

PAVEMENT REPORT NUMBER FY07-06
FHWA Project PRA-NATR 3D30, E12
Natchez Trace Parkway
Chickasaw, Pontotoc, and Lee Counties, Mississippi

Pavement Rehabilitations for Natchez Trace Parkway (Route 1F) from Milepost 240 to Milepost 266, Pull-Off Areas (Routes 962 through 967), and Visitor Center Parking Area (Route 971)

May 2007



U.S. Department of Transportation
Federal Highway Administration
Eastern Federal Lands Highway Division
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Note: Design changes, made subsequent to distribution of this report and prior to project advertisement, will be documented by a memo inserted after the title page

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1 INTRODUCTION

1.1 General

This report presents the results of the pavement and pavement subgrade investigations, analysis, design, and recommendations for Natchez Trace Parkway (Route 1F) and nearby parking areas from M.P. 240 (Mississippi State Route 32) to M.P. 266 (Mississippi State Route 245) located in Chickasaw, Pontotoc and Lee Counties in Mississippi. A Project Location Map is presented in Figure 1 of Appendix A.

1.2 Project Description

The Project PRA-NATR 3D30, E12 includes pavement rehabilitation, shoulder and drainage improvements, and slide repair for Natchez Trace Parkway from M.P. 240 to M.P. 266 and for adjacent parking areas. Natchez Trace Parkway within project limit is a 2-lane, 2-way, hot-mix asphalt (HMA) surfaced roadway. The above information was obtained from Highway Design and a Design Scoping Report dated February 2004.

1.3 Purpose-and-Need for Pavement Rehabilitation/Maintenance Strategy

According to Highway Design, the project's Purpose and Need for pavement rehabilitation is to provide a structurally and functionally adequate pavement structure with a long-term (20-year) service life of Natchez Trace Parkway within the project limits.

1.4 Regional Geology

The "Geologic Map of Mississippi, 1985," produced by the Mississippi Geological Survey, indicates that the project is located within the East Gulf Coast Plain of Mississippi and is underlain by rocks from of the Clayton Formation, Prairie Bluff Chalk and the Creek Formation, the Ripley Formation and Domopolis Chalk. The Clayton Formation was formed during the Paleocene Epoch and comprises the basal unit of the Tertiary period. The Prairie Bluff Chalk, Creek Formation, Ripley Formation and the Demopolis Chalk are members of the Selma Group formed during the Cretaceous Period. The Clayton Formation is comprised of greenish-gray, coarsely glauconitic sandy clay and marl and crystalline sandy limestone and loose sand. The rock formations of the Selma Group are comprised of a thick succession (1200-feet thick) of sandy clay, chalky marl, sandy limestone and calcareous clay. Refer to

Figure 2 in Appendix A for the geologic survey map showing the various geologic formations within the project limits. A Geologic Map of the project site is presented in Figure 2 of Appendix A.

2 PROCEDURES AND RESULTS

2.1 Pavement Condition Survey

The Eastern Federal Lands Highway Division (EFLHD) Pavement Section conducted a pavement condition survey in July 2005. Identified pavement distresses and their quantified severity levels were recorded in accordance with “The Distress Identification Manual for the Long-Term Pavement Performance Project, 1993” by the Strategic Highway Research Program (SHRP). Based on the conducted pavement condition survey, the limits of reconstruction/patch limits for isolated, highly distressed areas are presented in Appendix E.

2.2 Pavement Coring and Soil Boring

The Federal Lands Highway Division Subsurface Exploration Team drilled a total of 80 borings (Borings B-1 through B-80) on July 18, 2005 through July 22, 2005. All borings were advanced using a flight auger on a truck-mounted CME 45 rotary drill rig. Borings were advanced to depth of 5 feet. In addition to roadbed testing and sampling, the pavement core samplings on Natchez Trace Parkway were performed to supplement the non-destructive testing described in subsequent sections. Boring Logs are presented in Appendix B.

2.3 Sampling

Sampling of materials beneath the tip of the flight augers was performed in Borings B-1 through B-80 as the borings were advanced. Continuous sampling was typically conducted in these borings. Represented soil boring samples were recovered with a 2 ¼ inches outside diameter split-barrel sampler in accordance with AASHTO T200-87. Representative portions of split-barrels were preserved in glass jars for laboratory testing. The sampling sequence for soil borings are summarized on the Boring Logs presented in Appendix B.

2.4 Field Tests and Measurements

The EFLHD Pavement Section personnel performed following field tests and took measurements during the course of the structural evaluation of the existing pavement and the subsurface exploration.

Non-destructive pavement testing using a falling weight deflectometer (FWD) was performed on Natchez Trace Parkway at approximately 1,000 feet intervals on July 24, 2005 and July 25, 2005. Deflection responses of the existing pavement were recorded with 7 different sensors spaced 0, 8, 12, 18, 24, 36 and 48 inches from the 12-inch diameter load plate in response to three 9-kip loading sequences at each test location. At each test location,

asphalt concrete (AC) pavement temperature was measured by inserting a temperature probe down to near mid-depth in ½-inch diameter drilled hole and filled with mineral oil into the AC pavement.

Boring locations of Borings B-1 through B-80 were determined from features present on-site and by referencing the existing roadway centerlines and roadway milepost markers. Boring elevations were determined from a topographic map provided by Highway Design. Standard penetration tests (SPT) were performed and resistance was recorded during the recovery of each split barrel sample in accordance with AASHTO T206-87. The sampler was driven into the soil using an automatic hammer. Sample recovery measurements were made and recorded for each sampling attempt. A field description by color and texture was made for each recovered sample.

2.5 Data Summary

Measured FWD data was collected through Dynatest data acquisition computer files then the collected raw data were transferred to the DARWin Pavement Design System Computer program (Version 3.01) for back-calculation. The measured data only represent deflection response at selected locations, thus deflection discrepancies are expected between test locations due to changes in layer thickness, material properties, moisture and temperature conditions, subgrade support, and contact pressure under the load plate. Also, the measured data represents pavement response only during our field investigation time periods mentioned above; therefore, deflection variations are expected due to seasonal and climatic variations.

The results of field tests and measurements of all borings were recorded on the drillers' logs and appropriate data sheets in the field. These data sheets and logs contain information concerning the boring methods; samples attempted and recovered; indications of the presence of various materials. They also contain interpretations by the subsurface exploration team leader of the conditions based on the performance of the equipment and cuttings brought to the surface by the drilling tools. Therefore, the field data represents both factual and interpretative information. The Boring Logs in Appendix B of this report represent a compilation of field and laboratory data and description of the soil samples by a pavement engineer. These records occasionally do not include all data recorded on drillers' logs and field data sheets, but do include all information considered relevant to the design and construction of this report. Water was not encountered during or after drilling in all borings. Fluctuations in the ground water level due to seasonal and climatic effects should be expected.

2.6 Laboratory Investigation

At the conclusion of the fieldwork, laboratory testing was conducted on 30 soil samples from Borings B-1 through B-80. Laboratory tests on the samples included gradation (AASHTO T-27), Atterburg limits (AASHTO T-89, T-90), moisture content (AASHTO T-265), and classification (AASHTO T-317). Laboratory test results are represented in Appendix C and summarized in Table 1.

Table 1 - Results of Laboratory Testing

Boring	Sample	Sample Depth (ft)	%-200	LL ⁽¹⁾	PI ⁽²⁾	Classification ⁽¹⁾	Moisture Content ⁽¹⁾ (%)
B-1	J-1	1-3	41.9	29	11	A-6(1)	17.4
B-3	J-1	1-3	19.3	39	18	A-2-6(0)	15.4
B-4	J-1	1-3	24.6	24	N/P	A-2-4(0)	9.8
B-7	J-1	1-3	19.7	28	11	A-2-6(0)	17.0
B-8	J-2	3-5	54.5	48	28	A-7-6(12)	25.7
B-10	J-1	1-3	27.5	27	10	A-2-4(0)	14.6
B-13	J-2	3-5	55.3	42	25	A-7-6(10)	17.7
B-16	J-1	1-3	27.5	23	N/P	A-2-4(0)	15.9
B-19	J-2	3-5	65.8	45	28	A-7-6(16)	19.4
B-28	J-1	1-3	42.1	38	14	A-6(2)	20.2
B-32	J-1	1-3	35.4	30	N/P	A-2-4(0)	22.6
B-37	J-1	1-3	26.8	29	N/P	A-2-4(0)	22.6
B-39	J-2	3-5	74.1	40	21	A-6(14)	20.3
B-41	J-1	1-3	46.7	23	N/P	A-4(0)	13.5
B-45	J-1	1-3	43.8	26	11	A-6(1)	13.1
B-50	J-1	1-3	44.7	29	N/P	A-4(0)	12.8
B-55	J-1	1-3	23.6	N/D	N/P	A-2-4(0)	12.1
B-57	J-2	3-5	61.8	34	18	A-6(8)	15.9
B-63	J-1	1-3	65.5	41	25	A-7-6(14)	19.0
B-63	J-1	1-3	66.0	41	19	A-7-6(11)	19.0
B-67	J-1	1-3	60.4	21	N/P	A-4(0)	16.0
B-73	J-1	1-3	41.4	26	9	A-4(1)	14.9
B-73	J-2	3-5	45.1	26	N/P	A-4(0)	13.3
B-74	J-1	1-3	19.1	N/D	N/P	A-2-4(0)	10.9
B-75	J-1	1-3	11.4	N/D	N/P	A-1-a	8.8
B-76	J-2	3-5	52.7	36	22	A-6(8)	12.6
B-78	J-1	1-3	35.8	25	N/P	A-4(0)	14.4
B-80	J-2	3-5	43.5	24	11	A-6(1)	15.1
B-44	J-1	1-3	42.4	36	13	A-6(2)	15.2
B-66	J-1	1-3	42.1	38	14	A-6(2)	20.2

Note that (1) N/D denotes “Not Determined” and (2) N/P denotes “Non-Plastic” in Table 1 above.

2.7 Findings

The findings at the project site are summarized below. Refer to the boring logs in Appendix B and the laboratory data in Appendix C for more detailed information. Groundwater was not encountered in any of the borings at the time of drilling. Fluctuations in the water level due to seasonal and climatic effects should be expected.

2.7.1 *Pavement Condition*

Based on the pavement condition survey conducted by Pavement Section in July 2005, the most prevalent pavement distress types exhibited on Natchez Trace Parkway were raveling, fatigue cracks, and edge cracks. Repeated bending of HMA layer under traffic loads, most probably, caused these fatigue cracks, and a photo of fatigue cracks at the project site is presented below in Figure 1.

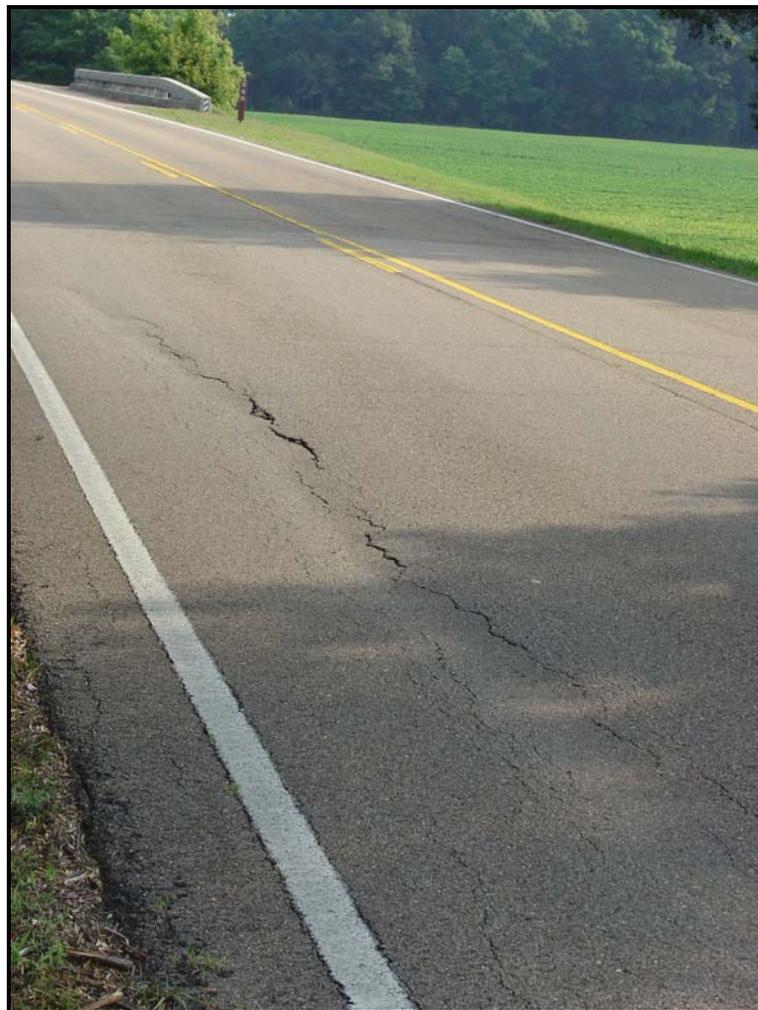


Figure 1 – High Severity Fatigue Cracks on Wheel Path

The bottom portion of some pavement cores, HMA stripping were detected. The stripping phenomenon takes place in an asphalt bound layer is subjected to a prolonged high-moisture condition (together with an aggregate with a high-stripping potential) leads to the de-bonding of asphalt binder from the aggregate particles. This loss of bond reduces the ability of the asphalt bound layer to carry tensile strains and generally reduces the overall load-carrying capacity of the pavement.

2.7.2 Subsurface Condition

The existing HMA pavement thickness on Natchez Trace Parkway ranged from 5 to 12 inches with an average of 8 inches. No aggregate base material was encountered (except in Boring B-45).

Brown sand with a minor quantity of silt, clay, and gravel (A-2-4, A-2-6, and A-4) was encountered in all borings directly below the existing HMA pavement, except Borings B-23, B-29, B-37 and B-45, to a depth ranged from 1 foot to 3 feet below the ground surface. Based on laboratory testing of this sand material's water content (WC) ranged from 8.8 to 23% with an average of 14.7% and liquid limit (LL) ranged from 21 to 39% with an average of 27%. This sand material appears to be a fill material.

Brown clay and/or silt with a minor quantity of sand and gravel (A-6 and A-7-6) were encountered in all borings below the HMA pavement and/or the brown sandy fill. Based on laboratory testing of this clay and/or silt material, WC ranged from 12 to 25% with an average of 18%, LL ranged from 23 to 48% with an average of 36%, and plasticity index (PI) ranged from 11 to 28% with an average of 19%.

3 ANALYSIS AND CONCLUSIONS

3.1 Pavement Design

Based on the field investigation, analyses, and available historic data, the project was segmented where there were significant differences in factors which would affect pavement performance. The following segments were established for pavement analysis purpose. The traffic information for the project was obtained from the Natchez Trace Parkway Traffic Package (dated 2004), and based on the past traffic history, the design average annual daily traffic (AADT) was projected. The traffic data is included in the Appendix D.

Table 2 – Analysis Segments for Natchez Trace Parkway

Segment Limits	Projected Design AADT & %Growth	Patch Design Subgrade Resilient Modulus (psi)	Patch Future Design Structural Number	Overlay Design Subgrade Resilient Modulus (psi)	Overlay Future Design Structural Number	Effective Structural Number
MP 239.3 to 247	3,657 1.8%	5,720	3.5	5,720	3.5	3.06
MP 247 to 251.5	4,506	4,170	3.97	6,017	3.46	2.74
MP 251.5 to 259.9	0.1%	6,608	3.34			
MP 259.9 to 266.5	8,814 3.6%	6,660	3.89	6,660	3.89	3.03

Flexible pavement design analyses were performed in accordance with 1993 AASHTO Pavement Design procedure using the DARWin (Version 3.01) Pavement Design System to determine the future structural number (SN) necessary for the proposed roadways. The flexible pavement design analysis and overlay design analysis were for a 20-year performance period. The design analysis to determine the 18-kip ESALs for the roadway was performed using the Rigorous ESAL Calculation in DARWin and based upon the obtained AADT in Table 2 above with 11% recreational vehicles, 0.4% light truck volume, 0.3% maintenance truck volume and 0.4% bus volume for the project. As indicated above, traffic growths were projected linearly from the past traffic volume data. The effective roadbed soil resilient modulus (M_R) and effective structural number (SN_{eff}) were determined from back-calculating measured falling weight deflectometer data for the roadway. A summary of back-calculation is presented in Appendix F. Other parameters specified in the analysis included a reliability of 85 percent, an overall standard deviation of 0.45, and initial serviceability index of 4.2, and a terminal serviceability index of 2.0. The results of the design analysis are presented in Appendix D.

4 RECOMMENDATIONS

The following pavement recommendations are based on the existing conditions at the time of the field investigation in April 2005. The recommendations included here reference the FP-03, “Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects” (FP-03 Specifications).

4.1 Pavement Section

Based on field condition survey and subsurface investigation, minimum flexible pavement sections with 20-year performance period for the project sites are provided in below.

4.1.1 Milepost 239.3 to Milepost 247

As indicated above, spot reconstruction limits from MP 239.3 to 247 are presented in Appendix E. The following minimum pavement section is recommended for spot reconstruction.

Table 3 – Minimum Spot Reconstruction Pavement Section for MP 239.3 to 247

Layer	Minimum Thickness (in)	Comments
Asphalt Concrete Pavement Overlay	---	See Table 4
Asphalt Concrete Base Course	6 ½ (2 equal lifts)	Superpave Asphalt Concrete Pavement (SACP), 1-inch Nominal Maximum Aggregate Size (NMAS), 0.3 to 3 Million ESALs
Aggregate Base	6	Base Aggregate, Grading C or D as per Subsection 703.05(b) of the FP-03 Specifications

A minimum AC pavement overlay section in Table 4 below is recommended for the MP 239.3 to 247.

Table 4 – Minimum AC Overlay Pavement Section for MP 239.3 to 247

Layer	Minimum Thickness (in)	Comments
Asphalt Concrete Pavement Overlay	1 ½	SACP, ½-inch NMAS, 0.3 to 3 Million ESALs, Type IV Smoothness

4.1.2 Milepost 247 to Milepost 266.5

As indicated previously, spot reconstruction limits from MP 247 to 266.5 are also presented in Appendix E. The following minimum pavement section is recommended for spot reconstruction.

Table 5 – Minimum Spot Reconstruction Pavement Section for MP 247 to 266.5

Layer	Minimum Thickness (in)	Comments
Asphalt Concrete Pavement Overlay	---	See Table 6
Asphalt Concrete Base Course	6 (2 equal lifts)	SACP, 1-inch NMAS, 0.3 to 3 Million ESALs
Aggregate Base	6	Base Aggregate, Grading C or D as per Subsection 703.05(b) of the FP-03 Specifications

A minimum AC overlay pavement section in Table 6 below is recommended for the MP 247 to 266.5.

Table 6 – Minimum AC Overlay Pavement Section for MP 247 to 266.5

Layer	Minimum Thickness (in)	Comments
Asphalt Concrete Pavement Overlay	2	SACP, ½-inch NMAS, 0.3 to 3 Million ESALs, Type IV Smoothness

4.1.3 Adjoining Pull-Outs (Routes 962 through 967)

An Asphalt Concrete pavement overlay should be constructed for adjoining pull-outs (Routes 962 through 967). Overlay thickness should be consistent with the proposed overlay thickness of the adjacent mainline presented in Tables 4 and 6. In places where the existing curb is to be remained, the existing pavement at these areas should be edge-milled by the proposed overlay thickness at the face of the exiting curb and gutter, transition of 6-foot length to match the mainline overlay thickness. Proposed grades of the pull-outs should be checked to ensure proper drainage and to avoid any ponding.

4.1.4 Visitor Center Parking Areas (Route 971)

An Asphalt Concrete pavement overlay should be constructed for Route 971 as presented in Table 4. The existing pavement at the existing curb and gutter should be edge-milled by the proposed overlay thickness at the face of the exiting curb and gutter, transition of 6-foot length to match the proposed overlay thickness. Proposed grades of the parking area also should be checked to ensure proper drainage and to avoid any ponding.

4.2 Earthwork

Soil Cover for Buried Structures: All proposed pipes and other proposed buried structures should have a minimum soil cover of 12 inches.

Subgrade Preparation: Proposed subgrade at the reconstruction areas should be scarified to a minimum depth of 6 inches below the subgrade and should be re-compacted to at least 95% of maximum density in accordance with the AASHTO T 180 Method D. If unsuitable subgrade materials are encountered in isolated areas, sub-excavation of unsuitable materials is recommended. The sub-excavated areas should then be backfilled with aggregate base material specified below.

Aggregate Base Course: Immediately after subgrade preparation, aggregate base course should be placed and compacted to at least 95% of maximum density in accordance with the Section 301 of the FP-03 Specifications. The gradation and material should be Base Aggregate, Grading C or D as per Section 703.05(b) of the FP-03 Specifications.

5 DISCLAIMER/LIMITATIONS CLAUSE

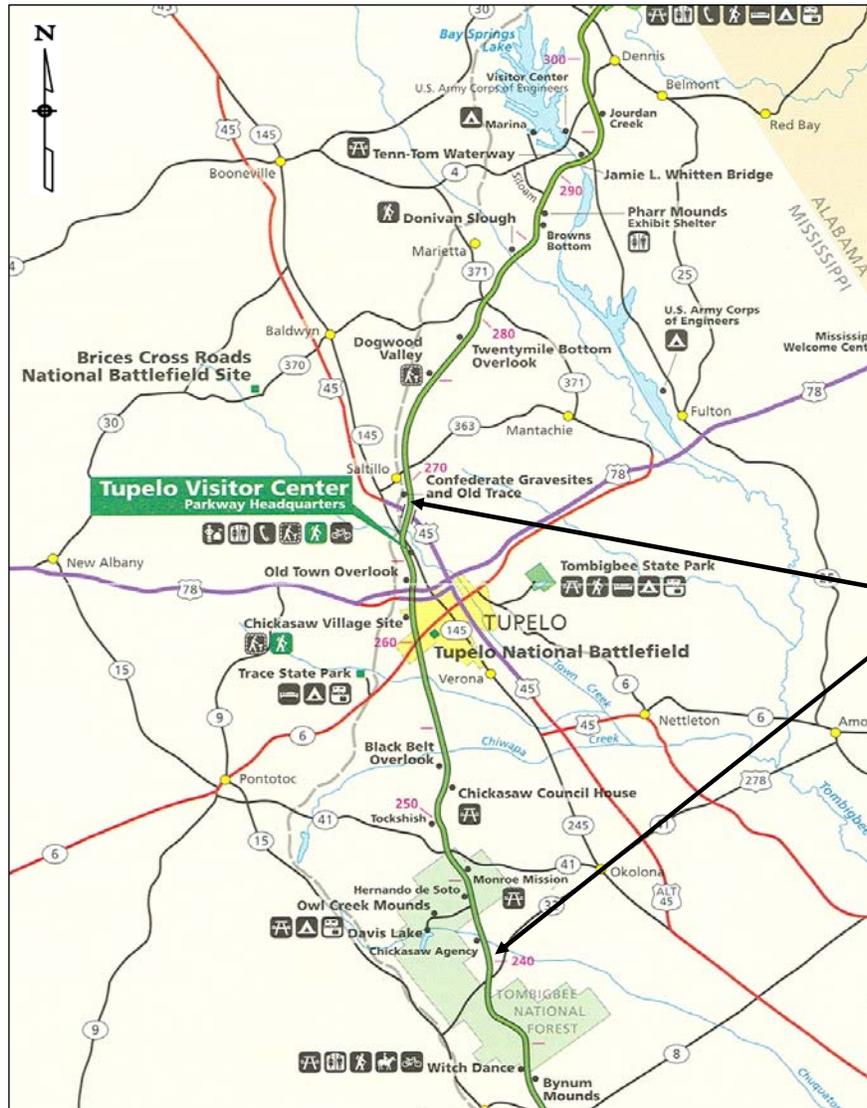
The subsurface explorations and tests described in the section on Procedures and Results have been conducted in accordance with standard practices and procedures (except as specifically noted). The results of these explorations and tests represent conditions at the specific locations indicated. Subsurface and conditions between these locations may vary. The Analysis and Conclusions section and the Recommendations section in this report include interpretations and recommendations developed by the Government in the process of preparing the design. These interpretations are not intended as a substitute for the personal investigation, independent interpretation, and judgment of the Contractor.

Prepared by:
Christopher Chang
Pavement Engineer

APPENDIX A – Project Location Map and Geological Map



PROJECT PRA NATR 3D30, E12



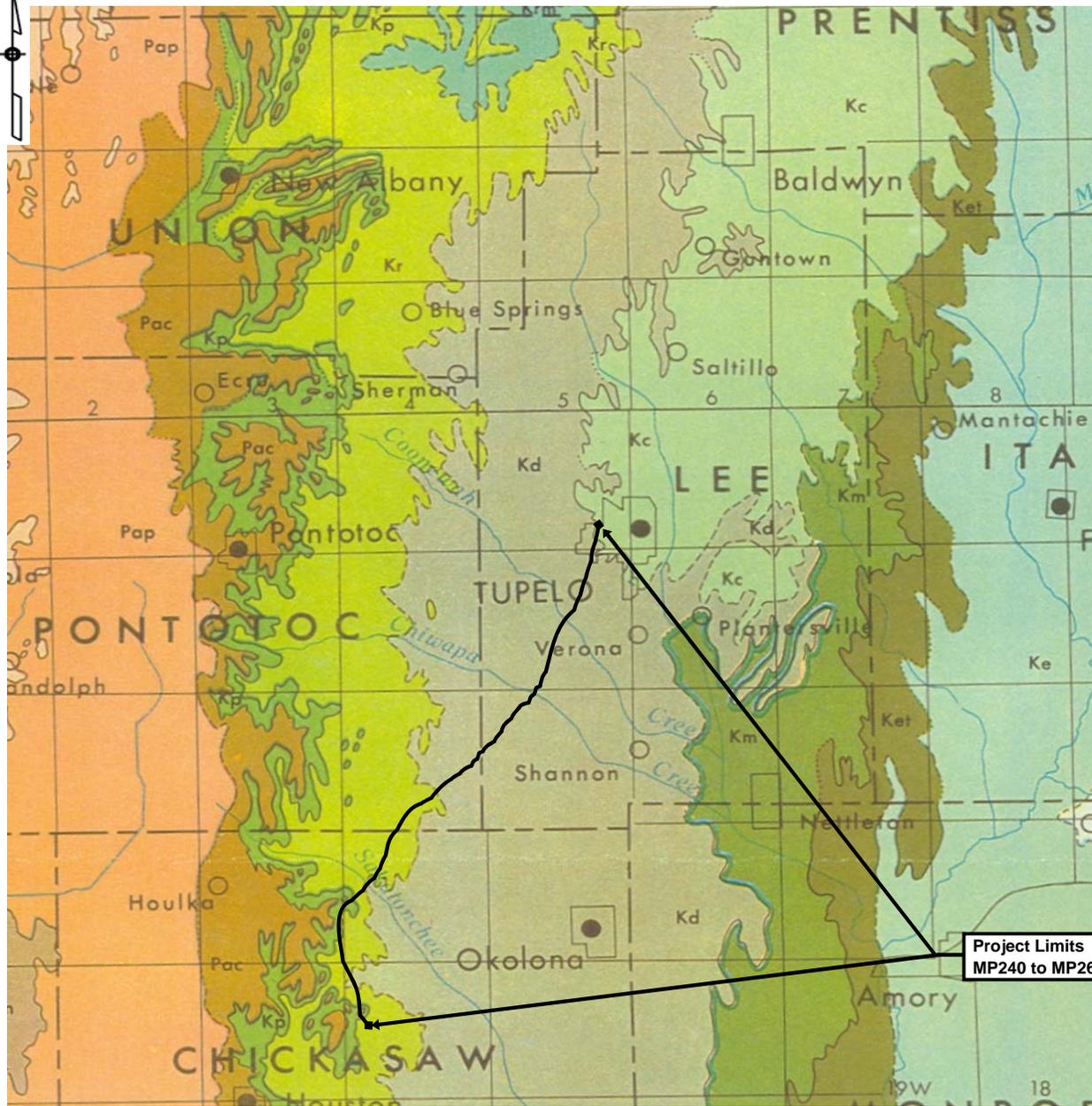
Project Limits
MP240 to MP266

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL LANDS HIGHWAY DIVISION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

PROJECT LOCATION MAP
Figure 1

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
NE	MS	NATR 3D30, E12	1	1

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
NE	MS	NATR 3D30, E12	1	1



Project Limits
MP240 to MP266

Pac CLAYTON FORMATION
Upper part, greenish-gray fine glauconitic sandy clay and marl; lower part, crystalline sandy limestone and loose sand, represented south of Houston by a discontinuous bed of indurated calcareous

Kd DEMOPOLIS FORMATION
Chalk and marly chalk containing fewer impurities than underlying and overlying formations

