Transportation

PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

January 6, 2016

MEMORANDUM TO: Judith Corley-Lay, P.E., Ph.D.
State Pavement Management Engineer

Glen W. Mumford, P.E.
State Roadway Design Engineer

FROM: J. L. Pilipchuk, P.E., L.G.
State Geotechnical Engineer

DS MAM

DocuSigned by: John Pilipchuk
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STATE PROJECT: 50125.1.FS1 (I-5710) – Turnkey
COUNTY: Wake

DESCRIPTION: I-540 from SR 1822 (Leesville Road) to SR 2000 (Falls of the Neuse Road) in Raleigh, Install Ramp Meters at Various Locations

SUBJECT: Geotechnical Recommendations for Pavement Design

The proposed work consists of milling, resurfacing, and widening the existing ramps to accommodate Ramp Meters at 4 interchanges.

Soil Type: The predominant soils encountered beneath the existing roadway consist of residual soils, micaceous silty clay (A-7). Lesser soil types encountered are sandy silt (A-4), clayey silt (A-5), and sandy clay (A-6).

Anticipated borrow will likely consist of residual soils that consist of soils encountered on the project. The design soil type is silty clay (A-7).

The length of this project is 0.667 miles.

Pavement Design Inputs: The following values are recommended to be used with the Design soil type:

ENVIRONMENTAL INPUTS								
TYPE	PASSING #200 SIEVE (%)	OPTIMUM MOISTURE CONTENT (%)	MAXIMUM DRY DENSITY (pcf)	D_{60}(in)	LL	PI	SPECIFIC GRAVITY (G_S)	CBR
Silty Clay	70	25.1	94.6	0.0014	58	19	2.73	6.4

Note 1: Optimum moisture, maximum dry density, D_{60}, specific gravity and CBR soil values were taken from Geotechnical soil databases
Note 2: Soil values Passing #200 Sieve, LL, and PI are values from project soil results

Areas of Special Geotechnical Interest

1) Highly Plastic Clays:

Line	STATION AND OFFSET	PI
-RB1-	7+50 OSS	25
-RB1-	12+50 OSS	27
-RB4-	9+00 ISS	26

2) High moisture areas:
The following locations contained soil with high moisture content:

Line	Station and Offset
-RB1-	5+00 to 7+50 RAMP, OSS
-RB2-	0+00 Earth Shoulder
-RB2-	9+50 to 12+00 OSL, OSS
-RB4-	4+00 OSS
-RB4-	9+00 to 11+50 OSS
-RB4-	14+00 OSS

3) Existing Pavement
All existing ramps have polished aggregate. A moderate to high severity longitudinal crack was present on -RB4- in the outside shoulder of the ramp, represented in the core taken at station 14+00 OSS. Suggest including a contingency of crack sealant to seal any moderate to high severity longitudinal cracks that may be present in areas of embankment.

DESIGN AND CONSTRUCTION RECOMMENDATIONS

I. Subgrade Stability

A. Stabilizer Aggregate
Recommend a quantity of 500 tons of Stabilizer Aggregate to be included in the project contract as a contingency item, to be used at the discretion of the Engineer.

B. Aggregate Subgrade
Recommend a quantity of 1,000 cubic yards of shallow undercut to be included in the project contract as a contingency item to be used at the discretion of the engineer.

Geotextile for Soil Stabilization
Recommend 3,000 square yards of Geotextile for Soil Stabilization to be included in the project contract as a contingency item.

Class IV Subgrade Stabilization
Recommend 2,000 tons of Class IV Subgrade Stabilization material to be included in the project contract as a contingency item.

III. Miscellaneous

A. Proof Rolling
It is recommended that proof rolling be performed on this project and should conform to Standard Specifications, Article 260.

Note: For additional recommendation and quantities refer to the forthcoming Geotechnical Report-Final Design and Construction Recommendations.

