and under similar conditions as this project. No other representation, express or implied, is included or intended, and no warranty or guarantee is included or intended in this report or any other instrument of service.

APPENDIX A

PAVEMENT DESIGN WORKSHEETS

1993 AASHTO Pavement Design

DARWin Pavement Design and Analysis System

A Proprietary AASHTOWare
Computer Software Product
Geotechnical Engineering-Testing, Inc.

Overlay Design Module

Ezra Trice Boulevard

Resurfacing, Restoration and Rehabilitation

Alabama State Port Authority

Required Overlay Design

AC Overlay of AC Pavement

Structural Number for Future Traffic

5.65 in

<u>Design Method</u>	<u>Effective Existing Structural Number (in)</u>	<u>Overlay Structural Number (in)</u>
Component Analysis	3.39	2.26
Remaining Life	-	-
Non-Destructive Testing	-	-

Effective Pavement Thickness - Component Analysis Method

<u>Layer</u>	<u>Material Description</u>	<u>Structural Coefficient</u>	<u>Drainage Coefficient</u>	<u>Thickness (in)</u>
1	Asphalt Plant Mix	0.31	1	10.6
2	Crushed Shell Base	0.09	0.94	8.5

Milling Thickness

2 in

Calculated Results

Calculated Pavement Structural Number Before Milling

4.01 in

Calculated Effective Pavement Structural Number

3.39 in

Specified Layer Design

<u>Layer</u>	<u>Material Description</u>	<u>Struct Coef. (Ai)</u>	<u>Drain Coef. (Mi)</u>	<u>Thickness (Di)(in)</u>	<u>Width (ft)</u>	<u>Calculated SN (in)</u>
1	424A-280, Wearing 1/2" Mix, 225 l...	0.54	1	2	-	1.08
2	424B-281, UBL, 1 " Mix, 250 lb/yd2	0.54	1	2.25	-	1.22
Total	-	-	-	4.25	-	2.30

1993 AASHTO Pavement Design

DARWin Pavement Design and Analysis System

A Proprietary AASHTOWare
Computer Software Product
Geotechnical Engineering-Testing, Inc.

Flexible Structural Design Module

Ezra Trice Boulevard

Resurfacing, Restoration and Rehabilitation

Alabama State Port Authority

Required Full Build-Up of Travel Lanes

Flexible Structural Design

18-kip ESALs Over Initial Performance Period	5,000,000
Initial Serviceability	4.2
Terminal Serviceability	3.5
Reliability Level	90 %
Overall Standard Deviation	0.49
Roadbed Soil Resilient Modulus	9,000 psi
Stage Construction	1
Calculated Design Structural Number	5.65 in

Specified Layer Design

<u>Layer</u>	<u>Material Description</u>	Struct Coef. <u>(Ai)</u>	Drain Coef. <u>(Mi)</u>	Thickness <u>(Di)(in)</u>	Width <u>(ft)</u>	Calculated <u>SN (in)</u>
1	424A-280, Wearing 1/2" Mix, 225 l...	0.54	1	2	-	1.08
2	424B-281, UBL, 1" Mix, 250 lb/yd2	0.54	1	2.25	-	1.22
3	424B-581, LBL, 1" Mix, 250 lb/yd2	0.54	1	2.25	-	1.22
4	424B-581, LBL, 1" Mix, 275 lb/yd2	0.54	1	2.5	-	1.35
5	Crushed Agg Base	0.14	0.94	6	-	0.79
Total	-	-	-	15.00	-	5.65