Kp PRAIRIE BLUFF CHALK and OWL CREEK FORMATION
Prairie Bluff chalk, compact brittle chalk, sandy chalk and calcareous clay; at base contains many phosphatic molds of fossils; in Pontotoc and Union Counties merges northward into Owl Creek Formation, tough blue glauconitic sandy clay

Kr **Krm** RIPLEY FORMATION
Gray to greenish-gray fine glauconitic sand, clay, and sandy limestone; south of Oktibbeha County is very sandy micaceous chalk; Krm McNairy sand member, red and white cross-bedded micaceous sand and white sandy clay

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA
GEOLOGIC MAP
FIGURE 2

APPENDIX B – Boring Logs



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-01 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 239.5

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %											
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit									
					● Standard Penetration Test Data (Blows / ft)															
					10 20 40 60 80															
		0.6	7 1/2" HOT-MIX ASPHALT PAVEMENT																	
		1.3	Loose, Brown SAND , some Gravel (fill) - moist																	
		5.0	Medium, Brown CLAY , trace Sand [A-6(1)] - moist		J-1	1.6	4-3-3-5	●	▼											
		5.0	End of Borehole @ Depth 5'	5	J-2	1.2	1-2-4-3	●												

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-02 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 239.75

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/22/05 Completed: 7/22/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.8	9 1/2" HOT-MIX ASPHALT PAVEMENT												
		1.5	Loose, Brown SAND , some Silt, trace Gravel (fill) - moist												
		3.0	Loose, Brown SAND , some Clay - moist		J-1	1.5	3-3-5-7	●							
		5.0	Medium, Brown CLAY , some Silt, some Sand - moist		J-2	1.6	2-2-3-5	●							
			End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-03 Sheet: 1 of 1
 Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 240

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05
 Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh
 At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains
 After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %										
					Type	No.	Rec.	Blows per 6 in.	Standard Penetration Test Data (Blows / ft)										
		0.7	7 3/4" HOT-MIX ASPHALT PAVEMENT																
		1.5	Loose, Brown SAND , some Silt, trace Gravel (fill) - moist																
		3.0	Brown SAND , some Clay [A-2-6(0)] - moist		J-1	1.5	3-3-5-7		●	▼	—								
		5.0	Medium, Brown CLAY , some Silt, some Sand - moist		J-2	1.6	2-2-3-5		●										
			End of Borehole @ Depth 5'	5															

BORING LOG PRA-NATR 3D30, E12.GPJ FHWA_VA.GDT 12/23/06

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT
 UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-04 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 240.5

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/22/05 Completed: 7/22/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.9	10 3/4" HOT-MIX ASPHALT PAVEMENT												
		5.0	Medium dense to loose, Brown SAND [A-2-4(0)] - moist		J-1	1.0	6-6-5-3		●	I					
					J-2	0.9	2-2-3-2		●						
			End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-05 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 240.75

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit						
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)						
										10	20	40	60	80	
		0.8	9" HOT-MIX ASPHALT PAVEMENT												
		1.5	Medium dense, Brown SAND, some Silt, some Gravel - moist												
		5.0	Stiff, Brown CLAY, some Silt, trace Sand - moist		J-1	1.5	7-11-5-5								
					J-2	1.1	3-4-7-3								
			End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-06 Sheet: 1 of 1
 Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 241
 Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/22/05 Completed: 7/22/05
 Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh
 At Completion: Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains
 After _____ hrs Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
									10	20	40	60	80
		0.7	7 3/4" HOT-MIX ASPHALT PAVEMENT										
		2.4	Loose, Brown SAND , trace Silt - moist		J-1	1.2	5-6-2-3	●					
		5.0	Soft, Brown CLAY , trace Sand - moist		J-2	1.3	2-2-2-3	●					
			End of Borehole @ Depth 5'	5									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-07 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 241.26

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %										
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit								
					● Standard Penetration Test Data (Blows / ft)														
										10	20	40	60	80					
		0.5	6" HOT-MIX ASPHALT PAVEMENT																
		1.4	Loose, Brown SAND, some Gravel, trace Silt (fill) - moist																
		3.0	Medium, Brown CLAY, some Sand, some Silt [A-2-6(0)] - moist		J-1	1.4	8-4-3-2		●		▼								
		5.0	Medium, Orange CLAY - moist		J-2	1.4	2-2-4-4		●										
		5.0	End of Borehole @ Depth 5'	5															

BORING LOG PRA-NATR 3D30, E12.GPJ FHWA_VA.GDT 12/23/06

Sample Types:

- Auger Cuttings
- Vane Shear
- SPT
- UD
- Penetrometer
- Rock Core

Remarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-08 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 241.52

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/22/05 Completed: 7/22/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.7	8" HOT-MIX ASPHALT PAVEMENT												
		2.3	Loose, Brown SAND, trace Silt - moist		J-1	1.1	5-6-4-2								
		5.0	Medium, Brown CLAY, trace Sand [A-7-6(12)] - moist		J-2	1.4	1-2-3-4								
		5.0	End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-09 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 241.77

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
									10	20	40	60	80	
		0.6	7 1/4" HOT-MIX ASPHALT PAVEMENT											
		1.0	Medium dense, Brown SAND , some Gravel, trace Silt - moist											
		5.0	Brown CLAY , trace Sand - moist		J-1	1.5	5-7-4-3							
					UD-1	2.0								
			End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-10 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 242

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/22/05 Completed: 7/22/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.7	7 3/4" HOT-MIX ASPHALT PAVEMENT												
		2.9	Medium dense, Brown SAND , trace Silt [A-2-4(0)] - moist		J-1	1.0	6-9-5-3		●						
		5.0	Soft, Brown CLAY , trace Sand - moist		J-2	1.6	2-2-2-3		●						
		5.0	End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-11 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 242.19

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %											
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit									
					● Standard Penetration Test Data (Blows / ft)															
					10 20 40 60 80															
		0.8	9 1/2" HOT-MIX ASPHALT PAVEMENT																	
		1.2	Brown SAND , some Gravel, trace Silt (fill) - moist																	
			Soft, Brown CLAY , some Sand - moist																	
		5.0	End of Borehole @ Depth 5'	5	J-1	1.4	5-7-4-3	●												
					J-2	1.6	1-1-2-1	●												

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-12 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 242.44

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/22/05 Completed: 7/22/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
									10	20	40	60	80	
		0.6	7 1/4" HOT-MIX ASPHALT PAVEMENT											
		3.0	Loose, Brown SAND , trace Silt - moist		J-1	1.3	4-4-4-2	●						
		5.0	Medium, Brown CLAY , trace Sand - moist		J-2	1.5	2-3-3-4	●						
			End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-13 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 242.66

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ———— Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
									10	20	40	60	80
			13 1/4" HOT-MIX ASPHALT PAVEMENT										
		1.1	Brown SAND , some Gravel, trace Silt (fill) - moist										
		1.7	Stiff, Brown CLAY , some Sand - moist		J-1	1.2	6-9-7-5						
		2.9	Stiff, Gray CLAY , some Silt [A-7-6(10)] - moist										
		5.0	End of Borehole @ Depth 5'	5	J-2	1.5	2-3-6-8						

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-14 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 243.35

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/22/05 Completed: 7/22/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.8	9" HOT-MIX ASPHALT PAVEMENT												
		2.7	Medium dense, Brown SAND, trace Silt - moist		J-1	1.4	3-12-7-4								
		5.0	Medium, Brown CLAY, trace Sand - moist		J-2	1.5	3-3-5-6								
			End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-15 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 243.74

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.9	10 3/4" HOT-MIX ASPHALT PAVEMENT												
		1.7	Brown SAND , some Gravel, trace Silt - moist												
		2.8	Medium dense, Brown SAND , some Clay - moist		J-1	1.7	9-11-6-3								
		5.0	Medium, Brown CLAY , some Silt - moist		J-2	1.3	1-2-3-4								
		5.0	End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-16 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 244

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
									10	20	40	60	80	
		0.8	9 1/2" HOT-MIX ASPHALT PAVEMENT											
		2.7	Medium dense, Brown SAND , trace Silt [A-2-4(0)] - moist		J-1	1.3	10-12-6-4							
		5.0	Medium, Brown CLAY , trace Sand - moist		J-2	0.4	3-2-4-3							
			End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-17 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 244.23

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.5	6" HOT-MIX ASPHALT PAVEMENT												
		1.3	Brown SAND, some Gravel, trace Silt - moist												
		2.6	Loose, Brown SAND, some Clay - moist		J-1	1.3	5-5-3-2	●							
		5.0	Medium, Brown CLAY, some Silt - moist		J-2	1.2	1-2-3-4	●							
		5.0	End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-18 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 244.53

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit						
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)						
										10	20	40	60	80	
		0.7	8 1/2" HOT-MIX ASPHALT PAVEMENT												
		2.0	Medium dense, Brown SAND , trace Clay - moist												
		5.0	Medium, Brown CLAY , trace Sand - moist		J-1	1.5	7-7-4-4								
		5.0	End of Borehole @ Depth 5'	5	J-2	1.6	2-2-3-3								

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-19 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 244.75

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %					
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit			
					● Standard Penetration Test Data (Blows / ft)									
										10	20	40	60	80
		0.8	9 1/2" HOT-MIX ASPHALT PAVEMENT											
		1.7	Brown SAND , some Gravel, trace Silt - moist											
		2.5	Loose, Brown SAND , some Clay - moist		J-1	1.0	12-4-3-3	●						
		5.0	Medium, Brown CLAY , some Silt [A-7-6(16)] - moist		J-2	1.6	2-3-4-5	●	▼	—	—			
		5.0	End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-20 Sheet: 1 of 1
 Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 245

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05
 Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh
 At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains
 After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ———— Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
									10	20	40	60	80
		0.8	9 1/2" HOT-MIX ASPHALT PAVEMENT										
		2.9	Loose, Brown SAND , trace Silt - moist		J-1	1.0	6-4-6-5						
		5.0	Medium, Brown CLAY , trace Sand - moist		J-2	1.4	3-3-4-5						
			End of Borehole @ Depth 5'	5									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-21 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 245.49

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
									10	20	40	60	80
		0.8	9 1/2" HOT-MIX ASPHALT PAVEMENT										
		1.5	Brown SAND , some Gravel, trace Silt - moist										
		2.3	Medium dense, Brown SAND , some Silt, some Gravel - moist		J-1	0.9	14-10-8-5						
		5.0	Medium, Brown CLAY , some Silt - moist		J-2	0.6	1-2-4-3						
		5.0	End of Borehole @ Depth 5'	5									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-22 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 245.73

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.3	5 1/2" HOT-MIX ASPHALT PAVEMENT												
			Medium dense, Brown SAND , trace Silt - moist												
		4.0			J-1	1.2	7-11-9-14								
		4.0	Soft, Brown CLAY , some Sand - moist		J-2	1.6	2-2-2-4								
		5.0		5											
			End of Borehole @ Depth 5'												

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-23 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 246

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %					
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit			
										● Standard Penetration Test Data (Blows / ft)				
										10	20	40	60	80
		0.5	6 1/2" HOT-MIX ASPHALT PAVEMENT											
		2.7	Brown CLAY - moist											
		3.5	Medium dense, Brown SAND , trace Clay - moist		J-1	1.1	8-6-4-3							
		5.5	Medium, Brown CLAY - wet		J-2	1.2	1-3-2-3							
			End of Borehole @ Depth 5.5'											

Sample Types:

- Auger Cuttings
- Vane Shear
- SPT

- UD
- Penetrometer
- Rock Core

Remarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-24 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 246.22

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %					
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit			
										● Standard Penetration Test Data (Blows / ft)				
										10	20	40	60	80
		0.9	10 3/4" HOT-MIX ASPHALT PAVEMENT											
		2.8	Medium dense, Brown SAND , some Gravel - moist		J-1	0.6	14-8-5-4							
		3.7	Loose, Brown SAND - moist											
		5.2	Soft, Brown CLAY , some Sand - moist		J-2	1.3	2-2-2-3							
			End of Borehole @ Depth 5.2'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-25 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 246.48

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.6	6 1/2" HOT-MIX ASPHALT PAVEMENT												
		1.3	Brown SAND , some Gravel - moist												
		3.0	Stiff, Brown CLAY , trace Sand - moist		J-1	1.2	12-8-3-2								
		5.0	Soft, Brown CLAY - moist		J-2	1.3	2-1-3-3								
		5.0	End of Borehole @ Depth 5'	5											

Sample Types:

- Auger Cuttings
- Vane Shear
- SPT

- UD
- Penetrometer
- Rock Core

Remarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-26 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 247.21

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.6	7 1/4" HOT-MIX ASPHALT PAVEMENT												
		2.7	Loose, Brown SAND , trace Clay - moist		J-1	1.3	6-5-3-3	●							
		5.0	Soft, Brown CLAY , trace Sand - moist		J-2	1.7	1-2-2-3	●							
		5.0	End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-27 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 247.74

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
									10	20	40	60	80	
		0.7	8 1/2" HOT-MIX ASPHALT PAVEMENT											
		3.0	Loose, Brown SAND , some Gravel - moist		J-1	0.4	7-4-2-2	●						
		5.0	Medium, Brown CLAY - moist		J-2	1.8	2-2-3-4	●						
			End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-28 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 248.23

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ———— Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
									10	20	40	60	80
		0.5	6" HOT-MIX ASPHALT PAVEMENT										
		2.6	Loose, Brown SAND, trace Clay [A-6(2)] - moist		J-1	1.3	6-7-3-4	●					
		5.0	Medium, Brown CLAY, trace Sand - moist		J-2	1.6	2-2-3-4	●					
		5.0	End of Borehole @ Depth 5'	5									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-29 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 248.49

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.5	6" HOT-MIX ASPHALT PAVEMENT												
			Medium, Brown CLAY, some Sand, trace Gravel - moist		J-1	1.3	7-5-3-1	●							
		3.6	Soft, Brown CLAY - moist		J-2	1.6	1-1-3-3	●							
		5.0	End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-30 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 248.73

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit											
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)											
					10	20	40	60	80											
		0.5	6" HOT-MIX ASPHALT PAVEMENT																	
		2.6	Medium dense, Brown SAND - moist		J-1	0.9	7-6-5-3	●												
		5.0	Medium, Brown CLAY, trace Sand - moist		J-2	1.4	3-2-3-4	●												
			Medium, Brown CLAY - moist																	

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-31 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 249.47

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %					
					Type	No.	Rec.	Blows per 6 in.	Standard Penetration Test Data (Blows / ft)					
										10	20	40	60	80
		0.8	9" HOT-MIX ASPHALT PAVEMENT - No core sample taken.											
		2.2	Medium dense, Brown SAND , some Gravel - moist		J-1	12.0	9-6-4-3							
		5.0	Brown CLAY - moist		UD-1	2.0								
			Medium, Brown CLAY - moist											

Sample Types:

- Auger Cuttings
- Vane Shear
- SPT

- UD
- Penetrometer
- Rock Core

Remarks:

- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-32 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 250

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %					
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit			
					● Standard Penetration Test Data (Blows / ft)									
										10	20	40	60	80
		0.9	10 3/4" HOT-MIX ASPHALT PAVEMENT											
		2.6	Stiff, Brown CLAY , some Sand [A-2-4(0)] - moist		J-1	1.5	5-6-3-3	●	▼					
		5.0	Medium, Brown CLAY - moist		J-2	1.5	1-2-3-4	●						
		5.0	End of Borehole @ Depth 5.5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-33 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 250.22

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
									10	20	40	60	80
		0.6	6 1/2" HOT-MIX ASPHALT PAVEMENT - No core sample taken										
		2.4	Medium dense, Brown GRAVELLY SAND - moist										
		2.7	Brown CLAY some Sand - moist		J-1	1.4	11-9-5-2						
		5.0	Medium, Brown CLAY - moist		J-2	2.0	1-2-3-4						
		5.0	End of Borehole @ Depth 5'	5									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-34 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 250.48

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %					
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit			
										● Standard Penetration Test Data (Blows / ft)				
										10	20	40	60	80
		0.6	6 1/2" HOT-MIX ASPHALT PAVEMENT											
		2.8	Loose, Brown SAND - moist		J-1	1.5	6-3-4-3	●						
		5.0	Medium, Brown CLAY - moist		J-2	1.3	2-3-4-6	●						
			End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-35 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 251

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit ● Standard Penetration Test Data (Blows / ft)										
					Type	No.	Rec.	Blows per 6 in.	10	20	40	60	80						
		0.6	7 1/4" HOT-MIX ASPHALT PAVEMENT - No core sample taken																
		1.9	Loose, Brown GRAVELLY SAND - moist																
		2.4	Brown CLAY some Sand - moist		J-1	1.2	4-6-2-2	●											
		5.0	Medium, Brown CLAY - moist		J-2	2.0	0-2-3-3	●											
			End of Borehole @ Depth 5'	5															

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-36 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 251.22

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.7	7 3/4" HOT-MIX ASPHALT PAVEMENT												
		2.8	Loose, Brown SAND - moist		J-1	1.4	5-4-3-5	●							
		5.0	Soft, Brown CLAY , trace Sand -moist		J-2	1.5	2-2-2-3	●							
			End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-37 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 251.74

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %					
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit			
					● Standard Penetration Test Data (Blows / ft)									
										10	20	40	60	80
		1.0	11 1/2" HOT-MIX ASPHALT PAVEMENT											
		3.0	Stiff, Brown SANDY CLAY [A-2-4(0)] - moist		J-1	1.0	2-5-5-3	●	▼					
		5.0	Medium, Brown CLAY -moist		J-2	1.2	2-3-3-4	●						
		5.0	End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-38 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 252

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.7	7 3/4" HOT-MIX ASPHALT PAVEMENT												
		2.8	Medium dense, Brown SAND , trace Clay - moist		J-1	1.2	10-11-6-5								
		5.0	Medium, Brown CLAY -moist		J-2	1.7	3-2-5-10								
		5.0	End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-39 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 252.22

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/18/05 Completed: 7/18/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit ———— Liquid Limit						
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
			10 1/4" HOT-MIX ASPHALT PAVEMENT												
		0.9	Medium dense, Brown GRAVELLY SAND - moist												
		2.0	Medium dense, Brown CLAY , some Sand [A-6(14)] - moist		J-1	1.5	13-12-7-5								
		2.5	Medium, Brown CLAY -moist												
		5.0	End of Borehole @ Depth 5'	5	J-2	1.3	4-3-4-5								

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-40 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 252.47

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit ● Standard Penetration Test Data (Blows / ft)										
					Type	No.	Rec.	Blows per 6 in.	10	20	40	60	80						
		0.6	6 1/2" HOT-MIX ASPHALT PAVEMENT																
		2.2	Loose, Brown SAND - moist																
		5.0	Medium, Brown CLAY -moist		J-1	1.3	6-3-4-5	●											
					J-2	1.5	3-2-4-5	●											
			End of Borehole @ Depth 5'	5															

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-42 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 253.21

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
									10	20	40	60	80	
			8 1/4" HOT-MIX ASPHALT PAVEMENT											
		0.7												
			Medium dense, Brown SAND - moist											
		2.5				J-1	1.5	4-11-6-6						
			Medium, Brown CLAY , trace Sand -moist											
		3.0												
			Medium dense, Brown SAND , some Clay - moist											
		5.0				J-2	1.2	2-2-3-3						
			End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-43 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 253.47

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
									10	20	40	60	80	
			12" HOT-MIX ASPHALT PAVEMENT											
		1.0	Medium dense, Brown GRAVELLY SAND - moist											
		1.5	Brown CLAY , some Sand -moist											
		2.0	Medium, Brown CLAY , trace Sand -moist		J-1	1.4	6-8-5-5	●						
		5.0	End of Borehole @ Depth 5'	5	J-2	1.6	3-2-5-5	●						

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-44 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 253.73

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %									
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit							
		0.7	8 1/2" HOT-MIX ASPHALT PAVEMENT															
		3.0	Medium dense, Brown SAND , some Clay [A-6(2)] - moist		J-1	1.3	5-14-14-11											
		5.0	Soft, Brown CLAY , trace Sand -moist		J-2	1.2	2-2-2-2											
			End of Borehole @ Depth 5'	5														

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-45 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 254

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.7	8" HOT-MIX ASPHALT PAVEMENT												
		2.4	20" AGGREGATE BASE		J-1	1.6	6-5-5-6								
		3.0	Stiff, Brown CLAY, some Sand [A-6(1)] -moist												
		5.0	Stiff, Brown CLAY, trace Sand -moist		N/R	0.0	3-3-4-5								
			End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-46 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 254.21

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
									10	20	40	60	80
		0.6	7 1/4" HOT-MIX ASPHALT PAVEMENT										
		2.0	Medium dense, Brown SAND - moist										
		5.0	Medium, Brown CLAY , trace Sand -moist		J-1	1.6	8-10-8-7						
					J-2	1.5	2-3-3-4						
			End of Borehole @ Depth 5'	5									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-47 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 254.47

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
									10	20	40	60	80	
		0.8	9" HOT-MIX ASPHALT PAVEMENT											
		2.2	Medium dense, Brown SAND, some Clay -moist		J-1	1.6	6-10-13-11							
		5.0	Medium, Brown CLAY, some Sand -moist		J-2	1.8	5-3-5-6							
		5.0	End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-48 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 254.72

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
										10	20	40	60	80
		0.7	8 1/2" HOT-MIX ASPHALT PAVEMENT											
		2.3	Medium dense, Brown SAND - moist		J-1	1.1	6-7-9-9		●					
		5.0	Medium, Brown CLAY , trace Sand -moist		J-2	1.2	4-3-2-3		●					
			End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-49 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 255

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
									10	20	40	60	80
		0.5	5 1/2" HOT-MIX ASPHALT PAVEMENT										
		2.5	Loose, Brown SAND , some Gravel - moist		J-1	1.4	6-4-2-2	●					
		3.0	Brown SAND - moist										
		5.0	Brown CLAY -moist		UD-1	2.0							
			End of Borehole @ Depth 5'	5									

Sample Types:

- Auger Cuttings
- Vane Shear
- SPT

- UD
- Penetrometer
- Rock Core

Remarks:

- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-50 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 255.46

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/21/05 Completed: 7/21/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %											
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit									
					● Standard Penetration Test Data (Blows / ft)															
					10 20 40 60 80															
		0.4	4 3/4" HOT-MIX ASPHALT PAVEMENT																	
			Medium dense, Brown SAND trace Clay [A-4(0)] - moist			J-1	1.2		5-7-5-6											
		5.0	End of Borehole @ Depth 5'	5		J-2	1.4													

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-51 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 255.71

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
									10	20	40	60	80	
		0.6	7 1/4" HOT-MIX ASPHALT PAVEMENT - No core sample taken.											
		2.3	Medium dense, Brown SAND - moist		J-1	1.3	5-8-5-7							
		3.0	Brown CLAY some Sand - moist											
		5.0	Medium, Brown CLAY -moist		J-2	1.4	2-2-3-4							
			End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-52 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 256

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/20/05 Completed: 7/20/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
										10	20	40	60	80
		0.7	7 3/4" HOT-MIX ASPHALT PAVEMENT											
		2.3	Medium dense, Brown SAND , some Gravel - moist		J-1	1.3	6-6-6-9							
		3.0	Medium dense, Brown SAND trace Clay - moist											
		5.0	Stiff, Brown CLAY -moist		J-2	2.0	3-3-7-20							
			End of Borehole @ Depth 5'	5										

Sample Types:

Auger Cuttings

Vane Shear

SPT

UD

Penetrometer

Rock Core

Remarks:
- No water was encountered during or after drilling.

BORING LOG PRA-NATR 3D30, E12.GPJ FHWA_VA.GDT 12/23/06



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-53 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 256.2

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
									10	20	40	60	80
		0.6	6 1/2" HOT-MIX ASPHALT PAVEMENT - No core sample taken.										
		2.5	Medium dense, Brown SAND - moist		J-1	1.1	4-5-5-5						
		5.0	Very stiff, Brown CLAY -moist		J-2	2.0	4-15-15-19						
			End of Borehole @ Depth 5'	5									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-54 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 256.46

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/20/05 Completed: 7/20/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.7	7 3/4" HOT-MIX ASPHALT PAVEMENT - No core sample taken.												
		2.1	Medium dense, Brown SAND - moist												
		3.2	Stiff, Brown CLAY , trace Sand -moist		J-1	1.4	5-7-6-7								
		5.0	Medium, Brown CLAY -moist		J-2	1.4	3-2-3-4								
			End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-55 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 257

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %					
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit			
										● Standard Penetration Test Data (Blows / ft)				
										10	20	40	60	80
		0.9	10 3/4" HOT-MIX ASPHALT PAVEMENT - No core sample taken.											
		2.7	Medium dense, Brown SAND [A-2-4(0)] - moist		J-1	1.5	7-8-5-8							
		5.0	Medium, Brown CLAY , trace Sand -moist		J-2	1.8	2-2-3-4							
			End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-56 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 257.21

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/20/05 Completed: 7/20/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.8	9 1/2" HOT-MIX ASPHALT PAVEMENT - No core sample taken.												
		2.0	Medium dense, Brown SAND - moist												
		3.0	Stiff, Brown CLAY , trace Sand -moist		J-1	1.4	4-5-6-5								
		5.0	Stiff, Brown CLAY -moist		J-2	1.4	3-4-6-8								
			End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-57 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 257.46

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit						
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)						
										10	20	40	60	80	
		0.5	6" HOT-MIX ASPHALT PAVEMENT												
		2.4	Medium dense, Brown SAND [A-6(8)] - moist		J-1	1.2	4-6-7-6								
		5.0	Soft, Brown CLAY, trace Sand -moist		J-2	1.4	2-2-2-4								
		5.0	End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-58 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 257.71

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/20/05 Completed: 7/20/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ———— Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
										10	20	40	60	80
		0.7	8 1/2" HOT-MIX ASPHALT PAVEMENT - No core sample taken.											
		2.2	Medium dense, Brown SAND - moist		J-1	1.5	4-8-5-4		●					
		5.0	Brown CLAY , trace Sand -moist		U-1	2.0								
			End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-59 Sheet: 1 of 1
 Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 258

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05
 Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh
 At Completion: Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains
 After _____ hrs Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
									10	20	40	60	80
		0.8	9" HOT-MIX ASPHALT PAVEMENT										
		2.4	Loose, Brown SAND, some Clay - moist		J-1	1.6	7-5-4-5						
		5.0	Medium, Brown CLAY, trace Sand -moist		J-2	1.7	2-4-4-6						
			End of Borehole @ Depth 5'	5									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-60 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 258.24

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/20/05 Completed: 7/20/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
										10	20	40	60	80
		0.7	7 3/4" HOT-MIX ASPHALT PAVEMENT											
		2.4	Medium dense, Brown SAND - moist		J-1	1.5	6-6-5-5	●						
		5.0	Soft, Brown CLAY , trace Sand -moist		J-2	1.5	2-1-2-3	●						
			End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-61 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 259

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ———— Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
									10	20	40	60	80
		0.7	8 1/2" HOT-MIX ASPHALT PAVEMENT										
		2.4	Medium dense, Brown SAND - moist		J-1	1.6	9-15-10-6						
		5.0	Medium, Brown CLAY , some Sand -moist		J-2	1.9	2-4-3-3						
			End of Borehole @ Depth 5'	5									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-62 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 259.25

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/20/05 Completed: 7/20/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
									10	20	40	60	80	
		0.6	6 1/2" HOT-MIX ASPHALT PAVEMENT											
		3.5	Medium dense, Brown SAND - moist		J-1	1.5	7-9-11-12							
		5.0	Medium, Brown CLAY -moist		J-2	1.9	6-3-3-6							
		5.0	End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-63 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 259.46

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
									10	20	40	60	80
		0.6	7 1/4" HOT-MIX ASPHALT PAVEMENT										
		2.7	Medium dense, Brown SAND - moist		J-1	1.4	7-8-5-5						
		4.3	Soft, Brown CLAY , trace Sand [A-7-6(11)] - moist		J-2	1.1	2-2-2-3						
		5.0	Soft, Brown CLAY [A-7-6(14)] -moist										
			End of Borehole @ Depth 5'	5									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-65 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 260.45

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %									
					Type	No.	Rec.	Blows per 6 in.	Standard Penetration Test Data (Blows / ft)									
		0.6	7" HOT-MIX ASPHALT PAVEMENT															
		2.6	Loose, Brown SAND, some Gravel - moist		J-1	1.5	6-3-3-3	●										
		3.0	Medium, Brown CLAY, trace Sand - moist															
		5.0	Stiff, Brown CLAY -moist		J-2	1.6	2-3-8-14	●										
			End of Borehole @ Depth 5'	5														

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-66 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 260.72

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/20/05 Completed: 7/20/05

Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.9	10 1/2" HOT-MIX ASPHALT PAVEMENT												
		2.9	Medium dense, Brown SAND , trace Clay - moist		J-1	1.3	7-8-7-5								
		5.0	Soft, Brown CLAY , trace Sand [A-6(2)] - moist		J-2	0.4	3-2-2-2								
		5.0	End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-67 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 261

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %					
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit			
										● Standard Penetration Test Data (Blows / ft)				
										10	20	40	60	80
		0.6	7 1/4" HOT-MIX ASPHALT PAVEMENT											
		2.5	Medium dense, Brown SAND [A-4(0)] - moist		J-1	1.6	8-9-4-4							
		5.0	Soft, Brown CLAY -moist		J-2	1.0	1-2-2-3							
			End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-68 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 261.19

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/20/05 Completed: 7/20/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
									10	20	40	60	80
		0.5	5 1/2" HOT-MIX ASPHALT PAVEMENT										
		2.3	Loose, Brown SAND - moist		J-1	1.7	5-5-3-4	●					
		5.0	Medium, Brown CLAY -moist		J-2	1.5	3-3-5-7	●					
		5.0	End of Borehole @ Depth 5'	5									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-69 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 261.7

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.8	9" HOT-MIX ASPHALT PAVEMENT												
		2.8	Medium dense, Brown SAND - moist												
		3.0	Brown CLAY, trace Sand - moist												
		5.0	Brown CLAY -moist												
			End of Borehole @ Depth 5'	5											

Sample Types:

- Auger Cuttings
- Vane Shear
- SPT

- UD
- Penetrometer
- Rock Core

Remarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-70 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 262

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/20/05 Completed: 7/20/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit ● Standard Penetration Test Data (Blows / ft)										
					Type	No.	Rec.	Blows per 6 in.	10	20	40	60	80						
		0.9	10 1/4" HOT-MIX ASPHALT PAVEMENT																
		2.0	Medium dense, Brown SAND , some Gravel - moist																
		3.0	Medium dense, Brown SAND - moist		J-1	1.5	9-12-10-7												
		3.7	Medium, Brown CLAY , trace Sand - moist																
		5.0	Loose, Brown SAND , trace Clay -moist		J-2	1.5	3-3-3-3												
			End of Borehole @ Depth 5'	5															

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-71 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 262.53

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
									10	20	40	60	80
		0.7	8 1/2" HOT-MIX ASPHALT PAVEMENT										
		2.6	Medium dense, Brown SAND , trace Clay - moist		J-1	1.2	6-7-6-7						
		3.0	Stiff, Brown CLAY , trace Sand - moist										
		4.1	Loose, Brown SAND - moist		J-2	1.2	3-4-5-5						
		5.0	Stiff, Brown CLAY -moist										
			End of Borehole @ Depth 5'	5									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-72 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 263

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/20/05 Completed: 7/20/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %					
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit			
										● Standard Penetration Test Data (Blows / ft)				
										10	20	40	60	80
		0.6	7 1/4" HOT-MIX ASPHALT PAVEMENT											
		2.1	Medium dense, Brown SAND , some Gravel - moist											
		5.0	Stiff, Brown CLAY , trace Sand - moist		J-1	1.5	4-8-6-5		●					
					J-2	0.9	3-2-3-3		●					
		5.0	End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-74 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 264.14

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/20/05 Completed: 7/20/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.7	8 1/2" HOT-MIX ASPHALT PAVEMENT												
			Medium dense, Brown SAND , trace Clay [a-2-4(0)] - moist		J-1	1.4	9-13-9-11		▼	●					
		5.0	End of Borehole @ Depth 5'	5	J-2	1.6	5-5-7-16			●					

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-75 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 264.44

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.7	8 1/2" HOT-MIX ASPHALT PAVEMENT												
		3.0	Medium dense, Brown SAND , trace Clay, trace Gravel [A-1-a] - moist		J-1	1.3	8-9-10-14		▼	●					
		5.0	Medium dense, Brown SAND - moist		J-2	2.0	10-8-6-6			●					
			End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-76 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 264.68

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/20/05 Completed: 7/20/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit										
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)										
					10	20	40	60	80										
		0.4	4 3/4" HOT-MIX ASPHALT PAVEMENT																
			Medium dense, Brown SAND [A-6(8)] - moist																
					J-1	1.5	6-9-7-5												
					J-2	1.8	5-5-8-10												
		5.0	End of Borehole @ Depth 5'	5															

Sample Types:

- Auger Cuttings
- Vane Shear
- SPT
- UD
- Penetrometer
- Rock Core

Remarks:
- No water was encountered during or after drilling.

