

CONTRACT: 41156.1.1 ID: R-5000

**STATE OF NORTH CAROLINA**  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**GEOTECHNICAL ENGINEERING UNIT**

# ROADWAY SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 41156.1.1 F.A. PROJ. \_\_\_\_\_  
COUNTY JACKSON  
PROJECT DESCRIPTION NEW CONNECTOR ROAD FROM NC 116  
AND BONNIE LANE TO NC 107 AND EVANS ROAD

## INVENTORY

**CONTENTS**

LINE	STATION	PLAN	PROFILE	XSECT
-L-	11+00 - 47+50	9 - 12	13 - 17	25 - 32
-Y3-	10+00 - 20+23	10	18 - 19	33
-RPA-	10+00 - 23+73	11 - 12	20 - 21	34 - 38
-RPB-	10+00 - 14+67	11	22	-
-RPD-	10+00 - 23+93	11 - 12	23 - 24	-

39 - 74 BORING LOGS, CORE LOGS, AND CORE PHOTOS  
75 SUMMARY OF SOIL CLASSIFICATION TEST RESULTS  
76 SUMMARY OF STANDARD COMPACTION AND CALIFORNIA BEARING RATIO TEST RESULTS  
77 SUMMARY OF ROCK CORE COMPRESSIVE STRENGTH TEST RESULTS

APPENDIX A - TRIAXIAL TEST DATA  
APPENDIX B - STANDARD COMPACTION AND CALIFORNIA BEARING RATIO TEST DATA

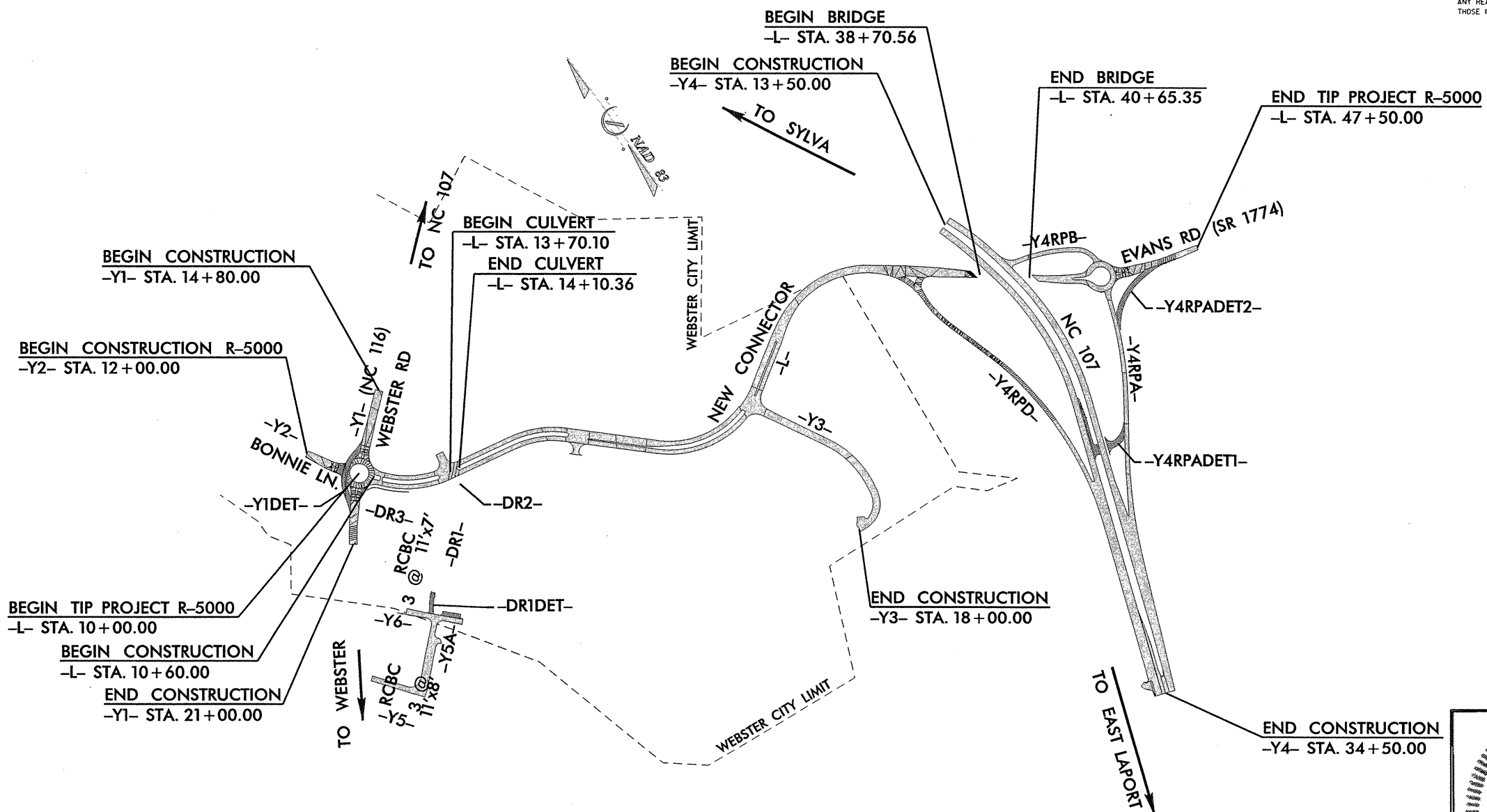
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	41156.1.1 (R-5000)	1	77
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
41156.1.1			

**CAUTION NOTICE**

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION, AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

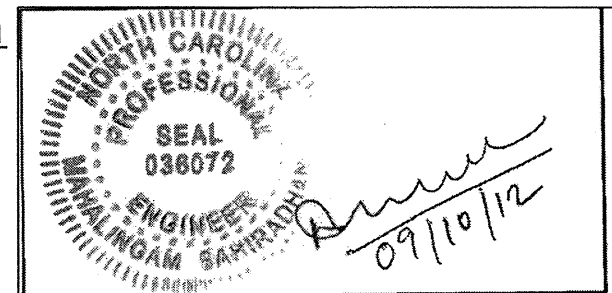
THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.



**PERSONNEL**

- C. NORVILLE
- M. BAHIRADHAN
- J. HAMM
- T. EVANS

INVESTIGATED BY T. EVANS  
CHECKED BY M. BAHIRADHAN  
SUBMITTED BY FALCON ENG.  
DATE SEPTEMBER 2012



DRAWN BY: J. HAMM / T. EVANS

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IT IS CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**GEOTECHNICAL ENGINEERING UNIT**

PROJECT REFERENCE NO. 4156.1.1 (R-5000)	SHEET NO. 2
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## SUBSURFACE INVESTIGATION

### SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION		GRADATION		ROCK DESCRIPTION		TERMS AND DEFINITIONS																																																																																																																																																					
<p>SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:</p> <p style="text-align: center;"><i>VERY STIFF, GRAY, SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i></p>		<p><b>WELL GRADED</b> - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. <b>UNIFORM</b> - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED)</p> <p><b>GAP-GRADED</b> - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.</p> <p style="text-align: center;"><b>ANGULARITY OF GRAINS</b></p> <p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: <b>ANGULAR</b>, <b>SUBANGULAR</b>, <b>SUBROUNDED</b>, OR <b>ROUNDED</b>.</p>		<p><b>HARD ROCK</b> IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:</p> <p><b>WEATHERED ROCK (WR)</b> </p> <p><b>CRYSTALLINE ROCK (CR)</b> </p> <p><b>NON-CRYSTALLINE ROCK (NCR)</b> </p> <p><b>COASTAL PLAIN SEDIMENTARY ROCK (CP)</b> </p>		<p><b>ALLUVIUM (ALLUV.)</b> - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.</p> <p><b>AQUIFER</b> - A WATER BEARING FORMATION OR STRATA.</p> <p><b>ARENACEOUS</b> - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.</p> <p><b>ARGILLACEOUS</b> - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC.</p> <p><b>ARTESIAN</b> - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.</p> <p><b>CALCAREOUS (CALC.)</b> - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.</p> <p><b>COLLUVIUM</b> - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.</p> <p><b>CORE RECOVERY (REC.)</b> - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.</p> <p><b>DIKE</b> - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.</p> <p><b>DIP</b> - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.</p> <p><b>DIP DIRECTION (DIP AZIMUTH)</b> - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.</p> <p><b>FAULT</b> - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.</p> <p><b>FISSILE</b> - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.</p> <p><b>FLOAT</b> - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL.</p> <p><b>FLOOD PLAIN (FP)</b> - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.</p> <p><b>FORMATION (FM)</b> - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.</p> <p><b>JOINT</b> - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.</p> <p><b>LEDGE</b> - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.</p> <p><b>LENS</b> - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.</p> <p><b>MOTTLED (MOT.)</b> - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.</p> <p><b>PERCHED WATER</b> - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.</p> <p><b>RESIDUAL (RES.) SOIL</b> - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.</p> <p><b>ROCK QUALITY DESIGNATION (RQD)</b> - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.</p> <p><b>SAPROLITE (SAP.)</b> - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.</p> <p><b>SILL</b> - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRODUCED ROCKS.</p> <p><b>SLICKENSIDE</b> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.</p> <p><b>STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT)</b> - NUMBER OF BLOWS IN OR BPF OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.</p> <p><b>STRATA CORE RECOVERY (SREC.)</b> - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.</p> <p><b>STRATA ROCK QUALITY DESIGNATION (SRQD)</b> - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.</p> <p><b>TOPSOIL (TS.)</b> - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>																																																																																																																																																					
<p style="text-align: center;"><b>SOIL LEGEND AND AASHTO CLASSIFICATION</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th rowspan="2">GENERAL CLASS.</th> <th colspan="7">GRANULAR MATERIALS (≤ 35% PASSING #200)</th> <th colspan="7">SILT-CLAY MATERIALS (&gt; 35% PASSING #200)</th> <th colspan="3">ORGANIC MATERIALS</th> </tr> <tr> <th>A-1-a</th> <th>A-1-b</th> <th>A-3</th> <th colspan="2">A-2</th> <th>A-4</th> <th>A-5</th> <th>A-6</th> <th>A-7</th> <th>A-1, A-2</th> <th>A-3</th> <th>A-4, A-5</th> <th>A-6, A-7</th> <th></th> <th></th> <th></th> </tr> <tr> <td>GROUP CLASS.</td> <td>A-1-a</td> <td>A-1-b</td> <td>A-3</td> <td>A-2-4</td> <td>A-2-5</td> <td>A-2-6</td> <td>A-2-7</td> <td>A-4</td> <td>A-5</td> <td>A-6</td> <td>A-7</td> <td>A-1, A-2</td> <td>A-3</td> <td>A-4, A-5</td> <td>A-6, A-7</td> </tr> <tr> <td>SYMBOL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>% PASSING</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> </tr> <tr> <td>LIQUID LIMIT</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> </tr> <tr> <td>PLASTIC INDEX</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>GROUP INDEX</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </table>		GENERAL CLASS.	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ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.</p> <p style="text-align: center;"><b>COMPRESSIBILITY</b></p> <p>SLIGHTLY COMPRESSIBLE      LIQUID LIMIT LESS THAN 31          MODERATELY COMPRESSIBLE      LIQUID LIMIT EQUAL TO 31-50          HIGHLY COMPRESSIBLE      LIQUID LIMIT GREATER THAN 50</p> <p style="text-align: center;"><b>PERCENTAGE OF MATERIAL</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>ORGANIC MATERIAL</th> <th>GRANULAR SOILS</th> <th>SILT-CLAY SOILS</th> <th>OTHER MATERIAL</th> </tr> <tr> <td>TRACE OF ORGANIC MATTER</td> <td>2 - 3%</td> <td>3 - 5%</td> <td>TRACE</td> </tr> <tr> <td>LITTLE ORGANIC MATTER</td> <td>3 - 5%</td> <td>5 - 12%</td> <td>LITTLE</td> </tr> <tr> <td>MODERATELY ORGANIC</td> <td>5 - 10%</td> <td>12 - 20%</td> <td>SOME</td> </tr> <tr> <td>HIGHLY ORGANIC</td> <td>&gt;10%</td> <td>&gt;20%</td> <td>HIGHLY</td> </tr> </table> <p style="text-align: center;"><b>GROUND WATER</b></p> <p> WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING</p> <p> STATIC WATER LEVEL AFTER 24 HOURS</p> <p> PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA</p> <p> SPRING OR SEEP</p>		ORGANIC MATERIAL	GRANULAR SOILS	SILT-CLAY SOILS	OTHER MATERIAL	TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE	LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE	MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME	HIGHLY ORGANIC	>10%	>20%	HIGHLY	<p style="text-align: center;"><b>WEATHERING</b></p> <p><b>FRESH</b> - ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE.</p> <p><b>VERY SLIGHT (V SLI.)</b> - ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.</p> <p><b>SLIGHT (SLI.)</b> - ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH, OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.</p> <p><b>MODERATE (MOD.)</b> - SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.</p> <p><b>MODERATELY SEVERE (MOD. SEV.)</b> - ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. <i>IF TESTED, WOULD YIELD SPT REFUSAL.</i></p> <p><b>SEVERE (SEV.)</b> - ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <i>IF TESTED, YIELDS SPT N VALUES &gt; 100 BPF.</i></p> <p><b>VERY SEVERE (V SEV.)</b> - ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, YIELDS SPT N VALUES &lt; 100 BPF.</i></p> <p><b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.</p>	
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### EARTHWORK SUMMARIES

COMPUTED BY W.C. Parker, PE      CHECKED BY \_\_\_\_\_  
 PROJECT R-5000      COUNTY Jackson      DATE August 9, 2012      SHEET 3 OF 77 SHEETS

LINE	STATION	STATION	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMB. +15%	BORROW	ROCK WASTE	SUITABLE WASTE	UNSUIT. WASTE	TOTAL WASTE
-L-	10+60.00	38+93.16	218,559	863			217,696	37,173	863	36,051	42,322			176,237		176,237
Bridge over Y4 (NC 107)																
-L-	40+47.27	47+50.00	5,099				5,099	22,083		22,083	25,395	20,296				
-Y1-	14+80.00	21+00.00	263				263	1,887		1,887	2,170	1,907				
-Y2-	12+00.00	13+61.77	54				54	103		103	118	64				
-Y3-	10+26.43	18+00.00	28,785				28,785	1,602		1,602	1,842			26,943		26,943
-Y4-	13+50.00	34+50.00	32,941				32,941	322		322	370			32,571		32,571
-Y4RPA-	14+89.65	23+12.73	5,083				5,083	12,766		12,766	14,681	9,598				
-Y4RPB-	10+41.49	14+06.83	19,433				19,433	2		2	2			19,431		19,431
-Y4RPD-	13+75.71	23+73.46	291,006	84			290,922	4	3		3		81	290,922		291,003
-Y5-	10+52.00	12+72.80	68				68	336		336	386	318				
-Y5A-	10+10.18	12+95.73	159				159	452		452	520	361				
-Y6-	10+88.78	14+25.00	134				134	139		139	160	26				
-DR1-	11+50.00	16+31.73	506				506	42		42	48			458		458
-DR2-	10+33.98	12+50.00	87				87	18		18	21			66		66
-DR3-	10+25.00	12+79.46	40				40	42		42	48	8				
SUBTOTAL #1			602,217	947			601,270	76,971	866	75,845	88,086	32,578	81	546,628		546,709
<b>DETOURS:</b>																
-Y1DET-	16+81.04	20+00.26	281				281	105		105	121			160		160
-Y4RPADET1-	10+49.00	11+81.98	28				28	112		112	129	101				
-Y4RPADET2-	21+49.38	25+50.06	6				6	6,050		6,050	6,958	6,952				
-DR1DET-	13+52.63	14+37.55	50				50	1		1	1			49		49
SUBTOTAL #2			365				365	6,268		6,268	7,209	7,053		209		209
<b>DETOUR REMOVAL:</b>																
-Y1DET-	16+81.04	20+00.26	7				7	0		0	0			7		7
-Y4RPADET1-	10+49.00	11+81.98	112				112	0		0	0			112		112
-Y4RPADET2-	21+49.38	25+50.06	6,050				6,050	0		0	0			6,050		6,050
-DR1DET-	13+52.63	14+37.55	1				1	0		0	0			1		1
SUBTOTAL #3			6,170				6,170	0		0	0			6,170		6,170
PROJECT TOTALS:			608,752	947			607,805	83,239	866	82,113	95,295	39,631	81	553,007	0	553,088
Rock Waste to Replace Borrow									81	-81		-81	-81			-81
Adjustment for Rock (30%)											-24	-24				
Adjustment for Earth Shrinkage											-16	-16				
Placement of Surcharge							260			260	299	299				
Removal of Surcharge			260				260							260		260
Use Waste In-Lieu of Borrow												-40,097		-40,097		-40,097
GRAND TOTALS:			609,012	947			608,065	83,499	947	82,292	95,553	0		513,459	0	513,459
<b>SAY:</b>			<b>610,000</b>									<b>0</b>				<b>514,000</b>

Est. DDE: 4,295 Yd<sup>3</sup>      Est. Class IV Subgrade Stabilization: 500 Tons      Est. Shallow Undercut = 500 Yd<sup>3</sup>  
 Shoulder Borrow: 4,000 Yd<sup>3</sup>      Est. Class IV Subgrade Stabilization by Station: 3,200 Tons      Est. Shallow Undercut by Stations = 1,550 Yd<sup>3</sup>  
 Estimated Undercut: 3,950 Yd<sup>3</sup>      Total Class IV Subgrade Stabilization: 3,700 Tons      Total Shallow Undercut = 2,050 Yd<sup>3</sup>  
 -L-, -Y- Line, & Detour Pavement Structure Volume = 10,864 Yd<sup>3</sup>

**NOTE:** This earthwork balance sheet was provided by the NCDOT Division 14 to be included in the report. The earthwork quantities presented on this sheet were estimated by the NCDOT Division 14 partly based on the subsurface data provided by the NCDOT Geotechnical Engineering Unit, Western Region. The earthwork quantities presented on this sheet were not reviewed or verified by Falcon Engineering, Inc.

**CONTRACT: C203133** **TIP PROJECT: R-5000**

See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  

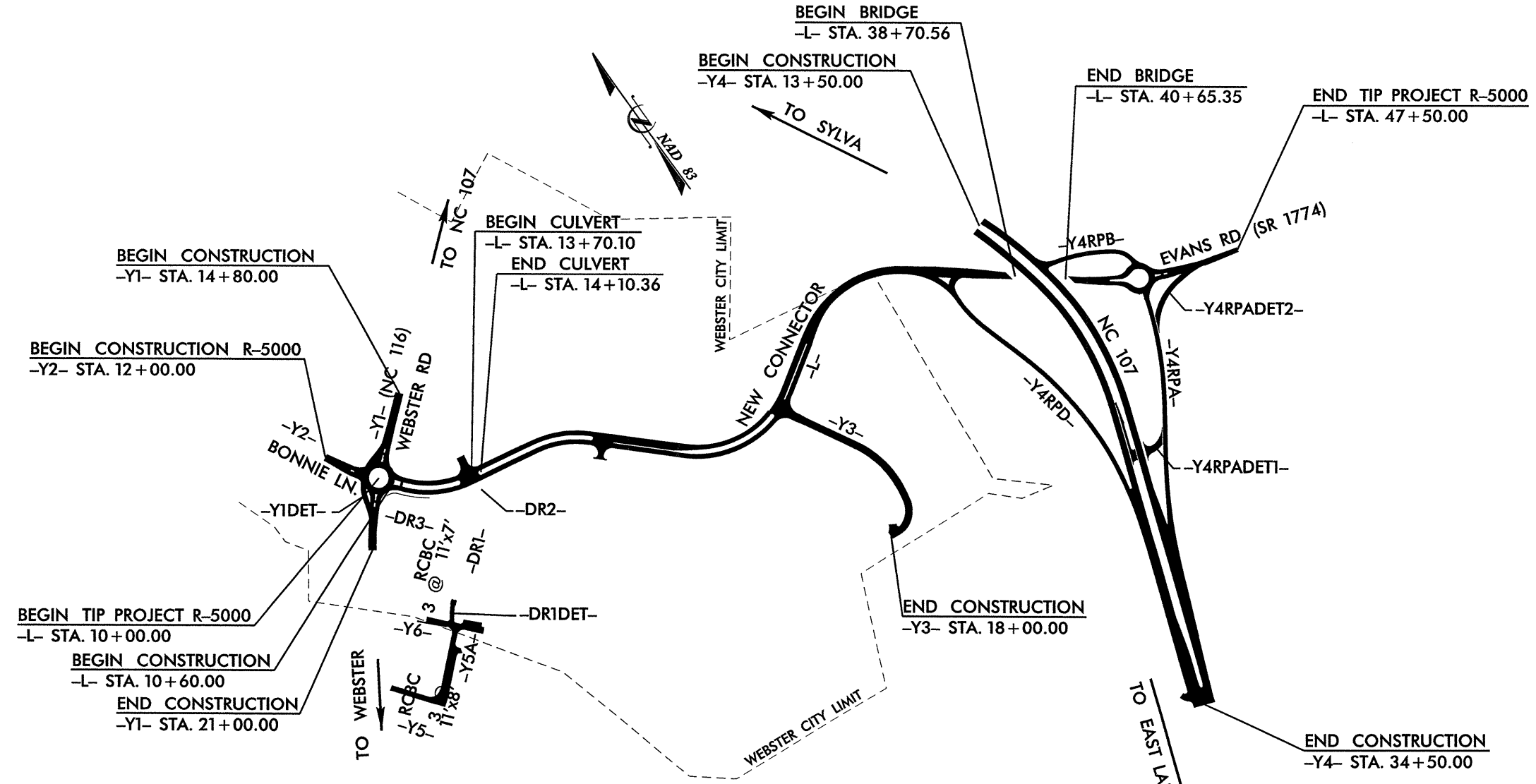

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**JACKSON COUNTY**

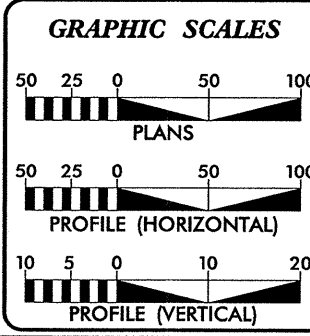

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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5000	4	77
WM NO.	F.A. PROJ. NO.	DESCRIPTION	
41156.1.1		P.E.	
41156.2.1		RW/UTIL.	
41156.3.1		CONST.	

**LOCATION: NEW LOCATION CONNECTOR ROAD FROM NC 116 TO EAST OF NC 107**  
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURES.**



THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.



**DESIGN DATA**

ADT 2012 =	2,900
ADT 2035 =	6,700
DHV =	11 %
D =	55 %
T =	3 % *
V =	35 MPH
(* TTST 1% + DUALS 2%)	
FUNC CLASS =	URBAN COLLECTOR STATEWIDE TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT R-5000	=	0.673 MILES
LENGTH STRUCTURE TIP PROJECT R-5000	=	0.037 MILES
TOTAL LENGTH TIP PROJECT R-5000	=	0.710 MILES

Prepared for:  
**NC DOT DIVISION 14**  
253 Webster Rd., Sylva, NC 28779  
2012 STANDARD SPECIFICATIONS  
**RIGHT OF WAY DATE: NOVEMBER 2011**  
**LETTING DATE: OCTOBER 16, 2012**

Prepared by:  
**MULKEY ENGINEERS & CONSULTANTS**  
RD BOX 28127  
MORRISVILLE, NC 27560  
TEL: 919-851-1414  
WWW.MULKEYENGINEERS.COM  
NC License No. C-2022

**JOHNNY BANKS**  
PROJECT ENGINEER

**W. CRAIG PARKER, PE**  
PROJECT DESIGN ENGINEER

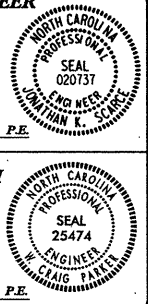
NCDOT CONTACT: **STEPHEN WILLIAMS**  
DIVISION 14 DESIGN CONSTRUCTION ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_



\$\$\$ SYSTEM TIME \$\$\$  
 \$\$\$ USER NAME \$\$\$  
 \$\$\$ USER ID \$\$\$  
 \$\$\$ DATE \$\$\$  
 \$\$\$ TIME \$\$\$  
 \$\$\$ END OF PAGE \$\$\$



## Roadway Subsurface Investigation Report

### Inventory

Proposed New Connector Road from NC-116 and Bonnie Lane to NC-107 and  
SR 1774 (Evans Road)  
Jackson County, North Carolina

**Prepared for:**

Mulkey Engineers and Consultants, Inc.  
6750 Tryon Road  
Cary, NC 27615

**Submitted by:**

Falcon Engineering, Inc.  
1210 Trinity Road, Suite 110  
Raleigh, North Carolina 27607  
(919) 871-0800  
www.falconengineers.com

Falcon Project Number | G11024.00

September 10, 2012

### PREFACE

This roadway subsurface investigation was conducted between August, 2011 and December, 2011 in general accordance with our proposal number F2011-057, dated July 15, 2011. The recommendations rendered in this report are based solely on the project data provided by your office, our site reconnaissance, subsurface exploration consisting of sixty nine (69) soil test borings, laboratory test results, engineering evaluation of the data gathered, and generally accepted soil and foundation engineering practices and principles.

Falcon appreciates the opportunity to have provided our geotechnical engineering services for the above referenced project. If you have any questions concerning the contents of this report or need additional information, please do not hesitate to contact our office.

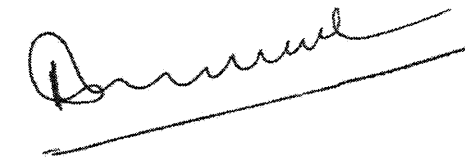
### FALCON ENGINEERING, INC.

Report Prepared By:

Report Reviewed By:



Jeremy Hamm, EI  
Geotechnical Designer



Mahalingam Bahiradhan, PE  
Senior Geotechnical Project Manager



**TIP:** R-5000  
**COUNTY:** Jackson  
**DESCRIPTION:** Proposed New Connector Road from NC-116 and Bonnie Lane and NC-107 and SR 1774 (Evans Road)  
**SUBJECT:** Roadway Subsurface Investigation – Inventory

**PROJECT DESCRIPTION**

Project site is located just east of the town of Webster in Jackson County, North Carolina. This project involves new roadway between NC-116 (Webster Road) and NC-107, access ramps to NC-107, new bridge, new access roads, retaining walls, culvert replacement and detour roads. The project involves the construction of a new bridge approaches, multiple access ramps, culvert replacements/extensions and retaining walls.

The geotechnical field investigation was conducted from August through October, 2011. A total of sixty nine (69) Standard Penetration Test (SPT) borings were advanced using a CME-55 rubber tire all-terrain vehicle (ATV) mounted drill machine equipped with an automatic hammer. This total includes two (2) culvert borings and four (4) bridge end bent borings since they provide relevant roadway subsurface information. Representative soil samples, collected with a split-barrel sampler, were selected for laboratory testing to verify visual field classifications.

The following alignments, totaling approximately 13,006 feet (2.46 miles) were investigated. Subsurface profiles and cross sections of these alignments are included in this report.

<u>Line</u>	<u>Station</u>
-L-	11+00 – 47+50
-Y3-	10+00 – 20+23
-RPA-	10+00 – 23+73
-RPB-	10+00 – 14+67
-RPD-	10+00 – 23+93

**AREAS OF SPECIAL GEOTECHNICAL INTEREST**

The following areas contained buried sawdust and other partially decomposed news paper etc.

<u>Station</u>	<u>Offset</u>
-L- 40+15 – 40+50	20 – 50 ft LT
-RPB- 10+45 – 10+70	100 ft. LT – 50 ft RT

A shallow drainage ditch crosses the proposed alignment at the following location.

<u>Station</u>
-RPB- 10+60

Culverts crosses the proposed alignments at the following locations.

<u>Station</u>
-L- 14+00
-Y5- 11+80
-Y6- 12+57

The majority of the soils present at the site contain variable amounts of mica. The following area was noted to contain soils with high mica content.

<u>Station</u>	<u>Offset</u>
-Y3- 17+00	Centerline

Weathered Rock (WR) was encountered within the following areas of proposed excavation:

<u>Station</u>	<u>Offset</u>	<u>Elevation</u>
-L- 23+00	75 ft LT	2154.0 – 2152.0 ft **
-L- 28+55	Centerline	2222.0 – 2206.0 ft
-L- 28+55	100 ft LT	2218.0 – 2209.0 ft
-L- 28+55	100 ft LT	2199.5 – 2193.0 ft†
-L- 28+55	78 ft RT	2200.0 – 2194.5 ft†
-L- 30+04	Centerline	2203.5 – 2200.0 ft
-L- 30+04	102 ft. RT	2206.5 – 2204.4 ft†
-L- 30+04	85 ft. LT	2204.5 – 2197.0 ft†
-L- 34+02	5 ft. LT	2201.0 – 2194.5 ft
-L-34+52	167 ft. RT.	2198.0 – 2195.2 ft†
-RPD- 15+28	102 ft LT	2188.0 – 2186.00 ft
-RPD- 15+28	102 ft LT	2173.0 – 2170.0 ft
-RPD- 15+28	102 ft LT	2158.00 – 2154.00 ft



-RPD- 15+28	102 ft LT	2146.00 – 2133.40 ft†
-RPD- 20+63	1 ft RT	2175.0 – 2170.5 ft
-RPD- 20+60	100 ft LT	2204.8 – 2187.5 ft
-RPD- 20+60	100 ft LT	2278.0 – 2177.2 ft†

\*\* - This may be a boulder

† - Boring terminated at this elevation

Crystalline Rock (CR) was encountered in the following areas of proposed excavations:

<u>Station</u>	<u>Offset</u>	<u>Elevation</u>
-L- 28+55	Centerline	2206.0 – 2195.0 ft
-RPD-15+28	102 ft LT	< 2133.0 ft†
-RPD- 20+60	100 ft LT	< 2177.2 ft†

† - Boring terminated at this elevation

## PHYSIOGRAPHY AND GEOLOGY

The project site is located within the Blue Ridge Belt. The site is within the Blue Ridge Mountain range and the rock formations are generally Gneissic with varying amounts of biotite.

Topographically, the site vicinity is mountainous. The mountain or large hill which the roadway will pass through contains a gentle sloping side to the west, and a taller, steeper slope exists on the east side of the mountain.

Rock outcrops of biotite gneiss were noticed in multiple areas within the project area and larger rock cuts are present south of the project site along NC-107. The rock was exposed by excavation during construction activity associated with the roadway. The rock is intruded by numerous quartz stringers, as well as some larger granitic intrusions.

Surface drainage from the project site flows both west and south toward the Tuckasegee River.

## SOIL PROPERTIES

In general, the soils encountered consist of roadway embankment / artificial fills, alluvial and residual soils, underlain by weathered rock and crystalline rock.

Roadway embankments range up to 13.5 feet in depth and were encountered in many borings along the ramps (RPA, RPB, RPD). They largely consist of red, brown, black and tan soft to very stiff sandy silts and clays (A-4, A-5, A-6, A-7), along with very loose to medium dense silty sands (A-2-4). These soils are occasionally micaceous and contain

trace amounts of organic material, gravel and fragments of weathered rock. The embankment extends to both alluvial and residual soils.

Artificial fill soils extended to depths up to 28 feet and were encountered in many borings. They largely consist of red, brown, gray, tan and black very soft to stiff sandy silts and clays (A-4, A-5, A-6, A-7), along with very loose to dense silty and clayey sands (A-1-b, A-2-4, A-2-6). These soils are occasionally micaceous and contain trace amounts of organic material, gravel and fragments of weathered rock. The embankment extends to both alluvial and residual soils.

Alluvial soils were encountered underneath roadway embankments and artificial fill areas in the vicinity of Mill Creek (-L- 14+00) and apparent filled in stream bed. They consist of dark gray, tan, orange, and brown very loose to loose silty sand (A-1b, A-2-4) and very soft to very stiff sandy silt and clay (A-4, A-6).

Residual soils were encountered at the ground surface and/or underneath roadway embankments, artificial fills and alluvial soils in the majority of the borings. They consist of white, gray, red, tan and brown very soft to hard sandy and clayey silts (A-4, A-6, A-7) along with very loose to very dense silty sand (A-1-b, A-2-4) commonly with trace to some mica, gravel and weathered rock fragments.

## ROCK PROPERTIES

Weathered rock was encountered beneath roadway embankments and residual soils. It consists of material weathered from gray, blue and red-brown biotite gneiss. Weathered rock was encountered in many places throughout the project site, most commonly in the deeper excavation areas as identified previously. Crystalline rock was also encountered in a couple of areas of proposed excavation. Crystalline rock core obtained from boring B-9 consisted of moderately to severely weathered, moderately hard, very to moderately closely fractured, Biotite Gneiss.

## GROUNDWATER

Groundwater levels were measured at the time of boring completion, and in most cases after a waiting period of at least 24 hours. Some borings drilled in close proximity to the existing roadway were backfilled immediately after drilling due to safety considerations. Groundwater was encountered at varying depths between 3.9 ft and 25 ft below the ground surface (BGS) throughout the project site. The majority of the borings located in upland areas of the site did not encounter groundwater.



**APPENDIX A****UNDISTURBED SAMPLES**

Undisturbed "Shelby tube" sample were collected at the following locations to be tested for consolidation and direct shear data if warranted.

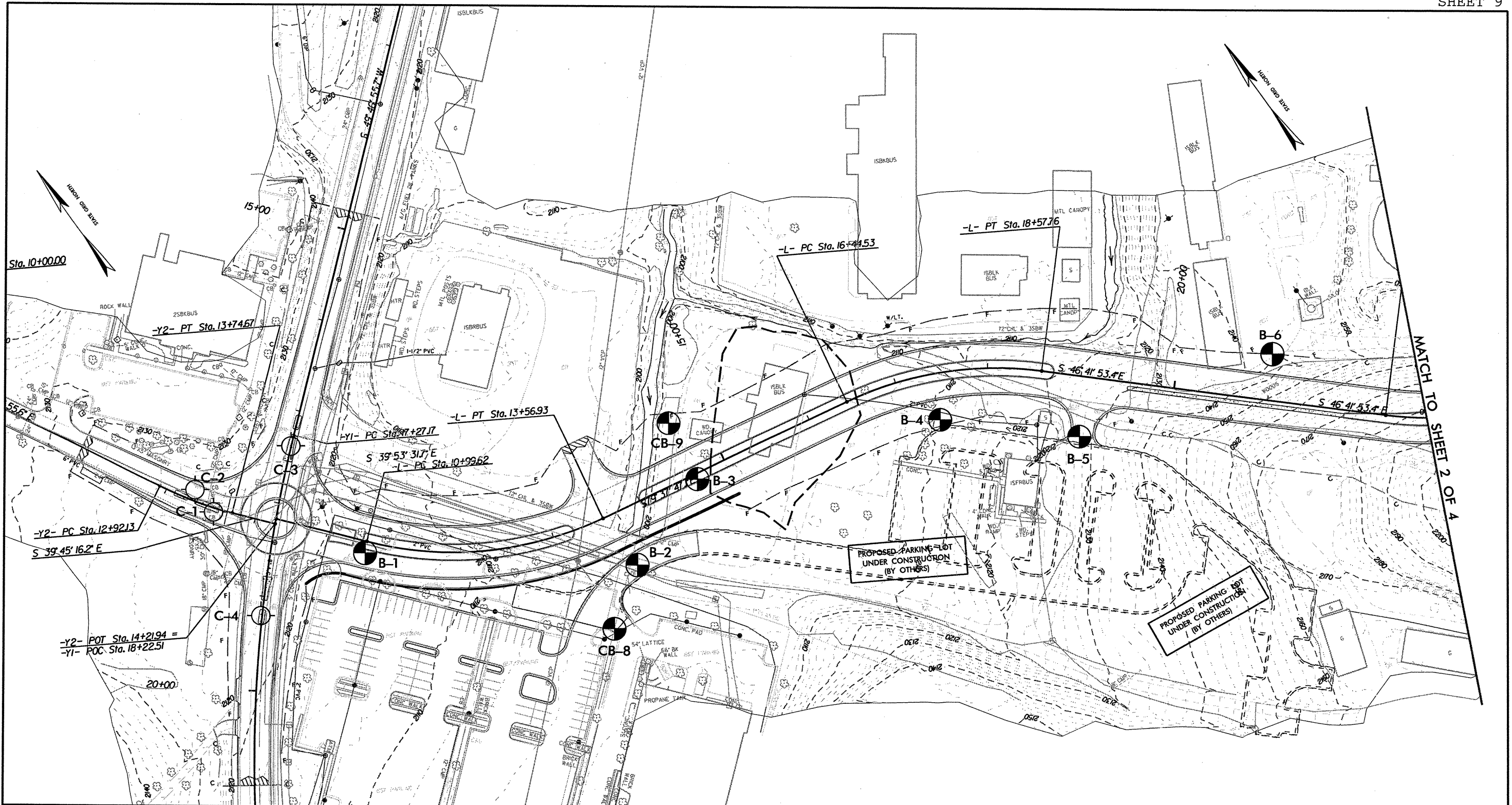
<u>Sample No.</u>	<u>Location</u>	<u>Depth (feet)</u>
ST-1	-Y3- 13+15, 94ft RT	4.0 - 6.0
ST-2	-Y3- 15+44, 63ft LT	8.5 - 10.2
ST-3	-RPD- 23+32, 123ft LT	6.0 - 8.0
ST-4	-RPD- 23+32, 123ft LT	8.0 - 10.0

**BULK SAMPLES**


The following bulk samples were collected to be tested for Standard Proctor Compaction and California Bearing Ratio values of soils in new pavement sections.


<u>Sample No.</u>	<u>Location</u>	<u>Depth (feet)</u>
BS-1	-RPA- 15+03, 3 ft RT	0 - 10.0
BS-2	-RPD- 10+96, 3 ft LT	0 - 10.0
BS-4	-Y3- 17+00, 4 ft LT	0 - 10.0
BS-5	-L- 23+00, 75 ft LT	0 - 20.0
BS-6	-L- 21+00, 50 ft LT	0 - 15.0
BS-7	-L- 11+00, 18 ft LT	0 - 5.0
BS-8	-L- 14+66, 6ft LT	0 - 10.0

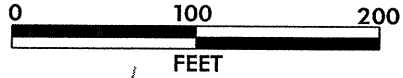




**NOTES:**  
 PLANS ADOPTED FROM ELECTRONIC FILES RECEIVED FROM MULKEY ENGINEERS AND CONSULTANTS, DATED OCTOBER 2011.

 APPROXIMATE SPT BORING LOCATION.

 APPROXIMATE PAVEMENT CORE BORING LOCATION.

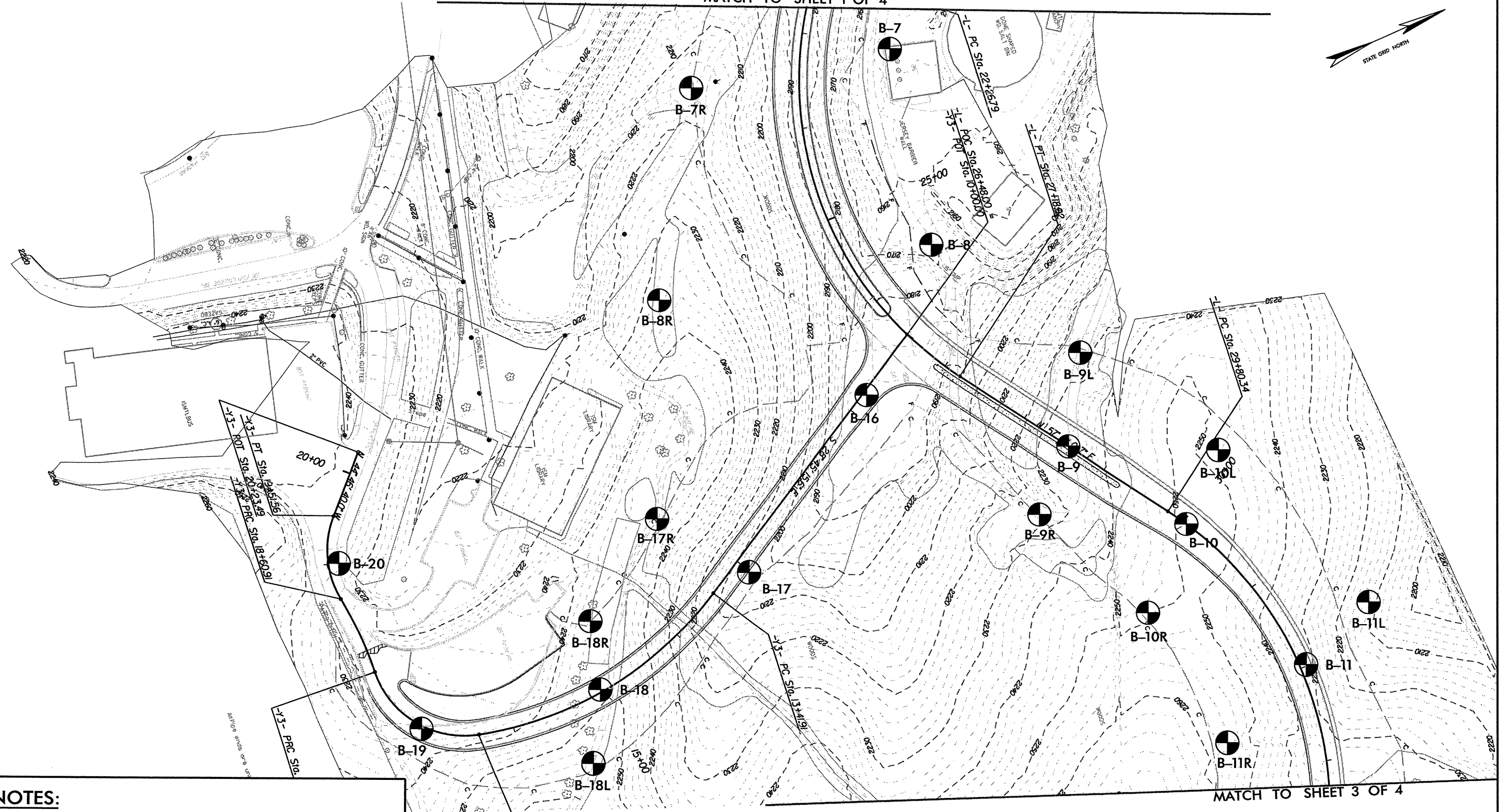
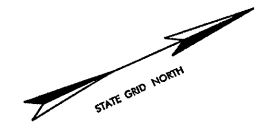


**FALCON ENGINEERING**  
 FALCON ENGINEERING, INC.  
 1210 TRINITY ROAD, SUITE 110  
 RALEIGH, NC 27607  
 PHONE: 919.871.0800  
 FAX: 919.871.0803

ROADWAY BORING LOCATION PLAN		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 1 OF 4





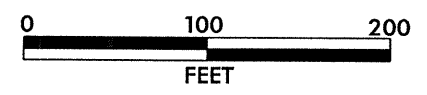
MATCH TO SHEET 1 OF 4



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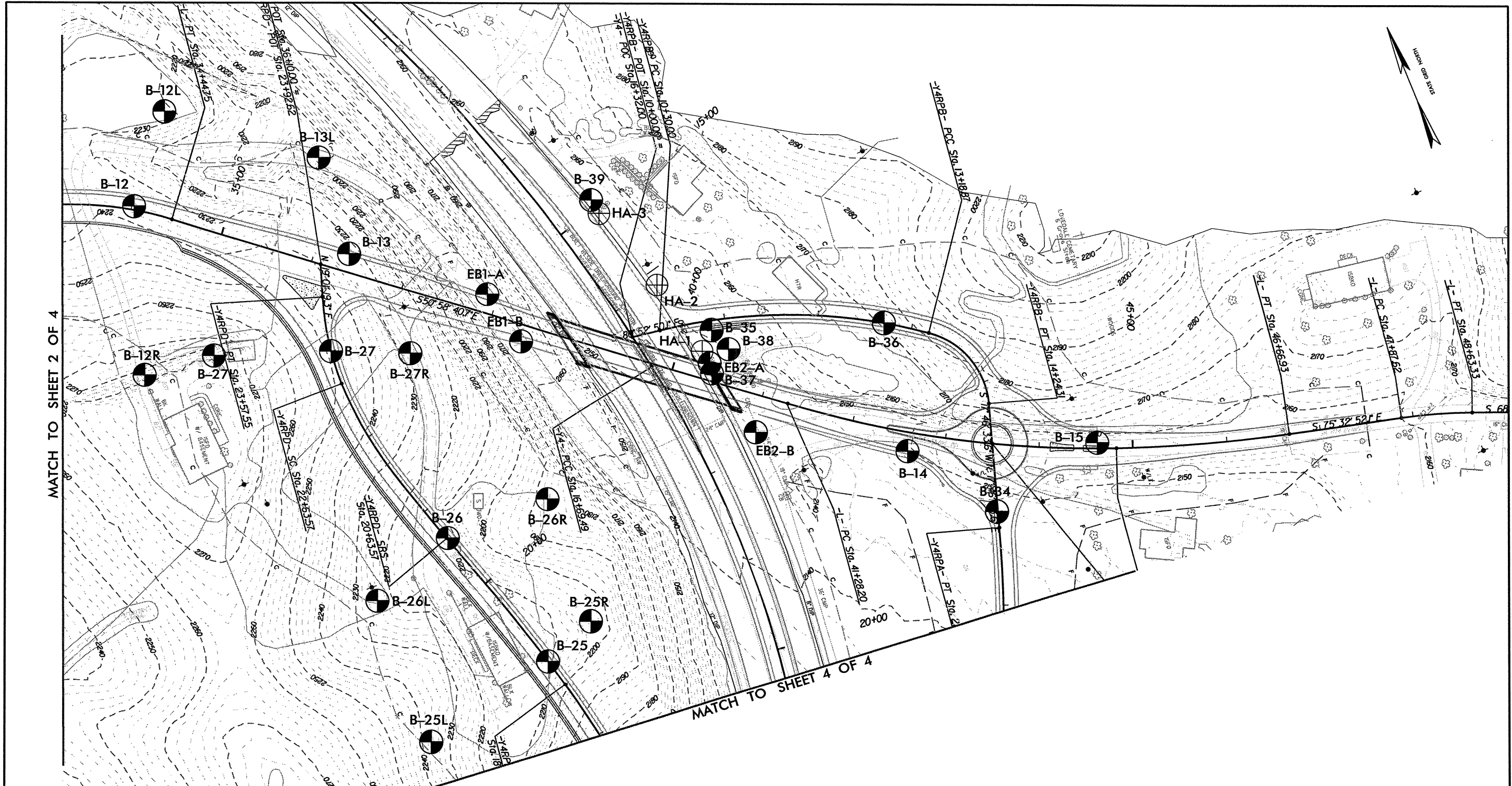


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

**ROADWAY BORING LOCATION PLAN**

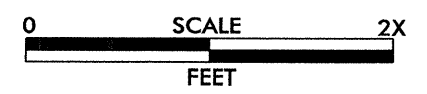
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA

NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 2 OF 4
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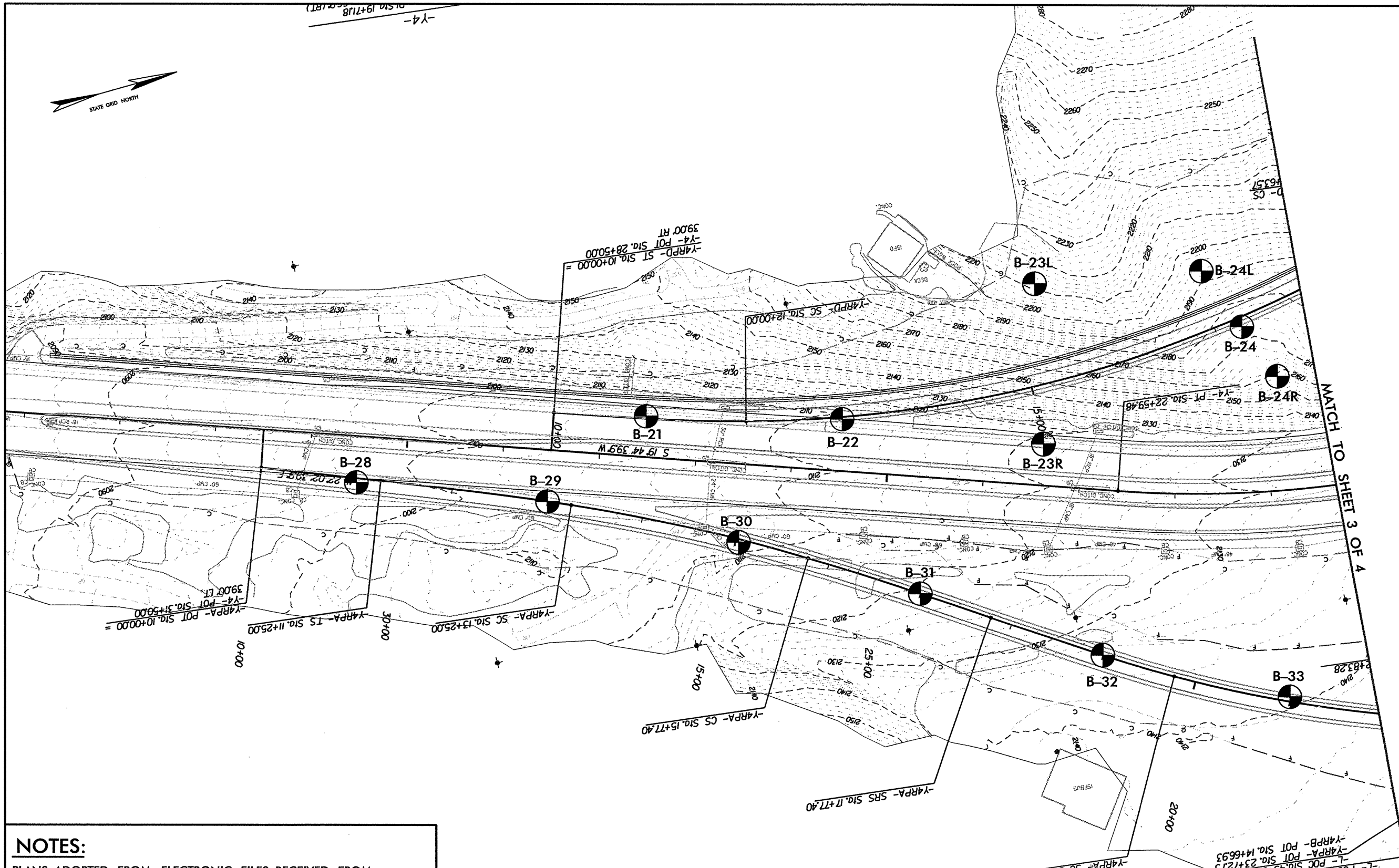
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-  APPROXIMATE SPT BORING LOCATION.
-  APPROXIMATE PAVEMENT CORE BORING LOCATION.
-  APPROXIMATE HAND AUGER BORING LOCATION.





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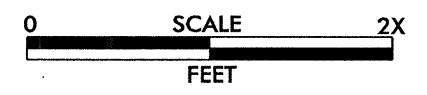
<b>ROADWAY BORING LOCATION PLAN</b>		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 3 OF 4



**NOTES:**  
 PLANS ADOPTED FROM ELECTRONIC FILES RECEIVED FROM MULKEY ENGINEERS AND CONSULTANTS, DATED OCTOBER 2011.

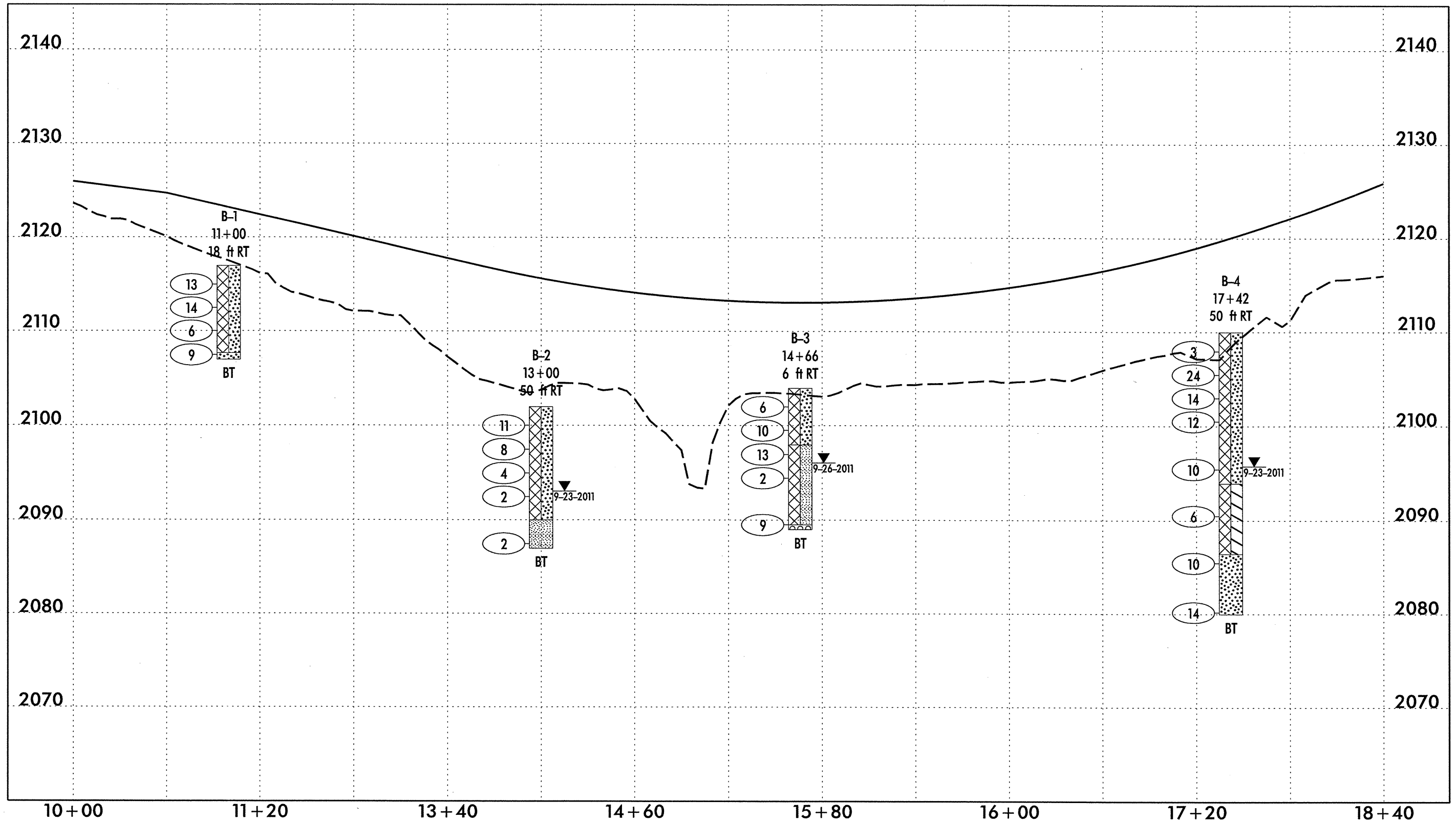
 APPROXIMATE SPT BORING LOCATION.