APPENDIX B
BORING LOCATION PLAN



Source – Google Earth, 2024



**Ezra Trice Boulevard
Resurfacing and Widening
Mobile, AL**

**Boring Location
Plan**

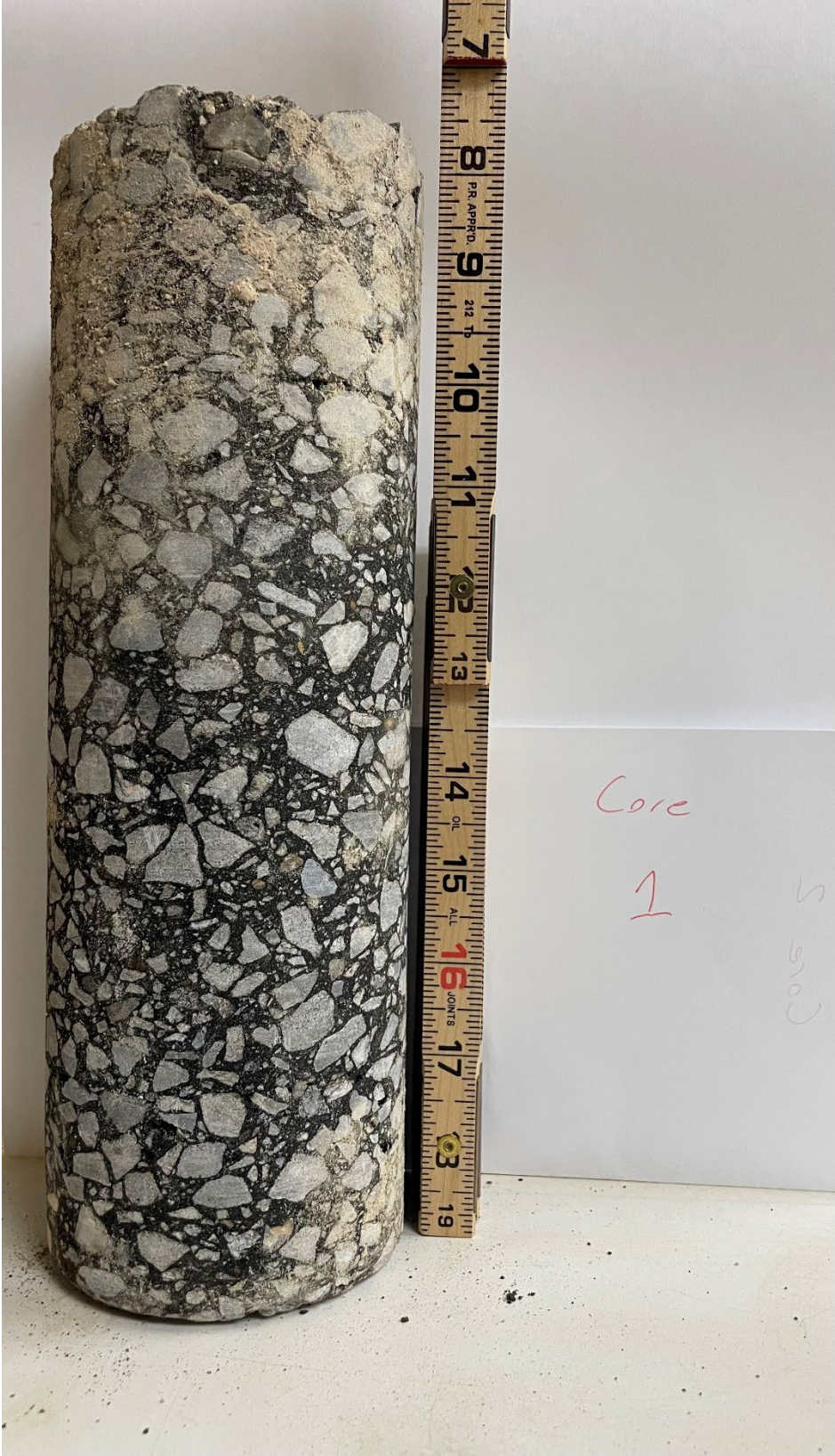
APPENDIX C
ASPHALT CORE DATA

**TABULATION OF ASPHALT THICKNESS
EZRA TRICE BOULEVARD
RESURFACING AND WIDENING
MOBILE, ALABAMA**

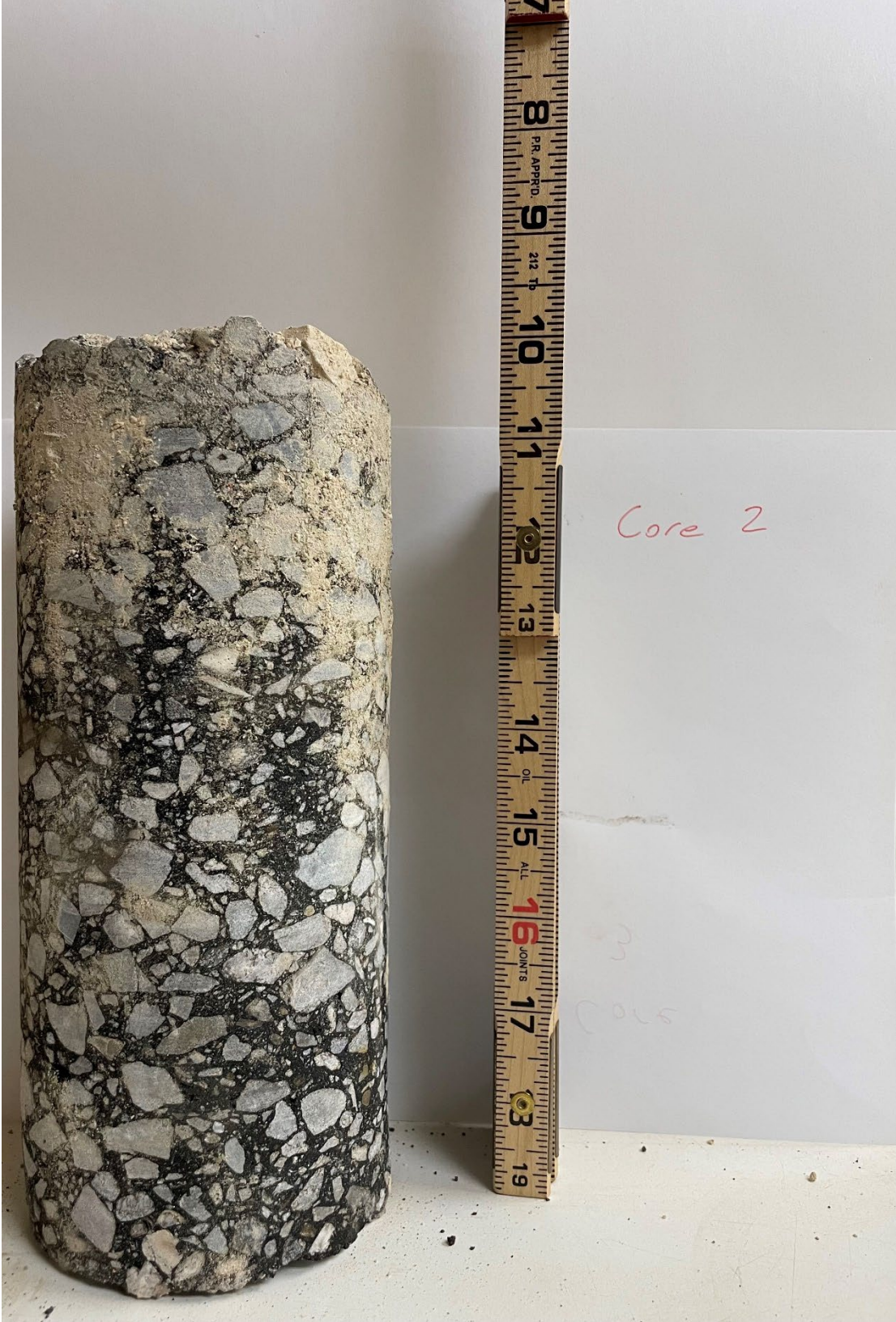
6/21/2024

Boring	Road	Northing	Easting	Asphalt Thickness (Inches)	Base Thickness (Inches)	Remarks
C-1	Ezra Trice Blvd.	243634	1797975	11.3	9	Crushed Stone Base
C-2	Ezra Trice Blvd.	243347	1798042	9.0	8	Crushed Stone Base
C-3	Ezra Trice Blvd.	243032	1798094	15.0*		Not measured
C-4	Ezra Trice Blvd.	242686	1798191	5.1	9	Oyster Shell Base
C-5	Ezra Trice Blvd.	242597	1798316	7.9	8	Crushed Stone Base
C-6	Ezra Trice Blvd.	242337	1798592	15.0*		Not measured