BORING LOG PRA-NATR 3D30, E12.GPJ FHWA_VA.GDT 12/23/06



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-77 Sheet: 1 of 1
 Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 265

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05
 Encountered at: _____ Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh
 At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains
 After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
										10	20	40	60	80
		0.7	8 1/2" HOT-MIX ASPHALT PAVEMENT											
		2.6	Medium dense, Brown SAND - moist		J-1	1.5	5-8-8-5							
		4.4	Medium dense, Brown SAND , trace Clay - moist		J-2	1.5	3-3-4-4							
		5.0	Medium, Brown CLAY - moist											
			End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-78 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 265.2

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/20/05 Completed: 7/20/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ----- Liquid Limit					
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)					
									10	20	40	60	80	
		0.6	7 1/4" HOT-MIX ASPHALT PAVEMENT											
		2.4	Medium dense, Brown SAND [A-4(0)] - moist		J-1	1.8	6-8-9-8							
		5.0	Medium dense, Brown SAND , trace Clay - moist		J-2	2.0	6-4-5-6							
			End of Borehole @ Depth 5'	5										

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: PRA-NATR 3D30, E12 Boring No.: B-79 Sheet: 1 of 1

Project Location: Natchez Trace Parkway (from MP240 to MP266) Boring Location: Natchez Trace Parkway (Route 1F), Milepost 265.44

Groundwater Depth: _____ Surface Elevation: _____ Boring Began: 7/19/05 Completed: 7/19/05

Encountered at: Caved at: _____ Boring Method: Flight Auger Inspector: W. Eshbaugh

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R. Kingsley/J. Bains

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: _____

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content %						
					Type	No.	Rec.	Blows per 6 in.	Plastic Limit		Liquid Limit				
					● Standard Penetration Test Data (Blows / ft)					10	20	40	60	80	
		0.6	7" HOT-MIX ASPHALT PAVEMENT												
		3.0	Medium dense, Brown SAND - moist		J-1	1.4	3-7-9-7	●							
		5.0	Loose, Brown SAND, trace Clay - moist		J-2	1.3	3-2-2-3	●							
		5.0	End of Borehole @ Depth 5'	5											

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
 - No water was encountered during or after drilling.

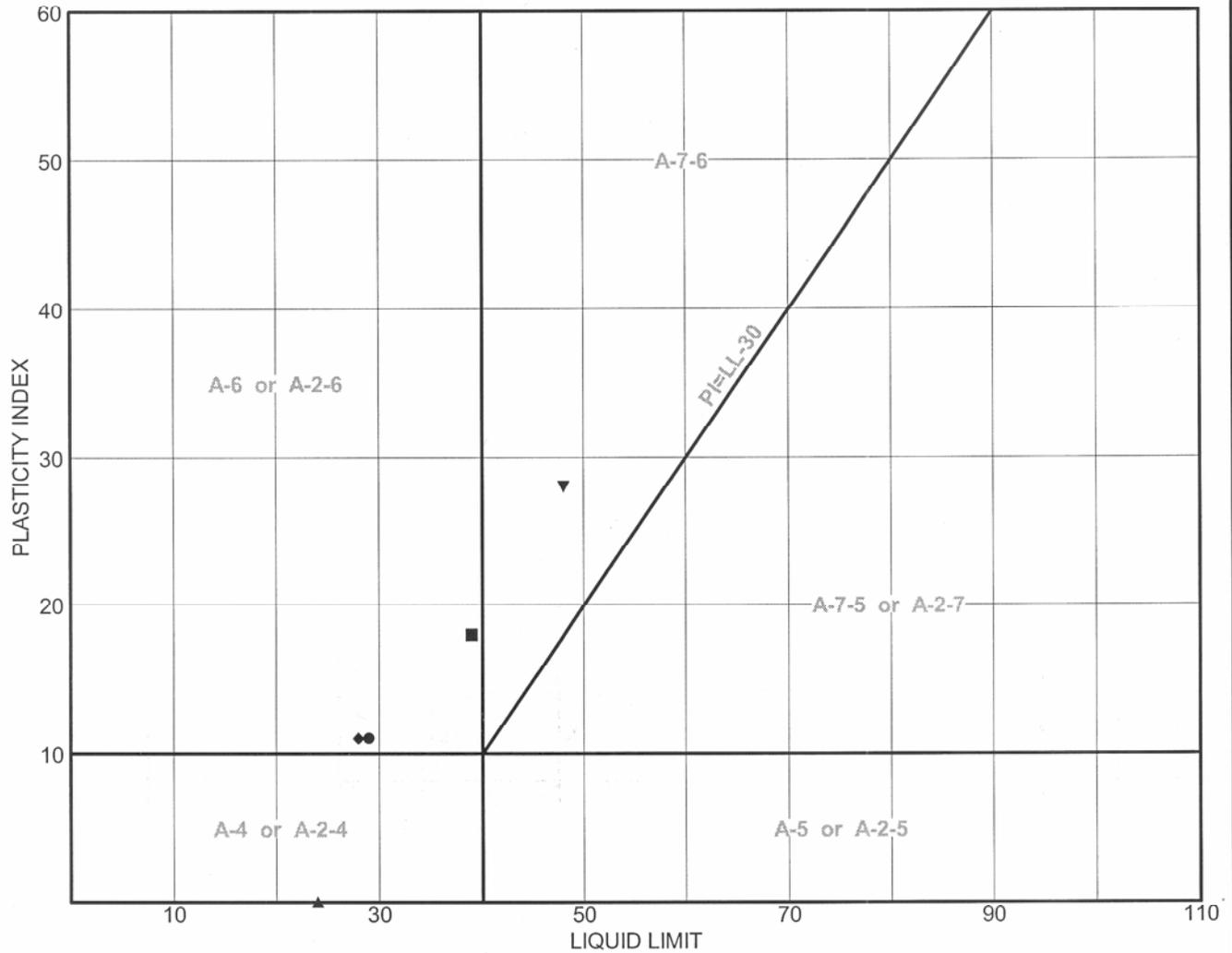
APPENDIX C – Laboratory Test Results

SUBJECT:**PRA-NATR 3D12, E12 Laboratory Test Results *(CORRECTION)***

TO	MESSAGE/COMMENT	FROM/DATE																		
C. Chang Project Engineer	<p>Attached are laboratory test results for PRA-NATR 3D12, E12. The following tests were performed per your request received September 16, 2005 and according to FP-96, Section 301:</p> <table border="1" data-bbox="451 531 1144 1003"> <thead> <tr> <th data-bbox="451 531 813 604">EFLHD Test Number</th> <th data-bbox="813 531 1144 604">Number of Tests Performed</th> </tr> </thead> <tbody> <tr><td data-bbox="451 604 813 640">11</td><td data-bbox="813 604 1144 640">36</td></tr> <tr><td data-bbox="451 640 813 676">27</td><td data-bbox="813 640 1144 676">36</td></tr> <tr><td data-bbox="451 676 813 711">87</td><td data-bbox="813 676 1144 711">36</td></tr> <tr><td data-bbox="451 711 813 747">89</td><td data-bbox="813 711 1144 747">36</td></tr> <tr><td data-bbox="451 747 813 783">90</td><td data-bbox="813 747 1144 783">36</td></tr> <tr><td data-bbox="451 783 813 819">265</td><td data-bbox="813 783 1144 819">36</td></tr> <tr><td data-bbox="451 819 813 854">400</td><td data-bbox="813 819 1144 854">36</td></tr> <tr><td data-bbox="451 854 813 890">900</td><td data-bbox="813 854 1144 890">36</td></tr> </tbody> </table> <p>An amount of \$9,180 has been charged to the project account for the above listed tests. These amounts do not include administrative overhead. Please refer to the latest EFLHD Materials Fee Schedule for unit rates and a description of each test.</p> <p>**Please be advised an incorrect graph for the Liquid and Plastic Limits was reported to you in a previous Minute Memo dated 10/18/05. The correct graphs are enclosed. Our apologies for any confusion this may have caused.</p>	EFLHD Test Number	Number of Tests Performed	11	36	27	36	87	36	89	36	90	36	265	36	400	36	900	36	C. McCown Materials Engineering Technician 10/25/05
EFLHD Test Number	Number of Tests Performed																			
11	36																			
27	36																			
87	36																			
89	36																			
90	36																			
265	36																			
400	36																			
900	36																			

cc: S. Saunders, w/attachments

LIQUID AND PLASTIC LIMITS TEST REPORT



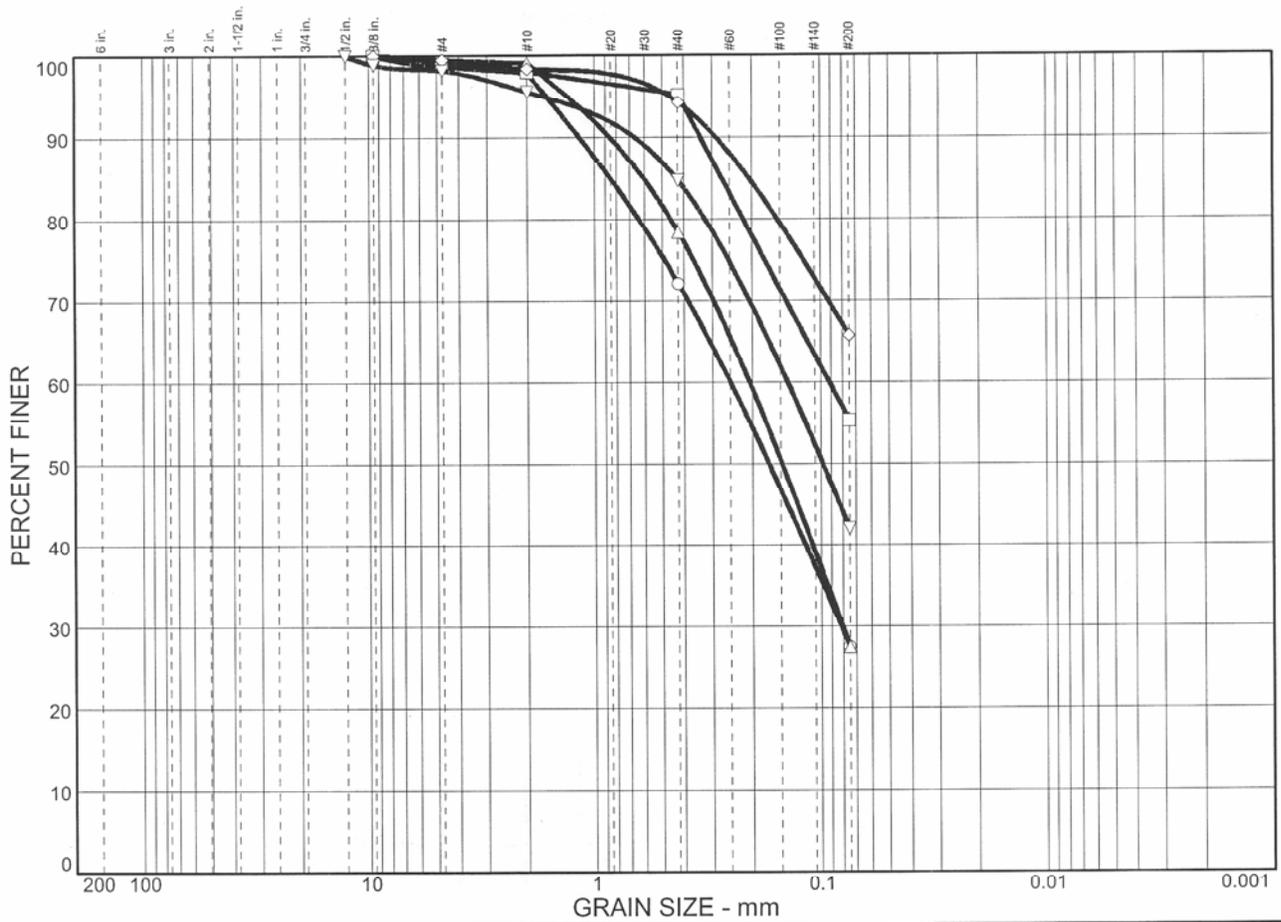
SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	AASHTO
●	MP 240-266	B-1/J-1	1-3	17.4	18	29	11	A-6(1)
■	MP 240-266	B-3/J-1	1-3	15.4	21	39	18	A-2-6(0)
▲	MP 240-266	B-4/J-1	1-3	9.8	NP	24	NP	A-2-4(0)
◆	MP 240-266	B-7/J-1	1-3	17.0	17	28	11	A-2-6(0)
▼	MP 240-266	B-8/J-2	3-5	25.7	20	48	28	A-7-6(12)

LIQUID AND PLASTIC LIMITS TEST REPORT
 FEDERAL HIGHWAY ADMINISTRATION
 EASTERN FEDERAL LANDS HIGHWAY DIVISION

Client: FHWA/EFLHD
 Project: Natchez Trace Parkway
 Project No.: PRA-NATR 3D12,E12

Particle Size Distribution Report

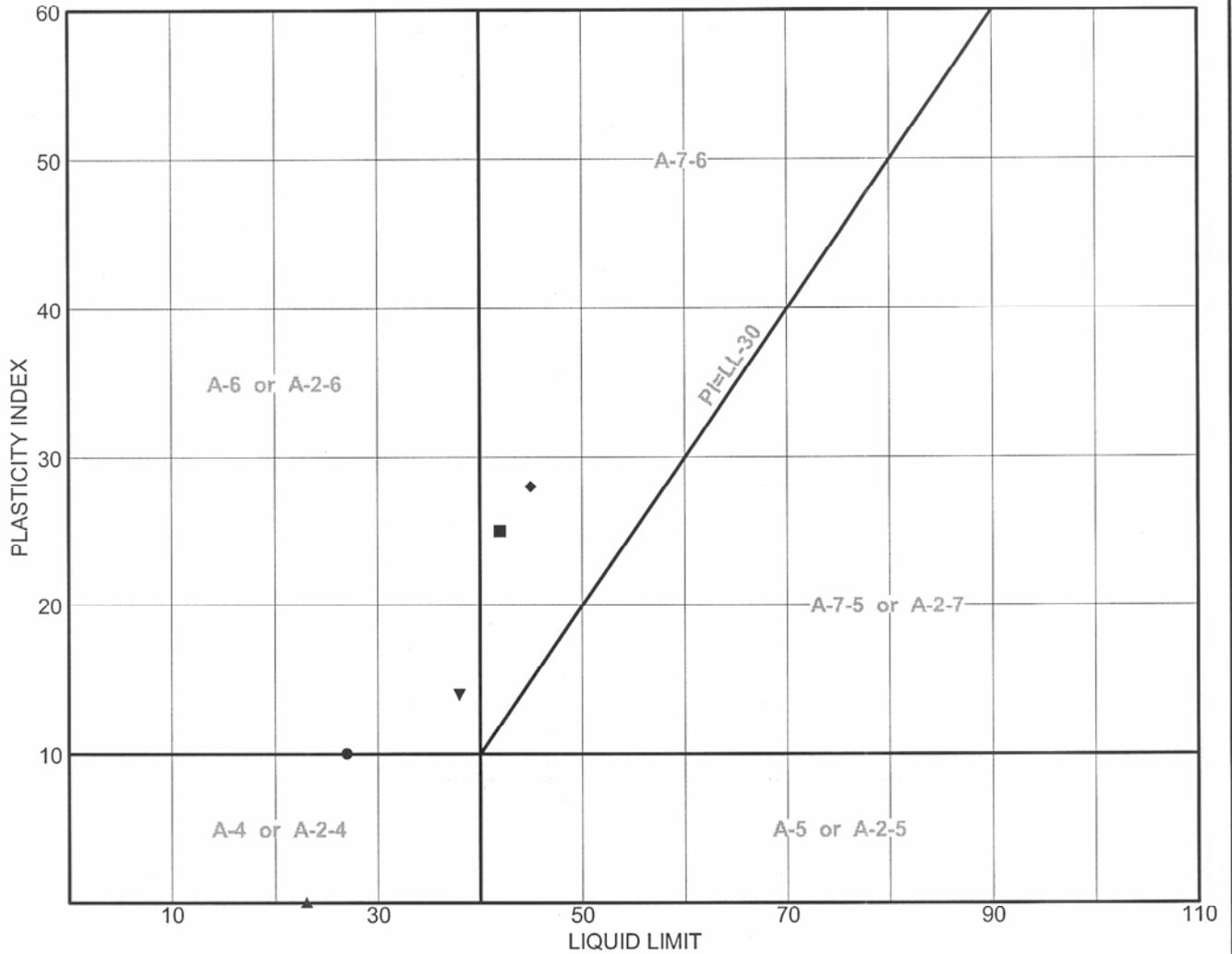


	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	1.3	71.2	27.5	
□	0.0	0.8	43.9	55.3	
△	0.0	0.5	72.0	27.5	
◇	0.0	0.5	33.7	65.8	
▽	0.0	1.8	56.1	42.1	

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	DESCRIPTION	AASHTO
○	MP 240-266	B-10/J-1	1-3	Clayey sand	A-2-4(0)
□	MP 240-266	B-13/J-2	3-5	Sandy lean clay	A-7-6(10)
△	MP 240-266	B-16/J-1	1-3	Silty sand	A-2-4(0)
◇	MP 240-266	B-19/J-2	3-5	Sandy lean clay	A-7-6(16)
▽	MP 240-266	B-28/J-1	1-3	Clayey sand	A-6(2)

Particle Size Distribution Report FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION	Client: FHWA/EFLHD Project: Natchez Trace Parkway Project No.: PRA-NATR 3D12,E12
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LIQUID AND PLASTIC LIMITS TEST REPORT



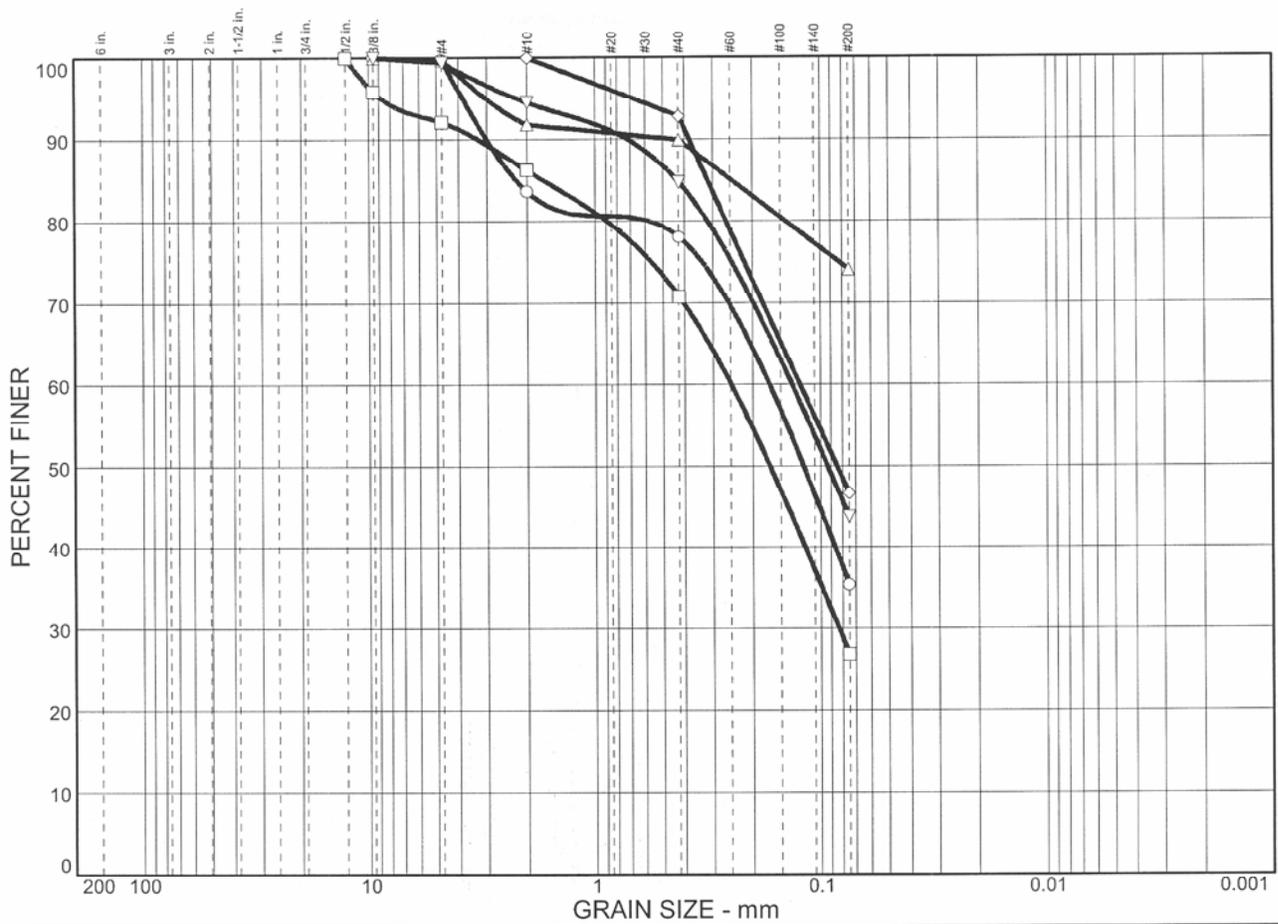
SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	AASHTO
●	MP 240-266	B-10/J-1	1-3	14.6	17	27	10	A-2-4(0)
■	MP 240-266	B-13/J-2	3-5	17.7	17	42	25	A-7-6(10)
▲	MP 240-266	B-16/J-1	1-3	15.9	NP	23	NP	A-2-4(0)
◆	MP 240-266	B-19/J-2	3-5	19.4	17	45	28	A-7-6(16)
▼	MP 240-266	B-28/J-1	1-3	20.2	24	38	14	A-6(2)

LIQUID AND PLASTIC LIMITS TEST REPORT
 FEDERAL HIGHWAY ADMINISTRATION
 EASTERN FEDERAL LANDS HIGHWAY DIVISION

Client: FHWA/EFLHD
Project: Natchez Trace Parkway
Project No.: PRA-NATR 3D12,E12

Particle Size Distribution Report

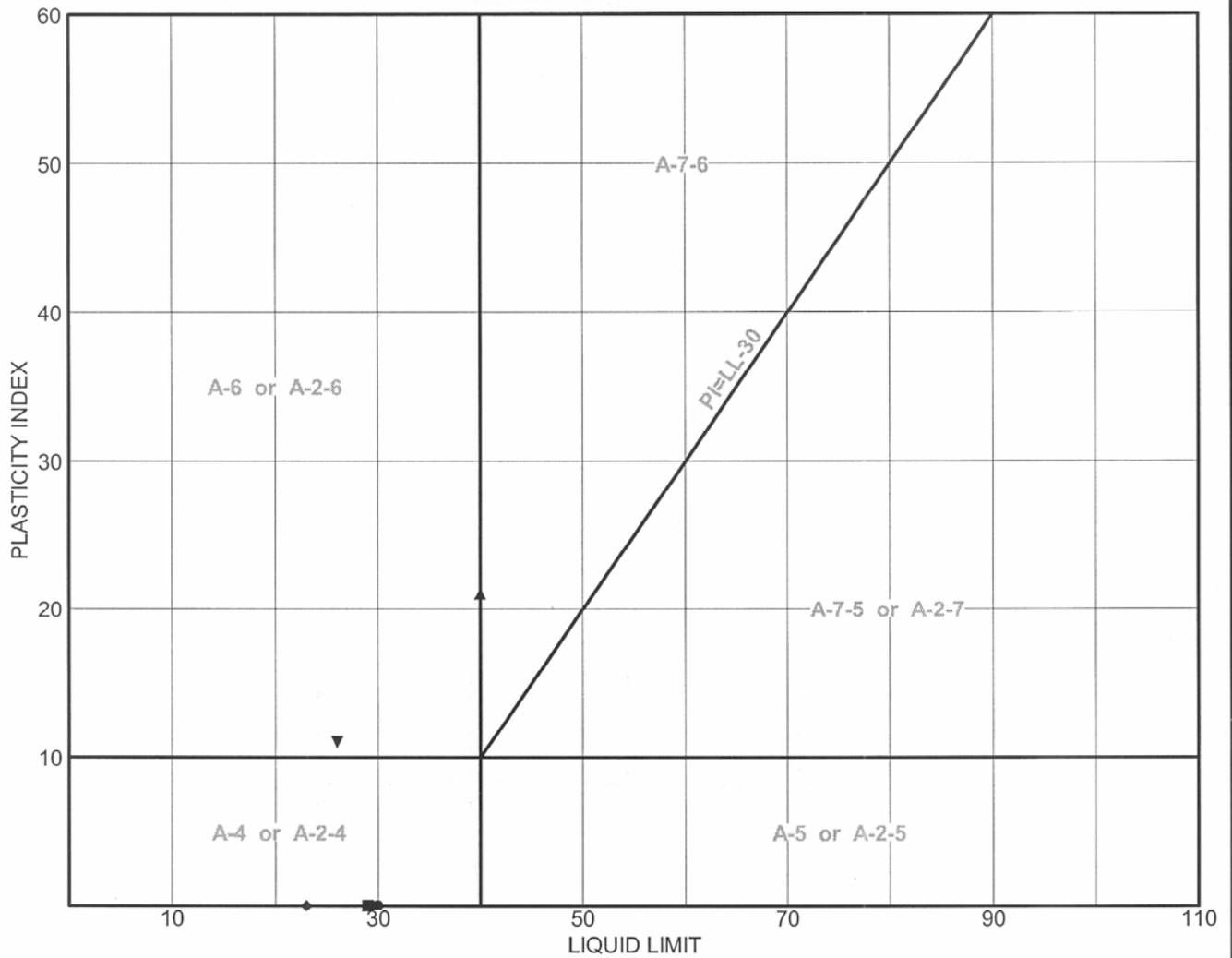


	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.3	64.3	35.4	
□	0.0	7.9	65.3	26.8	
△	0.0	0.3	25.6	74.1	
◇	0.0	0.0	53.3	46.7	
▽	0.0	0.6	55.6	43.8	