JLP/MAM/JBB/CWJ

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING UNIT
Summary of Quantities

WBS Number: 50125.1.FS1 County: Wake Project Engineer:
TIP Number: I-5710 Field Office: Central Project Geologist: T. W. Jaskolka
Description: I-540 from SR 1822 to SR 2000 in Raleigh, Install Ramp Meters at various locations

Pay Item No.	Pay Item/ Quantity Adjustment	Spec Book Section No. or Special Provision (SP) Reference	Report Section	Alignment	Begin Station	End Station	Quantity	Units / %
0196000000-E	Geotextile for Soil Stabilization	270 - Geotextile for Soil Stabilization	I. B	Contingency	N/A	N/A	3,000	SY
						Total Quantity of Geotextile for Soil Stabilization =	**3,000**	**SY**
1099500000-E	Shallow Undercut	505 - Aggregate Subgrade	I. B	Contingency	N/A	N/A	1,000	CY
						Total Quantity of Shallow Undercut =	**1,000**	**CY**
1099700000-E	Class IV Subgrade Stabilization	505 - Aggregate Subgrade	I. B	Contingency	N/A	N/A	2,000	TON
						Total Quantity of Class IV Subgrade Stabilization =	**2,000**	**TON**
1110000000-E	Stabilizer Aggregate	510 - Aggregate Stabilization	I. A	Contingency	N/A	N/A	500	TON
						Total Quantity of Stabilizer Aggregate =	**500**	**TON**

PAVEMENT CORES FOR

50125.1.FS1, I-5710, Wake County

ATTACHMENT 2

LINE	STATION	ABC (in)	SOIL CHEMICAL STAB. (in)	LAYER THICKNESS (in)	LAYERS	REMARKS
-RB1-	3+50 OSS 7 1/2" Asphalt	11	-	3 1/2	S	2 lifts, low severity stripping
				4	I	1 lift, low to moderate severity stripping
-RB1-	5+00 RAMP 11 1/2" Asphalt 8" CTB	-	9	3 1/2	S	2 lifts, indistinguishable
				3 1/2	I	1 lift, very low severity stripping
				4 1/2	B	1 lift, low to moderate severity stripping, high severity stripping last 1", delaminated from concrete with some missing material
				8	C	Concrete, 1 lift, good condition
-RB1-	5+00 OSS 10 1/2" Asphalt 8" CTB	-	8 1/2	3	S	2 lifts, very low severity stripping
				3 1/2	I	1 lift, low severity stripping at contact with base lift
				4	B	1 lift, low severity stripping, delaminated from concrete
				8	C	Concrete, 1 lift, low severity stripping
-RB1-	14+00 RAMP ISS 8" Asphalt	8 1/2	-	3 1/2	S	2 lifts
				2 1/4	I	1 lift, very low severity stripping
				2 1/4	B	1 lift, low to high severity stripping, top 1" low severity stripping, remaining core in pieces
-RB1-	14+00 RAMP OSL 8" Asphalt	8 1/2	-	2 3/4	S	2 lifts, very low severity stripping, and contact between lifts 1 and 2
				2 1/2	I	1 lift, very low severity stripping
				3 3/4	B	1 lift, low to moderate severity stripping
-RB1-	14+00 RAMP OSS 9 1/2" Asphalt	8	-	3	S	2 lifts
				3	I	1 lift, very low severity stripping
				3 1/2	B	1 lift, low to moderate severity stripping, missing aggregate last 1"
-RB2-	2+50 RAMP 6 1/2" Asphalt	-	21 1/2	3	S	2 lifts
				3 1/2	I	1 lift, very low severity stripping
-RB2-	2+50 OSS 6" Asphalt	6	8	3	S	2 lifts, lift 1 has very low severity stripping
				3	I	1 lift, low severity stripping at contact with surface lift
-RB2-	12+00 RAMP ISS 5" Asphalt	8	8	2 1/4	S	1 lift, no evidence for 2 lifts, very low severity stripping at contact with Intermediate
				2 3/4	I	1 lift, very low severity stripping bottom 1/2"
-RB2-	12+00 RAMP OSL 5 1/4" Asphalt	7 3/4	8 1/2	2 3/4	S	2 lifts, very low severity stripping
				2 1/2	I	1 lift, low severity stripping
-RB2-	12+00 RAMP OSS 5 1/2" Asphalt	8	8 1/2	2 1/2	S	2 lifts, very low severity stripping at Intermediate lift contact
				3	I	1 lift, very low severity stripping
-RB4-	2+50 OSS 9 1/2" Asphalt	7	8	2	S	1 lift, low severity stripping last 1/2" of lift
				2 1/2	I	1 lift, low severity stripping
				5	B	1lift, low severity stripping top 2" of lift
-RB4-	4+00 RAMP 9 1/2" Asphalt 7 1/2" CTB	-	-	3	S	2 lifts, indistinguishable
				2 1/2	I	1 lift, low to moderate severity sripping, machine break at base lift contact
				4	B	1 lift, machine break at contact with concrete
				7 1/2	C	Concrete, 1 lift, few small voids in matrix