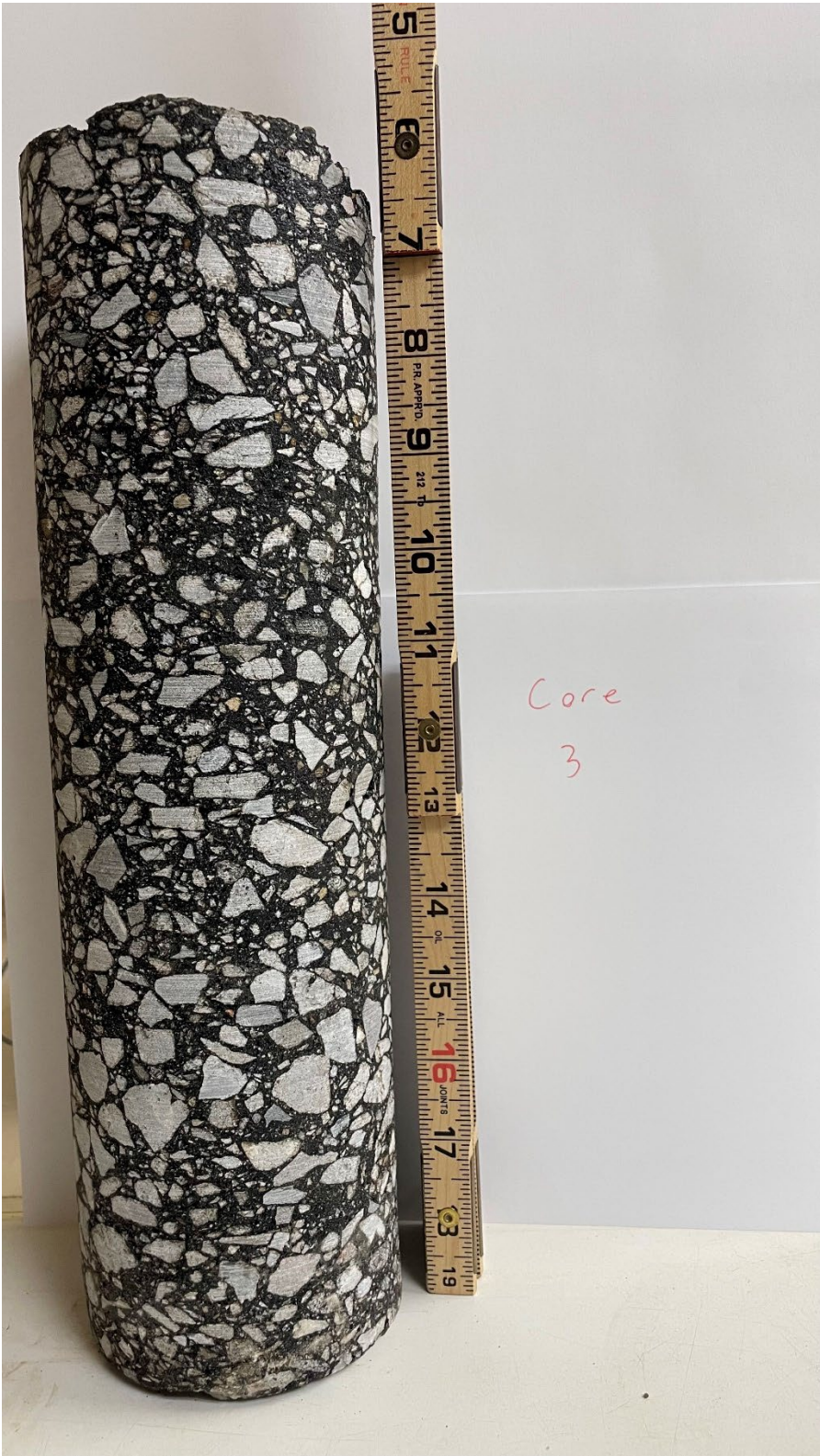
Note: Asphalt thickness at C-3 and C-6 exceeded core barrel length of 15 inches



C-1 - 11.3"



C-2 - 9.0"



C-3 - 13.1"



C-4 - 5.1"



C-5 - 7.9"

APPENDIX D
BORING LOGS

PROJECT NAME: EZRA TRICE BLVD.
RESURFACING & WIDENING

DATE DRILLED: 6/19/24



G.E.T. PROJ. NUMBER: 24-135

BORING DEPTH: 10 FT.

BORING ELEV.:

PROJECT LOCATION: MOBILE, AL

DATUM:

BORING NUMBER: B-1

DRILL RIG: CME-45

WATER DEPTH: 3 FT.

BORING LOCATION:

DRILL METHOD: SOLID STEM AUGER

DRILL CREW:

REMARKS:

N: 243188 **E:** 1798048

DEPTH IN FEET	LOG	DESCRIPTION	SAMPLE NO.	S.P.T.		W.C. %	ATTERBERG LIMITS		DRY UNIT WT. pcf	% MINUS #200	SHEAR STRENGTH tsf	UNIFIED CLASS
				N _r	N _c		L.L.	P.I.				
0		5" Topsoil										
		Firm reddish brown to brown silty sand	1	11								
		Firm reddish brown to brown silty sand	2	10		16				15.1		
		Black and gray sandy gravel	3	8								
5		Loose to firm gray silty sand	4	2								
		Loose to firm gray silty sand	5	11								
10		B.T. @ 10 FT										

MOD DEEP BORING LOG W/O NC VALUES & N-E 24-135 EZRA TRICE ROAD.GPJ GETI_AL.GDT 6/21/24

NOTE: The stratification lines shown represent the approximate boundary between soil types and the transition may be gradual. The groundwater level stated is for conditions at the time of boring and the level may fluctuate large amounts for other conditions or seasons.