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	DESCRIPTION	AASHTO
○	MP 240-266	B-32/J-1	1-3	Silty sand	A-2-4(0)
□	MP 240-266	B-37/J-1	1-3	Silty sand	A-2-4(0)
△	MP 240-266	B-39/J-2	1-3	Lean clay with sand	A-6(14)
◇	MP 240-266	B-41/J-1	3-5	Silty sand	A-4(0)
▽	MP 240-266	B-45/J-1	1-3	Clayey sand	A-6(1)

Particle Size Distribution Report FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION	Client: FHWA/EFLHD Project: Natchez Trace Parkway Project No.: PRA-NATR 3D12,E12
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LIQUID AND PLASTIC LIMITS TEST REPORT

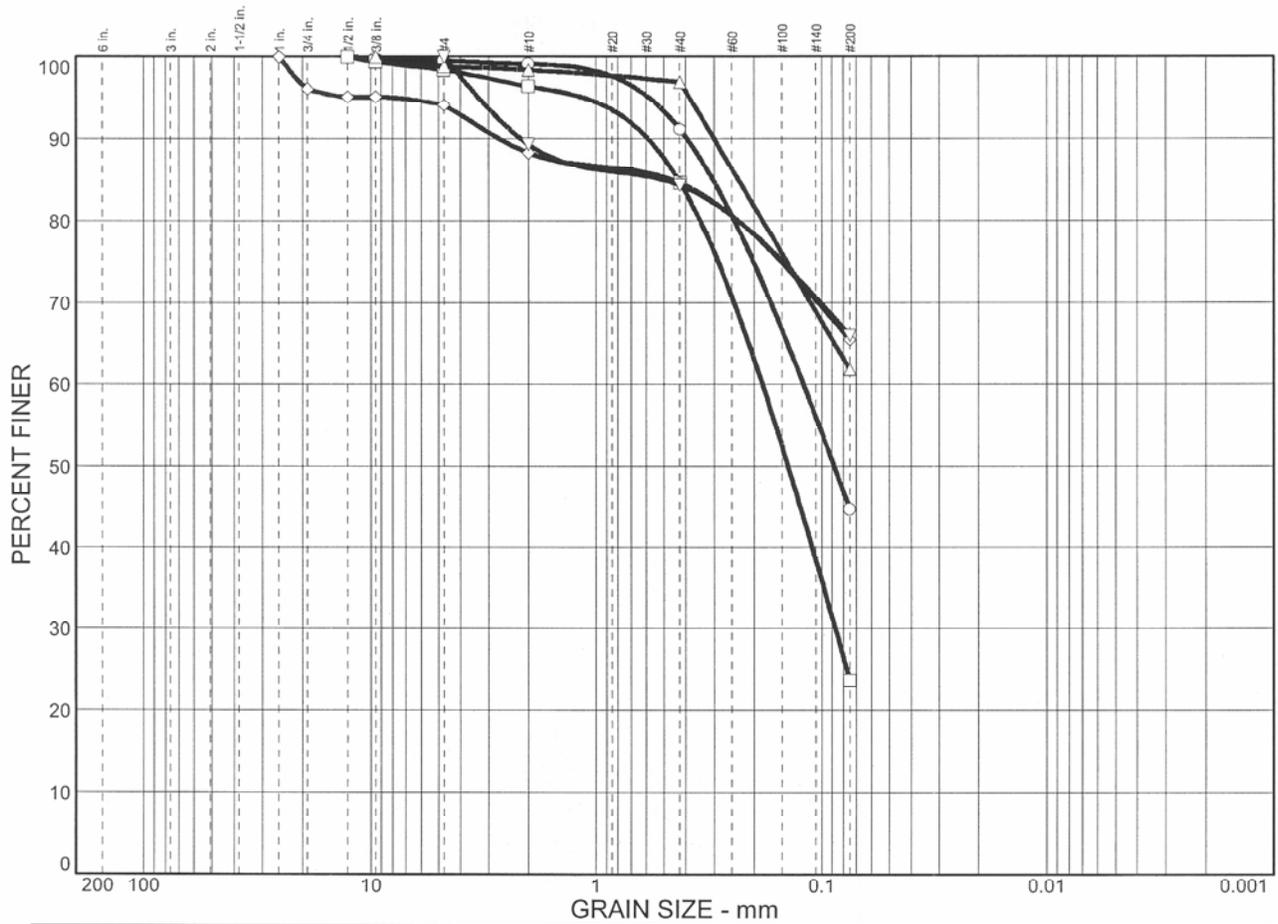


SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	AASHTO
●	MP 240-266	B-32/J-1	1-3	22.6	NP	30	NP	A-2-4(0)
■	MP 240-266	B-37/J-1	1-3	22.6	NP	29	NP	A-2-4(0)
▲	MP 240-266	B-39/J-2	1-3	20.3	19	40	21	A-6(14)
◆	MP 240-266	B-41/J-1	3-5	13.5	NP	23	NP	A-4(0)
▼	MP 240-266	B-45/J-1	1-3	13.1	15	26	11	A-6(1)

LIQUID AND PLASTIC LIMITS TEST REPORT
 FEDERAL HIGHWAY ADMINISTRATION
 EASTERN FEDERAL LANDS HIGHWAY DIVISION

Client: FHWA/EFLHD
Project: Natchez Trace Parkway
Project No.: PRA-NATR 3D12,E12

Particle Size Distribution Report

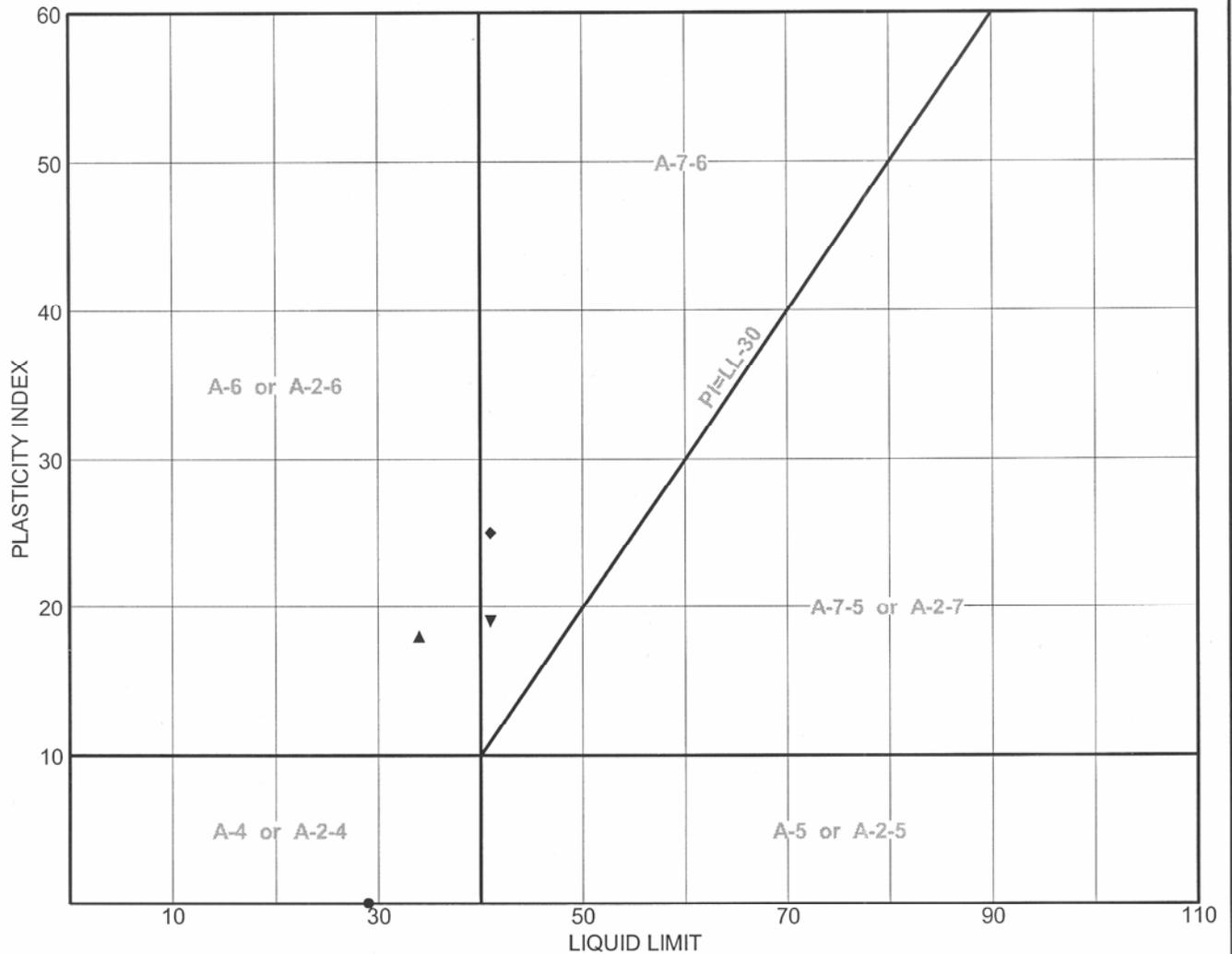


	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.5	54.8	44.7	
□	0.0	1.6	74.8	23.6	
△	0.0	1.2	37.0	61.8	
◇	0.0	5.9	28.6	65.5	
▽	0.0	0.0	34.0	66.0	

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	DESCRIPTION	AASHTO
○	MP 240-266	B-50/J-1	1-3	Silty sand	A-4(0)
□	MP 240-266	B-55/J-1	1-3	Silty sand	A-2-4(0)
△	MP 240-266	B-57/J-2	1-3	Sandy lean clay	A-6(8)
◇	MP 240-266	B-63/J-1	3-5	Sandy lean clay	A-7-6(14)
▽	MP 240-266	B-63/J-2	1-3	Sandy lean clay	A-7-6(11)

Particle Size Distribution Report FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION	Client: FHWA/EFLHD Project: Natchez Trace Parkway Project No.: PRA-NATR 3D12,E12
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LIQUID AND PLASTIC LIMITS TEST REPORT



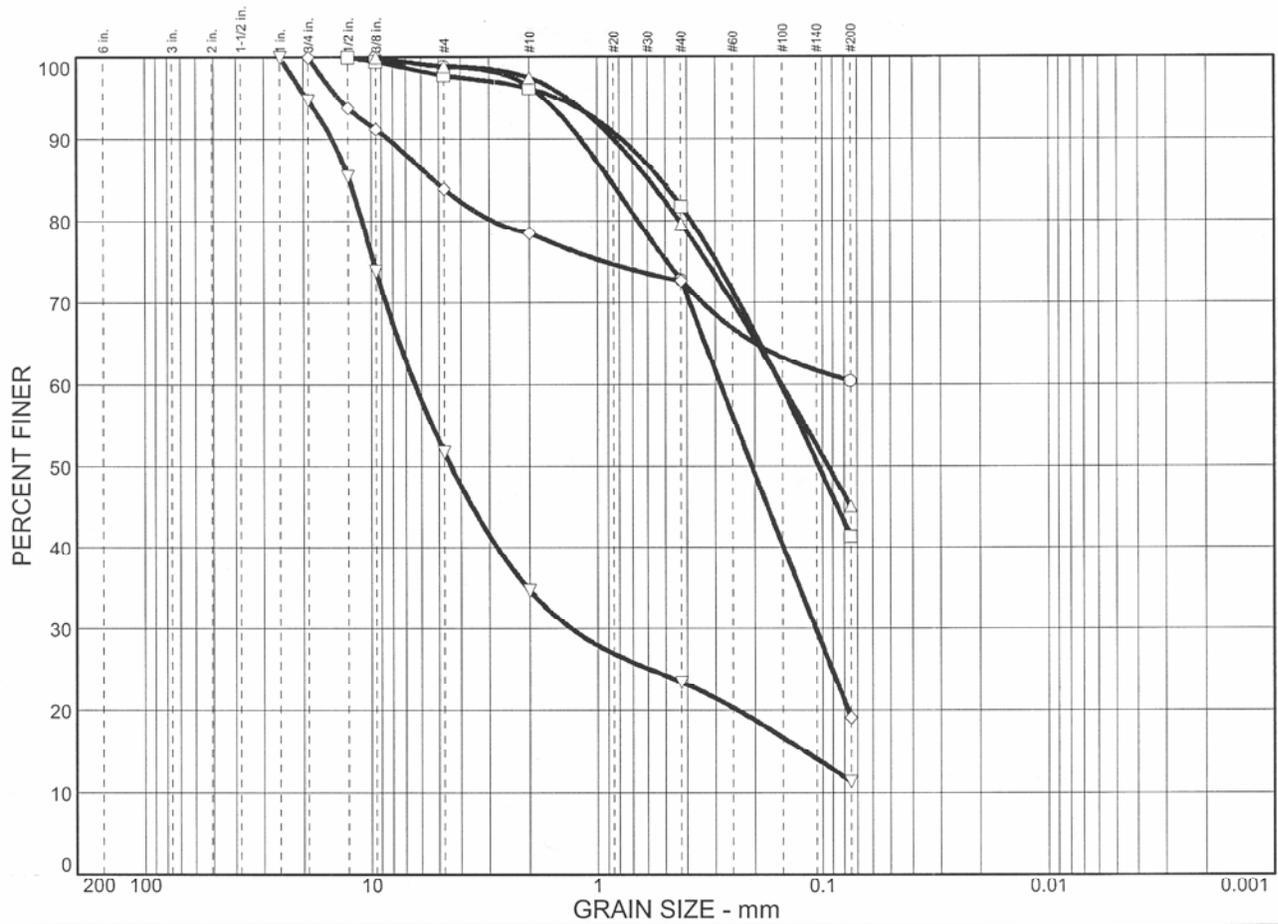
SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	AASHTO
●	MP 240-266	B-50/J-1	1-3	12.8	NP	29	NP	A-4(0)
■	MP 240-266	B-55/J-1	1-3	12.1	NP	NV	NP	A-2-4(0)
▲	MP 240-266	B-57/J-2	1-3	15.9	16	34	18	A-6(8)
◆	MP 240-266	B-63/J-1	3-5	19.0	16	41	25	A-7-6(14)
▼	MP 240-266	B-63/J-2	1-3	19.0	22	41	19	A-7-6(11)

LIQUID AND PLASTIC LIMITS TEST REPORT
 FEDERAL HIGHWAY ADMINISTRATION
 EASTERN FEDERAL LANDS HIGHWAY DIVISION

Client: FHWA/EFLHD
Project: Natchez Trace Parkway
Project No.: PRA-NATR 3D12,E12

Particle Size Distribution Report

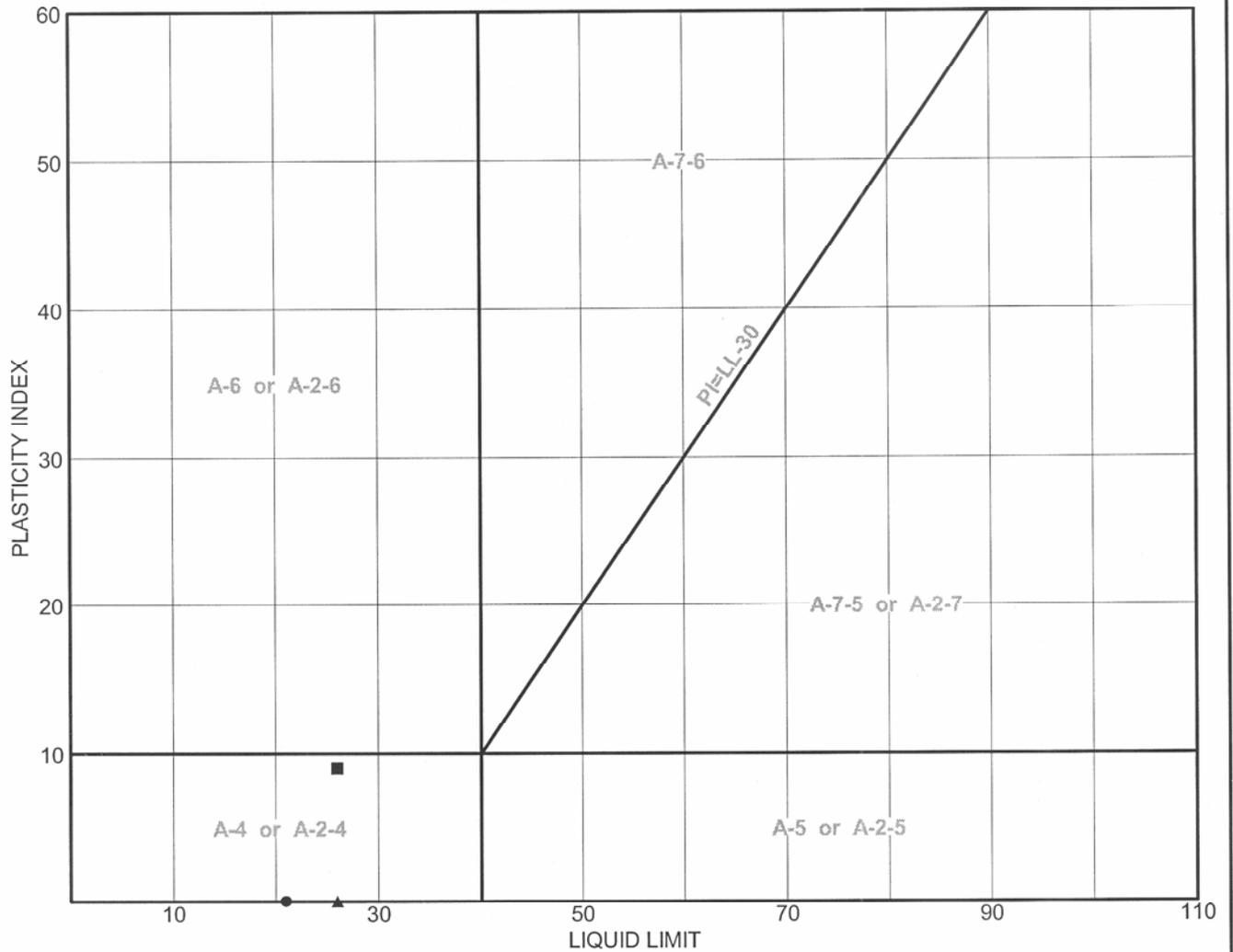


	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	1.1	38.5	60.4	
□	0.0	2.2	56.4	41.4	
△	0.0	1.1	53.8	45.1	
◇	0.0	16.1	64.8	19.1	
▽	0.0	48.3	40.3	11.4	

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	DESCRIPTION	AASHTO
○	MP 240-266	B-67/J-1	1-3	Sandy silt	A-4(0)
□	MP 240-266	B-73/J-1	1-3	Clayey sand	A-4(1)
△	MP 240-266	B-73/J-2	3-5	Silty sand	A-4(0)
◇	MP 240-266	B-74/J-1	1-3	Silty sand with gravel	A-2-4(0)
▽	MP 240-266	B-75/J-1	J-1	Poorly graded gravel with silt and sand	A-1-a

Particle Size Distribution Report FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION	Client: FHWA/EFLHD Project: Natchez Trace Parkway Project No.: PRA-NATR 3D12,E12
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LIQUID AND PLASTIC LIMITS TEST REPORT



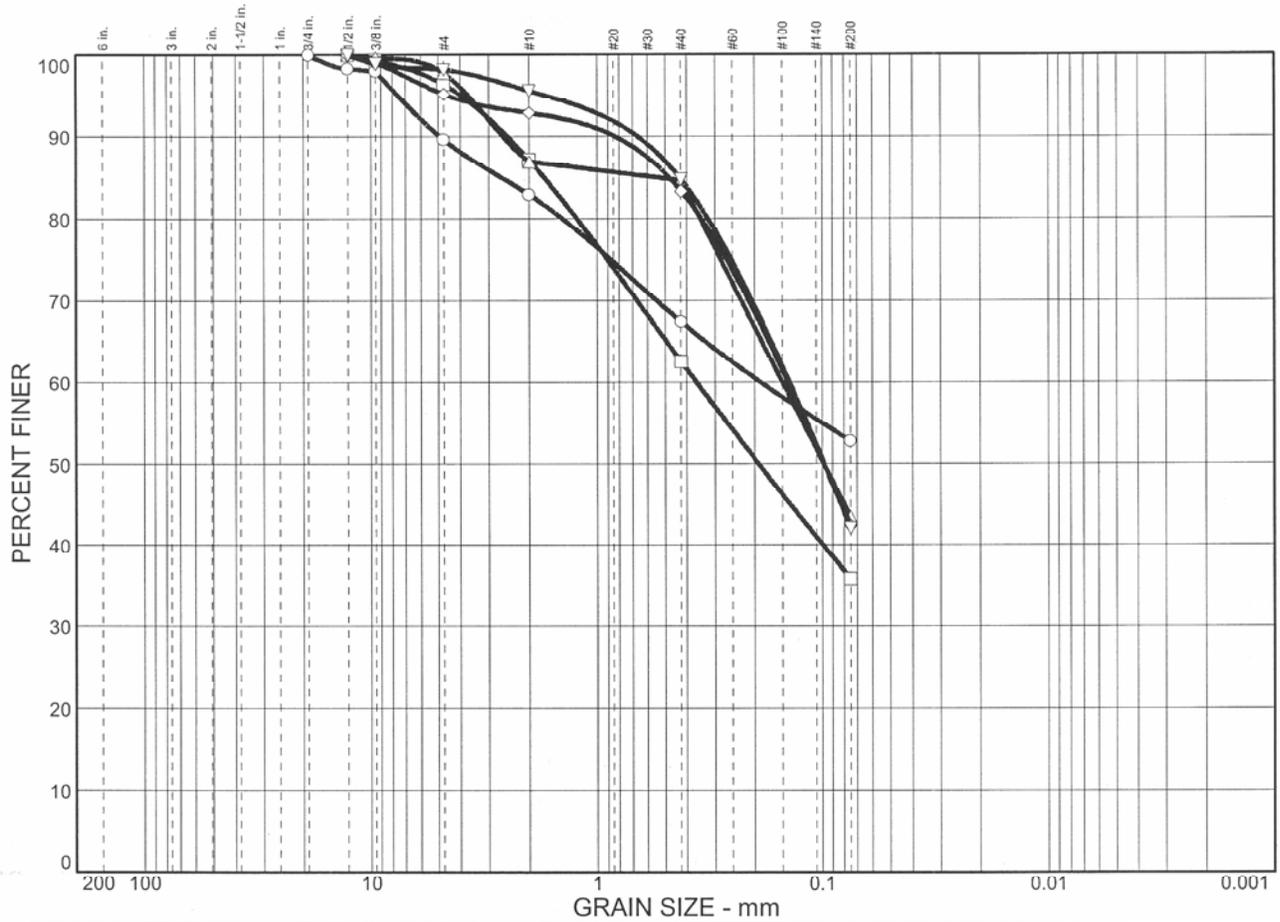
SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	AASHTO
●	MP 240-266	B-67/J-1	1-3	16.0	NP	21	NP	A-4(0)
■	MP 240-266	B-73/J-1	1-3	14.9	17	26	9	A-4(1)
▲	MP 240-266	B-73/J-2	3-5	13.3	NP	26	NP	A-4(0)
◆	MP 240-266	B-74/J-1	1-3	10.9	NP	NV	NP	A-2-4(0)
▼	MP 240-266	B-75/J-1	J-1	8.8	NP	NV	NP	A-1-a

LIQUID AND PLASTIC LIMITS TEST REPORT
 FEDERAL HIGHWAY ADMINISTRATION
 EASTERN FEDERAL LANDS HIGHWAY DIVISION

Client: FHWA/EFLHD
Project: Natchez Trace Parkway
Project No.: PRA-NATR 3D12.E12

Particle Size Distribution Report



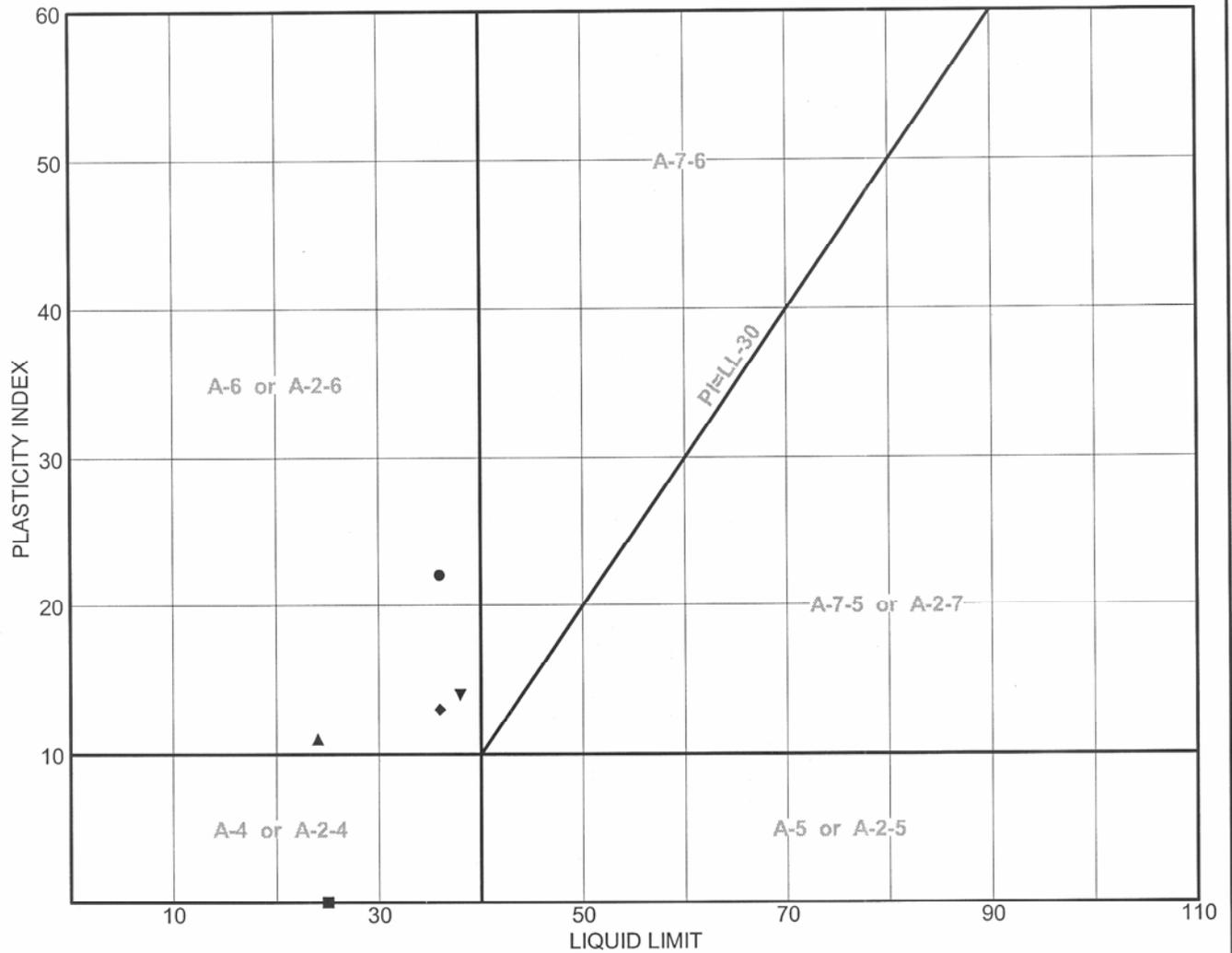
	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	10.4	36.9	52.7	
□	0.0	3.6	60.6	35.8	
△	0.0	2.2	54.3	43.5	
◇	0.0	4.8	52.8	42.4	
▽	0.0	1.8	56.1	42.1	

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	DESCRIPTION	AASHTO
○	MP 240-266	B-76/J-2	3-5	Sandy lean clay	A-6(8)
□	MP 240-266	B-78/J-1	1-3	Silty sand	A-4(0)
△	MP 240-266	B-80/J-2	3-5	Clayey sand	A-6(1)
◇	MP 240-266	B-44/J-1	1-3	Clayey sand	A-6(2)
▽	MP 240-266	B-66/J-1	1-3	Clayey sand	A-6(2)

