



**LABORATORY SUMMARY SHEET FOR ROCK CORE SAMPLES**

**PROJECT NO.:** 34379.1.17

**F.A. NO.:** N/A

**TIP NO.:** R-2123CE

**COUNTY:** Mecklenburg

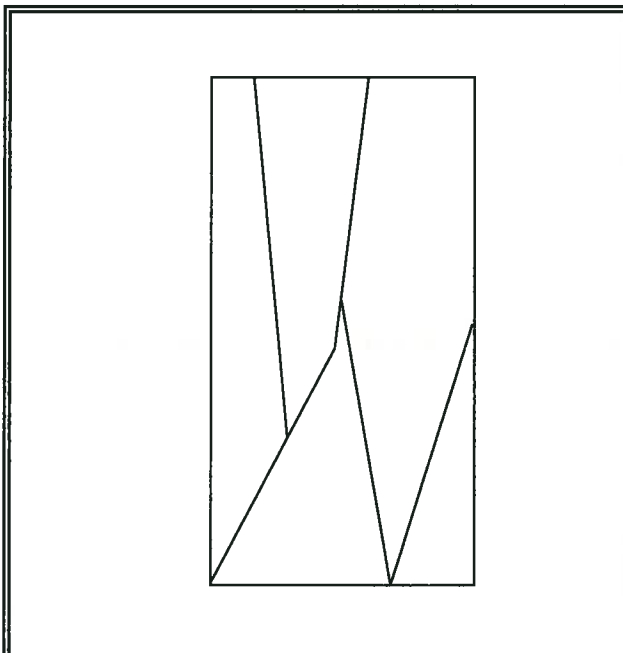
**I-485 (Charlotte Eastern Outer Loop) at I-85**

Sample #	Boring #	Depth (ft)	Rock Type	Geologic Map Unit	Run RQD	Length (ft)	Diameter (ft)	Unit Weight (PCF)	Unconfined Compressive Strength (PSI)	Remarks
RS-1	DB-14	40.4-40.7	Metamorphosed Quartz Diorite	PzZq	100%	0.3250	0.1642	189.9	19,741	
RS-2	DB-7	38.3-38.6	Crystalline Quartz Diorite	PzZq	96%	0.3300	0.1658	182.2	22,843	
RS-4	DB-9	72.5-72.8	Metamorphosed Quartz Diorite	PzZq	92%	0.3317	0.1650	183.4	19,860	
RS-5	DB-19	46.7-47.0	Quartz Diorite	PzZq	48%	0.3325	0.1658	164.4	7,820	
RS-6	DB-13	83.7-84.0	Metamorphosed Quartz Diorite	PzZq	76%	0.3242	0.1642	175.0	5,600	
RS-7	DB-23	65.6-65.9	Metamorphosed Quartz Diorite	PzZq	82%	0.2867	0.1467	174.4	21,706	
RS-9	DB-18	80.1-80.4	Altered Quartz Diorite	PzZq	34%	0.3333	0.1658	153.4	7,550	

**KLEINFELDER SOUTHEAST, INC.  
UNCONFINED COMPRESSIVE STRENGTH OF ROCK CORE SPECIMEN**

<b>Date</b> 6/30/2010	
<b>Project Description:</b>	<b>I-485 (Charlotte Eastern Outer Loop) at I-85</b>
<b>County:</b>	<b>Mecklenburg</b>
<b>Project Number:</b>	<b>34379.1.17</b>
<b>TIP Number:</b>	<b>R-2123CE</b>
<b>Boring Number:</b>	<b>DB-14</b>
<b>Depth:</b>	<b>40.4' to 40.7'</b>
<b>Rock Description:</b>	<b>Metamorphosed Quartz Diorite</b>
<b>Specimen No.</b>	<b>RS-1</b>
<b>Moisture Condition</b>	<b>Air Dry</b>
<b>Dry Density, lb/ft<sup>3</sup></b>	<b>189.9</b>
<b>Mass, lb</b>	<b>1.306</b>
<b>Diameter, in</b>	<b>1.970</b>
<b>Height, in</b>	<b>3.900</b>
<b>Maximum Load, lb</b>	<b>60,140</b>
<b>Unc. Comp. Strength, psi</b>	<b>19,741</b>
<b>Loading Rate, in/min.</b>	<b>0.009</b>
<b>NOTES:</b>	