Reviewed By:

PROJECT NAME: EZRA TRICE BLVD.
RESURFACING & WIDENING

DATE DRILLED: 6/19/24



G.E.T. PROJ. NUMBER: 24-135

BORING DEPTH: 6 FT.

BORING ELEV.:

PROJECT LOCATION: MOBILE, AL

DATUM:

WATER DEPTH: 3 FT.

BORING NUMBER: B-2

DRILL RIG: CME-45

DRILL CREW:

BORING LOCATION:

DRILL METHOD: SOLID STEM AUGER

REMARKS:

N: 243040 **E:** 1798125

DEPTH IN FEET	LOG	DESCRIPTION	SAMPLE NO.	S.P.T.		W.C. %	ATTERBERG LIMITS		DRY UNIT WT. pcf	% MINUS #200	SHEAR STRENGTH tsf	UNIFIED CLASS
				N _r	N _c		L.L.	P.I.				
0		7" Topsoil										
		Firm yellowish red silty sand	1	16								
		Firm red and gray silty sand	2	24	14				22.4			
		Firm brownish gray silty sand	3	12								
5		Firm gray silty sand	4	11								
		B.T. @ 6 FT										
10												

MOD DEEP BORING LOG W/O NC VALUES & N-E 24-135 EZRA TRICE ROAD.GPJ GETI_AL.GDT 6/21/24

NOTE: The stratification lines shown represent the approximate boundary between soil types and the transition may be gradual. The groundwater level stated is for conditions at the time of boring and the level may fluctuate large amounts for other conditions or seasons.

Reviewed By:

PROJECT NAME: EZRA TRICE BLVD.
RESURFACING & WIDENING

DATE DRILLED: 6/19/24



G.E.T. PROJ. NUMBER: 24-135

BORING DEPTH: 10 FT.

BORING ELEV.:

PROJECT LOCATION: MOBILE, AL

DATUM:

WATER DEPTH: 2.4 FT.

BORING NUMBER: B-3

DRILL RIG: CME-45

DRILL CREW:

BORING LOCATION:

DRILL METHOD: SOLID STEM AUGER

REMARKS:

N: 242805 **E:** 1798086

DEPTH IN FEET	LOG	DESCRIPTION	SAMPLE NO.	S.P.T.		W.C. %	ATTERBERG LIMITS		DRY UNIT WT. pcf	% MINUS #200	SHEAR STRENGTH tsf	UNIFIED CLASS
				N _r	N _c		L.L.	P.I.				
0		Very dense black and gray sandy gravel	1	97								
		Very dense red silty sand	2	52		11				17.4		
		Very dense red and white sand with silt	3	80								
5		Dense gray sand	4	46								
		Loose gray silty sand with organics	5	8								
10		B.T. @ 10 FT										

MOD DEEP BORING LOG W/O NC VALUES & N-E 24-135 EZRA TRICE ROAD.GPJ GETI_AL.GDT 6/21/24

NOTE: The stratification lines shown represent the approximate boundary between soil types and the transition may be gradual. The groundwater level stated is for conditions at the time of boring and the level may fluctuate large amounts for other conditions or seasons.

Reviewed By:

PROJECT NAME: EZRA TRICE BLVD.
RESURFACING & WIDENING

DATE DRILLED: 6/19/24



G.E.T. PROJ. NUMBER: 24-135

BORING DEPTH: 10 FT.

BORING ELEV.:

PROJECT LOCATION: MOBILE, AL

DATUM:

WATER DEPTH: NWTE

BORING NUMBER: B-4

DRILL RIG: CME-45

DRILL CREW:

BORING LOCATION:

DRILL METHOD: SOLID STEM AUGER

REMARKS:

N: 242738 **E:** 1798194

DEPTH IN FEET	LOG	DESCRIPTION	SAMPLE NO.	S.P.T.		W.C. %	ATTERBERG LIMITS		DRY UNIT WT. pcf	% MINUS #200	SHEAR STRENGTH tsf	UNIFIED CLASS
				N _r	N _c		L.L.	P.I.				
0		3" Topsoil										
		Firm dark brown sand	1	11								
		Firm to loose light brown si sand with gravel	2	13		10				15.3		
		Medium consistency gray clay	3	7		43	71	50		91.1		CH
5		Firm gray sand	4	13								
		Firm gray sand	5	10								
10		B.T. @ 10 FT										

MOD DEEP BORING LOG W/O NC-VALUES & N-E 24-135 EZRA TRICE ROAD.GPJ GETI_AL.GDT 6/21/24

NOTE: The stratification lines shown represent the approximate boundary between soil types and the transition may be gradual. The groundwater level stated is for conditions at the time of boring and the level may fluctuate large amounts for other conditions or seasons.