Particle Size Distribution Report
 FEDERAL HIGHWAY ADMINISTRATION
 EASTERN FEDERAL LANDS HIGHWAY DIVISION

Client: FHWA/EFLHD
Project: Natchez Trace Parkway
Project No.: PRA-NATR 3D12,E12

LIQUID AND PLASTIC LIMITS TEST REPORT



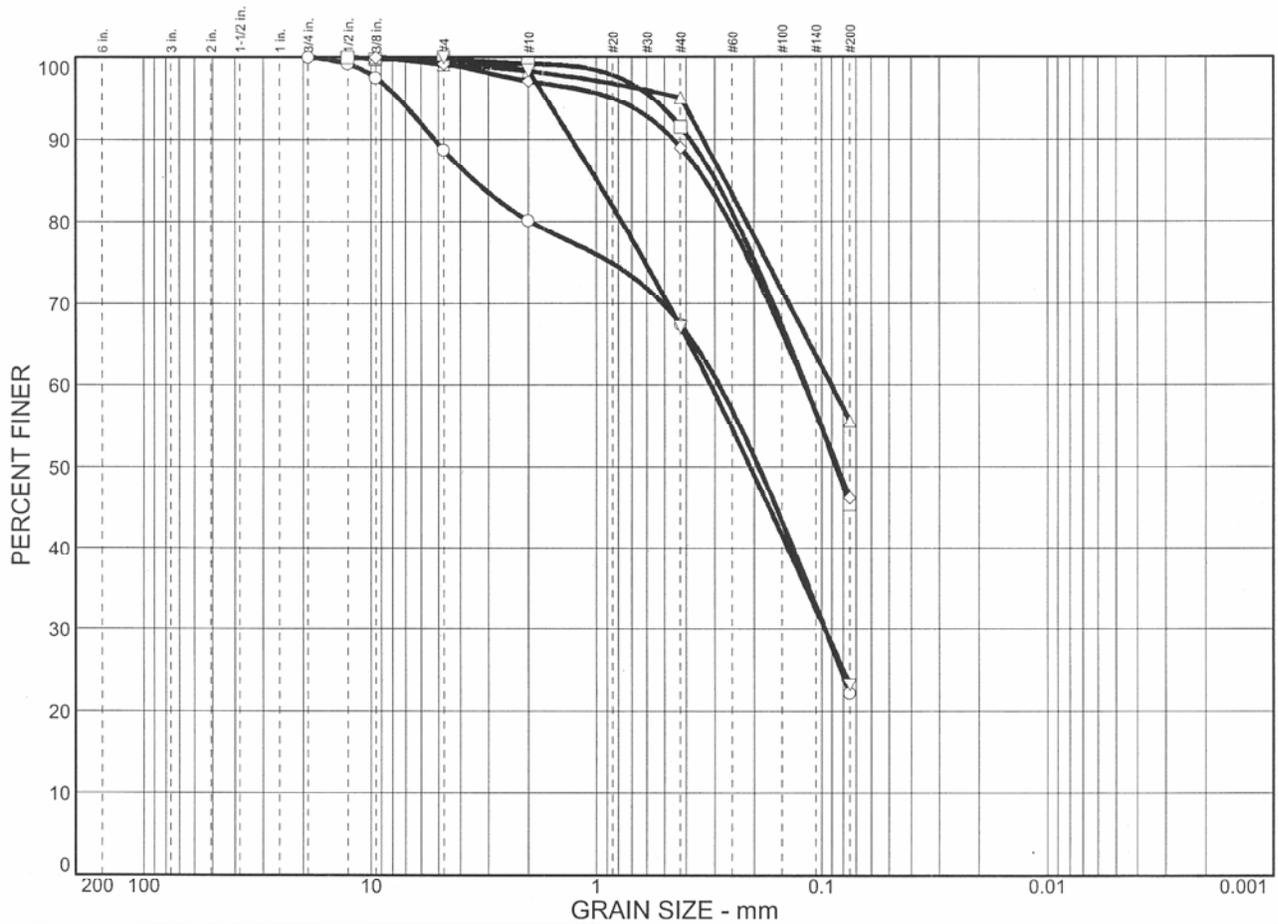
SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	AASHTO
●	MP 240-266	B-76/J-2	3-5	12.6	14	36	22	A-6(8)
■	MP 240-266	B-78/J-1	1-3	14.4	NP	25	NP	A-4(0)
▲	MP 240-266	B-80/J-2	3-5	15.1	13	24	11	A-6(1)
◆	MP 240-266	B-44/J-1	1-3	15.2	23	36	13	A-6(2)
▼	MP 240-266	B-66/J-1	1-3	20.2	24	38	14	A-6(2)

LIQUID AND PLASTIC LIMITS TEST REPORT
 FEDERAL HIGHWAY ADMINISTRATION
 EASTERN FEDERAL LANDS HIGHWAY DIVISION

Client: FHWA/EFLHD
 Project: Natchez Trace Parkway
 Project No.: PRA-NATR 3D12,E12

Particle Size Distribution Report



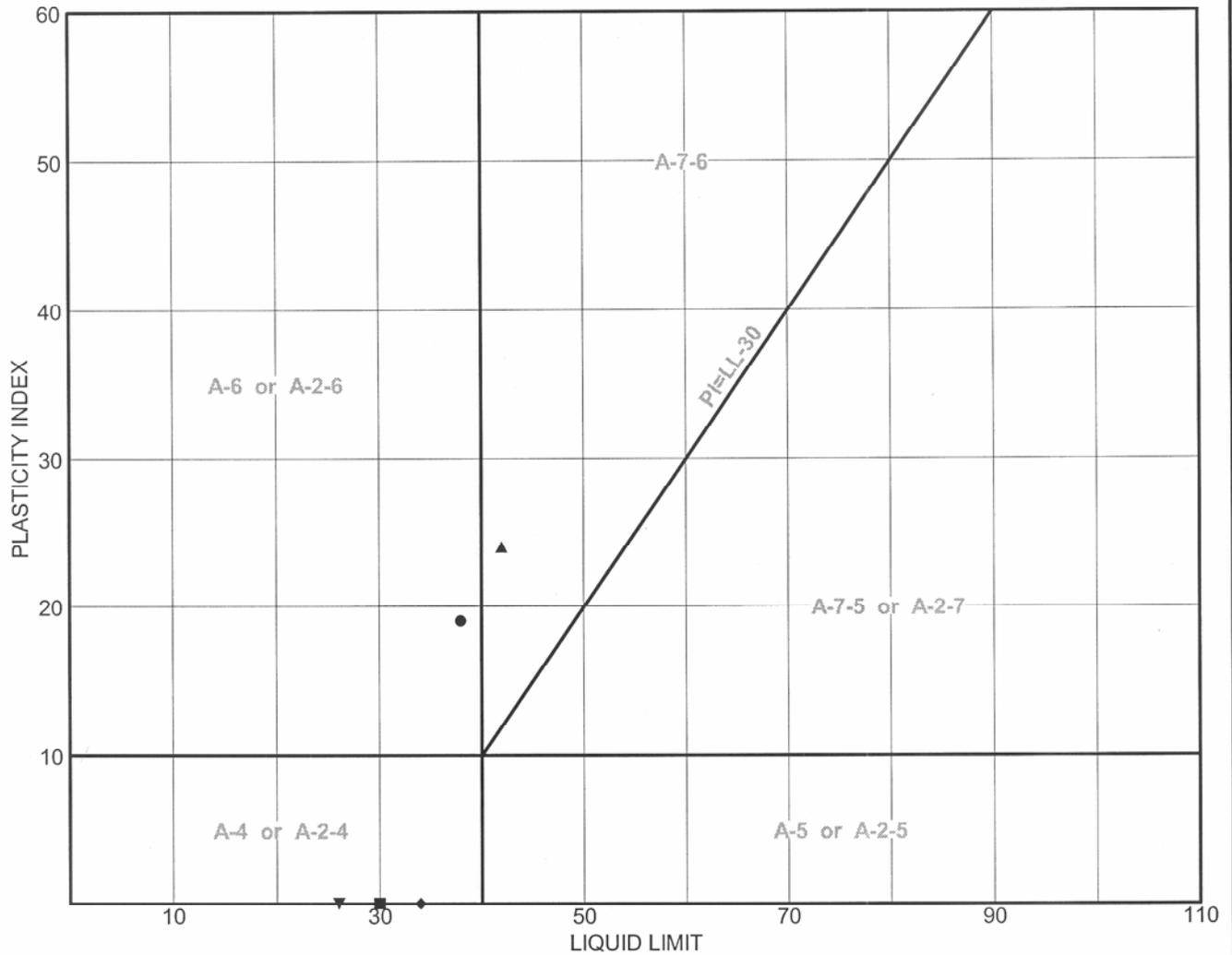
	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	11.3	66.6	22.1	
□	0.0	0.3	54.3	45.4	
△	0.0	0.9	43.5	55.6	
◇	0.0	0.8	53.0	46.2	
▽	0.0	0.0	76.8	23.2	

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	DESCRIPTION	AASHTO
○	MP 241	B-1/J-1	1-3	Clayey sand	A-2-6(1)
□	MP 241	B-1/J-3	6-8	Silty sand	A-4(0)
△	MP 241	B-1/J-5	10-12	Sandy lean clay	A-7-6(10)
◇	MP 241	B-2/J-1	1-3	Silty sand	A-4(0)
▽	MP 241	B-2/J-3	6-8	Silty sand	A-2-4(0)

Particle Size Distribution Report
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Client: FHWA/EFLHD
Project: Natchez Trace Parkway
Project No.: PRA-NATR 3D12,E12

LIQUID AND PLASTIC LIMITS TEST REPORT

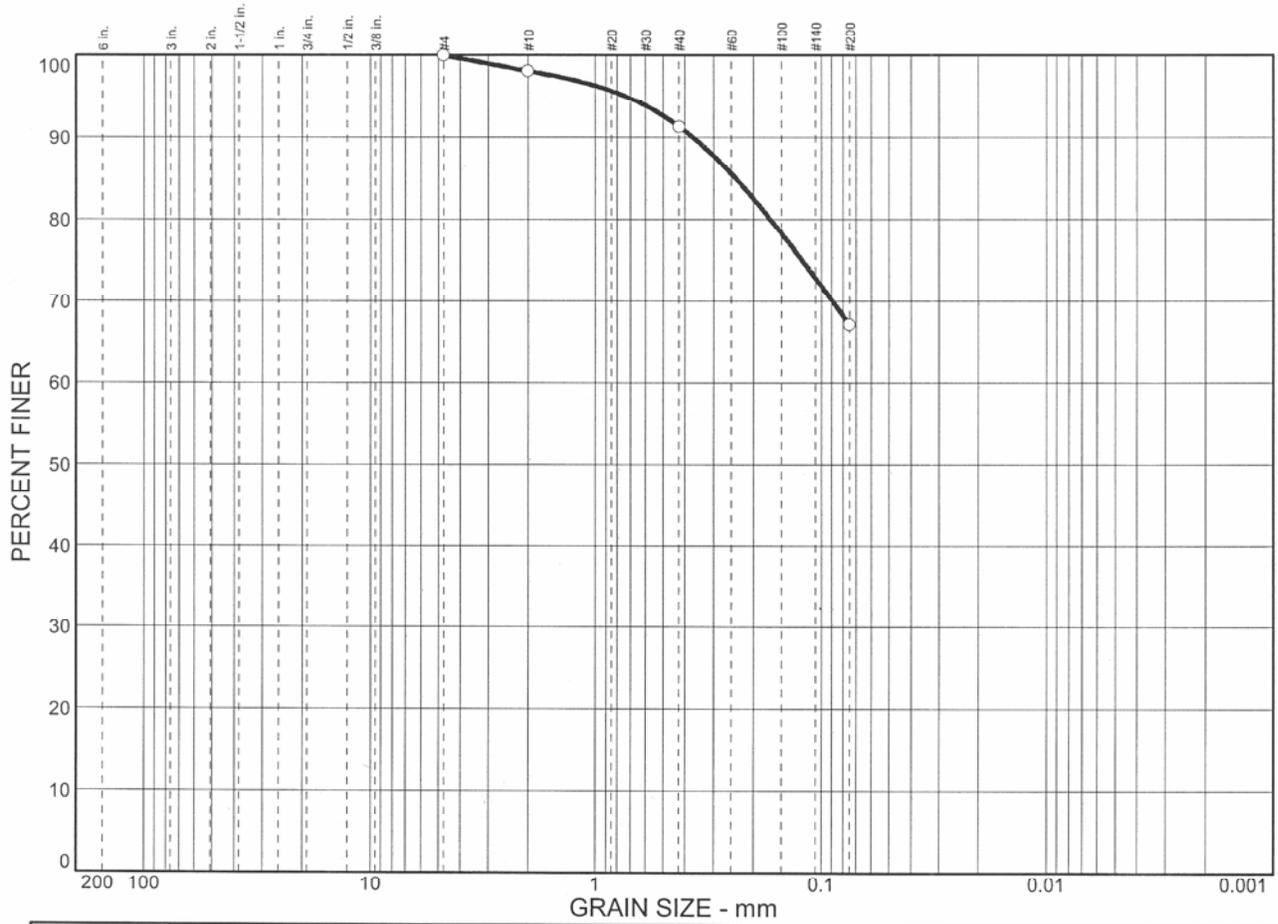


SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	AASHTO
●	MP 241	B-1/J-1	1-3	11.4	19	38	19	A-2-6(1)
■	MP 241	B-1/J-3	6-8	16.4	NP	30	NP	A-4(0)
▲	MP 241	B-1/J-5	10-12	30.7	18	42	24	A-7-6(10)
◆	MP 241	B-2/J-1	1-3	12.6	NP	34	NP	A-4(0)
▼	MP 241	B-2/J-3	6-8	14.3	NP	26	NP	A-2-4(0)

LIQUID AND PLASTIC LIMITS TEST REPORT
 FEDERAL HIGHWAY ADMINISTRATION
 EASTERN FEDERAL LANDS HIGHWAY DIVISION

Client: FHWA/EFLHD
Project: Natchez Trace Parkway
Project No.: PRA-NATR 3D12,E12

Particle Size Distribution Report

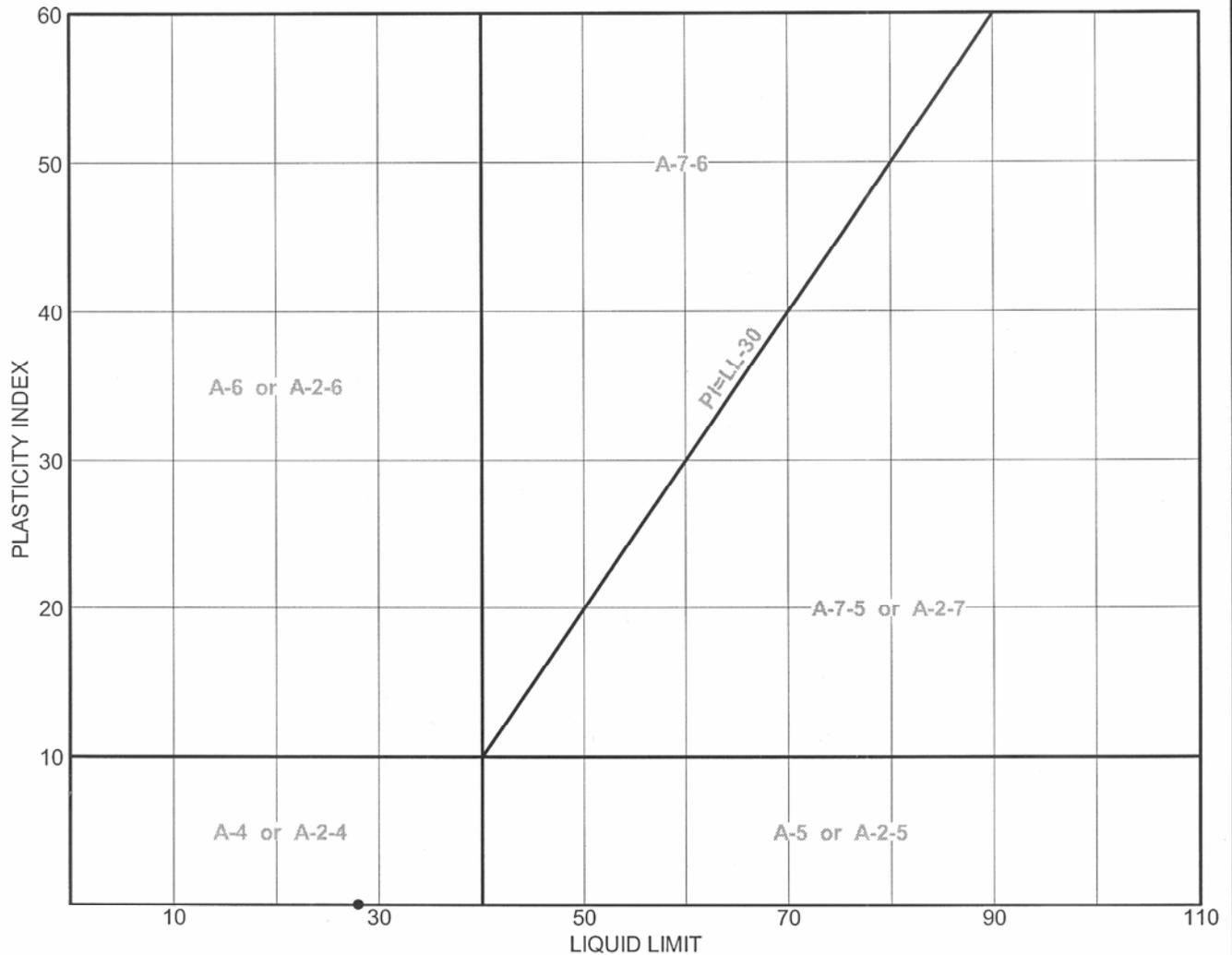


	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	32.9	67.1	

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	DESCRIPTION	AASHTO
○	MP 241	B-2/J-6	14-16	Sandy silt	A-4(0)

Particle Size Distribution Report FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION	Client: FHWA/EFLHD Project: Natchez Trace Parkway Project No.: PRA-NATR 3D12,E12
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LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	AASHTO
•	MP 241	B-2/J-6	14-16	35.5	NP	28	NP	A-4(0)

LIQUID AND PLASTIC LIMITS TEST REPORT
 FEDERAL HIGHWAY ADMINISTRATION
 EASTERN FEDERAL LANDS HIGHWAY DIVISION

Client: FHWA/EFLHD
Project: Natchez Trace Parkway
Project No.: PRA-NATR 3D12,E12

APPENDIX D – Pavement Design Analysis and Project Traffic Data

1993 AASHTO Pavement Design

DARWin Pavement Design and Analysis System

A Proprietary AASHTOWare
Computer Software Product

Flexible Structural Design Module

PRA-NATR 3D30, E12
Natchez Trace Parkway
From MP 239.3 to MP 247
Spot Reconstruction

Flexible Structural Design

18-kip ESALs Over Initial Performance Period	713,996
Initial Serviceability	4.2
Terminal Serviceability	2.5
Reliability Level	85 %
Overall Standard Deviation	0.45
Roadbed Soil Resilient Modulus	5,716 psi
Stage Construction	1
Calculated Design Structural Number	3.50 in

Rigorous ESAL Calculation

Performance Period (years)	20
Two-Way Traffic (ADT)	3,657
Number of Lanes in Design Direction	1
Percent of All Trucks in Design Lane	100 %
Percent Trucks in Design Direction	50 %

Vehicle Class	Percent of ADT	Annual % Growth	Average Initial Truck Factor (ESALs/Truck)	Annual % Growth in Truck Factor	Accumulated 18-kip ESALs over Performance Period
2	88.2	1.83	0.0007	0	9,680
3	10.77	1.83	0.3	0	506,599
4	0.38	1.83	1.85	0	110,226
5	0.37	1.83	0.6	0	34,808
6	0.28	1.83	1.2	0	52,683
Total	100	-	-	-	713,996

Growth Simple

Total Calculated Cumulative ESALs 713,996

Specified Layer Design

Layer	Material Description	Struct Coef. (Ai)	Drain Coef. (Mi)	Thickness (Di)(in)	Width (ft)	Calculated SN (in)
1	AC Surface Course	0.44	1	1.5	12	0.66

<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>
2	AC Base Course	0.44	1	6.5	12	2.86
Total	-	-	-	8.00	-	3.52

1993 AASHTO Pavement Design

DARWin Pavement Design and Analysis System

A Proprietary AASHTOWare Computer Software Product

Overlay Design Module

PRA-NATR 3D30, E12
Natchez Trace Parkway
From MP 239.3 to MP 247
Overlay Design

AC Overlay of AC Pavement

Structural Number for Future Traffic

3.5 in

<u>Design Method</u>	<u>Effective Existing Structural Number (in)</u>	<u>Overlay Structural Number (in)</u>
Component Analysis	-	-
Remaining Life	-	-
Non-Destructive Testing	3.06	0.44

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	AC Overlay	0.44	1	1.5	12	0.66
Total	-	-	-	1.50	-	0.66

1993 AASHTO Pavement Design

DARWin Pavement Design and Analysis System

A Proprietary AASHTOWare
Computer Software Product

Flexible Structural Design Module

PRA-NATR 3D30, E12
Natchez Trace Parkway
From MP 247 to MP 251.5
Spot Reconstruction

Flexible Structural Design

18-kip ESALs Over Initial Performance Period	755,870
Initial Serviceability	4.2
Terminal Serviceability	2.5
Reliability Level	85 %
Overall Standard Deviation	0.45
Roadbed Soil Resilient Modulus	4,170 psi
Stage Construction	1
Calculated Design Structural Number	3.97 in

Rigorous ESAL Calculation

Performance Period (years)	20
Two-Way Traffic (ADT)	4,506
Number of Lanes in Design Direction	1
Percent of All Trucks in Design Lane	100 %
Percent Trucks in Design Direction	50 %

Vehicle Class	Percent of ADT	Annual % Growth	Average Initial Truck Factor (ESALs/Truck)	Annual % Growth in Truck Factor	Accumulated 18-kip ESALs over Performance Period
2	88.2	0.09	0.0007	0	10,248
3	10.77	0.09	0.3	0	536,310
4	0.38	0.09	1.85	0	116,690
5	0.37	0.09	0.6	0	36,850
6	0.28	0.09	1.2	0	55,772
Total	100	-	-	-	755,870

Growth Simple

Total Calculated Cumulative ESALs 755,870

Specified Layer Design

Layer	Material Description	Struct. Coef. (Ai)	Drain. Coef. (Mi)	Thickness (Di)(in)	Width (ft)	Calculated SN (in)
1	AC Surface Course	0.44	1	2	12	0.88

<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>
2	AC base Course	0.44	1	6	12	2.64
3	Aggregate Base	0.12	0.8	6	12	0.58
Total	-	-	-	14.00	-	4.10

*Note: This value is not represented by the inputs or an error occurred in calculation.

1993 AASHTO Pavement Design

DARWin Pavement Design and Analysis System

A Proprietary AASHTOWare
Computer Software Product

Flexible Structural Design Module

PRA-NATR 3D30, E12
Natchez Trace Parkway
From MP 251.5 to MP 259.9
Spot Reconstruction

Flexible Structural Design

18-kip ESALs Over Initial Performance Period	755,870
Initial Serviceability	4.2
Terminal Serviceability	2.5
Reliability Level	85 %
Overall Standard Deviation	0.45
Roadbed Soil Resilient Modulus	6,608 psi
Stage Construction	1
Calculated Design Structural Number	3.34 in

Rigorous ESAL Calculation

Performance Period (years)	20
Two-Way Traffic (ADT)	4,506
Number of Lanes in Design Direction	1
Percent of All Trucks in Design Lane	100 %
Percent Trucks in Design Direction	50 %

Vehicle Class	Percent of ADT	Annual % Growth	Average Initial Truck Factor (ESALs/Truck)	Annual % Growth in Truck Factor	Accumulated 18-kip ESALs over Performance Period
2	88.2	0.09	0.0007	0	10,248
3	10.77	0.09	0.3	0	536,310
4	0.38	0.09	1.85	0	116,690
5	0.37	0.09	0.6	0	36,850
6	0.28	0.09	1.2	0	55,772
Total	100	-	-	-	755,870

Growth Simple

Total Calculated Cumulative ESALs 755,870

Specified Layer Design

Layer	Material Description	Struct. Coef. (Ai)	Drain. Coef. (Mi)	Thickness (Di)(in)	Width (ft)	Calculated SN (in)
1	AC Surface Course	0.44	1	2	12	0.88

<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>
2	AC Base Course	0.44	1	6	12	2.64
Total	-	-	-	8.00	-	3.52

1993 AASHTO Pavement Design

DARWin Pavement Design and Analysis System

A Proprietary AASHTOWare Computer Software Product

Overlay Design Module

Natchez Trace Parkway
From MP 247 to MP 259.9
Overlay Design

AC Overlay of AC Pavement

Structural Number for Future Traffic

3.46 in

<u>Design Method</u>	<u>Effective Existing Structural Number (in)</u>	<u>Overlay Structural Number (in)</u>
Component Analysis	-	-
Remaining Life	-	-
Non-Destructive Testing	2.74	0.72

Structural Number for Future Traffic

Future 18-kip ESALs Over Design Period	755,870
Initial Serviceability	4.2
Terminal Serviceability	2.5
Reliability Level	85 %
Overall Standard Deviation	0.45
Subgrade Resilient Modulus	6,017 psi

Calculated Structural Number for Future Traffic 3.46 in

Future Rigorous ESAL Calculation

Performance Period (years)	20
Two-Way Traffic (ADT)	4,506
Number of Lanes in Design Direction	1
Percent of All Trucks in Design Lane	100 %
Percent Trucks in Design Direction	50 %

Vehicle Class	Percent of ADT	Annual % Growth	Average Initial Truck Factor (ESALs/Truck)	Annual % Growth in Truck Factor	Accumulated 18-kip ESALs over Performance Period
1	88.2	0.09	0.0007	0	10,248
2	10.77	0.09	0.3	0	536,310
3	0.38	0.09	1.85	0	116,690
4	0.37	0.09	0.6	0	36,850
5	0.28	0.09	1.2	0	55,772
Total	100	-	-	-	755,870

Growth Simple

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	AC Overlay	0.44	1	2	12	0.88
Total	-	-	-	2.00	-	0.88

1993 AASHTO Pavement Design

DARWin Pavement Design and Analysis System

A Proprietary AASHTOWare
Computer Software Product

Flexible Structural Design Module

PRA-NATR 3D30, E12
Natchez Trace Parkway
From MP 259.9 to MP 266.5

Flexible Structural Design

18-kip ESALs Over Initial Performance Period	1,964,575
Initial Serviceability	4.2
Terminal Serviceability	2.5
Reliability Level	85 %
Overall Standard Deviation	0.45
Roadbed Soil Resilient Modulus	6,658 psi
Stage Construction	1
Calculated Design Structural Number	3.89 in

Rigorous ESAL Calculation

Performance Period (years)	20
Two-Way Traffic (ADT)	8,814
Number of Lanes in Design Direction	1
Percent of All Trucks in Design Lane	100 %
Percent Trucks in Design Direction	50 %

Vehicle Class	Percent of ADT	Annual % Growth	Average Initial Truck Factor (ESALs/Truck)	Annual % Growth in Truck Factor	Accumulated 18-kip ESALs over Performance Period
2	88.2	3.58	0.0007	0	26,636
3	10.77	3.58	0.3	0	1,393,919
4	0.38	3.58	1.85	0	303,288
5	0.37	3.58	0.6	0	95,775
6	0.28	3.58	1.2	0	144,957
Total	100	-	-	-	1,964,575

Growth Simple

Total Calculated Cumulative ESALs 1,964,575

Specified Layer Design

Layer	Material Description	Struct. Coef. (Ai)	Drain. Coef. (Mi)	Thickness (Di)(in)	Width (ft)	Calculated SN (in)
1	AC Surface Course	0.44	1	2	12	0.88
2	AC Base Course	0.44	1	6	12	2.64

<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>
3	Aggregate Base	0.12	0.8	6	12	0.58
Total	-	-	-	14.00	-	4.10

1993 AASHTO Pavement Design

DARWin Pavement Design and Analysis System

A Proprietary AASHTOWare Computer Software Product

Overlay Design Module

Natchez Trace Parkway
From MP 259.9 to MP 266.5
Overlay Design

AC Overlay of AC Pavement

Structural Number for Future Traffic

3.89 in

<u>Design Method</u>	<u>Effective Existing Structural Number (in)</u>	<u>Overlay Structural Number (in)</u>
Component Analysis	-	-
Remaining Life	-	-
Non-Destructive Testing	3.03	0.86

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	AC Overlay	0.44	1	2	12	0.88
Total	-	-	-	2.00	-	0.88

Form FHWA-201
(Rev. 11-67)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

Use this form in lieu of transmittal slips within Dept. of Trans. when message comment is to be retained as file material. Do not prepare carbons. Not to be used in lieu of form FHWA-121 for informal correspondence