 APPROXIMATE PAVEMENT CORE BORING LOCATION.



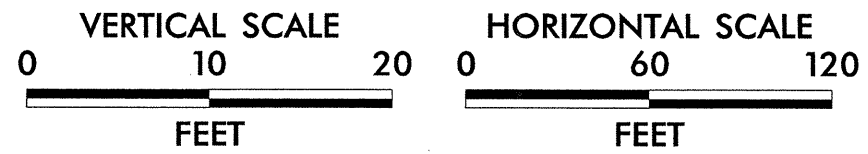
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 RALEIGH, NC 27607  
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ROADWAY BORING LOCATION PLAN		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 4 OF 4



**NOTES:**

- GROUNDLINE ADOPTED FROM ELECTRONIC FILES RECEIVED FROM MULKEY ENGINEERS & ASSOCIATES IN OCTOBER 2011.
- INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE.

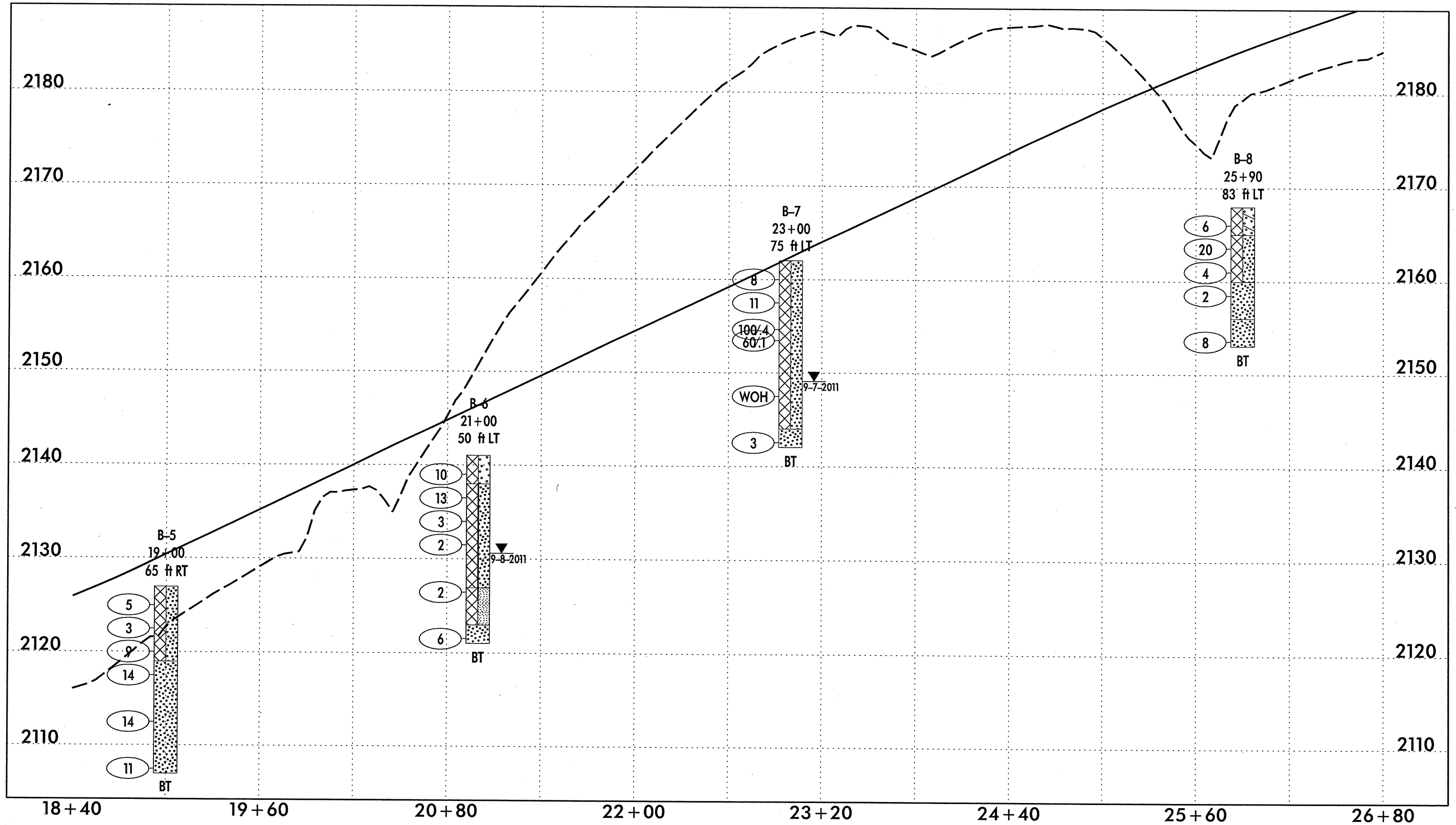


**FALCON ENGINEERING**

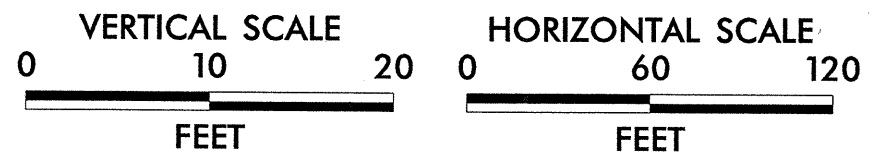
FALCON ENGINEERING, INC.  
1210 TRINITY ROAD, SUITE 110  
RALEIGH, NC 27607

PHONE: 919.871.0800  
FAX: 919.871.0803

<b>SUBSURFACE PROFILE ALONG -L-</b>		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 1 OF 5



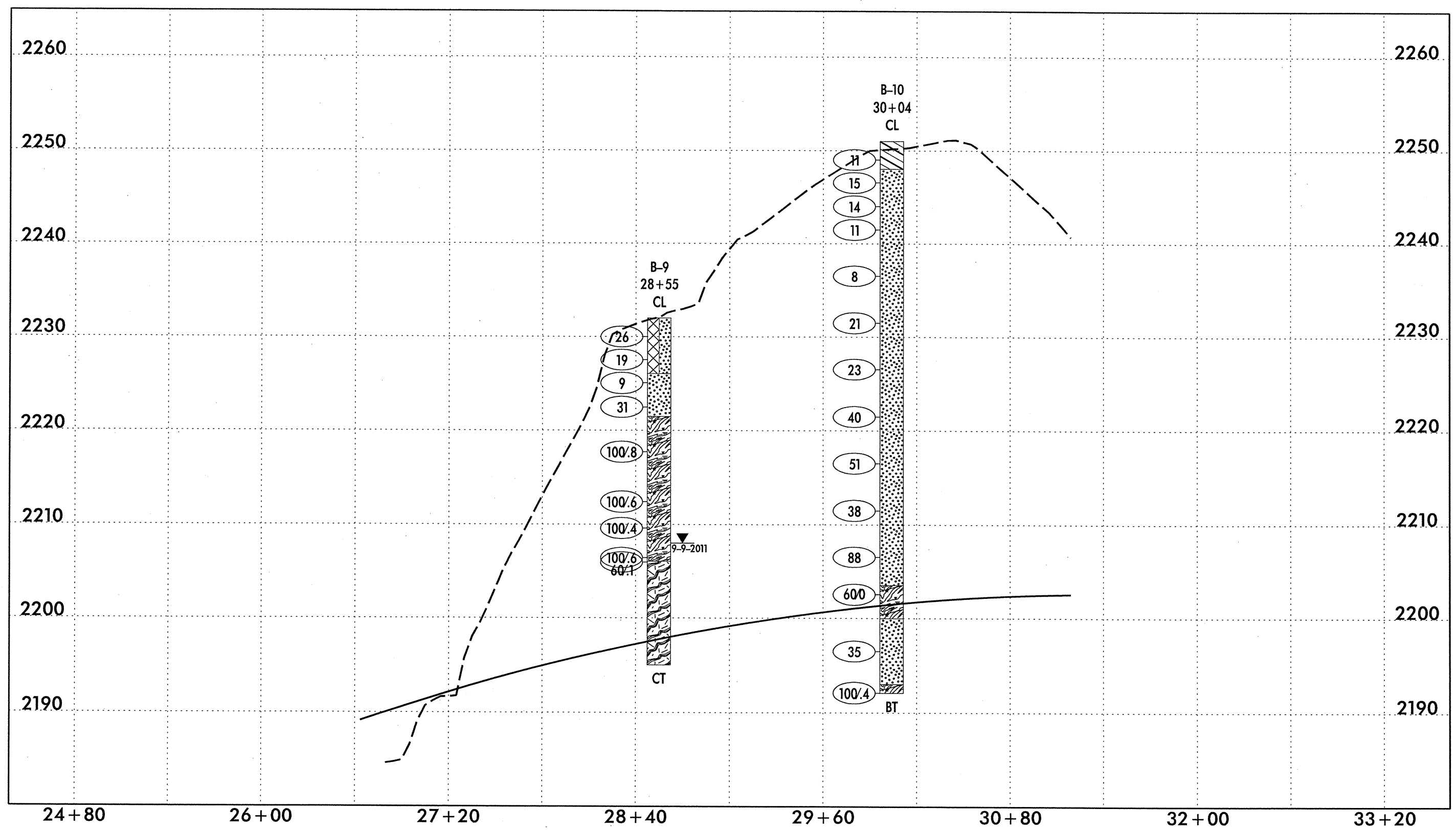
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<b>SUBSURFACE PROFILE ALONG -L-</b>		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 2 OF 5



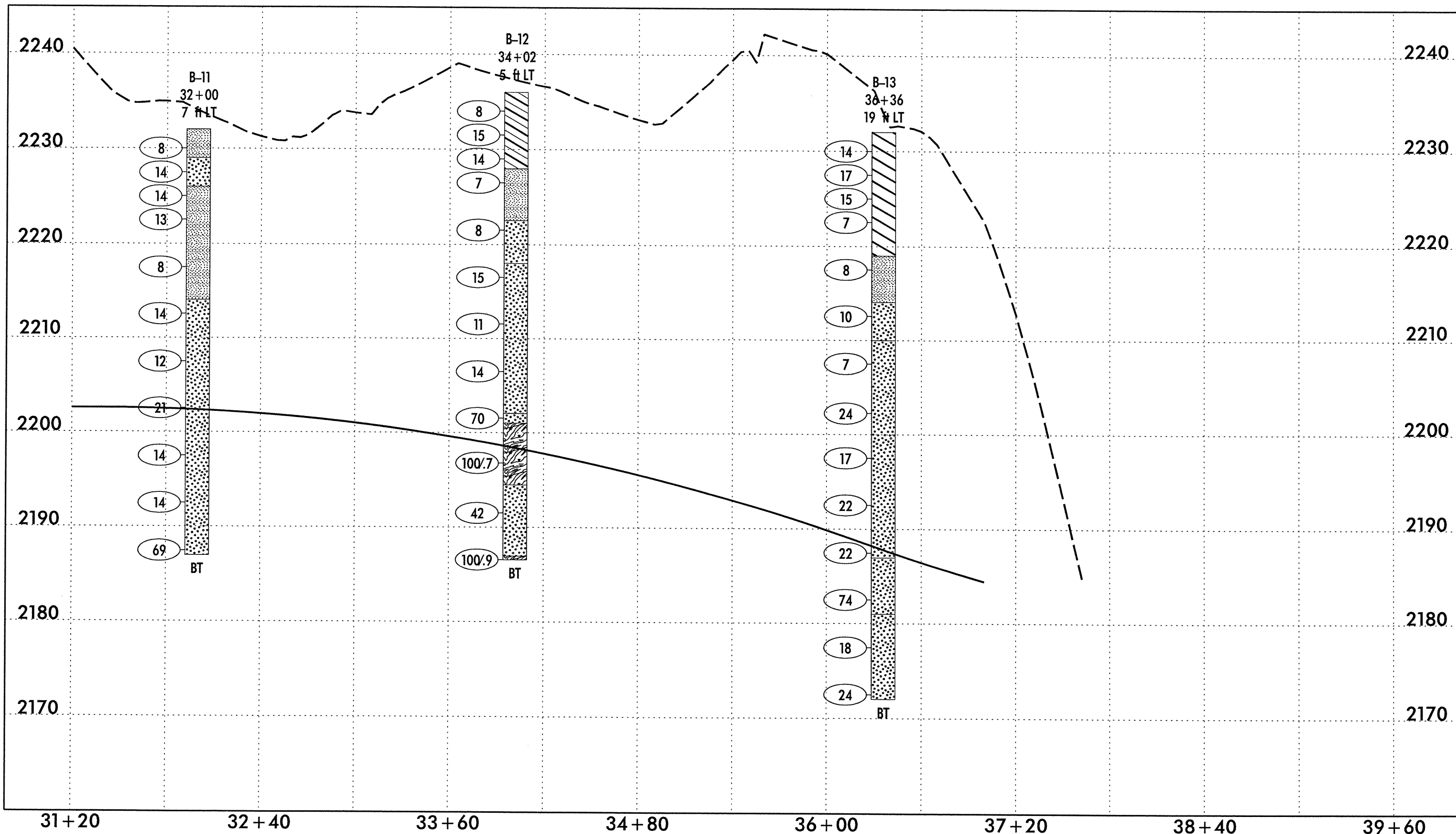


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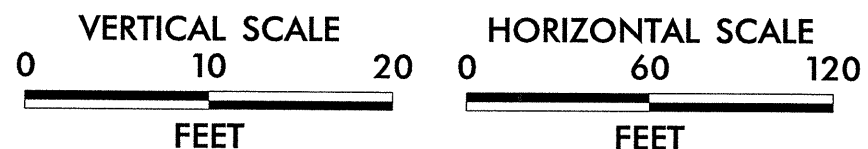


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SUBSURFACE PROFILE ALONG -L-		
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NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 3 OF 5

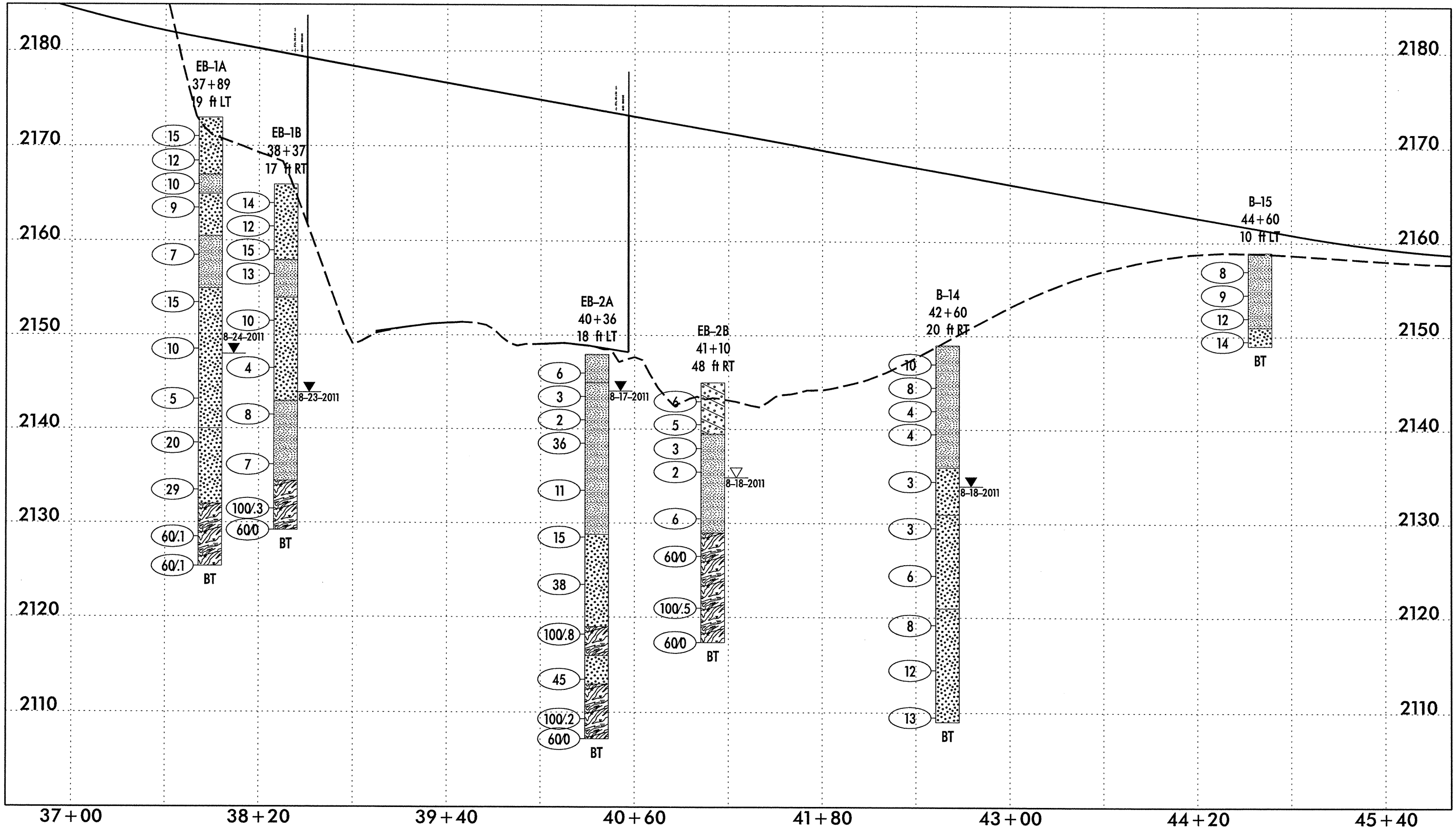


**NOTES:**  
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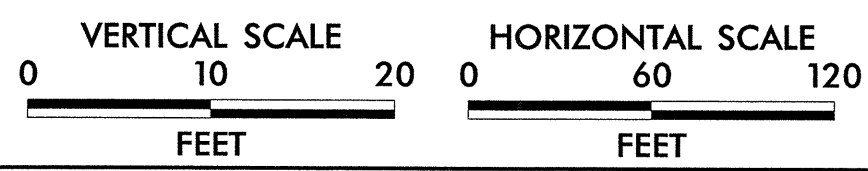
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 1210 TRINITY ROAD, SUITE 110  
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 PHONE: 919.871.0800  
 FAX: 919.871.0803

<b>SUBSURFACE PROFILE ALONG -L-</b>		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 4 OF 5

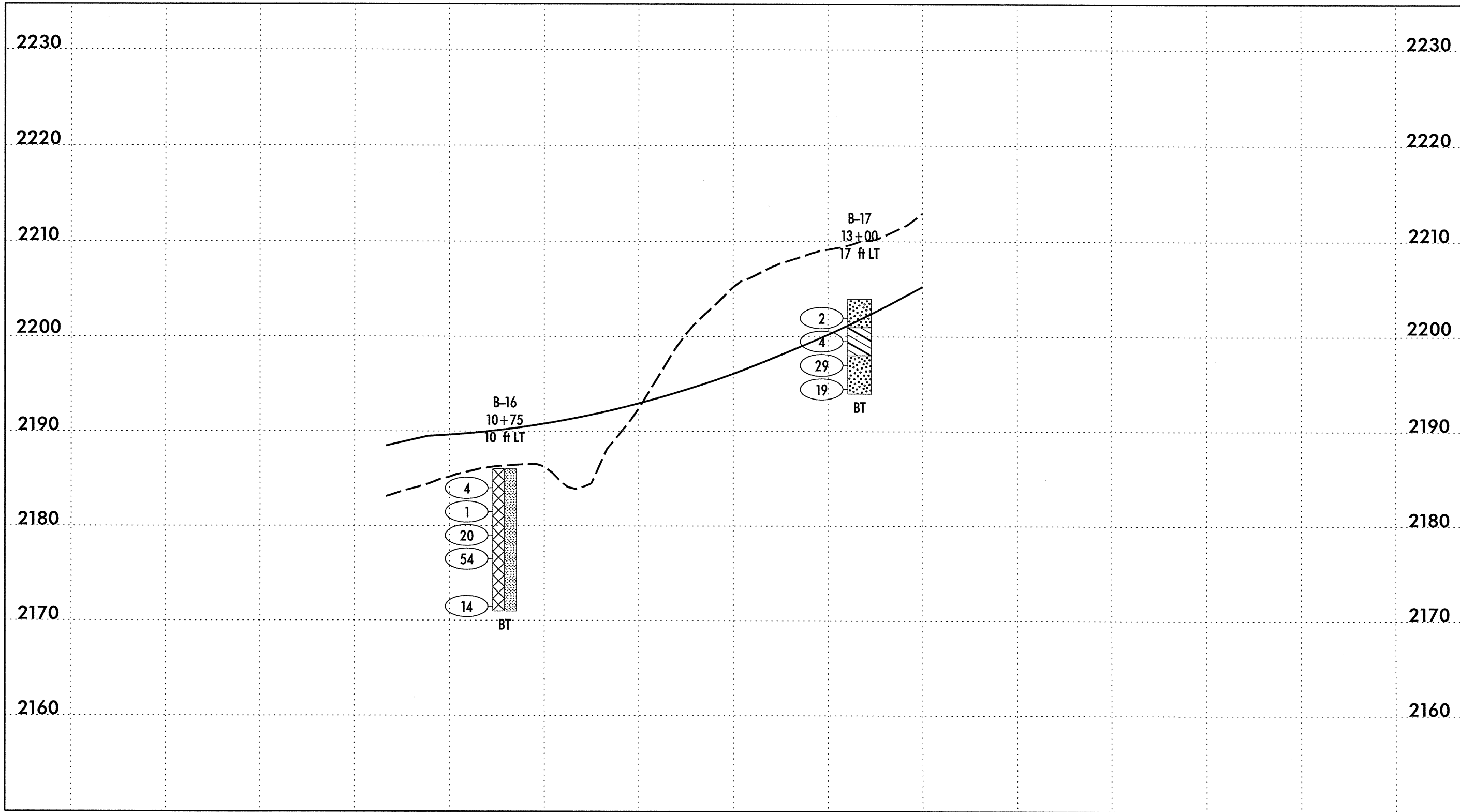


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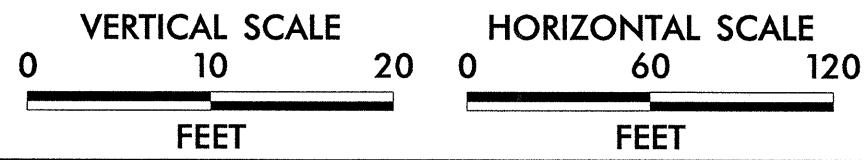
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	NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA	
NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 5 OF 5

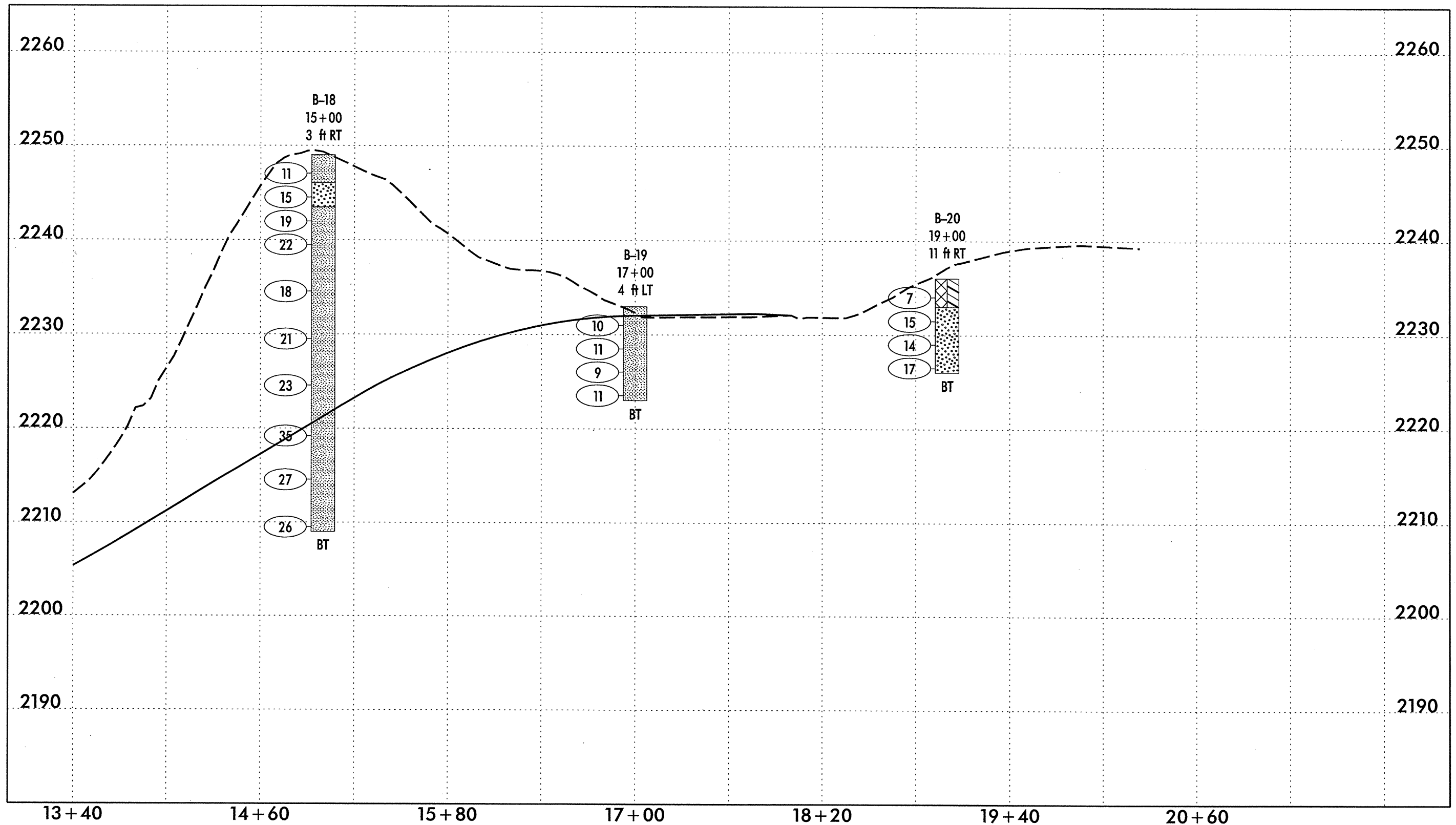


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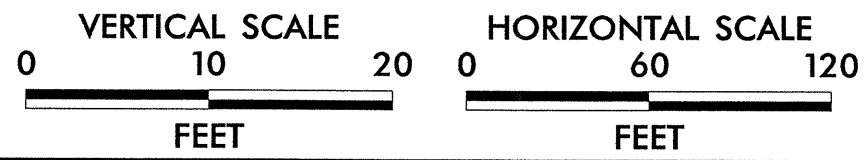
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<b>SUBSURFACE PROFILE ALONG -Y3-</b>		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 1 OF 2



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**SUBSURFACE PROFILE ALONG -Y3-**

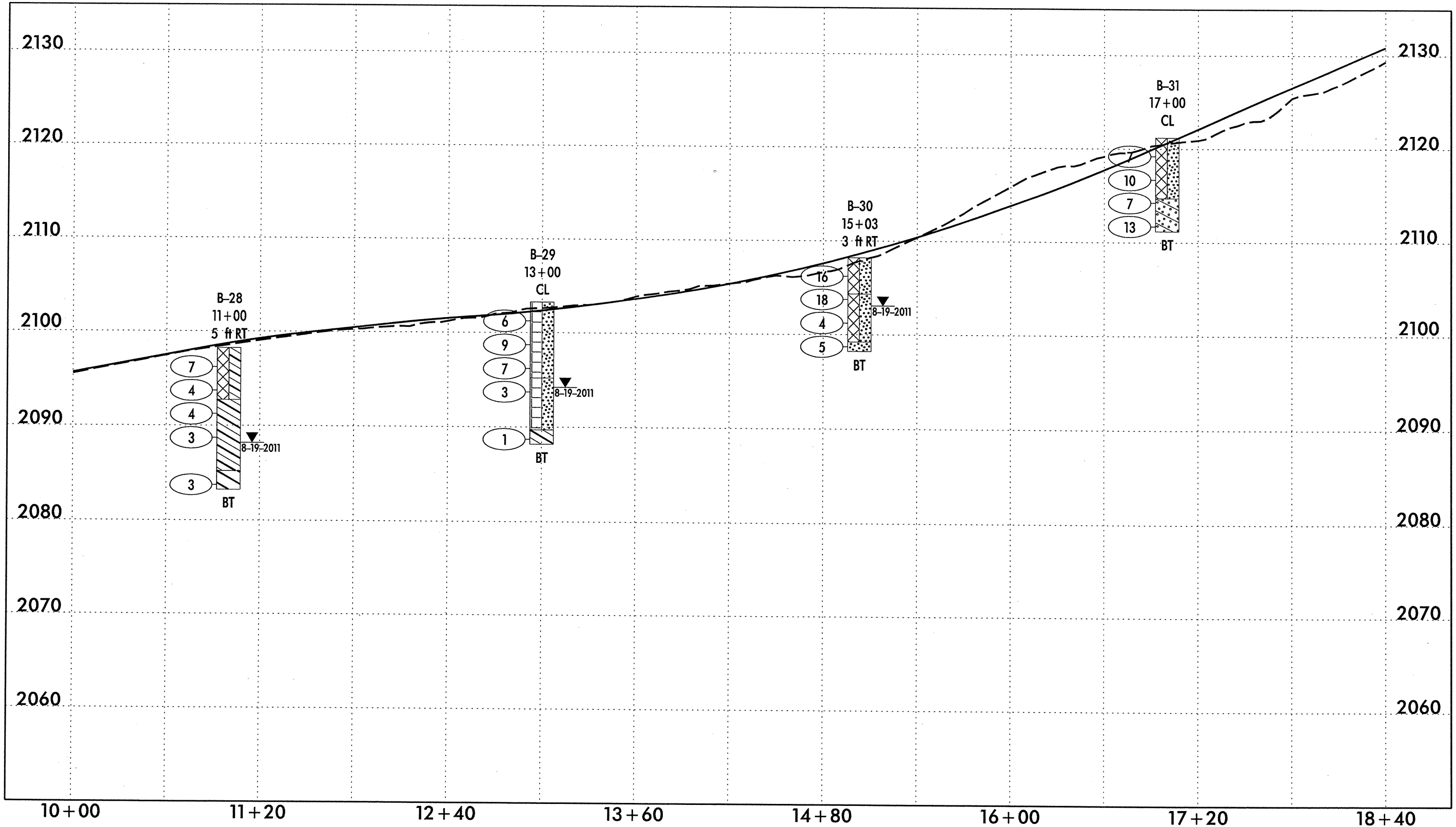
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JACKSON COUNTY, NORTH CAROLINA

NOVEMBER, 2011

PROJECT NO.: G11024.00

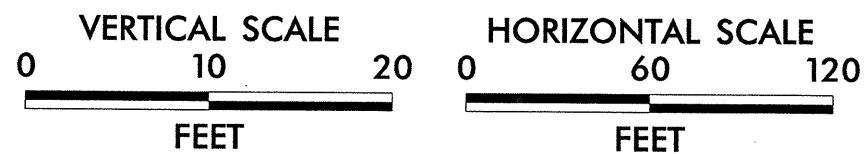
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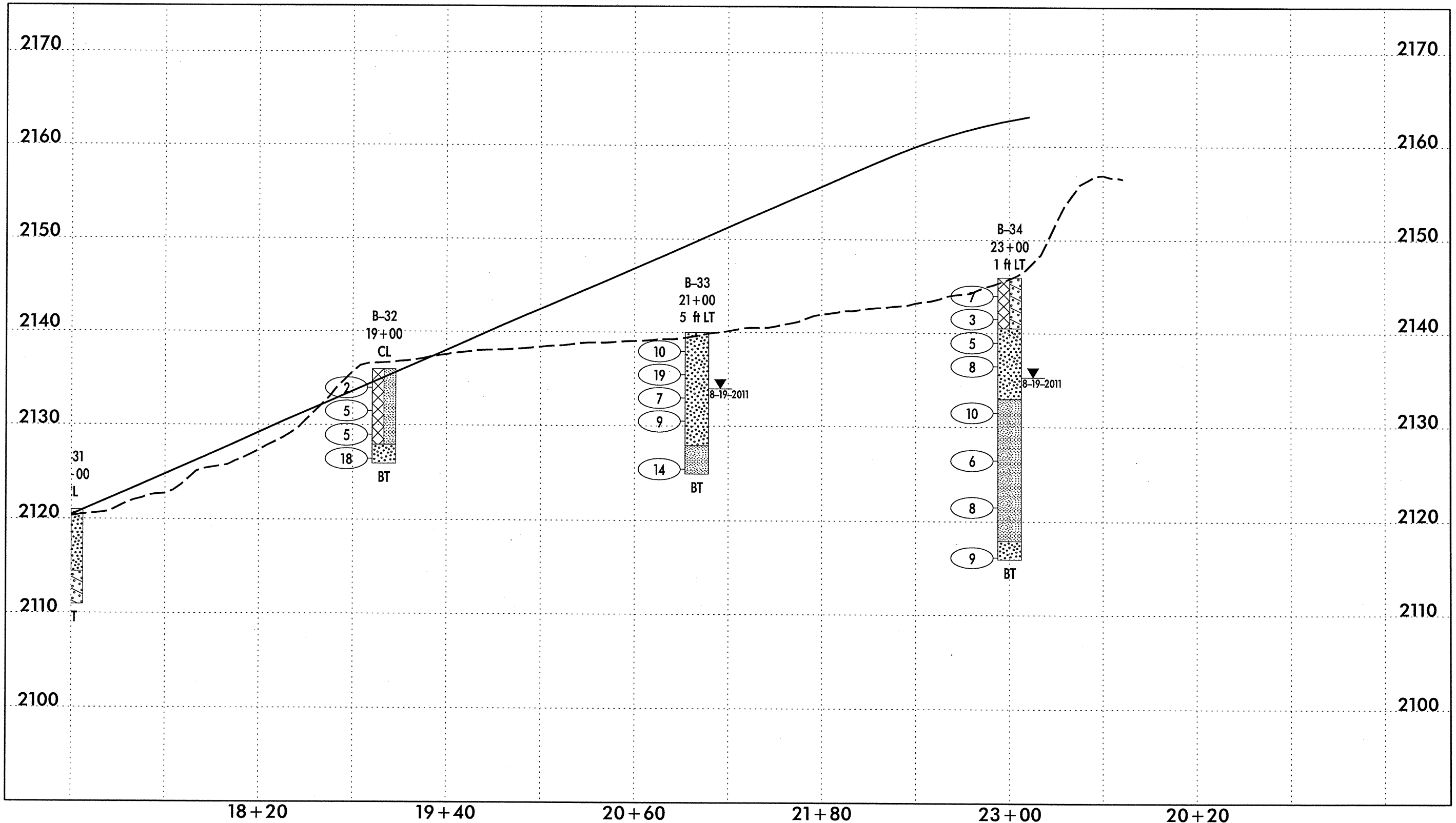


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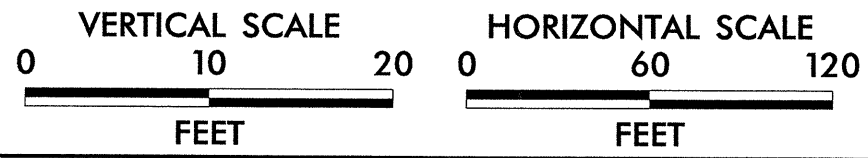
PHONE: 919.871.0800  
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<b>SUBSURFACE PROFILE ALONG -RPA-</b>		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 1 OF 2



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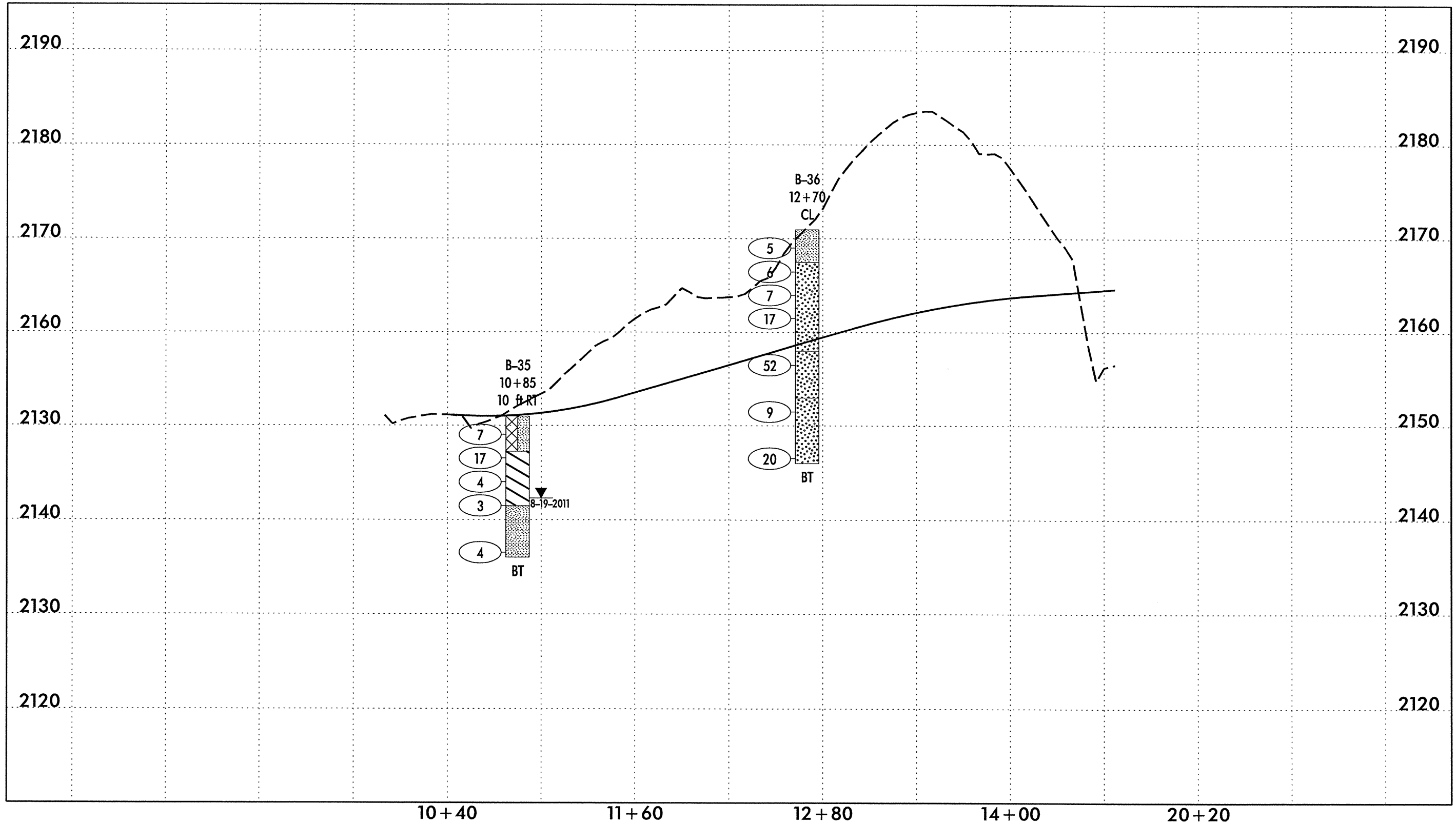
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**SUBSURFACE PROFILE ALONG -RPA-**

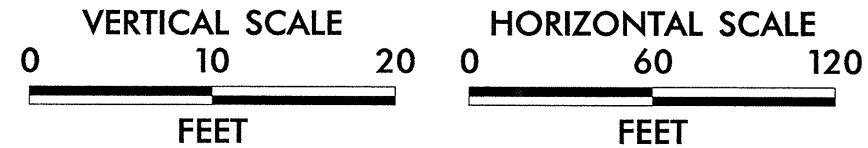
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD  
JACKSON COUNTY, NORTH CAROLINA

NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 2 OF 2
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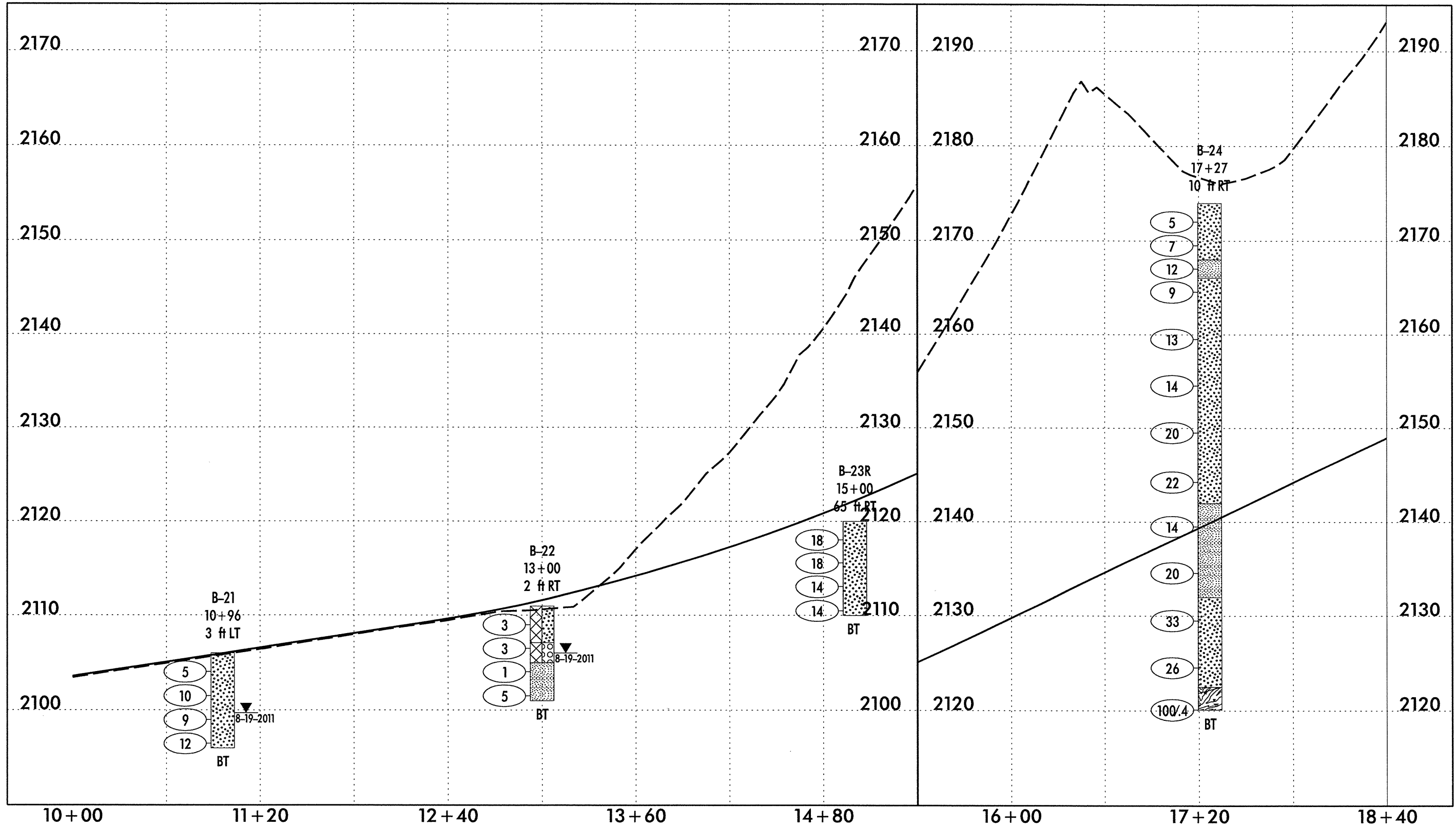
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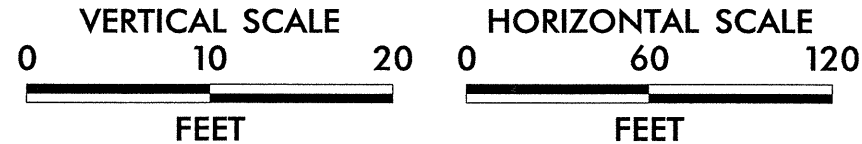
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<b>SUBSURFACE PROFILE ALONG -RPB-</b>		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 1 OF 1



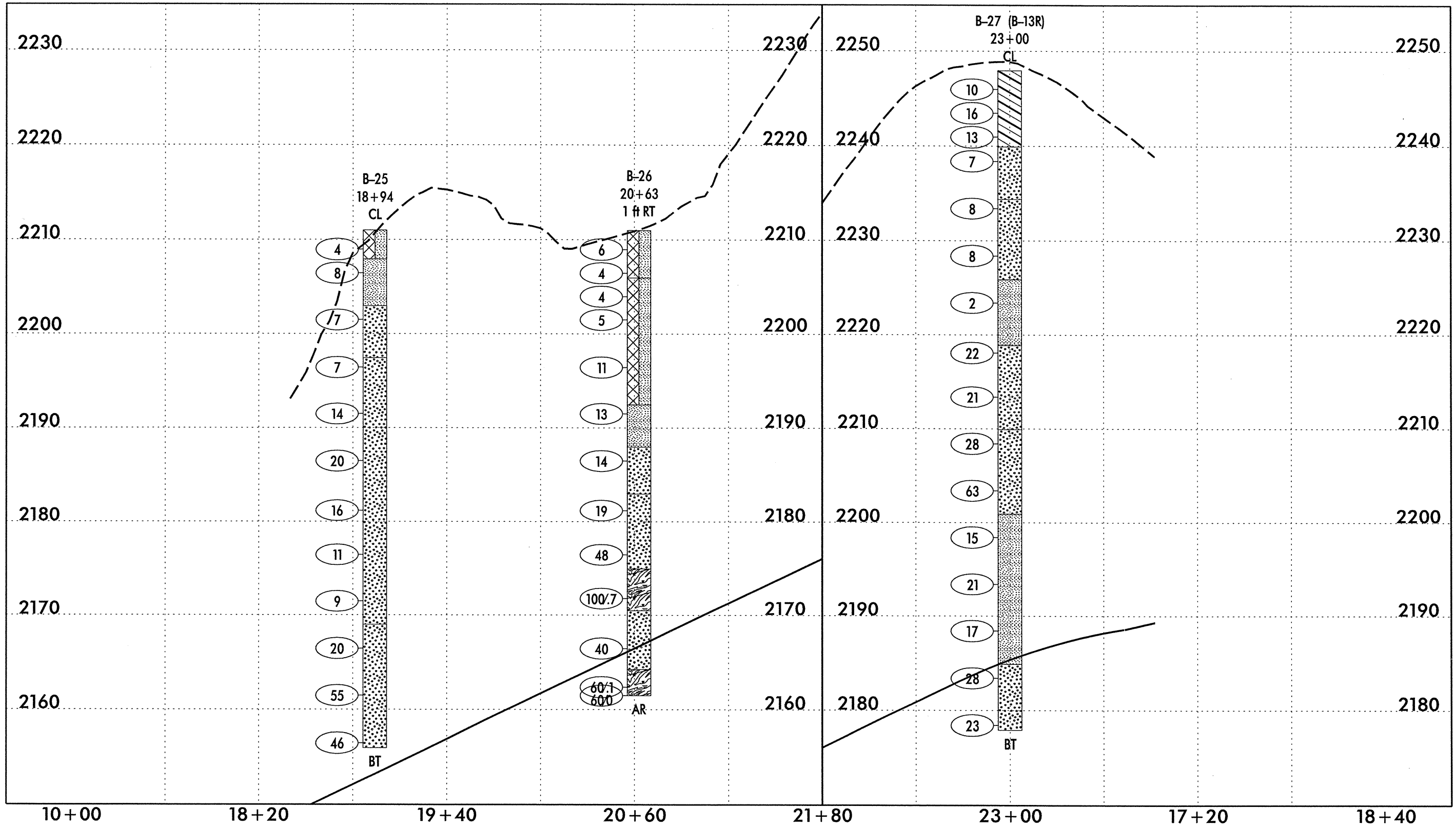
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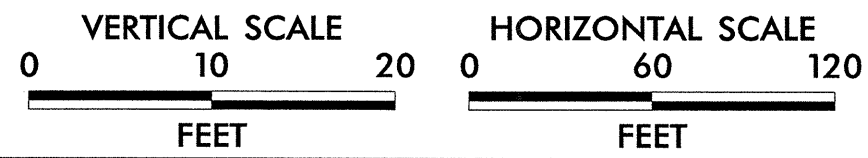
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<b>SUBSURFACE PROFILE ALONG -RPD-</b>		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 1 OF 2



**NOTES:**

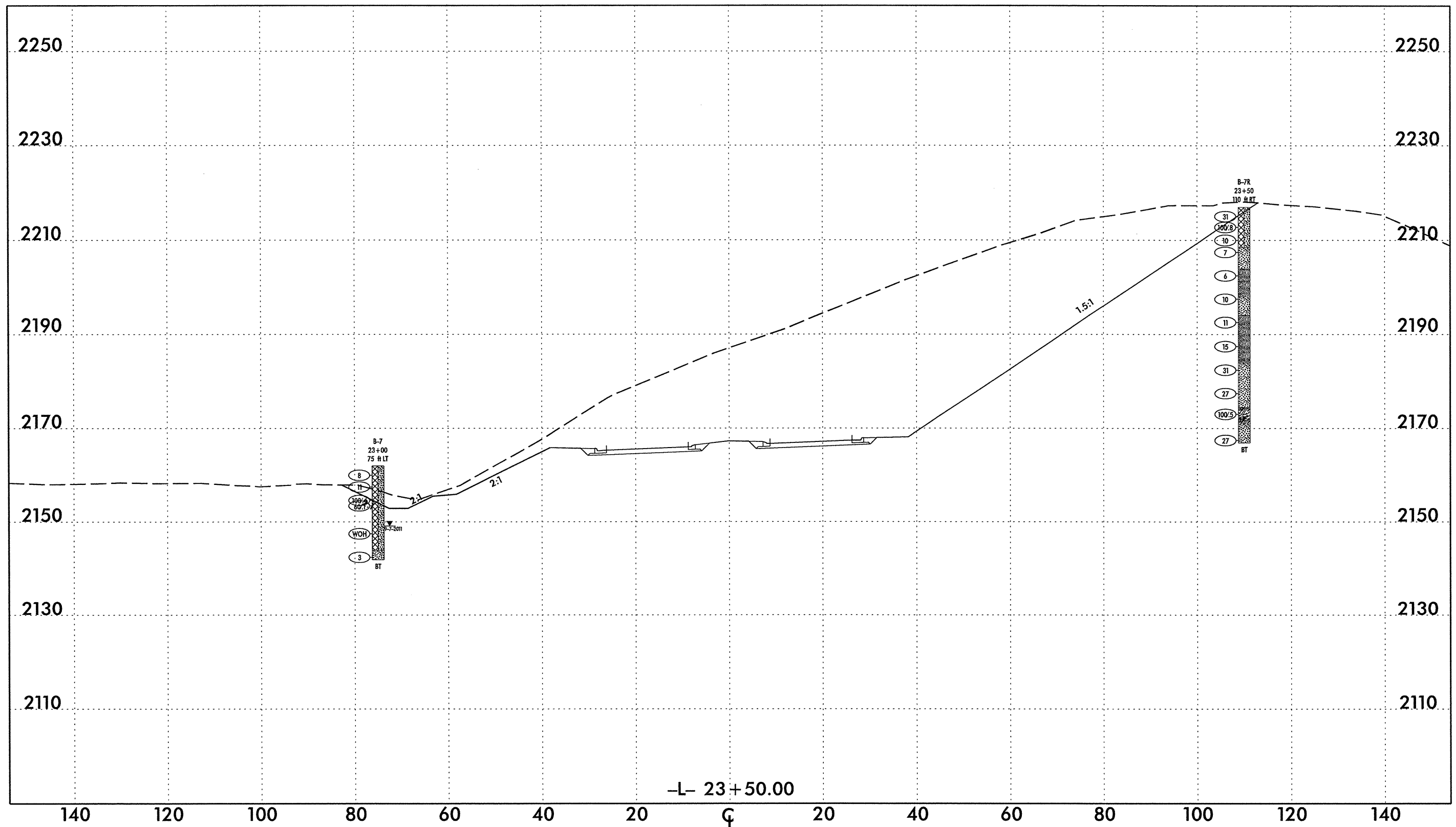
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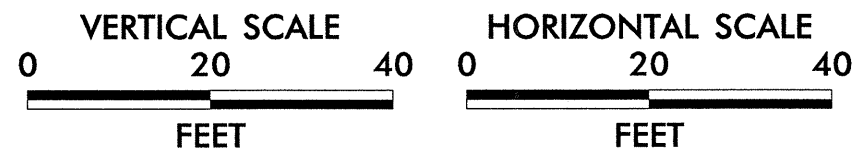
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NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 1 OF 2





