SUBSURFACE EXPLORATION AND GEOTECHNICAL EVALUATION

PROJECT TIP P-5205
GRAHAM – HAW RIVER SIDING AND MAINLINE RELOCATION

ALAMANCE COUNTY, NORTH CAROLINA
F&R PROJECT NO. K66-160

Prepared For:

HDR ENGINEERING, INC.
128 S Tryon Street, Suite 1400
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Prepared By:

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August 31, 2009

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August 31, 2009

Mr. Steven M. Carroll
HDR Engineering, Inc.
128 S. Tryon Street, Suite 1400
Charlotte, NC 28202

Re: Subsurface Exploration and Geotechnical Evaluation
Project TIP: P-5205
Graham-Haw River Siding and Mainline Relocation – NCRR MP H-23.5 West of Pomeroy Street (SR 1719) Crossing to NCRR MP 25.5 at the NC 49 Underpass
Graham, North Carolina

F&R Project No. K66-160

Dear Mr. Carroll:

Froehling and Robertson, Inc. (F&R) has completed the authorized subsurface exploration and geotechnical engineering evaluation for the proposed siding and mainline relocation in Graham, NC. The work was performed in general accordance with F&R's proposal No. 0966-188G dated February 16, 2009, Revised May 6, 2009. This report contains a description of the project information provided to F&R, a discussion of the general subsurface conditions revealed during the subsurface exploration, geotechnical engineering recommendations, and construction considerations for the proposed project.

Please do not hesitate to contact us if you have any questions regarding this report or if you need additional services.

Sincerely,
FROEHLING & ROBERTSON, INC.

Elizabeth C. Howey, P.G., P.E.
Senior Geotechnical Engineer

NORTH CAROLINA PROFESSIONAL SEAL 20175 ENGINEER ELIZABETH C. HOWEY 8/31/09

Daniel K. Schaefer, P.E.
Raleigh Branch Manager

TABLE OF CONTENTS

		PAGE
1.0	PURPOSE AND SCOPE OF SERVICES	2
1.1	Purpose of Study	2
1.2	Scope of Services	2
2.0	PROPOSED PROJECT DATA	2
3.0	EXPLORATION PROCEDURES	3
3.1	Field Exploration	3
3.2	Laboratory Testing	4
4.0	SITE AND SUBSURFACE CONDITIONS	4
4.1	Site Conditions	4
4.2	Geology	5
4.3	Subsurface Conditions	5
4.4	Groundwater Conditions	8
5.0	ENGINEERING EVALUATION & RECOMMENDATIONS	8
5.1	General Development Considerations	8
5.2	Site Preparation	8
5.3	Fill Placement and Compaction	9
5.4	Fill Slopes	11
5.5	Cut Slopes	11
5.6	Rock Excavation	12
5.7	Pipes	13
5.8	Pavement Subgrade Preparation	14
5.9	Construction Quality Control	14
6.0	LIMITATIONS	15

ATTACHMENTS: NCDOT ROCK BLASTING SPECIAL PROVISION
BORELOG REPORTS, CORE BORING REPORTS, CORE PHOTOS
RAILWAY SUBSURFACE INVESTIGATION - INVENTORY

1.0 PURPOSE AND SCOPE OF SERVICES

1.1 PURPOSE OF STUDY

The purpose of the subsurface exploration and geotechnical engineering evaluation was to explore the subsurface conditions at the site and to provide geotechnical recommendations for construction of the proposed siding and mainline relocation, including recommendations regarding the depth of surficial organic soil to be wasted during clearing and grubbing operations, potential undercut areas prior to placement of fill, slope recommendations, and pavement subgrade preparation recommendations for the affected roadway sections along Pomeroy Street, West River Street, and Jeffries Street.

1.2 SCOPE OF SERVICES

F&R's scope of services included the following:

- Completion of 51 test borings along the proposed siding and mainline relocation (B-T1 to B-T54). Borings B-T12, B-T14, and B-T35 were omitted due to access issues;
- Completion of 8 test borings along the existing roadways near the track crossing at Pomeroy Street (B-R1 to B-R8);
- Geotechnical laboratory classification testing of 50 selected soil samples;
- Standard Proctor and California Bearing Ratio (CBR) testing of 3 bulk samples;
- Preparation of typed Borelog Reports, Core Boring Reports, and Subsurface Profiles;
- Performing a geotechnical engineering evaluation of the subsurface conditions with regard to their suitability for the proposed construction;
- Preparation of this geotechnical report by professional engineers.

2.0 PROPOSED PROJECT DATA

The project is located in Graham, NC and begins approximately 1800 feet west of the NCRR intersection with Pomeroy Street and extends approximately 2 miles east to terminate at the NC 49 underpass, just before the Haw River bridge. Much of the project consists of a new

siding next to the existing track except for the new location proposed from approximate -MAIN- Station 1214 to 1247. According to the cross sections provided, the relocation will involve cuts up to approximately 33 feet in depth. Widening for the siding will involve cuts in some areas up to approximately 20 to 22 feet in depth. The maximum fill heights on the project are on the order of 20 to 22 feet. Some minor roadway re-grading/re-alignment is proposed near the track crossing at Pomeroy Street and nearby West River Street and Jeffries Street.

3.0 EXPLORATION PROCEDURES

3.1 FIELD EXPLORATION

59 borings (B-T1 to B-T54 and B-R1 to B-R8) were advanced along the proposed siding, mainline relocation, and associated roadways. Borings B-T12, B-T14, and B-T35 were omitted due to access issues. The borings extended to depths of 4.8 to 40.0 feet. The borings were located in the field with the use of a Trimble GEO-XT Unit based on Northing and Easting information provided by HDR. At the completion of drilling, the Northing and Easting information for each boring was provided to the project surveyor (Mr. Greg Myrick – NCDOT Location and Surveys) for his use in obtaining a ground surface elevation at each location and providing the final Northing and Easting points. The boring locations are depicted on the Plan/Profile Views included with the attached Subsurface Investigation plans.

The test borings were advanced with a CME 55 drill rig mounted on an ATV carrier using 2.25 inch inner diameter hollow stem augers for borehole stabilization. Representative soil samples were obtained using a standard two-inch outside diameter (O.D.) split barrel sampler in general accordance with ASTM D 1586, Penetration Test and Split-Barrel Sampling of Soils (Standard Penetration Test). The number of blows required to drive the split barrel sampler three consecutive 6-inch increments with an automatic hammer is recorded and the blows of the last two 6-inch increments are added to obtain the Standard Penetration Test (SPT) N-values

representing the penetration resistance of the soil. Standard Penetration Tests were performed at frequent intervals to evaluate the consistency and general engineering properties of the subsurface soils. Representative portions of the soil samples obtained were sealed in a container, labeled and transported to our laboratory for classification by a geotechnical engineer. Borings B-T40, B-T43, B-T44, B-T46, and B-T47 were advanced with NQ3 coring equipment after auger refusal was encountered above the proposed grade elevation. The Borelog Report for each test boring is presented with the attached Subsurface Investigation plans. Core Boring Reports and core photos are provided for borings where coring was performed.

3.2 LABORATORY TESTING

Fifty representative samples of the on-site soils obtained during the field-testing program were tested in our laboratory. Tests performed included natural moisture content, Atterberg Limits, and grain size distribution. In addition, three bulk samples of the soil overburden were obtained in the cut proposed in the area of track relocation. These samples were tested to determine their Standard Proctor and California Bearing Ratio (CBR) values since it is anticipated these cut soils will be utilized as structural fill soils elsewhere on the project. The results of the soil tests performed for this study are presented with the attached Subsurface Investigation.

4.0 SITE AND SUBSURFACE CONDITIONS

4.1 SITE CONDITIONS

The project begins in the town of Graham and extends approximately 2 miles eastward toward the town of Haw River, North Carolina. The ground surface along the project corridor is generally gently rolling while overall sloping downward to the Haw River to the east. The ground surface elevation ranges from approximately 650 feet at the beginning of the project to 540 feet at the end of the project at the NC 49 underpass. The existing and proposed track

grade is approximately 1% sloping from west to east along the alignment. The existing and proposed alignments cross a number of small streams that will flow in pipes or culverts installed or extended beneath the tracks.

4.2 GEOLOGY

Geologically, the project site is located in the Carolina Slate Belt consisting of predominantly low-grade metavolcanic and metamprphosed granitic rock. The project is located in an area mapped as containing units of both metavolcanic rock (generally non-crystalline rock) and intrusive metamorphosed granitic rock (crystalline rock). Although not encountered during our investigation, a major intrusive dike is also mapped running north to south across the alignment; smaller dikes are also likely to be encountered.

4.3 SUBSURFACE CONDITIONS

Subsurface profiles have been prepared from the boring data to graphically illustrate the subsurface conditions encountered at the site. Subsurface profiles are presented in the attached Subsurface Investigation. Strata breaks designated on the Borelog Reports and Subsurface Profiles represent approximate boundaries between soil types. The actual transition from one soil type to another may be gradual and may occur between samples and boring locations. The following is a general discussion of subsurface conditions encountered within areas of proposed construction during our subsurface exploration. For more detailed soil descriptions and stratifications at a particular boring location, the respective Borelog Reports, supplied with the Subsurface Investigation, should be reviewed.

Surficial Organic Soil: Surficial organic soil was encountered in all borings advanced on a natural ground surface (i.e. away from parking lots, driveways, or roadway shoulders). The term surficial organic soil is used to describe the near-surface soils that are typically dark-colored soil materials containing roots, fibrous material, and/or other organic components. The soils are generally unsuitable for engineering purposes. Surficial organic soil was noted in the

borings to approximate depths of 0.1 to 0.5 foot, except for boring B-T21 where the surficial organic soil was noted to a depth of 1.5 feet. It is anticipated that much of the surficial organic soil will be excavated and wasted during clearing and grubbing operations. F&R has not performed any laboratory testing to determine the organic content or other horticultural properties of the observed surficial organic soil materials. The term surficial organic soil is not intended to indicate its suitability for landscaping and/or other purposes.

We note that these observations were made by the field crew during drilling operations and should be considered approximate. We also note that the transition from surficial organic soils to underlying materials may be gradual and therefore the observation of surficial organic soil depths is subjective. Actual surficial organic soil thicknesses/depths should be expected to vary or be different at other locations of the project site.

Roadway Embankment: Roadway embankment was encountered in the borings advanced next to existing West River Street, Jeffries Street, and Pomeroy Street. The roadway embankment was 1.2 to 5.0 feet in height and consisted of very loose to loose, silty fine to coarse sand (A-2-4), soft to stiff silty clay (A-7-5), and stiff, fine to coarse sandy silt (A-4).

Artificial Fill: Artificial fill was encountered in borings located near the existing track at the beginning of the project (borings B-T3, B-T4, and B-T6) as well as in borings near the end of the project in areas of dirt roads and parking areas (B-T45, B-T50, B-T51, B-T52, and B-T53). The artificial fill generally consists of medium stiff to very stiff fine to coarse sandy or silty clay (A-7-5). One boring (B-T6) encountered medium stiff fine sandy silt (A-4). The artificial fill was generally encountered to a depth of approximately 2 feet.