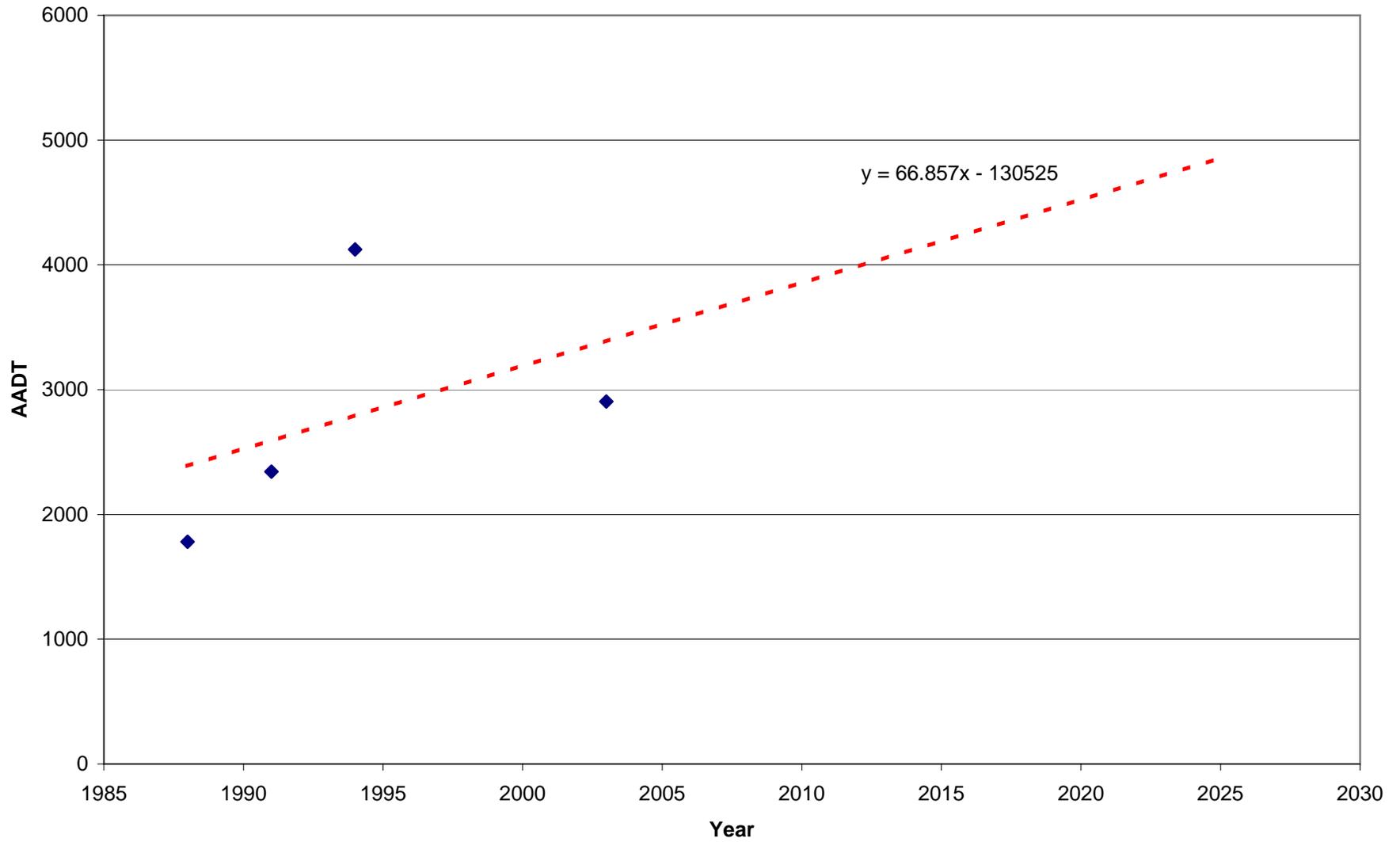
MINUTE - MEMO

Subject:

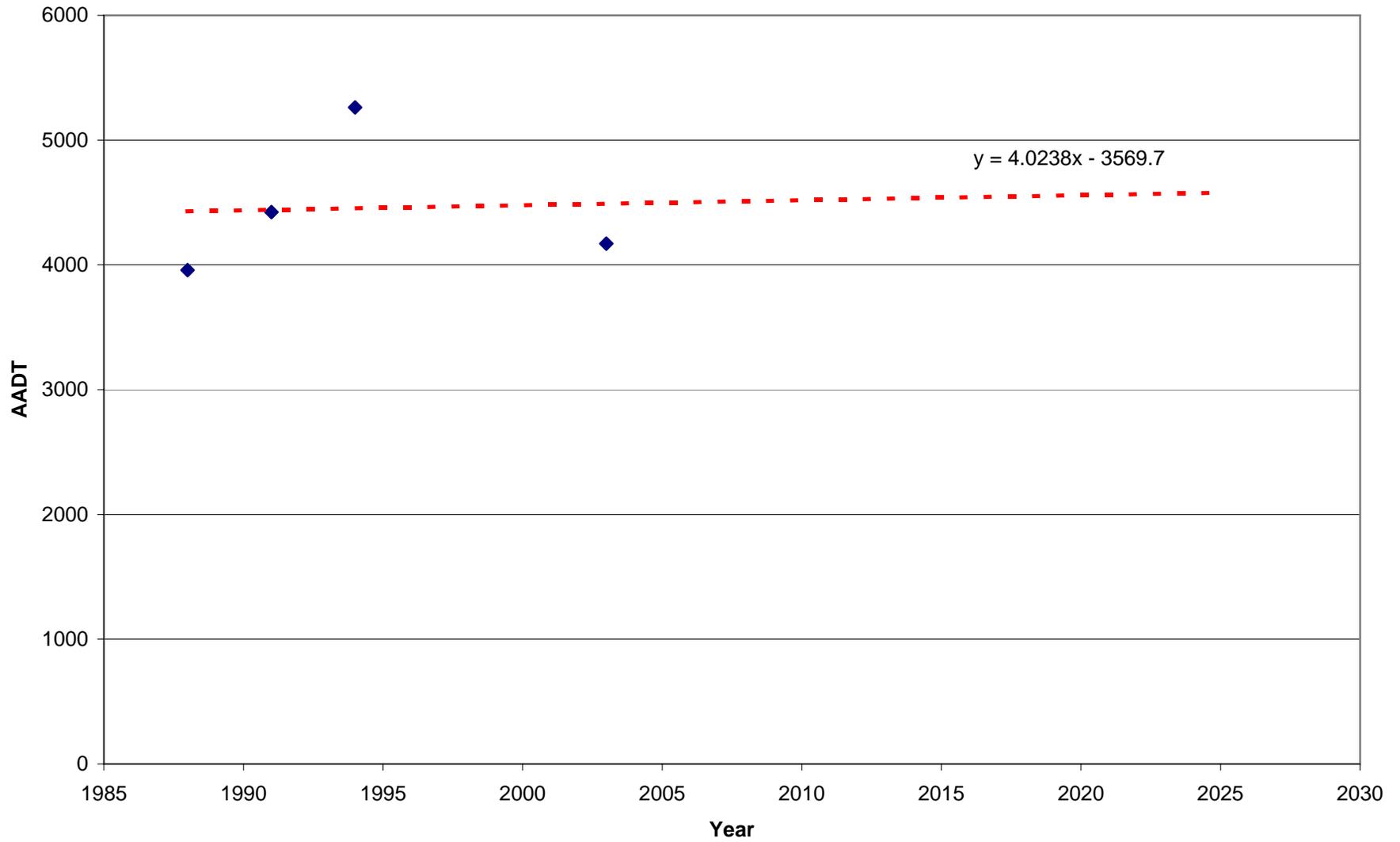
Pavement Design Guidance

TO	MESSAGE/COMMENT	FROM/DATE																				
<p>EFLHD, Geotechnical Section</p>	<p>Upon researching the AASHTO Pavement Design ESAL Factors for buses, it has become apparent to me that the factors shown in the FLH PDDM is outdated. I have looked into some other sources of information and have decided that the following factors should be used for pavement design from now on.</p> <table border="1" data-bbox="355 789 1261 1207"> <thead> <tr> <th>Vehicle Type</th> <th>Load Equivalency Factor</th> </tr> </thead> <tbody> <tr> <td>Passenger Car</td> <td>0.0007</td> </tr> <tr> <td>Recreation Vehicle</td> <td>0.25</td> </tr> <tr> <td>Light Truck</td> <td>0.30</td> </tr> <tr> <td>Heavy Maintenance Truck</td> <td>0.60</td> </tr> <tr> <td>Logging Truck</td> <td>2.30</td> </tr> <tr> <td>Tractor Trailer</td> <td>1.20</td> </tr> <tr> <td>Bus (School)</td> <td>1.20</td> </tr> <tr> <td>Bus (Tour)</td> <td>1.85</td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table> <p>The above data is based on information obtained from various sources including the "Washington Asphalt Pavement Association", Greyhound Bus Company and other sources.</p> <p>This information is provided as a guide and should help us to design pavements with better results until we begin to use the new AASHTO Pavement Design procedures, which will be based on Mechanistic-Empirical methods.</p>	Vehicle Type	Load Equivalency Factor	Passenger Car	0.0007	Recreation Vehicle	0.25	Light Truck	0.30	Heavy Maintenance Truck	0.60	Logging Truck	2.30	Tractor Trailer	1.20	Bus (School)	1.20	Bus (Tour)	1.85			<p>Harold L. Rohde, Division Geotechnical Engineer.</p> <p>September 8, 2003</p>
Vehicle Type	Load Equivalency Factor																					
Passenger Car	0.0007																					
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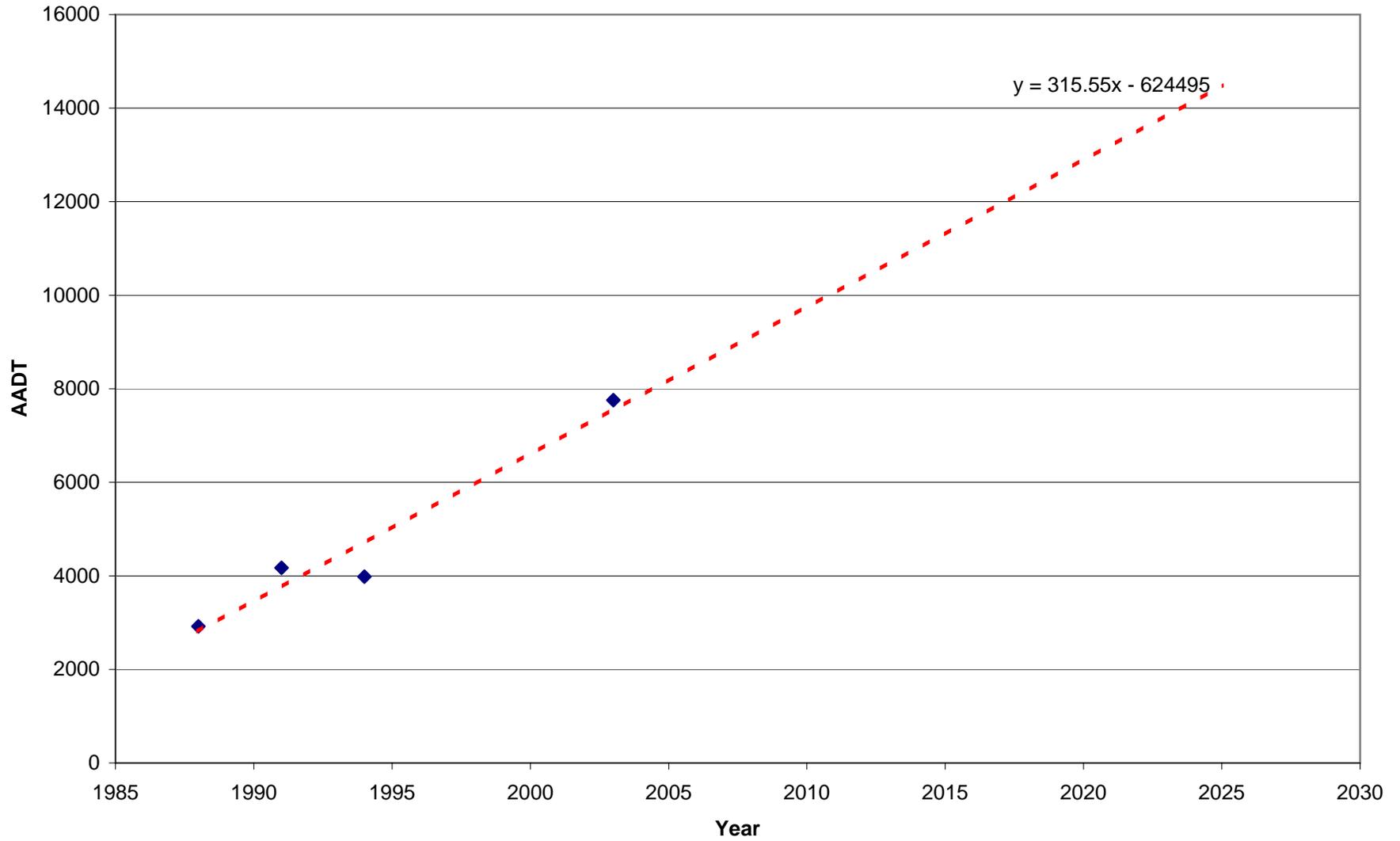
AADT vs. Year for Natchez Trace Parkway MP 239.3 to MP 247



AADT vs. Year from Natchez Trace Parkway MP 247 to MP 259.9



AADT vs. Year for Natchez Trace Parkway MP 259.9 to MP 266.5

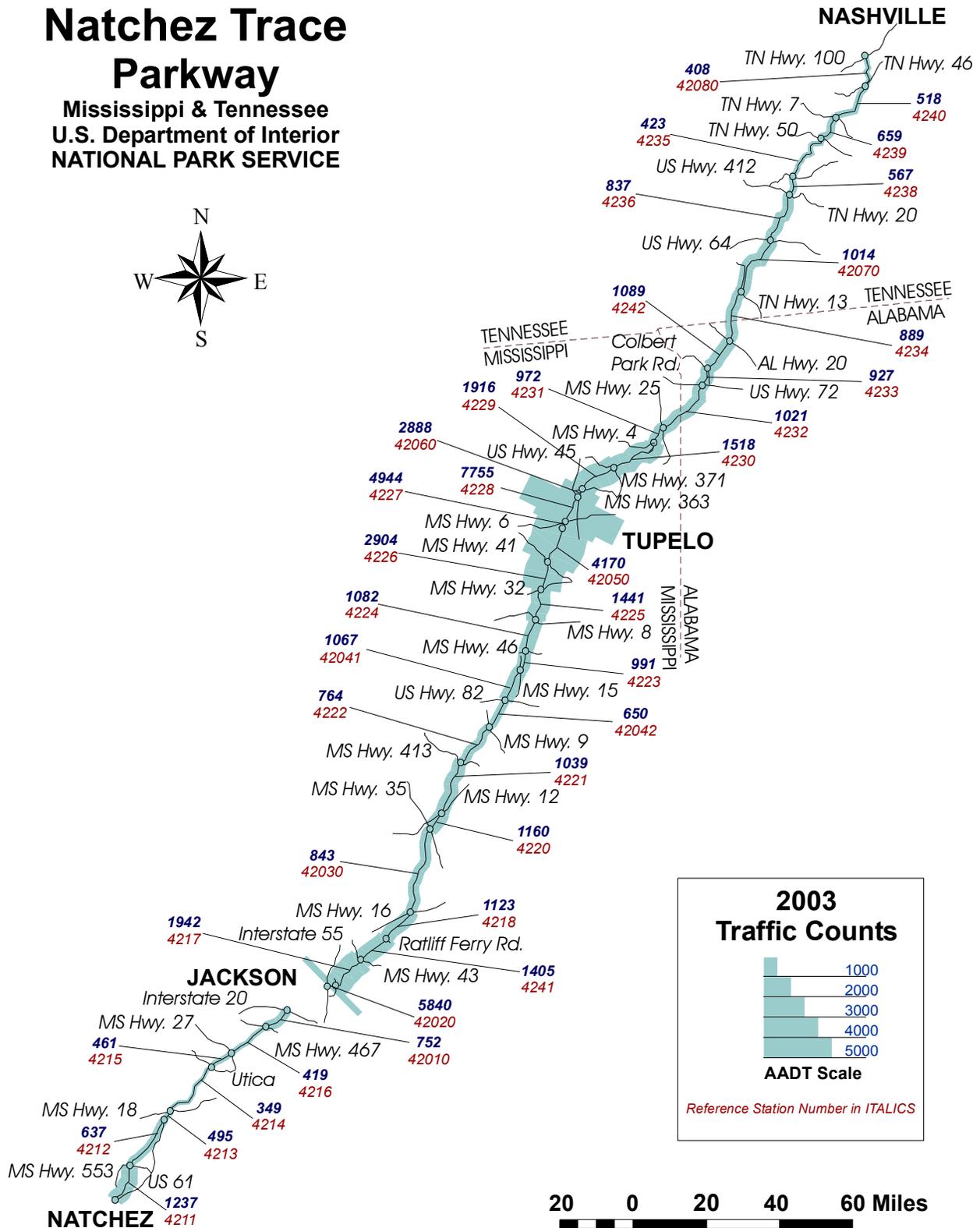
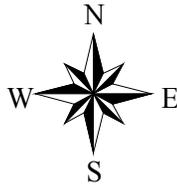


Natchez Trace Parkway Traffic Package



Natchez Trace Parkway

Mississippi & Tennessee
U.S. Department of Interior
NATIONAL PARK SERVICE



NATCHEZ TRACE PARKWAY

TRAFFIC TRENDS SUMMARY

Rt. No.	Roadway Segment	Sta. ID.	Length	AADT				VMT(1000's)			
				1988	1991	1994	2003	1988	1991	1994	2003
1	NT Parkway - US 61 near Natchez to MS Hwy 553	4211	12.01	410	742	603	1237	1797	3253	2643	5423
1	NT Parkway - MS Hwy 553 to US 61 near Port Gibson	4212	16.82	520	768	766	637	3192	4715	4703	3911
1	NT Parkway - US 61 near Port Gibson to MS Hwy 18	4213	4.17	440	481	403	495	670	732	613	753
1	NT Parkway - MS Hwy 18 to Utica Road	4214	17.78	440	569	436	349	2855	3693	2830	2265
1	NT Parkway - Utica Road to MS Hwy 27	4215	7.53	440	661	492	461	1209	1817	1352	1267
1	NT Parkway - MS Hwy 27 to MS Hwy 467	4216	12.47	650	516	500	419	2959	2349	2276	1907
1	NT Parkway - MS Hwy 467 to Interstate Hwy 20	42010	8.45	728	713	714	752	2245	2199	2202	2319
1	NT Parkway - Interstate Hwy 55 to Airport Road	42020	2.15	6155	6767	7543	5840	4830	5310	5919	4583
1	NT Parkway - Airport Road to MS Hwy 43	4217	11.31	2500	2424	2885	1942	10320	10007	11910	8017
1	NT Parkway - MS Hwy 43 to Ratliff Ferry Road	4241	8.99	2500	1925	1829	1405	8203	6317	6002	4610
1	NT Parkway - Ratliff Ferry Road MS Hwy 16	4218	11.25	2080	1247	2167	1123	8541	5120	8898	4611
1	NT Parkway - MS Hwy 16 to MS Hwy 35	42030	24.92	1641	1513	2120	843	14926	13762	19283	7668
1	NT Parkway - MS Hwy 35 to MS Hwy 12	4220	5.61	1430	813	1826	1160	2928	1665	3739	2375
1	NT Parkway - MS Hwy 12 to MS Hwy 413	4221	15.26	1140	863	1975	1039	6350	4807	11001	5787
1	NT Parkway - MS Hwy 413 to MS Hwy 9	4222	14.56	1230	1012	1774	764	6537	5378	9428	4060
1	NT Parkway - MS Hwy 9 to US Hwy 82	42042	8.82	1075	1022	1216	650	3461	3290	3915	2093
1	NT Parkway - US Hwy 82 to MS Hwy 15	42041	10.16	1088	1074	1278	1067	4035	3983	4739	3957
1	NT Parkway - MS Hwy 15 to MS Hwy 46	4223	5.21	1030	881	1619	991	1959	1675	3079	1885
1	NT Parkway - MS Hwy 46 to MS Hwy 8	4224	9.89	920	1059	2760	1082	3321	3823	9963	3906
1	NT Parkway - MS Hwy 8 to MS Hwy 32	4225	9.76	1210	1316	3005	1441	4311	4688	10705	5133
1	NT Parkway - MS Hwy 32 to MS Hwy 41	4226	7.78	1780	2344	4126	2904	5055	6656	11717	8246
1	NT Parkway - MS Hwy 41 to Tupelo Cliff Gookin Blvd	42050	11.6	3959	4423	5263	4170	16762	18727	22284	17656
1	NT Parkway - Tupelo Cliff Gookin Blvd to MS Hwy 6	4227	1.3	3050	4791	2210	4944	1447	2273	1049	2346
1	NT Parkway - MS Hwy 6 to US Hwy 45	4228	6.62	2920	4172	3982	7755	7056	10081	9622	18738
1	NT Parkway - US Hwy 45 to MS Hwy 363	42060	4.22	1940	2270	2851	2888	2988	3496	4391	4448
1	NT Parkway - MS Hwy 363 to MS Hwy 371	4229	11.44	1080	1613	1684	1916	4510	6735	7032	8000
1	NT Parkway - MS Hwy 371 to MS Hwy 4	4230	10.82	810	1097	1187	1518	3199	4332	4688	5995
1	NT Parkway - MS Hwy 4 to MS Hwy 25	4231	9.93	620	867	1214	972	2247	3142	4400	3523
1	NT Parkway - MS Hwy 25 to US Hwy 72 in Alabama	4232	17.58	510	970	1164	1021	3273	6224	7469	6551
1	NT Parkway - US Hwy 72 in Alabama to Colbert Park Road	4233	6.94	670	529	930	927	1697	1340	2356	2348
1	NT Parkway - Colbert Park Road to Alabama Hwy 20	4242	8.88	670	318	830	1089	2172	1031	2690	3530
1	NT Parkway - Alabama Hwy 20 to Tennessee Hwy 13	4234	14.42	670	489	1014	889	3526	2574	5337	4679
1	NT Parkway - Tennessee Hwy 13 to US Hwy 64	42070	19.16	685	954	1135	1014	4790	6672	7938	7091
1	NT Parkway - US Hwy 64 to Tennessee Hwy 20	4236	15.87	750	206	659	837	4344	1193	3817	4848
1	NT Parkway - Tennessee Hwy 20 to US Hwy 412	4238	5.23	480	249	851	567	916	475	1625	1082
1	NT Parkway - US Hwy 412 to Tennessee Hwy 50	4235	16.79	210	139	625	423	1287	852	3830	2592
1	NT Parkway - Tennessee Hwy 50 to Tennessee Hwy 7 at Fly	4239	10.2	210	156	641	659	782	581	2386	2453
1	NT Parkway - Tennessee Hwy 7 at Fly to Tennessee Hwy 46	4240	16.3	210	152	360	518	1249	904	2142	3082
1	NT Parkway - Tennessee Hwy 46 to Tennessee Hwy 100	42080	15.6	210	152	360	408	1196	865	2050	2323
VMT SUMMARY								163146	166737	232021	186065

Note: AADT -- Annual Average Daily Traffic
VMT-- Vehicle Miles of Travel

NATCHEZ TRACE PARKWAY

2003 TRAFFIC VOLUME SUMMARY

Sta. ID.	STATION LOCATION	BEGIN DATE	24 HR. VOL.	SEAS. FACT.	ANN. FACT.	SADT	AADT	REF. STA.
42010	NT Parkway - MS Hwy 467 to Interstate Hwy 20					760	752	Self
42020	NT Parkway - Interstate Hwy 55 to Airport Road					5893	5840	Self
42030	NT Parkway - MS Hwy 16 to MS Hwy 35					875	843	Self
42060	NT Parkway - US Hwy 45 to MS Hwy 363					2949	2888	Self
42080	NT Parkway - Tennessee Hwy 46 to Tennessee Hwy 100					452	408	Self
42041	NT Parkway - US Hwy 82 to MS Hwy 15	10/21/03	1120	0.988701	0.953013	1107	1067	42030
42042	NT Parkway - MS Hwy 9 to US Hwy 82	10/21/03	682	0.988701	0.953013	674	650	42030
42050	NT Parkway - MS Hwy 41 to Tupelo Cliff Gookin Blvd	10/21/03	4204	1.013054	0.991984	4259	4170	42060
42070	NT Parkway - Tennessee Hwy 13 to US Hwy 64	10/21/03	1022	1.013054	0.991984	1035	1014	42060
4211	NT Parkway - US 61 near Natchez to MS Hwy 553	10/21/03	1389	0.900474	0.890897	1251	1237	42010
4212	NT Parkway - MS Hwy 553 to US 61 near Port Gibson	10/21/03	715	0.900474	0.890897	644	637	42010
4213	NT Parkway - US 61 near Port Gibson to MS Hwy 18	10/21/03	556	0.900474	0.890897	501	495	42010
4214	NT Parkway - MS Hwy 18 to Utica Road	10/21/03	392	0.900474	0.890897	353	349	42010
4215	NT Parkway - Utica Road to MS Hwy 27	10/21/03	518	0.900474	0.890897	466	461	42010
4216	NT Parkway - MS Hwy 27 to MS Hwy 467	10/21/03	470	0.900474	0.890897	423	419	42010
4217	NT Parkway - Airport Road to MS Hwy 43	10/21/03	2185	0.896819	0.888779	1960	1942	42020
4218	NT Parkway - Ratliff Ferry Road MS Hwy 16	10/21/03	1178	0.988701	0.953013	1165	1123	42030
4220	NT Parkway - MS Hwy 35 to MS Hwy 12	10/21/03	1217	0.988701	0.953013	1203	1160	42030
4221	NT Parkway - MS Hwy 12 to MS Hwy 413	10/21/03	1090	0.988701	0.953013	1078	1039	42030
4222	NT Parkway - MS Hwy 413 to MS Hwy 9	10/21/03	802	0.988701	0.953013	793	764	42030
4223	NT Parkway - MS Hwy 15 to MS Hwy 46	10/21/03	1040	0.988701	0.953013	1028	991	42030
4224	NT Parkway - MS Hwy 46 to MS Hwy 8	10/21/03	1135	0.988701	0.953013	1122	1082	42030
4225	NT Parkway - MS Hwy 8 to MS Hwy 32	10/21/03	1512	0.988701	0.953013	1495	1441	42030
4226	NT Parkway - MS Hwy 32 to MS Hwy 41	10/21/03	3047	0.988701	0.953013	3013	2904	42030
4227	NT Parkway - Tupelo Cliff Gookin Blvd to MS Hwy 6	10/21/03	4984	1.013054	0.991984	5049	4944	42060
4228	NT Parkway - MS Hwy 6 to US Hwy 45	10/21/03	7818	1.013054	0.991984	7920	7755	42060
4229	NT Parkway - MS Hwy 363 to MS Hwy 371	10/21/03	1931	1.013054	0.991984	1956	1916	42060
4230	NT Parkway - MS Hwy 371 to MS Hwy 4	10/21/03	1530	1.013054	0.991984	1550	1518	42060
4231	NT Parkway - MS Hwy 4 to MS Hwy 25	10/21/03	980	1.013054	0.991984	993	972	42060
4232	NT Parkway - MS Hwy 25 to US Hwy 72 in Alabama	10/21/03	1029	1.013054	0.991984	1042	1021	42060
4233	NT Parkway - US Hwy 72 in Alabama to Colbert Park Road	10/21/03	934	1.013054	0.991984	946	927	42060
4234	NT Parkway - Alabama Hwy 20 to Tennessee Hwy 13	10/21/03	896	1.013054	0.991984	908	889	42060
4235	NT Parkway - US Hwy 412 to Tennessee Hwy 50	10/21/03	426	1.013054	0.991984	432	423	42060
4236	NT Parkway - US Hwy 64 to Tennessee Hwy 20	10/21/03	844	1.013054	0.991984	855	837	42060
4238	NT Parkway - Tennessee Hwy 20 to US Hwy 412	10/21/03	572	1.013054	0.991984	579	567	42060
4239	NT Parkway - Tennessee Hwy 50 to Tennessee Hwy 7 at Fly	10/21/03	664	1.013054	0.991984	673	659	42060
4240	NT Parkway - Tennessee Hwy 7 at Fly to Tennessee Hwy 46	10/21/03	522	1.013054	0.991984	529	518	42060
4241	NT Parkway - MS Hwy 43 to Ratliff Ferry Road	10/21/03	1474	0.988701	0.953013	1457	1405	42030
4242	NT Parkway - Colbert Park Road to Alabama Hwy 20	10/21/03	1098	1.013054	0.991984	1112	1089	42060

Note: AADT -- Annual Average Daily Traffic
 SADT -- Seasonal Average Daily Traffic computed using data for the months containing 80% of annual volume.
 REF. STA. -- a permanent Automated Traffic Recorder (ATR) reference station used to obtain seasonal and annual adjustment factors for coverage counts.