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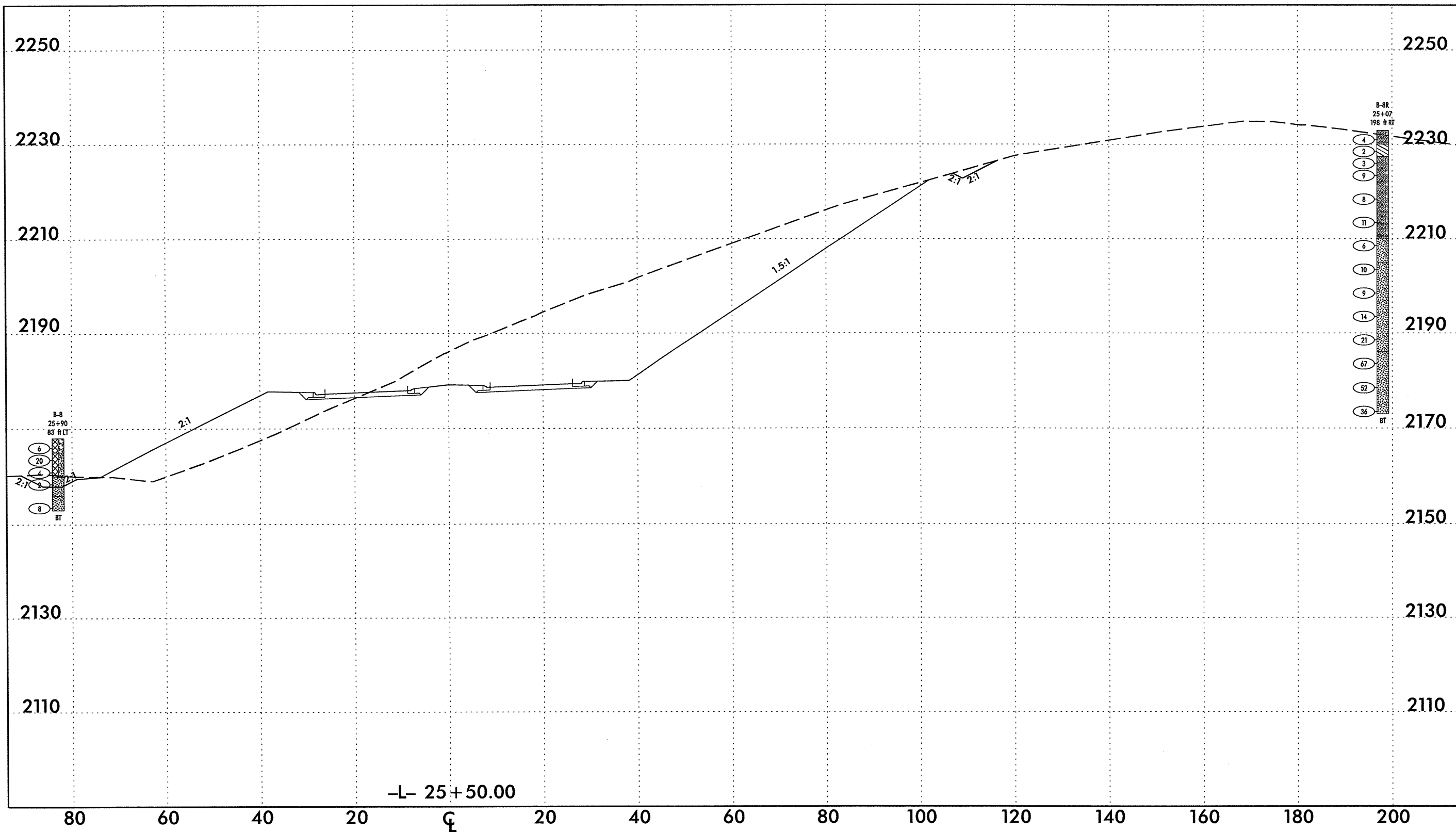


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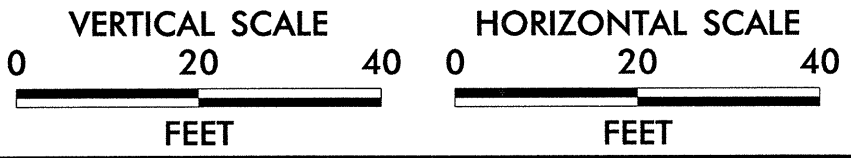
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SUBSURFACE CROSS SECTION		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: GT1024.00	SHEET 1 OF 8

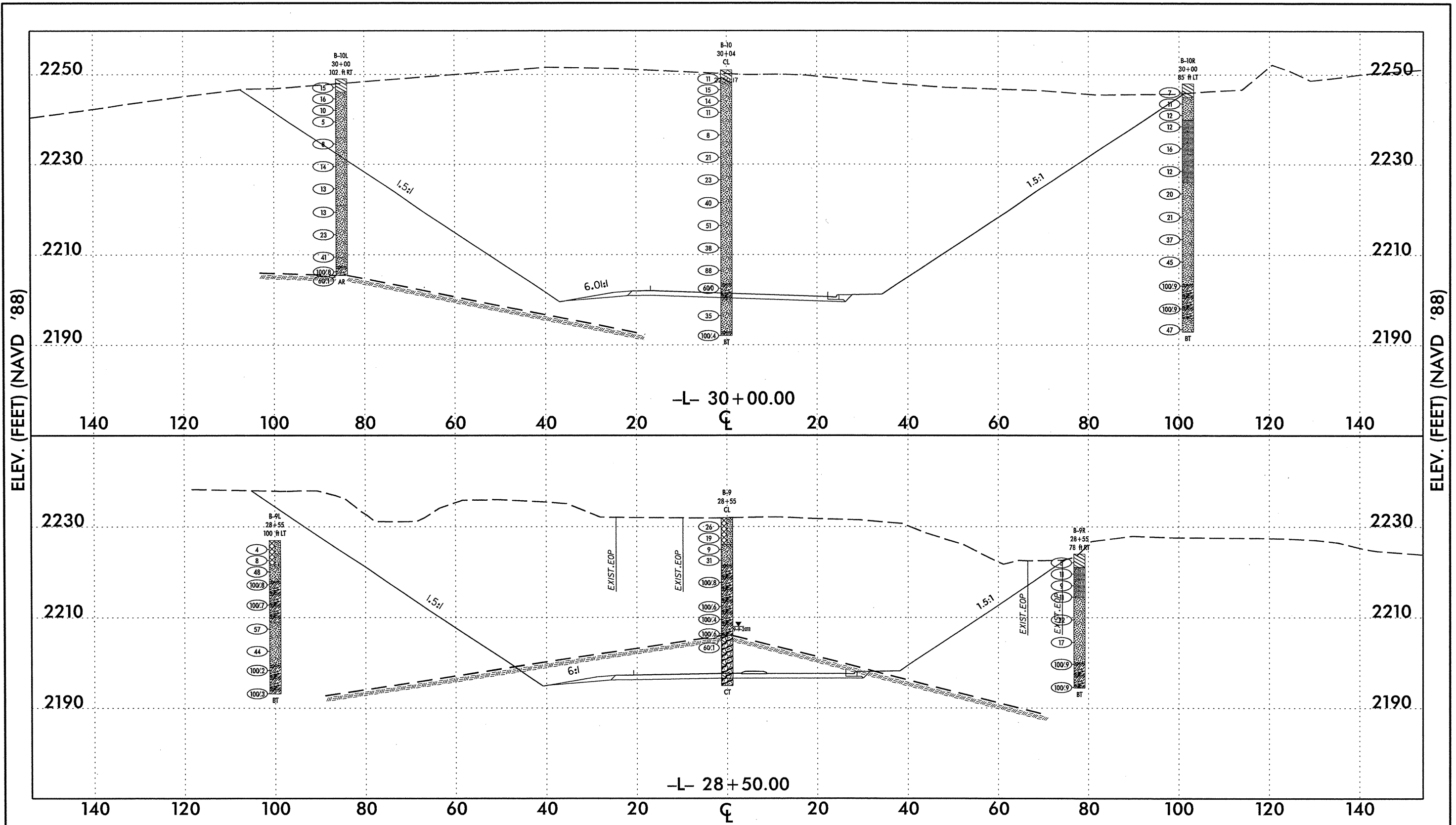


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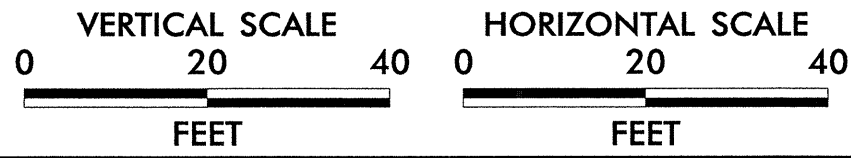
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SUBSURFACE CROSS SECTION		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: GT1024.00	SHEET 2 OF 8



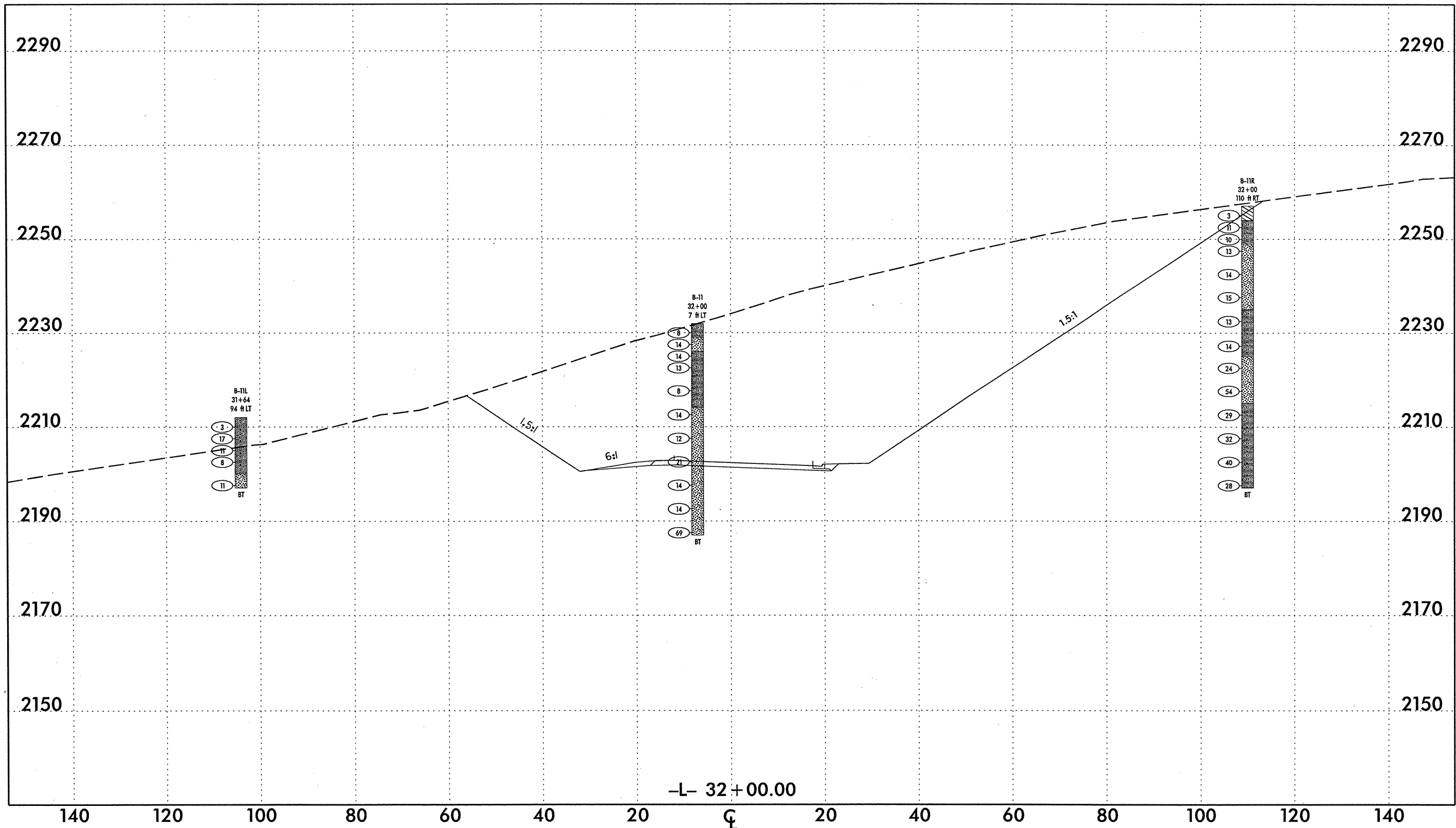
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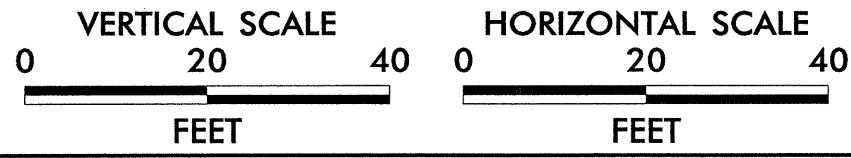
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PHONE: 919.871.0800  
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<b>SUBSURFACE CROSS SECTION</b>		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA PROJECT NO.: 41156.1.1, TIP NO.: R-5000		
SEPTEMBER 2012	FALCON PROJECT NO.: G11024.00	SHEET 3 OF 8



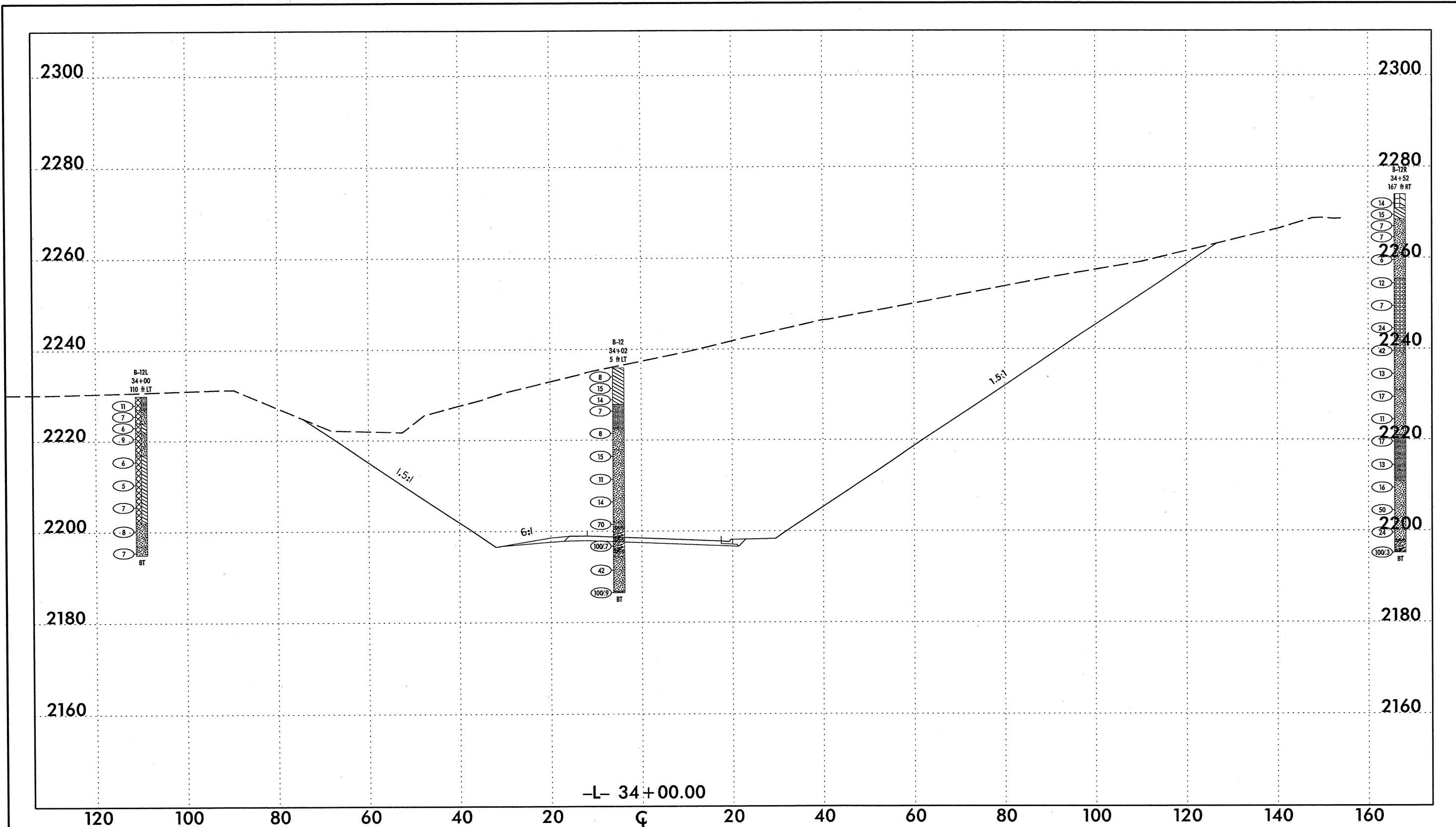
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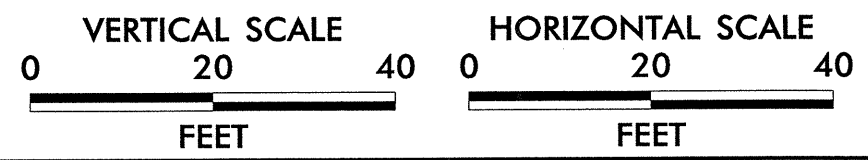
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SUBSURFACE CROSS SECTION		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 4 OF 8



**NOTES:**

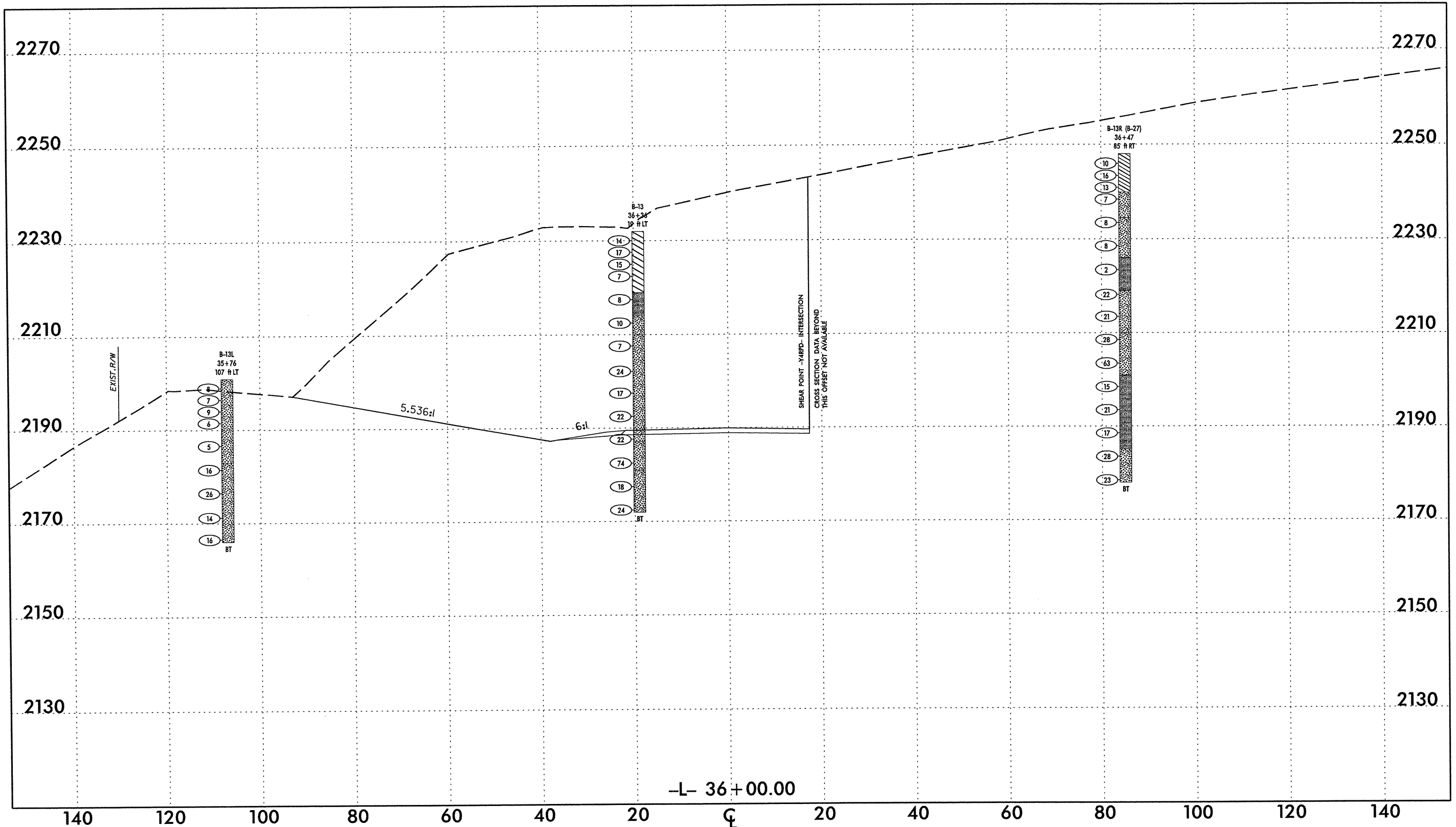
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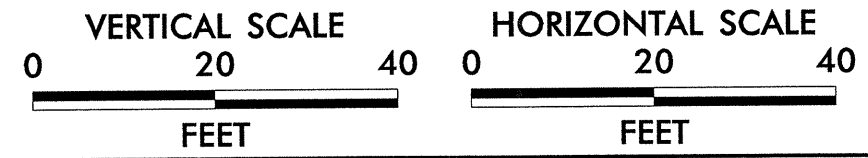
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SUBSURFACE CROSS SECTION		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 5 OF 8



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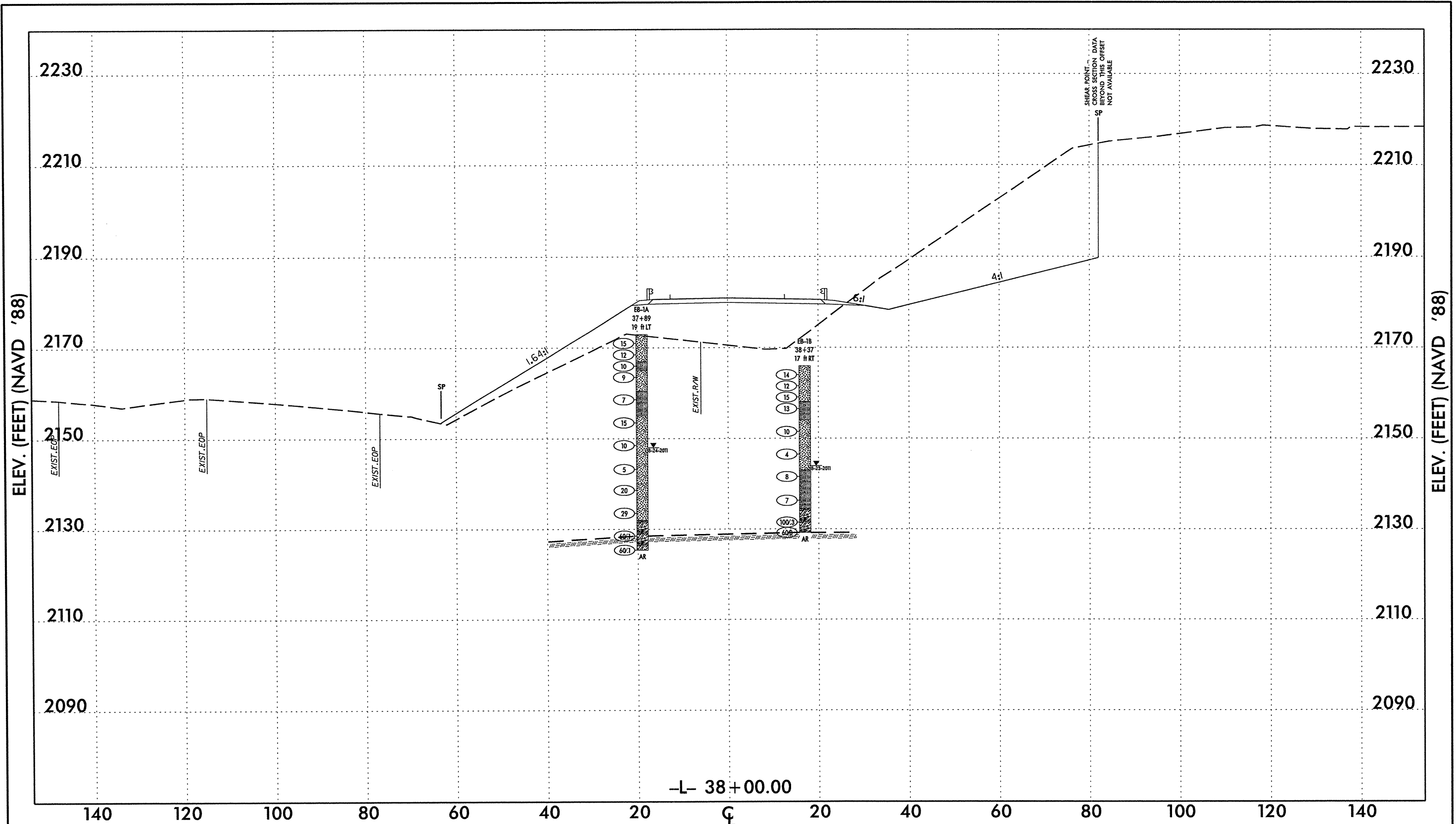


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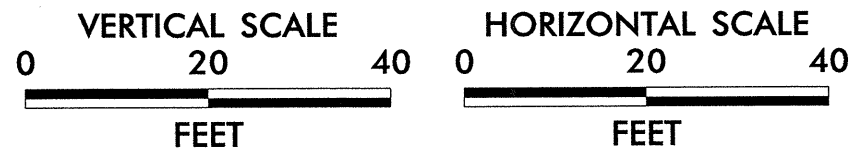
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SUBSURFACE CROSS SECTION		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: G11024.00	SHEET 6 OF 8



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**SUBSURFACE CROSS SECTION**

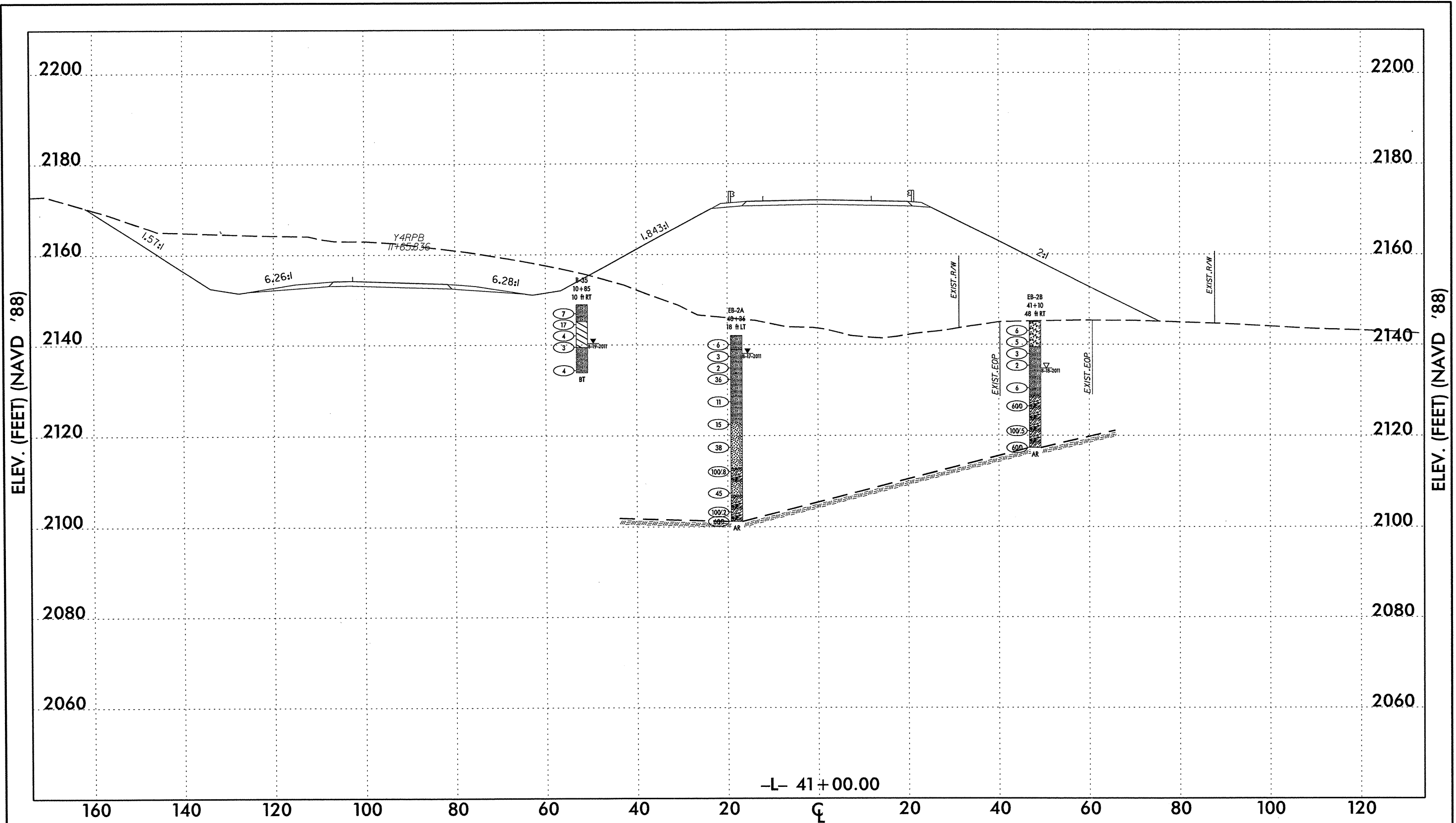
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JACKSON COUNTY, NORTH CAROLINA  
PROJECT NO.: 41156.1.1, TIP NO.: R-5000

SEPTEMBER 2012

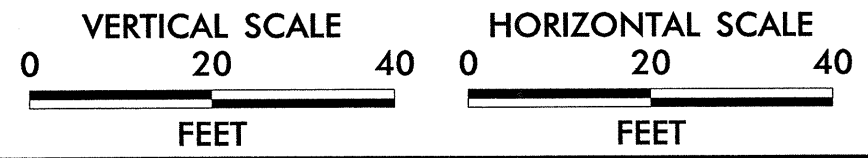
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G11024.00

SHEET 7 OF 8





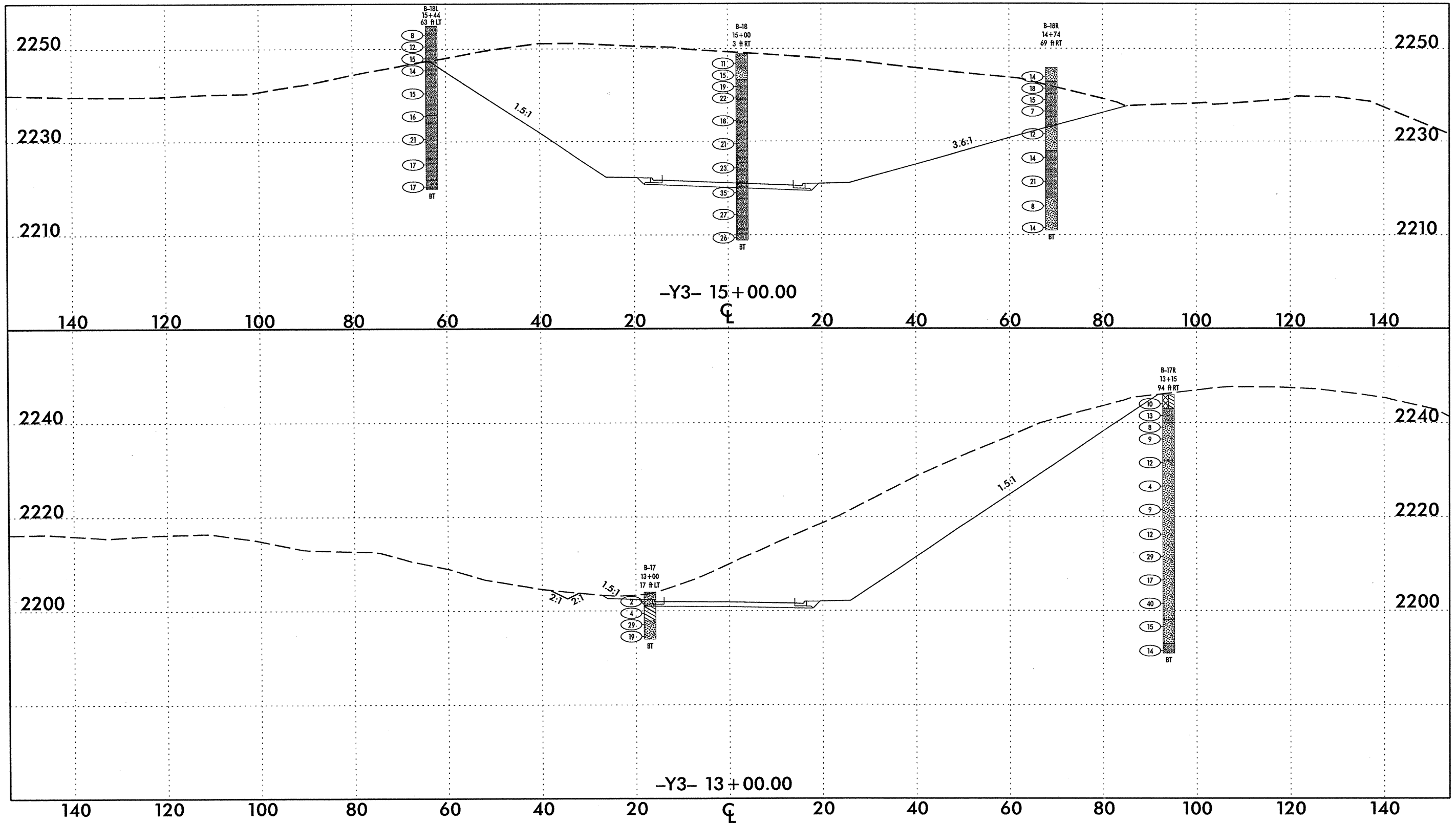
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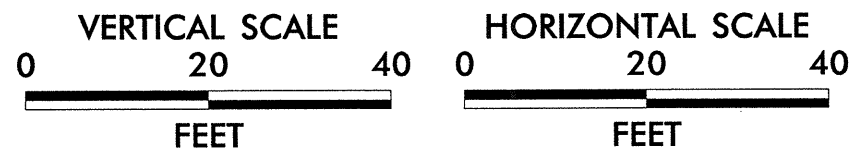
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**SUBSURFACE CROSS SECTION**  
 NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA  
 PROJECT NO.: 41156.1.1, TIP NO.: R-5000

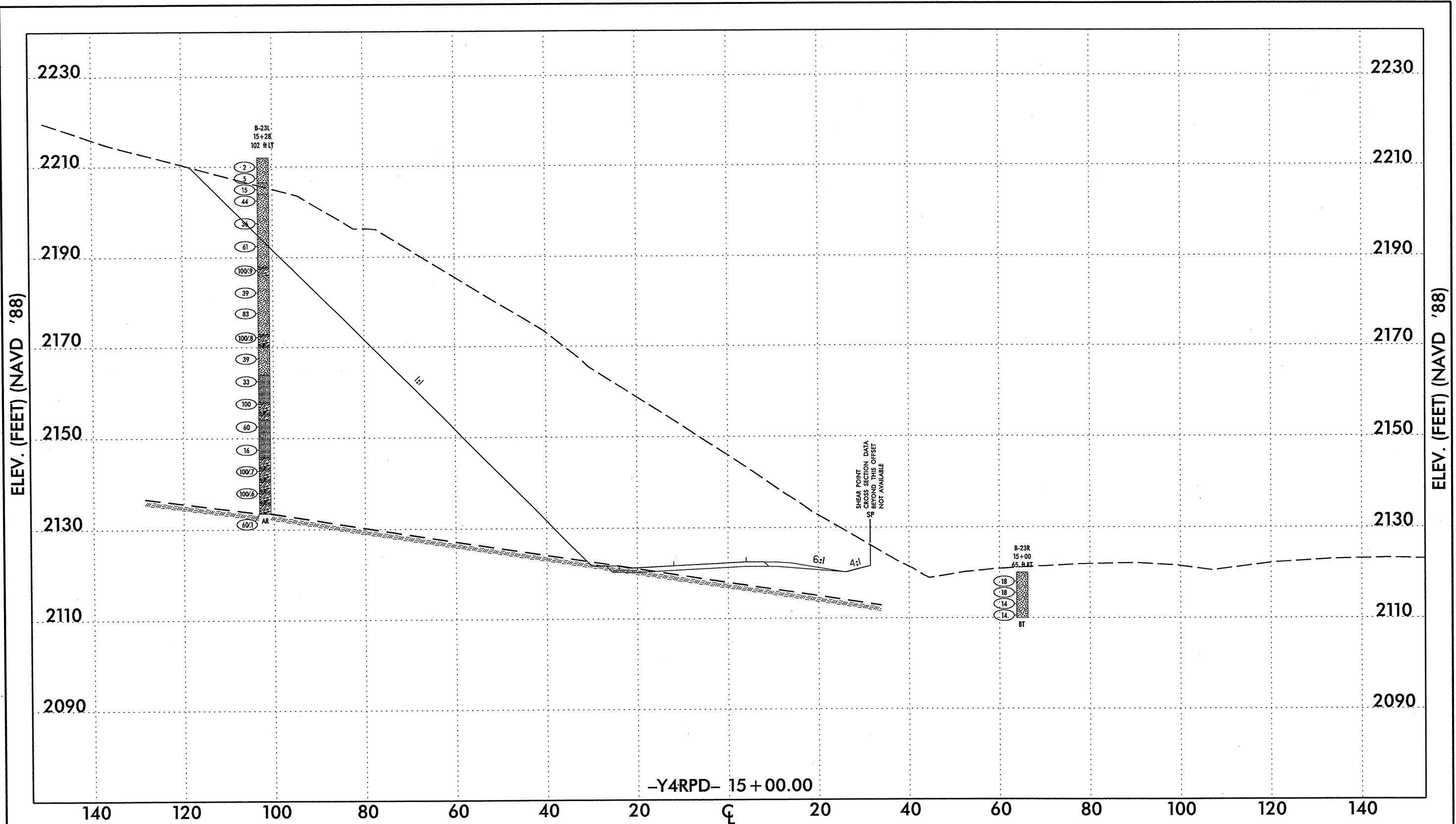
SEMPTEMBER 2012	FALCON PROJECT NO.: G11024.00	SHEET 8 OF 8
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- NOTES:**
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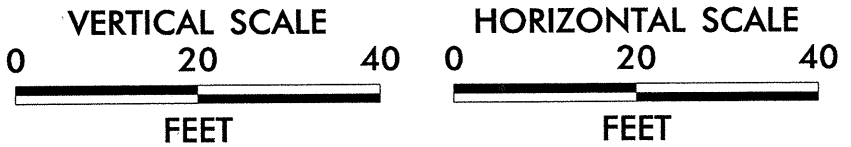


SUBSURFACE CROSS SECTION		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
NOVEMBER, 2011	PROJECT NO.: GT1024.00	SHEET 1 OF 1



**NOTES:**

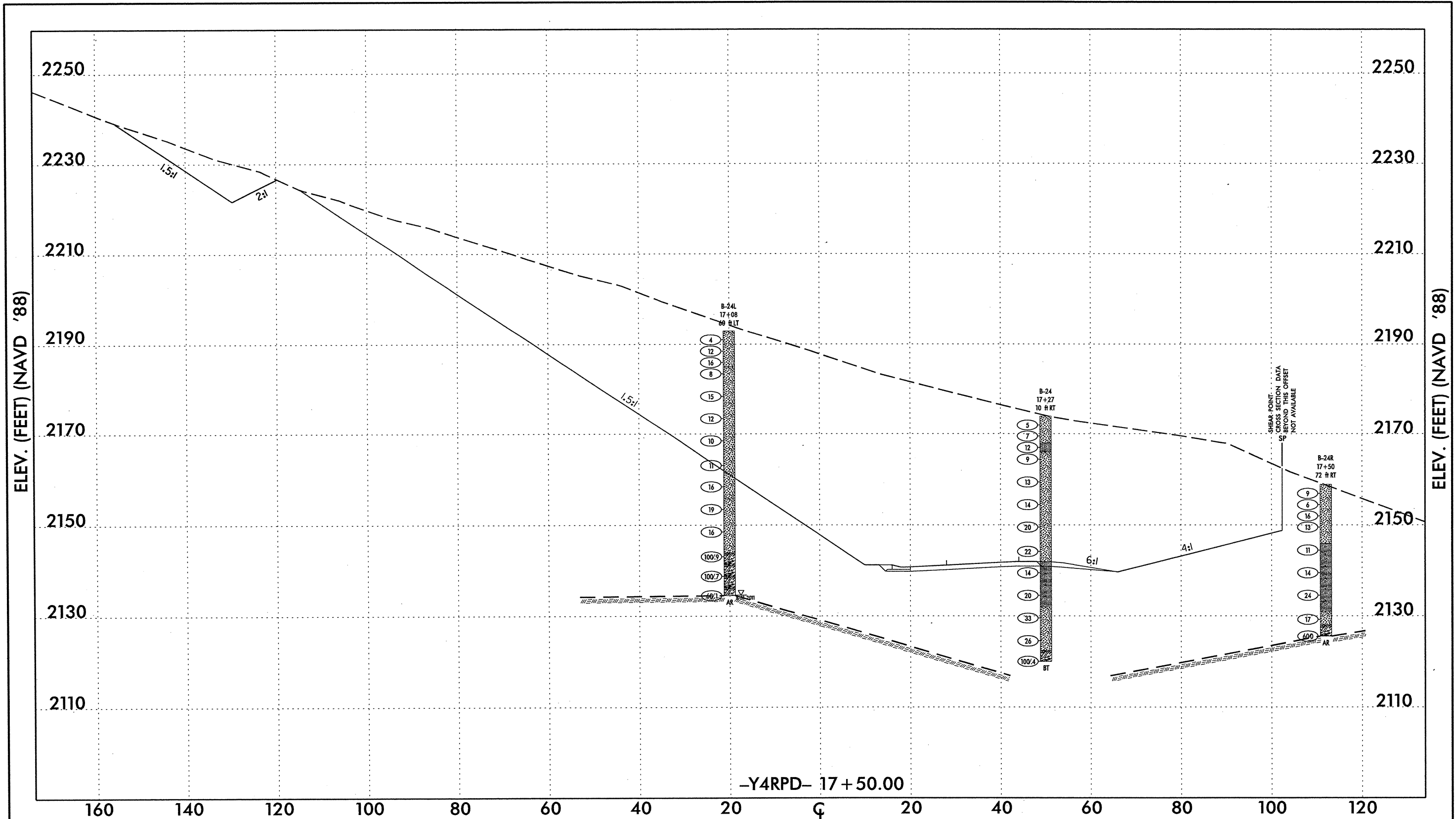
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**SUBSURFACE CROSS SECTION**  
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD  
JACKSON COUNTY, NORTH CAROLINA  
PROJECT NO.: 41156.1.1, TIP NO.: R-5000

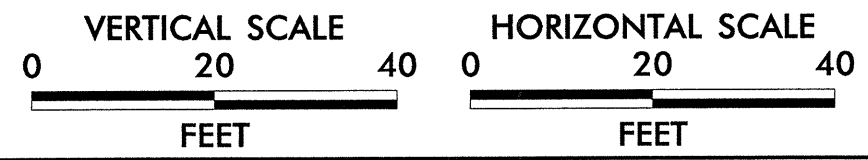
SEPTEMBER 2012 | FALCON PROJECT NO.: G11024.00 | SHEET 1 OF 5



-Y4RPD- 17+50.00

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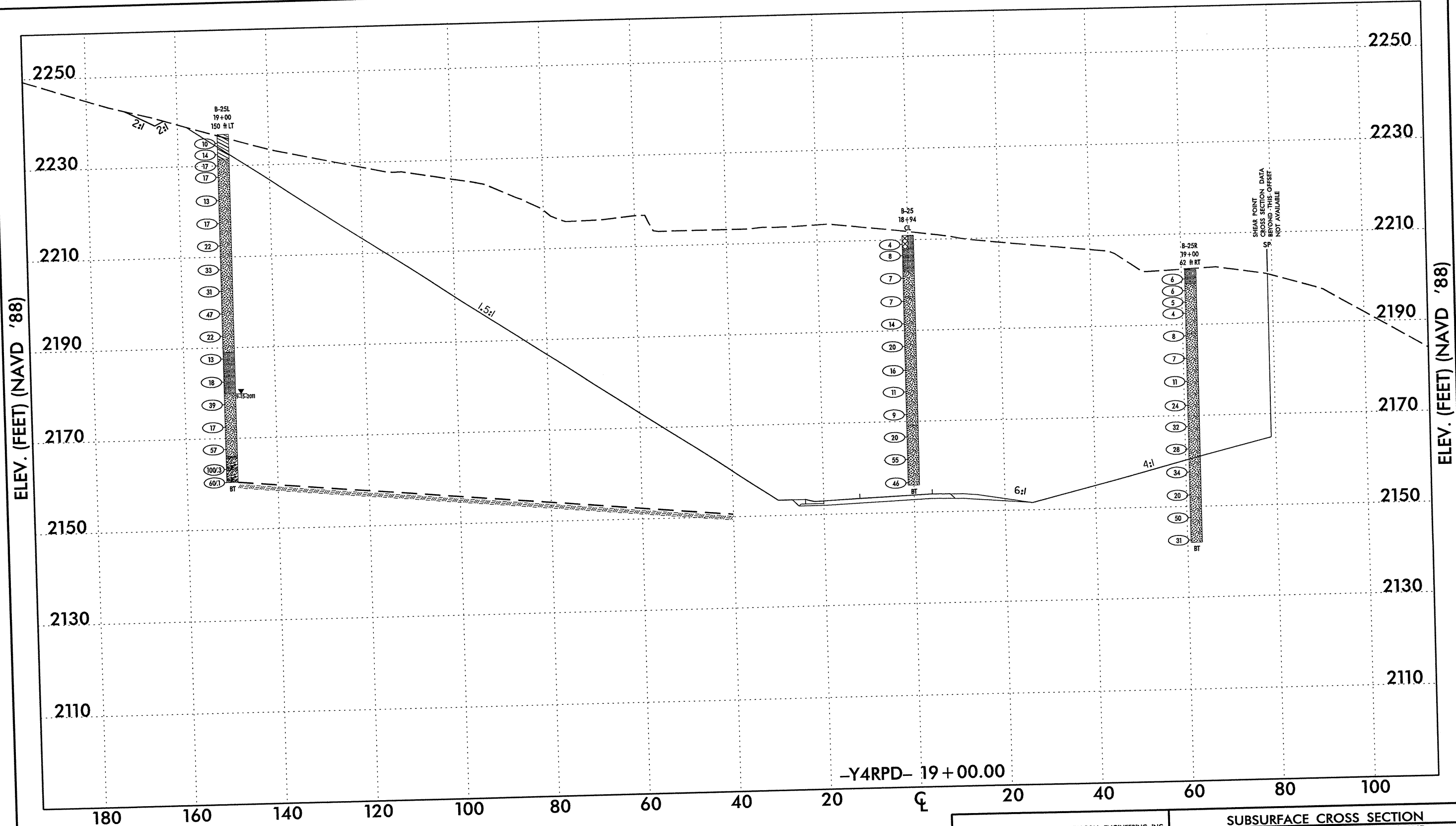


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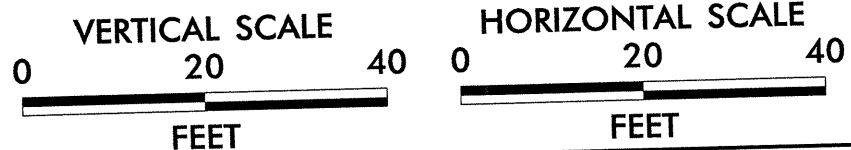
FALCON ENGINEERING, INC.  
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SUBSURFACE CROSS SECTION		
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SEPTEMBER 2012	FALCON PROJECT NO.: G11024.00	SHEET 2 OF 5

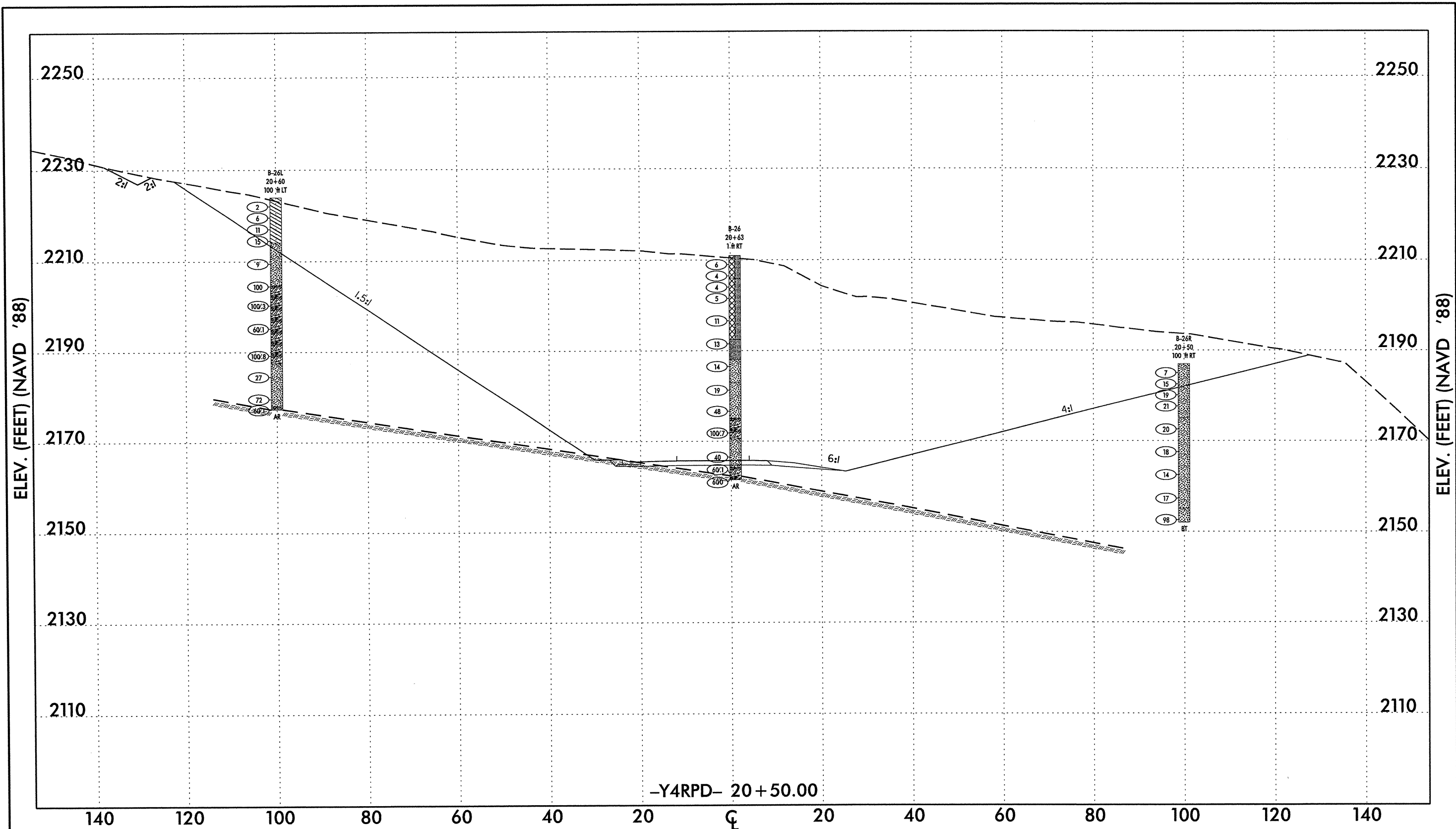


**NOTES:**  
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 • INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE.