PAVEMENT CORES FOR
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LINE	STATION	ABC (in)	SOIL CHEMICAL STAB. (in)	LAYER THICKNESS (in)	LAYERS	REMARKS
-RB4-	4+00 OSS 9 1/4" Asphalt	6 3/4	-	2 3/4	S	2 lifts, low severity stripping, possible HDS
				2 3/4	I	1 lift
				3 3/4	B	1 lift, low to moderate severity stripping last 1" of lift
-RB4-	6+50 RAMP OSS 6" Asphalt	7 1/2	-	3 1/2	S	2 lifts, low severity stripping
				2 1/2	I	1 lift, low severity stripping last 1" of lift
-RB4-	11+50 RAMP OSS 5" Asphalt	5 3/4	-	5	S	3 lifts, lift 1 has low to moderate severity stripping, lift 2 has very low severity stripping, lift 3 could be Intermediate, no change in aggregate size
-RB4-	14+00 RAMP ISS 5 1/2" Asphalt	7 1/2	8	3 1/2	S	2 lifts, indistinguishable
				2	I	1 lift, low severity stripping
-RB4-	14+00 RAMP OSL 5" Asphalt	7 1/2	-	2 3/4	S	2 lifts, indistinguishable, very low severity stripping
				2 1/4	I	1 lift, low severity stripping
-RB4-	14+00 RAMP OSS 5 1/2" Asphalt	6 1/2	-	3 1/4	S	2 lifts, indistinguishable, very low severity stripping at Intermediate lift contact, full-depth crack
				2 1/4	I	1 lift, low severity stripping, full-depth crack

Asphalt Core Photo

Project No.: 50125.1.FS1	*I.D. No.*: I-5710	*County*: WAKE	*Date:* 11/17 – 11/20/2015
Site Description: I-540 from SR 1822 (Leesville Road) to SR 2000 (Falls of the Neuse Road) in Raleigh. Install Ramp Meters at Various Locations.			
Driller: J. R. Turnage	*Core Size*: 4 - inch	*Drill Machine:* Hilti DD 200 / CME-75	
Geologist / Engineer: M. J. Alexander			

Notes:

OSL - Outside Lane
OSS - Outside Shoulder
ACCEL - Acceleration Lane
LTL - Left Turn Lane
RT LN - Right Lane
NB - Northbound
(I) - Inside

ISL - Inside Lane
ISS - Inside Shoulder
DECEL - Deceleration Lane
RTL - Right Turn Lane
LT LN - Left Lane
SB - Southbound
(O) - Outside

CL - Center Lane
PS - Paved Shoulder
COL - Collector Lane

Terracon Consultants, Inc.
2401 Brentwood Road, Suite 107
Raleigh, North Carolina 27604
www.terracon.com

Asphalt Core Photo

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CONE PENETROMETER RESULTS
NC - DOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	50125.1.FS1
PROJECT ID	I-5710
ROUTE	SR 1822
COUNTY	WAKE

GEOLOGIST	JBB
GEOTECHS	TERRACON

FILE	I5507_CONEPEN_ENG…

-RB1- 3+50 OSS RAW 1
FILL
Datum = ABC/SG 11/19/15

Interval 0.0 to 11.0	
# of Values	41
Avg CBR	60.6
Wghtd Avg.	51.1
Max CBR	100+
Min CBR	19.2

Interval 11.0 to 45.0	
# of Values	75
Avg CBR	49.4
Wghtd Avg.	29.1
Max CBR	100+
Min CBR	8.9

-RB1- 5+00 RAMP RAW 2
FILL
Datum = SS/SG 11/19/15

Interval 0.0 to 10.2	
# of Values	2
Avg CBR	15.0
Wghtd Avg.	15.0
Max CBR	15.4
Min CBR	14.6