Residual: Residual soil was encountered in all borings advanced at the site. The borings generally encountered a near surface silty clay layer (A-7-5, A-7-6) that was generally soft to medium stiff in consistency. Less commonly, the borings encountered soft to medium stiff silt (A-4, A-5) at the ground surface. The near surface layer was generally underlain by medium

stiff to hard silt (A-4 and A-5). Layers of loose to very dense, silty fine to coarse sand (A-2-4) were encountered sporadically in our borings.

Weathered Rock (WR): Weathered rock is defined for engineering purposes as residual material that yields an SPT value of at least 100 blows per foot. Weathered rock was encountered in 31 of the 59 borings advanced along the project. The weathered rock was encountered at depths ranging from 2.5 to 34.0 feet in our borings. The weathered rock consists of metavolcanic rock and metamorphosed granitic rock.

Non-Crystalline Rock (NCR) and Crystalline Rock (CR): As mentioned previously, the project area lies in a contact between metavolcanic rock (generally non-crystalline rock, NCR) and intrusive metamorphosed granitic rock (crystalline rock, CR). Both rock types were encountered in our borings. The recovered core generally contains zones of both rock types.

Based on the NCDOT legend, rock is defined by Standard Penetration Test (SPT) Refusal (SPT N-Value of 60/0.0 or 60/0.1). Material meeting this requirement was encountered in 33 of the 59 borings advanced along the project. The NCR and CR were encountered at depths ranging from 2.8 to 26.5 feet in our borings. Auger refusal was encountered in 29 of the borings. Five of these borings (B-T40, B-T43, B-T44, B-T46, and B-T47) encountered auger refusal above the proposed grade elevation and were extended with NQ coring equipment to reach the proposed grade and further identify the character of the rock. The recovered core exhibited recoveries (REC) of 67% to 100%. The recovery was generally over 90%; the final run in B-T46 left some core in the boring, which reduced its recovery value. The Rock Quality Designation (RQD) ranged from 30% to 100%. The rock is generally fresh to very slightly weathered. The Core Boring Reports and core photos are attached.

4.4 GROUNDWATER CONDITIONS

Groundwater was encountered at depths ranging from 2.1 to 37.0 feet immediately after drilling. Stabilized 24 hour groundwater levels were measured at depths of 0.5 to 23.5 feet. The stabilized groundwater levels were measured within approximately 6 feet of the proposed top of rail elevation at the following approximate -MAIN- Stations: 1173 to 1177, 1125+50, 1231, 1239 to 1244. Groundwater may be encountered in the proposed ditch excavations at these locations. We note that groundwater elevations tend to fluctuate with seasonal and climatic variations. Therefore, the elevation of the groundwater table may be different at other times of the year and from the elevations presented in this report.

BORELOG REPORTS, CORE BORING REPORTS,

CORE PHOTOS

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-R1	**STATION** 12+63	**OFFSET** 11ft LT	**ALIGNMENT** -Y-	**0 HR.** 14.5
COLLAR ELEV. 634.2 ft	**TOTAL DEPTH** 15.0 ft	**NORTHING** 848,466	**EASTING** 1,881,535	**24 HR.** 10.0
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic	
START DATE 06/29/09	**COMP. DATE** 06/29/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
635	634.2	0.0								634.2 GROUND SURFACE 0.0
	632.2	2.0	2	3	4	7		M		**ROADWAY EMBANKMENT**
	630.7	3.5	3	2	3	5		M		632.2 Red, brown & tan, silty CLAY (A-7-5), with gravel. 2.0
630			2	3	4	7	SS-265	26%		**RESIDUAL** Red-brown & tan to orange, fine sandy CLAY (A-7-5(16)), with trace silt.
625	625.7	8.5	2	3	3	6				
	622.2	12.0								622.2 Tan, tan-orange & gray, fine sandy clayey SILT (A-5). 12.0
620	620.7	13.5	2	2	3	5		W		619.2 Boring Terminated at Elevation 619.2 ft in RESIDUAL (SILT) 15.0
615										
610										NOTES:
605										1) 0.0-0.2' Surficial Organic Soils
600										
595										
590										
585										
580										
575										
570										
565										
560										
555										

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NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-R2	**STATION** 14+27	**OFFSET** 6ft RT	**ALIGNMENT** -Y-	**0 HR.** Dry
COLLAR ELEV. 633.7 ft	**TOTAL DEPTH** 15.0 ft	**NORTHING** 848,417	**EASTING** 1,881,693	**24 HR.** 8.0
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/29/09	**COMP. DATE** 06/29/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
635										
	633.7	0.0								633.7 GROUND SURFACE 0.0
	631.7	2.0	3	4	5	9		D		632.5 **ROADWAY EMBANKMENT** 1.2
630	630.2	3.5	6	8	12	20		M		Tan & brown, silty fine SAND (A-2-4), with gravel.
			6	8	13	21	SS-260	12%		**RESIDUAL**
625	625.2	8.5								Tan, gray & white, fine to coarse sandy SILT (A-4(0)), with trace clay, saprolitic.
			8	12	22	34		M		
620	620.2	13.5								
			16	25	37	62		M		618.7 15.0
615										Boring Terminated at Elevation 618.7 ft in RESIDUAL (SILT)
610										NOTES: 1) 0.0-0.3' Surficial Organic Soils 2) Geologist indicates strata break in split spoon at a depth of 1.2'.
605										
600										
595										
590										
585										
580										
575										
570										
565										
560										
555										

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NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance		**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation				**GROUND WTR (ft)**
BORING NO. B-R3	**STATION** 16+37	**OFFSET** 63ft RT	**ALIGNMENT** -Y-	**0 HR.** Dry
COLLAR ELEV. 629.8 ft	**TOTAL DEPTH** 15.0 ft	**NORTHING** 848,346	**EASTING** 1,881,904	**24 HR.** 7.8
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA			**HAMMER TYPE** Automatic
START DATE 06/26/09	**COMP. DATE** 06/26/09	**SURFACE WATER DEPTH** N/A		**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
630										ELEV. (ft) 629.8 GROUND SURFACE DEPTH (ft) 0.0
	629.8	0.0	5	8	5	13		M		**ROADWAY EMBANKMENT**
	627.8	2.0								627.8 Gray & brown, clayey fine to coarse sandy SILT (A-4), with gravel. 2.0
	626.3	3.5	9	7	6	13	SS-240	23%		**RESIDUAL**
625			4	5	6	11		M		Tan, gray & white, fine to coarse sandy SILT (A-4(0)), saprolitic.
	621.3	8.5								
620			11	15	18	33		M		
	616.3	13.5								
615			7	9	12	21		M		614.8 15.0
										Boring Terminated at Elevation 614.8 ft in RESIDUAL (SILT)
610										
605										NOTES:
600										1) Boring located on shoulder of River St.
595										
590										
585										
580										
575										
570										
565										
560										
555										
550										

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NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-R4	**STATION** 17+26	**OFFSET** 5ft RT	**ALIGNMENT** -Y-	**0 HR.** Dry
COLLAR ELEV. 636.6 ft	**TOTAL DEPTH** 20.0 ft	**NORTHING** 848,407	**EASTING** 1,881,993	**24 HR.** 14.0
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/26/09	**COMP. DATE** 06/26/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
640										
	636.6	0.0								636.6 GROUND SURFACE 0.0
635			2	3	4	7	SS-225	25%		**RESIDUAL**
	633.1	3.5								634.6 Tan, gray & red, silty fine sandy CLAY (A-7-6(37)), with roots, trace gravel (washed from driveway). 2.0
			8	9	12	21		D		Tan & brown, fine sandy SILT (A-4).
630	630.1	6.5								
			7	9	12	21		D		
	628.1	8.5								
			7	11	14	25		M		
625										
	623.1	13.5								
			5	6	9	15		M		
620										
	618.1	18.5								
			10	11	14	25		M		616.6 20.0
615										Boring Terminated at Elevation 616.6 ft in RESIDUAL (SILT)
610										NOTES:
										1) 0.0-0.4' Surficial Organic Soils
605										
600										
595										
590										
585										
580										
575										
570										
565										
560										

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NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-R5	**STATION** 18+80	**OFFSET** 3ft RT	**ALIGNMENT** -Y-	**0 HR.** Dry
COLLAR ELEV. 628.8 ft	**TOTAL DEPTH** 15.0 ft	**NORTHING** 848,426	**EASTING** 1,882,146	**24 HR.** 14.0
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/25/09	**COMP. DATE** 06/25/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
630										
	628.8	0.0								628.8 GROUND SURFACE 0.0
			2	3	4	7	SS-212	19%		**RESIDUAL**
	626.8	2.0								626.8 Tan, gray & red, fine to coarse sandy CLAY (A-7-6(18)), with some silt, trace roots. 2.0
625	625.3	3.5	4	9	21	30		D/M		625.3 Tan & gray, clayey SILT (A-5). 3.5
			14	20	29	49		M		Tan, gray, red & brown, fine sandy SILT (A-4), saprolitic.
620	620.3	8.5								
			24	30	30	60		M		
615	615.3	13.5								
			24	35	41	76		M		613.8 15.0
610										Boring Terminated at Elevation 613.8 ft in RESIDUAL (SILT)
605										NOTES: 1) 0.0-0.3' Surficial Organic Soils
600										
595										
590										
585										
580										
575										
570										
565										
560										
555										
550										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-R6	**STATION** 19+82	**OFFSET** 6ft RT	**ALIGNMENT** -Y-	**0 HR.** Dry
COLLAR ELEV. 625.7 ft	**TOTAL DEPTH** 15.0 ft	**NORTHING** 848,459	**EASTING** 1,882,243	**24 HR.** 9.3
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/25/09	**COMP. DATE** 06/25/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
630											
625	625.7	0.0								625.7 GROUND SURFACE	0.0
	623.7	2.0	2	2	3	5		M		**RESIDUAL**	
	622.2	3.5	4	6	7	13	SS-201	17%		623.4 Gray & tan, clayey fine to coarse sandy SILT (A-4), with roots.	2.3
620			8	9	15	24		M		Tan & tan-orange, fine to coarse sandy CLAY (A-7-6(28)), with little silt, some quartz fragments.	
	617.2	8.5								618.7	7.0
615			5	7	9	16		M		Tan, tan-orange & gray, fine sandy SILT (A-4), saprolitic.	
	612.2	13.5									
610			25	27	49	76		M		610.7	15.0
605										Boring Terminated at Elevation 610.7 ft in RESIDUAL (SILT)	
600										NOTES:	
595										1) 0.0-0.4' Surficial Organic Soils 2) Geologist indicates strata break in split spoon at a depth of 2.3'. 3) Driller indicates harder drilling at a depth of 12.5'.	
590											
585											
580											
575											
570											
565											
560											
555											
550											