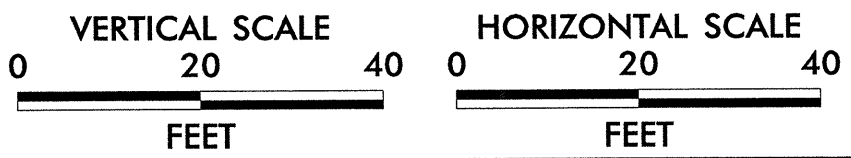


**FALCON ENGINEERING**  
 FALCON ENGINEERING, INC.  
 1210 TRINITY ROAD, SUITE 110  
 RALEIGH, NC 27607  
 PHONE: 919.871.0800  
 FAX: 919.871.0803

**SUBSURFACE CROSS SECTION**  
 NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA  
 PROJECT NO.: 41156.1.1, TIP NO.: R-5000  
 SEPTEMBER 2012 | FALCON PROJECT NO.: G11024.00 | SHEET 3 OF 5



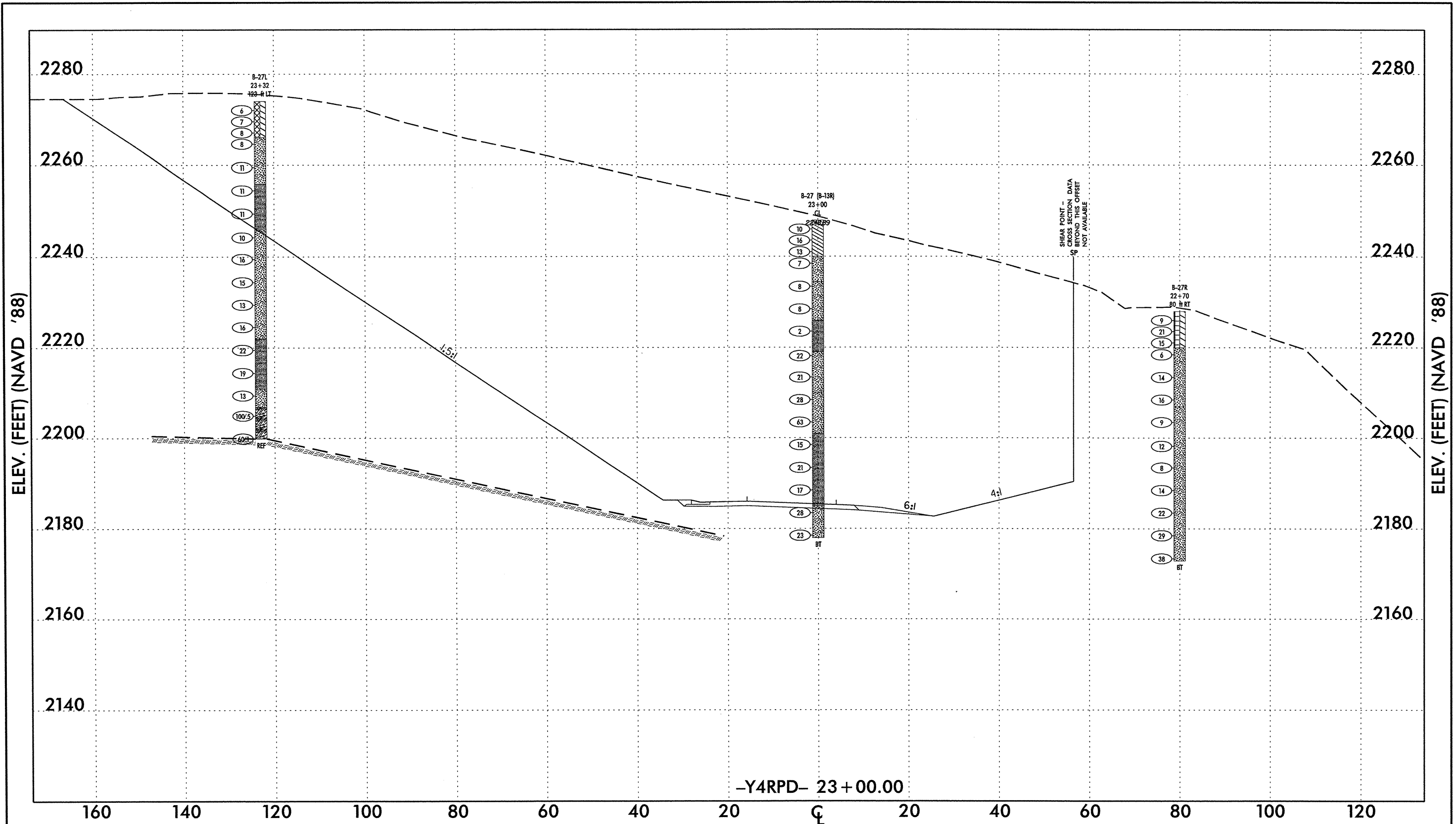
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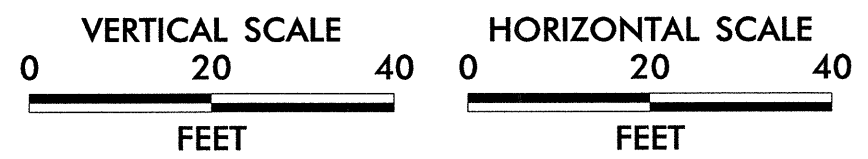
**SUBSURFACE CROSS SECTION**  
 NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA  
 PROJECT NO.: 41156.1.1, TIP NO.: R-5000

SEPTEMBER 2012 | FALCON PROJECT NO.: G11024.00 | SHEET 4 OF 5



-Y4RPD- 23+00.00

**NOTES:**  
 • GROUNDLINE ADOPTED FROM ELECTRONIC FILES RECEIVED FROM MULKEY ENGINEERS & CONSULTANTS IN DECEMBER 2011.  
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SUBSURFACE CROSS SECTION		
NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
PROJECT NO.: 41156.1.1, TIP NO.: R-5000		
SEPTEMBER 2012	FALCON PROJECT NO.: G11024.00	SHEET 5 OF 5



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. B-1	STATION 11+00	OFFSET 18 ft RT	ALIGNMENT -L-
COLLAR ELEV. 2,117.0 ft	TOTAL DEPTH 10.0 ft	NORTHING 608,796	EASTING 745,754
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 09/22/11	COMP. DATE 09/22/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2125															
2120															
2115	2,116.0	1.0													
	2,113.5	3.5	5	7	6										
	2,111.0	6.0	5	4	10										
2110	2,108.5	8.5	3	3	3										
			7	6	3										
2105															
2100															
2095															
2090															
2085															
2080															
2075															
2070															
2065															
2060															
2055															
2050															
2045															
2040															
2035															
2030															
2025															
2020															
2015															
2010															

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. B-2	STATION 13+00	OFFSET 50 ft RT	ALIGNMENT -L-
COLLAR ELEV. 2,102.0 ft	TOTAL DEPTH 15.0 ft	NORTHING 608,616	EASTING 745,981
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 09/22/11	COMP. DATE 09/22/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2110															
2105															
2100	2,101.0	1.0													
	2,098.5	3.5	6	5	6										
	2,096.0	6.0	7	3	5										
2095	2,093.5	8.5	2	2	2										
			1	1	1										
2090	2,088.5	13.5	2	1	1										
2085															
2080															
2075															
2070															
2065															
2060															
2055															
2050															
2045															
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2035															
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2025															
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2015															
2010															
2005															
2000															
1995															

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT\_GDT\_12/1/11



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. B-3	STATION 14+66	OFFSET 6 ft RT	ALIGNMENT -L-
COLLAR ELEV. 2,104.0 ft	TOTAL DEPTH 15.0 ft	NORTHING 608,653	EASTING 746,087
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 09/23/11	COMP. DATE 09/23/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2110																
2105																
2100	2,103.0	1.0														
	2,100.5	3.5	3	3	3											
	2,098.0	6.0	3	4	6											
2095	2,095.5	8.5	3	6	7											
			2	1	1											
2090	2,090.5	13.5	2	2	7											
2085																
2080																
2075																
2070																
2065																
2060																
2055																
2050																
2045																
2040																
2035																
2030																
2025																
2020																
2015																
2010																
2005																
2000																
1995																

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. B-4	STATION 17+42	OFFSET 50 ft RT	ALIGNMENT -L-
COLLAR ELEV. 2,110.0 ft	TOTAL DEPTH 30.0 ft	NORTHING 608,552	EASTING 746,333
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 09/22/11	COMP. DATE 09/22/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2115																
2110	2,109.0	1.0														
2105	2,106.5	3.5	2	2	1											
	2,104.0	6.0	6	12	12											
2100	2,101.5	8.5	7	6	8											
			5	6	6											
2095	2,096.5	13.5	5	4	6											
2090	2,091.5	18.5	3	3	3											
2085	2,086.5	23.5	3	3	7											
2080	2,081.2	28.8	4	6	8											
2075																
2070																
2065																
2060																
2055																
2050																
2045																
2040																
2035																
2030																
2025																
2020																
2015																
2010																
2005																
2000																

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11

**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. B-5	STATION 19+00	OFFSET 65 ft RT	ALIGNMENT -L-
COLLAR ELEV. 2,127.0 ft	TOTAL DEPTH 20.0 ft	NORTHING 608,451	EASTING 746,442
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 09/22/11	COMP. DATE 09/22/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2135															
2130															
2125	2,126.0	1.0												2,127.0	0.0
	2,123.5	3.5	2	3	2										
	2,121.0	6.0	2	1	2										
2120	2,118.5	8.5	3	4	5									2,119.0	8.0
	2,118.5	8.5	4	6	8										
2115	2,113.5	13.5													
	2,113.5	13.5	4	6	8										
2110	2,108.5	18.5													
	2,108.5	18.5	2	4	7										
2105															
2100															
2095															
2090															
2085															
2080															
2075															
2070															
2065															
2060															
2055															
2050															
2045															
2040															
2035															
2030															
2025															
2020															

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ, NC\_DOT.GDT 12/1/11

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. B-6	STATION 21+00	OFFSET 50 ft LT	ALIGNMENT -L-
COLLAR ELEV. 2,141.0 ft	TOTAL DEPTH 20.0 ft	NORTHING 608,402	EASTING 746,661
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 09/07/11	COMP. DATE 09/07/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2150															
2145															
2140	2,140.0	1.0												2,141.0	0.0
	2,137.5	3.5	7	6	4										
2135	2,135.0	6.0	4	4	9									2,138.0	3.0
	2,132.5	8.5	3	1	2										
2130	2,127.5	13.5	1	1	1										
	2,127.5	13.5	1	1	1									2,127.0	14.0
2125	2,122.5	18.5												2,123.0	18.0
	2,122.5	18.5	2	2	4									2,121.0	20.0
2120															
2115															
2110															
2105															
2100															
2095															
2090															
2085															
2080															
2075															
2070															
2065															
2060															
2055															
2050															
2045															
2040															
2035															
2030															
2025															
2020															



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans											
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)										
BORING NO. B-7		STATION 23+00		OFFSET 75 ft LT		ALIGNMENT -L-											
COLLAR ELEV. 2,162.0 ft		TOTAL DEPTH 20.0 ft		NORTHING 608,311		EASTING 746,831											
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic													
DRILLER W. Whichard		START DATE 09/06/11		COMP. DATE 09/07/11		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	ELEV. (ft)	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
2170																	
2165																	
2160	2,161.0	1.0													2,162.0	0.0	GRAVEL PARKING LOT: 3" GRAVEL
	2,158.5	3.5	7	5	3												ARTIFICIAL FILL RED-BROWN AND BLACK, V. LOOSE TO MED. DENSE, SILTY SAND (A-2-4) W/ GRAVEL
2155	2,156.0	6.0	6	4	7												
	2,153.5	8.5	4	1	100/4												100/4 (BOULDER) 60/1 (BOULDER)
2150	2,148.5	13.5	WOH	WOH	WOH												SPT/AUGER REFUSAL OCCURRED ON APPARENT BOULDERS BETWEEN 5.0' AND 9.5'. BORING WAS OFFSET TWICE TO ACHIEVE ADVANCEMENT BEYOND THIS MATERIAL.
2145	2,143.5	18.5													2,144.0	18.0	RESIDUAL RED-BROWN WHITE AND TAN, V. LOOSE, SILTY SAND (A-2-4) SAPROLITIC, W/ TRACE MICA
2140															2,142.0	20.0	Boring Terminated at Elevation 2,142.0 ft IN RES: SILTY SAND
2135																	
2130																	
2125																	
2120																	
2115																	
2110																	
2105																	
2100																	
2095																	
2090																	
2085																	
2080																	
2075																	
2070																	
2065																	
2060																	
2055																	

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans											
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)										
BORING NO. B-7R		STATION 23+50		OFFSET 110 ft RT		ALIGNMENT -L-											
COLLAR ELEV. 2,217.0 ft		TOTAL DEPTH 50.0 ft		NORTHING 608,103		EASTING 746,781											
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic													
DRILLER W. Whichard		START DATE 09/01/11		COMP. DATE 09/02/11		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	ELEV. (ft)	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
2225																	
2220																	
2215	2,216.0	1.0													2,217.0	0.0	GROUND SURFACE: 6" GRAVEL
	2,213.5	3.5	11	12	19												ARTIFICIAL FILL RED-BROWN AND TAN, DENSE TO LOOSE, SILTY SAND (A-2-4) W/ GRAVEL, TRACE MICA
2210	2,211.0	6.0	78	22/3													
	2,208.5	8.5	3	4	6												BOULDER @ 2.0-5.0 ft
2205	2,203.5	13.5	5	3	4												RESIDUAL BROWN ORANGE AND TAN, LOOSE, SILTY SAND (A-2-4) W/ GRAVEL, TRACE MICA
2200	2,198.5	18.5	3	3	3												RESIDUAL BROWN ORANGE AND TAN, LOOSE, SILTY SAND (A-2-4) W/ GRAVEL, TRACE MICA
2195	2,193.5	23.5	3	4	6												RESIDUAL BROWN ORANGE AND TAN, MED. STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA
2190	2,188.5	28.5	3	5	6												RESIDUAL WHITE GRAY AND TAN, MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA
2185	2,183.5	33.5	5	7	8												RESIDUAL BROWN WHITE TAN AND GRAY, STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA
2180	2,178.5	38.5	7	9	22												RESIDUAL BROWN WHITE TAN AND GRAY, STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA
2175	2,173.5	43.5	11	12	15												RESIDUAL WHITE GRAY BROWN AND TAN, DENSE TO MED. DENSE, SILTY MED.-FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA
2170	2,168.5	48.5	100/5														WEATHERED ROCK BROWN WHITE TAN AND GRAY, BIOTITE GNEISS, W/ TRACE MICA
2165			11	14	13												RESIDUAL WHITE GRAY BROWN AND ORANGE, MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA Boring Terminated at Elevation 2,167.0 ft IN RES: SILTY SAND
2160																	
2155																	
2150																	
2145																	
2140																	
2135																	
2130																	
2125																	
2120																	
2115																	
2110																	

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11



# NCDOT GEOTECHNICAL ENGINEERING UNIT

## BORELOG REPORT

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. Dry
BORING NO. B-8	STATION 25+90	OFFSET 83 ft LT	ALIGNMENT -L-
COLLAR ELEV. 2,168.0 ft	TOTAL DEPTH 15.0 ft	NORTHING 608,266	EASTING 747,036
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 09/06/11	COMP. DATE 09/06/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2175															
2170														2,168.0 GROUND SURFACE: 3" TOPSOIL	0.0
2165	2,167.0	1.0	5	3	3	...	...	...	...	...			M	2,165.0 ARTIFICIAL FILL RED-BROWN, LOOSE, CLAYEY FN. SAND (A-2-6) W/ GRAVEL	3.0
2160	2,164.5	3.5	18	11	9	...	...	...	...	...			M	2,160.0 ARTIFICIAL FILL BROWN AND GRAY, MED. DENSE TO V. LOOSE, SILTY SAND (A-2-4) W/ GRAVEL, WOOD	8.0
2155	2,159.5	8.5	2	1	1	...	...	...	...	...			SS-5 22%	2,156.0 RESIDUAL TAN, V. LOOSE, SILTY SAND (A-2-4) W/ GRAVEL	12.0
2150	2,154.5	13.5	3	4	4	...	...	...	...	...			M	2,153.0 RESIDUAL DK. BROWN GRAY AND TAN, LOOSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, LITTLE MICA	15.0
2145														Boring Terminated at Elevation 2,153.0 ft IN RES: SILTY SAND	
2140															
2135															
2130															
2125															
2120															
2115															
2110															
2105															
2100															
2095															
2090															
2085															
2080															
2075															
2070															
2065															
2060															

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. Dry
BORING NO. B-8R	STATION 25+07	OFFSET 198 ft RT	ALIGNMENT -L-
COLLAR ELEV. 2,233.0 ft	TOTAL DEPTH 60.0 ft	NORTHING 607,980	EASTING 746,971
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 09/02/11	COMP. DATE 09/02/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2240															
2235														2,233.0 GROUND SURFACE: 1" GRAVEL	0.0
2230	2,232.0	1.0	3	2	2	...	...	...	...	...			M	2,230.0 RESIDUAL BROWN AND TAN, OFT, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, HIGHLY MICACEOUS	3.0
2225	2,229.5	3.5	2	1	1	...	...	...	...	...			M	2,227.5 RESIDUAL RED-BROWN BLACK AND TAN, V. SOFT, SILTY CLAY (A-6) W/ TRACE-LITTLE MICA, TRACE ORGANICS	5.5
2220	2,227.0	6.0	1	1	2	...	...	...	...	...			M	2,224.5 RESIDUAL RED BROWN AND TAN, SOFT TO STIFF, FN. SANDY SILT (A-4) SAPROLITIC @ 18.5 ft, W/ GRAVEL, LITTLE MICA (CONCENTRATED IN LAYERS)	23.0
2215	2,224.5	8.5	2	4	5	...	...	...	...	...			M	2,210.0 RESIDUAL GRAY WHITE AND TAN, LOOSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	28.0
2210	2,219.5	13.5	3	3	5	...	...	...	...	...			M	2,205.0 RESIDUAL GRAY TAN BROWN AND RED, LOOSE TO MED. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, CSE. SAND LAYERS, TRACE MICA	47.0
2205	2,214.5	18.5	4	5	6	...	...	...	...	...			M	2,186.0 RESIDUAL WHITE GRAY AND RED-BROWN, V. DENSE TO DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL AND ROCK FRAGS, TRACE TO LITTLE MICA, CSE SAND LAYERS @ 58.0 ft	60.0
2200	2,209.5	23.5	3	3	3	...	...	...	...	...			M	Boring Terminated at Elevation 2,173.0 ft IN RES: SILTY CSE SAND	
2195	2,204.5	28.5	4	5	5	...	...	...	...	...			M		
2190	2,199.5	33.5	3	4	5	...	...	...	...	...			M		
2185	2,194.5	38.5	5	5	9	...	...	...	...	...			M		
2180	2,189.5	43.5	8	9	12	...	...	...	...	...			M		
2175	2,184.5	48.5	66	23	44	...	...	...	...	...			M		
2170	2,179.5	53.5	24	25	27	...	...	...	...	...			M		
2165	2,174.5	58.5	30	20	16	...	...	...	...	...			M		
2160															
2155															
2150															
2145															
2140															
2135															
2130															
2125															

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. B-9	STATION 28+55	OFFSET CL	ALIGNMENT -L-
COLLAR ELEV. 2,232.0 ft	TOTAL DEPTH 37.0 ft	NORTHING 608,309	EASTING 747,289
DRILL MACHINE CME-55 ATV	DRILL METHOD Mud Rotary	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 09/07/11	COMP. DATE 09/08/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
2240														
2235													GROUND SURFACE: 18" BOULDER	0.0
2230	2,231.0	1.0											ARTIFICIAL FILL	
	2,228.5	3.5	37	17	9								RED AND BROWN, MED. DENSE, SILTY SAND (A-2-4) W/ GRAVEL, COBBLE AND BOULDERS, TRACE MICA	6.0
2225	2,226.0	6.0	5	8	11								RESIDUAL	
	2,223.5	8.5	5	5	4								RED-BROWN GRAY WHITE AND ORANGE, LOOSE TO DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	10.5
2220			16	14	17								WEATHERED ROCK	
	2,218.5	13.5	33	67/3									GRAY WHITE AND BROWN, BIOTITE GNEISS, W/ V. DENSE SILTY SAND LAYERS, QUARTZ GRAVEL LAYERS	28.0
2215													CRYSTALLINE ROCK	
	2,213.5	18.5	21	67	33/1								BLACK GRAY WHITE ORANGE AND RED, MOD. SEV. WEATHERED, MOD. HARD, V. CLOSE TO MOD. CLOSELY FRACTURED, BIOTITE GNEISS, W/ TRACE MICA	37.0
2210	2,210.0	22.0	100/4											
2205	2,207.0	25.0	63	37/1										
	2,205.0	26.0	60/1											
2200														
2195													Boring Terminated at Elevation 2,195.0 ft IN CR: BIOTITE GNEISS	
2190														
2185														
2180														
2175														
2170														
2165														
2160														
2155														
2150														
2145														
2140														
2135														
2130														
2125														

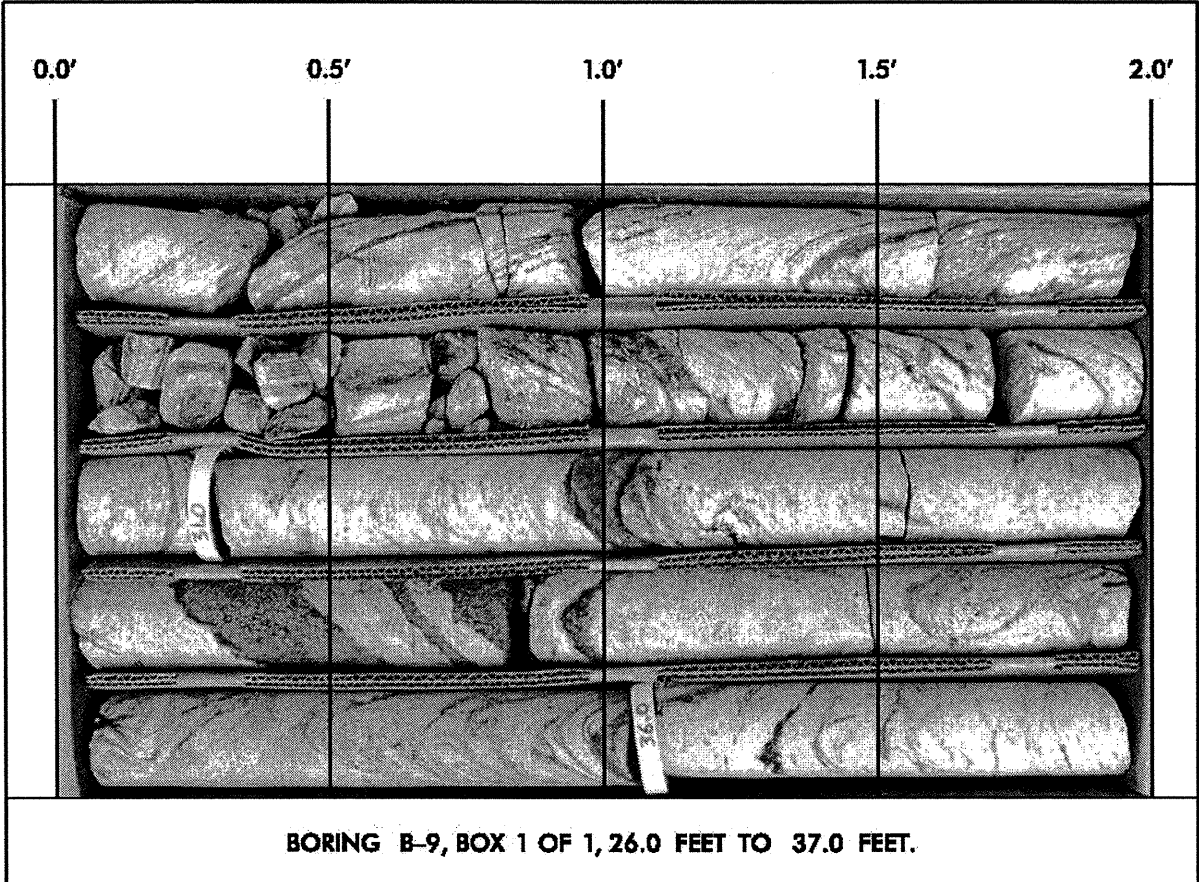
NCDOT BORE SINGLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. B-9	STATION 28+55	OFFSET CL	ALIGNMENT -L-
COLLAR ELEV. 2,232.0 ft	TOTAL DEPTH 37.0 ft	NORTHING 608,309	EASTING 747,289
DRILL MACHINE CME-55 ATV	DRILL METHOD Mud Rotary	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 09/07/11	COMP. DATE 09/08/11	SURFACE WATER DEPTH N/A

ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (%)	RCD (%)		REC. (%)	RCD (%)			
2208												
	2,208.0	26.0	5.0	2:53/1.0	(4.2)	(0.6)					Begin Coring @ 26.0 ft	
2200	2,201.0	31.0	5.0	2:25/1.0	84%	12%					CRYSTALLINE ROCK	
				2:00/1.0							BLACK GRAY WHITE ORANGE AND RED, MOD. SEV. WEATHERED, MOD. HARD, V. CLOSE TO MOD. CLOSELY FRACTURED, BIOTITE GNEISS, W/ TRACE MICA (continued)	
2195	2,196.0	36.0	1.0	1:19/1.0	(4.8)	(4.5)						
	2,195.0	37.0		3:09/1.0	96%	90%					Boring Terminated at Elevation 2,195.0 ft IN CR: BIOTITE GNEISS	37.0
				2:48/1.0								
				2:02/1.0	(1.0)	(1.0)						
				3:06/1.0	100%	100%						
2190				2:50/1.0								
2185												
2180												
2175												
2170												
2165												
2160												
2155												
2150												
2145												
2140												
2135												
2130												
2125												


NCDOT CORE SINGLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11





BORING B-9, BOX 1 OF 1, 26.0 FEET TO 37.0 FEET.



 <b>FALCON</b> ENGINEERING, INC. 1216 TRINITY ROAD, SUITE 100 RALEIGH, NC 27607 PHONE: 919.871.0880 FAX: 919.871.0881	<b>ROCK CORE PHOTOGRAPHS</b>		
	(R-5000) NEW CONNECTOR ROAD FROM NC-116 AND BONNIE LANE TO NC-107 AND EVANS ROAD JACKSON COUNTY, NORTH CAROLINA		
	OCTOBER, 2011	PROJECT NO.: GT1024.00	SHEET 1 OF 1





**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans	
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)
BORING NO. B-9L		STATION 28+55		OFFSET 100 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 2,227.0 ft		TOTAL DEPTH 33.8 ft		NORTHING 608,362		EASTING 747,204	
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers			HAMMER TYPE Automatic		
DRILLER W. Whichard		START DATE 09/07/11		COMP. DATE 09/07/11		SURFACE WATER DEPTH N/A	

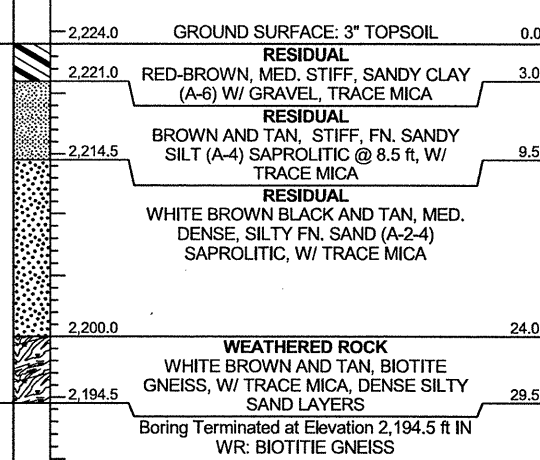
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2235																
2230																
2225	2,226.0	1.0														
	2,223.5	3.5	2	2	2											
2220	2,221.0	6.0	4	4	4											
	2,218.5	8.5	10	18	30											
2215	2,213.5	13.5	20	60	40/3											
	2,213.5	13.5	40	60/2												
2210	2,208.5	18.5														
	2,208.5	18.5	20	22	35											
2205	2,203.5	23.5														
	2,203.5	23.5	42	23	21											
2200	2,198.5	28.5														
	2,198.5	28.5	100/2													
2195	2,193.5	33.5														
	2,193.5	33.5	100/3													
2190																
2185																
2180																
2175																
2170																
2165																
2160																
2155																
2150																
2145																
2140																
2135																
2130																
2125																
2120																

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans	
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)
BORING NO. B-9R		STATION 28+55		OFFSET 78 ft RT		ALIGNMENT -L-	
COLLAR ELEV. 2,224.0 ft		TOTAL DEPTH 29.5 ft		NORTHING 608,243		EASTING 747,329	
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers			HAMMER TYPE Automatic		
DRILLER W. Whichard		START DATE 09/07/11		COMP. DATE 09/07/11		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2230																
2225																
	2,223.0	1.0														
2220	2,220.5	3.5	3	2	3											
	2,218.0	6.0	4	5	6											
2215	2,215.5	8.5	3	4	5											
	2,215.5	8.5	4	5	6											
2210	2,210.5	13.5														
	2,210.5	13.5	7	9	13											
2205	2,205.5	18.5														
	2,205.5	18.5	10	9	8											
2200	2,200.5	23.5														
	2,200.5	23.5	19	81/4												
2195	2,195.5	28.5														
	2,195.5	28.5	30	70/4												
2190																
2185																
2180																
2175																
2170																
2165																
2160																
2155																
2150																
2145																
2140																
2135																
2130																
2125																
2120																
2115																

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11

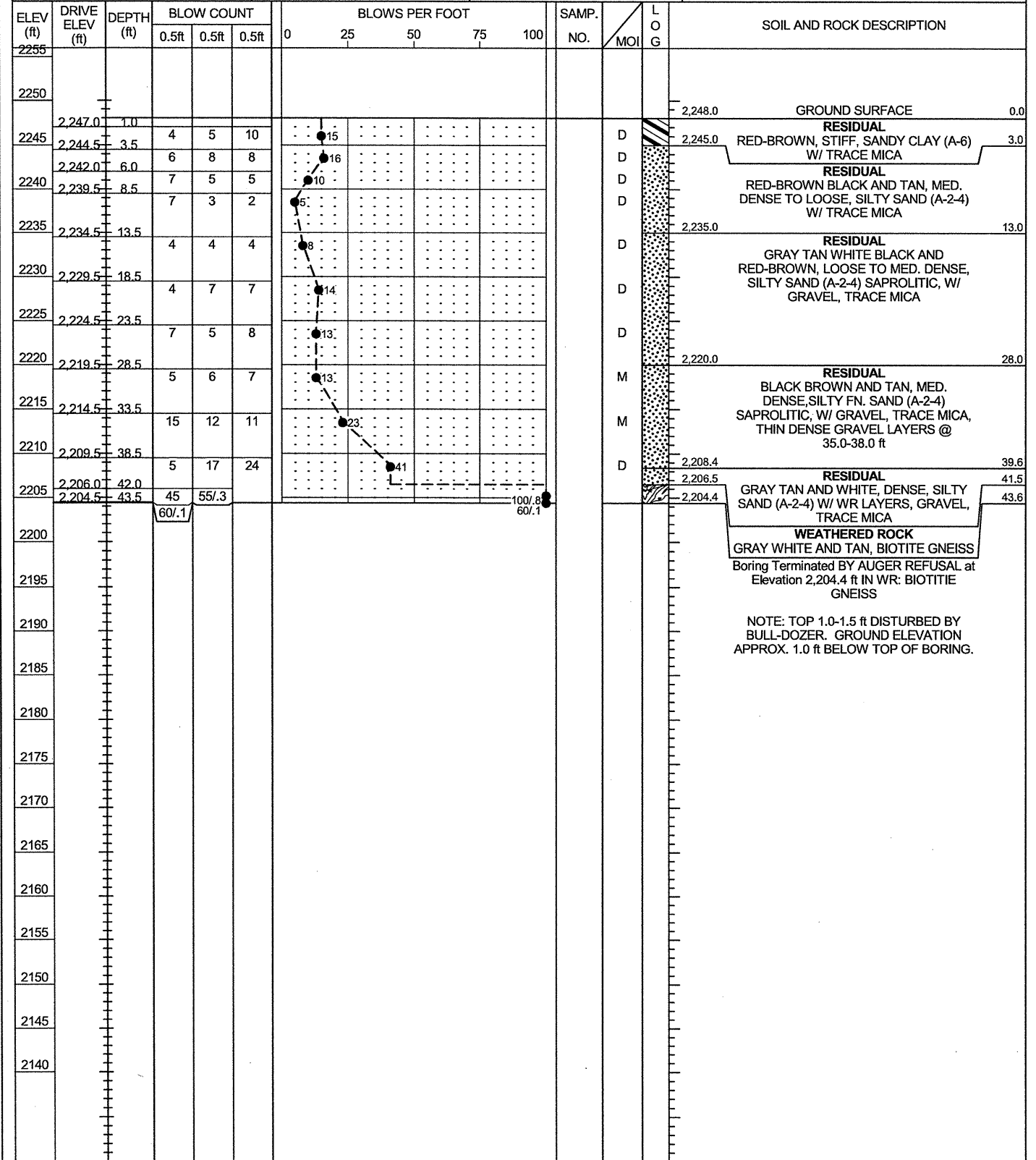
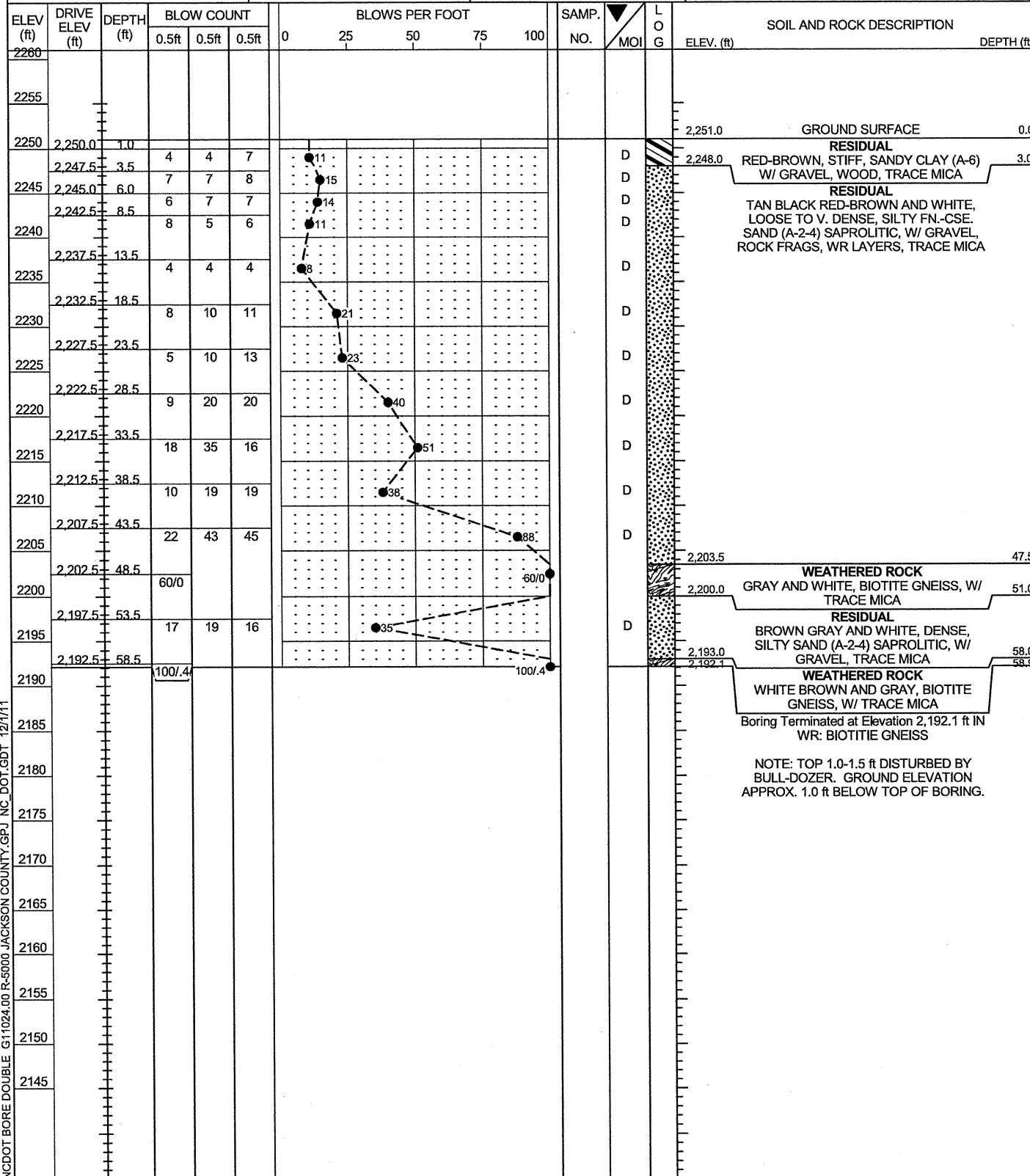




**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. Dry
BORING NO. B-10	STATION 30+04	OFFSET CL	ALIGNMENT -L-
COLLAR ELEV. 2,251.0 ft	TOTAL DEPTH 58.9 ft	NORTHING 608,389	EASTING 747,415
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 09/13/11	COMP. DATE 09/13/11	SURFACE WATER DEPTH N/A

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. Dry
BORING NO. B-10L	STATION 30+00	OFFSET 102 ft RT	ALIGNMENT -L-
COLLAR ELEV. 2,248.0 ft	TOTAL DEPTH 43.6 ft	NORTHING 608,452	EASTING 747,358
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 09/09/11	COMP. DATE 09/09/11	SURFACE WATER DEPTH N/A



NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11

NOTE: TOP 1.0-1.5 ft DISTURBED BY BULL-DOZER. GROUND ELEVATION APPROX. 1.0 ft BELOW TOP OF BORING.



# NCDOT GEOTECHNICAL ENGINEERING UNIT

## BORELOG REPORT

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. Dry
BORING NO. B-10R	STATION 30+00	OFFSET 85 ft LT	ALIGNMENT -L-
COLLAR ELEV. 2,249.0 ft	TOTAL DEPTH 55.0 ft	NORTHING 608,313	EASTING 747,483
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 09/09/11	COMP. DATE 09/09/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
2255														
2250	2,248.0	1.0	2	3	4								GROUND SURFACE	0.0
2245	2,245.5	3.5	3	5	6								RESIDUAL RED-BROWN, MED. STIFF, SANDY CLAY (A-6) W/ TRACE MICA, ROOTS	3.0
2240	2,243.0	6.0	6	7	5								RESIDUAL RED-BROWN BLACK AND TAN, MED. DENSE TO DENSE, SILTY FN.-CSE. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, QUARTZ GRAVEL, TRACE MICA	8.0
2235	2,240.5	8.5	4	6	6								RESIDUAL WHITE GRAY AND TAN, STIFF TO V. STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	22.0
2230	2,235.5	13.5	4	7	9								RESIDUAL WHITE GRAY BLACK RED AND TAN, MED. DENSE TO DENSE, SILTY FN.-CSE. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, QUARTZ GRAVEL, TRACE MICA	44.5
2225	2,230.5	18.5	4	5	7								WEATHERED ROCK WHITE GRAY BLACK AND TAN, BIOTITE GNEISS, W/ V. DENSE SILTY SAND LAYERS	52.0
2220	2,225.5	23.5	5	9	11								RESIDUAL TAN GRAY AND WHITE, DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, CSE. SAND LAYERS, TRACE MICA	55.0
2215	2,220.5	28.5	4	8	13								Boring Terminated at Elevation 2,194.0 ft IN RES: SILTY SAND	
2210	2,215.5	33.5	12	15	22								NOTE: TOP 1.0-2.0 ft DISTURBED BY BULL-DOZER. GROUND ELEVATION APPROX. 2.0 ft ABOVE TOP OF BORING.	
2205	2,210.5	38.5	9	23	22									
2200	2,205.5	43.5	36	17	83/4									
2195	2,200.5	48.5	36	24	76/4									
2190	2,195.5	53.5	27	26	21									

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. Dry
BORING NO. B-11	STATION 32+00	OFFSET 7 ft LT	ALIGNMENT -L-
COLLAR ELEV. 2,232.0 ft	TOTAL DEPTH 45.0 ft	NORTHING 608,443	EASTING 747,602
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 09/12/11	COMP. DATE 09/12/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
2240														
2235													GROUND SURFACE	0.0
2230	2,231.0	1.0	3	4	4								RESIDUAL RED-BROWN, MED. STIFF, FN. SANDY SILT (A-4) W/ TRACE MICA	3.0
2225	2,228.5	3.5	5	6	8								RESIDUAL WHITE BROWN AND TAN, MED. STIFF, SILTY SAND (A-2-4) SAPROLITIC, W/ TRACE MICA	6.0
2220	2,226.0	6.0	5	7	7								RESIDUAL WHITE RED-BROWN AND TAN, STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	18.0
2215	2,223.5	8.5	4	5	8								RESIDUAL TAN BLACK RED AND WHITE, MED. DENSE TO V. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	45.0
2210	2,221.5	13.5	2	3	5								Boring Terminated at Elevation 2,187.0 ft IN RES: SILTY SAND	
2205	2,218.5	18.5	4	7	7								NOTE: TOP 1.5-3.0 ft DISTURBED BY BULL-DOZER. GROUND ELEVATION APPROX. 2.5 ft ABOVE TOP OF BORING	
2200	2,215.5	23.5	5	5	7									
2195	2,210.5	28.5	7	11	10									
2190	2,208.5	33.5	7	8	6									
2185	2,205.5	38.5	6	7	7									
2180	2,203.5	43.5	7	41	28									

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. Dry
BORING NO. B-11L	STATION 31+64	OFFSET 94 ft LT	ALIGNMENT -L-
COLLAR ELEV. 2,212.0 ft	TOTAL DEPTH 15.0 ft	NORTHING 608,530	EASTING 747,569
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 09/13/11	COMP. DATE 09/13/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
2220														
2215														
2210	2,211.0	1.0											GROUND SURFACE	0.0
	2,208.5	3.5	2	1	2							D	RESIDUAL	
	2,206.0	6.0	4	10	7							D	RED-BROWN TAN AND BLACK, SOFT TO V. STIFF, FN. SANDY SILT (A-4) W/ ROOTS, GRAVEL, TRACE MICA	
2205	2,203.5	8.5	4	5	6							D		
	2,198.5	13.5	4	4	7							D		
2200												M	RESIDUAL	12.0
2195													RED-BROWN TAN AND BLACK, MED. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ TRACE MICA	15.0
2190													Boring Terminated at Elevation 2,197.0 ft IN RES: SILTY SAND	
2185													NOTE: TOP 1.0-2.0 ft DISTURBED BY BULL-DOZER. GROUND ELEVATION APPROX. 2.0 ft ABOVE TOP OF BORING.	
2180														
2175														
2170														
2165														
2160														
2155														
2150														
2145														
2140														
2135														
2130														
2125														
2120														
2115														
2110														
2105														

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. Dry
BORING NO. B-11R	STATION 32+00	OFFSET 110 ft RT	ALIGNMENT -L-
COLLAR ELEV. 2,257.0 ft	TOTAL DEPTH 60.0 ft	NORTHING 608,333	EASTING 747,642
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 09/12/11	COMP. DATE 09/12/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
2265														
2260														
2255	2,256.0	1.0											GROUND SURFACE	0.0
	2,253.5	3.5	2	1	2							D	RESIDUAL	
	2,251.0	6.0	4	4	7							D	RED-BROWN, SOFT, FN. SANDY CLAY (A-6) W/ TRACE MICA	3.0
2250	2,248.5	8.5	5	5	5							D	RESIDUAL	
			4	6	7							D	RED-BROWN BLACK AND TAN, STIFF, FN. SANDY SILT (A-4) W/ TRACE MICA	8.0
2245	2,243.5	13.5											RESIDUAL	
			4	6	8							D	RED-BROWN BLACK AND TAN, MED. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ TRACE MICA	
2240	2,238.5	18.5	4	7	8							D		
2235	2,233.5	23.5	3	6	7								RESIDUAL	22.0
			4	6	8							M	RED-BROWN GRAY AND TAN, STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	
2230	2,228.2	28.8												
			5	11	13							M	RESIDUAL	32.0
2225	2,223.5	33.5											TAN RED-BROWN WHITE AND BLACK, MED. DENSE TO V. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE TO LITTLE MICA	
			18	27	27							M		
2220	2,218.5	38.5											RESIDUAL	42.0
			10	14	15							M	BROWN GRAY RED AND TAN, V. STIFF TO HARD, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	
2215	2,213.5	43.5												
			10	14	18							M		
2210	2,208.5	48.5												
			14	16	24							M		
2205	2,203.5	53.5												
			10	13	15							D		
2200	2,198.5	58.5												
2195													Boring Terminated at Elevation 2,197.0 ft IN RES: SANDY SILT	60.0
2190													NOTE: TOP 1.0-1.5 ft DISTURBED BY BULL-DOZER. GROUND ELEVATION APPROX. 1.0 ft ABOVE TOP OF BORING.	
2185														
2180														
2175														
2170														
2165														
2160														
2155														
2150														

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11



PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans										
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)									
BORING NO. B-12		STATION 34+02		OFFSET 5 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 2,236.0 ft		TOTAL DEPTH 49.4 ft		NORTHING 608,381		EASTING 747,797										
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER W. Whichard		START DATE 08/24/11		COMP. DATE 08/24/11		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2245																
2240																
2235	2,235.0	1.0	5	4	4										2,236.0	GROUND SURFACE: 2" TOPSOIL 0.0
2230	2,232.5	3.5	6	7	8											RESIDUAL RED-BROWN, STIFF, FN. SANDY CLAY (A-6) W/ ROOTS, GRAVEL
2225	2,227.5	8.5	5	6	8											RESIDUAL RED-BROWN AND BLACK, MED. STIFF, FN. SANDY SILT (A-4) W/ TRACE MICA
2220	2,222.5	13.5	5	4	4											RESIDUAL TAN BROWN AND GRAY, LOOSE, SILTY FN. SAND (A-2-4) W/ TRACE MICA
2215	2,217.5	18.5	6	8	7											RESIDUAL WHITE TAN BROWN GRAY AND BLACK, MED. DENSE, SILTY MED.-CSE. SAND (A-2-4) SAPROLITIC, W/ TRACE MICA, GRAVEL
2210	2,212.5	23.5	7	6	5											
2205	2,207.5	28.5	5	6	8											
2200	2,202.5	33.5	11	30	40											
2195	2,197.5	38.5	53	471.2												
2190	2,192.5	43.5	11	15	27											
2185	2,187.5	48.5	15	85/4												

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans										
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)									
BORING NO. B-12L		STATION 34+00		OFFSET 110 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 2,230.0 ft		TOTAL DEPTH 35.0 ft		NORTHING 608,461		EASTING 747,865										
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER W. Whichard		START DATE 08/23/11		COMP. DATE 08/23/11		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2235																
2230	2,229.0	1.0	7	6	5										2,230.0	GROUND SURFACE: 6" TOPSOIL 0.0
2225	2,226.5	3.5	4	4	3											ARTIFICIAL FILL RED AND BROWN, STIFF, FN. SANDY SILT (A-4) W/ GRAVEL, TRACE MICA 3.0
2220	2,224.0	6.0	4	3	3											ARTIFICIAL FILL GRAY RED AND BROWN, LOOSE, SILTY FN. SAND (A-2-4) W/ GRAVEL, TRACE MICA 6.0
2215	2,221.5	8.5	4	5	4											ARTIFICIAL FILL RED-BROWN AND TAN, MED. STIFF, SILTY CLAY (A-6) W/ GRAVEL, TRACE MICA 8.0
2210	2,216.5	13.5	3	2	4											ARTIFICIAL FILL RED-BROWN AND TAN, MED. STIFF, SILTY CLAY (A-6) W/ GRAVEL, TRACE MICA 13.0
2205	2,211.5	18.5	2	2	3											ARTIFICIAL FILL RED AND BROWN, LOOSE, SILTY SAND (A-2-4) W/ GRAVEL, TRACE MICA
2200	2,206.5	23.5	2	3	4											ARTIFICIAL FILL RED BROWN AND TAN, MED. STIFF, FN. SANDY CLAY (A-6) W/ GRAVEL, TRACE MICA 19%
2195	2,201.2	28.8	3	4	4											RESIDUAL GRAY AND BROWN, LOOSE, SILTY FN. SAND (A-2-4) W/ TRACE MICA 28.0
2190	2,196.5	33.5	3	3	4											RESIDUAL WHITE TAN AND BROWN, LOOSE, SILTY SAND (A-2-4) SAPROLITIC, W/ TRACE MICA 33.0
2185																Boring Terminated at Elevation 2,195.0 ft IN RES: SILTY SAND 35.0
2180																
2175																
2170																
2165																
2160																
2155																
2150																
2145																
2140																
2135																
2130																
2125																
2120																

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11





**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. Dry
BORING NO. B-12R	STATION 34+52	OFFSET 167 ft RT	ALIGNMENT -L-
COLLAR ELEV. 2,274.0 ft	TOTAL DEPTH 78.8 ft	NORTHING 608,213	EASTING 747,739
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 08/25/11	COMP. DATE 08/25/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
2280														
2275													2,274.0 EX. PAVEMENT: 1" ASPHALT, 3" ABC	0.0
2270	2,273.0	1.0	6	6	8							D	ROADWAY EMBANKMENT	
	2,270.5	3.5	10	7	8							D	2,271.0 RED-BROWN, STIFF, SILTY CLAY (A-7) W/ ROOTS, WOOD	3.0
	2,268.0	6.0	4	4	3							D	2,268.5 RESIDUAL RED-BROWN AND TAN, STIFF, FN. SANDY CLAY (A-6)	5.5
2265	2,265.5	8.5	3	3	4							SS-7	RESIDUAL BROWN GRAY AND RED, LOOSE, SILTY SAND (A-2-4) W/ GRAVEL, TRACE MICA	13.0
2260	2,260.5	13.5	2	2	4							D	2,255.5 RESIDUAL RED-BROWN TAN AND GRAY, LOOSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	18.5
2255	2,255.5	18.5	2	6	6							D	2,255.5 RESIDUAL RED-BROWN TAN AND GRAY, LOOSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	18.5
2250	2,250.5	23.5	4	3	4							SS-8	RESIDUAL RED-BROWN BLACK AND WHITE, MED. DENSE TO LOOSE, SLL. SILTY CSE. SAND (A-1-b) SAPROLITIC, W/ ROCK FRAGS	26%
2245	2,245.5	28.5	12	12	12							D		
2240	2,240.5	33.5	13	20	22							D	2,239.5 RESIDUAL BROWN DK. GRAY BLACK AND WHITE, V. DENSE TO MED. DENSE, SILTY CSE. SAND (A-2-4) SAPROLITIC, W/ GRAVEL AND ROCK FRAGS	34.5
2235	2,235.5	38.5	8	6	7							D	2,231.0 RESIDUAL RED-BROWN BLACK TAN AND WHITE, MED. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA, QUARTZ GRAVEL LAYER @ 50.0 ft	43.0
2230	2,230.5	43.5	6	7	10							D	2,221.0 RESIDUAL WHITE BLACK BROWN AND RED, V. STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	53.0
2225	2,225.5	48.5	5	5	6							D		
2220	2,220.5	53.5	6	8	9							D	2,211.0 RESIDUAL RED-BROWN BLACK AND TAN, MED. DENSE TO V. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA (CONCENTRATED IN LAYERS)	63.0
2215	2,215.5	58.5	4	6	7							SS-9		
2210	2,210.5	63.5	6	7	9							D		
2205	2,205.5	68.5	13	21	29							D		
2200	2,200.5	73.5	12	10	14							D		
2195	2,195.5	78.5	100/3										2,195.2 WEATHERED ROCK BLACK RED GREEN GRAY AND TAN, BIOTITE GNEISS, W/ TRACE MICA	78.8
2190													Boring Terminated at Elevation 2,195.2 ft IN WR: BIOTITE GNEISS	

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. Dry
BORING NO. B-13	STATION 36+36	OFFSET 19 ft LT	ALIGNMENT -L-
COLLAR ELEV. 2,232.0 ft	TOTAL DEPTH 60.0 ft	NORTHING 608,248	EASTING 747,989
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 08/29/11	COMP. DATE 08/29/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
2240														
2235													2,232.0 EX. GRAVEL ROAD: 3" ABC	0.0
2230	2,231.0	1.0	6	7	7							SS-10	RESIDUAL RED-BROWN AND TAN, STIFF, FN. SANDY CLAY (A-7-6) W/ GRAVEL, TRACE MICA	25%
	2,228.5	3.5	9	8	9							D		
2225	2,226.0	6.0	6	7	8							D	2,219.0 RESIDUAL RED BROWN TAN AND WHITE, STIFF, SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	13.0
	2,223.5	8.5	5	3	4							D	2,214.0 RESIDUAL RED-BROWN WHITE TAN AND BLACK, LOOSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL	18.0
2220	2,218.5	13.5	4	4	4							D	2,210.0 RESIDUAL WHITE TAN AND BLACK, LOOSE TO MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE TO LITTLE MICA, CSE. SAND LAYERS, QUARTZ GRAVEL @ 40.0 ft	22.0
2215	2,213.5	18.5	5	4	6							D		
2210	2,208.5	23.5	3	3	4							D		
2205	2,203.2	28.8	9	13	11							SS-11		18%
2200	2,198.5	33.5	8	9	8							D		
2195	2,193.5	38.5	7	10	12							D	2,187.0 RESIDUAL WHITE TAN AND GRAY, V. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL AND ROCK FRAGS	45.0
2190	2,188.5	43.5	8	9	13							D	2,181.0 RESIDUAL ORANGE WHITE BROWN AND TAN, MED. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL AND ROCK FRAGS, TRACE MICA	51.0
2185	2,183.5	48.5	16	36	38							D		
2180	2,178.5	53.5	8	8	10							D		
2175	2,173.5	58.5	7	12	12							M	Boring Terminated at Elevation 2,172.0 ft IN RES: SILTY FN. SAND	60.0
2170														
2165														
2160														
2155														
2150														
2145														
2140														
2135														
2130														
2125														

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11

**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans	
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)
BORING NO. B-13L		STATION 35+76		OFFSET 107 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 2,201.0 ft		TOTAL DEPTH 35.0 ft		NORTHING 608,354		EASTING 747,998	
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic			
DRILLER W. Whichard		START DATE 08/23/11		COMP. DATE 08/23/11		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2210																
2205																
2200	2,200.0	1.0														2,201.0 GROUND SURFACE: 2" GRAVEL/TOPSOIL 0.0
2195	2,195.0	6.0	3	4	4											RESIDUAL WHITE PINK TAN RED AND BROWN, LOOSE, SILTY FN. SAND (A-2-4) SAPROLITIC @ 5.0 ft, W/ QUARTZ GRAVEL @ 13.0 ft, TRACE MICA
2190	2,192.5	8.5	6	4	5											
2185	2,187.5	13.5	3	3	3											
2180	2,182.5	18.5	3	2	3											2,183.0 18.0
2175	2,177.5	23.5	6	7	9											RESIDUAL GRAY WHITE BLACK AND RED-BROWN, MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ TRACE MICA
2170	2,172.2	28.8	9	12	14											
2165	2,167.5	33.5	4	6	8											2,166.0 35.0
2160			6	7	9											Boring Terminated at Elevation 2,166.0 ft IN RES: SILTY SAND
2155																
2150																
2145																
2140																
2135																
2130																
2125																
2120																
2115																
2110																
2105																
2100																
2095																

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans	
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)
BORING NO. B-13R (B-27)		STATION 36+47		OFFSET 85 ft RT		ALIGNMENT -L-	
COLLAR ELEV. 2,248.0 ft		TOTAL DEPTH 70.0 ft		NORTHING 608,160		EASTING 747,932	
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic			
DRILLER W. Whichard		START DATE 09/13/11		COMP. DATE 09/13/11		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2255																
2250																
2245	2,247.0	1.0	4	4	6											2,248.0 GROUND SURFACE 0.0
2240	2,244.5	3.5	6	7	9											RESIDUAL RED-BROWN, V. STIFF TO STIFF, SANDY CLAY (A-6) W/ ROOTS, TRACE MICA
2235	2,242.0	6.0	6	6	7											2,240.0 8.0
2230	2,239.5	8.5	4	3	4											RESIDUAL RED-BROWN AND BLACK, LOOSE, SILTY FN. SAND (A-2-4) W/ TRACE MICA
2225	2,234.5	13.5	3	4	4											2,234.5 13.5
2220	2,229.5	18.5	2	3	5											RESIDUAL PINK TAN WHITE BLACK AND GRAY, LOOSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ TRACE MICA
2215	2,224.5	23.5	3	1	1											2,226.0 22.0
2210	2,219.2	28.8	6	11	11											RESIDUAL RED-BROWN AND TAN, V. SOFT, FN. SANDY SILT (A-4) W/ TRACE MICA
2205	2,214.5	33.5	6	11	10											2,219.0 29.0
2200	2,209.5	38.5	8	14	14											RESIDUAL RED-BROWN TAN AND GRAY, MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA
2195	2,204.5	43.5	32	37	26											2,210.0 38.0
2190	2,199.5	48.5	6	7	8											RESIDUAL BLACK AND BROWN, MED. DENSE TO V. DENSE, SILTY CSE. SAND (A-2-4) W/ GRAVEL, TRACE MICA
2185	2,194.5	53.5	15	12	9											2,201.0 47.0
2180	2,189.5	58.5	6	8	9											RESIDUAL BROWN WHITE AND BLACK, STIFF TO V. STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA
2175	2,184.5	63.5	8	9	19											2,185.0 63.0
2170	2,179.5	68.5	10	11	12											RESIDUAL BROWN WHITE AND TAN, MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA
2165																2,178.0 70.0
2160																Boring Terminated at Elevation 2,178.0 ft IN RES: SILTY SAND
2155																
2150																
2145																
2140																

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT\_GDT 12/1/11

NOTE: TOP 1.0-1.5 ft DISTURBED BY BULL-DOZER. GROUND ELEVATION APPROX. 1.0 ft ABOVE TOP OF BORING.