Interval 10.2 to 37.1	
# of Values	44
Avg CBR	28.6
Wghtd Avg.	21.2
Max CBR	58.4
Min CBR	5.3

Legend
SS= Soil Stabilization IES= Inside Earth Shoulder
OES= Outside Earth Shoulder EGS= Existing Ground Surface

CONE PENETROMETER RESULTS
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COUNTY	WAKE

GEOLOGIST	JBB
GEOTECHS	TERRACON

FILE	I5507_CONEPEN_ENG…

-RB1- 5+00 OSS — RAW — 3

FILL

Datum = SS/SG — 11/19/15

Interval 0.0 to 8.3	
# of Values	56
Avg CBR	100+
Wghtd Avg.	95.4
Max CBR	100+
Min CBR	30.6

Interval 8.3 to 38.4	
# of Values	62
Avg CBR	32.0
Wghtd Avg.	27.2
Max CBR	70.9
Min CBR	9.5

-RB1- 7+50 OES — RAW — 4

CUT

Datum = 12" BELOW EGS — 11/19/15

Interval 0.0 to 0.0	
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval 0.0 to 39.6	
# of Values	62
Avg CBR	26.4
Wghtd Avg.	20.2
Max CBR	43.0
Min CBR	3.8

CONE PENETROMETER RESULTS
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GEOLOGIST	JBB
GEOTECHS	TERRACON

FILE	I5507_CONEPEN_ENG…

-RB1- 10+00 OES RAW 5
CUT
Datum = 12" BELOW EGS 11/19/15

Interval 0.0 to 0.0	
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval 0.0 to 41.9	
# of Values	108
Avg CBR	64.8
Wghtd Avg.	34.4
Max CBR	100+
Min CBR	4.5

-RB1- 12+50 RAMP OES RAW 6
GRADE
Datum = 12" BELOW EGS 11/19/15

Interval 0.0 to 0.0	
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval 0.0 to 43.4	
# of Values	48
Avg CBR	21.6
Wghtd Avg.	14.0
Max CBR	70.9
Min CBR	4.0

CONE PENETROMETER RESULTS
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FILE	I5507_CONEPEN_ENG…

-RB1- 14+00 RAMP ISS RAW 7
FILL
Datum = ABC/SG 11/19/15

Interval 0.0 to 8.5	
# of Values	43
Avg CBR	94.4
Wghtd Avg.	70.9
Max CBR	100+
Min CBR	17.1

Interval 8.5 to 43.6	
# of Values	86
Avg CBR	100+
Wghtd Avg.	32.6
Max CBR	100+
Min CBR	10.5

-RB1- 14+00 RAMP OSL RAW 8
FILL
Datum = ABC/SG 11/19/15

Interval 0.0 to 8.4	
# of Values	34
Avg CBR	77.6
Wghtd Avg.	55.5
Max CBR	100+
Min CBR	25.6

Interval 8.4 to 40.4	
# of Values	38
Avg CBR	18.2
Wghtd Avg.	15.1
Max CBR	30.6
Min CBR	6.8

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FILE	I5507_CONEPEN_ENG…

-RB1- 14+00 RAMP OSS — RAW — 9

FILL

Datum = ABC/SG — 11/19/15

Interval 0.0 to 7.8	
# of Values	28
Avg CBR	76.9
Wghtd Avg.	49.0
Max CBR	100+
Min CBR	15.4

Interval 7.8 to 37.1	
# of Values	45
Avg CBR	24.9
Wghtd Avg.	19.8
Max CBR	90.0
Min CBR	11.3

-RB2- 0+00 OES — RAW — 10

NC 50 — CUT

Datum = 12" BELOW EGS — 11/19/15

Interval 0.0 to 0.0	
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval 0.0 to 36.3	
# of Values	81
Avg CBR	100+
Wghtd Avg.	29.5
Max CBR	100+
Min CBR	3.9

CONE PENETROMETER RESULTS
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ROUTE	NC 50
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GEOTECHS	TERRACON

FILE	I5507_CONEPEN_ENG…

-RB2- 2+50 RAMP — RAW — 11

CUT

Datum = SS/SG — 11/19/15

Interval 0.0 to 21.3	
# of Values	4
Avg CBR	62.5
Wghtd Avg.	43.0
Max CBR	90.0
Min CBR	18.1