NATCHEZ TRACE PARKWAY

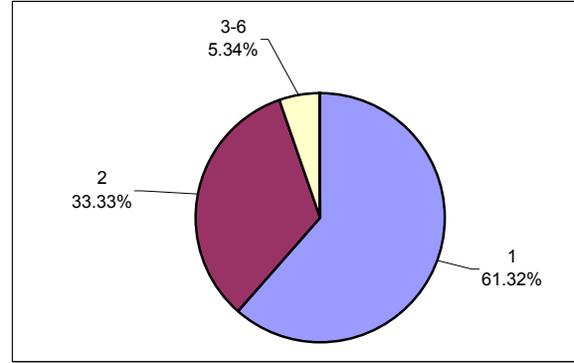
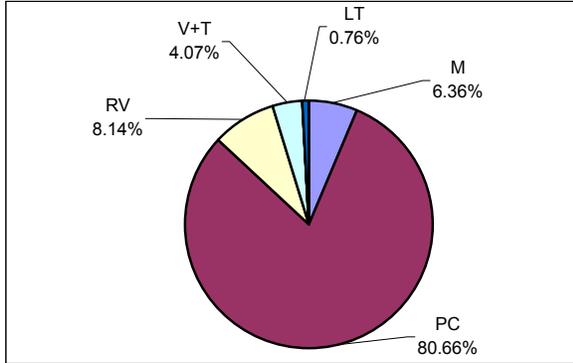
2003 TRAFFIC COMPOSITION SUMMARY

Vehicle Classification

Vehicle Occupancy

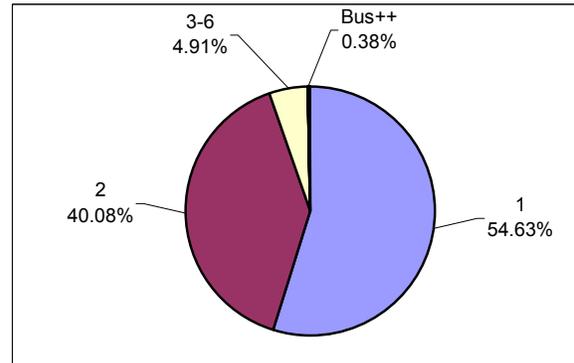
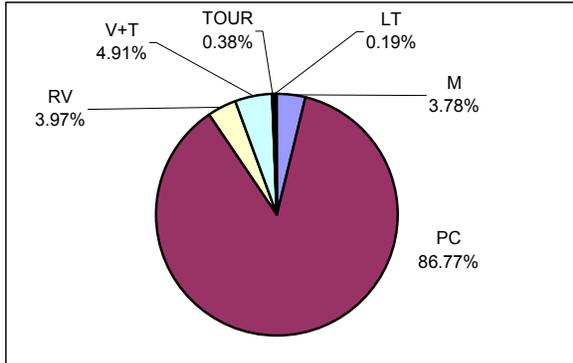
Location: STATION 42042

Location: STATION 42042



Location: STATION 42070

Location: STATION 42070



CLASSIFICATION LEGEND:

OCCUPANCY LEGEND:

No.	Vehicle Type	FHWA Class
M	Motorcycles	Class 1
PC	Passenger Cars	Class 2
RV	Recreational Vehicles	N/A
V+T	Vehicles/RV pulling Trailer	N/A
BUS	Transit/Shuttle Buses	Class 4
TOUR	Tour Buses	Class 4
LT	Light-duty Trucks	Classes 3, 5
HT	Heavy-duty Trucks	Classes 6 - 13

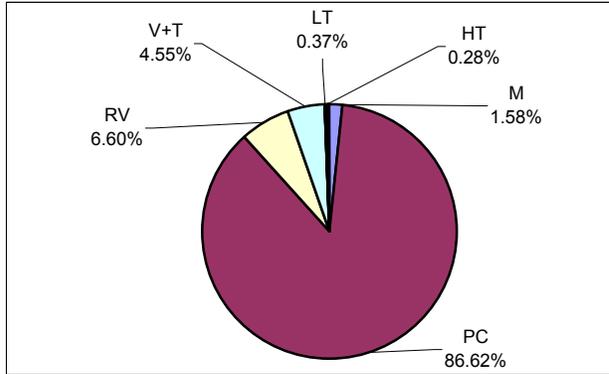
No.	Vehicle Occupancy
1	1 Occupant
2	2 Occupants
3-6	3-6 Occupants (car load)
6+	More than 6 Occupants, (non-Bus)
Bus 0	Bus, No Passengers
Bus +	Bus, Few Passengers
Bus++	Bus, Semi-Loaded
Bus Full	Bus, Fully Loaded

Note: Vehicle Classifications and Vehicle Occupancy values represented by 0% (No Occurrence) are not shown on the charts.

NATCHEZ TRACE PARKWAY

Vehicle Classification

Location: STATION 42060



CLASSIFICATION LEGEND:

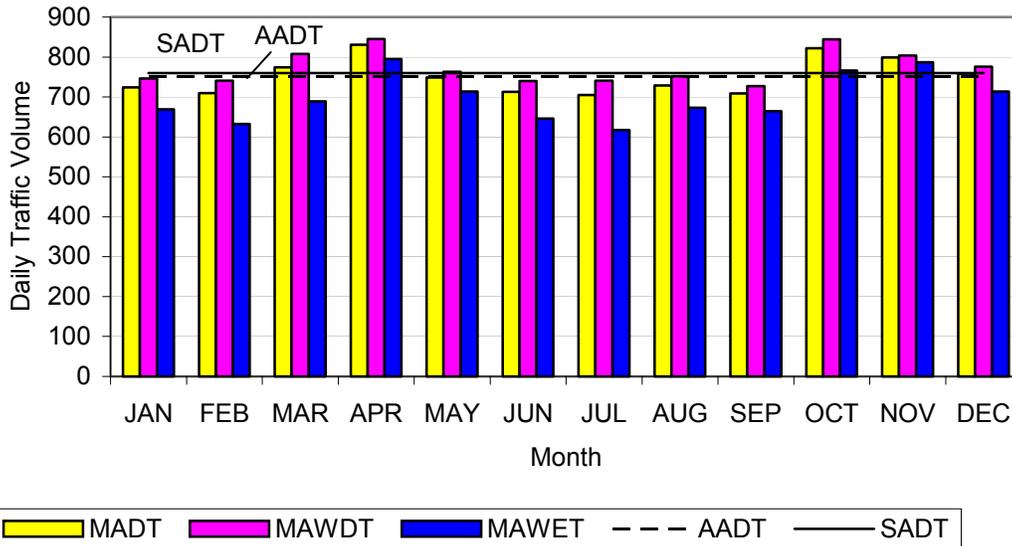
No.	Vehicle Type	FHWA Class
M	Motorcycle	Class 1
PC	Passenger Vehicles	Class 2
RV	Recreational Vehicles (RVs)	N/A
V+T	Vehicles pulling trailers or RVs	N/A
BUS	Transit Buses	Class 4
TOUR	Tour Buses	Class 4
LT	Light-duty Trucks	Classes 3, 5
HT	Heavy-duty Trucks	Classes 6 - 13

Note: Vehicle and occupancy classes represented by 0% vehicles are not shown on the charts.

NATCHEZ TRACE PARKWAY

Station: 42010 NT Parkway - MS Hwy 467 to Interstate Hwy 20

Month	Year	Average Day of Month (MADT)	Average Weekday of Month (MAWDT)	Average Weekend Day of Month (MAWET)	Annual Average Daily Traffic Factor (AADTF)	Seasonal Average Daily Traffic Factor (SADTF)
1	2002	724	746	669	1.0079	1.0188
2	2002	710	741	632	1.0147	1.0256
3	2002	774	808	689	0.9306	0.9406
4	2001	831	845	795	0.8898	0.8994
5	2001	749	763	714	0.9855	0.9961
6	2001	713	740	646	1.0161	1.0270
7	2001	705	741	617	1.0147	1.0256
8	2001	729	752	673	0.9999	1.0106
9	2001	709	727	664	1.0343	1.0454
10	2001	822	844	766	0.8909	0.9005
11	2001	799	804	787	0.9352	0.9453
12	2001	758	776	714	0.9690	0.9794
Annual Average Daily Traffic (AADT)				752		
Annual Average Weekday Traffic (AAWDT)				774		
Annual Average Weekend Traffic (AAWET)				697		
Seasonal Average Daily Traffic (SADT)				760		

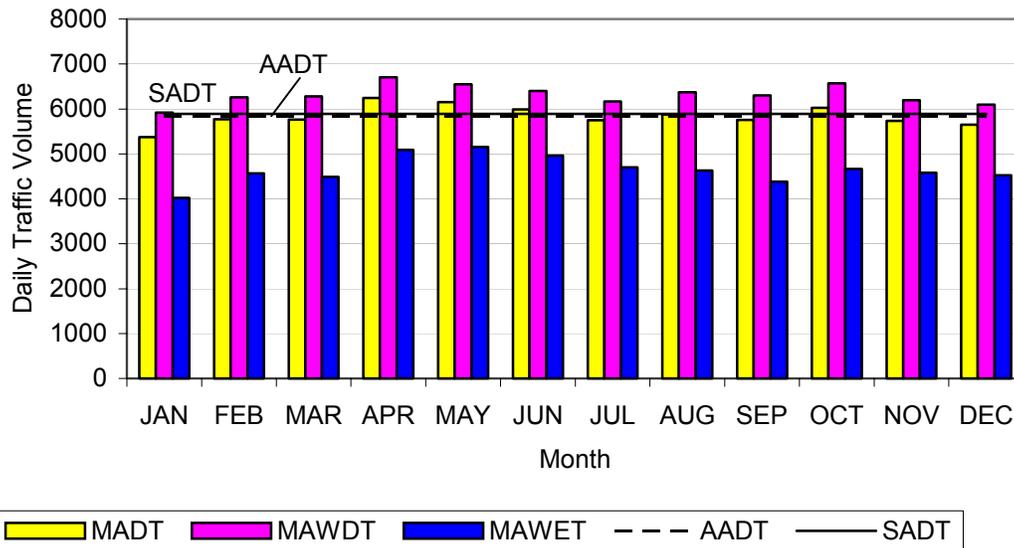


Note: AADTF is used to adjust coverage traffic volumes to AADT volume.
 SADTF is used to adjust coverage traffic volumes to SADT volume.
 SADT -- Seasonal Average Daily Traffic for the months containing 80% of annual volume.

NATCHEZ TRACE PARKWAY

Station: 42020 NT Parkway - Interstate Hwy 55 to Airport Road

Month	Year	Average Day of Month (MADT)	Average Weekday of Month (MAWDT)	Average Weekend Day of Month (MAWET)	Annual Average Daily Traffic Factor (AADTF)	Seasonal Average Daily Traffic Factor (SADTF)
1	2002	5375	5917	4018	0.9870	0.9959
2	2002	5773	6256	4563	0.9335	0.9420
3	2002	5766	6277	4488	0.9304	0.9388
4	2001	6241	6702	5090	0.8714	0.8793
5	2001	6151	6551	5151	0.8915	0.8996
6	2001	5992	6403	4965	0.9121	0.9203
7	2001	5749	6168	4701	0.9468	0.9554
8	2001	5873	6371	4629	0.9167	0.9250
9	2001	5754	6303	4380	0.9266	0.9350
10	2001	6026	6571	4664	0.8888	0.8968
11	2001	5732	6192	4581	0.9432	0.9517
12	2001	5650	6099	4526	0.9576	0.9662
Annual Average Daily Traffic (AADT)				5840		
Annual Average Weekday Traffic (AAWDT)				6318		
Annual Average Weekend Traffic (AAWET)				4646		
Seasonal Average Daily Traffic (SADT)				5893		

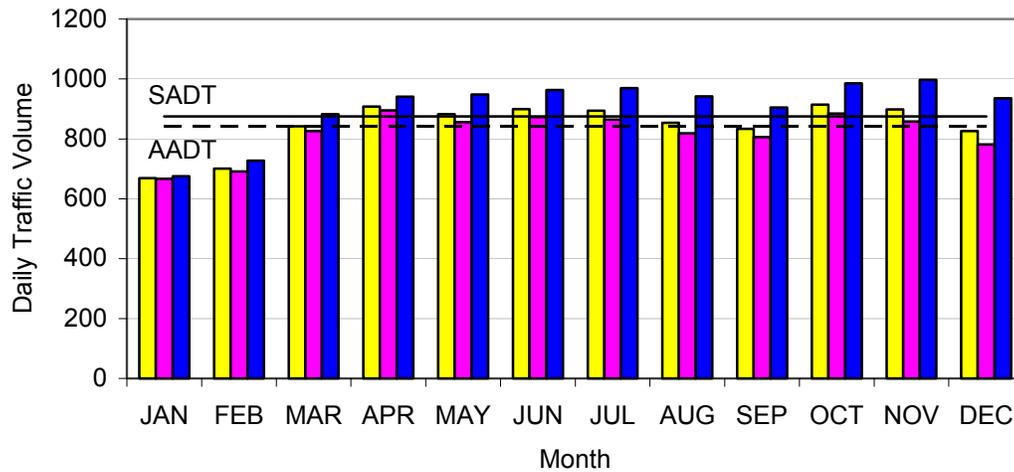


Note: AADTF is used to adjust coverage traffic volumes to AADT volume.
 SADTF is used to adjust coverage traffic volumes to SADT volume.
 SADT -- Seasonal Average Daily Traffic for the months containing 80% of annual volume.

NATCHEZ TRACE PARKWAY

Station: 42030 NT Parkway - MS Hwy 16 to MS Hwy 35

Month	Year	Average Day of Month (MADT)	Average Weekday of Month (MAWDT)	Average Weekend Day of Month (MAWET)	Annual Average Daily Traffic Factor (AADTF)	Seasonal Average Daily Traffic Factor (SADTF)
1	2003	669	667	675	1.2645	1.3118
2	2003	701	691	727	1.2206	1.2663
3	2003	842	826	882	1.0211	1.0593
4	2003	908	895	941	0.9424	0.9777
5	2003	882	856	948	0.9853	1.0222
6	2003	899	873	963	0.9661	1.0023
7	2003	894	864	970	0.9762	1.0127
8	2003	854	819	942	1.0298	1.0684
9	2003	834	806	905	1.0464	1.0856
10	2003	914	885	986	0.9530	0.9887
11	2002	898	858	997	0.9830	1.0198
12	2002	826	782	936	1.0785	1.1189
Annual Average Daily Traffic (AADT)				843		
Annual Average Weekday Traffic (AAWDT)				819		
Annual Average Weekend Traffic (AAWET)				906		
Seasonal Average Daily Traffic (SADT)				875		

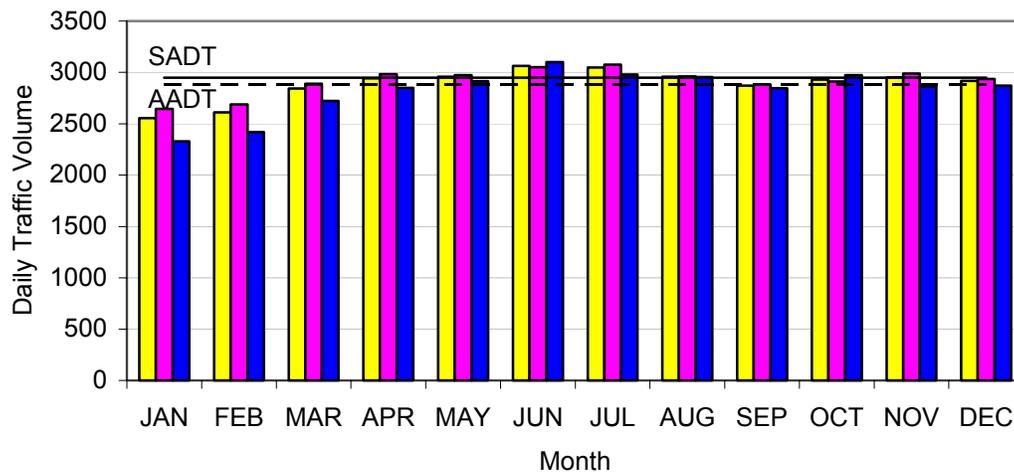


Note: AADTF is used to adjust coverage traffic volumes to AADT volume.
 SADTF is used to adjust coverage traffic volumes to SADT volume.
 SADT -- Seasonal Average Daily Traffic for the months containing 80% of annual volume.

NATCHEZ TRACE PARKWAY

Station: 42060 NT Parkway - US Hwy 45 to MS Hwy 363

Month	Year	Average Day of Month (MADT)	Average Weekday of Month (MAWDT)	Average Weekend Day of Month (MAWET)	Annual Average Daily Traffic Factor (AADTF)	Seasonal Average Daily Traffic Factor (SADTF)
1	2003	2555	2645	2330	1.0917	1.1149
2	2003	2611	2688	2418	1.0743	1.0971
3	2003	2842	2890	2722	0.9992	1.0204
4	2003	2944	2982	2849	0.9684	0.9889
5	2003	2957	2973	2916	0.9713	0.9919
6	2003	3064	3050	3099	0.9468	0.9669
7	2003	3049	3076	2981	0.9388	0.9587
8	2003	2959	2962	2954	0.9749	0.9956
9	2003	2871	2881	2845	1.0023	1.0236
10	2003	2929	2911	2975	0.9920	1.0131
11	2002	2953	2988	2866	0.9664	0.9869
12	2002	2918	2936	2871	0.9835	1.0044
Annual Average Daily Traffic (AADT)				2888		
Annual Average Weekday Traffic (AAWDT)				2915		
Annual Average Weekend Traffic (AAWET)				2819		
Seasonal Average Daily Traffic (SADT)				2949		

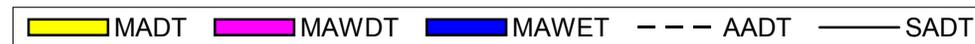
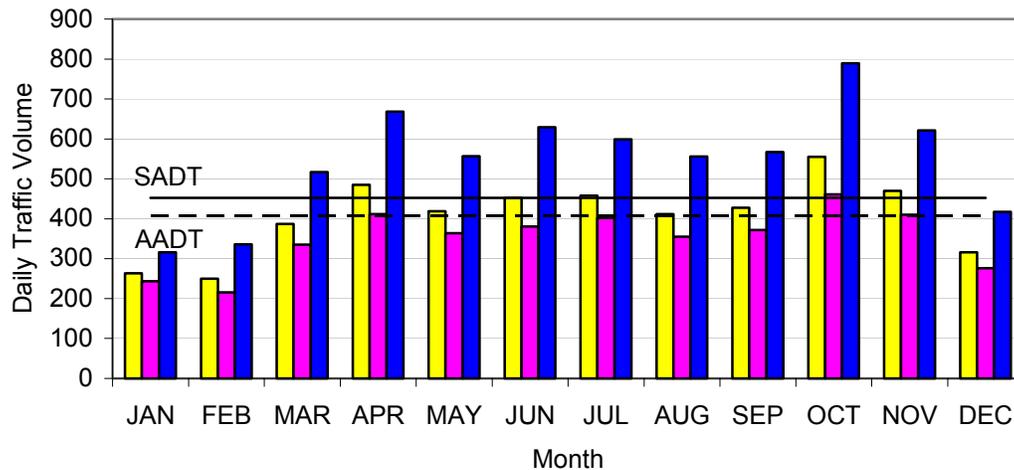


Note: AADTF is used to adjust coverage traffic volumes to AADT volume.
 SADTF is used to adjust coverage traffic volumes to SADT volume.
 SADT -- Seasonal Average Daily Traffic for the months containing 80% of annual volume.

NATCHEZ TRACE PARKWAY

Station: 42080 NT Parkway - Tennessee Hwy 46 to Tennessee Hwy 100

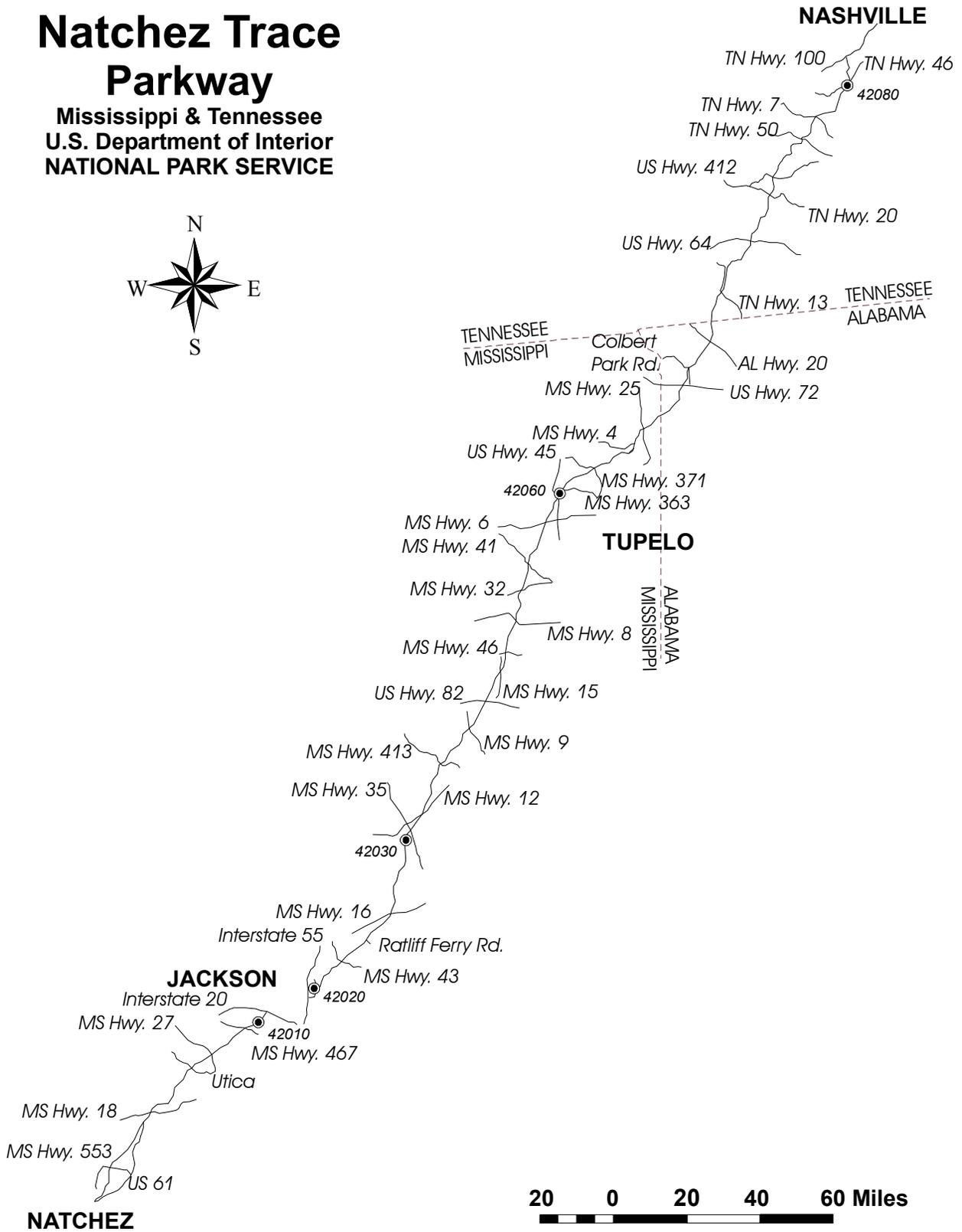
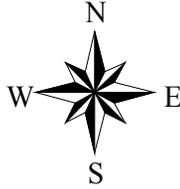
Month	Year	Average Day of Month (MADT)	Average Weekday of Month (MAWDT)	Average Weekend Day of Month (MAWET)	Annual Average Daily Traffic Factor (AADTF)	Seasonal Average Daily Traffic Factor (SADTF)
1	2003	264	244	316	1.6721	1.8525
2	2003	250	216	336	1.8889	2.0926
3	2003	387	335	517	1.2179	1.3493
4	2003	485	412	668	0.9903	1.0971
5	2003	419	364	557	1.1209	1.2418
6	2003	452	381	629	1.0709	1.1864
7	2003	458	402	599	1.0149	1.1244
8	2003	412	355	556	1.1493	1.2732
9	2003	428	372	567	1.0968	1.2151
10	2003	555	461	789	0.8850	0.9805
11	2002	470	410	621	0.9951	1.1024
12	2002	316	276	417	1.4783	1.6377
Annual Average Daily Traffic (AADT)				408		
Annual Average Weekday Traffic (AAWDT)				352		
Annual Average Weekend Traffic (AAWET)				548		
Seasonal Average Daily Traffic (SADT)				452		

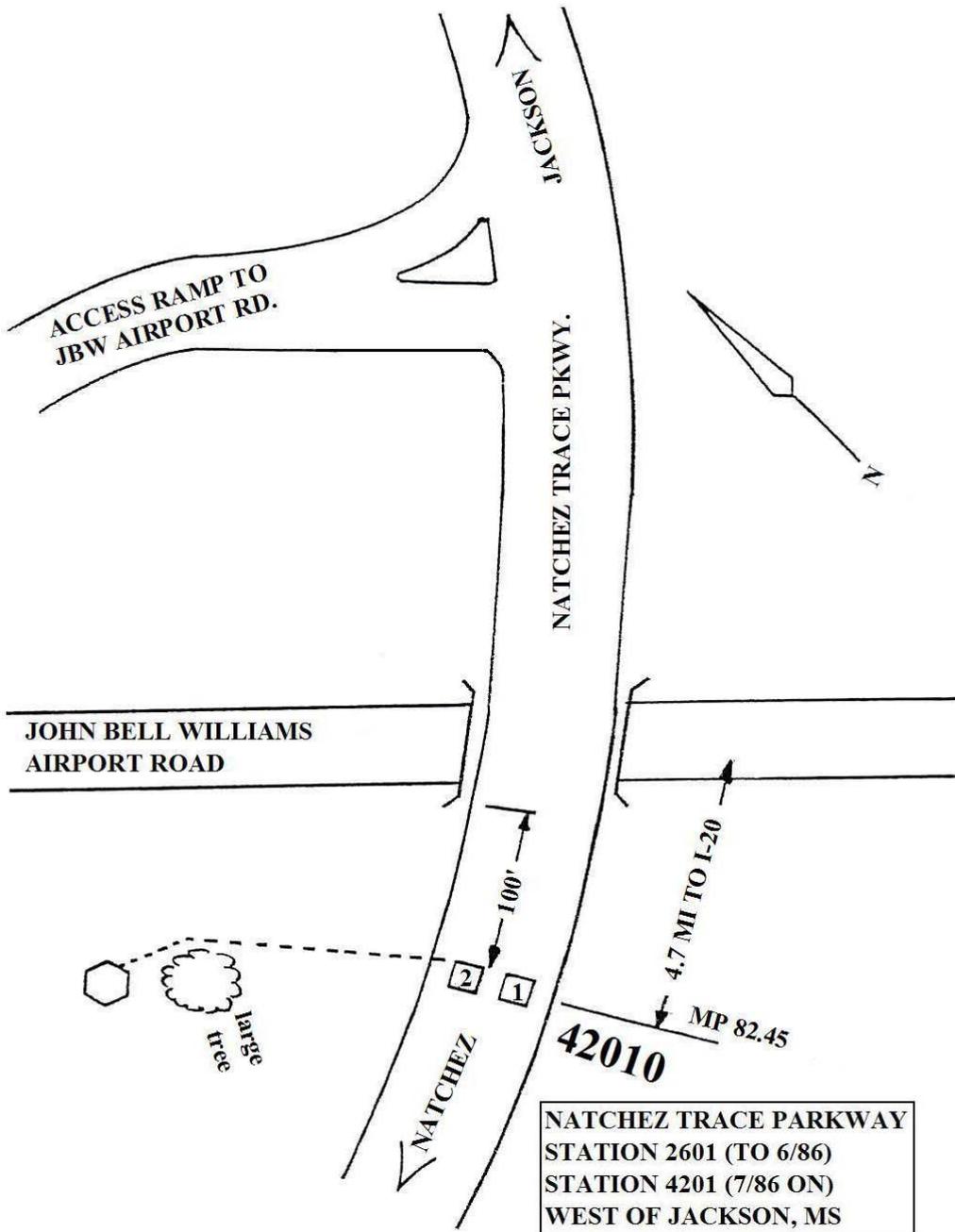


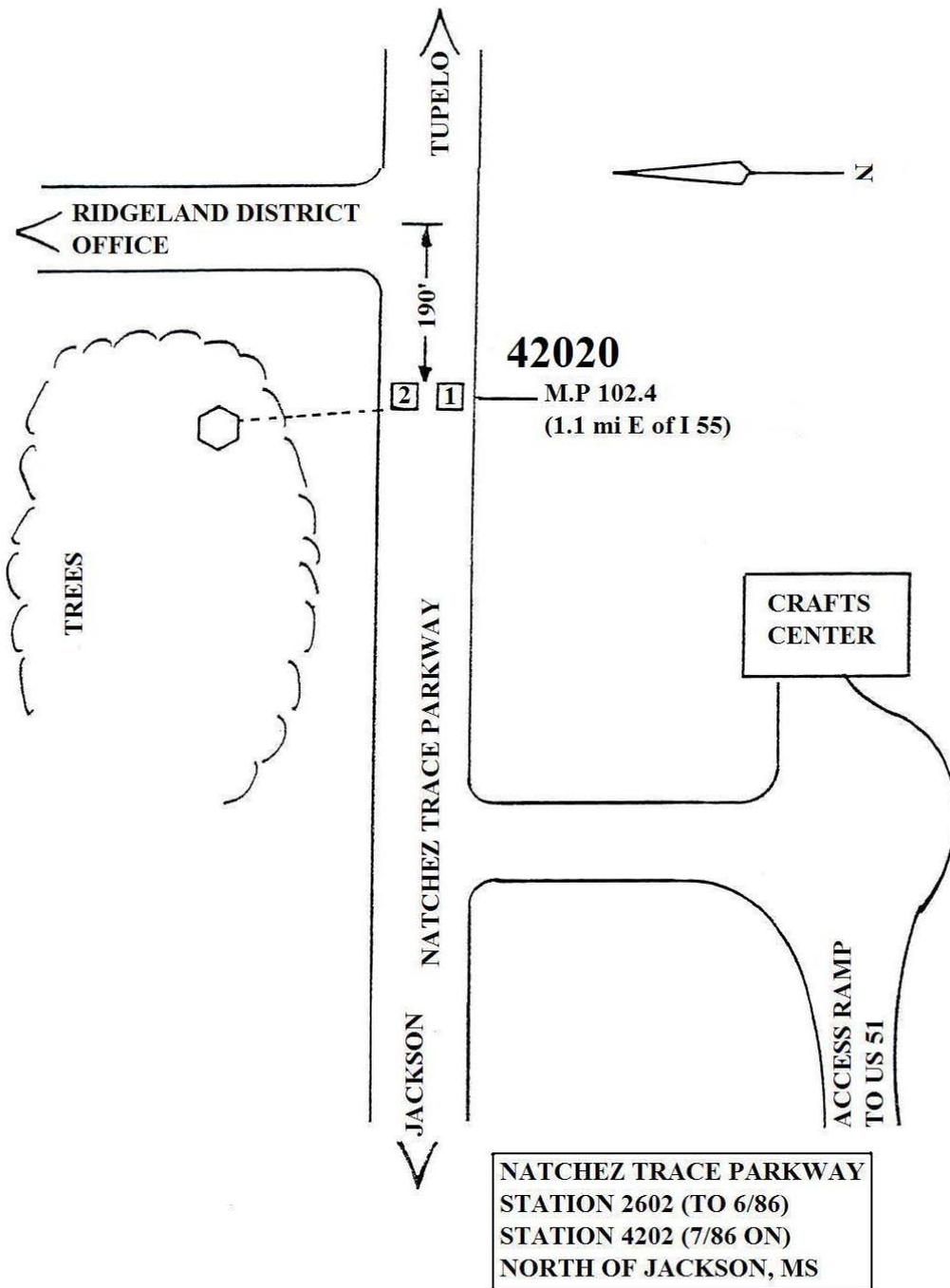
Note: AADTF is used to adjust coverage traffic volumes to AADT volume.
 SADTF is used to adjust coverage traffic volumes to SADT volume.
 SADT -- Seasonal Average Daily Traffic for the months containing 80% of annual volume.