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans									
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)								
BORING NO. B-14		STATION 42+60		OFFSET 20 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 2,149.0 ft		TOTAL DEPTH 40.0 ft		NORTHING 607,828		EASTING 748,458									
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER W. Whichard		START DATE 08/17/11		COMP. DATE 08/17/11		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2155															
2150	2,148.0	1.0													
2145	2,145.5	3.5	6	5	5										
	2,143.0	6.0	4	3	5										
2140	2,140.5	8.5	2	2	2										
	2,140.5	8.5	2	2	2										
2135	2,135.5	13.5													
	2,130.5	18.5	1	1	2										
2130	2,130.5	18.5	1	1	2										
2125	2,125.5	23.5	2	1	5										
	2,125.5	23.5	2	1	5										
2120	2,120.2	28.8	2	3	5										
	2,120.2	28.8	2	3	5										
2115	2,115.5	33.5	4	5	7										
	2,115.5	33.5	4	5	7										
2110	2,110.5	38.5	3	5	8										
	2,110.5	38.5	3	5	8										
2105															
2100															
2095															
2090															
2085															
2080															
2075															
2070															
2065															
2060															
2055															
2050															
2045															
2040															

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans									
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)								
BORING NO. B-15		STATION 44+60		OFFSET 10 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 2,159.0 ft		TOTAL DEPTH 10.0 ft		NORTHING 607,759		EASTING 748,648									
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER W. Whichard		START DATE 08/18/11		COMP. DATE 08/18/11		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2165															
2160	2,158.0	1.0													
2155	2,155.5	3.5	3	3	5										
	2,153.0	6.0	5	4	5										
2150	2,150.5	8.5	4	6	6										
	2,150.5	8.5	5	6	8										
2145															
2140															
2135															
2130															
2125															
2120															
2115															
2110															
2105															
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NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans										
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)									
BORING NO. B-16		STATION 10+75		OFFSET 10 ft LT		ALIGNMENT -Y3-										
COLLAR ELEV. 2,186.0 ft		TOTAL DEPTH 15.0 ft		NORTHING 608,138		EASTING 747,152										
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER W. Whichard		START DATE 09/06/11		COMP. DATE 09/06/11		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2195																
2190																
2185	2,185.0	1.0														
	2,182.5	3.5	5	2	2											
	2,180.0	6.0	WOH	WOH	1											
	2,177.5	8.5	8	9	11											
	2,172.5	13.5	WOH	4	50											
			5	7	7											
2170																
2165																
2160																
2155																
2150																
2145																
2140																
2135																
2130																
2125																
2120																
2115																
2110																
2105																
2100																
2095																
2090																
2085																
2080																

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans										
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)									
BORING NO. B-17		STATION 13+00		OFFSET 17 ft LT		ALIGNMENT -Y3-										
COLLAR ELEV. 2,204.0 ft		TOTAL DEPTH 10.0 ft		NORTHING 607,947		EASTING 747,272										
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER W. Whichard		START DATE 09/08/11		COMP. DATE 09/08/11		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2210																
2205																
	2,203.0	1.0														
	2,200.5	3.5	1	1	1											
	2,198.0	6.0	3	2	2											
	2,195.5	8.5	6	10	9											
2190																
2185																
2180																
2175																
2170																
2165																
2160																
2155																
2150																
2145																
2140																
2135																
2130																
2125																
2120																
2115																
2110																
2105																
2100																
2095																

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11

2,204.0 GROUND SURFACE: 5" TOPSOIL 0.0

2,201.0 **RESIDUAL** DK. BROWN, V. LOOSE, SILTY SAND (A-2-4) W/ GRAVEL, TRACE ORGANICS, ROOTS 3.0

2,198.0 **RESIDUAL** DK. BROWN, SOFT, FN. SANDY CLAY (A-6) W/ TRACE MICA, ROOTS 6.0

2,194.0 **RESIDUAL** TAN AND RED-BROWN, MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA, CSE. SAND LAYERS 10.0

Boring Terminated at Elevation 2,194.0 ft IN RES: SILTY SAND



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

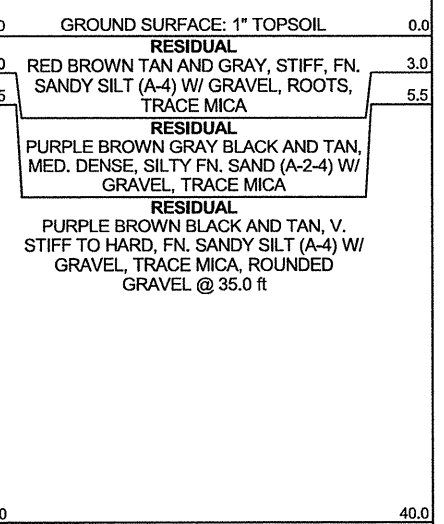
PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans	
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)
BORING NO. B-17R		STATION 13+15		OFFSET 94 ft RT		ALIGNMENT -Y3-	
COLLAR ELEV. 2,246.0 ft		TOTAL DEPTH 55.0 ft		NORTHING 607,882		EASTING 747,180	
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic			
DRILLER W. Whichard		START DATE 09/01/11		COMP. DATE 09/01/11		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2255																
2250																
2245	2,245.0	1.0														
	2,242.5	3.5	5	5	5											
2240	2,240.0	6.0	9	7	6											
	2,237.5	8.5	5	4	4											
2235	2,232.5	13.5														
	2,227.5	18.5	8	6	6											
2225	2,222.5	23.5	3	2	2											
	2,217.2	28.8	5	5	4											
2220	2,212.5	33.5	6	6	6											
	2,207.5	38.5	10	12	17											
2210	2,202.5	43.5	5	7	10											
	2,197.5	48.5	27	17	23											
2200	2,192.5	53.5	6	8	7											
			6	6	8											
2190																
2185																
2180																
2175																
2170																
2165																
2160																
2155																
2150																
2145																
2140																

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans	
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)
BORING NO. B-18		STATION 15+00		OFFSET 3 ft RT		ALIGNMENT -Y3-	
COLLAR ELEV. 2,249.0 ft		TOTAL DEPTH 40.0 ft		NORTHING 607,754		EASTING 747,319	
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic			
DRILLER W. Whichard		START DATE 08/31/11		COMP. DATE 08/31/11		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2255																
2250																
	2,248.0	1.0														
2245	2,245.5	3.5	4	5	6											
	2,243.0	6.0	8	7	8											
2240	2,240.5	8.5	8	9	10											
			9	10	12											
2235	2,235.5	13.5														
			7	8	10											
2230	2,230.5	18.5														
			6	10	11											
2225	2,225.5	23.5														
			10	11	12											
2220	2,220.2	28.8														
			10	15	20											
2215	2,215.5	33.5														
			7	12	15											
2210	2,210.5	38.5														
			10	12	14											
2205																
2200																
2195																
2190																
2185																
2180																
2175																
2170																
2165																
2160																
2155																
2150																
2145																
2140																

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11



Boring Terminated at Elevation 2,209.0 ft IN RES: SANDY SILT



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. Dry
BORING NO. B-18L	STATION 15+44	OFFSET 63 ft LT	ALIGNMENT -Y3-
COLLAR ELEV. 2,255.0 ft	TOTAL DEPTH 35.0 ft	NORTHING 607,715	EASTING 747,386
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 08/31/11	COMP. DATE 08/31/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2260															
2255	2,254.0	1.0											2,255.0 GROUND SURFACE: 2" MULCH	0.0	
2250	2,251.5	3.5	3	4	4	...	...	...	...	...			RESIDUAL RED-BROWN TAN AND WHITE, STIFF, FN. SANDY SILT (A-4) W/ ROOTS, TRACE MICA		
2245	2,249.0	6.0	7	6	6	...	...	...	...	...					
2240	2,246.5	8.5	7	7	8	...	...	...	...	...					
2235	2,241.5	13.5	9	6	8	...	...	...	...	...					
2230	2,236.5	18.5	7	7	8	...	...	...	...	...					
2225	2,231.5	23.5	7	6	10	...	...	...	...	...			RESIDUAL RED-BROWN GRAY AND TAN, V. STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	19.2	
2220	2,226.2	28.8	6	9	12	...	...	...	...	...					
2215	2,221.5	33.5	6	8	9	...	...	...	...	...			RESIDUAL TAN GRAY AND ORANGE, V. STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ TRACE MICA	33.0	
2210													Boring Terminated at Elevation 2,220.0 ft IN RES: SANDY SILT	35.0	

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. Dry
BORING NO. B-18R	STATION 14+74	OFFSET 69 ft RT	ALIGNMENT -Y3-
COLLAR ELEV. 2,246.0 ft	TOTAL DEPTH 35.0 ft	NORTHING 607,774	EASTING 747,250
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 08/31/11	COMP. DATE 08/31/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
2255														
2250	2,245.0	1.0											2,246.0 GROUND SURFACE: 2" MULCH	0.0
2245	2,242.5	3.5	3	6	8	...	...	...	...	...		D	RESIDUAL PINK TAN BROWN AND WHITE, MED. DENSE, SILTY SAND (A-2-4) W/ GRAVEL, ROOTS AND WOOD	3.0
2240	2,240.0	6.0	10	9	9	...	...	...	...	...		D	RESIDUAL RED-BROWN GRAY BLACK AND TAN, V. STIFF TO MED. STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	13.0
2235	2,237.5	8.5	8	7	8	...	...	...	...	...		D		
2230	2,232.5	13.5	6	3	4	...	...	...	...	...		M	RESIDUAL PINK RED-BROWN BLACK AND TAN, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	18.0
2225	2,227.5	18.5	6	6	6	...	...	...	...	...		M	RESIDUAL PINK WHITE RED-BROWN BLACK AND TAN, STIFF TO V. STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, CSE. SAND LAYERS, TRACE MICA	28.0
2220	2,222.5	23.5	4	6	8	...	...	...	...	...		M	RESIDUAL WHITE BLACK AND TAN, LOOSE TO MED. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	35.0
2215	2,217.2	28.8	6	9	12	...	...	...	...	...		M		
2210	2,212.5	33.5	3	4	4	...	...	...	...	...		M	Boring Terminated at Elevation 2,211.0 ft IN RES: SILTY SAND	

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT\_GDT 12/1/11





**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans										
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)									
BORING NO. B-21		STATION 10+96		OFFSET 3 ft LT		ALIGNMENT -RPD-										
COLLAR ELEV. 2,106.0 ft		TOTAL DEPTH 10.0 ft		NORTHING 606,982		EASTING 747,983										
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER W. Whichard		START DATE 08/18/11		COMP. DATE 08/18/11		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2115																
2110																
2105	2,105.0	1.0													2,106.0	GROUND SURFACE: 4" TOPSOIL/GRAVEL
2100	2,102.5	3.5	2	2	3	5	5	5	5	5						RESIDUAL RED-BROWN WHITE BLACK AND TAN, LOOSE TO MED. DENSE, SILTY FN. SAND (A-2-4) W/ QUARTZ GRAVEL @ 8.0 ft, TRACE MICA
2095	2,100.0	6.0	3	5	5	5	5	5	5	5						
	2,097.5	8.5	5	4	5	5	5	5	5	5						
			4	6	6										2,096.0	Boring Terminated at Elevation 2,096.0 ft IN RES: SILTY SAND
2090																
2085																
2080																
2075																
2070																
2065																
2060																
2055																
2050																
2045																
2040																
2035																
2030																
2025																
2020																
2015																
2010																
2005																
2000																

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans										
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)									
BORING NO. B-22		STATION 13+00		OFFSET 2 ft RT		ALIGNMENT -RPD-										
COLLAR ELEV. 2,111.0 ft		TOTAL DEPTH 10.0 ft		NORTHING 607,178		EASTING 748,042										
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER W. Whichard		START DATE 08/18/11		COMP. DATE 08/18/11		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2120																
2115																
2110	2,110.0	1.0													2,111.0	GROUND SURFACE: 3" TOPSOIL/GRAVEL
2105	2,107.5	3.5	3	2	1	5	5	5	5	5						ARTIFICIAL FILL RED-BROWN AND BLACK, V. LOOSE, SILTY FN. SAND (A-2-4) W/ GRAVEL, TRACE MICA
2100	2,105.0	6.0	1	1	2	5	5	5	5	5						ARTIFICIAL FILL BROWN AND TAN, V. LOOSE, SLI. SILTY POORLY-GRADED SAND (A-1-b)
	2,102.5	8.5	1	WOH	1	5	5	5	5	5						RESIDUAL BROWN BLACK AND TAN, V. SOFT TO MED. STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ TRACE MICA
			1	2	3										2,101.0	Boring Terminated at Elevation 2,101.0 ft IN RES: SANDY SILT
2095																
2090																
2085																
2080																
2075																
2070																
2065																
2060																
2055																
2050																
2045																
2040																
2035																
2030																
2025																
2020																
2015																
2010																
2005																

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11





**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. N/A
BORING NO. B-23L	STATION 15+28	OFFSET 102 ft LT	ALIGNMENT -RPD-
COLLAR ELEV. 2,212.0 ft	TOTAL DEPTH 78.6 ft	NORTHING 607,409	EASTING 747,960
DRILL MACHINE CME-55 ATV		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 09/15/11	COMP. DATE 09/15/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2220															
2215														GROUND SURFACE	0.0
2210	2,211.0	1.0												RESIDUAL BROWN AND TAN, V. LOOSE TO LOOSE, SILTY SAND (A-2-4) W/ GRAVEL, ROOTS	5.5
2205	2,208.5	3.5	3	1	1									RESIDUAL WHITE GRAY BLACK AND TAN, MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	8.0
2200	2,206.0	6.0	3	2	3									RESIDUAL RED-BROWN AND TAN, DENSE TO V. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ TRACE MICA	24.0
2195	2,203.5	8.5	8	7	8									WEATHERED ROCK YELLOW BROWN AND TAN, BIOTITE GNEISS, W/ TRACE MICA	28.0
2190	2,198.5	13.5	5	12	24									RESIDUAL RED-BROWN WHITE BLACK AND TAN, DENSE TO V. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ TRACE MICA	39.0
2185	2,193.5	18.5	6	24	37									WEATHERED ROCK YELLOW BROWN AND BLACK, BIOTITE GNEISS, W/ TRACE MICA	42.0
2180	2,188.5	23.5	17	69	31/4									RESIDUAL RED-BROWN BLACK PINK AND WHITE, DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ TRACE MICA	48.0
2175	2,183.2	28.8	21	22	17									RESIDUAL TAN YELLOW BROWN AND WHITE, HARD, FN. SANDY SILT (A-4) SAPROLITIC, W/ TRACE MICA	54.0
2170	2,178.5	33.5	15	30	53									WEATHERED ROCK YELLOW GRAY TAN AND BLACK, BIOTITE GNEISS, W/ TRACE MICA	58.0
2165	2,173.5	38.5	13	65	35/3									RESIDUAL RED-BROWN GRAY BLACK AND TAN, HARD TO V. STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ TRACE MICA	66.0
2160	2,168.5	43.5	12	18	21									WEATHERED ROCK GRAY BROWN AND TAN, BIOTITE GNEISS	78.6
2155	2,163.5	48.5	12	15	18										
2150	2,158.5	53.5	27	77											
2145	2,153.5	58.5	36	28	32										
2140	2,148.5	63.5	9	7	9										
2135	2,143.5	68.5	76	24/2											
2130	2,138.5	73.5	58	42/1											
2125	2,133.5	78.5	60/1												
2120															
2115															
2110															
2105															

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. CI @ 7.3
BORING NO. B-23R	STATION 15+00	OFFSET 65 ft RT	ALIGNMENT -RPD-
COLLAR ELEV. 2,120.0 ft	TOTAL DEPTH 10.0 ft	NORTHING 607,372	EASTING 748,123
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 09/27/11	COMP. DATE 09/27/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2125															
2120	2,119.0	1.0												EX. PAVEMENT: 11" ASPHALT, 3" ABC	0.0
2115	2,116.5	3.5												RESIDUAL ORANGE BROWN AND TAN, MED. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	10.0
2110	2,114.0	6.0													
2105	2,111.5	8.5												Boring Terminated at Elevation 2,110.0 ft IN RES: SILTY SAND	10.0
2100															
2095															
2090															
2085															
2080															
2075															
2070															
2065															
2060															
2055															
2050															
2045															
2040															
2035															
2030															
2025															
2020															
2015															
2010															

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11

Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 2,133.4 ft IN WR: BIOTITE GNEISS

NOTE: TOP 5.0-6.0 ft DISTURBED BY BULL-DOZER. GROUND SURFACE APPROX. 5.0 ft BELOW TOP OF BORING.



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans											
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)										
BORING NO. B-24		STATION 17+27		OFFSET 10 ft RT		ALIGNMENT -RPD-											
COLLAR ELEV. 2,174.0 ft		TOTAL DEPTH 53.9 ft		NORTHING 607,604		EASTING 748,062											
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic													
DRILLER W. Whichard		START DATE 09/19/11		COMP. DATE 09/19/11		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
2180																	
2175	2,173.0	1.0														2,174.0 GROUND SURFACE 0.0	
2170	2,170.5	3.5	2	2	3									D	RESIDUAL RED-BROWN, LOOSE, SILTY SAND (A-2-4) W/ ROOTS	6.0	
	2,168.0	6.0	4	3	4									D			
2165	2,165.5	8.5	3	6	6									D	RESIDUAL RED-BROWN AND BROWN, STIFF, FN. SANDY SILT (A-4) W/ GRAVEL, TRACE MICA	8.0	
			4	4	5									D			
2160	2,160.5	13.5	5	6	7									D	RESIDUAL RED-BROWN WHITE BLACK AND TAN, LOOSE TO MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA		
2155	2,155.5	18.5	4	6	8									D			
2150	2,150.5	23.5	6	9	11									D			
2145	2,145.2	28.8	9	11	11									D			
2140	2,140.5	33.5	6	6	8									D	RESIDUAL RED-BROWN GRAY BLACK AND TAN, STIFF TO V. STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, LITTLE MICA	32.0	
2135	2,135.5	38.5	5	8	12									M			
2130	2,130.5	43.5	6	13	20									M	RESIDUAL WHITE GRAY BLACK AND TAN, DENSE TO MED. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ TRACE TO LITTLE MICA	42.0	
2125	2,125.5	48.5	6	10	16									M			
2120	2,120.5	53.5												W	WEATHERED ROCK BLACK AND RED, BIOTITE GNEISS, W/ MICA	51.5	
2115																Boring Terminated at Elevation 2,120.1 ft IN WR: BIOTITE GNEISS	53.9
2110																NOTE: TOP 1.5-2.5 ft DISTURBED BY BULL-DOZER. GROUND SURFACE APPROX. 2.0 ft ABOVE TOP OF BORING.	

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans										
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)									
BORING NO. B-24L		STATION 17+08		OFFSET 60 ft LT		ALIGNMENT -RPD-										
COLLAR ELEV. 2,193.0 ft		TOTAL DEPTH 58.5 ft		NORTHING 607,579		EASTING 747,994										
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER W. Whichard		START DATE 08/30/11		COMP. DATE 08/30/11		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2200																
2195																2,193.0 GROUND SURFACE 0.0
2190	2,192.0	1.0	2	1	3									D	RESIDUAL RED-BROWN AND TAN, V. LOOSE TO MED. DENSE, SILTY FN. SAND (A-2-4) W/ ROOTS, GRAVEL, TRACE MICA	8.0
	2,189.5	3.5	4	5	7									D		
2185	2,187.0	6.0	5	8	8									D	RESIDUAL BROWN RED BLACK AND TAN, LOOSE TO MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, LITTLE TO SOME MICA	37.0
	2,184.5	8.5	4	4	4									D		
2180	2,179.5	13.5	8	7	8									D		
2175	2,174.5	18.5	5	6	6									D		
2170	2,169.5	23.5	3	5	5									D		
2165	2,164.2	28.8	4	5	6									D		
2160	2,159.5	33.5	6	7	9									D		
2155	2,154.5	38.5	7	9	10									D	RESIDUAL RED-BROWN BLACK AND TAN, MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL AND ROCK FRAGS, TRACE MICA	49.0
2150	2,149.5	43.5	6	7	9									D		
2145	2,144.5	48.5	13	33	67/4									D		
2140	2,139.5	53.5	48	52/2										D	WEATHERED ROCK RED-BROWN GRAY WHITE AND BLACK, BIOTITE GNEISS, W/ TRACE TO LITTLE MICA	58.5
2135	2,134.6	58.4												D		Boring Terminated BY AUGER REFUSAL at Elevation 2,134.5 ft IN WR: BIOTITE GNEISS
2130																NOTE: TOP 1.0-2.0 ft DISTURBED BY BULL-DOZER. GROUND SURFACE APPROX. 2.0 ft ABOVE TOP OF BORING.

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans							
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)						
BORING NO. B-24R		STATION 17+50		OFFSET 72 ft RT		ALIGNMENT -RPD-							
COLLAR ELEV. 2,159.0 ft		TOTAL DEPTH 33.5 ft		NORTHING 607,626		EASTING 748,121							
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic									
DRILLER W. Whichard		START DATE 09/15/11		COMP. DATE 09/15/11		SURFACE WATER DEPTH N/A							
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT				SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75				
2165													
2160													
2155	2,158.0	1.0	5	6	3								
	2,155.5	3.5	4	3	3								
	2,153.0	6.0	7	6	10								
2150	2,150.5	8.5	10	7	6								
2145	2,145.5	13.5	7	5	6								
2140	2,140.5	18.5	5	6	8								
2135	2,135.5	23.5	11	11	13								
2130	2,130.2	28.8	8	8	9								
2125	2,125.5	33.5	60/0										60/0
2120													
2115													
2110													
2105													
2100													
2095													
2090													
2085													
2080													
2075													
2070													
2065													
2060													
2055													
2050													

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans							
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)						
BORING NO. B-25		STATION 18+94		OFFSET CL		ALIGNMENT -RPD-							
COLLAR ELEV. 2,211.0 ft		TOTAL DEPTH 55.0 ft		NORTHING 607,767		EASTING 748,019							
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic									
DRILLER W. Whichard		START DATE 08/30/11		COMP. DATE 08/30/11		SURFACE WATER DEPTH N/A							
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT				SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75				
2220													
2215													
2210	2,210.0	1.0	3	2	2								
	2,207.5	3.5	5	4	4								
2205	2,202.5	8.5	5	3	4								
2200	2,197.5	13.5	4	3	4								
2195	2,192.5	18.5	5	6	8								
2190	2,187.5	23.5	7	8	12								
2185	2,182.2	28.8	6	7	9								
2180	2,177.5	33.5	3	5	6								
2175	2,172.5	38.5	3	3	6								
2170	2,167.5	43.5	12	11	9								
2165	2,162.5	48.5	9	22	33								
2160	2,157.5	53.5	24	23	23								
2155													
2150													
2145													
2140													
2135													
2130													
2125													
2120													
2115													
2110													
2105													

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans									
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)								
BORING NO. B-25L		STATION 19+00		OFFSET 150 ft LT		ALIGNMENT -RPD-									
COLLAR ELEV. 2,237.0 ft		TOTAL DEPTH 76.6 ft		NORTHING 607,736		EASTING 747,872									
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER W. Whichard		START DATE 09/14/11		COMP. DATE 09/14/11		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2245															
2240															
2235	2,236.0	1.0													
	2,233.5	3.5	3	4	6										
	2,231.0	6.0	6	7	7										
2230	2,228.5	8.5	7	9	8										
	2,223.5	13.5	5	8	9										
2225	2,218.5	18.5	3	5	8										
2220	2,213.5	23.5	6	9	8										
2215	2,208.2	28.8	8	10	12										
2210	2,203.5	33.5	14	16	17										
2205	2,198.5	38.5	10	14	17										
2200	2,193.5	43.5	12	20	27										
2195	2,188.5	48.5	8	10	12										
2190	2,183.5	53.5	5	7	11										
2185	2,178.5	58.5	27	25	14										
2180	2,173.5	63.5	5	8	9										
2175	2,168.5	68.5	8	22	35										
2170	2,163.5	73.5	100/3												
2165	2,160.5	76.5	60/1												
2160															
2155															
2150															
2145															
2140															
2135															
2130															

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans									
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)								
BORING NO. B-25R		STATION 19+00		OFFSET 62 ft RT		ALIGNMENT -RPD-									
COLLAR ELEV. 2,202.0 ft		TOTAL DEPTH 60.0 ft		NORTHING 607,789		EASTING 748,078									
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER W. Whichard		START DATE 09/16/11		COMP. DATE 09/16/11		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2210															
2205															
2200	2,201.0	1.0													
	2,198.5	3.5	4	3	3										
	2,196.0	6.0	4	3	3										
2195	2,193.5	8.5	3	3	2										
	2,188.5	13.5	2	2	2										
2190	2,183.5	18.5	3	4	4										
2185	2,178.5	23.5	3	2	5										
2180	2,173.2	28.8	5	5	6										
2175	2,168.5	33.5	6	8	16										
2170	2,163.5	38.5	14	13	19										
2165	2,158.5	43.5	15	17	11										
2160	2,153.5	48.5	12	20	14										
2155	2,148.5	53.5	6	8	12										
2150	2,143.5	58.5	7	13	37										
2145			14	15	16										
2140															
2135															
2130															
2125															
2120															
2115															
2110															
2105															
2100															
2095															

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT\_GDT 12/1/11

Boring Terminated at Elevation 2,142.0 ft IN RES: SILTY SAND

NOTE: TOP 1.0-2.0 ft DISTURBED BY BULL-DOZER. GROUND SURFACE APPROX. 0.5 ft ABOVE TOP OF BORING.



PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans									
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)								
BORING NO. B-26		STATION 20+63		OFFSET 1 ft RT		ALIGNMENT -RPD-									
COLLAR ELEV. 2,211.0 ft		TOTAL DEPTH 49.5 ft		NORTHING 607,929		EASTING 747,971									
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER W. Whichard		START DATE 08/25/11		COMP. DATE 08/25/11		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT				SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75					100	
2220															
2215															
2210	2,210.0	1.0											2,211.0	GRAVEL PARKING LOT: 4" GRAVEL	0.0
	2,207.5	3.5	3	3	3								2,206.0	ARTIFICIAL FILL RED-BROWN AND TAN, MED. STIFF, FN. SANDY SILT (A-4) W/ GRAVEL, ROOTS, TRACE MICA	5.0
2205	2,205.0	6.0	3	2	2									ARTIFICIAL FILL RED-BROWN, MED. STIFF TO STIFF, FN. SANDY SILT (A-4) W/ ROOTS, TRACE MICA	
	2,202.5	8.5	3	2	2										
2200	2,202.5	8.5	4	2	3										
	2,197.5	13.5	6	5	6										
2195	2,192.5	18.5	6	5	8										
	2,187.5	23.5	8	7	7										
2185	2,182.2	28.8	10	9	10										
	2,177.5	33.5	10	27	21										
2175	2,172.5	38.5	61	39/2											
	2,167.5	43.5	13	20	20										
2165	2,162.5	48.5	60/1												
	2,161.5	49.5	60/0												
2160															
2155															
2150															
2145															
2140															
2135															
2130															
2125															
2120															
2115															
2110															
2105															

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans								
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)							
BORING NO. B-26L		STATION 20+60		OFFSET 100 ft LT		ALIGNMENT -RPD-								
COLLAR ELEV. 2,224.0 ft		TOTAL DEPTH 46.9 ft		NORTHING 607,895		EASTING 747,876								
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER W. Whichard		START DATE 08/30/11		COMP. DATE 08/30/11		SURFACE WATER DEPTH N/A								
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT				SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75					100
2230														
2225														
	2,223.0	1.0												
2220	2,220.5	3.5	1	1	1									
	2,218.0	6.0	2	2	4									
2215	2,215.5	8.5	5	6	5									
			6	5	10									
2210	2,210.5	13.5	4	4	5									
2205	2,205.5	18.5	4	7	93									
			100/3											
2200	2,200.5	23.5												
2195	2,195.2	28.8												
			60/1											
2190	2,190.5	33.5												
			20	45	55/3									
2185	2,185.5	38.5												
			10	10	17									
2180	2,180.5	43.5												
			72	25	47									
	2,177.2	46.8												
2175			60/1											
2170														
2165														
2160														
2155														
2150														
2145														
2140														
2135														
2130														
2125														
2120														
2115														
2110														
2105														

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT\_GDT\_12/1/11



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans									
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)								
BORING NO. B-26R		STATION 20+50		OFFSET 100 ft RT		ALIGNMENT -RPD-									
COLLAR ELEV. 2,187.0 ft		TOTAL DEPTH 35.0 ft		NORTHING 607,926		EASTING 748,084									
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER W. Whichard		START DATE 09/16/11		COMP. DATE 09/16/11		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2195															
2190															
2185	2,186.0	1.0	2	4	3										
	2,183.5	3.5													
2180	2,181.0	6.0	5	8	7										
	2,178.5	8.5	7	9	10										
2175			6	10	11										
	2,173.5	13.5													
2170			8	6	14										
	2,168.5	18.5	8	10	8										
2165															
	2,163.5	23.5	4	7	7										
2160															
	2,158.2	28.8	9	9	8										
2155															
	2,153.5	33.5	53	23	75										
2150															
2145															
2140															
2135															
2130															
2125															
2120															
2115															
2110															
2105															
2100															
2095															
2090															
2085															
2080															

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans									
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)								
BORING NO. B-27 (B-13R)		STATION 23+00		OFFSET CL		ALIGNMENT -L-									
COLLAR ELEV. 2,248.0 ft		TOTAL DEPTH 70.0 ft		NORTHING 608,160		EASTING 747,932									
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER W. Whichard		START DATE 09/13/11		COMP. DATE 09/13/11		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2255															
2250															
	2,247.0	1.0													
2245			4	4	6										
	2,244.5	3.5													
	2,242.0	6.0	6	7	9										
2240			6	6	7										
	2,239.5	8.5	4	3	4										
2235															
	2,234.5	13.5	3	4	4										
2230															
	2,229.5	18.5	2	3	5										
2225															
	2,224.5	23.5	3	1	1										
2220															
	2,219.2	28.8	6	11	11										
2215															
	2,214.5	33.5	6	11	10										
2210															
	2,209.5	38.5	8	14	14										
2205															
	2,204.5	43.5	32	37	26										
2200															
	2,199.5	48.5	6	7	8										
2195															
	2,194.5	53.5	15	12	9										
2190															
	2,189.5	58.5	6	8	9										
2185															
	2,184.5	63.5	8	9	19										
2180															
	2,179.5	68.5	10	11	12										
2175															
2170															
2165															
2160															
2155															
2150															
2145															
2140															

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11





**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. Dry
BORING NO. B-27R	STATION 22+70	OFFSET 80 ft RT	ALIGNMENT -RPD-
COLLAR ELEV. 2,228.0 ft	TOTAL DEPTH 55.0 ft	NORTHING 608,126	EASTING 748,009
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 08/26/11	COMP. DATE 08/26/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
2235														
2230														
2225	2,227.0	1.0	4	4	5							D	GROUND SURFACE: 6" ABC ROADWAY EMBANKMENT	0.0
	2,224.5	3.5	10	9	12							SS-22 22%	RED-BROWN AND TAN, STIFF TO V. STIFF, FN. SANDY CLAY (A-7-5) W/ GRAVEL, TRACE MICA	
2220	2,222.0	6.0	7	7	8							D		8.0
	2,219.5	8.5	4	3	3							D	RESIDUAL RED-BROWN BLACK AND TAN, LOOSE TO MED. DENSE, SILTY SAND (A-2-4) W/ GRAVEL, CSE. SAND LAYERS, TRACE MICA	
2215	2,214.5	13.5	7	8	6							D		
2210	2,209.5	18.5	19	11	5							D		21.0
2205	2,204.5	23.5	3	4	5							D	RESIDUAL RED-BROWN GRAY BLACK AND TAN, LOOSE TO DENSE, SILTY FN.-MED. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	
2200	2,199.2	28.8	5	6	6							D		
2195	2,194.5	33.5	5	5	3							M	COBBLE @ 43.5 ft	
2190	2,189.5	38.5	7	7	7							M		
2185	2,184.5	43.5	8	10	12							M		
2180	2,179.5	48.5	11	14	15							M		
2175	2,174.5	53.5	7	13	25							M		55.0
2170													Boring Terminated at Elevation 2,173.0 ft IN RES: SILTY SAND	
2165														
2160														
2155														
2150														
2145														
2140														
2135														
2130														
2125														
2120														

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. N/A
BORING NO. B-27L	STATION 23+32	OFFSET 123 ft LT	ALIGNMENT -RPD-
COLLAR ELEV. 2,274.0 ft	TOTAL DEPTH 74.1 ft	NORTHING 608,204	EASTING 747,815
DRILL MACHINE CME-55 ATV		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 08/24/11	COMP. DATE 09/20/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
2280														
2275														
2270	2,273.0	1.0	4	3	3							D	GROUND SURFACE	0.0
	2,270.5	3.5	6	4	3							D	ARTIFICIAL FILL RED-BROWN, MED. STIFF, SILTY CLAY (A-7) W/ ROOTS, WOOD, TRACE MICA	
2265	2,268.0	6.0	5	4	4							D		8.0
	2,265.5	8.5	6	4	4							M	RESIDUAL WHITE BROWN BLACK AND TAN, LOOSE TO MED. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC	
2260	2,260.5	13.5	5	5	6							M		
2255	2,255.5	18.5	4	5	6							M	RESIDUAL BROWN GRAY PINK BLACK AND TAN, STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	
2250	2,250.5	23.5	3	4	7							M		28.0
2245	2,245.2	28.8	4	4	6							M	RESIDUAL GRAY WHITE BROWN BLACK AND TAN, LOOSE TO MED. DENSE, SILTY MED.-FN. SAND (A-2-4) W/ GRAVEL, TRACE MICA	
2240	2,240.5	33.5	6	7	9							M		
2235	2,235.5	38.5	6	7	8							M		
2230	2,230.5	43.5	5	6	7							M		
2225	2,225.5	48.5	4	7	9							W		
2220	2,220.5	53.5	6	8	14							SS-20 40%	RESIDUAL TAN BROWN AND BLACK, V. STIFF, SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL	52.0
2215	2,215.5	58.5	7	9	10							M		
2210	2,210.5	63.5	5	6	7							SS-21 31%	RESIDUAL RED-BROWN WHITE BLACK AND TAN, MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	63.0
2205	2,205.5	68.5	100/5											67.0
2200	2,200.5	73.5	30	60/1									WEATHERED ROCK GRAY AND BLACK, BIOTITE GNEISS, W/ GRAVEL, TRACE MICA	74.1
2195													Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 2,199.9 ft IN WR: BIOTITE GNEISS	
2190														
2185														
2180														
2175														
2170														
2165														

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11

NOTE: TOP 2.5-3.5 ft DISTURBED BY BULL-DOZER. GROUND SURFACE APPROX. 3.0 ft ABOVE TOP OF BORING.



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans										
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)									
BORING NO. B-28		STATION 11+00		OFFSET 5 ft RT		ALIGNMENT -RPA-										
COLLAR ELEV. 2,098.0 ft		TOTAL DEPTH 15.0 ft		NORTHING 606,673		EASTING 747,968										
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER W. Whichard		START DATE 08/18/11		COMP. DATE 08/18/11		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2105																
2100	2,097.0	1.0													2,098.0	GROUND SURFACE: 4" TOPSOIL 0.0
2095	2,094.5	3.5	4	4	3	•	•	•	•	•					2,092.5	ARTIFICIAL FILL RED-BROWN, MED. STIFF, FN. SANDY CLAY (A-6) W/ GRAVEL, TRACE MICA 5.5
2090	2,092.0	6.0	3	2	2	•	•	•	•	•						RESIDUAL ORANGE TAN AND BLACK, SOFT, SILTY CLAY (A-6) W/ GRAVEL
2085	2,089.5	8.5	1	2	2	•	•	•	•	•					2,085.0	RESIDUAL RED-BROWN GRAY AND TAN, V. SOFT, SILTY CLAY (A-7) 13.0
2080	2,084.5	13.5	WOH	1	2	•	•	•	•	•				2,083.0	RESIDUAL RED-BROWN GRAY AND TAN, V. SOFT, SILTY CLAY (A-7) 15.0 Boring Terminated at Elevation 2,083.0 ft IN RES: SILTY CLAY	
2075																
2070																
2065																
2060																
2055																
2050																
2045																
2040																
2035																
2030																
2025																
2020																
2015																
2010																
2005																
2000																
1995																
1990																

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans										
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)									
BORING NO. B-29		STATION 13+00		OFFSET CL		ALIGNMENT -RPA-										
COLLAR ELEV. 2,103.0 ft		TOTAL DEPTH 15.0 ft		NORTHING 606,860		EASTING 748,041										
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER W. Whichard		START DATE 08/18/11		COMP. DATE 08/18/11		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2110																
2105															2,103.0	GROUND SURFACE: 4" TOPSOIL 0.0
2100	2,102.0	1.0														ROADWAY EMBANKMENT RED-BROWN AND TAN, LOOSE, SILTY SAND (A-2-4) W/ ROOTS, GRAVEL AND ROCK FRAGS 8.0
2095	2,099.5	3.5	5	3	3	•	•	•	•	•					2,095.0	ROADWAY EMBANKMENT RED-BROWN AND GRAY, V. LOOSE, SILTY FN. SAND (A-2-4) W/ GRAVEL AND ROCK FRAGS, TRACE MICA 13.5
2090	2,097.0	6.0	3	4	5	•	•	•	•	•					2,089.5	ALLUVIAL DK. GRAY, V. SOFT, SLI. SANDY SILTY CLAY (A-6) W/ GRAVEL, TRACE ORGANICS, ROOTS, TRACE MICA 15.0
2085	2,094.5	8.5	5	4	3	•	•	•	•	•					2,088.0	ALLUVIAL DK. GRAY, V. SOFT, SLI. SANDY SILTY CLAY (A-6) W/ GRAVEL, TRACE ORGANICS, ROOTS, TRACE MICA 15.0 Boring Terminated at Elevation 2,088.0 ft IN ALLUV: SANDY CLAY
2080	2,089.5	13.5	2	1	2	•	•	•	•	•						
2075			WOH	WOH	1	•	•	•	•	•						
2070																
2065																
2060																
2055																
2050																
2045																
2040																
2035																
2030																
2025																
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2015																
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1995																
1990																

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11





**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. B-30	STATION 15+03	OFFSET 3 ft RT	ALIGNMENT -RPA-
COLLAR ELEV. 2,108.0 ft	TOTAL DEPTH 10.0 ft	NORTHING 607,039	EASTING 748,136
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 08/18/11	COMP. DATE 08/18/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2115																
2110																
2105	2,107.0	1.0													2,108.0	0.0
	2,104.5	3.5	9	8	8										2,104.1	3.9
	2,102.0	6.0	18	12	6											
2100	2,102.0	6.0	3	2	2											
	2,099.5	8.5	WOH	2	3											
2095																
2090																
2085																
2080																
2075																
2070																
2065																
2060																
2055																
2050																
2045																
2040																
2035																
2030																
2025																
2020																
2015																
2010																
2005																
2000																

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. B-31	STATION 17+00	OFFSET CL	ALIGNMENT -RPA-
COLLAR ELEV. 2,121.0 ft	TOTAL DEPTH 10.0 ft	NORTHING 607,207	EASTING 748,238
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 08/18/11	COMP. DATE 08/18/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2130																
2125																
2120	2,120.0	1.0													2,121.0	0.0
	2,117.5	3.5	5	4	3											
2115	2,115.0	6.0	3	4	6											
	2,112.5	8.5	8	4	3											
2110			4	5	8											
2105																
2100																
2095																
2090																
2085																
2080																
2075																
2070																
2065																
2060																
2055																
2050																
2045																
2040																
2035																
2030																
2025																
2020																
2015																

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT\_GDT 12/11/11



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans										
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)									
BORING NO. B-32		STATION 19+00		OFFSET CL		ALIGNMENT -RPA-										
COLLAR ELEV. 2,136.0 ft		TOTAL DEPTH 10.0 ft		NORTHING 607,372		EASTING 748,351										
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER W. Whichard		START DATE 08/18/11		COMP. DATE 08/18/11		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2145																
2140																
2135	2,135.0	1.0													2,136.0	GROUND SURFACE: 4" TOPSOIL 0.0
2130	2,132.5	3.5	2	1	1											ARTIFICIAL FILL BROWN AND TAN, MOTTLED, V. SOFT TO MED. STIFF, FN. SANDY SILT (A-4) W/ GRAVEL, ROOTS, TRACE ORGANICS, TRACE MICA
2125	2,130.0	6.0	2	3	2											
2125	2,127.5	8.5	2	2	3											
2125			5	10	8										2,128.0	RESIDUAL BROWN, MED. DENSE, SILTY FN. SAND (A-2-4) W/ ROCK FRAGS, TRACE MICA Boring Terminated at Elevation 2,126.0 ft IN RES: SILTY SAND
2120																
2115																
2110																
2105																
2100																
2095																
2090																
2085																
2080																
2075																
2070																
2065																
2060																
2055																
2050																
2045																
2040																
2035																
2030																

PROJECT NO. G11024.00		ID. R-5000		COUNTY Jackson		GEOLOGIST T. Evans										
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)							GROUND WTR (ft)									
BORING NO. B-33		STATION 21+00		OFFSET 5 ft LT		ALIGNMENT -RPA-										
COLLAR ELEV. 2,140.0 ft		TOTAL DEPTH 15.0 ft		NORTHING 607,547		EASTING 748,445										
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER W. Whichard		START DATE 08/18/11		COMP. DATE 08/18/11		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2145																
2140																
2135	2,139.0	1.0													2,140.0	GROUND SURFACE: 4" TOPSOIL 0.0
2135	2,136.5	3.5	5	5	5											RESIDUAL RED BROWN AND TAN, MOTTLED, LOOSE TO MED. DENSE, SILTY FN. SAND (A-2-4) W/ GRAVEL, TRACE MICA
2130	2,134.0	6.0	5	9	10											
2130	2,131.5	8.5	3	3	4											
2125	2,126.5	13.5	2	4	5											
2125			7	7	7										2,128.0	RESIDUAL RED BROWN AND GRAY, STIFF, FN. SANDY SILT (A-4) W/ GRAVEL AND ROCK FRAGS, TRACE MICA Boring Terminated at Elevation 2,125.0 ft IN RES: SANDY SILT
2120																
2115																
2110																
2105																
2100																
2095																
2090																
2085																
2080																
2075																
2070																
2065																
2060																
2055																
2050																
2045																
2040																
2035																
2030																

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT\_GDT 12/1/11



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. B-34	STATION 23+00	OFFSET 1 ft LT	ALIGNMENT -RPA-
COLLAR ELEV. 2,146.0 ft	TOTAL DEPTH 30.0 ft	NORTHING 607,732	EASTING 748,521
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 08/18/11	COMP. DATE 08/18/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2155															
2150															
2145	2,145.0	1.0													
	2,142.5	3.5	4	3	4										
2140	2,140.0	6.0	3	1	2										
	2,137.5	8.5	2	2	3										
2135			3	3	5										
	2,132.5	13.5													
2130			3	4	6										
	2,127.5	18.5	2	2	4										
2125			2	2	4										
	2,122.5	23.5	3	3	5										
2120			3	3	5										
	2,117.2	28.8													
2115			3	3	6										
2110															
2105															
2100															
2095															
2090															
2085															
2080															
2075															
2070															
2065															
2060															
2055															
2050															
2045															
2040															

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. B-35	STATION 10+85	OFFSET 10 ft RT	ALIGNMENT -RPB-
COLLAR ELEV. 2,151.0 ft	TOTAL DEPTH 15.0 ft	NORTHING 608,026	EASTING 748,315
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 08/18/11	COMP. DATE 08/18/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2180															
2155															
2150	2,150.0	1.0													
	2,147.5	3.5	4	4	3										
2145	2,145.0	6.0	5	9	8										
	2,142.5	8.5	3	2	2										
2140			2	1	2										
	2,137.5	13.5	2	2	2										
2135															
2130															
2125															
2120															
2115															
2110															
2105															
2100															
2095															
2090															
2085															
2080															
2075															
2070															
2065															
2060															
2055															
2050															
2045															

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11



PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. Dry
BORING NO. B-36	STATION 12+70	OFFSET CL	ALIGNMENT -RPB-
COLLAR ELEV. 2,171.0 ft	TOTAL DEPTH 25.0 ft	NORTHING 607,963	EASTING 748,487
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 08/18/11	COMP. DATE 08/18/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
2180														
2175														
2170	2,170.0	1.0	3	2	3								2,171.0 GROUND SURFACE: 4" TOPSOIL	0.0
	2,167.5	3.5	2	3	3								RESIDUAL RED-BROWN BLACK AND TAN, MED. STIFF, FN. SANDY SILT (A-4) W/ LITTLE MICA	3.5
2165	2,165.0	6.0	3	3	4								RESIDUAL RED-BROWN BLACK AND TAN, LOOSE TO MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC @ 10.0 ft, W/ LITTLE MICA	13.0
	2,162.5	8.5	4	10	7								RESIDUAL RED-BROWN TAN AND GRAY, V. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	18.0
2160	2,157.5	13.5	16	21	31								RESIDUAL RED-BROWN TAN AND GRAY, LOOSE TO MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ TRACE MICA	25.0
	2,152.5	18.5	3	3	6								Boring Terminated at Elevation 2,146.0 ft IN RES: SILTY SAND	
2155	2,147.5	23.5	6	8	12									
2150														
2145														
2140														
2135														
2130														
2125														
2120														
2115														
2110														
2105														
2100														
2095														
2090														
2085														
2080														
2075														
2070														
2065														

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft) 0 HR. 8.0
BORING NO. B-37	STATION 40+42	OFFSET 8 ft LT	ALIGNMENT -L-
COLLAR ELEV. 2,148.0 ft	TOTAL DEPTH 32.0 ft	NORTHING 607,984	EASTING 748,298
DRILL MACHINE CME-55 ATV		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER W. Whichard	START DATE 08/19/11	COMP. DATE 08/19/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
2155														
2150														
2145	2,148.0	3.5	2	1	2								2,148.0 EX. PAVEMENT: 7" ASPHALT, 24" ABC	0.0
	2,144.5	8.0	WOH	WOH	WOH								ROADWAY EMBANKMENT GRAY BROWN AND BLACK, SOFT, FN. SANDY CLAY (A-6)	7.0
2140	2,139.5	8.5											ROADWAY EMBANKMENT DK. GRAY AND BLACK, V. SOFT, FN. SANDY SILT (A-4) W/ SAWDUST AND WOOD CHUNKS, LITTLE TO SOME ORGANICS	12.0
2135	2,134.5	13.5	1	2	3								RESIDUAL WHITE AND GRAY, LOOSE, SILTY FN. SAND (A-2-4) SAPROLITIC, TRACE MICA	19.3
2130	2,129.5	18.5	6	11	15								RESIDUAL BLUE-GRAY PINK AND TAN, MED. DENSE, SILTY SAND (A-2-4) SAPROLITIC, W/ QUARTZ GRAVEL, TRACE MICA	32.0
2125	2,124.5	23.5	6	6	12									
2120	2,119.2	28.8	6	5	6									
2115	2,116.0	32.0											Boring Terminated BY AUGER REFUSAL at Elevation 2,116.0 ft IN WR: BIOTITE GNEISS	
2110														
2105														
2100														
2095														
2090														
2085														
2080														
2075														
2070														
2065														

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. B-38	STATION 40+51	OFFSET 38 ft LT	ALIGNMENT -L-
COLLAR ELEV. 2,150.0 ft	TOTAL DEPTH 39.4 ft	NORTHING 608,001	EASTING 748,324
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 08/19/11	COMP. DATE 08/19/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2155														2,150.0 GROUND SURFACE: 4" TOPSOIL	0.0
2150														ARTIFICIAL FILL RED-BROWN AND BLACK, MED. DENSE, SILTY FN. SAND (A-2-4) W/ TRACE MICA, ROOTS	
2145	2,146.5	3.5	5	8	5										
2140	2,141.5	8.5	3	1	2										
2135	2,136.5	13.5	2	1	4									ALLUVIAL TAN GRAY AND RED-BROWN, SOFT, FN. SANDY CLAY (A-6) W/ TRACE MICA	12.0
2130	2,131.5	18.5	2	2	4									RESIDUAL RED BROWN GRAY AND TAN, LOOSE TO MED. DENSE, SILTY FN. SAND (A-2-4) W/ GRAVEL, TRACE MICA	
2125	2,126.5	23.5	5	8	8										
2120	2,121.2	28.8	5	7	8									RESIDUAL GRAY AND BROWN, STIFF, SILTY CLAY (A-7) W/ GRAVEL, TRACE MICA	31.0
2115	2,116.5	33.5	30	31	34									RESIDUAL DK. GRAY WHITE AND BROWN, V. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	
2110	2,111.5	38.5	22	78/4										WEATHERED ROCK BLUE-GRAY RED AND WHITE, BIOTITE GNEISS, W/ TRACE MICA	39.0
2105														Boring Terminated at Elevation 2,110.6 ft IN WR: BIOTITE GNEISS	39.4

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. B-39	STATION 14+91	OFFSET 48 ft LT	ALIGNMENT -L-
COLLAR ELEV. 2,158.0 ft	TOTAL DEPTH 20.0 ft	NORTHING 608,202	EASTING 748,249
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 09/29/11	COMP. DATE 09/29/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2165														2,158.0 GROUND SURFACE: 2" TOPSOIL	0.0
2160														ARTIFICIAL FILL TAN BROWN AND GRAY, LOOSE, SILTY SAND (A-2-4) W/ GRAVEL, TRACE MICA	
2155	2,157.0	1.0	3	3	4										
2150	2,152.0	6.0	3	2	1									ARTIFICIAL FILL BLACK AND GRAY, V. SOFT, HIGHLY ORGANIC SILT (A-5) W/ SAWDUST AND WOOD, NEWSPAPER AND DEBRIS	7.0
2145	2,144.5	13.5	2	1	1									ALLUVIAL (ORIGIN/ FILL?) GRAY AND TAN, SOFT TO V. SOFT, FN. SANDY CLAY (A-6) W/ TRACE TO LITTLE ORGANICS	14.9
2140	2,139.5	18.5	2	2	2									WOOD LAYER @ 10.0-10.5 ft	20.0
2135														RESIDUAL BROWN BLACK AND GRAY, SOFT, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	
2130														Boring Terminated at Elevation 2,138.0 ft IN RES: SILTY SAND	

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11



**NCDOT GEOTECHNICAL ENGINEERING UNIT  
BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. EB-1A	STATION 37+89	OFFSET 19 ft LT	ALIGNMENT -L-
COLLAR ELEV. 2,173.0 ft	TOTAL DEPTH 47.6 ft	NORTHING 608,152	EASTING 748,109
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 08/23/11	COMP. DATE 08/23/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
2180															2,173.0	GROUND SURFACE: 5" TOPSOIL	0.0
2175															2,173.0	RESIDUAL RED-BROWN WHITE BLACK AND TAN, MED. DENSE, SILTY FN. SAND (A-2-4) W/ QUARTZ GRAVEL, TRACE MICA	6.0
2170	2,172.0	1.0	6	7	8									D	2,167.0	RESIDUAL RED-BROWN BLACK AND TAN, STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	12.5
2165	2,169.5	3.5	5	6	6									D	2,165.0	RESIDUAL BROWN BLACK AND TAN, LOOSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	18.0
2160	2,167.0	6.0	4	5	5									D	2,160.5	RESIDUAL BROWN BLACK AND TAN, MED. STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	23.0
2155	2,164.5	8.5	5	4	5									M	2,155.0	RESIDUAL BROWN BLACK AND TAN, MED. DENSE TO LOOSE, SILTY SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	33.0
2150	2,159.5	13.5	3	4	3									W	2,150.0	RESIDUAL BROWN BLACK AND TAN, MED. STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	41.0
2145	2,154.5	18.5	6	7	8									W	2,140.0	RESIDUAL RED-BROWN GRAY BLACK AND TAN, MED. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	47.6
2140	2,149.5	23.5	4	4	6									Sat.	2,132.0	WEATHERED ROCK BLUE-GRAY WHITE AND DK. BROWN, BIOTITE GNEISS, W/ TRACE MICA, ROCK LAYERS	60/1
2135	2,144.2	28.8	2	2	3									W	2,125.4	Boring Terminated BY AUGER REFUSAL at Elevation 2,125.4 ft IN WR: BIOTITE GNEISS	60/1
2130	2,139.5	33.5	5	8	12									W			
2125	2,134.5	38.5	10	14	15									W			
2120	2,129.5	43.5															
2115	2,125.5	47.5															
2110																	
2105																	
2100																	
2095																	
2090																	
2085																	
2080																	
2075																	
2070																	
2065																	

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. EB-1B	STATION 38+37	OFFSET 17 ft RT	ALIGNMENT -L-
COLLAR ELEV. 2,166.0 ft	TOTAL DEPTH 36.8 ft	NORTHING 608,093	EASTING 748,123
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 08/22/11	COMP. DATE 08/22/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
2175															2,166.0	GROUND SURFACE: 5" TOPSOIL/GRAVEL	0.0
2170															2,166.0	RESIDUAL BROWN BLACK AND TAN, MED. DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ GRAVEL, TRACE MICA	8.0
2165	2,165.0	1.0	5	7	7									D	2,158.0	RESIDUAL RED-BROWN WHITE AND BLACK, STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ TRACE MICA	12.0
2160	2,162.5	3.5	8	6	6									M	2,154.0	RESIDUAL RED-BROWN GRAY BLACK AND TAN, LOOSE TO V. LOOSE, SILTY FN. SAND (A-2-4)	23.0
2155	2,160.0	6.0	5	6	9									W	2,143.0	RESIDUAL RED-BROWN AND GRAY, MED. STIFF, FN. SANDY SILT (A-4) SAPROLITIC, W/ GRAVEL, LITTLE MICA	31.5
2150	2,157.5	8.5	4	6	7									W	2,129.2	WEATHERED ROCK WHITE BROWN BLACK AND TAN, BIOTITE GNEISS, W/ TRACE MICA	36.8
2145	2,155.0	13.5	3	5	5									W	2,129.2	Boring Terminated BY AUGER REFUSAL at Elevation 2,129.2 ft IN WR: BIOTITE GNEISS	
2140	2,152.5	18.5	2	2	2												
2135	2,147.5	23.5	3	3	5												
2130	2,142.5	28.8	3	3	4												
2125	2,137.2	28.8															
2120	2,132.5	33.5															
2115	2,129.2	36.8															
2110																	
2105																	
2100																	
2095																	
2090																	
2085																	
2080																	
2075																	
2070																	
2065																	
2060																	