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-R7	**STATION** 15+10	**OFFSET** 16ft LT	**ALIGNMENT** -L-	**0 HR.** 9.6
COLLAR ELEV. 637.1 ft	**TOTAL DEPTH** 20.0 ft	**NORTHING** 848,494	**EASTING** 1,881,756	**24 HR.** 8.7
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/30/09	**COMP. DATE** 06/30/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
640										
	637.1	0.0								637.1 GROUND SURFACE 0.0
635	635.1	2.0	3	6	5	11		D		**ROADWAY EMBANKMENT** 635.1 Brown, silty fine to coarse SAND (A-2-4), with gravel & roots. 2.0
	633.6	3.5	2	2	2	4		M		
			2	2	1	3		W		632.1 Red & black, silty fine to coarse SAND (A-2-4), with gravel, roots & glass fragments. 5.0
630										
	628.6	8.5								**RESIDUAL**
			1	1	2	3	SS-294	58%		Tan & red, clayey SILT (A-5(16)), with trace fine to coarse sand, saprolitic.
625										
	623.6	13.5	2	1	3	4		W		
620										
	618.6	18.5								
			2	2	3	5		W		617.1 20.0
615										Boring Terminated at Elevation 617.1 ft in RESIDUAL (SILT)
610										NOTES:
										1) 0.0-0.5' Surficial Organic Soils
605										
600										
595										
590										
585										
580										
575										
570										
565										
560										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-R8	**STATION** 12+67	**OFFSET** 24ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 631.1 ft	**TOTAL DEPTH** 15.0 ft	**NORTHING** 848,249	**EASTING** 1,881,789	**24 HR.** 13.9
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/29/09	**COMP. DATE** 06/29/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
635										
	631.1	0.0								631.1 GROUND SURFACE 0.0
630	630.3	0.8	8	6	5	11		M		630.3 GRAVEL 0.8
	629.1	2.0	7	12	26	38		D		629.1 **ROADWAY EMBANKMENT** 2.0
	627.6	3.5	13	14	15	29	SS-246	15%		Tan & gray, fine sandy silty CLAY (A-7-5), with gravel.
625										**RESIDUAL**
	622.6	8.5	14	9	12	21		M		Tan, tan-orange, gray & brown, fine to coarse sandy SILT (A-4(5)), with little clay, saprolitic.
620										
	617.6	13.5	6	6	6	12		M		616.1 15.0
615										Boring Terminated at Elevation 616.1 ft in RESIDUAL (SILT)
610										NOTES:
										1) Boring located in gravel "turnout".
605										
600										
595										
590										
585										
580										
575										
570										
565										
560										
555										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T1	**STATION** 1144+87	**OFFSET** 68ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 20.5
COLLAR ELEV. 628.9 ft	**TOTAL DEPTH** 30.0 ft	**NORTHING** 848,577	**EASTING** 1,880,615	**24 HR.** 2.4
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/30/09	**COMP. DATE** 06/30/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
630	628.9	0.0								628.9 GROUND SURFACE 0.0
			2	2	3	5		D		**RESIDUAL**
										626.9 Tan & gray, silty CLAY (A-7-5), with roots. 2.0
625	625.4	3.5	5	6	7	13	SS-312	20%		Tan, tan-orange & gray, silty fine to coarse sandy CLAY (A-6(7)), with quartz fragments.
										621.9 7.0
620	620.4	8.5	4	7	9	16	SS-313	16%		Tan, brown & red, fine to coarse sandy SILT (A-4(0)), with trace clay.
615	615.4	13.5								
			8	14	17	31		M		
610	610.4	18.5								610.4 18.5
			35	65/0.4'		100/0.9'		M		**WEATHERED ROCK**
										Tan, gray & brown, METAMORPHOSED GRANITIC ROCK.
605	605.4	23.5	100/0.4'					W		605.0 23.9
						100/0.4'				**RESIDUAL**
										Tan, gray & brown, silty fine to coarse SAND (A-2-4).
600	600.4	28.5	17	30	58	88		W		598.9 30.0
										Boring Terminated at Elevation 598.9 ft in RESIDUAL (SAND)
595										
590										NOTES:
585										1) 0.0-0.5' Surficial Organic Soils
580										
575										
570										
565										
560										
555										
550										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T2	**STATION** 1146+55	**OFFSET** 78ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 8.6
COLLAR ELEV. 629.2 ft	**TOTAL DEPTH** 30.0 ft	**NORTHING** 848,503	**EASTING** 1,880,768	**24 HR.** 5.2
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/30/09	**COMP. DATE** 06/30/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
630	629.2	0.0								629.2 GROUND SURFACE 0.0
			1	2	2	4		D		**RESIDUAL**
	625.7	3.5								627.2 Red-brown, clayey fine sandy SILT (A-4), with roots. 2.0
625			4	8	13	21	SS-305	21%		Gray & tan, CLAY (A-7-6(19)), with some fine to coarse sand & silt.
	620.7	8.5						▽		
620			3	3	6	9		M		619.7 9.5
										Gray & red, slightly clayey silty fine SAND (A-2-4).
	615.7	13.5								617.2 12.0
615			3	4	5	9		M/W		Tan-orange, white & gray, fine sandy SILT (A-4).
	610.7	18.5								
610			3	4	4	8		M/W		
	605.7	23.5								
605			3	5	7	12		M/W		
	600.7	28.5								
600			2	3	5	8		W		599.2 30.0
										Boring Terminated at Elevation 599.2 ft in RESIDUAL (SILT)
595										
590										NOTES:
										1) 0.0-0.2' Surficial Organic Soils
585										2) Geologist indicates strata break in split spoon at a depth of 9.5'.
580										
575										
570										
565										
560										
555										
550										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance		**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation				**GROUND WTR (ft)**
BORING NO. B-T3	**STATION** 1148+70	**OFFSET** 45ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 26.5
COLLAR ELEV. 633.4 ft	**TOTAL DEPTH** 30.0 ft	**NORTHING** 848,458	**EASTING** 1,880,984	**24 HR.** 10.7
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA			**HAMMER TYPE** Automatic
START DATE 06/30/09	**COMP. DATE** 06/30/09	**SURFACE WATER DEPTH** N/A		**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
635										
	633.4	0.0								633.4 GROUND SURFACE 0.0
			7	8	8	16		D		**ARTIFICIAL FILL**
630	629.9	3.5								631.4 Red & black, fine to coarse sandy CLAY (A-7-5), with gravel & roots. 2.0
			7	10	18	28		D		**RESIDUAL** Tan, red & gray, silty CLAY (A-7-5).
625	624.9	8.5								626.4 7.0
			3	4	6	10				Tan, red, gray & brown, fine to coarse sandy SILT (A-4(0)), with little clay, saprolitic.
620	619.9	13.5								
			1	2	3	5	SS-300	34%		
615	614.9	18.5								
			2	2	4	6		W		
610	609.9	23.5								
			2	4	5	9		W		
605	604.9	28.5								
			5	8	6	14		W		603.4 30.0
600										Boring Terminated at Elevation 603.4 ft in RESIDUAL (SILT)
595										NOTES: 1) 0.0-0.1' Surficial Organic Soils
590										
585										
580										
575										
570										
565										
560										
555										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T4	**STATION** 1150+73	**OFFSET** 2ft LT	**ALIGNMENT** -MAIN-	**0 HR.** 18.0
COLLAR ELEV. 639.8 ft	**TOTAL DEPTH** 30.0 ft	**NORTHING** 848,444	**EASTING** 1,881,194	**24 HR.** 14.0
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/29/09	**COMP. DATE** 06/29/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
640	639.8	0.0	2	3	2	5		D		639.8 GROUND SURFACE 0.0
										ARTIFICIAL FILL
	636.3	3.5	5	9	14	23		M		637.8 Black & red, fine sandy silty CLAY (A-7-5), with gravel. 2.0
635	633.3	6.5	7	10	13	23		M		**RESIDUAL**
	631.3	8.5	5	6	9	15		M		Red & tan, fine sandy silty CLAY (A-7-5).
630										
	626.3	13.5	3	3	4	7	SS-287	47%		627.8 12.0
625										Tan, tan-orange & gray, clayey SILT (A-5(10)), with some fine to coarse sand.
	621.3	18.5	2	1	3	4		W		
620										
	616.3	23.5	1	2	3	5		W		
615										
	611.3	28.5	2	3	5	8		W		609.8 30.0
610										Boring Terminated at Elevation 609.8 ft in RESIDUAL (SILT)
605										
600										NOTES:
595										1) 0.0-0.2' Surficial Organic Soils
590										
585										
580										
575										
570										
565										
560										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T5	**STATION** 1152+56	**OFFSET** 12ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 18.7
COLLAR ELEV. 634.8 ft	**TOTAL DEPTH** 29.1 ft	**NORTHING** 848,389	**EASTING** 1,881,369	**24 HR.** 11.0
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/29/09	**COMP. DATE** 06/29/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
635										634.8 GROUND SURFACE 0.0
	634.8	0.0	3	2	3	5		M		**RESIDUAL** Tan, gray & red, CLAY (A-7-6(14)), with some fine to coarse sand & silt, roots in upper 1.5'.
	631.3	3.5								
630			5	10	15	25		M		
	626.3	8.5								
625			4	5	7	12	SS-278	23%		
										622.8 12.0
	621.3	13.5								Tan, tan-orange & white, fine sandy clayey SILT (A-5).
620			2	3	4	7		M		
										617.8 17.0
	616.3	18.5								Tan, fine sandy SILT (A-4).
615			5	6	7	13		M		
	611.3	23.5								
610			6	8	16	24		M		
	606.3	28.5								606.3 28.5
605			75	25/0.1'		100/0.6'		M		605.7 29.1 **WEATHERED ROCK** Tan, brown & gray, METAMORPHOSED GRANITIC ROCK. Boring Terminated at Elevation 605.7 ft in WEATHERED ROCK (METAMORPHOSED GRANITIC ROCK)
600										
595										NOTES: 1) 0.0-0.5' Surficial Organic Soils
590										
585										
580										
575										
570										
565										
560										
555										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T6	**STATION** 1154+61	**OFFSET** 8ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 27.4
COLLAR ELEV. 632.4 ft	**TOTAL DEPTH** 30.0 ft	**NORTHING** 848,359	**EASTING** 1,881,572	**24 HR.** 13.7
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/29/09	**COMP. DATE** 06/29/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
635										
	632.4	0.0								632.4 GROUND SURFACE 0.0
630			2	3	4	7		M		**ARTIFICIAL FILL**
	628.9	3.5								630.4 Tan & red, clayey fine sandy SILT (A-4), with gravel & brick fragments. 2.0
			3	5	7	12		M		**RESIDUAL**
	625.9	6.5								Tan & gray, silty CLAY (A-7-5).
625			5	9	12	21		M		
	623.9	8.5								624.4 8.0
			4	7	10	17		M		Tan, tan-orange & gray, clayey SILT (A-5).
620										
	618.9	13.5								
			5	7	11	18		M		
615										
	613.9	18.5								
			6	7	10	17		M		
610										610.4 22.0
	608.9	23.5								Tan, tan-orange & gray, silty fine SAND (A-2-4), saprolitic.
			11	21	42	63		M		
605										
	603.9	28.5								
			4	12	28	40		M		602.4 30.0
600										Boring Terminated at Elevation 602.4 ft in RESIDUAL (SAND)
595										NOTES:
										1) 0.0-0.3' Surficial Organic Soils
590										
585										
580										
575										
570										
565										
560										
555										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T7	**STATION** 1156+00	**OFFSET** 13ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 25.5
COLLAR ELEV. 635.1 ft	**TOTAL DEPTH** 34.8 ft	**NORTHING** 848,340	**EASTING** 1,881,710	**24 HR.** 14.0
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/29/09	**COMP. DATE** 06/29/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
640										
635	635.1	0.0								635.1 GROUND SURFACE 0.0
			3	7	5	12		D		**RESIDUAL**
	631.6	3.5								633.1 Tan & gray, clayey silty fine SAND (A-2-4), with roots. 2.0
630			5	7	11	18		M		Tan, tan-orange & gray, clayey SILT (A-5), with quartz fragments.
	628.6	6.5								
			5	4	8	12		M		
	626.6	8.5								
625			4	6	9	15		M		
										623.1 12.0
	621.6	13.5								Tan, gray & white, fine to coarse sandy SILT (A-4(0)), with trace to little clay, saprolitic.
620			7	9	12	21	SS-253	19%		
	616.6	18.5								
615			9	12	20	32		M		
	611.6	23.5								
610			23	27	33	60		M		
										607.1 28.0
	606.6	28.5								Tan, gray & white, silty fine SAND (A-2-4), with mica.
605			19	43	40	83		M		
	601.6	33.5								601.1 34.0
600			15	37	63/0.3'	100/0.8'		W		600.3 **WEATHERED ROCK** 34.8
										Tan, gray & white, METAMORPHOSED GRANITIC ROCK.
										Boring Terminated at Elevation 600.3 ft in WEATHERED ROCK (METAMORPHOSED GRANITIC ROCK)
595										
590										NOTES:
										1) 0.0-0.1' Surficial Organic Soils
585										2) Driller indicates harder drilling at depths of 23.0' & 28.0'.
580										
575										
570										
565										
560										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance		**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation				**GROUND WTR (ft)**
BORING NO. B-T8	**STATION** 1158+66	**OFFSET** 25ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 12.1
COLLAR ELEV. 628.6 ft	**TOTAL DEPTH** 29.8 ft	**NORTHING** 848,316	**EASTING** 1,881,977	**24 HR.** 8.2
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA			**HAMMER TYPE** Automatic
START DATE 06/26/09	**COMP. DATE** 06/26/09	**SURFACE WATER DEPTH** N/A		**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
630										ELEV. (ft) DEPTH (ft)
	628.6	0.0								628.6 GROUND SURFACE 0.0
	626.6	2.0	4	6	6	12		D		**ROADWAY EMBANKMENT** 626.6 Gray & brown, clayey fine to coarse sandy SILT (A-4), with gravel. 2.0
625	625.1	3.5	5	9	12	21		M		**RESIDUAL** Tan with black, fine sandy SILT (A-4).
			7	8	11	19		M		
620	620.1	8.5								
			11	14	22	36		M		617.1 11.5
615	615.1	13.5								**WEATHERED ROCK** Tan, green-gray & white, METAVOLCANIC ROCK.
			21	44	56/0.3'	100/0.8'		D		
610	610.1	18.5								
			20	37	63/0.4'	100/0.9'		D		608.7 19.9
605	605.1	23.5								**RESIDUAL** Tan, green-gray & white, fine sandy SILT (A-4), saprolitic.
			18	34	62	96		D		
600	600.1	28.5								599.6 29.0
			22	37	63/0.3'	100/0.8'		M		598.8 29.8 **WEATHERED ROCK** Brown, red & gray, METAVOLCANIC ROCK.
595										Boring Terminated at Elevation 598.8 ft in WEATHERED ROCK (METAVOLCANIC ROCK)
590										
585										NOTES: 1) Boring located on shoulder of River St. 2) Driller indicates harder drilling at a depth of 11.5'.
580										
575										
570										
565										
560										
555										
550										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey	
SITE DESCRIPTION Haw River Siding & Mainline Relocation				**GROUND WTR (ft)**
BORING NO. B-T9	**STATION** 1160+57	**OFFSET** 18ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 11.0
COLLAR ELEV. 625.2 ft	**TOTAL DEPTH** 30.0 ft	**NORTHING** 848,331	**EASTING** 1,882,169	**24 HR.** 10.7
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic	
START DATE 06/26/09	**COMP. DATE** 06/26/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
630										
625	625.2	0.0								625.2 GROUND SURFACE 0.0
	623.2	2.0	6	7	7	14		M		**ROADWAY EMBANKMENT** Red, gray & brown, silty fine to coarse sandy CLAY (A-7-5), with gravel.
	621.7	3.5	2	2	1	3		M		621.2 4.0
620			7	3	4	7		M		**RESIDUAL** Tan, tan-orange, brown & white, fine sandy SILT (A-4).
	616.7	8.5								
615			8	11	18	29				
	611.7	13.5								611.2 14.0
610			10	11	12	23		M		Tan, gray, white & red, silty fine SAND (A-2-4), with rock fragments.
	606.7	18.5								
605			14	23	27	50		M		
	601.7	23.5								
600			7	11	17	28		M		
	596.7	28.5								
595			11	27	39	66		M/W		595.2 30.0
										Boring Terminated at Elevation 595.2 ft in RESIDUAL (SAND)
590										
585										NOTES: 1) Boring located on shoulder of River St. 2) Geologist indicates strata breaks in split spoon at depths of 4.0' & 14.0'.
580										
575										
570										
565										
560										
555										
550										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T10	**STATION** 1162+76	**OFFSET** 52ft LT	**ALIGNMENT** -MAIN-	**0 HR.** 22.5
COLLAR ELEV. 626.7 ft	**TOTAL DEPTH** 30.0 ft	**NORTHING** 848,422	**EASTING** 1,882,379	**24 HR.** 10.9
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/25/09	**COMP. DATE** 06/25/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
630										
	626.7	0.0								626.7 GROUND SURFACE 0.0
625			2	2	3	5		M		**RESIDUAL**
	623.2	3.5								624.7 Tan, fine sandy CLAY (A-7-5), with roots. 2.0
			3	3	5	8	SS-206	27%		Tan, tan-orange & white, fine to coarse sandy clayey SILT (A-5(5)).
620	618.2	8.5								
			3	2	4	6		M		
615										614.7 12.0
	613.2	13.5								Tan, gray & brown, fine sandy SILT (A-4).
			2	3	5	8		M		
610	608.2	18.5								
			3	4	5	9		M/W		
605	603.2	23.5								
			3	4	7	11		M		
600										599.7 27.0
	598.2	28.5								Tan, gray & brown, silty fine SAND (A-2-4), saprolitic.
			15	18	21	39		M		596.7 30.0
595										Boring Terminated at Elevation 596.7 ft in RESIDUAL (SAND)
590										NOTES:
										1) 0.0-0.3' Surficial Organic Soils
585										2) Driller indicates harder drilling at a depth of 27.0'.
580										
575										
570										
565										
560										
555										
550										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T11	**STATION** 1164+66	**OFFSET** 44ft LT	**ALIGNMENT** -MAIN-	**0 HR.** 20.4
COLLAR ELEV. 634.2 ft	**TOTAL DEPTH** 35.0 ft	**NORTHING** 848,446	**EASTING** 1,882,565	**24 HR.** 18.3
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/25/09	**COMP. DATE** 06/25/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
635											
	634.2	0.0								634.2 GROUND SURFACE	0.0
			2	3	3	6		M		**RESIDUAL**	
										632.2 Tan, fine sandy SILT (A-4), with roots, some clay.	2.0
630	630.7	3.5	5	8	12	20		M		Red & tan, silty CLAY (A-7-5), with roots.	
										628.2	6.0
625	625.7	8.5	3	4	4	8	SS-194	45%		Red, tan & black, clayey SILT (A-5(16)), with trace fine sand.	
620	620.7	13.5	3	3	4	7		M			
615	615.7	18.5	2	3	4	7					
										612.2	22.0
610	610.7	23.5	3	4	6	10		M/W		Tan & gray, silty fine SAND (A-2-4), saprolitic.	
605	605.7	28.5	7	11	17	28		M			
										602.2	32.0
600	600.7	33.5	2	5	7	12		M		Tan & black, fine sandy clayey SILT (A-5), with mica & a 1" thick quartz fragment layer.	
										599.2	35.0
										Boring Terminated at Elevation 599.2 ft in RESIDUAL (SILT)	
595											
590										NOTES:	
585										1) 0.0-0.4' Surficial Organic Soils	
580											
575											
570											
565											
560											
555											