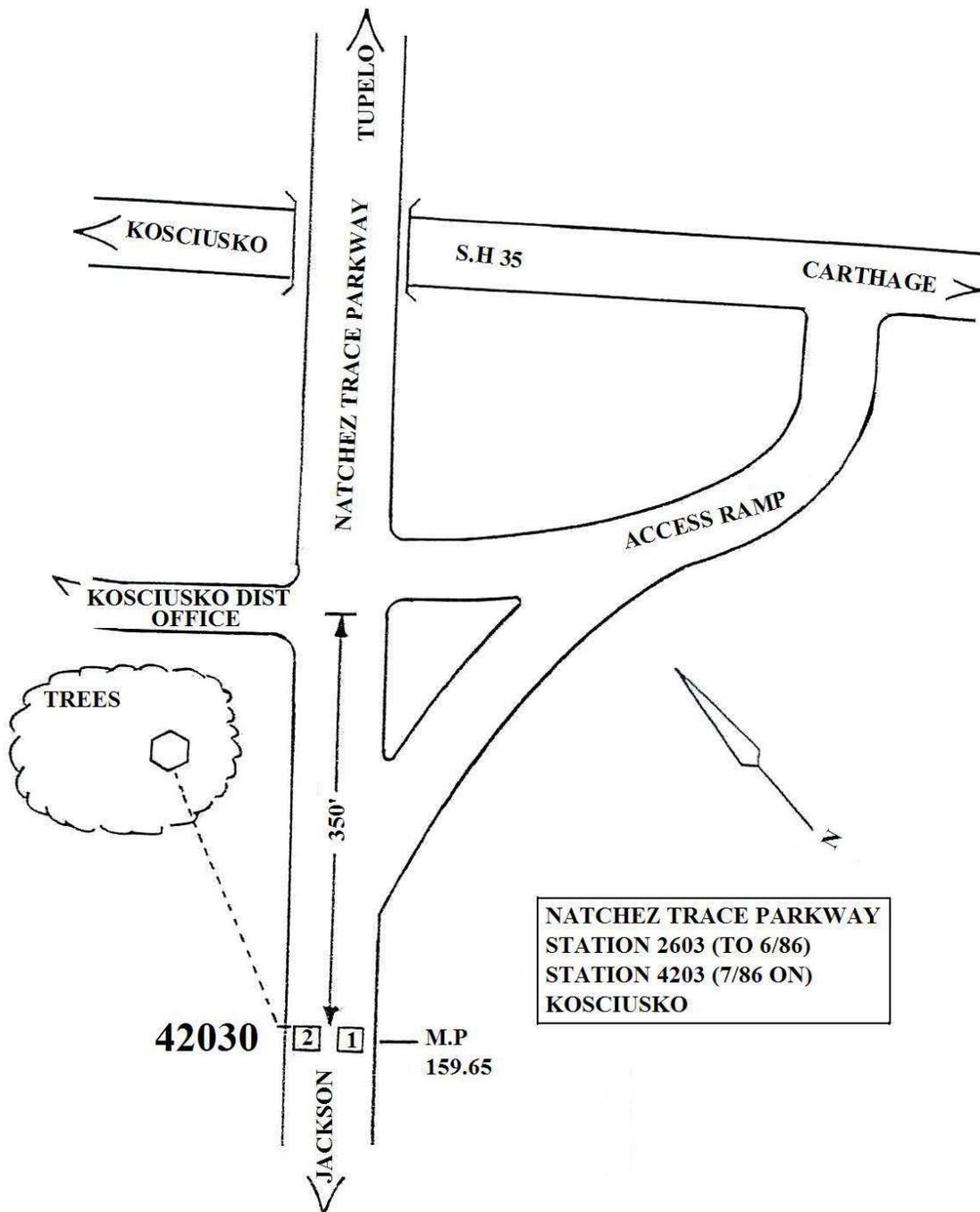
Natchez Trace Parkway

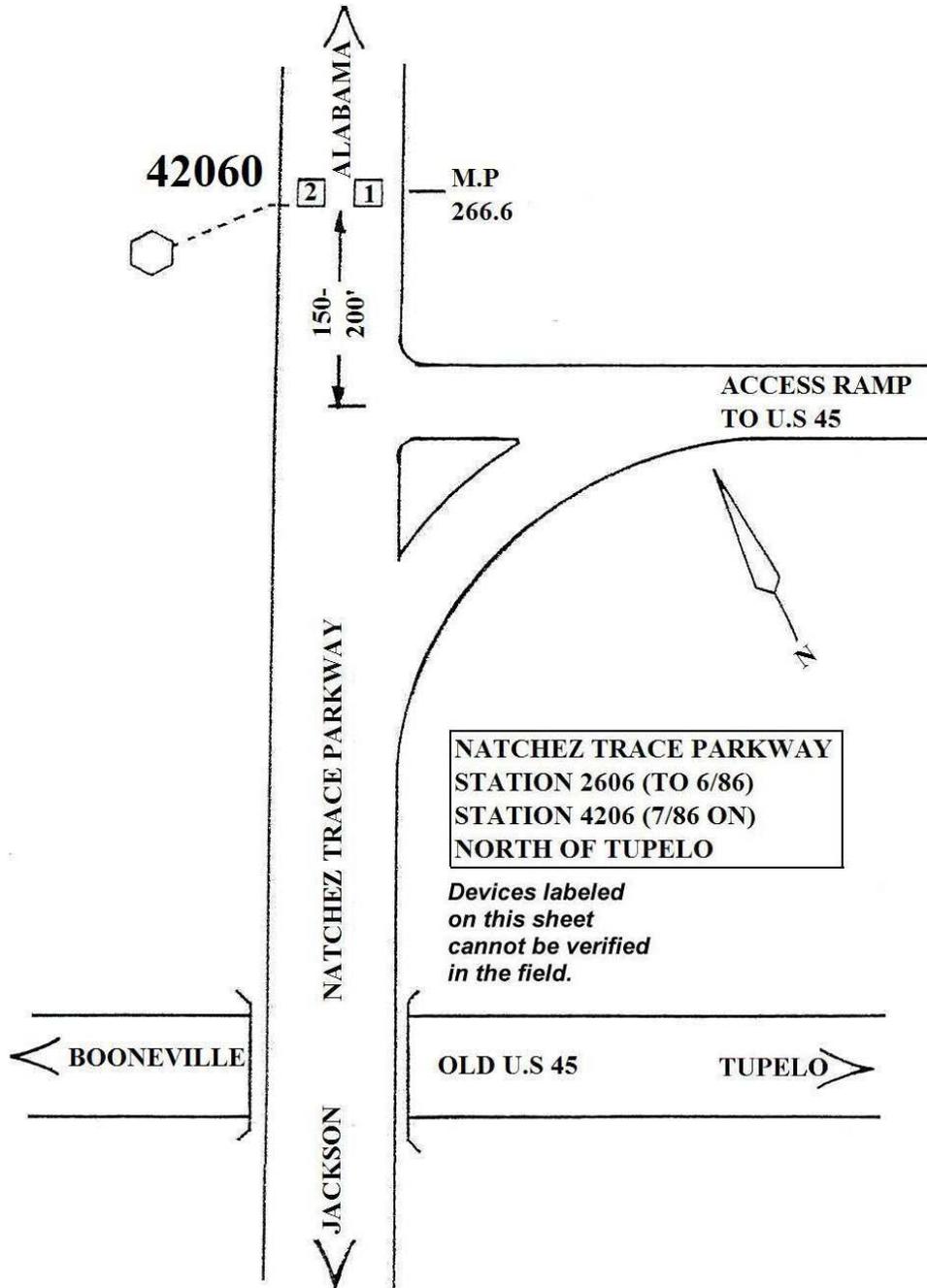
Mississippi & Tennessee
U.S. Department of Interior
NATIONAL PARK SERVICE

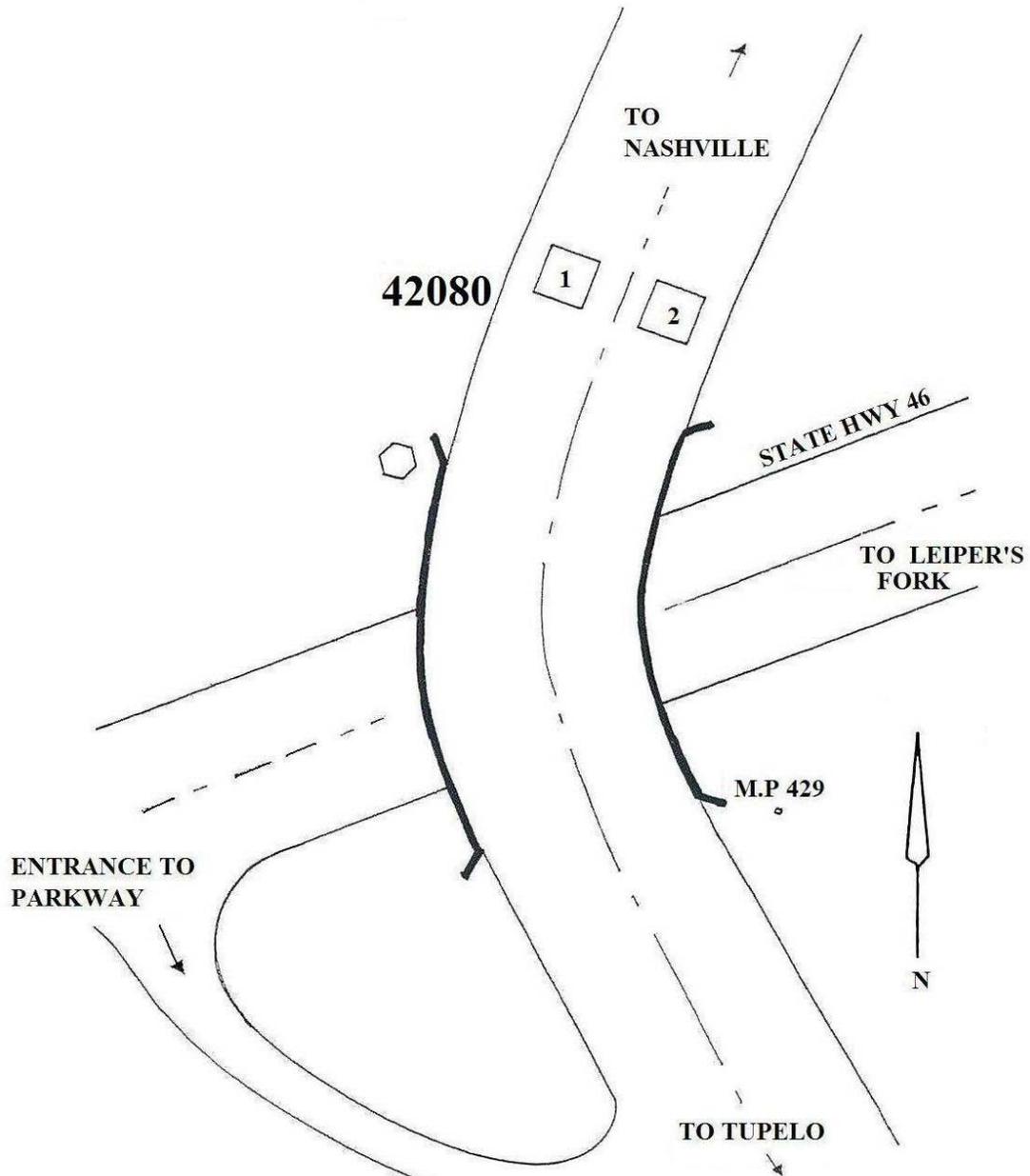












NATCHEZ TRACE PARKWAY
STATION 4208
LEIPER'S FORK

*Devices labeled
on this sheet
cannot be verified
in the field.*

APPENDIX E – Limits of Reconstruction

Patch Limits and Proposed Patch for Natchez Trace Parkway

Lane	Milepost	From Sta	To Sta	Proposed AC Thickness (in)	Proposed Aggregate Base Thickness (in)
SB	239	4444	4544	8	6
Both	240	1131	1136	8	6
NB	240	4130	4340	8	6
Both	241	267	387	8	8 Minimum
NB	243	3620	3730	8	6
NB	244	5205	5495	8	6
NB	245	400	630	8	6
SB	245	878	1018	8	6
SB	245	4304	4554	8	6
NB	246	594	794	8	8 Minimum
SB	246	1804	2054	8	6
SB	246	2751	2951	8	6
NB	247	378	528	8	6
SB	247	2091	2151	8	6
Both	247	4927	4977	8	6
SB	247	5153	5253	8	6
SB	248	764	864	8	6
NB	248	4199	4379	8	6
NB	249	111	361	8	6
Both	249	818	908	8	6
SB	250	1571	1631	8	6
SB	250	2915	3065	8	6
NB	250	4694	4794	8	6
NB	251	266	316	8	6
NB	252	1703	1833	8	6
NB	252	2484	2634	8	6
Both	252	3673	3793	8	6
Both	253	291	541	8	6
Both	253	965	1095	8	6
NB	253	1843	2293	8	6
SB	253	3510	3590	8	6
NB	253	4290	4390	8	6
NB	254	5144	5294	8	6
NB	255	3337	3487	8	6
SB	255	4004	4084	8	6
Both	255	5180	5340	8	6
NB	256	1105	1225	8	6
SB	256	1175	1275	8	6
SB	256	4113	4213	8	6
Both	258	1659	1799	8	6
NB	258	3142	3392	8	6
SB	262	2669	2869	8	6
NB	263	1992	2062	8	6
SB	263	2857	3057	8	6
NB	264	2368	2648	8	6
NB	265	4863	5133	8	6
SB	266	1465	1615	8	6
Both	266	2128	2228	8	6

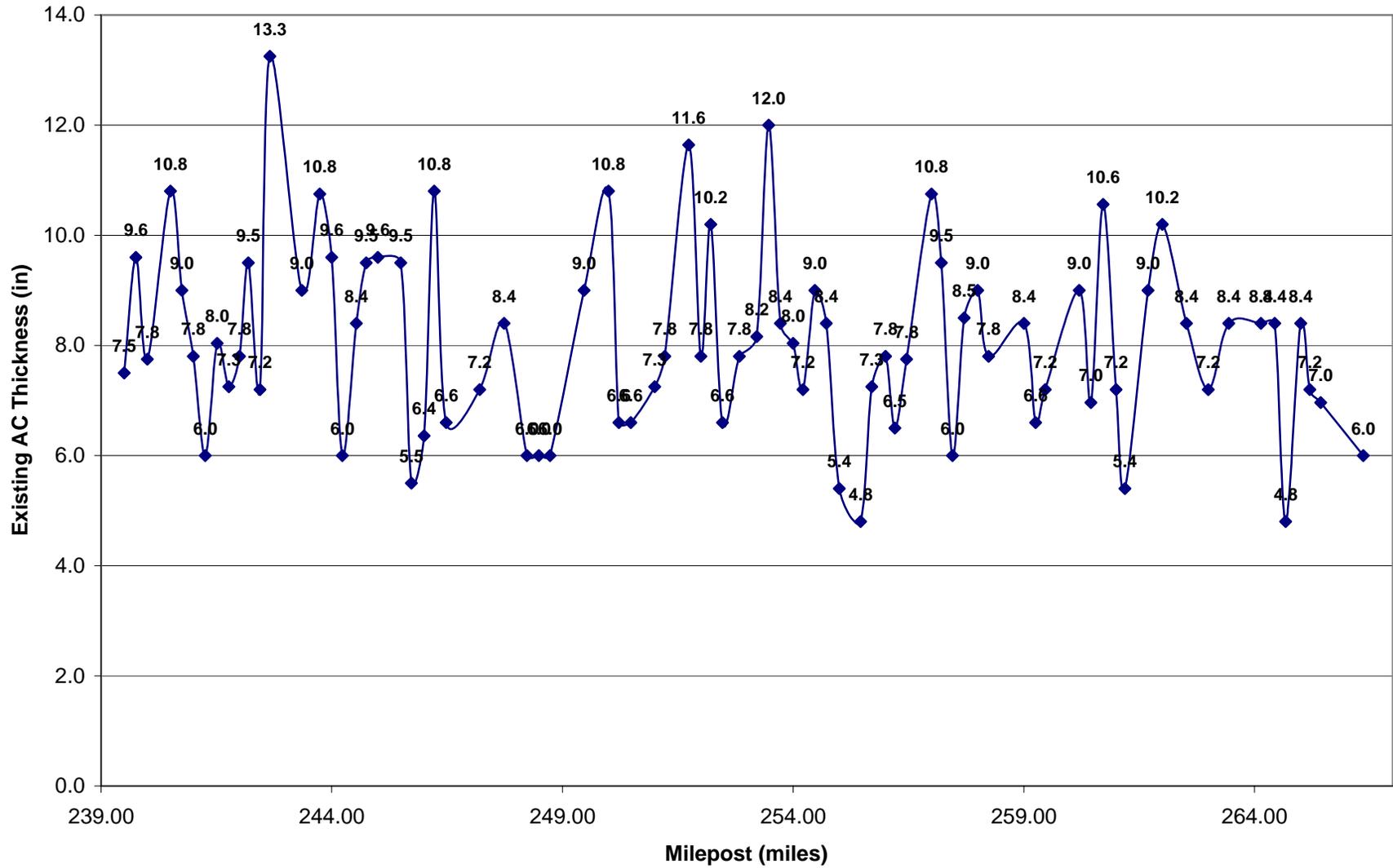
All limits were based on the measurements taken from a DMI (+/-100 ft). The limits should be field-verified prior to patching.

Limits are based on the condition survey performed on 7/8/05.

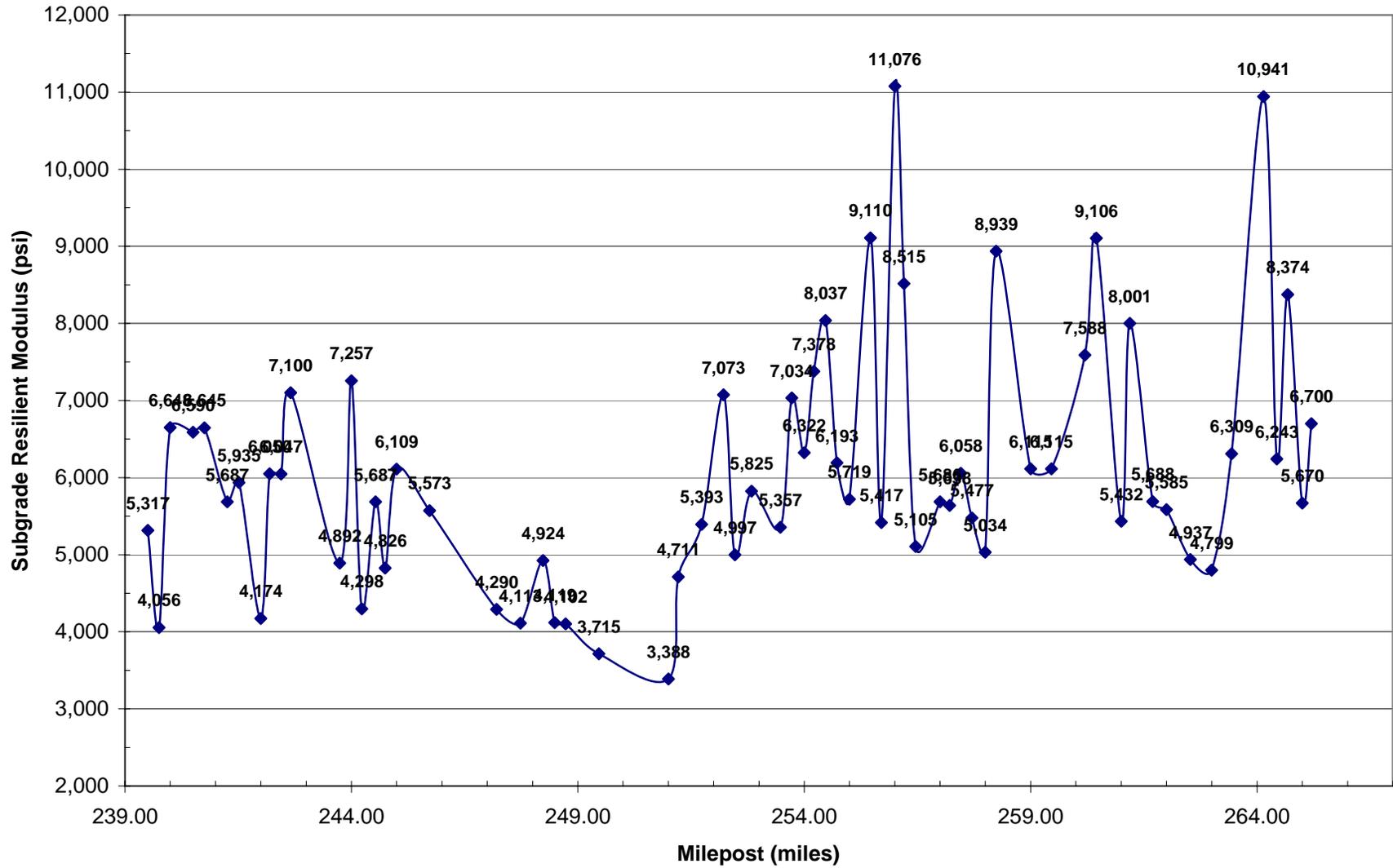
All slide repair areas should be added to this list.

APPENDIX F – FWD Field Data Back-Calculation Summary

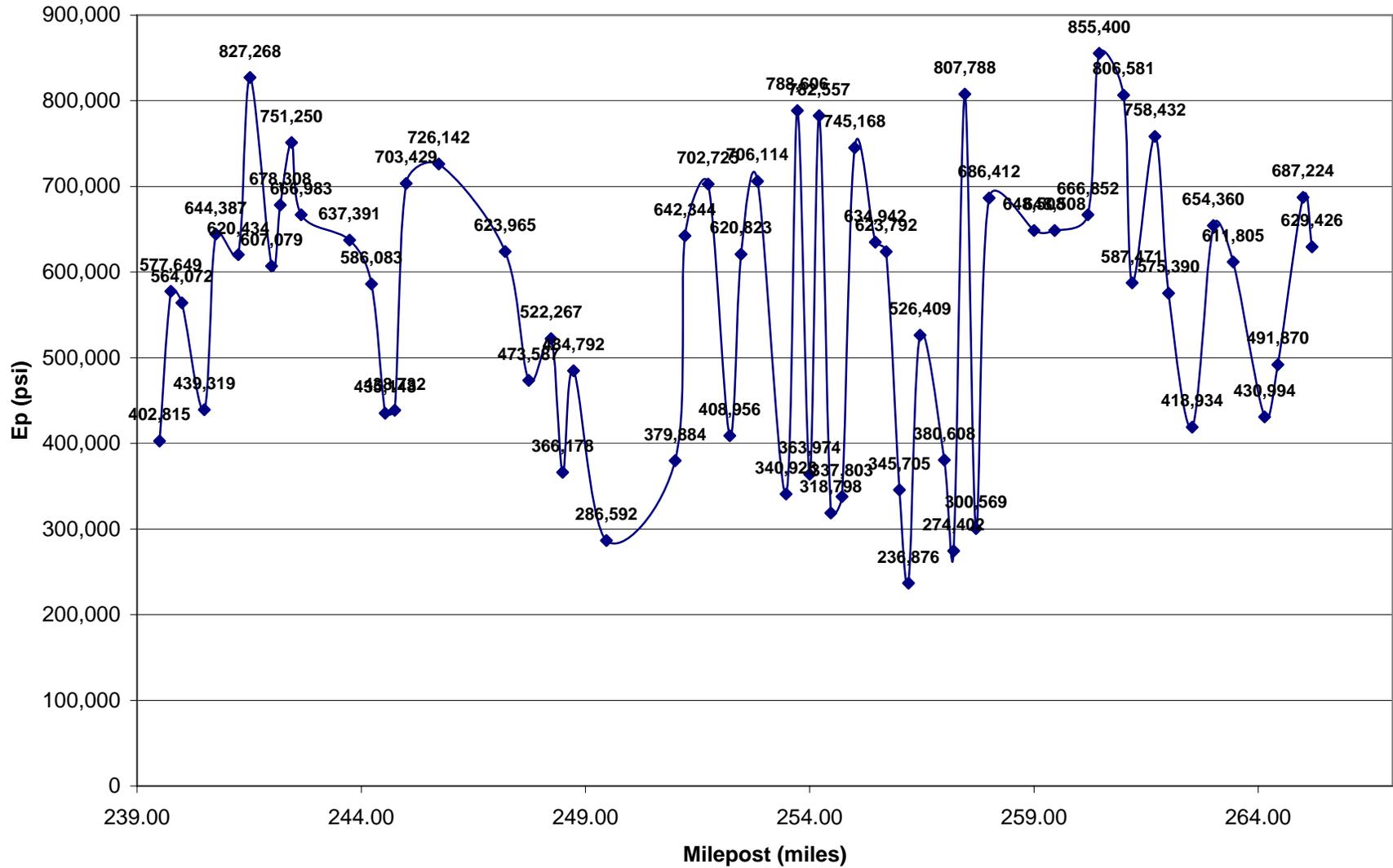
Cored AC Thickness vs. Natchez Trace Parkway Milepost



Back-Calculated Subgrade Resilient Modulus vs. Natchez Trace Parkway Milepost



Back-Calculated Effective Pavement Modulus vs. Natchez Trace Parkway Milepost



Calculated Effective Structural Number vs. Natchez Trace Parkway Milepost