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11





**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. EB-2A	STATION 40+36	OFFSET 18 ft LT	ALIGNMENT -L-
COLLAR ELEV. 2,148.0 ft	TOTAL DEPTH 40.8 ft	NORTHING 607,995	EASTING 748,300
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 08/16/11	COMP. DATE 08/16/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2155															
2150														2,148.0 GROUND SURFACE: 2" TOPSOIL	0.0
2145	2,147.0	1.0	2	2	4	6							W	ROADWAY EMBANKMENT	3.0
2140	2,144.5	3.5	1	2	1	3							W	RED-BROWN, MED. STIFF, SANDY SILT (A-4) W/ TRACE MICA	
2135	2,142.0	6.0	1	1	1	2							W	ROADWAY EMBANKMENT	
2130	2,139.5	8.5	4	3	33	11							W	BLACK AND GRAY, V. SOFT TO STIFF, SANDY SILT (A-4) W/ WOOD, SAWDUST AND NEWSPAPER, HIGHLY ORGANIC	
2125	2,134.5	13.5	3	6	5	15							Sat.		
2120	2,129.5	18.5	5	7	8	38							W	RESIDUAL	19.2
2115	2,124.5	23.5	5	11	27	45							W	RED-BROWN WHITE AND TAN, MED. DENSE TO DENSE, SILTY FN. SAND (A-2-4) SAPROLITIC, W/ TRACE MICA	
2110	2,119.2	28.8	30	47	53/3	100/8							W	WEATHERED ROCK	29.0
2105	2,114.5	33.5	10	12	33	100/2							W	GRAY ORANGE AND BROWN, BIOTITE GNEISS, W/ TRACE MICA	32.0
2100	2,109.5	38.5												RESIDUAL	35.0
2095	2,107.2	40.8	100/2			100/2								RED-BROWN DK. GRAY AND WHITE, DENSE, SILTY FN. SAND (A-2-4) W/ TRACE MICA	40.8
2090			60/0			60/0								WEATHERED ROCK	
2085														RED GRAY AND WHITE, BIOTITE GNEISS, W/ TRACE MICA	
2080														Boring Terminated BY AUGER REFUSAL at Elevation 2,107.2 ft IN WR: BIOTITE GNEISS	
2075															
2070															
2065															
2060															
2055															
2050															
2045															
2040															

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. EB-2B	STATION 41+10	OFFSET 48 ft RT	ALIGNMENT -L-
COLLAR ELEV. 2,145.0 ft	TOTAL DEPTH 27.6 ft	NORTHING 607,908	EASTING 748,317
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 08/17/11	COMP. DATE 08/17/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2150															
2145	2,144.0	1.0	2	2	4	6							M	EX. PAVEMENT: 7" ASPHALT, 7" ABC	0.0
2140	2,141.5	3.5	3	3	2	5							W	ROADWAY EMBANKMENT	3.0
2135	2,139.0	6.0	1	2	1	3							W	RED-BROWN BLACK AND GRAY, LOOSE, CLAYEY FN. SAND (A-2-6) W/ GRAVEL, TRACE MICA	5.5
2130	2,136.5	8.5	1	1	1	2							SS-4 47%	ROADWAY EMBANKMENT	
2125	2,131.5	13.5	4	3	3	6							W	RED-BROWN BLACK AND TAN, SOFT TO MED. STIFF, SANDY SILT (A-4) W/ GRAVEL AND ROCK FRAGS @ 15.0 ft, WOOD, HIGHLY ORGANIC, TRACE MICA	16.0
2120	2,126.5	18.5												WEATHERED ROCK	
2115	2,121.5	23.5												BLACK RED-BROWN AND WHITE, BIOTITE GNEISS, W/ TRACE MICA	
2110	2,117.4	27.6	60/0			60/0								Boring Terminated BY AUGER REFUSAL at Elevation 2,117.4 ft IN WR: BIOTITE GNEISS	27.6
2105															
2100															
2095															
2090															
2085															
2080															
2075															
2070															
2065															
2060															
2055															
2050															
2045															
2040															
2035															

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11





**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. CB-8	STATION 13+27	OFFSET 112 ft RT	ALIGNMENT -L-
COLLAR ELEV. 2,102.0 ft	TOTAL DEPTH 15.0 ft	NORTHING 608,576	EASTING 745,922
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 09/22/11	COMP. DATE 09/22/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2110																
2105																
2100	2,101.0	1.0													2,102.0	EX. PAVEMENT: 4" ASPHALT, 9" ABC
	2,098.5	3.5	4	3	3										2,099.0	ARTIFICIAL FILL RED-BROWN TAN AND BROWN, MED. STIFF, SILTY CLAY (A-7-6) W/ GRAVEL
2095	2,096.0	6.0	3	3	3											ARTIFICIAL FILL DK. GRAY AND TAN, LOOSE TO V. LOOSE, SILTY MED.-FN. SAND (A-2-4) W/ GRAVEL, TRACE MICA
	2,093.5	8.5	2	2	2											
2090			WOH	1	2											
	2,088.5	13.5													2,087.5	RESIDUAL BROWN TAN AND GRAY, LOOSE, SILTY SAND (A-2-4) W/ GRAVEL
2085			3	3	7										2,087.0	RES: SILTY SAND
2080																
2075																
2070																
2065																
2060																
2055																
2050																
2045																
2040																
2035																
2030																
2025																
2020																
2015																
2010																
2005																
2000																
1995																

PROJECT NO. G11024.00	ID. R-5000	COUNTY Jackson	GEOLOGIST T. Evans
SITE DESCRIPTION New Connector Road from NC 116 and Bonnie Lane to NC 107 at SR 1774 (Evans Road)			GROUND WTR (ft)
BORING NO. CB-9	STATION 14+63	OFFSET 61 ft LT	ALIGNMENT -L-
COLLAR ELEV. 2,104.0 ft	TOTAL DEPTH 15.0 ft	NORTHING 608,719	EASTING 746,096
DRILL MACHINE CME-55 ATV	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER W. Whichard	START DATE 09/23/11	COMP. DATE 09/23/11	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2110																
2105																
	2,103.0	1.0													2,104.0	GROUND SURFACE: 3" TOPSOIL
2100	2,100.5	3.5	5	5	5											ARTIFICIAL FILL GRAY TAN AND BROWN, LOOSE, SILTY SAND (A-2-4) W/ GRAVEL, TRACE MICA
	2,098.0	6.0	4	4	4										2,098.5	ALLUVIAL DK. GRAY, V. SOFT, FN. SANDY SILT (A-4) W/ TRACE ORGANICS, ROOTS
2095	2,095.5	8.5	WOH	1	1											
			1	WOH	WOH											
2090	2,090.5	13.5													2,091.0	RESIDUAL TAN BROWN AND GRAY, V. LOOSE, SILTY SAND (A-2-4) W/ GRAVEL, TRACE MICA
2085			3	2	2										2,089.0	Boring Terminated at Elevation 2,089.0 ft IN RES: SILTY SAND
2080																
2075																
2070																
2065																
2060																
2055																
2050																
2045																
2040																
2035																
2030																
2025																
2020																
2015																
2010																
2005																
2000																
1995																

NCDOT BORE DOUBLE G11024.00 R-5000 JACKSON COUNTY.GPJ NC\_DOT.GDT 12/1/11

**AASHTO SOIL CLASSIFICATION AND GRADATION SHEET**  
**NEW CONNECTOR ROAD FROM NC 116 AND BONNIE LANE TO NC 107 AND EVANS ROAD**  
**NCDOT PROJECT NO.: 41156.1.1, TIP NO.: R-5000, FALCON PROJECT NO.: G11024.00**  
**JACKSON COUNTY, NORTH CAROLINA**

BORING #			SAMPLE #			TOTAL SAMPLE			Atterberg Limit Test Results			Natural Moisture Content
AASHTO Classification			PERCENT PASSING									
STATION #	OFFSET (FEET)	DEPTH (FEET)	#10	#40	#200	LL	PL	PI				%
B-1			BS-7			92	78	47	40	28	12	14.6
A-6												
11+00	18' RT	0 - 5.0										
B-2			SS-1			100	84	49	50	NP	NP	49.5
A-4												
13+00	50' RT	13.5 - 15.0										
B-3			SS-2			94	79	43	37	NP	NP	24.4
A-4												
14+66	6' RT	6.0 - 7.5										
B-3			BS-8			97	86	54	41	34	7	22.8
A-5												
14+66	6' RT	0 - 10.0										
B-4			SS-3			98	89	56	45	28	17	25.4
A-7-6												
17+42	50' RT	18.5 - 20.0										
B-5			SS-4			94	66	31	34	NP	NP	32.4
A-2-4												
19+00	65' RT	13.5 - 15.0										
B-6			BS-6			87	70	36	33	NP	NP	28.6
A-4												
21+00	50' LT	0 - 15.0										
B-7			BS-5			97	83	45	46	38	8	35.6
A-5												
23+00	75' LT	0 - 20.0										
B-8			SS-5			99	90	50	39	26	13	21.5
A-6												
25+90	83' LT	8.5 - 10.0										
B-12L			SS-6			99	92	60	39	23	16	19.4
A-6												
34+00	110' LT	23.5 - 25.0										
B-12R			SS-7			89	76	28	23	NP	NP	11.3
A-2-4												
34+52	167' RT	8.5 - 10.0										
B-12R			SS-8			57	32	14	36	NP	NP	25.8
A-1-b												
34+52	167' RT	23.5 - 25.0										
B-12R			SS-9			95	69	34	50	NP	NP	26.5
A-2-4												
34+52	167' RT	58.5 - 60.0										
B-13			SS-10			99	92	69	58	36	22	24.8
A-7-5												
36+36	19' LT	1.0 - 2.5										
B-13			SS-11			85	75	20	31	NP	NP	17.7
A-2-4												
36+36	19' LT	28.5 - 30.0										
B-14			SS-12			97	68	33	47	NP	NP	41.0
A-2-4												
42+60	20' RT	23.5 - 25.0										
B-18			SS-13			99	85	53	50	NP	NP	21.3
A-4												
15+00	3' RT	23.5 - 25.0										

BORING #			SAMPLE #			TOTAL SAMPLE			Atterberg Limit Test Results			Natural Moisture Content
AASHTO Classification			PERCENT PASSING									
STATION #	OFFSET (FEET)	DEPTH (FEET)	#10	#40	#200	LL	PL	PI				%
B-19			BS-4			100	90	53	38	NP	NP	13.6
A-4												
17+00	4' LT	0 - 10.0										
B-21			BS-3			98	79	44	36	NP	NP	25.2
A-4												
10+96	3' LT	0 - 10.0										
B-23L			SS-14			95	82	45	26	NP	NP	23.9
A-4												
15+28	102' LT	58.5 - 60.0										
B-24L			SS-15			91	59	13	43	NP	NP	46.1
A-2-4												
17+08	60' LT	13.5 - 15.0										
B-25			SS-16			99	83	35	36	NP	NP	21.4
A-2-4												
18+94	CL	28.5 - 30.0										
B-26			SS-17			99	93	61	31	21	10	15.1
A-4												
20+63	1' RT	8.5 - 10.0										
B-26			SS-18			99	87	40	30	NP	NP	22.0
A-4												
20+63	1' RT	18.5 - 20.0										
B-26R			SS-19			98	82	30	29	NP	NP	17.2
A-2-4												
20+50	100' RT	23.5 - 25.0										
B-27L			SS-20			94	75	40	38	NP	NP	40.0
A-4												
23+32	123' LT	53.5 - 55.0										
B-27L			SS-21			80	51	21	35	NP	NP	31.4
A-2-4												
23+32	123' LT	63.5 - 65.0										
B-27R			SS-22			100	94	65	57	34	23	21.8
A-7-5												
22+70	80' RT	3.5 - 5.0										
B-28			BS-2			98	87	60	45	27	18	27.5
A-7-6												
11+00	5' RT	0 - 15.0										
B-30			BS-1			80	62	29	33	NP	NP	20.8
A-2-4												
15+03	3' RT	0 - 10.0										
B-35			SS-23			97	91	65	49	28	21	25.0
A-7-6												
10+85	10' RT	3.5 - 5.0										
B-38			SS-24			93	55	33	30	NP	NP	22.3
A-2-4												
40+51	38' LT	28.5 - 30.0										
CB-8			SS-25			96	86	57	49	20	29	23.3
A-7-6												
13+27	112' RT	1.0 - 2.5										
CB-9			SS-26			99	94	60	38	30	8	45.0
A-4												
14+63	61' LT	8.5 - 10.0										

FALCON

1210 TRINITY ROAD, SUITE 110, RALEIGH, NC 27607

**SUMMARY OF STANDARD COMPACTION AND  
CALIFORNIA BEARING RATIO TEST RESULTS**

**NEW CONNECTOR ROAD FROM NC 116 AND BONNIE LANE TO NC 107 AND EVANS ROAD**

**JACKSON COUNTY, NORTH CAROLINA**

**NCDOT PROJECT NO.: 41156.1.1**

**TIP NO.: R-5000**

**FALCON PROJECT NO.: G11024.00**

BORING DESIGNATION	SAMPLE	DEPTH (FT)	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT	NATURAL MOISTURE CONTENT	PERCENT COMPACTION	CBR VALUE Corrected at 0.1 inch	PERCENT SWELL
B-30	BS-1	0 - 10.0	115.3	13.7%	20.8%	100%	13.0	0.6%
B-28	BS-2	0 - 15.0	105.6	19.6%	27.5%	98%	10.2	0.3%
B-21	BS-3	0 - 10.0	110.2	15.4%	25.2%	99%	6.4	1.3%
B-19	BS-4	0 - 10.0	104.0	18.7%	13.6%	95%	1.0	0.7%
B-7	BS-5	0 - 20.0	108.5	15.7%	35.6%	96%	4.9	1.7%
B-6	BS-6	0 - 15.0	111.7	15.6%	28.6%	95%	6.9	0.8%
B-1	BS-7	0 - 5.0	102.8	19.8%	14.6%	95%	6.4	1.2%
B-3	BS-8	0 - 10.0	109.8	16.4%	22.8%	96%	15.8	0.6%

LABORATORY SUMMARY SHEET FOR ROCK CORE SAMPLES



PROJECT ID NO.: 41156.1.1 (R-5000)

F.A. NO.:

COUNTY: JACKSON

NEW CONNECTOR ROAD FROM NC 116 AND BONNIE LANE TO NC 107 AND EVANS ROAD

SHEET 77

Sample #	Boring #	Depth (ft)	Rock Type	Geologic Map Unit	Run RQD	Length (ft)	Diameter (ft)	Unit Weight (PCF)	Unconfined Compressive Strength (PSI)	Young's Modulus (PSI)	Failure Mode
RS-1	B-9	27.0-27.6	BIOTITE GNEISS	-	12%	0.36	0.17	162.0	9,785	723,435	
RS-2	B-9	34.5-35.0	BIOTITE GNEISS	-	90%	0.36	0.17	168.0	13,139	1,045,558	

**APPENDIX A**  
**TRIAXIAL TEST DATA**



**MOISTURE CONTENT**  
ASTM D 2216 (SOP-S1)

November 2, 2011

Project No. 2011-863-01

Mr. Bahi Bahiradhan, PE  
Falcon Engineering  
1210 Trinity Rd., Suite 101  
Raleigh, NC 27607

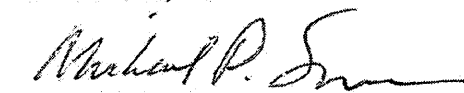
**Transmittal**  
**Laboratory Test Results**  
**New Connector Road**

Please find attached the laboratory test results for the above referenced project. The tests were outlined on the Project Verification Form that was faxed to your firm prior to the testing. The testing was performed in general accordance with the methods listed on the enclosed data sheets. The test results are believed to be representative of the samples that were submitted for testing and are indicative only of the specimens which were evaluated. We have no direct knowledge of the origin of the samples and imply no position with regard to the nature of the test results, i.e. pass/fail and no claims as to the suitability of the material for its intended use.

The test data and all associated project information provided shall be held in strict confidence and disclosed to other parties only with authorization by our Client. The test data submitted herein is considered integral with this report and is not to be reproduced except in whole and only with the authorization of the Client and Geotechnics. The remaining sample materials for this project will be retained for a minimum of 90 days as directed by the Geotechnics' Quality Program.

We are pleased to provide these testing services. Should you have any questions or if we may be of further assistance, please contact our office.

Respectively submitted,  
**Geotechnics, Inc.**


  
Michael P. Smith  
Regional Manager

Client FALCON ENGINEERING  
Client Reference NEW CONNECTOR ROAD  
Project No. 2011-863-01

Lab ID	.001	.002
Boring No.	B-17-R	B-27-L
Depth (ft)	4-6	8-10
Sample No.	ST-1	ST-4
Tare Number	214	840
Wt. of Tare & WS (gm)	397.44	595.06
Wt. of Tare & DS (gm)	371.47	518.91
Wt. of Tare (gm)	171.24	262.72
Wt. of Water (gm)	25.97	76.15
Wt. of DS (gm)	200.23	256.19
<b>Water Content (%)</b>	<b>13.0</b>	<b>29.7</b>

Notes : NA

***We understand that you have a choice in your laboratory services  
and we thank you for choosing Geotechnics.***

Tested By SD Date 10/20/2011 Checked By  Date 10-20-11  
page 1 of 1 DCN: CT-S1 DATE 6-30-98 REVISION: 2 \\Server\data drive\Data Sheets\WATCONT W Header.XLS\Sheet1

### ATTERBERG LIMITS

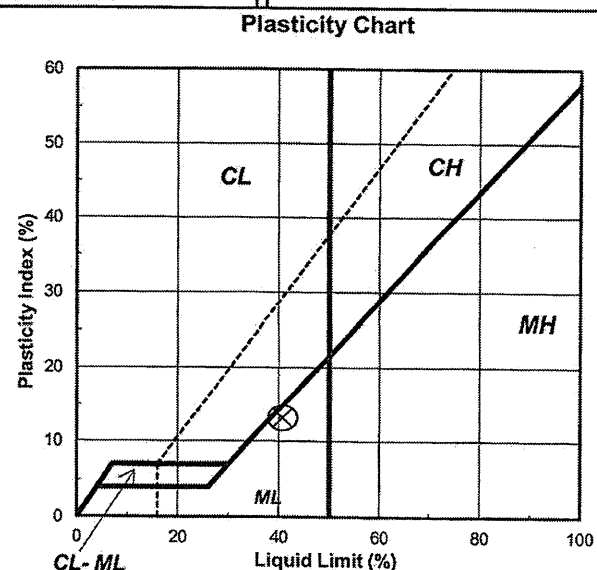
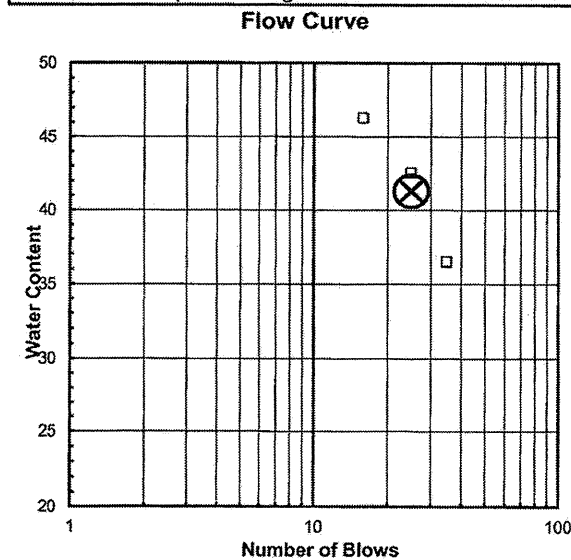
ASTM D 4318-10 / AASHTO T89 (SOP - S4A)

Client	FALCON ENGINEERING	Boring No.	B-17-R
Client Reference	NEW CONNECTOR ROAD	Depth (ft)	4-6
Project No.	2011-863-01	Sample No.	ST-1
Lab ID	2011-863-01-01	Soil Description	<b>PINK SILT</b>

Note: The USCS symbol used with this test refers only to the minus No. 40 sieve material. (Minus No. 40 sieve material, Airdried)

Liquid Limit Test	1	2	3	
Tare Number	5	G	J	M
Wt. of Tare & WS (gm)	25.66	24.21	23.14	U
Wt. of Tare & DS (gm)	22.87	21.46	20.60	L
Wt. of Tare (gm)	15.22	14.99	15.11	T
Wt. of Water (gm)	2.8	2.8	2.5	P
Wt. of DS (gm)	7.7	6.5	5.5	O
Moisture Content (%)	36.5	42.5	46.3	I
Number of Blows	35	25	16	N
				T

Plastic Limit Test	1	2	Range	Test Results
Tare Number	I	B		Liquid Limit (%) 41
Wt. of Tare & WS (gm)	21.91	22.00		Plastic Limit (%) 28
Wt. of Tare & DS (gm)	20.44	20.49		Plasticity Index (%) 13
Wt. of Tare (gm)	15.23	15.15		USCS Symbol ML
Wt. of Water (gm)	1.5	1.5		
Wt. of DS (gm)	5.2	5.3		
Moisture Content (%)	28.2	28.3	-0.1	



Tested By SD Date 10/18/2011 Checked By *gam* Date 10-19-11  
 page 1 of 1 DCN: CT-S4B DATE: 12/20/2006 REVISION: 3

### ATTERBERG LIMITS

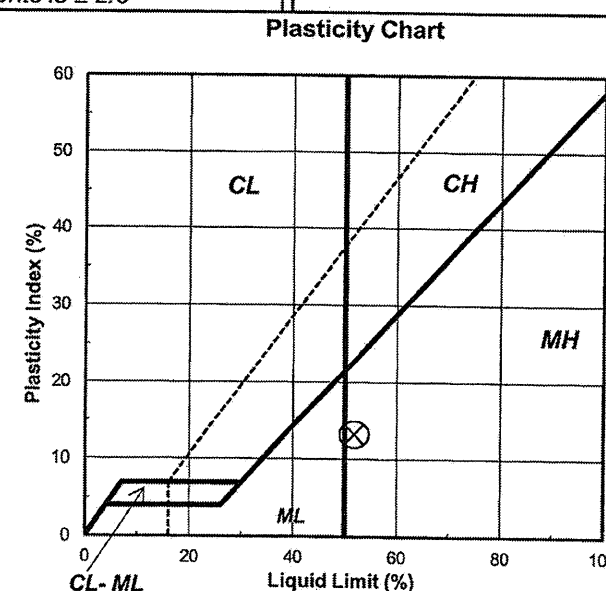
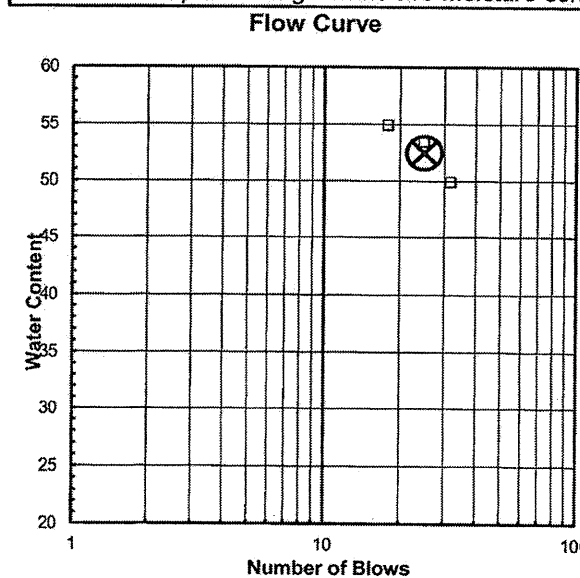
ASTM D 4318-10 / AASHTO T89 (SOP - S4A)

Client	FALCON ENGINEERING	Boring No.	B-27-L
Client Reference	NEW CONNECTOR ROAD	Depth (ft)	8-10
Project No.	2011-863-01	Sample No.	ST-4
Lab ID	2011-863-01-02	Soil Description	<b>PINK ELASTIC SILT</b>

Note: The USCS symbol used with this test refers only to the minus No. 40 sieve material. (Minus No. 40 sieve material, Airdried)

Liquid Limit Test	1	2	3	
Tare Number	A-L	B-1	4M	M
Wt. of Tare & WS (gm)	25.48	23.51	24.83	U
Wt. of Tare & DS (gm)	22.17	20.78	21.58	L
Wt. of Tare (gm)	15.53	15.67	15.66	T
Wt. of Water (gm)	3.3	2.7	3.3	P
Wt. of DS (gm)	6.6	5.1	5.9	O
Moisture Content (%)	49.8	53.4	54.9	I
Number of Blows	32	25	18	N
				T

Plastic Limit Test	1	2	Range	Test Results
Tare Number	A-I	A-F		Liquid Limit (%) 52
Wt. of Tare & WS (gm)	21.85	21.87		Plastic Limit (%) 39
Wt. of Tare & DS (gm)	20.00	20.07		Plasticity Index (%) 13
Wt. of Tare (gm)	15.41	15.40		USCS Symbol MH
Wt. of Water (gm)	1.9	1.8		
Wt. of DS (gm)	4.6	4.7		
Moisture Content (%)	40.3	38.5	1.8	



Tested By SD Date 10/18/2011 Checked By *gam* Date 10-19-11  
 page 1 of 1 DCN: CT-S4B DATE: 12/20/2006 REVISION: 3



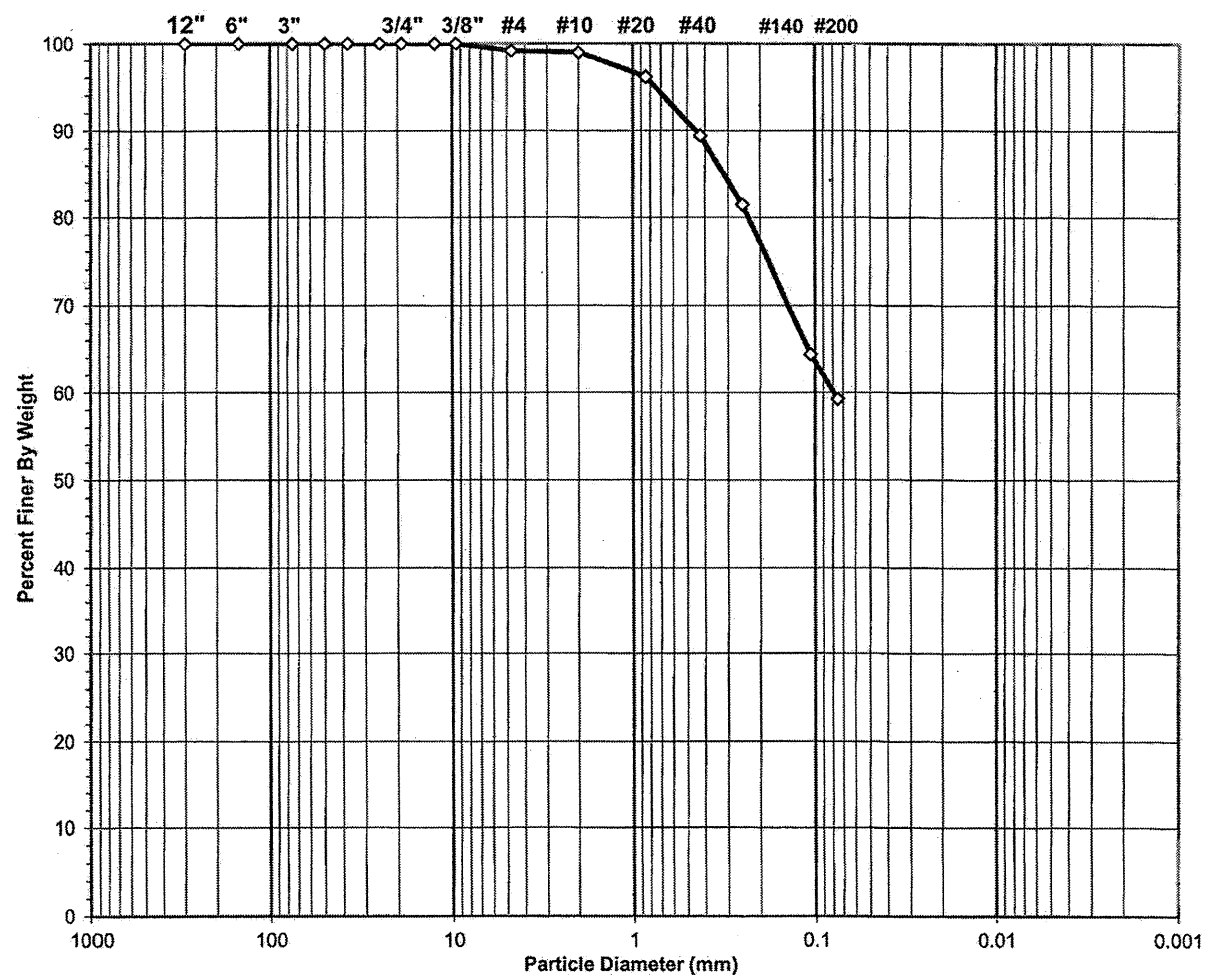
**SIEVE ANALYSIS**  
ASTM D 422-63 (SOP-S3)

**WASH SIEVE ANALYSIS**  
ASTM D 422-63 (SOP-S3)

Client	FALCON ENGINEERING	Boring No.	B-17-R
Client Reference	NEW CONNECTOR ROAD	Depth (ft)	4-6
Project No.	2011-863-01	Sample No.	ST-1
Lab ID	2011-863-01-01	Soil Color	PINK

Client	FALCON ENGINEERING	Boring No.	B-17-R
Client Reference	NEW CONNECTOR ROAD	Depth (ft)	4-6
Project No.	2011-863-01	Sample No.	ST-1
Lab ID	2011-863-01-01	Soil Color	PINK

<b>USCS</b>	<b>SIEVE ANALYSIS</b>		<b>HYDROMETER</b>
	gravel	sand	silt and clay



USCS Symbol **ML, TESTED**

USCS Classification **SANDY SILT**

Tested By **SD** Date **10/20/2011** Checked By **GAM** Date **10-20-11**

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	214	Tare No.	NA
Wgt. Tare + Wet Specimen (gm)	397.44	Wgt. Tare + Wet Specimen (gm)	NA
Wgt. Tare + Dry Specimen (gm)	371.47	Wgt. Tare + Dry Specimen (gm)	NA
Weight of Tare (gm)	171.24	Weight of Tare (gm)	NA
Weight of Water (gm)	25.97	Weight of Water (gm)	NA
Weight of Dry Soil (gm)	200.23	Weight of Dry Soil (gm)	NA
<b>Moisture Content (%)</b>	<b>13.0</b>	<b>Moisture Content (%)</b>	<b>NA</b>

Wet Weight - 3/4" Sample (gm)	NA	Weight of the Dry Specimen (gm)	200.23
Dry Weight - 3/4" Sample (gm)	81.5	Weight of minus #200 material (gm)	118.69
Wet Weight + 3/4" Sample (gm)	NA	Weight of plus #200 material (gm)	81.54
Dry Weight + 3/4" Sample (gm)	0.00		
Total Dry Weight Sample (gm)	NA		

Sieve Size	Sieve Opening (mm)	Wgt. of Soil Retained (gm)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.0	0.0	100.0	100.0
6"	150	0.00	0.0	0.0	100.0	100.0
3"	75	0.00	0.0	0.0	100.0	100.0
2"	50	0.00	0.0	0.0	100.0	100.0
1 1/2"	37.5	0.00	0.0	0.0	100.0	100.0
1"	25.0	0.00	0.0	0.0	100.0	100.0
3/4"	19.0	0.00	0.0	0.0	100.0	100.0
1/2"	12.50	0.00	0.0	0.0	100.0	100.0
3/8"	9.50	0.00	0.0	0.0	100.0	100.0
#4	4.75	1.70	0.8	0.8	99.2	99.2
#10	2.00	0.38	0.2	1.0	99.0	99.0
#20	0.850	5.67	2.8	3.9	96.1	96.1
#40	0.425	13.35	6.7	10.5	89.5	89.5
#60	0.250	16.00	8.0	18.5	81.5	81.5
#140	0.106	34.18	17.1	35.6	64.4	64.4
#200	0.075	10.26	5.1	40.7	59.3	59.3
Pan	-	118.69	59.3	100.0	-	-

Tested By **SD** Date **10/20/2011** Checked By **GAM** Date **10-20-11**

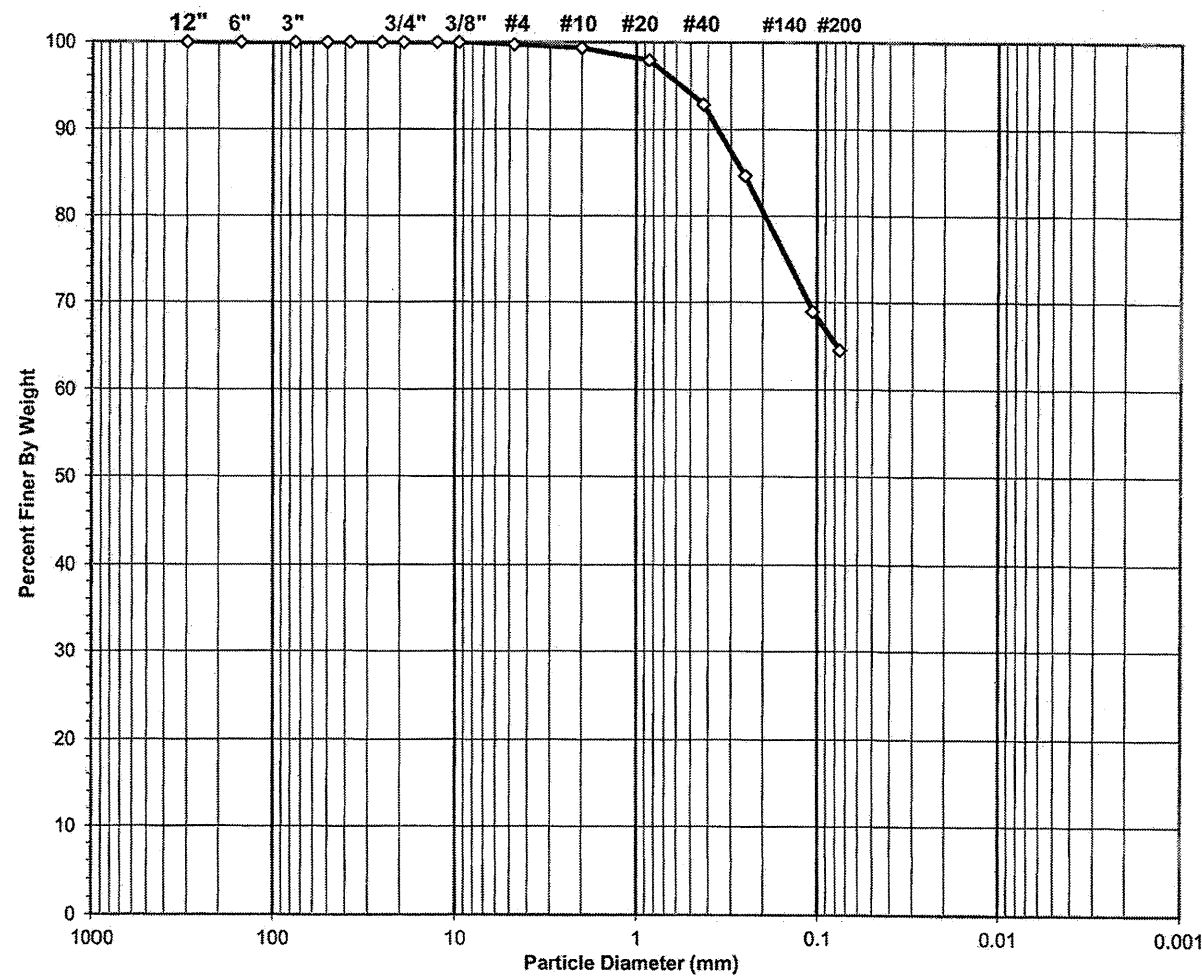
**SIEVE ANALYSIS**  
ASTM D 422-63 (SOP-S3)

**WASH SIEVE ANALYSIS**  
ASTM D 422-63 (SOP-S3)

Client FALCON ENGINEERING Boring No. B-27-L  
 Client Reference NEW CONNECTOR ROAD Depth (ft) 8-10  
 Project No. 2011-863-01 Sample No. ST-4  
 Lab ID 2011-863-01-02 Soil Color PINK

Client FALCON ENGINEERING Boring No. B-27-L  
 Client Reference NEW CONNECTOR ROAD Depth (ft) 8-10  
 Project No. 2011-863-01 Sample No. ST-4  
 Lab ID 2011-863-01-02 Soil Color PINK

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol **MH, TESTED**

USCS Classification **SANDY ELASTIC SILT**

Tested By SD Date 10/20/2011 Checked By Gem Date 10-20-11

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	840	Tare No.	NA
Wgt. Tare + Wet Specimen (gm)	595.06	Wgt. Tare + Wet Specimen (gm)	NA
Wgt. Tare + Dry Specimen (gm)	518.91	Wgt. Tare + Dry Specimen (gm)	NA
Weight of Tare (gm)	262.72	Weight of Tare (gm)	NA
Weight of Water (gm)	76.15	Weight of Water (gm)	NA
Weight of Dry Soil (gm)	256.19	Weight of Dry Soil (gm)	NA
<b>Moisture Content (%)</b>	<b>29.7</b>	<b>Moisture Content (%)</b>	<b>NA</b>

Wet Weight - 3/4" Sample (gm)	NA	Weight of the Dry Specimen (gm)	256.19
Dry Weight - 3/4" Sample (gm)	90.6	Weight of minus #200 material (gm)	165.55
Wet Weight + 3/4" Sample (gm)	NA	Weight of plus #200 material (gm)	90.64
Dry Weight + 3/4" Sample (gm)	0.00		
Total Dry Weight Sample (gm)	NA		

Sieve Size	Sieve Opening (mm)	Wgt. of Soil Retained (gm)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.0	0.0	100.0	100.0
6"	150	0.00	0.0	0.0	100.0	100.0
3"	75	0.00	0.0	0.0	100.0	100.0
2"	50	0.00	0.0	0.0	100.0	100.0
1 1/2"	37.5	0.00	0.0	0.0	100.0	100.0
1"	25.0	0.00	0.0	0.0	100.0	100.0
3/4"	19.0	0.00	0.0	0.0	100.0	100.0
1/2"	12.50	0.00	0.0	0.0	100.0	100.0
3/8"	9.50	0.00	0.0	0.0	100.0	100.0
#4	4.75	0.63	0.2	0.2	99.8	99.8
#10	2.00	1.01	0.4	0.6	99.4	99.4
#20	0.850	3.58	1.4	2.0	98.0	98.0
#40	0.425	13.09	5.1	7.1	92.9	92.9
#60	0.250	20.98	8.2	15.3	84.7	84.7
#140	0.106	40.10	15.7	31.0	69.0	69.0
#200	0.075	11.25	4.4	35.4	64.6	64.6
Pan	-	165.55	64.6	100.0	-	-

Tested By SD Date 10/20/2011 Checked By Gem Date 10-20-11



**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**

ASTM D4767-04 / AASHTO T297-94 (SOP-S28)

Client FALCON ENGINEERING  
 Client Reference NEW CONNECTOR ROAD  
 Project No. 2011-863-01  
 Lab ID 2011-863-01-02      Specific Gravity (assumed) 2.7

Visual Description: RED SILT

**SAMPLE CONDITION SUMMARY**

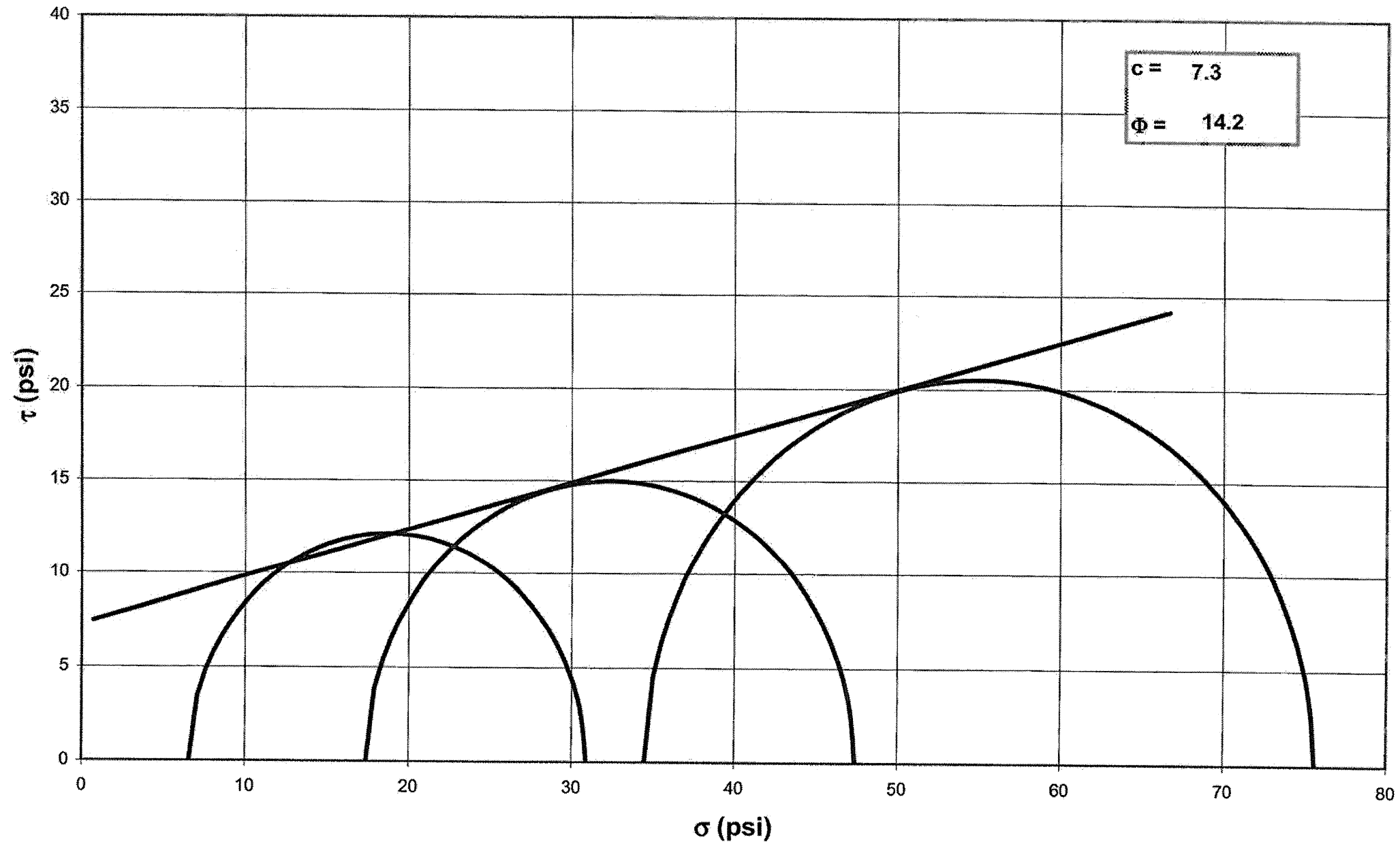
Boring No.	B-27-L	B-27-L	B-27-L
Depth (ft)	8.3-8.8	8.8-9.3	9.4-9.9
Sample No.	ST-4	ST-4	ST-4
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.003	0.003	0.003
Back Pressure (psi)	40.3	40	40
Consolidation Time (days)	1	1	1
Initial State (w%)	32.8	32.8	32.8
Total Unit Weight (pcf)	106.1	106.1	109.9
Dry Unit Weight (pcf)	79.9	79.9	82.7
Final State (w%)	38.1	35.2	35.3
Initial State Void Ratio, e	1.108	1.110	1.037
Void Ratio at Shear, e	0.934	1.001	0.916

Tested By BW Date 10/26/2011 Input Checked By *MET* Date *11/2*

# MOHR TOTAL STRENGTH ENVELOPE



Client	FALCON ENGINEERING	Boring No.	B-27-L
Client Ref. No.	NEW CONNECTOR ROAD	Depth(ft.)	8.3-9.9
Project no.	2011-863-01	Sample No.	ST-4
Lab ID	2011-863-01-02	Visual Description	RED SILT



NOTE: GRAPH NOT TO SCALE

Tested By: BW

Date: 10/26/11 Approved By: *[Signature]*

Date: 11/2 FALCON CONNECTOR RD\2011-863-01-02 MOHR.XLS]Sheet1

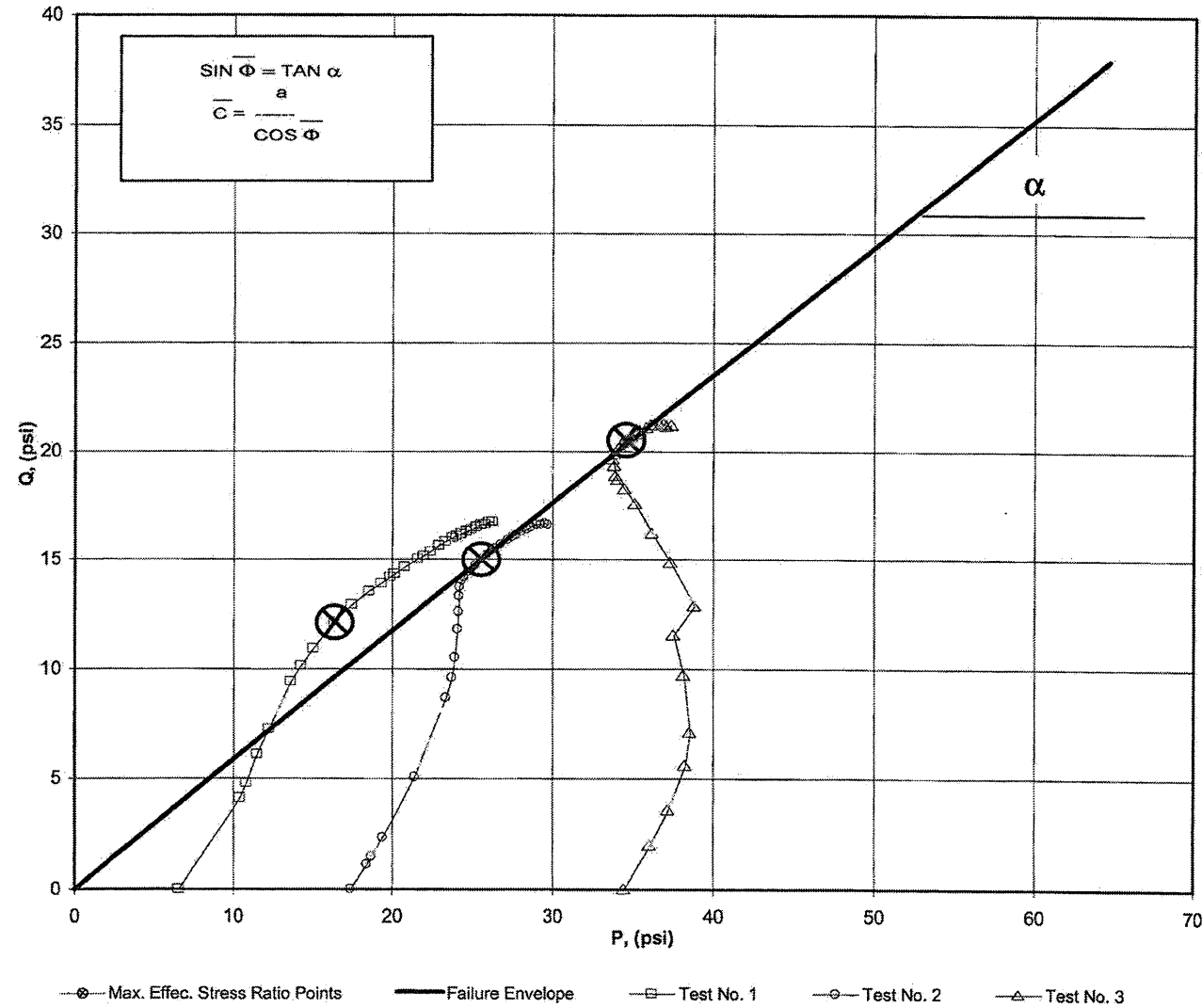
**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)**

Client	FALCON ENGINEERING	Boring No.	B-27-L
Client Reference	NEW CONNECTOR ROAD	Depth(ft.)	8.3-9.9
Project No.	2011-863-01	Sample No.	ST-4
Lab ID	2011-863-01-02		

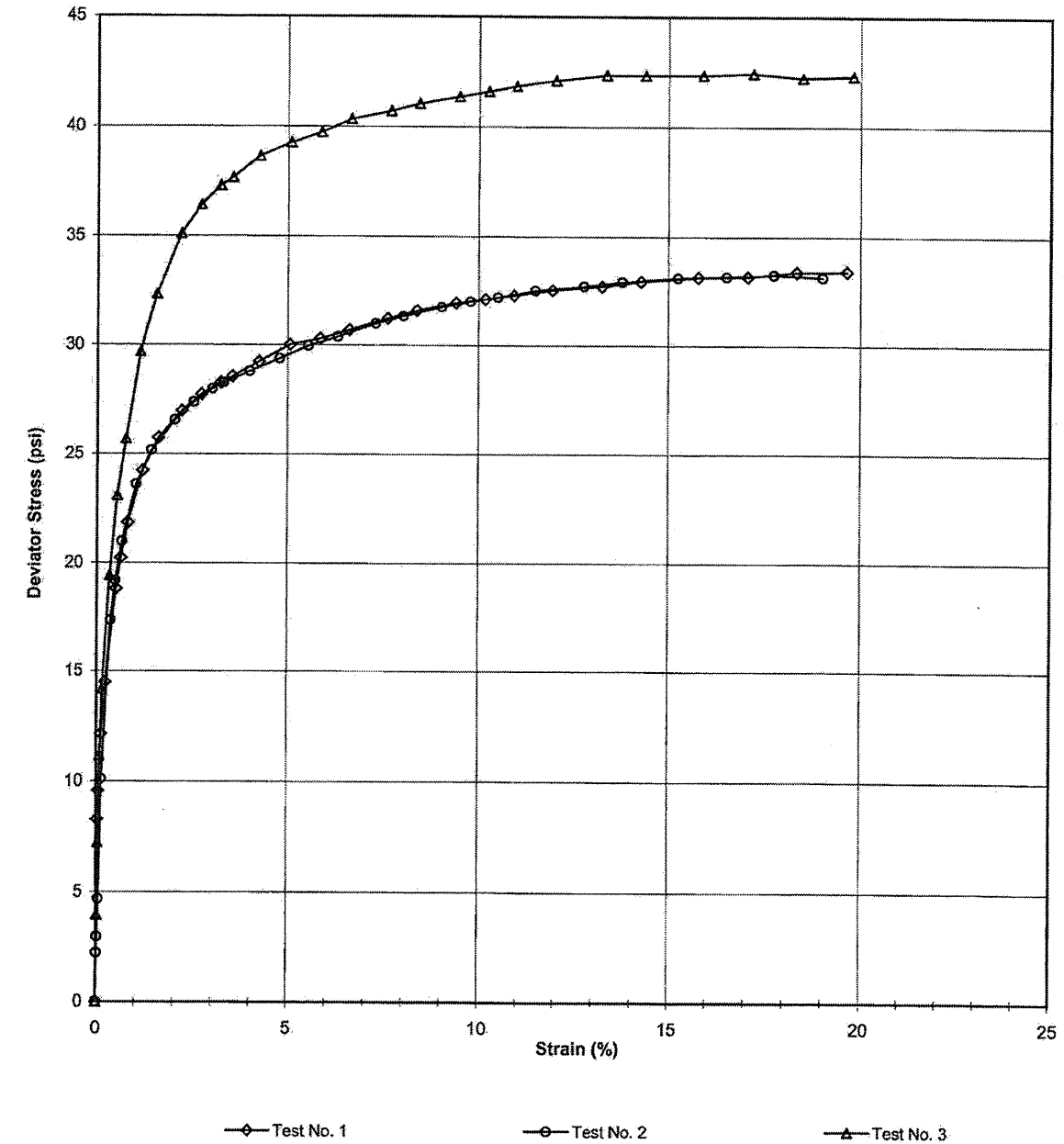
**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)**

Client	FALCON ENGINEERING	Boring No.	B-27-L
Client Reference	NEW CONNECTOR ROAD	Depth(ft.)	8.3-9.9
Project No.	2011-863-01	Sample No.	ST-4
Lab ID	2011-863-01-02		
Visual Description:	RED SILT		

**Consolidated Undrained Triaxial Test with Pore Pressure**



<b>a</b>	=	<b>0.00</b>	<b>C̄</b>	=	<b>0.00</b>
<b>α</b>	=	<b>30.4</b>	<b>Φ̄</b>	=	<b>35.99</b>



Tested By BW Date 10/26/2011 Approved By MW Date 11/2

CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)



Client FALCON ENGINEERING Boring No. B-27-L  
Client Reference NEW CONNECTOR ROAD Depth(ft.) 8.3-8.8  
Project No. 2011-863-01 Sample No. ST-4  
Lab ID 2011-863-01-02

Visual Description: RED SILT

Stage No.	1
Test No	1

**PRESSURES (psi)**

Cell Pressure(psi) 46.9  
Back Pressure(psi) 40.3  
Eff. Cons. Pressure(psi) 6.6  
Pore Pressure  
Response (%) 95

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$  = 16.40  
 $\bar{Q}$  = 12.12

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1 5.964 Diameter 1 2.833  
Length 2 6.016 Diameter 2 2.830  
Length 3 6.024 Diameter 3 2.831  
Avg Leng.= 6.001 Avg. Diam.= 2.831

**VOLUME CHANGE**

Initial Burette Reading (ml) 15.1  
Final Burette Reading (ml) 0.0  
Final Change (ml) 15.1

Initial Dial Reading (D.R.), mils 92  
D.R. After Saturation, mils 209  
D.R. After Consolidation, mils 245