Reviewed By:

PROJECT NAME: EZRA TRICE BLVD.
RESURFACING & WIDENING

DATE DRILLED: 6/19/24



G.E.T. PROJ. NUMBER: 24-135

BORING DEPTH: 10 FT.

BORING ELEV.:

PROJECT LOCATION: MOBILE, AL

DATUM:

WATER DEPTH: NWTE

BORING NUMBER: B-5

DRILL RIG: CME-45

DRILL CREW:

BORING LOCATION:

DRILL METHOD: SOLID STEM AUGER

REMARKS:

N: 242569 **E:** 1798283

DEPTH IN FEET	LOG	DESCRIPTION	SAMPLE NO.	S.P.T.		W.C. %	ATTERBERG LIMITS		DRY UNIT WT. pcf	% MINUS #200	SHEAR STRENGTH tsf	UNIFIED CLASS
				N _r	N _c		L.L.	P.I.				
0		17" Asphalt	1									
		Dense white sand	2	42		5				3.3		SP
		Dense to firm light brown sand	3	30								
5		Dense to firm light brown sand	4	22								
		Firm gray sand	5	21								
10		B.T. @ 10 FT										

MOD DEEP BORING LOG W/O NC VALUES & N-E 24-135 EZRA TRICE ROAD.GPJ GETI_AL.GDT 6/21/24

NOTE: The stratification lines shown represent the approximate boundary between soil types and the transition may be gradual. The groundwater level stated is for conditions at the time of boring and the level may fluctuate large amounts for other conditions or seasons.

Reviewed By:

PROJECT NAME: EZRA TRICE BLVD.
RESURFACING & WIDENING

DATE DRILLED: 6/19/24



G.E.T. PROJ. NUMBER: 24-135

BORING DEPTH: 10 FT.

BORING ELEV.:

PROJECT LOCATION: MOBILE, AL

DATUM:

WATER DEPTH: NWTE

BORING NUMBER: B-6

DRILL RIG: CME-45

DRILL CREW:

BORING LOCATION:

DRILL METHOD: SOLID STEM AUGER

REMARKS:

N: 242513 **E:** 1798414

DEPTH IN FEET	LOG	DESCRIPTION	SAMPLE NO.	S.P.T.		W.C. %	ATTERBERG LIMITS		DRY UNIT WT. pcf	% MINUS #200	SHEAR STRENGTH tsf	UNIFIED CLASS
				N _r	N _c		L.L.	P.I.				
0		3" Topsoil										
		Firm grayish brown silty sand	1	16								
			2	17		9				9.7		
		Firm light brown sand with silt	3	17								
5			4	16								
		Light gray sand	5	15								
10		B.T. @ 10 FT										

MOD DEEP BORING LOG W/O NC VALUES & N-E 24-135 EZRA TRICE ROAD.GPJ GETI_AL.GDT 6/21/24

NOTE: The stratification lines shown represent the approximate boundary between soil types and the transition may be gradual. The groundwater level stated is for conditions at the time of boring and the level may fluctuate large amounts for other conditions or seasons.

Reviewed By:

PROJECT NAME: EZRA TRICE BLVD.
RESURFACING & WIDENING

DATE DRILLED: 6/19/24



G.E.T. PROJ. NUMBER: 24-135

BORING DEPTH: 10 FT.

BORING ELEV.:

PROJECT LOCATION: MOBILE, AL

DATUM:

WATER DEPTH: NWTE

BORING NUMBER: B-7

DRILL RIG: CME-45

DRILL CREW:

BORING LOCATION:

DRILL METHOD: SOLID STEM AUGER

REMARKS:

N: 242356 **E:** 1798545

DEPTH IN FEET	LOG	DESCRIPTION	SAMPLE NO.	S.P.T.		W.C. %	ATTERBERG LIMITS		DRY UNIT WT. pcf	% MINUS #200	SHEAR STRENGTH tsf	UNIFIED CLASS
				N _r	N _c		L.L.	P.I.				
0		3" Topsoil										
			1	9								
			2	12		5				2.6		SP
			3	13								
5		Firm light brown sand										
			4	11								
			5	7								
10		B.T. @ 10 FT										

MOD DEEP BORING LOG W/O NC VALUES & N-E 24-135 EZRA TRICE ROAD.GPJ GETI_AL.GDT 6/21/24

NOTE: The stratification lines shown represent the approximate boundary between soil types and the transition may be gradual. The groundwater level stated is for conditions at the time of boring and the level may fluctuate large amounts for other conditions or seasons.