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T13	**STATION** 1168+08	**OFFSET** 67ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 25.0
COLLAR ELEV. 635.1 ft	**TOTAL DEPTH** 40.0 ft	**NORTHING** 848,412	**EASTING** 1,882,922	**24 HR.** 23.6
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/25/09	**COMP. DATE** 06/25/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
640										
635	635.1	0.0								635.1 GROUND SURFACE 0.0
			1	3	3	6		M		**RESIDUAL**
	631.6	3.5								633.1 Red, silty CLAY (A-7-5), with trace roots. 2.0
630			4	5	7	12	SS-184	34%		Red & tan, clayey SILT (A-5(3)), with some fine to coarse sand.
	626.6	8.5								
625			4	4	3	7		M		
	621.6	13.5								623.1 12.0
620			2	3	4	7		M		Tan, fine sandy SILT (A-4).
	616.6	18.5								
615			3	5	6	11		M		
	611.6	23.5								613.1 22.0
610			3	3	6	9				Tan, tan-orange & white, fine sandy clayey SILT (A-5).
	606.6	28.5								608.1 27.0
605			4	6	11	17		M		Tan, silty fine SAND (A-2-4), with rock fragments.
	601.6	33.5								603.1 32.0
600			4	6	9	15		M		Tan, gray & white, fine sandy clayey SILT (A-5).
	596.6	38.5								
595			7	10	21	31		M/W		595.1 40.0
										Boring Terminated at Elevation 595.1 ft in RESIDUAL (SILT)
590										
585										
580										
575										
570										
565										
560										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T15	**STATION** 1173+28	**OFFSET** 50ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 10.8
COLLAR ELEV. 618.2 ft	**TOTAL DEPTH** 30.0 ft	**NORTHING** 848,546	**EASTING** 1,883,425	**24 HR.** 8.6
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/24/09	**COMP. DATE** 06/24/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
620	618.2	0.0								618.2 GROUND SURFACE 0.0
615	614.7	3.5	2	3	4	7		D		**RESIDUAL** Tan, red, gray & black, fine sandy SILT (A-4), with roots.
610	609.7	8.5	5	6	7	13		D		611.2 7.0 Tan, gray & red, silty CLAY (A-7-5(13)).
605	604.7	13.5	2	3	3	6	SS-171	37%		606.2 12.0 Gray, tan & white, highly silty fine SAND (A-2-4), saprolitic.
600	599.7	18.5	3	4	5	9		W		601.2 17.0 Tan, brown & white, fine sandy SILT (A-4), saprolitic.
595	594.7	23.5	2	4	4	8		W		
590	589.7	28.5	3	6	9	15		M/W		
585			4	7	11	18		M		588.2 30.0 Boring Terminated at Elevation 588.2 ft in RESIDUAL (SILT)
580										NOTES: 1) 0.0-0.2' Surficial Organic Soils
575										
570										
565										
560										
555										
550										
545										
540										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance		**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation				**GROUND WTR (ft)**
BORING NO. B-T16	**STATION** 1174+45	**OFFSET** 52ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 8.8
COLLAR ELEV. 615.9 ft	**TOTAL DEPTH** 30.0 ft	**NORTHING** 848,571	**EASTING** 1,883,540	**24 HR.** 8.0
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA			**HAMMER TYPE** Automatic
START DATE 06/24/09	**COMP. DATE** 06/24/09	**SURFACE WATER DEPTH** N/A		**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
620											
615	615.9	0.0	1	2	3	5		M		615.9 GROUND SURFACE	0.0
										RESIDUAL	
	612.4	3.5								613.9 Tan, red & gray, fine sandy SILT (A-4), with roots & rock fragments.	2.0
610			3	4	7	11	SS-177	20%		Tan, gray & white, fine to coarse sandy silty CLAY (A-7-5(7)).	
	607.4	8.5								608.9	7.0
			3	4	8	12		M		Tan & brown, fine sandy SILT (A-4), saprolitic.	
605										603.9	12.0
	602.4	13.5								Brown, orange & red, highly silty fine SAND (A-2-4), saprolitic.	
600			5	6	10	16		M			
	597.4	18.5								598.9	17.0
			4	6	10	16				Brown, orange & red, fine sandy SILT (A-4), saprolitic.	
595								M			
	592.4	23.5									
			9	8	14	22					
590								M			
										588.9	27.0
	587.4	28.5								Tan, orange & white, silty fine SAND (A-2-4), saprolitic.	
			7	9	12	21		M		585.9	30.0
585										Boring Terminated at Elevation 585.9 ft in RESIDUAL (SAND)	
580										NOTES:	
										1) 0.0-0.3' Surficial Organic Soils	
575											
570											
565											
560											
555											
550											
545											
540											