Interval 21.3 to 42.8	
# of Values	36
Avg CBR	47.6
Wghtd Avg.	21.7
Max CBR	100+
Min CBR	8.6

-RB2- 2+50 OSS — RAW — 12

CUT

Datum = ABC/SS/SG — 11/19/15

Interval 0.0 to 0.0	
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval 0.0 to 40.4	
# of Values	31
Avg CBR	27.5
Wghtd Avg.	17.2
Max CBR	90.0
Min CBR	9.2

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GEOTECHS	TERRACON

FILE	I5507_CONEPEN_ENG…

-RB2- 5+00 OES — RAW — CUT — 13

Datum = 12" BELOW EGS — 11/19/15

Interval 0.0 to 0.0	
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval 0.0 to 44.4	
# of Values	97
Avg CBR	90.6
Wghtd Avg.	37.6
Max CBR	100+
Min CBR	12.8

-RB2- 7+00 OES — RAW — GRADE — 14

Datum = 12" BELOW EGS — 11/19/15

Interval 0.0 to 0.0	
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval 0.0 to 39.3	
# of Values	115
Avg CBR	59.1
Wghtd Avg.	39.5
Max CBR	100+
Min CBR	13.3

CONE PENETROMETER RESULTS
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FILE	I5507_CONEPEN_ENG…

-RB2- 9+50 OES — RAW — 15

CUT

Datum = 12" BELOW EGS — 11/19/15

Interval 0.0 to 0.0	
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval 0.0 to 40.2	
# of Values	70
Avg CBR	56.6
Wghtd Avg.	22.4
Max CBR	100+
Min CBR	8.4

-RB2- 12+00 RAMP ISS — RAW — 16

CUT

Datum = ABC/SS/SG — 11/19/15

Interval 0.0 to 0.0	
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval 0.0 to 43.0	
# of Values	26
Avg CBR	13.4
Wghtd Avg.	12.4
Max CBR	22.0
Min CBR	7.3

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FILE	I5507_CONEPEN_ENG…

-RB2- 12+00 RAMP OSL — RAW — CUT — 17

Datum = ABC/SS/SG — 11/19/15

Interval 0.0 to 0.0	
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval 0.0 to 52.4	
# of Values	41
Avg CBR	27.5
Wghtd Avg.	16.8
Max CBR	100+
Min CBR	7.7

-RB2- 12+00 RAMP OSS — RAW — CUT — 18

Datum = ABC/SS/SG — 11/19/15

Interval 0.0 to 16.1	
# of Values	11
Avg CBR	42.7
Wghtd Avg.	33.6
Max CBR	70.9
Min CBR	17.1

Interval 16.1 to 44.7	
# of Values	35
Avg CBR	16.1
Wghtd Avg.	15.6
Max CBR	23.7
Min CBR	10.5

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FILE	I5507_CONEPEN_ENG…

-RB4- 2+50 OSS — RAW — 19

FILL

Datum = ABC/SS/SG — 11/19/15

Interval 0.0 to 14.9	
# of Values	29
Avg CBR	64.5
Wghtd Avg.	54.7
Max CBR	100+
Min CBR	25.6

Interval 14.9 to 42.9	
# of Values	52
Avg CBR	28.0
Wghtd Avg.	24.2
Max CBR	49.6
Min CBR	12.2

-RB4- 4+00 RAMP — RAW — 20

GRADE

Datum = SG — 11/19/15

Interval 0.0 to 0.0	
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval 0.0 to 41.5	
# of Values	72
Avg CBR	27.8
Wghtd Avg.	22.5
Max CBR	70.9
Min CBR	7.2

CONE PENETROMETER RESULTS
NC - DOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	50125.1.FS1
PROJECT ID	I-5710
ROUTE	SR 2000
COUNTY	WAKE

GEOLOGIST	JBB
GEOTECHS	TERRACON

FILE	I5507_CONEPEN_ENG…

-RB4- 4+00 OSS — RAW — 21

GRADE

Datum = ABC/SG — 11/19/15

Interval 7.2 to 0.0	
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval 0.0 to 39.9	
# of Values	79
Avg CBR	43.6
Wghtd Avg.	32.2
Max CBR	100+
Min CBR	10.5