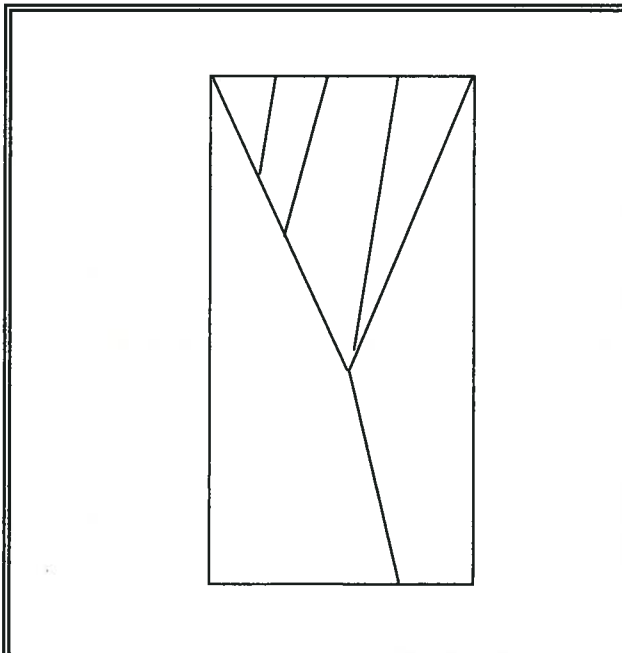
**Failure Sketch**



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UNCONFINED COMPRESSIVE STRENGTH OF ROCK CORE SPECIMEN**

<b>Date</b>	6/30/2010	
<b>Project Description:</b>	I-485 (Charlotte Eastern Outer Loop) at I-85	
<b>County:</b>	Mecklenburg	
<b>Project Number:</b>	34379.1.17	
<b>TIP Number:</b>	R-2123CE	
<b>Boring Number:</b>	DB-7	
<b>Depth:</b>	38.3' to 38.6'	
<b>Rock Description:</b>	Crstalline Quartz Diorite	
<b>Specimen No.</b>	RS-2	
<b>Moisture Condition</b>	Air Dry	
<b>Dry Density, lb/ft<sup>3</sup></b>	182.2	
<b>Mass, lb</b>	1.298	
<b>Diameter, in</b>	1.990	
<b>Height, in</b>	3.960	
<b>Maximum Load, lb</b>	71,010	
<b>Unc. Comp. Strength, psi</b>	22,843	
<b>Loading Rate, in/min.</b>	0.009	
<b>NOTES:</b>		

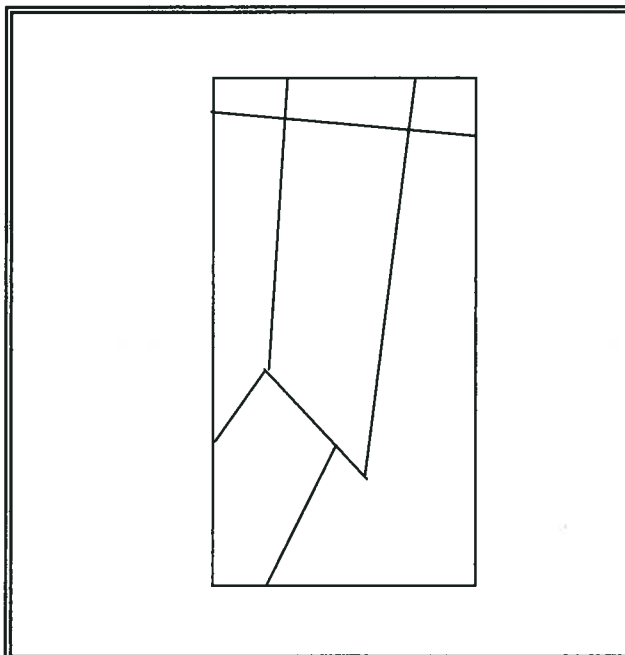
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UNCONFINED COMPRESSIVE STRENGTH OF ROCK CORE SPECIMEN**

<b>Date</b> 6/30/2010	
<b>Project Description:</b>	<b>I-485 (Charlotte Eastern Outer Loop) at I-85</b>
<b>County:</b>	<b>Mecklenburg</b>
<b>Project Number:</b>	<b>34379.1.17</b>
<b>TIP Number:</b>	<b>R-2123CE</b>
<b>Boring Number:</b>	<b>DB-9</b>
<b>Depth:</b>	<b>72.5' to 72.8'</b>
<b>Rock Description:</b>	<b>Metamorphosed Quartz Diorite</b>
<b>Specimen No.</b>	<b>RS-4</b>
<b>Moisture Condition</b>	<b>Air Dry</b>
<b>Dry Density, lb/ft<sup>3</sup></b>	<b>183.4</b>
<b>Mass, lb</b>	<b>1.300</b>
<b>Diameter, in</b>	<b>1.980</b>
<b>Height, in</b>	<b>3.980</b>
<b>Maximum Load, lb</b>	<b>61,120</b>
<b>Unc. Comp. Strength, psi</b>	<b>19,860</b>
<b>Loading Rate, in/min.</b>	<b>0.009</b>
<b>NOTES:</b>	