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T17	**STATION** 1176+57	**OFFSET** 54ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 20.9
COLLAR ELEV. 614.9 ft	**TOTAL DEPTH** 28.5 ft	**NORTHING** 848,616	**EASTING** 1,883,746	**24 HR.** 10.1
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/24/09	**COMP. DATE** 06/24/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 26.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
615	614.9	0.0	2	2	4	6	SS-162	25%		614.9 GROUND SURFACE 0.0
										RESIDUAL
	612.9	2.0								Tan, silty CLAY (A-7-5(19)), with roots, little fine to coarse sand.
610	611.4	3.5	11	13	12	25		M		Tan, orange, gray & brown, fine sandy SILT (A-4), saprolitic.
	606.4	8.5								
605			9	8	12	20				
	601.4	13.5								
600			9	13	16	29		D/M		
	596.4	18.5								
595			8	11	19	30		D/M		
	591.4	23.5								
590			10	83	17/0.1'	100/0.6'		D		590.9 24.0
										WEATHERED ROCK
										588.4 Tan, red & black, METAVOLCANIC ROCK. 26.5
										NON-CRYSTALLINE ROCK
	586.4	28.5								586.4 Brown, METAVOLCANIC ROCK. 28.5
585			60/0.0'			60/0.0'		D		Boring Terminated with Standard Penetration Test Refusal at Elevation 586.4 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
580										
575										NOTES:
570										1) 0.0-0.3' Surficial Organic Soils 2) Driller indicates harder drilling at a depth of 26.5'.
565										
560										
555										
550										
545										
540										
535										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T18	**STATION** 1178+14	**OFFSET** 52ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 24.0
COLLAR ELEV. 604.1 ft	**TOTAL DEPTH** 28.8 ft	**NORTHING** 848,654	**EASTING** 1,883,898	**24 HR.** 2.8
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/23/09	**COMP. DATE** 06/23/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 17.6 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
605										ELEV. (ft) / DEPTH (ft)
	604.1	0.0	1	2	2	4		M		604.1 / 0.0 GROUND SURFACE
										RESIDUAL
	602.1	2.0								Orange, tan & gray, fine to coarse sandy CLAY (A-7-5), with rounded rock fragments, trace roots.
600	600.6	3.5	8	10	15	25	SS-156	19%		Tan, gray & brown, fine to coarse sandy CLAY (A-6(6)), with some silt, saprolitic.
	597.1	7.0								Brown & gray, fine sandy SILT (A-4).
595	595.6	8.5	20	25	22	47		D		
	592.6	11.5								**WEATHERED ROCK**
590	590.6	13.5	40	60/0.2'		100/0.7'		D		Tan, METAVOLCANIC ROCK.
	586.5	17.6								
585	585.6	18.5	60/0.1'			60/0.1'		D		585.5 / 18.6 **NON-CRYSTALLINE ROCK** Tan & gray, METAVOLCANIC ROCK. **WEATHERED ROCK** Tan & gray, METAVOLCANIC ROCK.
580	580.6	23.5	100/0.4'			100/0.4'		W		
575	575.6	28.5	100/0.3'			100/0.3'		M		575.3 / 28.8 Boring Terminated at Elevation 575.3 ft in WEATHERED ROCK (METAVOLCANIC ROCK)
570										
565										NOTES: 1) 0.0-0.3' Surficial Organic Soils 2) Driller indicates harder drilling at depths of 7.0', 11.5' & 17.6'.
560										
555										
550										
545										
540										
535										
530										
525										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T19	**STATION** 1180+43	**OFFSET** 43ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 13.6
COLLAR ELEV. 598.9 ft	**TOTAL DEPTH** 16.4 ft	**NORTHING** 848,715	**EASTING** 1,884,120	**24 HR.** 2.9
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/23/09	**COMP. DATE** 06/23/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 16.0 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
600										
	598.9	0.0								598.9 GROUND SURFACE 0.0
			1	1	2	3		M		**RESIDUAL**
										596.9 Tan & orange, fine to coarse sandy CLAY (A-7-5). 2.0
595	595.4	3.5	5	7	10	17	SS-152	17%		Tan & gray, fine to coarse sandy CLAY (A-6(13)), with little silt.
										591.9 7.0
590	590.4	8.5	18	15	41	56		M		Tan, brown & gray, fine sandy SILT (A-4), saprolitic.
										584.9 14.0
585	585.4	13.5	12	42	58/0.1'	100/0.6'				**WEATHERED ROCK**
	582.5	16.4	60/0.0'			60/0.0'				582.9 Brown & gray, METAVOLCANIC ROCK. 16.0
										582.5 **NON-CRYSTALLINE ROCK** 16.4
580										METAVOLCANIC ROCK.
										Boring Terminated with Standard Penetration Test Refusal at Elevation 582.5 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
575										
570										NOTES:
										1) 0.0-0.3' Surficial Organic Soils
										2) Driller indicates harder drilling at depths of 10.5' & 16.0'.
565										3) Auger refusal at a depth of 16.4'.
560										
555										
550										
545										
540										
535										
530										
525										
520										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T20	**STATION** 1182+49	**OFFSET** 53ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 9.2
COLLAR ELEV. 594.7 ft	**TOTAL DEPTH** 10.5 ft	**NORTHING** 848,752	**EASTING** 1,884,323	**24 HR.** 3.4
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/23/09	**COMP. DATE** 06/23/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 10.0 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
595											
	594.7	0.0	1	2	3	5	SS-148	28%		594.7 GROUND SURFACE	0.0
	591.2	3.5								**RESIDUAL**	
590			6	8	14	22		M		592.7 Tan-orange, CLAY (A-7-5(26)), with roots & rock fragments, some fine to coarse sand & silt.	2.0
	586.2	8.5								Brown, gray & white, silty fine SAND (A-2-4), with rock fragments, saprolitic.	
585			41	42	30	72		M		584.7	10.0
	584.2	10.5	60/0.0'			60/0.0'				584.2 **NON-CRYSTALLINE ROCK** METAVOLCANIC ROCK.	10.5
580										Boring Terminated with Standard Penetration Test Refusal at Elevation 584.2 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)	
575											
570										NOTES:	
565										1) 0.0-0.5' Surficial Organic Soils 2) Driller indicates harder drilling at depths of 7.7' & 10.0'. 3) Auger refusal at a depth of 10.5'.	
560											
555											
550											
545											
540											
535											
530											
525											
520											
515											