Reviewed By:

PROJECT NAME: EZRA TRICE BLVD.
RESURFACING & WIDENING

G.E.T. PROJ. NUMBER: 24-135

PROJECT LOCATION: MOBILE, AL

DRILL RIG:

DRILL METHOD:

REMARKS:

DATE DRILLED:

BORING DEPTH: 1.7 FT.

BORING ELEV.:

DATUM:

WATER DEPTH:

DRILL CREW:



BORING NUMBER: C-1

BORING LOCATION:

N: 243634 **E:** 1797975

DEPTH IN FEET	LOG	DESCRIPTION	SAMPLE NO.	S.P.T.		W.C. %	ATTERBERG LIMITS		DRY UNIT WT. pcf	% MINUS #200	SHEAR STRENGTH tsf	UNIFIED CLASS
				N _r	N _c		L.L.	P.I.				
0		11.329" Asphalt										
		9" Crushed stone										
		B.T. @ 1.7 FT										
5												
10												

MOD DEEP BORING LOG W/O NC VALUES & N-E 24-135 EZRA TRICE ROAD.GPJ GETI_AL.GDT 6/21/24

NOTE: The stratification lines shown represent the approximate boundary between soil types and the transition may be gradual. The groundwater level stated is for conditions at the time of boring and the level may fluctuate large amounts for other conditions or seasons.

Reviewed By:

PROJECT NAME: EZRA TRICE BLVD.
RESURFACING & WIDENING

G.E.T. PROJ. NUMBER: 24-135

PROJECT LOCATION: MOBILE, AL

DRILL RIG:

DRILL METHOD:

REMARKS:

DATE DRILLED:

BORING DEPTH: 1.4 FT.

BORING ELEV.:

DATUM:

WATER DEPTH:



DRILL CREW:



BORING NUMBER: C-2

BORING LOCATION:

N: 243347 **E:** 1798042

DEPTH IN FEET	LOG	DESCRIPTION	SAMPLE NO.	S.P.T.		W.C. %	ATTERBERG LIMITS		DRY UNIT WT. pcf	% MINUS #200	SHEAR STRENGTH tsf	UNIFIED CLASS
				N _r	N _c		L.L.	P.I.				
0		8.963" Asphalt										
		8" Crushed stone										
		B.T. @ 1.4 FT										
5												
10												

MOD DEEP BORING LOG W/O NC VALUES & N-E 24-135 EZRA TRICE ROAD.GPJ GETI_AL.GDT 6/21/24

NOTE: The stratification lines shown represent the approximate boundary between soil types and the transition may be gradual. The groundwater level stated is for conditions at the time of boring and the level may fluctuate large amounts for other conditions or seasons.

Reviewed By:

PROJECT NAME: EZRA TRICE BLVD.
RESURFACING & WIDENING

G.E.T. PROJ. NUMBER: 24-135

PROJECT LOCATION: MOBILE, AL

DRILL RIG:

DRILL METHOD:

REMARKS:

DATE DRILLED:

BORING DEPTH: 1.1 FT.

BORING ELEV.:

DATUM:

WATER DEPTH:

DRILL CREW:



BORING NUMBER: C-3

BORING LOCATION:

N: 243032 **E:** 1798094

DEPTH IN FEET	LOG	DESCRIPTION	SAMPLE NO.	S.P.T.		W.C. %	ATTERBERG LIMITS		DRY UNIT WT. pcf	% MINUS #200	SHEAR STRENGTH tsf	UNIFIED CLASS
				N _r	N _c		L.L.	P.I.				
0		+15" Asphalt										
		B.T. @ 1.1 FT										
5												
10												

MOD DEEP BORING LOG W/O NC VALUES & N-E 24-135 EZRA TRICE ROAD.GPJ GETI_AL.GDT 6/21/24

NOTE: The stratification lines shown represent the approximate boundary between soil types and the transition may be gradual. The groundwater level stated is for conditions at the time of boring and the level may fluctuate large amounts for other conditions or seasons.

Reviewed By:

PROJECT NAME: EZRA TRICE BLVD.
RESURFACING & WIDENING

G.E.T. PROJ. NUMBER: 24-135

PROJECT LOCATION: MOBILE, AL

DRILL RIG:

DRILL METHOD:

REMARKS:

DATE DRILLED:

BORING DEPTH: 1.2 FT.