-RB4- 6+50 RAMP OSS — RAW — 22

FILL

Datum = ABC/SG — 11/19/15

Interval 0.0 to 7.6	
# of Values	37
Avg CBR	100+
Wghtd Avg.	67.8
Max CBR	100+
Min CBR	12.2

Interval 7.6 to 41.7	
# of Values	90
Avg CBR	50.1
Wghtd Avg.	35.3
Max CBR	100+
Min CBR	14.6

CONE PENETROMETER RESULTS
NC - DOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	50125.1.FS1
PROJECT ID	I-5710
ROUTE	SR 2000
COUNTY	WAKE

GEOLOGIST	JBB
GEOTECHS	TERRACON

FILE	I5507_CONEPEN_ENG…

-RP4- 9+00 IES RAW 23
FILL
Datum = 12" BELOW EGS 11/19/15

Interval 0.0 to 0.0	
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval 0.0 to 34.3	
# of Values	26
Avg CBR	9.9
Wghtd Avg.	9.3
Max CBR	15.4
Min CBR	5.7

-RB4- 11+50 RAMP OSS RAW 24
FILL
Datum = ABC/SG 11/19/15

Interval 0.0 to 5.8	
# of Values	24
Avg CBR	69.7
Wghtd Avg	56.7
Max CBR	100+
Min CBR	30.6

Interval 5.8 to 41.7	
# of Values	61
Avg CBR	34.7
Wghtd Avg.	22.1
Max CBR	100+
Min CBR	5.6

CONE PENETROMETER RESULTS
NC - DOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	50125.1.FS1
PROJECT ID	I-5710
ROUTE	SR 2000
COUNTY	WAKE

GEOLOGIST	JBB
GEOTECHS	TERRACON

FILE	I5507_CONEPEN_ENG…

-RP4- 14+00 ISS RAW 25
FILL
Datum = ABC/SS/SG 11/19/15

Interval 0.0 to 15.2	
# of Values	31
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	43.0

Interval 15.2 to 43.9	
# of Values	85
Avg CBR	49.5
Wghtd Avg.	39.9
Max CBR	90.0
Min CBR	15.4

-RB4- 14+00 RAMP OSL RAW 26
FILL
Datum = ABC/SG 11/19/15

Interval 0.0 to 7.5	
# of Values	48
Avg CBR	100+
Wghtd Avg.	91.0
Max CBR	100+
Min CBR	37.9

Interval 7.5 to 43.3	
# of Values	93
Avg CBR	46.2
Wghtd Avg.	34.6
Max CBR	90.0
Min CBR	11.3

CONE PENETROMETER RESULTS
NC - DOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	50125.1.FS1
PROJECT ID	I-5710
ROUTE	SR 2000
COUNTY	WAKE

GEOLOGIST	JBB
GEOTECHS	TERRACON

FILE	I5507_CONEPEN_ENG…

-RP4- 14+00 RAMP OSS RAW 27
FILL
Datum = ABC/SG 11/19/15

Interval 0.0 to 6.7	
# of Values	18
Avg CBR	41.3
Wghtd Avg.	35.8
Max CBR	70.9
Min CBR	18.1

Interval 6.7 to 41.8	
# of Values	27
Avg CBR	12.3
Wghtd Avg.	9.5
Max CBR	30.6
Min CBR	3.4

-RB1- 50125.1.FS1 (I-5710) LEESVILLE RD.
Legend
Core/Auger
-RB1- END CONSTRUCTION 14+00
-RB1- 14+00 RAMP OSL
-RB1- 14+00 RAMP OSS
-RB1- 14+00 ISS
Berry Crest Ave
Schaller Ct
-RB1- 10+00 OUTSIDE EXISTING SHOULDER
-RB1- 7+50 OUTSIDE EARTH SHOULDER
-RB1- 5+00 OSS
-RB1- 5+00 RAMP
-RB1- 3+50 OSS
540
-RB1- BEGIN CONSTRUCTION 3+50
Northern Wake Expy
Leesville Church Rd
Google earth
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N
400 ft

-RB2- 50125.1.FS1 (I-5710) CREEDMOOR RD.

-RB4- 50125.1.FS1 (I-5710) FALLS OF THE NEUSE RD.