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T21	**STATION** 1184+72	**OFFSET** 77ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 8.0
COLLAR ELEV. 591.5 ft	**TOTAL DEPTH** 9.2 ft	**NORTHING** 848,779	**EASTING** 1,884,545	**24 HR.** 1.9
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/23/09	**COMP. DATE** 06/23/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
595										
	591.5	0.0								591.5 GROUND SURFACE 0.0
590	589.5	2.0	WOH	WOH	WOH	0				**RESIDUAL**
	588.0	3.5	1	1	2	3		W		Tan, dark brown & gray, clayey SILT (A-5), with roots & organics, trace fine sand. 588.0 3.5
			4	3	6	9	SS-146	17%		Tan & gray, fine sandy SILT (A-4(5)), with some clay.
585	583.0	8.5								583.4 8.1
	582.3	9.2	100/0.4'			100/0.4'		M		582.3 **WEATHERED ROCK** 9.2
			60/0.0'			60/0.0'				Greenish-gray & brown, METAVOLCANIC ROCK.
580										Boring Terminated with Standard Penetration Test Refusal at Elevation 582.3 ft on NON-CRYSTALLINE ROCK (METAVOCANIC ROCK)
575										
570										NOTES:
565										1) 0.0-1.5' Surficial Organic Soils 2) Driller indicates harder drilling at a depth of 8.1'. 3) Auger refusal at a depth of 9.2'.
560										
555										
550										
545										
540										
535										
530										
525										
520										
515										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T22	**STATION** 1186+52	**OFFSET** 59ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 591.1 ft	**TOTAL DEPTH** 5.7 ft	**NORTHING** 848,837	**EASTING** 1,884,717	**24 HR.** Dry
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/23/09	**COMP. DATE** 06/23/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 5.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
595										
	591.1	0.0								591.1 GROUND SURFACE 0.0
590			1	2	1	3		M/W		**RESIDUAL** Tan & gray, fine sandy SILT (A-4).
	587.6	3.5								
			6	11	18	29		M		
585	585.4	5.7	60/0.0'			60/0.0'				585.6 5.5
										585.4 5.7 **NON-CRYSTALLINE ROCK** Gray, METAVOLCANIC ROCK.
580										Boring Terminated with Standard Penetration Test Refusal at Elevation 585.4 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
575										NOTES: 1) 0.0-0.5' Surficial Organic Soils 2) Driller indicates harder drilling at a depth of 5.5'. 3) Auger refusal at a depth of 5.7'.
570										
565										
560										
555										
550										
545										
540										
535										
530										
525										
520										
515										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T23	**STATION** 1188+27	**OFFSET** 61ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 592.2 ft	**TOTAL DEPTH** 14.8 ft	**NORTHING** 848,875	**EASTING** 1,884,887	**24 HR.** 8.4
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/23/09	**COMP. DATE** 06/23/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 13.4 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
595										
	592.2	0.0								592.2 GROUND SURFACE 0.0
590			2	2	6	8		D		**RESIDUAL** Tan, gray & red, fine sandy SILT (A-4).
	588.7	3.5								
585			13	18	30	48		M		585.5 6.7
	583.7	8.5								Brown, gray & red, fine sandy SILT (A-4), saprolitic.
			46	48	46	94		D		582.2 10.0
580										**WEATHERED ROCK** Tan, METAMORPHOSED GRANITIC ROCK.
	578.7	13.5								578.8 13.4
	577.7	14.5	60/0.1'			.60/0.1'		D		578.6 13.6 **CRYSTALLINE ROCK** Tan & gray, METAMORPHOSED GRANITIC ROCK. 577.4 14.8
575			100/0.3'			100/0.3'		D		**WEATHERED ROCK** White, METAMORPHOSED GRANITIC ROCK.
570										Boring Terminated at Elevation 577.4 ft in WEATHERED ROCK (METAMORPHOSED GRANITIC ROCK)
565										
560										NOTES:
555										1) 0.0-0.4' Surficial Organic Soils 2) Driller indicates harder drilling at depths of 6.7', 10.0' & 13.4'. 3) Auger refusal at a depth of 14.5'.
550										
545										
540										
535										
530										
525										
520										
515										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T24	**STATION** 1190+56	**OFFSET** 55ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 585.3 ft	**TOTAL DEPTH** 7.7 ft	**NORTHING** 848,933	**EASTING** 1,885,109	**24 HR.** 1.0
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/22/09	**COMP. DATE** 06/22/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 5.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
590										
585	585.3	0.0								585.3 GROUND SURFACE 0.0
			1	1	2	3 ... 46	SS-134	20%		**RESIDUAL**
	581.8	3.5								583.3 Tan & brown, fine to coarse sandy SILT (A-4(0)), with trace roots, some clay. 2.0
580			5	16	30			W		Tan, gray & orange, silty fine to coarse SAND (A-2-4), with rock fragments, saprolitic.
	577.6	7.7								579.8 5.5
			60/0.0'			60/0.0'		D		577.6 **CRYSTALLINE ROCK** 7.7
575										White/tan, METAMORPHOSED GRANITIC ROCK.
570										Boring Terminated with Standard Penetration Test Refusal at Elevation 577.6 ft in CRYSTALLINE ROCK (METAMORPHOSED GRANITIC ROCK)
565										NOTES: 1) 0.0-0.4' Surficial Organic Soils 2) Driller indicates harder drilling at a depth of 5.5'. 3) Auger refusal at a depth of 7.7'.
560										
555										
550										
545										
540										
535										
530										
525										
520										
515										
510										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance		**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation				**GROUND WTR (ft)**
BORING NO. B-T25	**STATION** 1192+50	**OFFSET** 59ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 15.8
COLLAR ELEV. 588.5 ft	**TOTAL DEPTH** 21.5 ft	**NORTHING** 848,973	**EASTING** 1,885,299	**24 HR.** 8.9
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA			**HAMMER TYPE** Automatic
START DATE 06/22/09	**COMP. DATE** 06/22/09	**SURFACE WATER DEPTH** N/A		**DEPTH TO ROCK** 19.8 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
590	588.5	0.0								588.5 GROUND SURFACE 0.0
			2	2	3	5		M		**RESIDUAL**
585	585.0	3.5								586.5 Tan, silty CLAY (A-7-5), with trace roots. 2.0
			7	11	16	27		M		Tan, gray & brown, silty fine to coarse SAND (A-2-4), saprolitic.
580	580.0	8.5								
			12	13	12	25		M/W		
575	575.0	13.5								
			12	14	20	34		W/S		
570	570.0	18.5								571.0 17.5
			15	85/0.4'		100/0.9'		W		**WEATHERED ROCK**
	567.0	21.5	60/0.0'			60/0.0'				568.7 Tan, gray & brown, METAMORPHOSED GRANITIC ROCK. 19.8
565										567.0 **CRYSTALLINE ROCK** 21.5
										METAMORPHOSED GRANITIC ROCK.
560										Boring Terminated with Standard Penetration Test Refusal at Elevation 567.0 ft in CRYSTALLINE ROCK (METAMORPHOSED GRANITIC ROCK)
555										NOTES:
										1) 0.0-0.3' Surficial Organic Soils
550										2) Driller indicates harder drilling at depths of 17.5' & 19.8'.
545										3) Auger refusal at a depth of 21.5'.
540										
535										
530										
525										
520										
515										
510										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T26	**STATION** 1193+81	**OFFSET** 45ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 24.3
COLLAR ELEV. 582.2 ft	**TOTAL DEPTH** 27.8 ft	**NORTHING** 849,016	**EASTING** 1,885,423	**24 HR.** 4.0
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/22/09	**COMP. DATE** 06/22/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 24.2 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
585										
	582.2	0.0								582.2 GROUND SURFACE 0.0
580			2	2	6	8		D/M		**RESIDUAL**
	578.7	3.5								580.2 Tan, silty CLAY (A-7-5). 2.0
			9	13	21	34		M		Tan & gray, fine to coarse sandy SILT (A-4(0)), with little clay, trace rock fragments, saprolitic.
575										
	573.7	8.5								
			8	9	22	31		M		
570										
	568.7	13.5								
			18	14	27	41	SS-126	16%		
565										565.7 16.5
	563.7	18.5								**WEATHERED ROCK**
			73	27/0.1'		100/0.6'		M		Tan, gray & brown, METAMORPHOSED GRANITIC ROCK.
560										
	558.7	23.5								558.0 24.2
			100/0.4'			100/0.4'				**CRYSTALLINE ROCK**
555										METAMORPHOSED GRANITIC ROCK.
	554.4	27.8								554.4 27.8
			60/0.0'			60/0.0'				Boring Terminated with Standard Penetration Test Refusal at Elevation 554.4 ft in CRYSTALLINE ROCK (METAMORPHOSED GRANITIC ROCK)
550										
545										NOTES:
540										1) 0.0-0.3' Surficial Organic Soils 2) Driller indicates harder drilling at depths of 10.5', 16.5' & 24.2'. 3) Auger refusal at a depth of 27.8'.
535										
530										
525										
520										
515										
510										
505										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T27	**STATION** 1196+46	**OFFSET** 43ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 585.9 ft	**TOTAL DEPTH** 11.3 ft	**NORTHING** 849,078	**EASTING** 1,885,681	**24 HR.** Dry
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/18/09	**COMP. DATE** 06/18/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 11.0 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
590										
585	585.9	0.0	1	2	2	4		M		585.9 GROUND SURFACE 0.0
	582.4	3.5	6	9	12	21		M		**RESIDUAL** Orange, tan & yellow, fine sandy SILT (A-4), with some clay & roots.
580										578.9 7.0
	577.4	8.5	26	32	41	73		D		Tan & gray, silty fine SAND (A-2-4), saprolitic.
575	574.6	11.3	60/0.0'			60/0.0'				574.9 11.0
										574.6 11.3 **CRYSTALLINE ROCK** METAMORPHOSED GRANITIC ROCK.
570										Boring Terminated with Standard Penetration Test Refusal at Elevation 574.6 ft in CRYSTALLINE ROCK (METAMORPHOSED GRANITIC ROCK)
565										NOTES: 1) 0.0-0.3' Surficial Organic Soils 2) Driller indicates harder drilling at depths of 7.0' & 11.0'. 3) Auger refusal at a depth of 11.3'.
560										
555										
550										
545										
540										
535										
530										
525										
520										
515										
510										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T28	**STATION** 1198+26	**OFFSET** 61ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 570.8 ft	**TOTAL DEPTH** 4.8 ft	**NORTHING** 849,102	**EASTING** 1,885,860	**24 HR.** Dry
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/18/09	**COMP. DATE** 06/18/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 4.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
575										
570	570.8	0.0	1	1	2	3		M		570.8 GROUND SURFACE 0.0
										RESIDUAL
										568.3 Red-brown, silty CLAY (A-7-5), with roots. 2.5
	567.3	3.5						D		**WEATHERED ROCK**
	566.0	4.8	100/0.2'			100/0.2'				566.3 Brown & greenish-gray, METAVOLCANIC ROCK. 4.5
565			60/0.0'			60/0.0'				566.0 4.8
										NON-CRYSTALLINE ROCK
										METAVOLCANIC ROCK.
560										Boring Terminated with Standard Penetration Test Refusal at Elevation 566.0 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
555										
550										NOTES:
545										1) 0.0-0.3' Surficial Organic Soils 2) Driller indicates harder drilling at depths of 2.5' & 4.5'. 3) Auger refusal at a depth of 4.8'.
540										
535										
530										
525										
520										
515										
510										
505										
500										
495										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T29	**STATION** 1200+31	**OFFSET** 45ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 10.0
COLLAR ELEV. 567.0 ft	**TOTAL DEPTH** 15.6 ft	**NORTHING** 849,165	**EASTING** 1,886,056	**24 HR.** 4.0
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/18/09	**COMP. DATE** 06/18/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 15.1 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
570										
	567.0	0.0								567.0 GROUND SURFACE 0.0
565			1	1	2	3	SS-113	28%		**RESIDUAL** Red-brown, silty CLAY (A-6(12)), with roots, little fine to coarse sand.
	563.5	3.5								562.5 4.5
			2	3	6	9	SS-114	13%		Tan, black, gray & brown, fine to coarse sandy SILT (A-4(0)), with rock fragments, some clay, saprolitic.
560	558.5	8.5								
			17	30	29	59				
555	553.5	13.5								553.5 13.5
			100/0.3'			100/0.3'		D		**WEATHERED ROCK**
	551.5	15.5						W		551.9 15.1
550			60/0.1'			60/0.1'				Brown & gray, METAMORPHOSED GRANITIC ROCK. 551.4 15.6
										CRYSTALLINE ROCK METAMORPHOSED GRANITIC ROCK.
545										Boring Terminated with Standard Penetration Test Refusal at Elevation 551.4 ft in CRYSTALLINE ROCK (METAMORPHOSED GRANITIC ROCK)
540										
535										NOTES: 1) 0.0-0.3' Surficial Organic Soils 2) Geologist indicates strata break in split spoon at a depth of 4.5'. 3) Driller indicates harder drilling at a depth of 15.1'. 4) Auger refusal at a depth of 15.5'.
530										
525										
520										
515										
510										
505										
500										
495										
490										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T30	**STATION** 1202+50	**OFFSET** 37ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 577.2 ft	**TOTAL DEPTH** 6.3 ft	**NORTHING** 849,227	**EASTING** 1,886,268	**24 HR.** Dry
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/18/09	**COMP. DATE** 06/18/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 4.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
580										
	577.2	0.0								577.2 GROUND SURFACE 0.0
575			WOH	1	1	2	SS-110	24%		**RESIDUAL** Brown, fine to coarse sandy SILT (A-4(1)), with roots, some clay.
	573.7	3.5								573.7 3.5
			24	76/0.3'		100/0.8'				572.7 **WEATHERED ROCK** 4.5
	570.9	6.3								Tan, red & gray, METAMORPHOSED GRANITIC ROCK. 570.9 6.3
570			60/0.0'			60/0.0'				**CRYSTALLINE ROCK** Gray, METAMORPHOSED GRANITIC ROCK.
565										Boring Terminated with Standard Penetration Test Refusal at Elevation 570.9 ft in CRYSTALLINE ROCK (METAMORPHOSED GRANITIC ROCK)
560										
555										NOTES: 1) 0.0-0.3' Surficial Organic Soils 2) Driller indicates harder drilling at a depth of 4.5'. 3) Auger refusal at a depth of 6.3'.
550										
545										
540										
535										
530										
525										
520										
515										
510										
505										
500										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T31	**STATION** 1204+71	**OFFSET** 22ft LT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 576.0 ft	**TOTAL DEPTH** 12.6 ft	**NORTHING** 849,347	**EASTING** 1,886,463	**24 HR.** Dry
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/17/09	**COMP. DATE** 06/17/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 7.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
580										
	576.0	0.0								576.0 GROUND SURFACE 0.0
575			1	1	2	3		M		**RESIDUAL** Red, fine sandy SILT (A-4), with some clay & roots.
	572.5	3.5								
			5	9	13	22		M		
570										568.5 7.5
	567.5	8.5								**NON-CRYSTALLINE ROCK** Greenish-gray, METAVOLCANIC ROCK.
			60/0.1'			-60/0.1'		D		
565										
	563.4	12.6								563.4 12.6
			60/0.0'			60/0.0'				Boring Terminated with Standard Penetration Test Refusal at Elevation 563.4 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
560										
555										NOTES:
										1) 0.0-0.3' Surficial Organic Soils
										2) Driller indicates harder drilling at a depth of 7.5'.
550										3) Auger refusal at a depth of 12.6'.
545										
540										
535										
530										
525										
520										
515										
510										
505										
500										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T32	**STATION** 1206+56	**OFFSET** 10ft LT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 575.8 ft	**TOTAL DEPTH** 17.6 ft	**NORTHING** 849,397	**EASTING** 1,886,640	**24 HR.** Dry
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/17/09	**COMP. DATE** 06/17/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 11.1 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
580										
575	575.8	0.0								575.8 GROUND SURFACE 0.0
			1	1	2	3		M		**RESIDUAL** Red, silty CLAY (A-7-5), with some fine sand, roots & rock fragments.
	572.3	3.5								571.8 4.0
570			7	12	15	27		D		Tan, gray & orange, fine to coarse sandy SILT (A-4(0)), with little clay, saprolitic.
	567.3	8.5								
565			17	15	38	53	SS-96	20%		564.7 11.1
	562.3	13.5	60/0.1'			60/0.1'				**NON-CRYSTALLINE ROCK** Greenish-gray, METAVOLCANIC ROCK.
560										
	558.2	17.6	60/0.0'			60/0.0'				558.2 17.6
555										Boring Terminated with Standard Penetration Test Refusal at Elevation 558.2 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
550										NOTES:
545										1) 0.0-0.2' Surficial Organic Soils 2) Geologist indicates strata break in split spoon at a depth of 4.0'. 3) Driller indicates harder drilling at depths of 6.6' & 11.1'.
540										
535										
530										
525										
520										
515										
510										
505										
500										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T33	**STATION** 1208+41	**OFFSET** 5ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 565.5 ft	**TOTAL DEPTH** 18.6 ft	**NORTHING** 849,450	**EASTING** 1,886,818	**24 HR.** 14.5
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/17/09	**COMP. DATE** 06/17/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 14.9 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
570										
565	565.5	0.0								565.5 GROUND SURFACE 0.0
			1	1	4	5		M/W		**RESIDUAL** Red, silty CLAY (A-7-5).
	562.0	3.5								561.3 4.2
560			10	12	13	25		M		Tan, red & orange, fine sandy SILT (A-4), with rock fragments.
	557.0	8.5								
555			15	21	30	51		M		
	552.0	13.5								552.0 13.5
			100/0.3'			100/0.3'				550.6 **WEATHERED ROCK** 14.9
550										Tan & gray, METAVOLCANIC ROCK.
										NON-CRYSTALLINE ROCK Brown, METAVOLCANIC ROCK.
	547.0	18.5						M		546.9 18.6
			60/0.1'			60/0.1'				Boring Terminated with Standard Penetration Test Refusal at Elevation 546.9 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
545										
540										
535										
530										
525										
520										
515										
510										
505										
500										
495										
490										