LOAD (LBS)	DEFORMATION (INCHES)	PORE PRESSURE (PSI)
19.4	0.000	40.3
68.4	0.002	40.6
76.2	0.003	40.9
91.6	0.007	41.5
105.4	0.013	41.9
131.5	0.029	42.7
140.1	0.037	42.7
149.9	0.047	42.8
164.7	0.069	42.6
174.6	0.093	42.3
183.0	0.129	41.8
188.5	0.159	41.4
192.7	0.189	41.2
195.0	0.207	41.0
200.4	0.248	40.8
206.7	0.296	40.3
209.9	0.341	40.1
214.1	0.386	39.9
219.7	0.445	39.6
223.7	0.490	39.4
228.5	0.551	39.1
231.4	0.595	39.0
234.4	0.640	38.8
238.6	0.699	38.6
243.1	0.775	38.4
247.3	0.835	38.2
252.9	0.924	38.0
256.7	0.999	37.8
261.9	1.073	37.6
266.0	1.149	37.4

Tested By BW Date 10/31/2011 Input Checked By *mm* Date *11/2*

CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)



Client FALCON ENGINEERING Boring No. B-27-L  
Client Reference NEW CONNECTOR ROAD Depth(ft.) 8.3-8.8  
Project No. 2011-863-01 Sample No. ST-4  
Lab ID 2011-863-01-02

Visual Description: RED SILT

Effective Confining Pressure (psi)	6.6	Stage No.	1
		Test No	1

**INITIAL DIMENSIONS**

Initial Sample Length (in.) 6.00  
Initial Sample Diameter (in.) 2.83  
Initial Sample Area (in<sup>2</sup>) 6.30  
Initial Sample Volume (in<sup>3</sup>) 37.79

**VOLUME CHANGE**

Volume After Consolidation (in<sup>3</sup>) 34.65  
Length After Consolidation (in) 5.85  
Area After Consolidation (in<sup>2</sup>) 5.925

Strain (%)	Deviation Stress	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	$\bar{A}$	$\bar{P}$	$\bar{Q}$
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0.03	8.27	0.31	14.55	6.3	2.315	0.04	10.42	4.13
0.05	9.58	0.57	15.62	6.0	2.589	0.06	10.82	4.79
0.13	12.16	1.17	17.59	5.4	3.239	0.10	11.51	6.08
0.23	14.48	1.59	19.49	5.0	3.892	0.12	12.25	7.24
0.50	18.82	2.36	23.05	4.2	5.441	0.13	13.64	9.41
0.62	20.25	2.44	24.41	4.2	5.864	0.13	14.29	10.12
0.80	21.84	2.45	25.99	4.1	6.268	0.12	15.07	10.92
1.18	24.24	2.31	28.52	4.3	6.655	0.10	16.40	12.12
1.59	25.77	2.01	30.36	4.6	6.615	0.08	17.47	12.88
2.20	27.00	1.55	32.05	5.1	6.344	0.06	18.55	13.50
2.72	27.75	1.15	33.21	5.5	6.089	0.04	19.33	13.88
3.23	28.30	0.87	34.03	5.7	5.938	0.03	19.88	14.15
3.54	28.58	0.75	34.43	5.9	5.885	0.03	20.14	14.29
4.24	29.25	0.47	35.38	6.1	5.769	0.02	20.76	14.62
5.06	30.01	0.03	36.57	6.6	5.569	0.00	21.57	15.00
5.84	30.28	-0.20	37.08	6.8	5.451	-0.01	21.94	15.14
6.60	30.68	-0.43	37.72	7.0	5.363	-0.01	22.37	15.34
7.61	31.22	-0.69	38.51	7.3	5.285	-0.02	22.90	15.61
8.38	31.59	-0.91	39.10	7.5	5.204	-0.03	23.31	15.79
9.41	31.96	-1.18	39.74	7.8	5.110	-0.04	23.76	15.98
10.18	32.13	-1.32	40.05	7.9	5.057	-0.04	23.98	16.07
10.94	32.32	-1.51	40.42	8.1	4.986	-0.05	24.26	16.16
11.96	32.57	-1.72	40.89	8.3	4.914	-0.06	24.61	16.29
13.25	32.75	-1.93	41.28	8.5	4.838	-0.06	24.91	16.37
14.27	32.97	-2.13	41.70	8.7	4.778	-0.07	25.21	16.49
15.79	33.17	-2.33	42.10	8.9	4.716	-0.07	25.51	16.59
17.09	33.20	-2.54	42.34	9.1	4.632	-0.08	25.74	16.60
18.35	33.41	-2.69	42.71	9.3	4.595	-0.08	26.00	16.71
19.65	33.44	-2.87	42.92	9.5	4.531	-0.09	26.19	16.72

Tested By BW Date 10/31/2011 Input Checked By *mm* Date *11/2*

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)



Client FALCON ENGINEERING Boring No. B-27-L  
Client Reference NEW CONNECTOR ROAD Depth(ft.) 8.8-9.3  
Project No. 2011-863-01 Sample No. ST-4  
Lab ID 2011-863-01-02

Visual Description: RED SILT

Stage No.	1
Test No	2

**PRESSURES (psi)**

Cell Pressure(psi) 57.4  
Back Pressure(psi) 40  
Eff. Cons. Pressure(ps) 17.4  
Pore Pressure Response (%) 97

**MAXIMUM OBLIQUITY POINTS**

P = 25.49  
Q = 14.98

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1 6.043 Diameter 1 2.833  
Length 2 6.049 Diameter 2 2.829  
Length 3 6.022 Diameter 3 2.831  
Avg Leng.= 6.038 Avg. Diam.= 2.831

**VOLUME CHANGE**

Initial Burette Reading (ml) 21.3  
Final Burette Reading (ml) 0.0  
Final Change (ml) 21.3

Initial Dial Reading (D.R.), mils 25  
D.R. After Saturation, mils 60  
D.R. After Consolidation, mils 81

LOAD (LBS)	DEFORMATION (INCHES)	PORE PRESSURE (PSI)
20.3	0.000	40.0
33.7	0.001	40.1
38.2	0.002	40.2
48.5	0.004	40.3
81.2	0.008	41.1
125.2	0.022	42.7
136.4	0.029	43.3
147.6	0.039	44.0
163.9	0.061	45.2
174.1	0.084	45.9
183.7	0.121	46.5
189.6	0.151	46.9
194.3	0.180	47.1
196.6	0.198	47.1
201.1	0.240	47.1
206.2	0.286	46.9
211.3	0.331	46.9
215.6	0.377	46.7
221.6	0.436	46.5
225.4	0.479	46.4
230.6	0.541	46.1
234.2	0.586	46.0
237.2	0.629	45.8
241.9	0.689	45.7
246.5	0.765	45.4
250.6	0.824	45.3
255.9	0.913	45.0
259.9	0.989	44.8
264.1	1.062	44.6
267.1	1.138	44.3

Tested By BW Date 10/28/2011 Input Checked By *AMS* Date *11/2*

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)



Client FALCON ENGINEERING Boring No. B-27-L  
Client Reference NEW CONNECTOR ROAD Depth(ft.) 8.8-9.3  
Project No. 2011-863-01 Sample No. ST-4  
Lab ID 2011-863-01-02

Visual Description: RED SILT

Effective Confining Pressure (psi)	17.4	Stage No.	1
		Test No	2

**INITIAL DIMENSIONS**

Initial Sample Length (in.) 6.04  
Initial Sample Diameter (in.) 2.83  
Initial Sample Area (in^2) 6.29  
Initial Sample Volume (in^3) 38.01

**VOLUME CHANGE**

Volume After Consolidation (in^3) 36.05  
Length After Consolidation (in) 5.98  
Area After Consolidation (in^2) 6.026

Strain (%)	Deviation Stress	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	$\bar{A}$	$\bar{P}$	Q
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0.02	2.24	0.10	19.54	17.3	1.129	0.05	18.42	1.12
0.03	2.97	0.18	20.19	17.2	1.172	0.06	18.70	1.48
0.06	4.69	0.33	21.76	17.1	1.275	0.07	19.42	2.34
0.13	10.10	1.07	26.43	16.3	1.618	0.11	21.38	5.05
0.37	17.35	2.74	32.01	14.7	2.183	0.16	23.34	8.67
0.49	19.18	3.29	33.29	14.1	2.359	0.18	23.70	9.59
0.65	21.00	4.03	34.38	13.4	2.571	0.20	23.87	10.50
1.01	23.60	5.16	35.84	12.2	2.928	0.23	24.04	11.80
1.41	25.17	5.89	36.69	11.5	3.187	0.24	24.10	12.59
2.02	26.57	6.55	37.43	10.9	3.449	0.25	24.14	13.29
2.52	27.39	6.93	37.86	10.5	3.617	0.26	24.16	13.70
3.01	28.01	7.09	38.32	10.3	3.717	0.26	24.31	14.00
3.31	28.30	7.12	38.58	10.3	3.753	0.26	24.43	14.15
4.00	28.81	7.09	39.11	10.3	3.794	0.25	24.71	14.40
4.79	29.39	6.94	39.84	10.5	3.811	0.24	25.15	14.69
5.53	29.96	6.89	40.47	10.5	3.849	0.24	25.49	14.98
6.30	30.37	6.72	41.06	10.7	3.843	0.23	25.87	15.19
7.29	30.97	6.52	41.85	10.9	3.848	0.22	26.36	15.49
8.01	31.32	6.35	42.37	11.0	3.834	0.21	26.71	15.66
9.04	31.76	6.11	43.05	11.3	3.813	0.20	27.17	15.88
9.79	32.03	5.96	43.47	11.4	3.800	0.19	27.45	16.01
10.51	32.22	5.83	43.80	11.6	3.784	0.19	27.69	16.11
11.51	32.55	5.65	44.30	11.7	3.770	0.18	28.02	16.27
12.78	32.74	5.39	44.75	12.0	3.727	0.17	28.38	16.37
13.78	32.96	5.28	45.08	12.1	3.719	0.17	28.60	16.48
15.25	33.15	5.00	45.54	12.4	3.674	0.16	28.97	16.57
16.53	33.19	4.77	45.82	12.6	3.628	0.15	29.23	16.60
17.76	33.29	4.55	46.14	12.8	3.590	0.14	29.49	16.64
19.03	33.18	4.32	46.26	13.1	3.536	0.13	29.67	16.59

Tested By BW Date 10/28/2011 Input Checked By *AMS* Date *11/2*





**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)

Client FALCON ENGINEERING Boring No. B-27-L  
 Client Reference NEW CONNECTOR ROAD Depth(ft.) 8.3-8.8  
 Project No. 2011-863-01 Sample No. ST-4  
 Lab ID 2011-863-01-02

Visual Description: RED SILT

Stage No.	1
Test No	3

**PRESSURES (psi)**

Cell Pressure(psi) 74.5  
 Back Pressure(psi) 40  
 Eff. Cons. Pressure(ps) 34.5  
 Pore Pressure  
 Response (%) 95

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$  = 34.59  
 $\bar{Q}$  = 20.52

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1 5.914 Diameter 1 2.830  
 Length 2 5.909 Diameter 2 2.830  
 Length 3 5.919 Diameter 3 2.830  
 Avg Leng.= 5.914 Avg. Diam.= 2.830

**VOLUME CHANGE**

Initial Burette Reading (ml) 33.3  
 Final Burette Reading (ml) 0.0  
 Final Change (ml) 33.3

Initial Dial Reading (D.R.), mils 123  
 D.R. After Saturation, mils 123  
 D.R. After Consolidation, mils 230

LOAD (LBS)	DEFORMATION (INCHES)	PORE PRESSURE (PSI)
7.3	0.000	40.0
31.3	0.001	40.4
51.0	0.002	40.9
74.9	0.005	41.8
93.3	0.009	43.0
125.2	0.020	46.0
147.8	0.031	48.5
164.2	0.044	48.5
189.1	0.065	51.9
206.4	0.089	54.5
224.7	0.126	56.9
234.3	0.157	58.2
240.9	0.187	59.1
243.9	0.206	59.4
251.7	0.247	59.9
257.7	0.295	60.3
262.9	0.340	60.5
269.0	0.386	60.5
274.3	0.446	60.5
278.7	0.490	60.4
284.1	0.551	60.2
288.0	0.596	60.1
292.2	0.639	60.0
297.3	0.699	59.7
303.3	0.776	59.5
306.9	0.835	59.3
312.3	0.924	58.9
317.8	1.000	58.7
321.2	1.075	58.5
326.9	1.150	58.2

Tested By BW Date 10/26/2011 Input Checked By *MAT* Date 11/2



**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)

Client FALCON ENGINEERING Boring No. B-27-L  
 Client Reference NEW CONNECTOR ROAD Depth(ft.) 8.3-8.8  
 Project No. 2011-863-01 Sample No. ST-4  
 Lab ID 2011-863-01-02

Visual Description: RED SILT

Effective Confining Pressure (psi)	34.5	Stage No.	1
		Test No	3

**INITIAL DIMENSIONS**

Initial Sample Length (in.) 5.91  
 Initial Sample Diameter (in.) 2.83  
 Initial Sample Area (in<sup>2</sup>) 6.29  
 Initial Sample Volume (in<sup>3</sup>) 37.20

**VOLUME CHANGE**

Volume After Consolidation (in<sup>3</sup>) 35.17  
 Length After Consolidation (in) 5.81  
 Area After Consolidation (in<sup>2</sup>) 6.057

Strain (%)	Deviation Stress	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	$\bar{A}$	$\bar{P}$	$\bar{Q}$
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0.02	3.97	0.38	38.08	34.1	1.116	0.10	36.10	1.98
0.04	7.21	0.86	40.85	33.6	1.214	0.13	37.24	3.61
0.08	11.16	1.79	43.87	32.7	1.341	0.17	38.29	5.58
0.15	14.18	3.02	45.67	31.5	1.450	0.22	38.57	7.09
0.34	19.41	6.00	47.91	28.5	1.681	0.33	38.21	9.70
0.53	23.07	8.46	49.11	26.0	1.886	0.39	37.57	11.53
0.75	25.71	8.49	51.72	26.0	1.989	0.35	38.86	12.86
1.12	29.69	11.94	52.25	22.6	2.316	0.42	37.40	14.84
1.53	32.37	14.45	52.42	20.0	2.615	0.47	36.24	16.19
2.17	35.11	16.86	52.75	17.6	2.990	0.51	35.20	17.55
2.70	36.46	18.19	52.77	16.3	3.236	0.53	34.54	18.23
3.21	37.33	19.06	52.77	15.4	3.418	0.54	34.10	18.66
3.54	37.68	19.37	52.81	15.1	3.491	0.54	33.97	18.84
4.26	38.63	19.93	53.20	14.6	3.652	0.54	33.88	19.31
5.08	39.25	20.34	53.41	14.2	3.771	0.55	33.79	19.62
5.86	39.73	20.50	53.73	14.0	3.839	0.54	33.86	19.87
6.64	40.34	20.46	54.38	14.0	3.873	0.53	34.21	20.17
7.68	40.70	20.49	54.72	14.0	3.904	0.53	34.37	20.35
8.43	41.04	20.43	55.11	14.1	3.917	0.52	34.59	20.52
9.49	41.36	20.23	55.63	14.3	3.899	0.51	34.95	20.68
10.26	41.60	20.10	55.99	14.4	3.890	0.51	35.19	20.80
11.01	41.86	19.96	56.40	14.5	3.879	0.50	35.47	20.93
12.04	42.11	19.66	56.95	14.8	3.838	0.49	35.90	21.06
13.36	42.35	19.50	57.35	15.0	3.824	0.48	36.17	21.17
14.38	42.35	19.28	57.57	15.2	3.782	0.48	36.40	21.17
15.91	42.35	18.94	57.92	15.6	3.721	0.47	36.74	21.18
17.22	42.44	18.74	58.19	15.8	3.693	0.46	36.97	21.22
18.50	42.24	18.47	58.27	16.0	3.635	0.46	37.15	21.12
19.80	42.32	18.20	58.62	16.3	3.597	0.45	37.46	21.16

Tested By BW Date 10/26/2011 Input Checked By *MAT* Date 11/2



**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**  
ASTM D4767-04 / AASHTO T297-94 (SOP-S28)

Client: FALCON ENGINEERING  
 Client Reference: NEW CONNECTOR ROAD  
 Project No.: 2011-863-01  
 Lab ID: 2011-863-01-01      Specific Gravity (assumed)      2.7

Visual Description: RED SILT

**SAMPLE CONDITION SUMMARY**

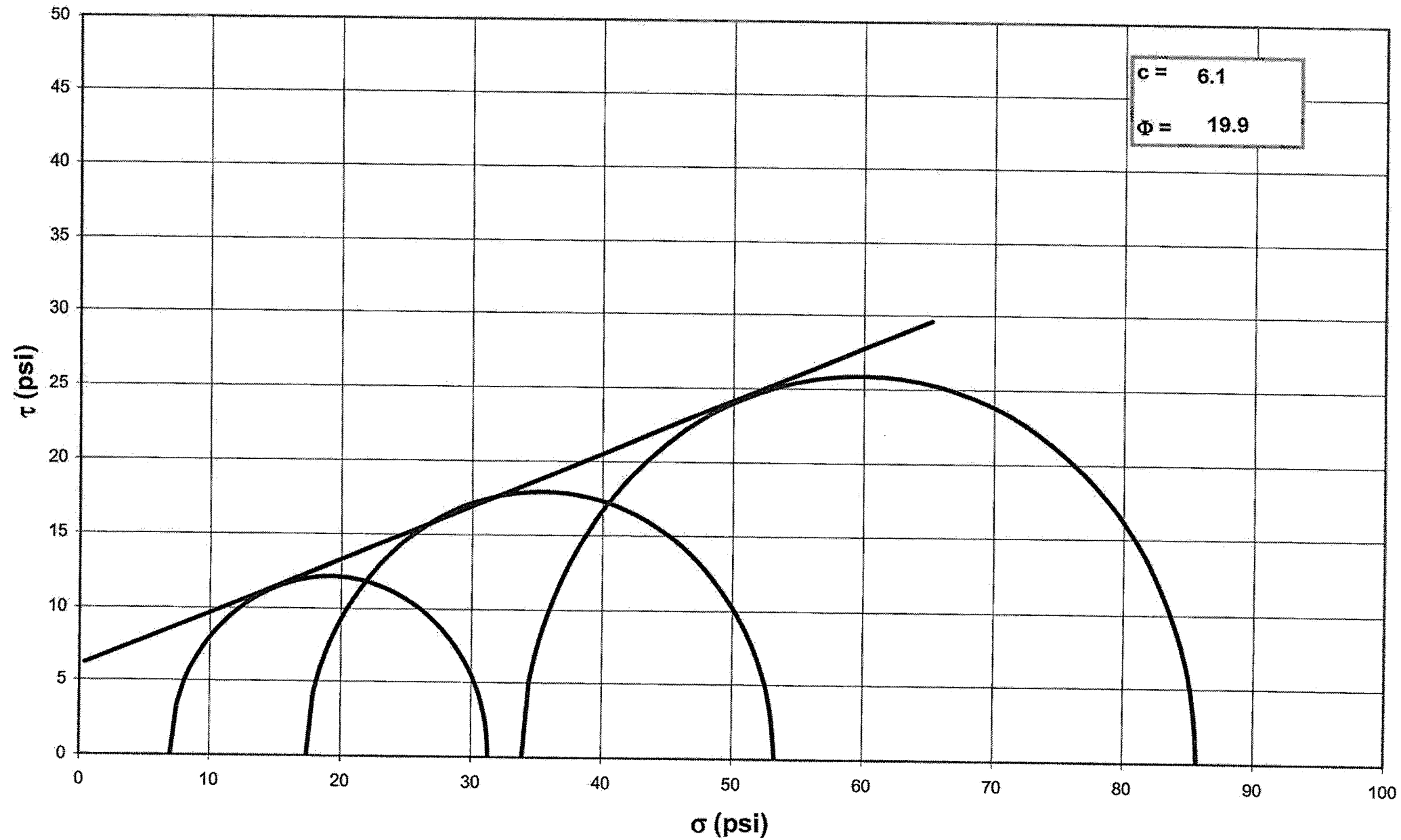
	B-17-R	B-17-R	B-17-R
Boring No.	B-17-R	B-17-R	B-17-R
Depth (ft)	4.3-4.8	4.9-5.4	5.4-5.9
Sample No.	ST-1	ST-1	ST-1
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.003	0.003	0.003
Back Pressure (psi)	45.4	45	42.3
Consolidation Time (days)	1	1	1
Initial State (w%)	16.3	16.3	13.2
Total Unit Weight (pcf)	98.8	102.7	109.7
Dry Unit Weight (pcf)	85.0	88.3	96.9
Final State (w%)	28.7	28.8	26.8
Initial State Void Ratio, e	0.983	0.908	0.739
Void Ratio at Shear, e	0.906	0.770	0.631

Tested By BW Date 10/25/2011 Input Checked By AMS Date 11/2

# MOHR TOTAL STRENGTH ENVELOPE



Client	FALCON ENGINEERING	Boring No.	B-17-R
Client Ref. No.	NEW CONNECTOR ROAD	Depth(ft.)	4.3-5.9
Project no.	2011-863-01	Sample No.	ST-1
Lab ID	2011-863-01-01	Visual Description	RED SILT



Tested By: BW

Date: 10/26/2011 Approved By:

NOTE: GRAPH NOT TO SCALE

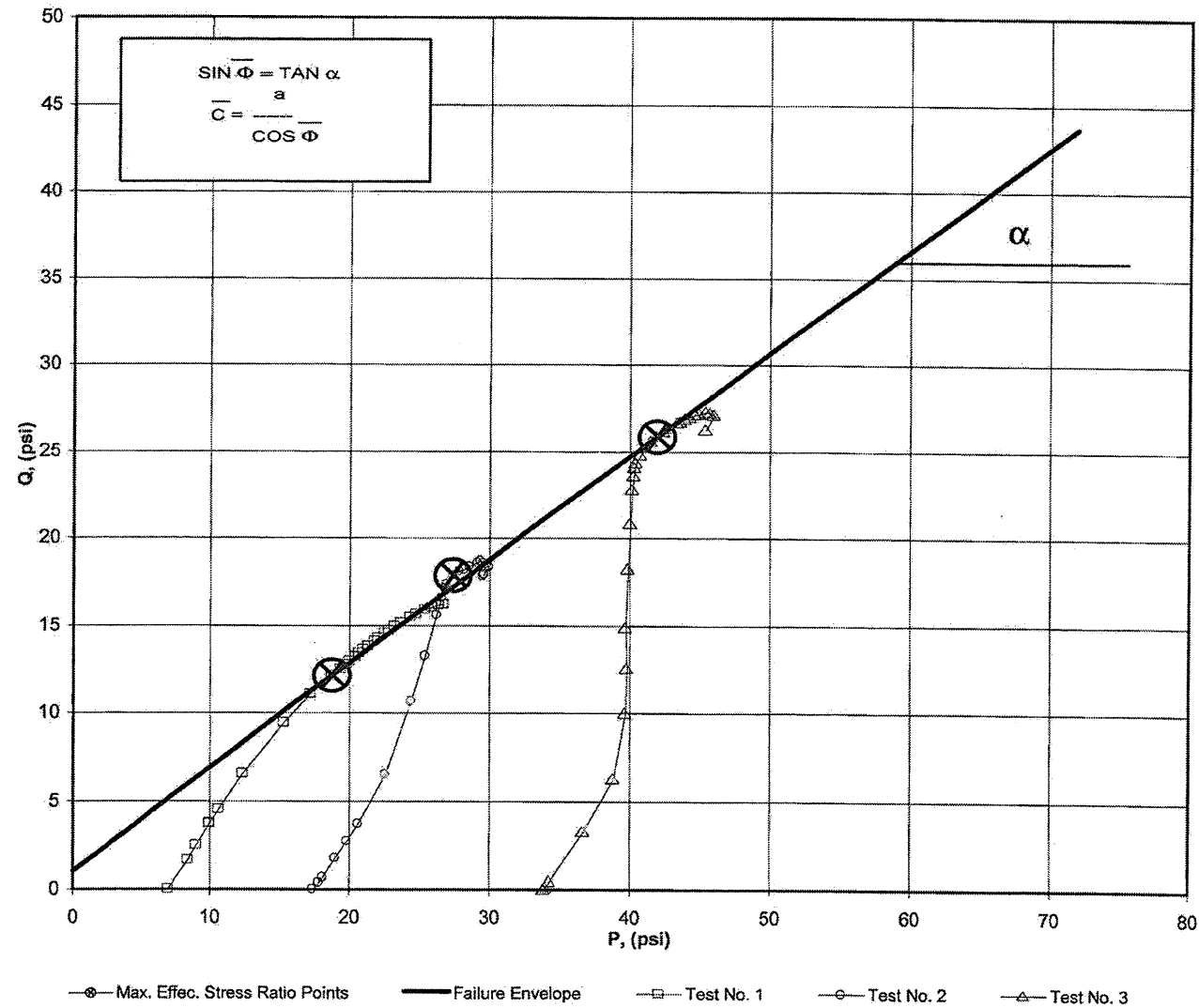
Date: FALCON CONNECTOR RD\2011-863-01-01 MOHR.XLS]Sheet1

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)**

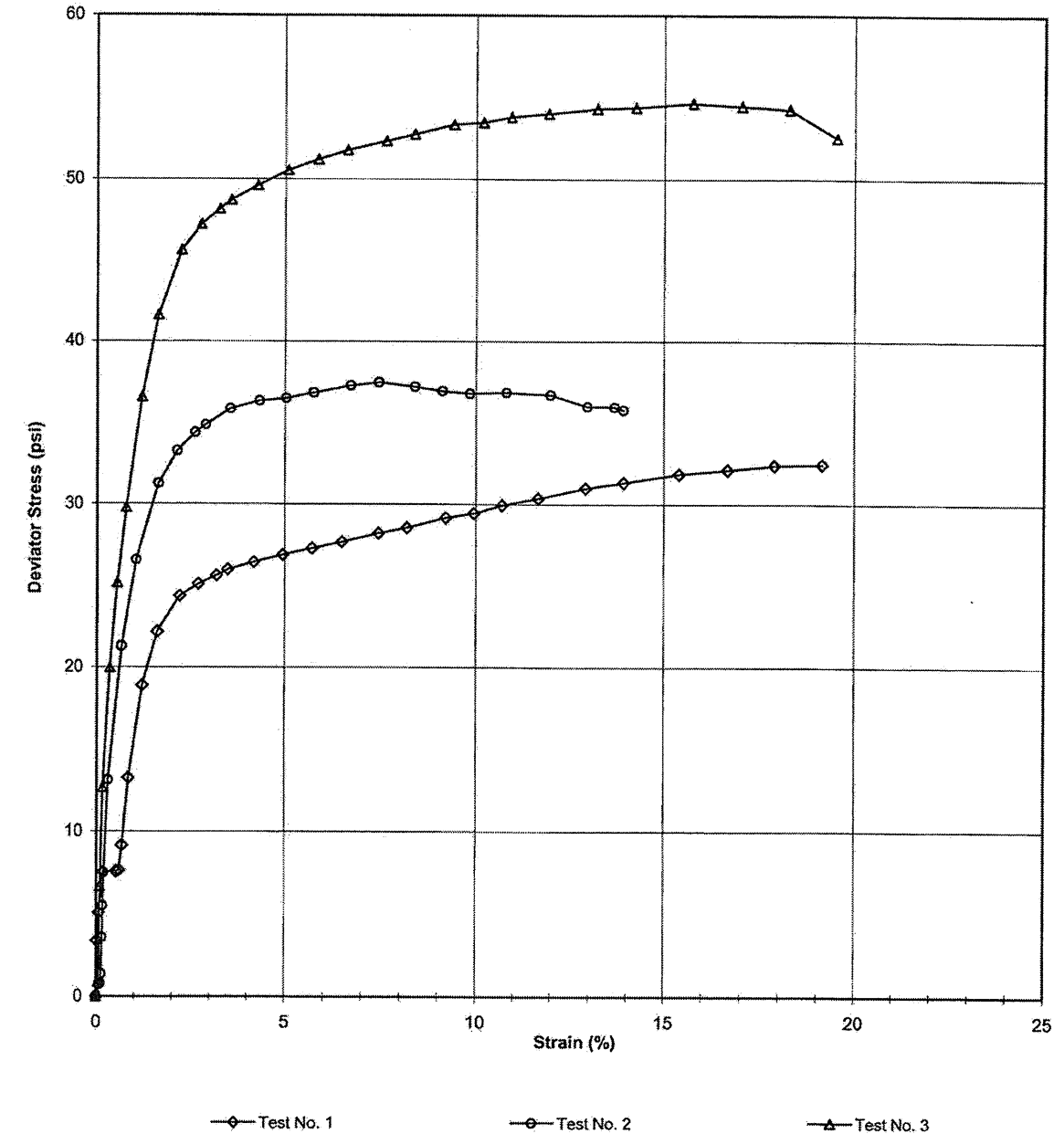
Client	FALCON ENGINEERING	Boring No.	B-17-R
Client Reference	NEW CONNECTOR ROAD	Depth(ft.)	4.3-5.9
Project No.	2011-863-01	Sample No.	ST-1
Lab ID	2011-863-01-01		

Client	FALCON ENGINEERING	Boring No.	B-17-R
Client Reference	NEW CONNECTOR ROAD	Depth(ft.)	4.3-5.9
Project No.	2011-863-01	Sample No.	ST-1
Lab ID	2011-863-01-01		
Visual Description:	RED SILT		

**Consolidated Undrained Triaxial Test with Pore Pressure**



<b>a</b>	<b>=</b>	<b>1.02</b>	<b>C</b>	<b>=</b>	<b>1.26</b>
<b>α</b>	<b>=</b>	<b>30.7</b>	<b>Φ</b>	<b>=</b>	<b>36.38</b>



Tested By BW Date 10/25/2011 Approved By [Signature] Date 11/2

Tested By BW Date 10/25/2011 Approved By [Signature] Date 11/2

CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)



Client FALCON ENGINEERING Boring No. B-17-R  
Client Reference NEW CONNECTOR ROAD Depth(ft.) 4.3-4.8  
Project No. 2011-863-01 Sample No. ST-1  
Lab ID 2011-863-01-01

Visual Description: RED SILT

Stage No.	1
Test No	1

**PRESSURES (psi)**

Cell Pressure(psi) 52.4  
Back Pressure(psi) 45.4  
Eff. Cons. Pressure(psi) 7.0  
Pore Pressure  
Response (%) 100

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$  = 18.77  
 $\bar{Q}$  = 12.15

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1 6.073 Diameter 1 2.83  
Length 2 6.049 Diameter 2 2.83  
Length 3 6.072 Diameter 3 2.83  
Avg Leng.= 6.065 Avg. Diam.= 2.830

**VOLUME CHANGE**

Initial Burette Reading (ml) 60.0  
Final Burette Reading (ml) 0.0  
Final Change (ml) 60.0

Initial Dial Reading (D.R.), mils 110  
D.R. After Saturation, mils 121  
D.R. After Consolidation, mils 172

LOAD (LBS)	DEFORMATION (INCHES)	PORE PRESSURE (PSI)
6.9	0.000	45.4
25.8	0.001	45.6
35.7	0.004	45.9
49.8	0.011	46.2
50.2	0.031	46.2
50.5	0.036	46.2
59.3	0.040	46.3
82.7	0.050	46.6
116.0	0.072	46.5
135.4	0.096	46.2
148.8	0.131	45.8
153.9	0.161	45.5
157.8	0.191	45.4
160.4	0.209	45.3
164.3	0.251	45.2
168.2	0.297	45.1
172.0	0.342	45.0
175.7	0.389	44.9
180.9	0.447	44.7
184.5	0.491	44.7
190.2	0.553	44.4
193.5	0.597	44.3
198.2	0.641	44.1
203.1	0.701	43.9
210.1	0.776	43.5
214.7	0.836	43.3
221.9	0.925	42.9
226.9	1.001	42.6
232.1	1.074	42.2
236.0	1.150	41.9

CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)



Client FALCON ENGINEERING Boring No. B-17-R  
Client Reference NEW CONNECTOR ROAD Depth(ft.) 4.3-4.8  
Project No. 2011-863-01 Sample No. ST-1  
Lab ID 2011-863-01-01

Visual Description: RED SILT

Effective Confining Pressure (psi)	7.0	Stage No.	1
		Test No	1

**INITIAL DIMENSIONS**

Initial Sample Length (in.) 6.06  
Initial Sample Diameter (in.) 2.83  
Initial Sample Area (in<sup>2</sup>) 6.29  
Initial Sample Volume (in<sup>3</sup>) 38.15

**VOLUME CHANGE**

Volume After Consolidation (in<sup>3</sup>) 34.28  
Length After Consolidation (in) 6.00  
Area After Consolidation (in<sup>2</sup>) 5.711

Strain (%)	Deviation Stress	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	$\bar{A}$	$\bar{P}$	$\bar{Q}$
0.02	3.31	0.23	10.08	6.8	1.489	0.07	8.42	1.66
0.06	5.04	0.50	11.54	6.5	1.776	0.10	9.02	2.52
0.18	7.51	0.81	13.70	6.2	2.212	0.11	9.95	3.75
0.52	7.55	0.79	13.76	6.2	2.214	0.10	9.99	3.77
0.60	7.60	0.79	13.80	6.2	2.224	0.10	10.00	3.80
0.67	9.12	0.92	15.19	6.1	2.501	0.10	10.64	4.56
0.83	13.16	1.21	18.95	5.8	3.273	0.09	12.37	6.58
1.20	18.87	1.08	24.78	5.9	4.190	0.06	15.35	9.43
1.59	22.14	0.82	28.32	6.2	4.583	0.04	17.25	11.07
2.19	24.30	0.38	30.92	6.6	4.671	0.02	18.77	12.15
2.68	25.05	0.14	31.92	6.9	4.650	0.01	19.39	12.53
3.18	25.58	-0.03	32.60	7.0	4.641	0.00	19.81	12.79
3.48	25.95	-0.06	33.01	7.1	4.675	0.00	20.04	12.98
4.18	26.42	-0.24	33.66	7.2	4.650	-0.01	20.45	13.21
4.95	26.85	-0.26	34.11	7.3	4.699	-0.01	20.68	13.42
5.70	27.26	-0.36	34.62	7.4	4.703	-0.01	20.99	13.63
6.47	27.65	-0.50	35.15	7.5	4.687	-0.02	21.32	13.82
7.45	28.20	-0.69	35.89	7.7	4.666	-0.02	21.79	14.10
8.19	28.55	-0.74	36.28	7.7	4.690	-0.03	22.01	14.27
9.21	29.15	-0.97	37.12	8.0	4.660	-0.03	22.54	14.58
9.94	29.43	-1.10	37.54	8.1	4.632	-0.04	22.82	14.72
10.68	29.93	-1.25	38.18	8.3	4.626	-0.04	23.22	14.96
11.68	30.35	-1.51	38.86	8.5	4.567	-0.05	23.68	15.17
12.93	30.99	-1.85	39.84	8.9	4.501	-0.06	24.34	15.49
13.93	31.32	-2.11	40.43	9.1	4.439	-0.07	24.77	15.66
15.41	31.84	-2.50	41.34	9.5	4.352	-0.08	25.42	15.92
16.68	32.10	-2.85	41.95	9.8	4.261	-0.09	25.90	16.05
17.90	32.38	-3.17	42.55	10.2	4.184	-0.10	26.36	16.19
19.16	32.44	-3.46	42.90	10.5	4.100	-0.11	26.68	16.22

Tested By BW Date 10/25/2011 Input Checked By *MPT* Date 11/2

Tested By BW Date 10/25/2011 Input Checked By *MPT* Date 11/2

CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)



Client FALCON ENGINEERING Boring No. B-17-R  
Client Reference NEW CONNECTOR ROAD Depth(ft.) 4.9-5.4  
Project No. 2011-863-01 Sample No. ST-1  
Lab ID 2011-863-01-01

Visual Description: RED SILT

Stage No.	1
Test No	2

**PRESSURES (psi)**

Cell Pressure(psi) 62.4  
Back Pressure(psi) 45  
Eff. Cons. Pressure(ps) 17.4  
Pore Pressure  
Response (%) 97

**MAXIMUM OBLIQUITY POINTS**

P = 27.39  
Q = 17.91

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1 5.683 Diameter 1 2.830  
Length 2 5.732 Diameter 2 2.830  
Length 3 5.679 Diameter 3 2.830  
Avg Leng.= 5.698 Avg. Diam.= 2.830

**VOLUME CHANGE**

Initial Burette Reading (ml) 41.1  
Final Burette Reading (ml) 0.0  
Final Change (ml) 41.1

Initial Dial Reading (D.R.), mils 295  
D.R. After Saturation, mils 300  
D.R. After Consolidation, mils 355

LOAD (LBS)	DEFORMATION (INCHES)	PORE PRESSURE (PSI)
19.7	0.000	45.0
23.9	0.005	44.9
24.1	0.006	44.9
27.4	0.008	44.9
40.4	0.009	45.1
52.1	0.010	45.3
63.8	0.011	45.5
96.8	0.017	46.4
145.9	0.037	48.6
177.7	0.058	50.2
207.0	0.091	51.8
219.8	0.119	52.4
227.4	0.146	52.8
231.0	0.162	52.9
238.7	0.200	52.9
243.5	0.244	52.7
246.2	0.283	52.5
250.1	0.324	52.3
255.3	0.378	51.9
258.4	0.420	51.8
259.2	0.474	51.5
259.3	0.514	51.3
260.2	0.555	51.1
263.3	0.609	50.9
265.7	0.677	50.8
263.4	0.732	50.8
265.2	0.772	50.7
264.6	0.785	50.8

CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)



Client FALCON ENGINEERING Boring No. B-17-R  
Client Reference NEW CONNECTOR ROAD Depth(ft.) 4.9-5.4  
Project No. 2011-863-01 Sample No. ST-1  
Lab ID 2011-863-01-01

Visual Description: RED SILT

Effective Confining Pressure (psi)	17.4	Stage No.	1
		Test No	2

**INITIAL DIMENSIONS**

Initial Sample Length (in.) 5.70  
Initial Sample Diameter (in.) 2.83  
Initial Sample Area (in^2) 6.29  
Initial Sample Volume (in^3) 35.84

**VOLUME CHANGE**

Volume After Consolidation (in^3) 33.24  
Length After Consolidation (in) 5.64  
Area After Consolidation (in^2) 5.896

Strain (%)	Deviation Stress	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	$\bar{A}$	$\bar{P}$	Q
0.09	0.71	-0.09	18.21	17.5	1.041	-0.14	17.85	0.36
0.11	0.74	-0.08	18.23	17.5	1.042	-0.12	17.86	0.37
0.14	1.30	-0.09	18.79	17.5	1.075	-0.07	18.14	0.65
0.15	3.51	0.13	20.78	17.3	1.203	0.04	19.02	1.76
0.17	5.48	0.30	22.58	17.1	1.321	0.06	19.84	2.74
0.20	7.46	0.50	24.36	16.9	1.442	0.07	20.63	3.73
0.31	13.03	1.35	29.08	16.0	1.812	0.11	22.56	6.52
0.66	21.27	3.64	35.03	13.8	2.545	0.18	24.39	10.63
1.03	26.52	5.24	38.68	12.2	3.181	0.20	25.42	13.26
1.62	31.25	6.80	41.85	10.6	3.948	0.22	26.23	15.63
2.12	33.22	7.44	43.18	10.0	4.335	0.23	26.57	16.61
2.59	34.32	7.76	43.96	9.6	4.559	0.23	26.80	17.16
2.88	34.81	7.87	44.34	9.5	4.653	0.23	26.93	17.40
3.55	35.83	7.93	45.30	9.5	4.781	0.23	27.39	17.91
4.32	36.31	7.74	45.97	9.7	4.760	0.22	27.81	18.16
5.03	36.48	7.45	46.42	9.9	4.667	0.21	28.19	18.24
5.74	36.83	7.26	46.97	10.1	4.631	0.20	28.56	18.42
6.71	37.28	6.91	47.77	10.5	4.554	0.19	29.13	18.64
7.45	37.47	6.78	48.08	10.6	4.530	0.19	29.35	18.73
8.40	37.21	6.45	48.16	10.9	4.399	0.18	29.55	18.61
9.12	36.93	6.31	48.02	11.1	4.330	0.18	29.55	18.46
9.84	36.78	6.11	48.07	11.3	4.259	0.17	29.68	18.39
10.80	36.85	5.91	48.34	11.5	4.206	0.17	29.92	18.42
12.01	36.71	5.84	48.27	11.6	4.175	0.16	29.92	18.36
12.97	35.97	5.82	47.55	11.6	4.107	0.17	29.57	17.99
13.69	35.94	5.73	47.61	11.7	4.081	0.16	29.64	17.97
13.92	35.75	5.76	47.39	11.6	4.072	0.17	29.51	17.88

Tested By BW Date 10/25/2011 Input Checked By MMS Date 11/2  
page 5 of 8 DCN: CT-S28 DATE 6-25-98 REVISION 1

Tested By BW Date 10/25/2011 Input Checked By MMS Date 11/2  
page 6 of 8



**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)

Client	FALCON ENGINEERING	Boring No.	B-17-R
Client Reference	NEW CONNECTOR ROAD	Depth(ft.)	5.4-5.9
Project No.	2011-863-01	Sample No.	ST-1
Lab ID	2011-863-01-01		

Visual Description: RED SILT

Stage No.	1
Test No	3

**PRESSURES (psi)**

Cell Pressure(psi)	76.2
Back Pressure(psi)	42.3
Eff. Cons. Pressure(psi)	33.9
Pore Pressure	
Response (%)	100

**MAXIMUM OBLIQUITY POINTS**

P	=	41.92
Q	=	25.88

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1	5.893	Diameter 1	2.830
Length 2	5.916	Diameter 2	2.830
Length 3	5.925	Diameter 3	2.830
Avg Leng.=	5.911	Avg. Diam.=	2.830

**VOLUME CHANGE**

Initial Burette Reading (ml)	36.0
Final Burette Reading (ml)	0.0
Final Change (ml)	36.0

Initial Dial Reading (D.R.), mils	221
D.R. After Saturation, mils	225
D.R. After Consolidation, mils	235

LOAD (LBS)	DEFORMATION (INCHES)	PORE PRESSURE (PSI)
12.8	0.000	42.3
13.9	0.002	42.3
17.8	0.003	42.3
52.1	0.006	42.8
87.4	0.009	43.6
131.4	0.021	46.5
162.3	0.032	48.9
190.5	0.045	51.4
231.8	0.070	54.6
263.3	0.095	57.0
288.7	0.131	58.8
299.9	0.162	59.5
307.3	0.192	59.9
311.7	0.210	60.1
319.5	0.252	60.3
327.9	0.299	60.3
334.7	0.344	60.3
340.9	0.390	60.2
348.2	0.450	60.0
353.5	0.495	59.8
361.3	0.555	59.5
365.1	0.601	59.4
370.3	0.645	59.2
375.8	0.704	58.9
383.1	0.780	58.7
388.0	0.840	58.4
396.6	0.929	58.1
401.3	1.005	57.7
405.9	1.078	57.3
399.4	1.152	57.1

Tested By BW Date 10/25/2011 Input Checked By MW Date 11/2  
page 7 of 8 DCN: CT-S28 DATE 6-25-98 REVISION 1



**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**  
ASTM D4767-95 / AASHTO T297-94 (SOP-S28)

Client	FALCON ENGINEERING	Boring No.	B-17-R
Client Reference	NEW CONNECTOR ROAD	Depth(ft.)	5.4-5.9
Project No.	2011-863-01	Sample No.	ST-1
Lab ID	2011-863-01-01		

Visual Description: RED SILT

Effective Confining Pressure (psi)	33.9	Stage No.	1
		Test No	3

**INITIAL DIMENSIONS**

Initial Sample Length (in.)	5.91
Initial Sample Diameter (in.)	2.83
Initial Sample Area (in^2)	6.29
Initial Sample Volume (in^3)	37.18

**VOLUME CHANGE**

Volume After Consolidation (in^3)	34.91
Length After Consolidation (in)	5.90
Area After Consolidation (in^2)	5.920

Strain (%)	Deviation Stress	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	$\bar{A}$	$\bar{P}$	Q
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0.03	0.18	-0.05	34.13	33.9	1.005	-0.25	34.04	0.09
0.06	0.85	0.00	34.75	33.9	1.025	0.00	34.33	0.42
0.09	6.64	0.48	40.07	33.4	1.199	0.07	36.74	3.32
0.16	12.59	1.33	45.16	32.6	1.387	0.11	38.86	6.29
0.35	19.96	4.17	49.69	29.7	1.671	0.21	39.71	9.98
0.54	25.12	6.63	52.39	27.3	1.921	0.26	39.83	12.56
0.77	29.79	9.07	54.62	24.8	2.200	0.30	39.72	14.89
1.19	36.55	12.29	58.16	21.6	2.691	0.34	39.89	18.27
1.62	41.64	14.68	60.86	19.2	3.166	0.35	40.04	20.82
2.22	45.57	16.51	62.96	17.4	3.620	0.36	40.18	22.78
2.75	47.17	17.21	63.87	16.7	3.826	0.36	40.28	23.59
3.25	48.14	17.63	64.40	16.3	3.959	0.37	40.34	24.07
3.56	48.69	17.82	64.77	16.1	4.029	0.37	40.42	24.35
4.27	49.59	17.96	65.53	15.9	4.112	0.36	40.74	24.80
5.07	50.54	18.03	66.41	15.9	4.185	0.36	41.14	25.27
5.84	51.20	18.02	67.08	15.9	4.223	0.35	41.48	25.60
6.61	51.76	17.86	67.80	16.0	4.228	0.35	41.92	25.88
7.64	52.32	17.67	68.55	16.2	4.224	0.34	42.39	26.16
8.39	52.73	17.47	69.16	16.4	4.209	0.33	42.80	26.37
9.41	53.33	17.19	70.04	16.7	4.192	0.32	43.37	26.67
10.19	53.45	17.05	70.30	16.8	4.172	0.32	43.57	26.72
10.94	53.79	16.88	70.81	17.0	4.161	0.31	43.91	26.90
11.94	54.00	16.62	71.28	17.3	4.125	0.31	44.28	27.00
13.22	54.28	16.38	71.80	17.5	4.098	0.30	44.66	27.14
14.25	54.35	16.12	72.13	17.8	4.057	0.30	44.96	27.18
15.76	54.62	15.78	72.73	18.1	4.015	0.29	45.42	27.31
17.04	54.45	15.41	72.93	18.5	3.945	0.28	45.71	27.22
18.29	54.25	15.04	73.12	18.9	3.876	0.28	45.99	27.13
19.53	52.55	14.77	71.69	19.1	3.747	0.28	45.41	26.28

Tested By BW Date 10/25/2011 Input Checked By MW Date 11/2  
page 8 of 8



**APPENDIX B**

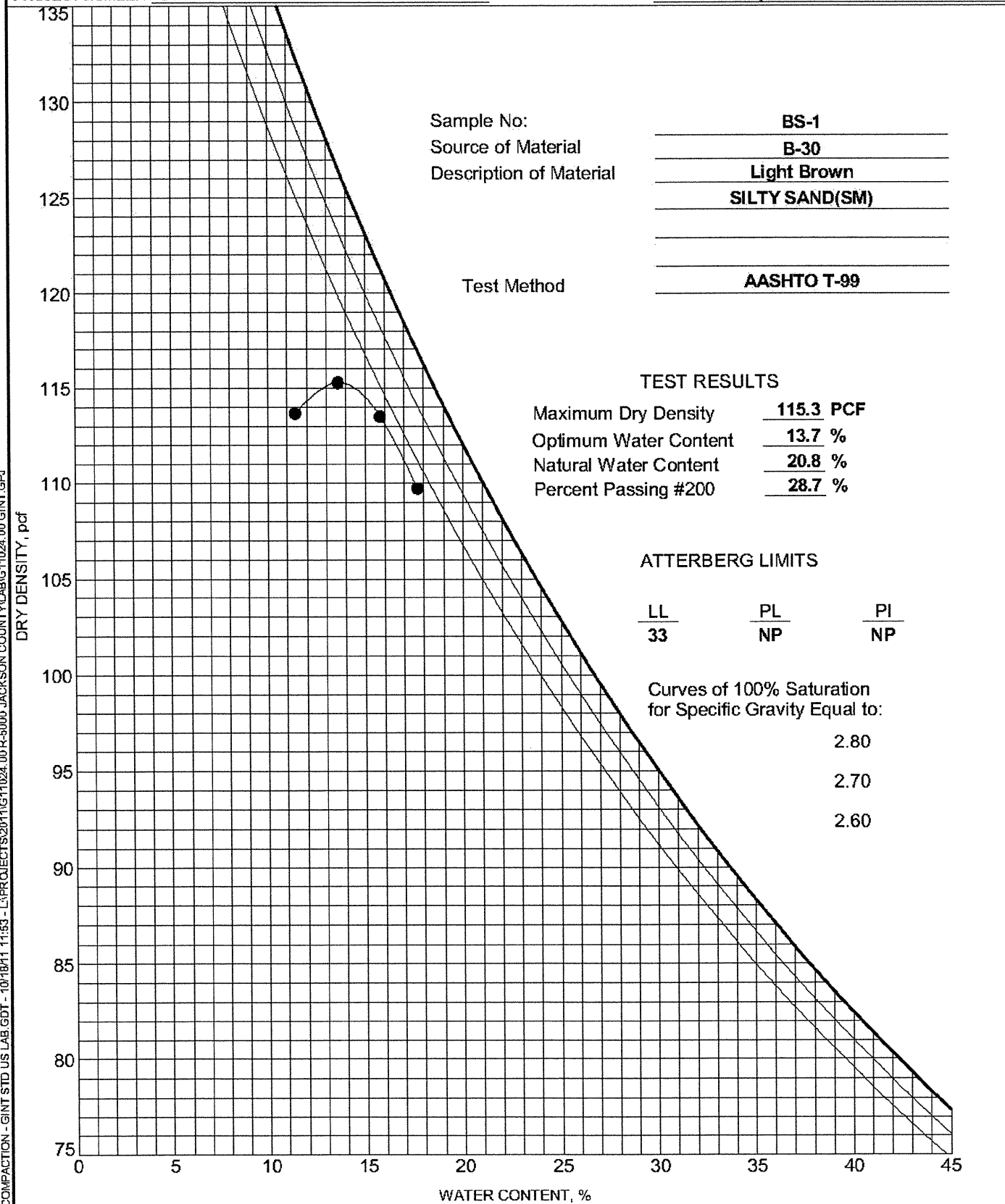
**STANDARD COMPACTION AND CALIFORNIA BEARING RATIO TEST DATA**



Falcon Engineering, Inc.  
1210 Trinity Rd., Suite 110  
Raleigh, NC 27607  
Telephone: (919) 871-0800  
Fax: (919) 871-0803

### MOISTURE-DENSITY RELATIONSHIP

CLIENT Mulkey PROJECT NAME R-5000 Jackson County  
PROJECT NUMBER G11024.00 PROJECT LOCATION Jackson County, NC



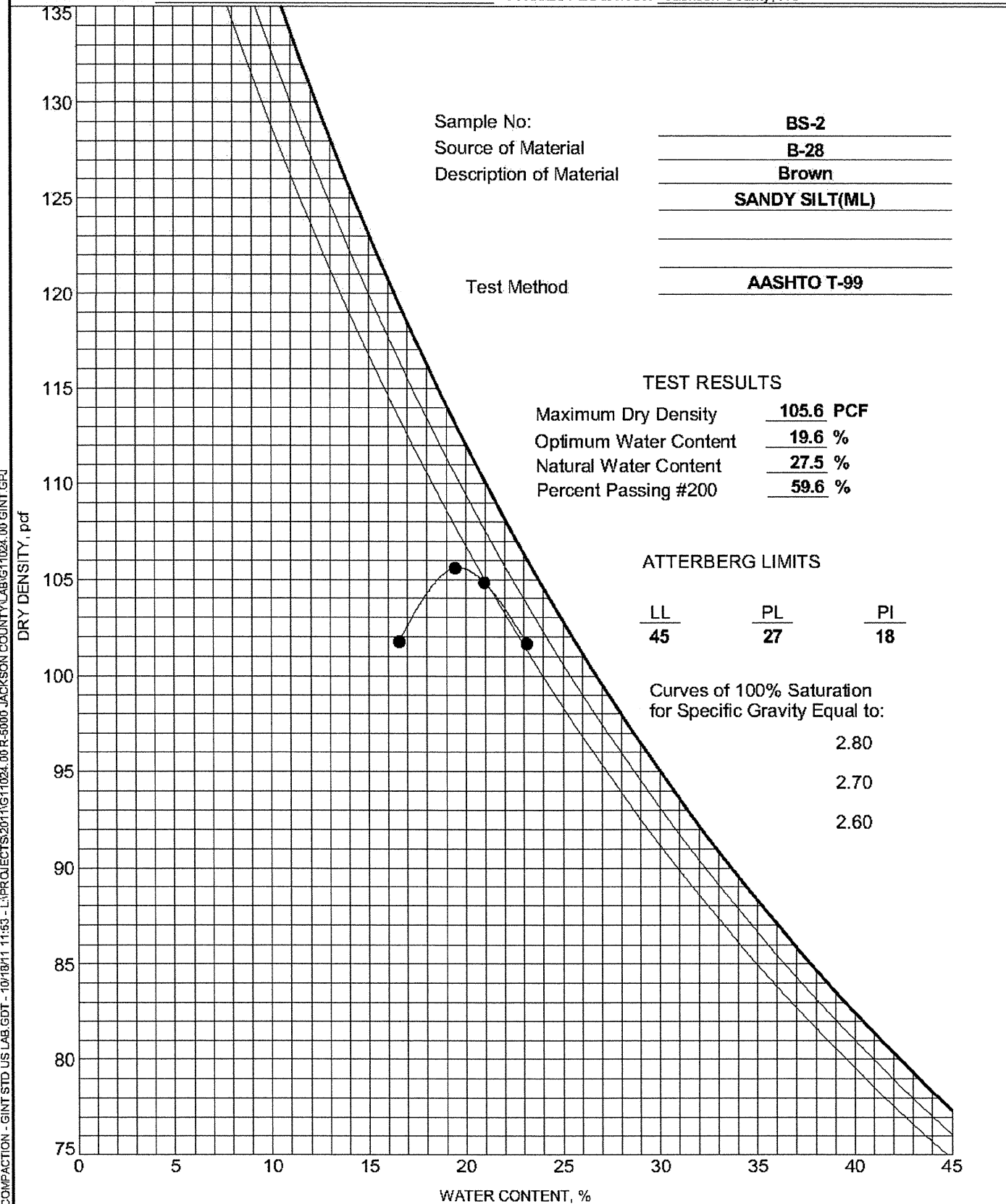
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Falcon Engineering, Inc.  
1210 Trinity Rd., Suite 110  
Raleigh, NC 27607  
Telephone: (919) 871-0800  
Fax: (919) 871-0803