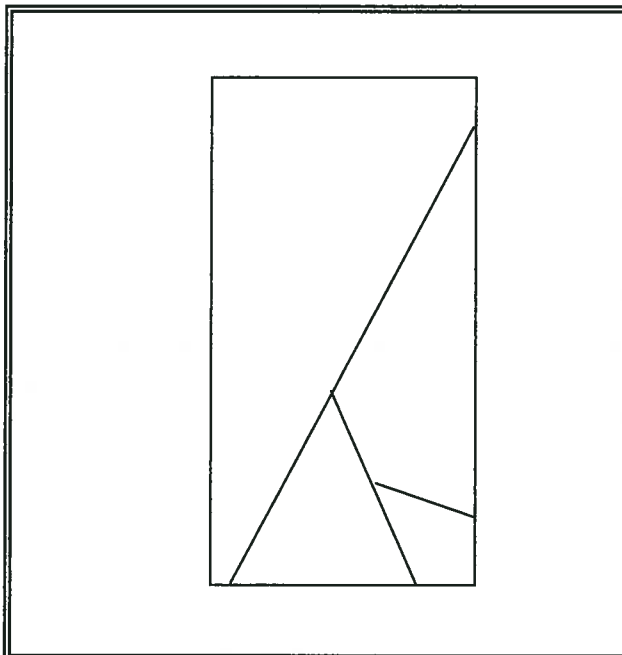
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UNCONFINED COMPRESSIVE STRENGTH OF ROCK CORE SPECIMEN**

<b>Date</b>	<b>6/30/2010</b>	
<b>Project Description:</b>	<b>I-485 (Charlotte Eastern Outer Loop) at I-85</b>	
<b>County:</b>	<b>Mecklenburg</b>	
<b>Project Number:</b>	<b>34379.1.17</b>	
<b>TIP Number:</b>	<b>R-2123CE</b>	
<b>Boring Number:</b>	<b>DB-19</b>	
<b>Depth:</b>	<b>46.7' to 47.0'</b>	
<b>Rock Description:</b>	<b>Quartz Diorite</b>	
<b>Specimen No.</b>	<b>RS-5</b>	
<b>Moisture Condition</b>	<b>Air Dry</b>	
<b>Dry Density, lb/ft<sup>3</sup></b>	<b>164.4</b>	
<b>Mass, lb</b>	<b>1.180</b>	
<b>Diameter, in</b>	<b>1.990</b>	
<b>Height, in</b>	<b>3.990</b>	
<b>Maximum Load, lb</b>	<b>24,310</b>	
<b>Unc. Comp. Strength, psi</b>	<b>7,820</b>	
<b>Loading Rate, in/min.</b>	<b>0.009</b>	
<b>NOTES:</b>		

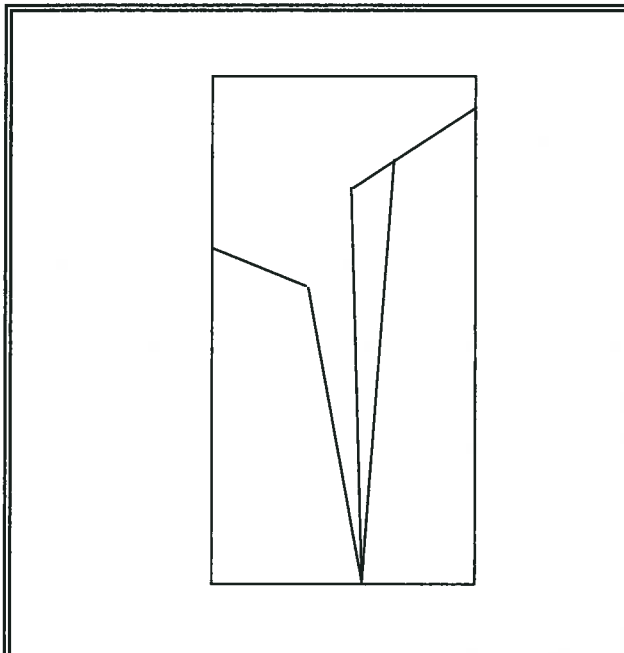
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<b>Project Description:</b>	<b>I-485 (Charlotte Eastern Outer Loop) at I-85</b>	
<b>County:</b>	<b>Mecklenburg</b>	
<b>Project Number:</b>	<b>34379.1.17</b>	
<b>TIP Number:</b>	<b>R-2123CE</b>	
<b>Boring Number:</b>	<b>DB-13</b>	
<b>Depth:</b>	<b>83.7' to 84.0'</b>	
<b>Rock Description:</b>	<b>Metamorphosed Quartz Diorite</b>	
<b>Specimen No.</b>	<b>RS-6</b>	
<b>Moisture Condition</b>	<b>Air Dry</b>	
<b>Dry Density, lb/ft<sup>3</sup></b>	<b>175.0</b>	
<b>Mass, lb</b>	<b>1.200</b>	
<b>Diameter, in</b>	<b>1.970</b>	
<b>Height, in</b>	<b>3.890</b>	
<b>Maximum Load, lb</b>	<b>17,060</b>	
<b>Unc. Comp. Strength, psi</b>	<b>5,600</b>	
<b>Loading Rate, in/min.</b>	<b>0.009</b>	
<b>NOTES:</b>		