BORING ELEV.:

DATUM:

WATER DEPTH:



DRILL CREW:



BORING NUMBER: C-4

BORING LOCATION:

N: 242686 **E:** 1798191

DEPTH IN FEET	LOG	DESCRIPTION	SAMPLE NO.	S.P.T.		W.C. %	ATTERBERG LIMITS		DRY UNIT WT. pcf	% MINUS #200	SHEAR STRENGTH tsf	UNIFIED CLASS
				N _r	N _c		L.L.	P.I.				
0		5.107" Asphalt										
		9" Crushed shells										
		B.T. @ 1.2 FT										
5												
10												

MOD DEEP BORING LOG W/O NC VALUES & N-E 24-135 EZRA TRICE ROAD.GPJ GETI_AL.GDT 6/21/24

NOTE: The stratification lines shown represent the approximate boundary between soil types and the transition may be gradual. The groundwater level stated is for conditions at the time of boring and the level may fluctuate large amounts for other conditions or seasons.

Reviewed By:

PROJECT NAME: EZRA TRICE BLVD.
RESURFACING & WIDENING

G.E.T. PROJ. NUMBER: 24-135

PROJECT LOCATION: MOBILE, AL

DRILL RIG:

DRILL METHOD:

REMARKS:

DATE DRILLED:

BORING DEPTH: 1.3 FT.

BORING ELEV.:

DATUM:

WATER DEPTH:



DRILL CREW:



BORING NUMBER: C-5

BORING LOCATION:

N: 242597 **E:** 1798316

DEPTH IN FEET	LOG	DESCRIPTION	SAMPLE NO.	S.P.T.		W.C. %	ATTERBERG LIMITS		DRY UNIT WT. pcf	% MINUS #200	SHEAR STRENGTH tsf	UNIFIED CLASS
				N _r	N _c		L.L.	P.I.				
0		7.861" Asphalt										
		8" Crushed stone										
		B.T. @ 1.3 FT										
5												
10												

MOD DEEP BORING LOG W/O NC VALUES & N-E 24-135 EZRA TRICE ROAD.GPJ GETI_AL.GDT 6/21/24

NOTE: The stratification lines shown represent the approximate boundary between soil types and the transition may be gradual. The groundwater level stated is for conditions at the time of boring and the level may fluctuate large amounts for other conditions or seasons.

Reviewed By:

PROJECT NAME: EZRA TRICE BLVD.
RESURFACING & WIDENING

G.E.T. PROJ. NUMBER: 24-135

PROJECT LOCATION: MOBILE, AL

DRILL RIG:

DRILL METHOD:

REMARKS:

DATE DRILLED:

BORING DEPTH: 1.3 FT.

BORING ELEV.:

DATUM:

WATER DEPTH:

DRILL CREW:



BORING NUMBER: C-6

BORING LOCATION:

N: 242337 **E:** 1798592

DEPTH IN FEET	LOG	DESCRIPTION	SAMPLE NO.	S.P.T.		W.C. %	ATTERBERG LIMITS		DRY UNIT WT. pcf	% MINUS #200	SHEAR STRENGTH tsf	UNIFIED CLASS
				N _r	N _c		L.L.	P.I.				
0		+15" Asphalt										
		B.T. @ 1.3 FT										
5												
10												

MOD DEEP BORING LOG W/O NC VALUES & N-E 24-135 EZRA TRICE ROAD.GPJ GETI_AL.GDT 6/21/24

NOTE: The stratification lines shown represent the approximate boundary between soil types and the transition may be gradual. The groundwater level stated is for conditions at the time of boring and the level may fluctuate large amounts for other conditions or seasons.

Reviewed By:

APPENDIX E
LABORATORY TEST RESULTS

Boring Location	Boring No.	Sample ID	Depth (ft)	Water Content (%)	Atterberg Limits			% Gravel	% Sand	% Passing 200 (if hydrometer data available)		D ₅₀ (mm)	USCS	AASHTO Class
					LL	PL	PI			% Silt	% Clay			
	B-1	2	2.0	16				15.5	69.4	15.1	0.604			
	B-2	2	2.0	14				1.3	76.3	22.4	0.337			
	B-3	2	2.0	11				0.3	82.2	17.4	0.388			
	B-4	2	2.0	10				21.2	63.5	15.3	0.723			
	B-4	3	3.5	43	71	21	50	0.0	8.9	91.1		CH	A-7-6 (50)	
	B-5	2	2.0	5				0.0	96.7	3.3	0.556	SP		
	B-6	2	2.0	9				0.0	90.3	9.7	0.477			
	B-7	2	2.0	5				0.4	97.0	2.6	0.569	SP		



SOIL CLASSIFICATION SUMMARY	
GET PROJECT NUMBER: 24-135	
PROJECT NAME: EZRA TRICE BLVD. RESURFACING & WIDENING	
COUNTY: MOBILE	