### MOISTURE-DENSITY RELATIONSHIP

CLIENT Mulkey PROJECT NAME R-5000 Jackson County  
PROJECT NUMBER G11024.00 PROJECT LOCATION Jackson County, NC



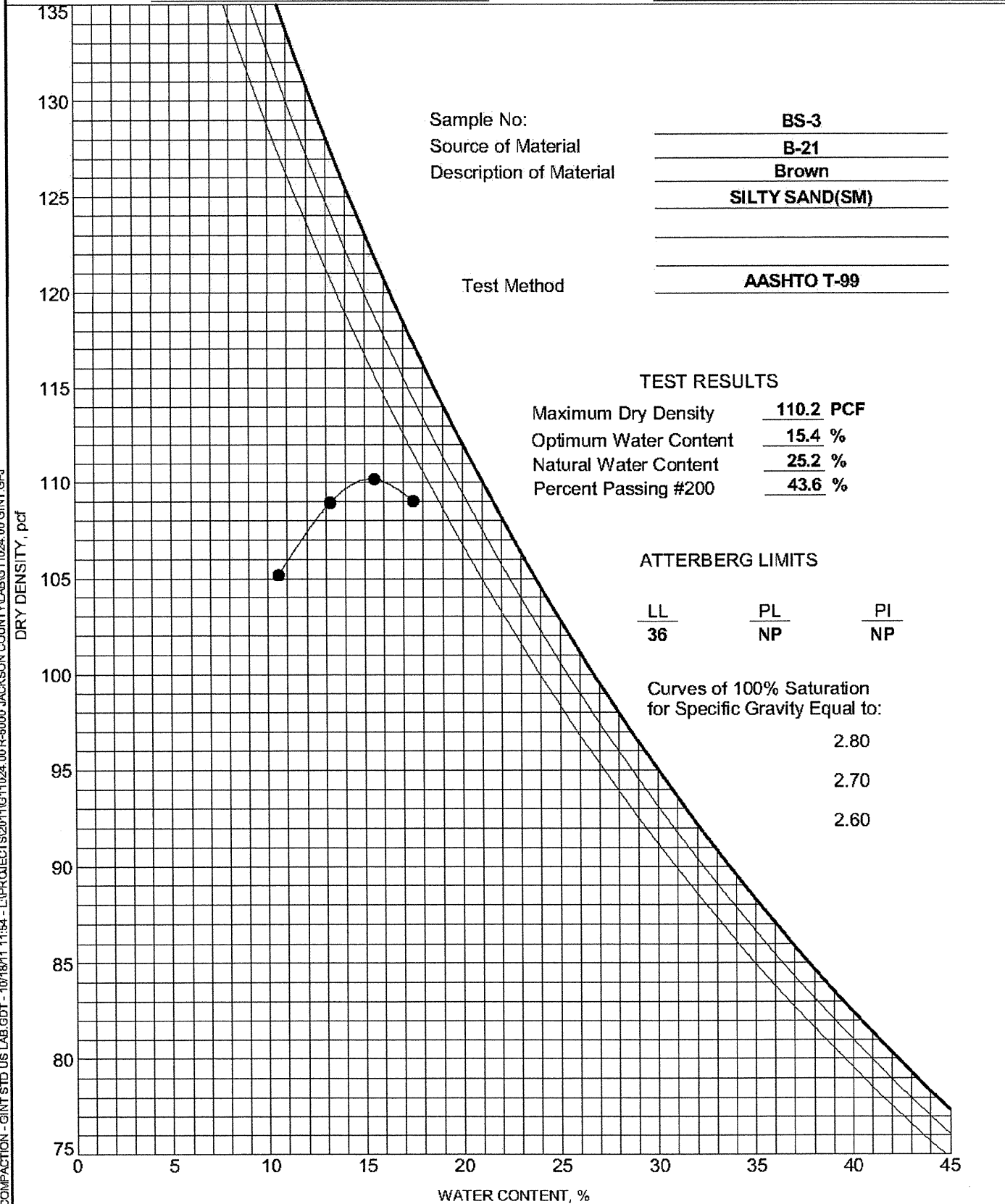
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Falcon Engineering, Inc.  
1210 Trinity Rd., Suite 110  
Raleigh, NC 27607  
Telephone: (919) 871-0800  
Fax: (919) 871-0803

### MOISTURE-DENSITY RELATIONSHIP

CLIENT Mulkey PROJECT NAME R-5000 Jackson County  
PROJECT NUMBER G11024.00 PROJECT LOCATION Jackson County, NC



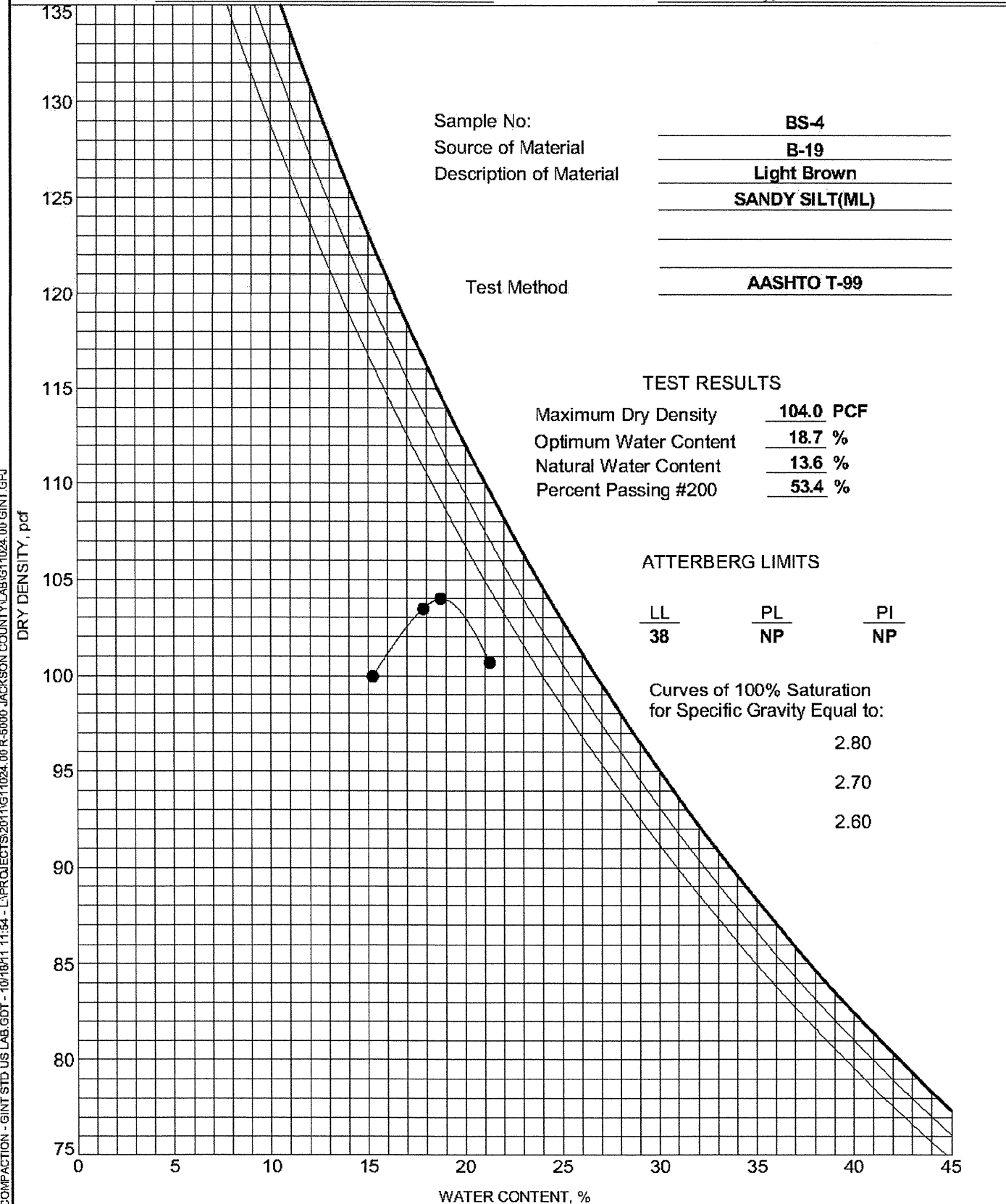
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Falcon Engineering, Inc.  
1210 Trinity Rd., Suite 110  
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Telephone: (919) 871-0800  
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CLIENT Mulkey PROJECT NAME R-5000 Jackson County  
PROJECT NUMBER G11024.00 PROJECT LOCATION Jackson County, NC



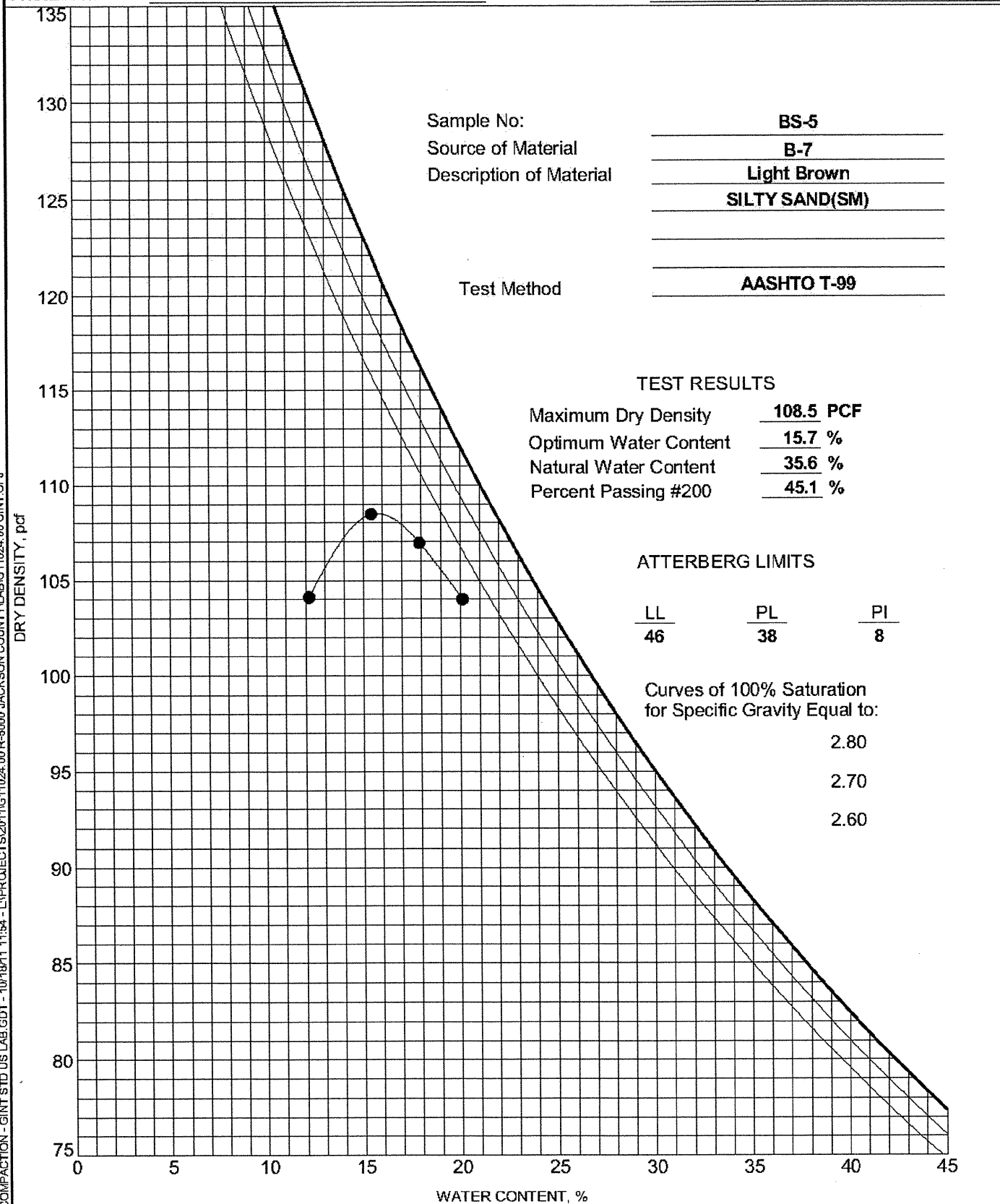
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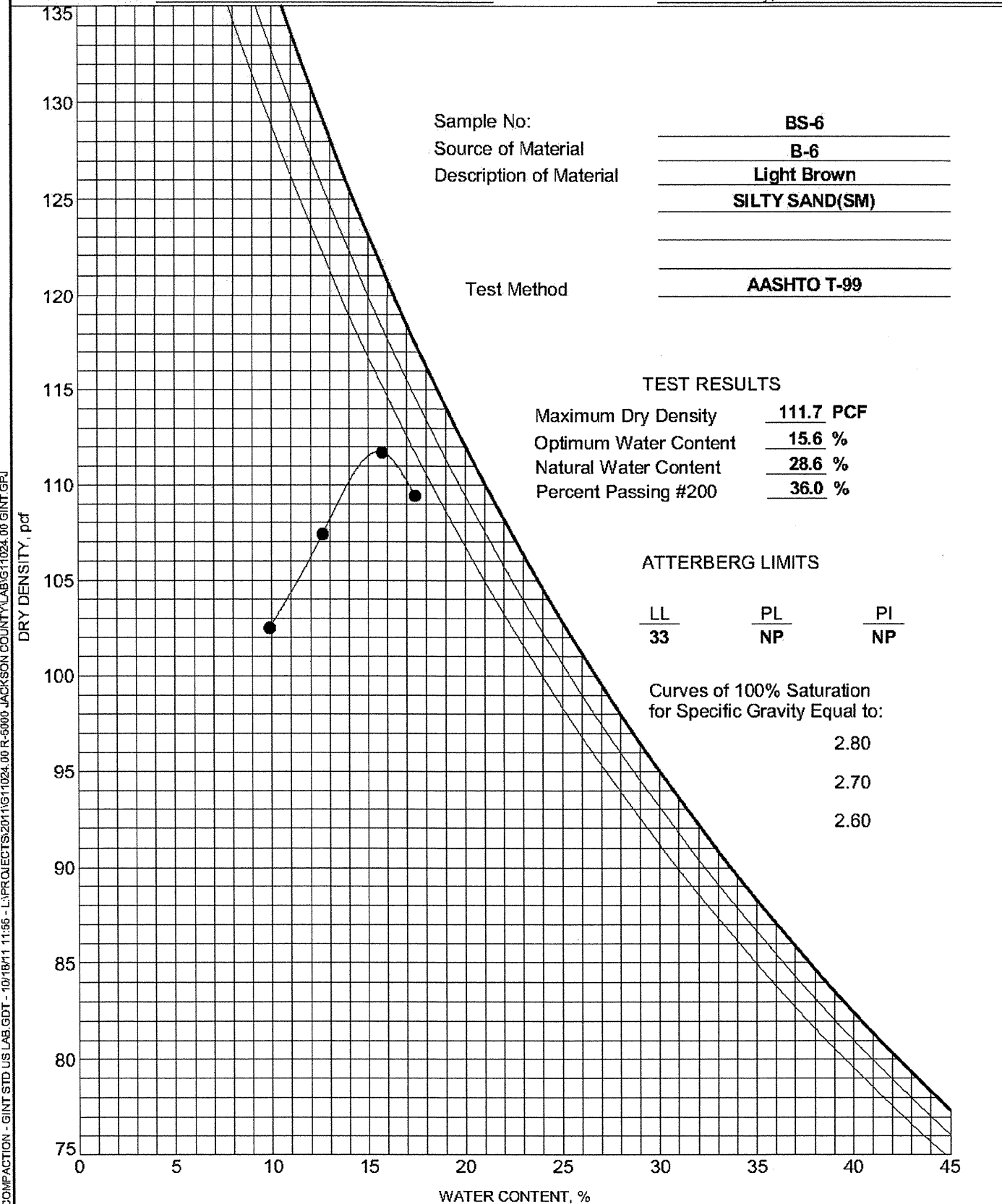
CLIENT Mulkey PROJECT NAME R-5000 Jackson County  
PROJECT NUMBER G11024.00 PROJECT LOCATION Jackson County, NC



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PROJECT NUMBER G11024.00 PROJECT LOCATION Jackson County, NC

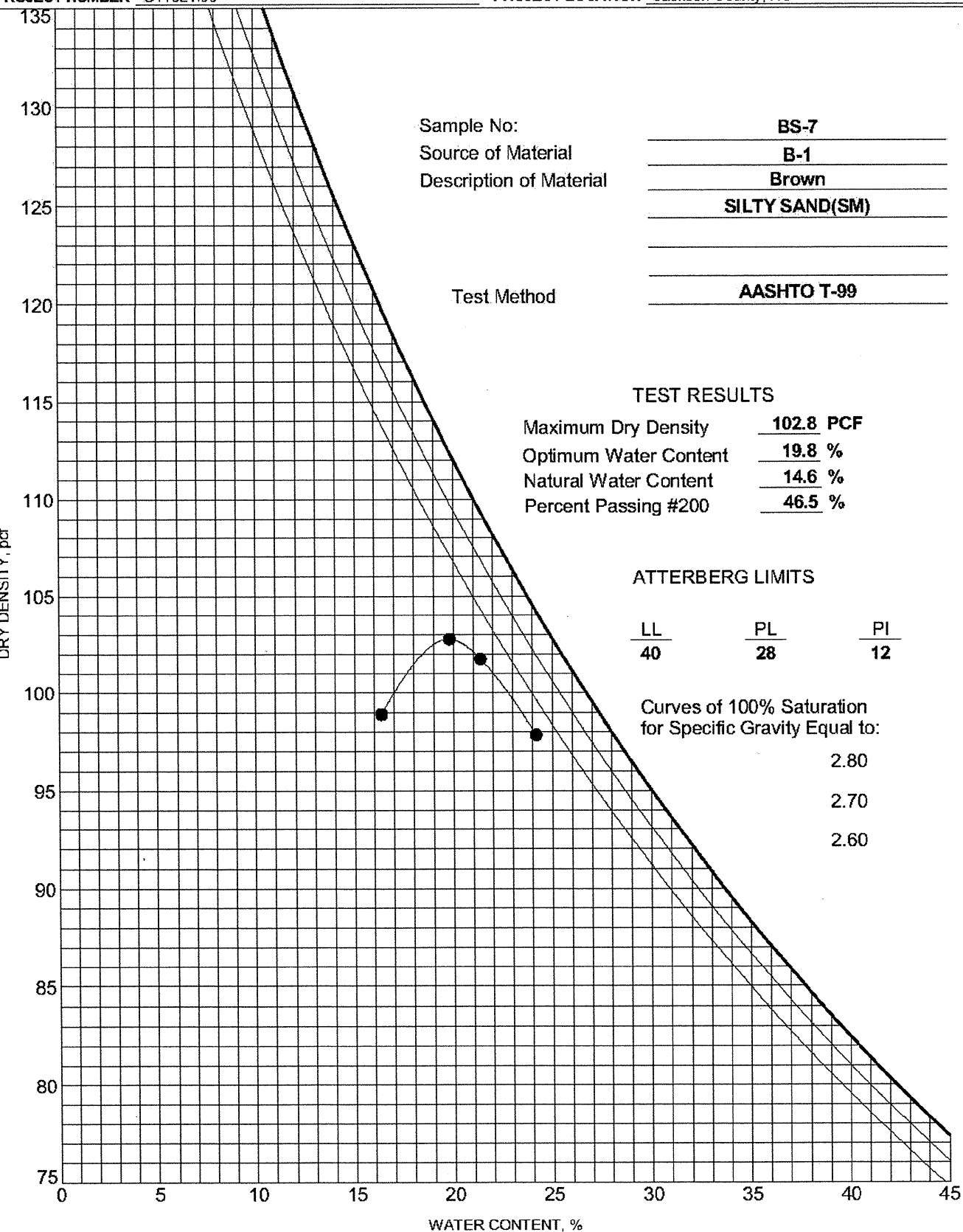




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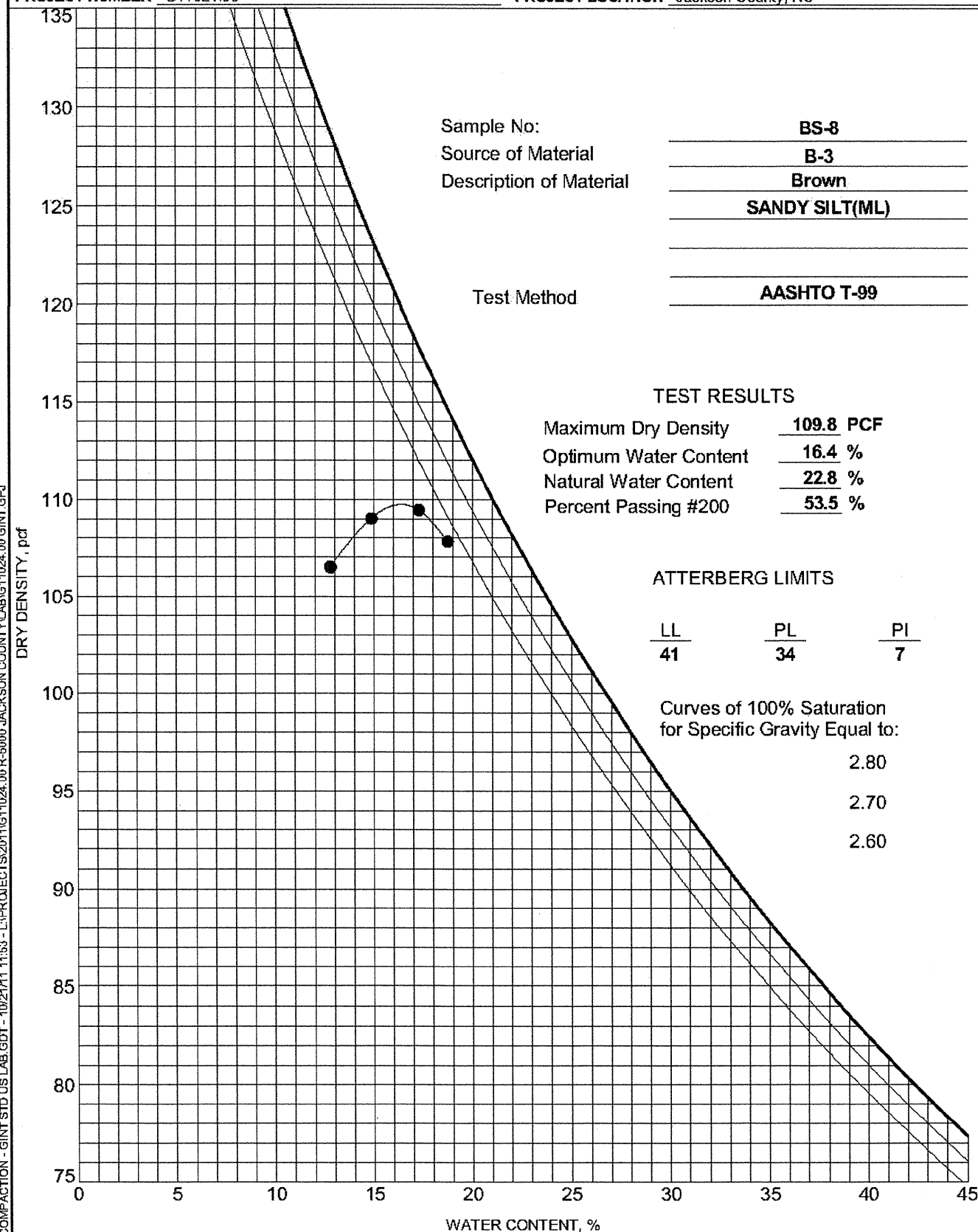
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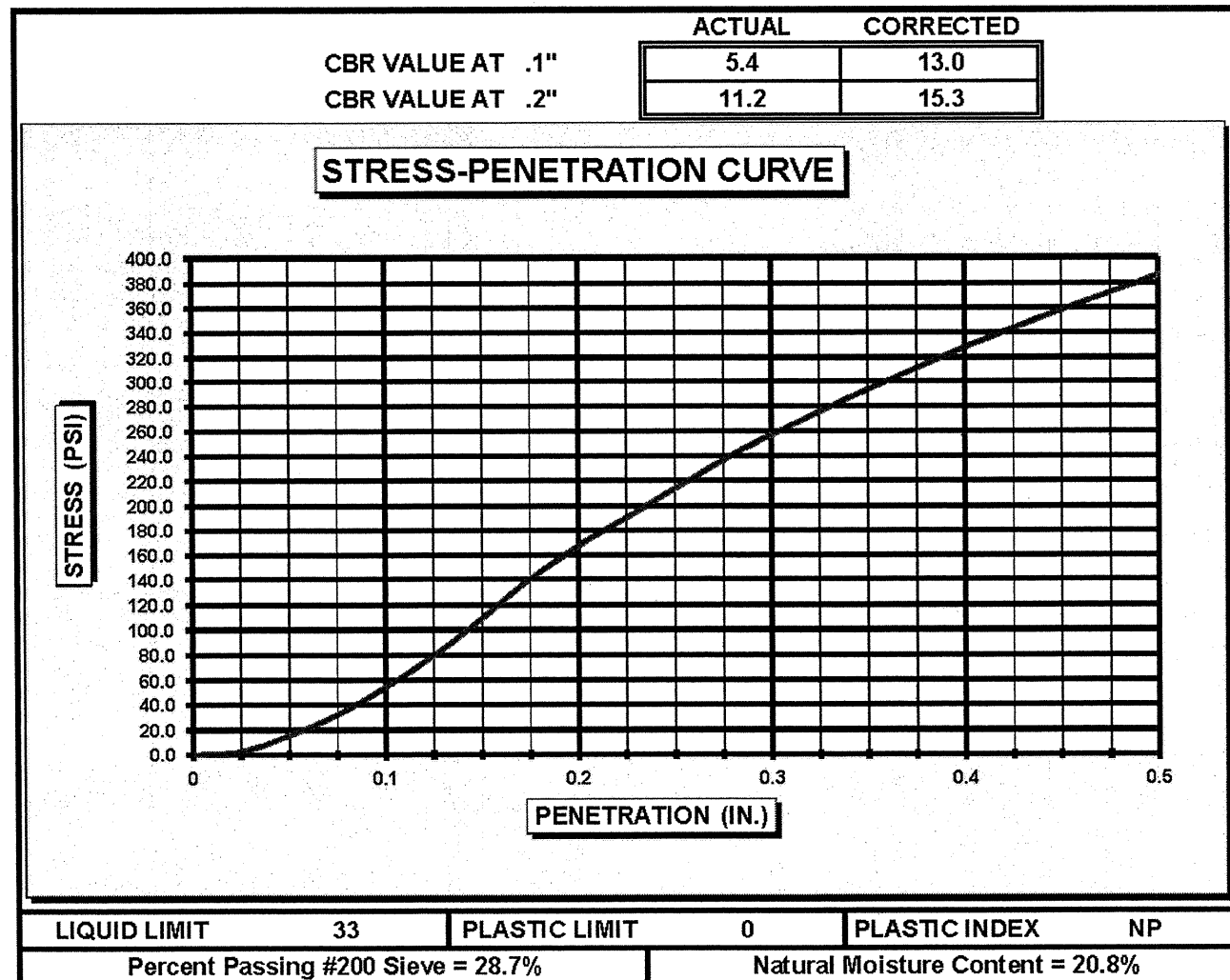
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**CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL**  
AASHTO T-193 \ ASTM D-1883

PROJECT #: G11024.00 DATE: 10/17/2011  
PROJECT NAME: New Connector Road Between NC-116 and NC-107  
BORING: B-30 SAMPLE: BS-1 DEPTH: 0-10'

SOIL DESCRIPTION:

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	115.3 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	13.7%	LOAD CELL	2500lb
TEST DATA		SURCHARGE WEIGHT	10 lb.
DRY DENSITY	114.9 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	13.4%	FINAL MOISTURE CONTENT	
PERCENT COMPACTION	99.7%	SWELL	0.60%

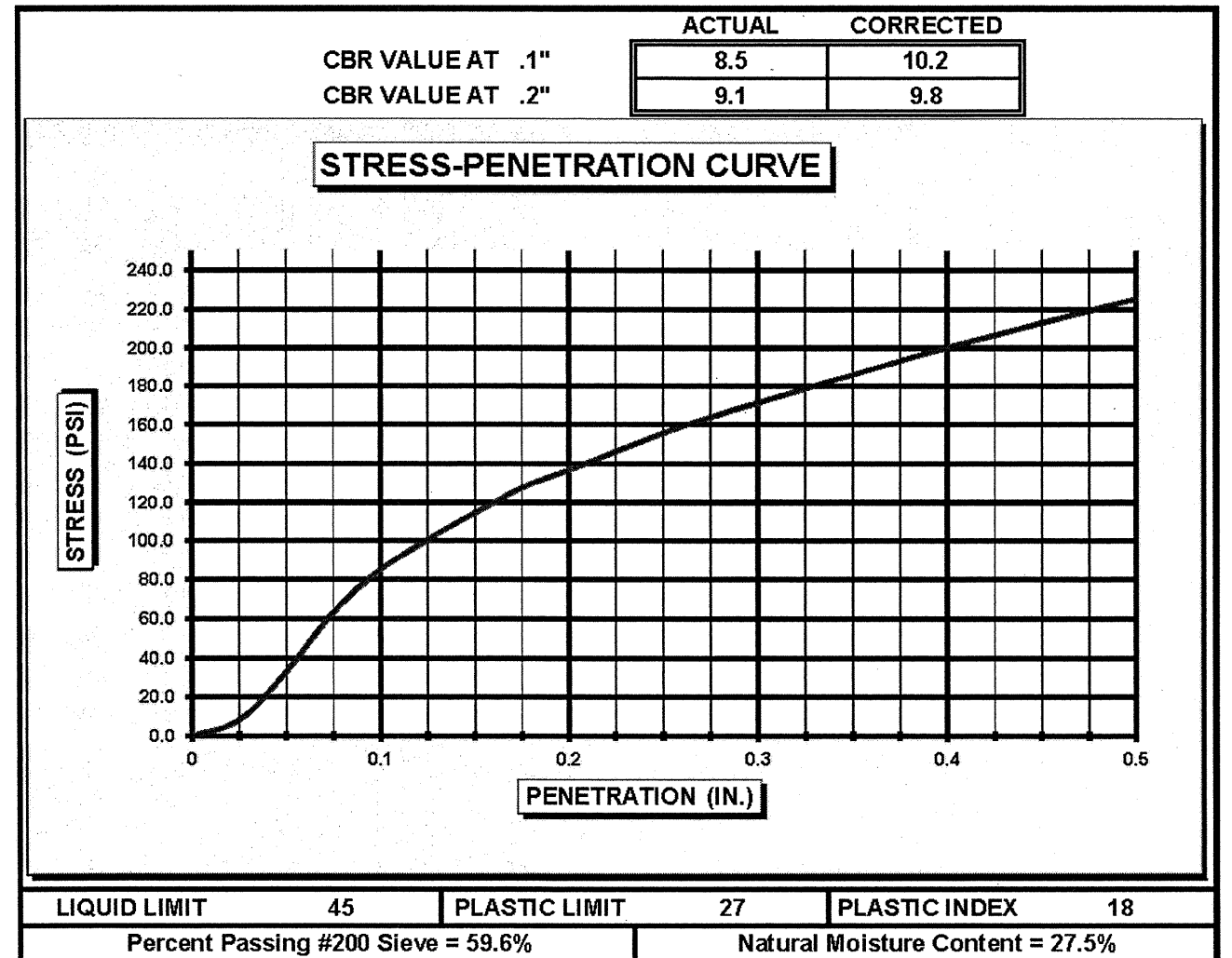


**CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL**  
AASHTO T-193 \ ASTM D-1883

PROJECT #: G11024.00 DATE: 10/17/2011  
PROJECT NAME: New Connector Road Between NC-116 and NC-107  
BORING: B-28 SAMPLE: BS-2 DEPTH: 0-15'

SOIL DESCRIPTION:

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	105.6 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	19.6%	LOAD CELL	2500lb
TEST DATA		SURCHARGE WEIGHT	10 lb.
DRY DENSITY	103.8 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	19.2%	FINAL MOISTURE CONTENT	
PERCENT COMPACTION	98.3%	SWELL	0.33%





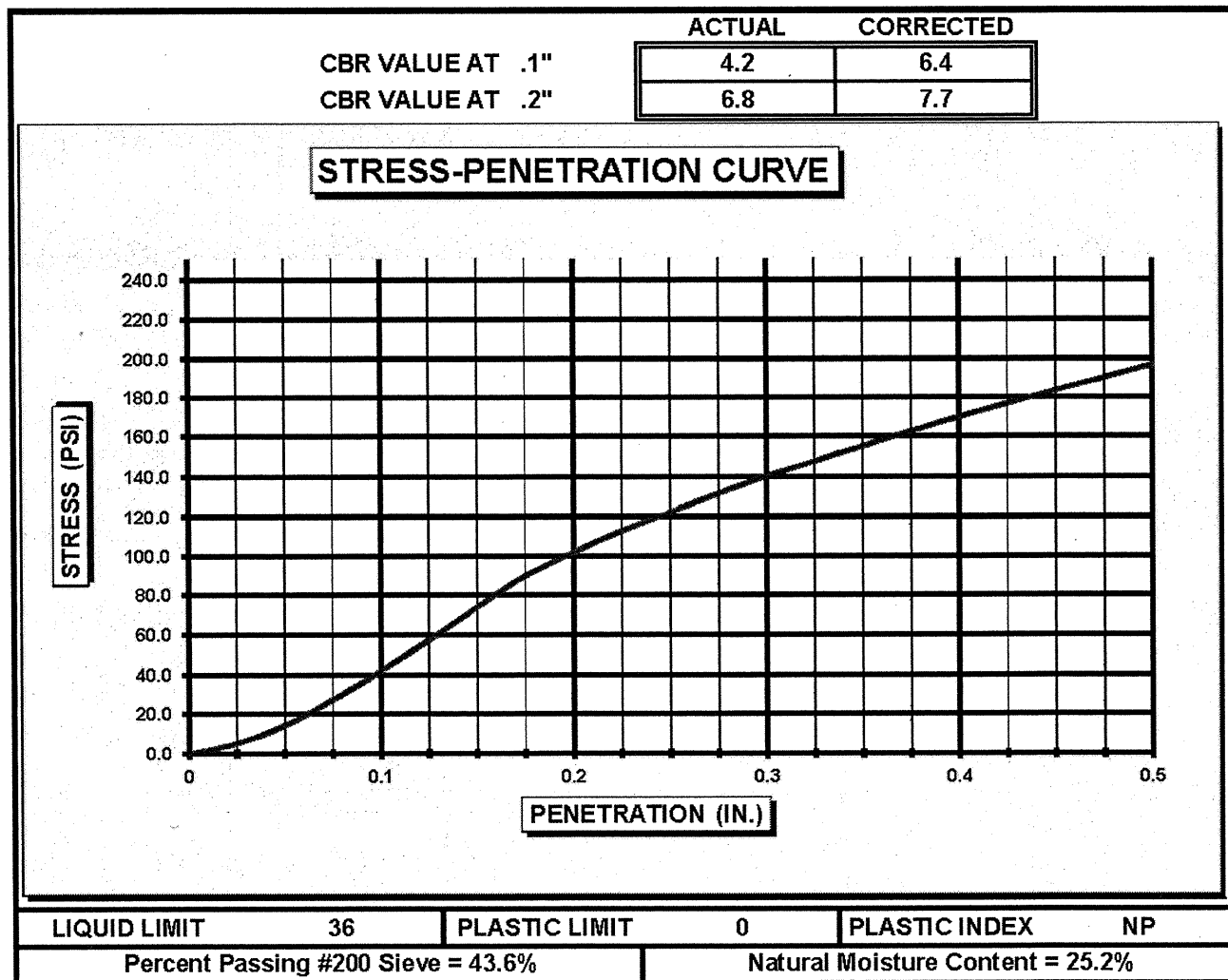
**CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL**

AASHTO T-193 \ ASTM D-1883

PROJECT #: G11024.00 DATE: 10/17/2011  
 PROJECT NAME: New Connector Road Between NC-116 and NC-107  
 BORING: B-21 SAMPLE: BS-3 DEPTH: 0-10'

SOIL DESCRIPTION:

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	110.2 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	15.4%	LOAD CELL	2500lb
TEST DATA		SURCHARGE WEIGHT	10 lb.
DRY DENSITY	108.8 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	15.2%	FINAL MOISTURE CONTENT	
PERCENT COMPACTION	98.8%	SWELL	1.29%



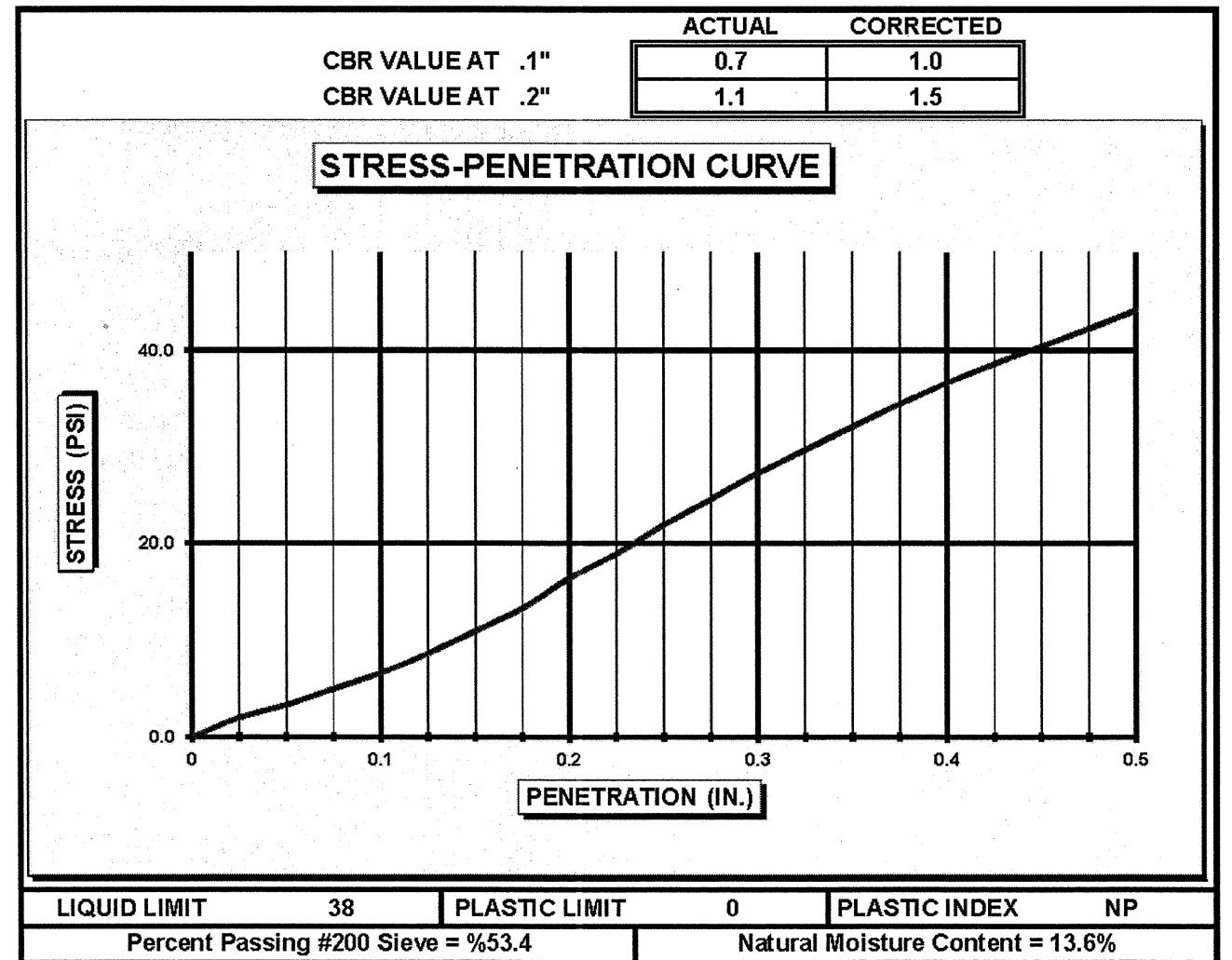
**CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL**

AASHTO T-193 \ ASTM D-1883

PROJECT #: G11024.00 DATE: 10/17/2011  
 PROJECT NAME: New Connector Road Between NC-116 and NC-107  
 BORING: B-19 SAMPLE: BS-4 DEPTH: 0-10'

SOIL DESCRIPTION:

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	104.0 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	18.7%	LOAD CELL	2500lb
TEST DATA		SURCHARGE WEIGHT	10 lb.
DRY DENSITY	99.1 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	18.4%	FINAL MOISTURE CONTENT	
PERCENT COMPACTION	95.3%	SWELL	0.69%





**CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL**

AASHTO T-193 \ ASTM D-1883

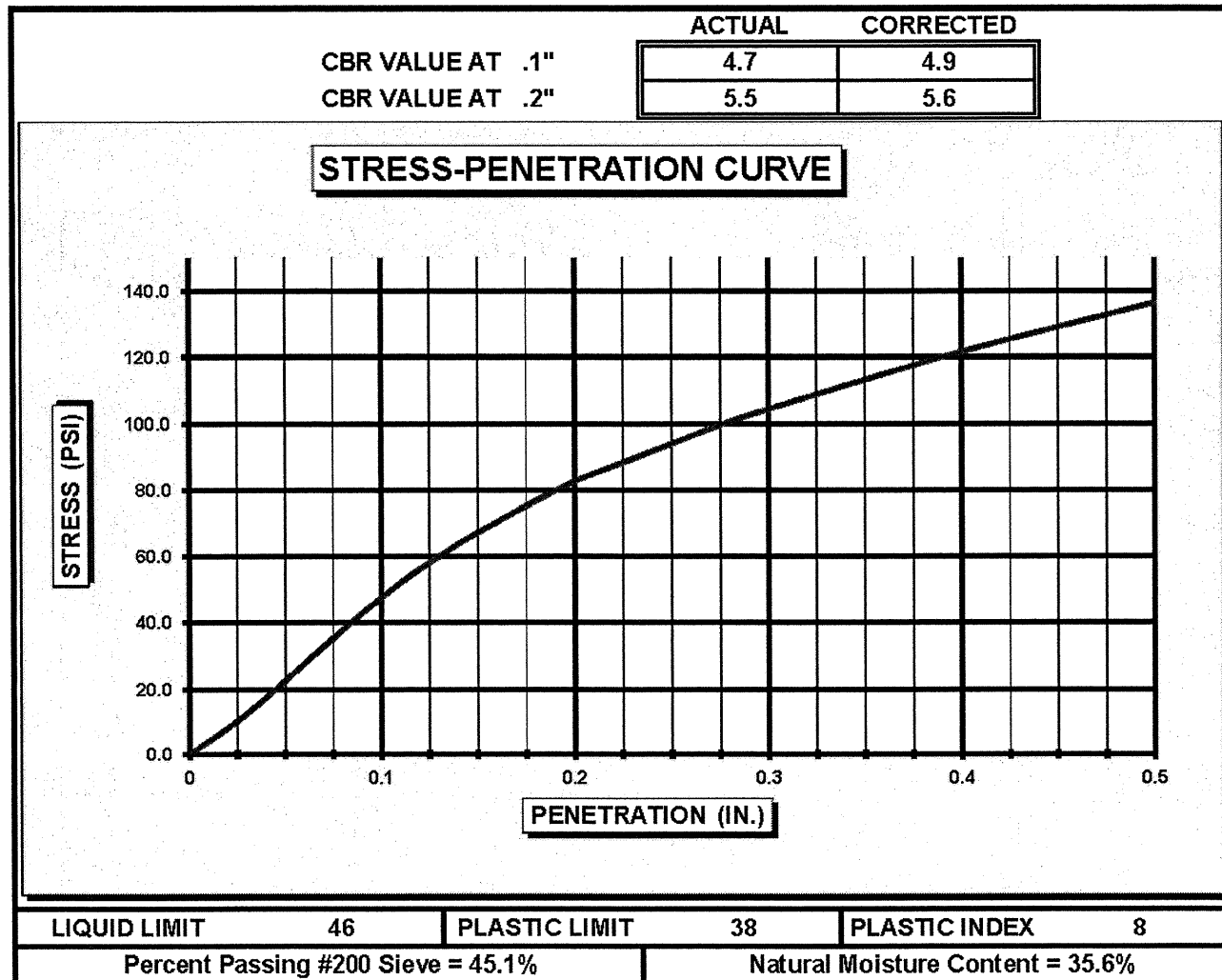
PROJECT #: G11024.00 DATE: 10/17/2011

PROJECT NAME: New Connector Road Between NC-116 and NC-107

BORING: B-7 SAMPLE: BS-5 DEPTH: 0-20'

SOIL DESCRIPTION:

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	108.5 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	15.7%	LOAD CELL	2500lb
TEST DATA		SURCHARGE WEIGHT	10 lb.
DRY DENSITY	104.1 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	15.3%	FINAL MOISTURE CONTENT	
PERCENT COMPACTION	95.9%	SWELL	1.67%



**CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL**

AASHTO T-193 \ ASTM D-1883

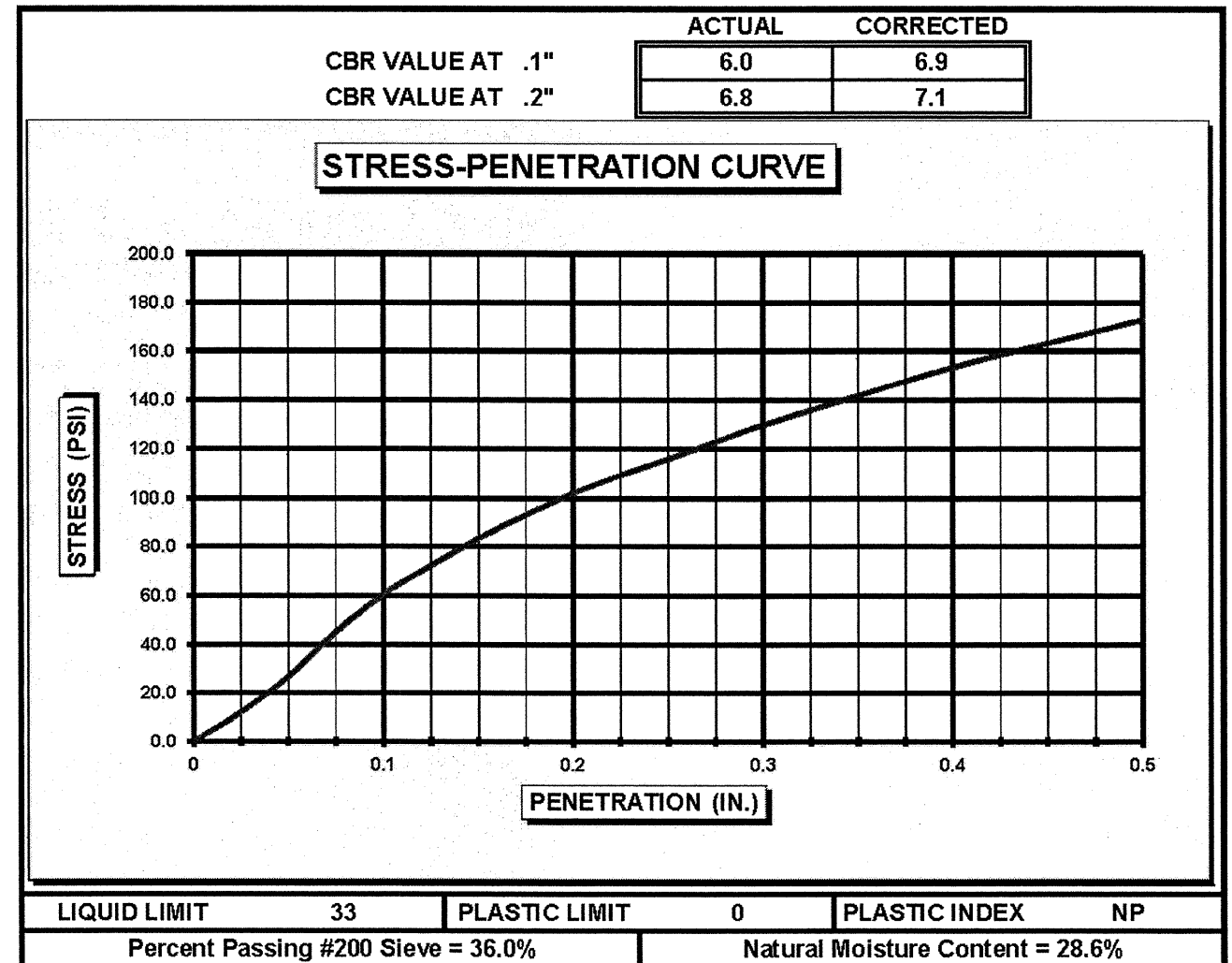
PROJECT #: G11024.00 DATE: 10/17/2011

PROJECT NAME: New Connector Road Between NC-116 and NC-107

BORING: B-6 SAMPLE: BS-6 DEPTH: 0-15'

SOIL DESCRIPTION:

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	111.7 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	15.6%	LOAD CELL	2500lb
TEST DATA		SURCHARGE WEIGHT	10 lb.
DRY DENSITY	106.4 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	15.8%	FINAL MOISTURE CONTENT	
PERCENT COMPACTION	95.3%	SWELL	0.84%



**CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL**

AASHTO T-193 \ ASTM D-1883

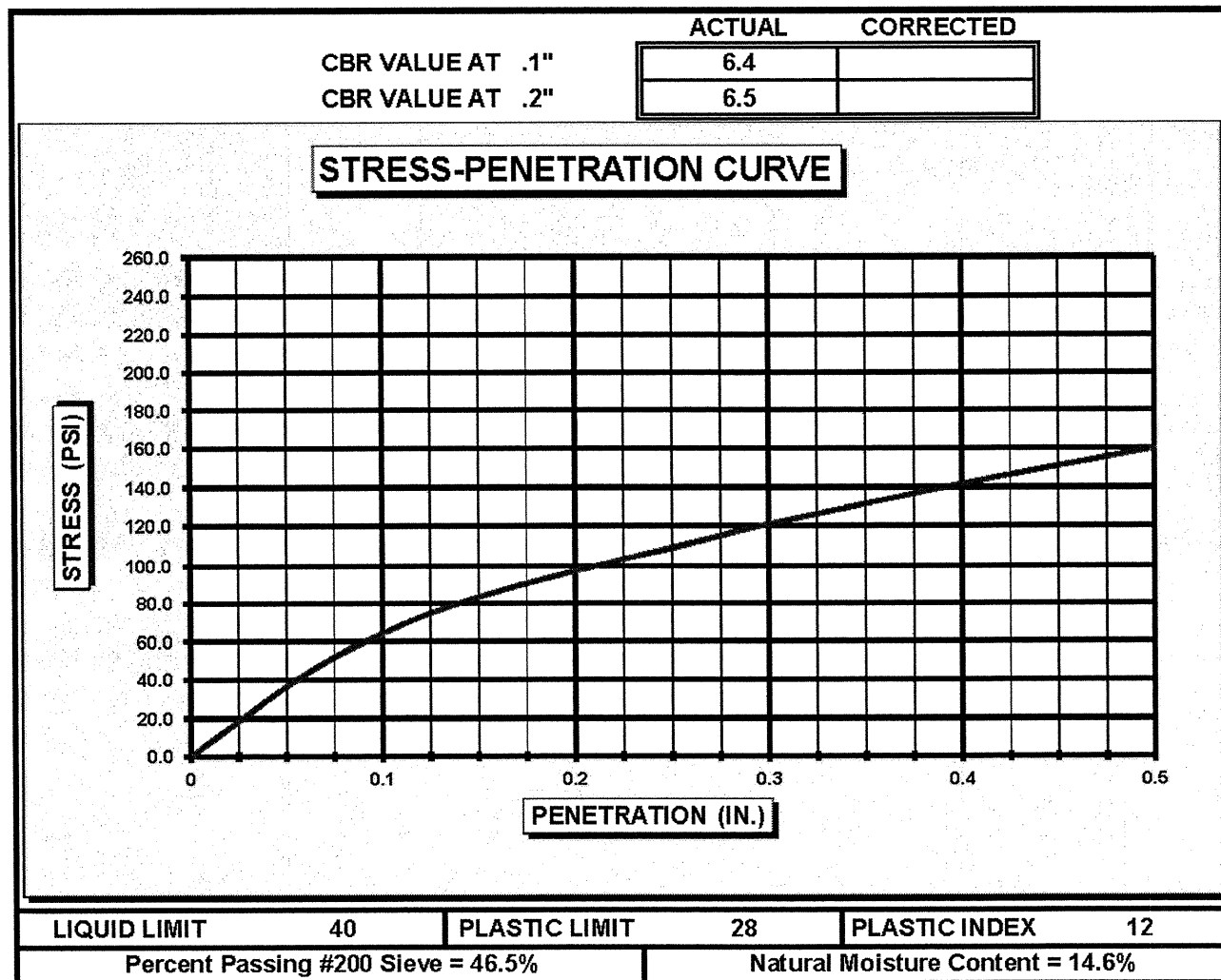
PROJECT #: G11024.00 DATE: 10/21/2011

PROJECT NAME: New Connector Road Between NC 116 and NC 107

BORING: B-1 SAMPLE: BS-7 DEPTH: 0-5'

SOIL DESCRIPTION: Brown SILTY SAND

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	102.8 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	19.8%	LOAD CELL	
TEST DATA		SURCHARGE WEIGHT	10 lb.
DRY DENSITY	98.0 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	19.7%	FINAL MOISTURE CONTENT	
PERCENT COMPACTION	95.3%	SWELL	1.24%



**CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL**

AASHTO T-193 \ ASTM D-1883

PROJECT #: G11024.00 DATE: 10/21/2011

PROJECT NAME: New Connector Road Between NC 116 and NC 107

BORING: B-3 SAMPLE: BS-8 DEPTH: 0-10'

SOIL DESCRIPTION: Brown SANDY SILT

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	109.8 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	16.4%	LOAD CELL	
TEST DATA		SURCHARGE WEIGHT	10 lb.
DRY DENSITY	105.8 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	16.1%	FINAL MOISTURE CONTENT	
PERCENT COMPACTION	96.4%	SWELL	0.58%