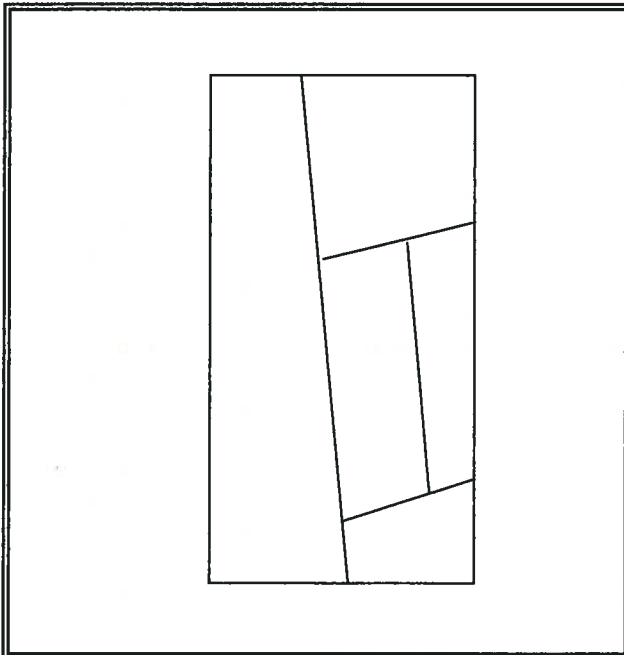
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<b>County:</b>	<b>Mecklenburg</b>
<b>Project Number:</b>	<b>34379.1.17</b>
<b>TIP Number:</b>	<b>R-2123CE</b>
<b>Boring Number:</b>	<b>DB-23</b>
<b>Depth:</b>	<b>65.6' to 65.9'</b>
<b>Rock Description:</b>	<b>Metamorphosed Quartz Diorite</b>
<b>Specimen No.</b>	<b>RS-7</b>
<b>Moisture Condition</b>	<b>Air Dry</b>
<b>Dry Density, lb/ft<sup>3</sup></b>	<b>174.4</b>
<b>Mass, lb</b>	<b>0.844</b>
<b>Diameter, in</b>	<b>1.760</b>
<b>Height, in</b>	<b>3.440</b>
<b>Maximum Load, lb</b>	<b>52,780</b>
<b>Unc. Comp. Strength, psi</b>	<b>21,706</b>
<b>Loading Rate, in/min.</b>	<b>0.009</b>
<b>NOTES:</b>	

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<b>TIP Number:</b>	<b>R-2123CE</b>
<b>Boring Number:</b>	<b>DB-18</b>
<b>Depth:</b>	<b>80.1' to 80.4'</b>
<b>Rock Description:</b>	<b>Altered Quartz Diorite</b>
<b>Specimen No.</b>	<b>RS-9</b>
<b>Moisture Condition</b>	<b>Air Dry</b>
<b>Dry Density, lb/ft<sup>3</sup></b>	<b>153.4</b>
<b>Mass, lb</b>	<b>1.104</b>
<b>Diameter, in</b>	<b>1.990</b>
<b>Height, in</b>	<b>4.000</b>
<b>Maximum Load, lb</b>	<b>23,470</b>
<b>Unc. Comp. Strength, psi</b>	<b>7,550</b>
<b>Loading Rate, in/min.</b>	<b>0.009</b>
<b>NOTES:</b>	

**Failure Sketch**