NOTES:

1) 0.0-0.3' Surficial Organic Soils
2) Geologist indicates strata break in split spoon at a depth of 4.2'.
3) Driller indicates harder drilling at a depth of 14.9'.

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T34	**STATION** 1210+74	**OFFSET** 4ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 13.0
COLLAR ELEV. 561.9 ft	**TOTAL DEPTH** 18.5 ft	**NORTHING** 849,541	**EASTING** 1,887,033	**24 HR.** 10.8
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/17/09	**COMP. DATE** 06/17/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 18.0 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
565										
	561.9	0.0								561.9 GROUND SURFACE 0.0
560			WOH	2	2	4		M		**RESIDUAL**
	558.4	3.5	8	11	16	27		M		559.9 Red, tan & gray, silty CLAY (A-7-5), with roots. 2.0
555										Tan, orange & gray, fine sandy SILT (A-4), saprolitic.
	553.4	8.5								554.4 7.5
			41	59/0.4'		100/0.9'		D		**WEATHERED ROCK**
550										Brown & gray, METAVOLCANIC ROCK.
	548.4	13.5	84	16/0.0'		100/0.5'		D		
545										543.9 18.0
	543.4	18.5	60/0.0'			60/0.0'				543.4 **NON-CRYSTALLINE ROCK** 18.5
540										METAVOLCANIC ROCK.
										Boring Terminated with Standard Penetration Test Refusal at Elevation 543.4 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
535										
										NOTES:
530										1) 0.0-0.3' Surficial Organic Soils 2) Driller indicates harder drilling at depths of 7.5' & 18.0'.
525										
520										
515										
510										
505										
500										
495										
490										
485										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T36	**STATION** 1214+70	**OFFSET** 21ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 579.7 ft	**TOTAL DEPTH** 20.2 ft	**NORTHING** 849,679	**EASTING** 1,887,405	**24 HR.** Dry
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/11/09	**COMP. DATE** 06/11/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 16.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
580	579.7	0.0								579.7 GROUND SURFACE 0.0
	577.7	2.0	1	2	2	4		M		**RESIDUAL**
	576.2	3.5	3	8	10	18	SS-67	15%		577.7 Tan, highly silty CLAY (A-7-5), with roots, trace fine sand. 2.0
575			10	27	39	66		D		Tan & orange, fine to coarse sandy SILT (A-4(6)), with little clay, saprolitic.
	571.2	8.5								570.7 9.0
570			22	35	65/0.2'	100/0.7'		D		**WEATHERED ROCK** Tan, gray & orange, METAVOLCANIC ROCK.
	566.2	13.5								
565			46	54/0.2'		100/0.7'		D		
	563.2	16.5								**NON-CRYSTALLINE ROCK** Gray, METAVOLCANIC ROCK.
	561.2	18.5								
560	559.5	20.2	60/0.1'			60/0.1'		D		559.5 20.2
			60/0.0'			60/0.0'				Boring Terminated with Standard Penetration Test Refusal at Elevation 559.5 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
555										
550										NOTES:
545										1) 0.0-0.4' Surficial Organic Soils 2) Driller indicates harder drilling at a depth of 16.5'. 3) Auger refusal at a depth of 20.2'.
540										
535										
530										
525										
520										
515										
510										
505										
500										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T37	**STATION** 1216+46	**OFFSET** 6ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 577.0 ft	**TOTAL DEPTH** 21.4 ft	**NORTHING** 849,761	**EASTING** 1,887,561	**24 HR.** Dry
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/10/09	**COMP. DATE** 06/10/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 20.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
580										
	577.0	0.0								577.0 GROUND SURFACE 0.0
575			1	1	3	4		M/W		**RESIDUAL**
	573.5	3.5								575.0 Tan-red, silty CLAY (A-7-5), with trace fine sand & roots. 2.0
			12	18	22	40		M		Tan, gray & black, fine sandy SILT (A-4), saprolitic.
570										
	568.5	8.5								568.5 8.5
			29	71/0.3'		100/0.8'		D		**WEATHERED ROCK**
565										Gray, tan & red, METAVOLCANIC ROCK.
	563.5	13.5								
			70	30/0.1'		100/0.6'		D		
560										
	558.5	18.5								
			100/0.2'			100/0.2'		D		
	556.5	20.5								556.5 20.5
555	555.7	21.3	60/0.1'			60/0.1'		D		555.6 **NON-CRYSTALLINE ROCK** 21.4
										Gray, METAVOLCANIC ROCK.
										Boring Terminated with Standard Penetration Test Refusal at Elevation 555.6 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
550										
545										
540										
535										
530										
525										
520										
515										
510										
505										
500										

NOTES:

1) 0.0-0.3' Surficial Organic Soils
2) Driller indicates harder drilling at a depth of 20.5'.
3) Auger refusal at a depth of 21.3'.

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T38	**STATION** 1218+42	**OFFSET** 1ft LT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 564.2 ft	**TOTAL DEPTH** 16.2 ft	**NORTHING** 849,844	**EASTING** 1,887,739	**24 HR.** 8.2
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/10/09	**COMP. DATE** 06/10/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 15.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
565	564.2	0.0								564.2 GROUND SURFACE 0.0
	562.2	2.0	WOH	1	1	2		W		**RESIDUAL** Brown, tan-red & gray, SILT (A-4(1)), with some fine sand, clay & roots.
560	560.7	3.5	WOH	1	2	3	SS-56A	27%		
			1	2	3	5		W		
555	555.7	8.5	10	17	24	41		M		
550	550.7	13.5	6	21	63	84		D		
	548.7	15.5	60/0.1'			60/0.1'		D		548.7 15.5
	548.0	16.2								548.0 16.2 **NON-CRYSTALLINE ROCK** Gray, METAVOLCANIC ROCK.
545										Boring Terminated with Standard Penetration Test Refusal at Elevation 548.0 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
540										NOTES: 1) 0.0-0.4' Surficial Organic Soils 2) Driller indicates harder drilling at a depth of 15.5'. 3) Auger refusal at a depth of 16.1'.
535										
530										
525										
520										
515										
510										
505										
500										
495										
490										
485										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T39	**STATION** 1219+84	**OFFSET** 4ft LT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 568.6 ft	**TOTAL DEPTH** 12.8 ft	**NORTHING** 849,901	**EASTING** 1,887,868	**24 HR.** 8.3
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/10/09	**COMP. DATE** 06/10/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 10.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
	568.6	0.0								568.6 GROUND SURFACE 0.0
			1	2	3	5		M		**RESIDUAL**
565	565.1	3.5								566.6 Red, silty CLAY (A-7-5), with some fine sand & roots. 2.0
			3	5	7	12		M		Tan, orange & gray, fine sandy SILT (A-4).
560	560.1	8.5								
			8	7	16	23		M		558.1 10.5
	555.9	12.7	60/0.1'			60/0.1'		D		**NON-CRYSTALLINE ROCK**
555										555.8 Brown & greenish-gray, METAVOLCANIC ROCK. 12.8
										Boring Terminated with Standard Penetration Test Refusal at Elevation 555.8 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
550										
545										NOTES:
										1) 0.0-0.3' Surficial Organic Soils
										2) Driller indicates harder drilling at a depth of 10.5'.
540										3) Auger refusal at a depth of 12.7'.
535										
530										
525										
520										
515										
510										
505										
500										
495										
490										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T40	**STATION** 1221+66	**OFFSET** 6ft LT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 584.5 ft	**TOTAL DEPTH** 19.9 ft	**NORTHING** 849,974	**EASTING** 1,888,036	**24 HR.** N/A
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA/NQ-3 Core		**HAMMER TYPE** Automatic
START DATE 06/10/09	**COMP. DATE** 06/10/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 16.2 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
585	584.5	0.0								584.5 GROUND SURFACE 0.0
			1	2	2	4 70		M		**RESIDUAL**
	581.0	3.5								582.5 Tan, clayey SILT (A-5), with some coarse sand, rock fragments & roots. 2.0
580			15	24	46			D		Tan, orange & black, fine sandy SILT (A-4), saprolitic.
	576.0	8.5								577.5 7.0
575			100/0.3'			100/0.3'		D		**WEATHERED ROCK** Tan-brown, METAVOLCANIC ROCK.
										572.5 12.0
	571.0	13.5								**RESIDUAL**
570			7	14	27	41		D		Tan, orange & black, fine sandy SILT (A-4), saprolitic.
	568.0	16.5								568.3 16.2
	567.3	17.2	60/0.1'			60/0.1'		D		**NON-CRYSTALLINE ROCK**
565			60/0.1'			60/0.1'				Gray, brown & white, METAVOLCANIC ROCK.
										564.6 19.9
560										Boring Terminated at Elevation 564.6 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
555										
550										NOTES:
545										1) 0.0-0.3' Surficial Organic Soils 2) Driller indicates harder drilling at depths of 7.0' & 16.2'. 3) Driller indicates softer drilling at a depth of 12.0'. 4) Auger refusal at a depth of 17.2'. 5) Began coring at a depth of 17.2'. 6) 0 hr. water level measured before coring began. 7) 24 hr. water level not measured due to water introduced for coring.
540										
535										
530										
525										
520										
515										
510										
505										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
CORE BORING REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T40	**STATION** 1221+66	**OFFSET** 6ft LT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 584.5 ft	**TOTAL DEPTH** 19.9 ft	**NORTHING** 849,974	**EASTING** 1,888,036	**24 HR.** N/A
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA/NQ-3 Core		**HAMMER TYPE** Automatic
START DATE 06/10/09	**COMP. DATE** 06/10/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 16.2 ft
CORE SIZE NQ-3	**TOTAL RUN** 2.7 ft	**DRILLER** C. Price	

ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS
567.3											ELEV. (ft) / DEPTH (ft)
											Begin Coring @ 17.2 ft
565	567.3	17.2	2.7	N=60/0.1' 3:46/1.0 2:43/1.0 1:47/0.7	(2.7) 100%	(0.8) 30%		(2.7) 100%	(0.8) 30%		**NON-CRYSTALLINE ROCK***(continued)*
	564.6	19.9									Gray, brown & white, moderately to slightly weathered, moderately hard to hard METAVOLCANIC ROCK. 564.6 / 19.9
560											2 joints @ 80°, 3 joints @ 30°.
											Boring Terminated at Elevation 564.6 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
555											
550											NOTES:
545											1) 0.0-0.3' Surficial Organic Soils 2) Driller indicates harder drilling at depths of 7.0' & 16.2'. 3) Driller indicates softer drilling at a depth of 12.0'. 4) Auger refusal at a depth of 17.2'. 5) Began coring at a depth of 17.2'. 6) 0 hr. water level measured before coring began. 7) 24 hr. water level not measured due to water introduced for coring.
540											
535											
530											
525											
520											
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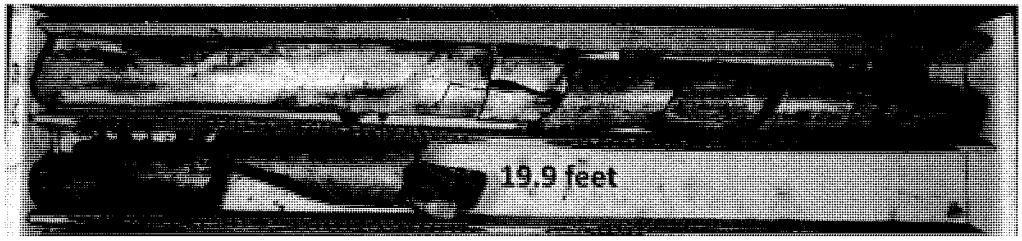
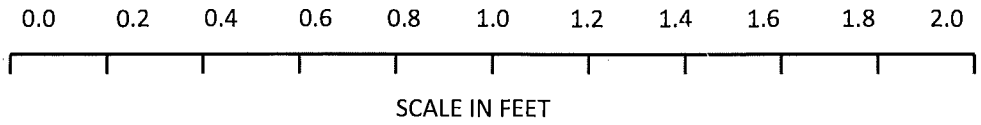
510											
505											
500											
495											
490											

CORE PHOTOGRAPHS
P-5205 BORING B-T40

17.2 feet





NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T41	**STATION** 1223+64	**OFFSET** 1ft LT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 578.2 ft	**TOTAL DEPTH** 26.3 ft	**NORTHING** 850,046	**EASTING** 1,888,220	**24 HR.** 24.8
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/09/09	**COMP. DATE** 06/09/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 24.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
580	578.2	0.0								578.2 GROUND SURFACE 0.0
			1	3	4	7		M/W		**RESIDUAL**
575	574.7	3.5								576.2 Red, silty CLAY (A-7-5), with roots. 2.0
			5	10	18	28	SS-40	29%		Tan-orange, fine sandy SILT (A-4(0)), with trace coarse sand & clay.
570	569.7	8.5								569.7 8.5
			48	52/0.4"		100/0.9"		D		568.8 **WEATHERED ROCK** 9.4
565	564.7	13.5								Tan & black, METAVOLCANIC ROCK. **RESIDUAL** Tan, red & black, fine sandy SILT (A-4), with rock fragments, saprolitic.
			9	13	54	67		D		
560	559.7	18.5								559.7 18.5
			39	61/0.4"		100/0.9"		D		**WEATHERED ROCK** Tan, gray & orange, METAVOLCANIC ROCK.
555	554.7	23.5								553.7 24.5
			42	58/0.3"		100/0.8"				**NON-CRYSTALLINE ROCK**
	551.9	26.3						D		551.9 METAVOLCANIC ROCK. 26.3
550			60/0.0"			60/0.0"				Boring Terminated with Standard Penetration Test Refusal at Elevation 551.9 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
545										
540										NOTES: 1) 0.0-0.2' Surficial Organic Soils 2) Driller indicates harder drilling at a depth of 24.5'.
535										
530										
525										
520										
515										
510										
505										
500										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T42	**STATION** 1225+47	**OFFSET** 7ft LT	**ALIGNMENT** -MAIN-	**0 HR.** 12.1
COLLAR ELEV. 568.8 ft	**TOTAL DEPTH** 13.3 ft	**NORTHING** 850,123	**EASTING** 1,888,387	**24 HR.** 8.1
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/09/09	**COMP. DATE** 06/09/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 13.2 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
570										
	568.8	0.0	2	2	2	4		M		568.8 GROUND SURFACE 0.0
										RESIDUAL
	565.3	3.5	5	13	21	34		D/M		566.8 Red & tan, silty CLAY (A-7-5), with roots & rock fragments. 2.0
565										Red, tan & greenish-gray, fine sandy SILT (A-4), with rock fragments, saprolitic.
	562.3	6.5	7	8	15	23				
	560.3	8.5								
560			5	15	35	50		D		
										557.3 11.5
	555.6	13.2	60/0.1'			60/0.1'				**WEATHERED ROCK**
555										555.6 METAVOLCANIC ROCK. 13.2
										555.5 13.3
										NON-CRYSTALLINE ROCK
										METAVOLCANIC ROCK.
										Boring Terminated with Standard Penetration Test Refusal at Elevation 555.5 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
550										
545										NOTES:
										1) 0.0-0.2' Surficial Organic Soils
										2) Driller indicates harder drilling at a depth of 11.5'.
540										3) Auger refusal at a depth of 13.2'.
535										
530										
525										
520										
515										
510										
505										
500										
495										
490										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T43	**STATION** 1227+50	**OFFSET** 1ft LT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 587.3 ft	**TOTAL DEPTH** 30.8 ft	**NORTHING** 850,196	**EASTING** 1,888,576	**24 HR.** N/A
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA/NQ-3 Core		**HAMMER TYPE** Automatic
START DATE 06/09/09	**COMP. DATE** 06/09/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 16.8 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
590										
	587.3	0.0								587.3 GROUND SURFACE 0.0
585			1	2	3	5	SS-31	32%		**RESIDUAL** 585.3 Red with black specks, silty CLAY (A-7-5(29)), with trace rock fragments & grass. 2.0
	583.8	3.5	12	18	16	34		M		Tan & gray with black specks, fine sandy SILT (A-4), saprolitic.
580										
	578.8	8.5	12	16	55	71		M		
575										
	573.8	13.5	15	14	24	38		M		
570	570.5	16.8	60/0.0'			60/0.0'		D		571.3 16.0 570.5 **WEATHERED ROCK** 16.8 Gray & white, METAVOLCANIC ROCK. **NON-CRYSTALLINE ROCK** Greenish-gray, gray & white, METAVOLCANIC ROCK, with some zones of METAMORPHOSED GRANITIC ROCK.
565										
560										
										556.5 30.8
555										Boring Terminated at Elevation 556.5 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
550										
545										NOTES:
540										1) 0.0-0.1' Surficial Organic Soils 2) Driller indicates softer drilling at a depth of 10.5'. 3) Driller indicates harder drilling at a depth of 16.0'. 4) Auger & SPT refusal at a depth of 16.8'. 5) Began coring at a depth of 16.8'. 6) 0 hr. water level measured before coring began. 7) 24 hr. water level not measured due to water introduced for coring.
535										
530										
525										
520										
515										
510										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
CORE BORING REPORT

SHEET

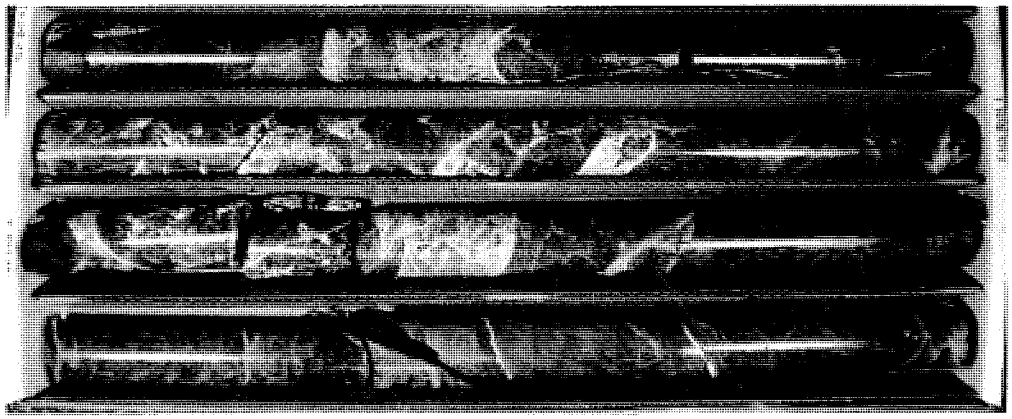
PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T43	**STATION** 1227+50	**OFFSET** 1ft LT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 587.3 ft	**TOTAL DEPTH** 30.8 ft	**NORTHING** 850,196	**EASTING** 1,888,576	**24 HR.** N/A
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA/NQ-3 Core		**HAMMER TYPE** Automatic
START DATE 06/09/09	**COMP. DATE** 06/09/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 16.8 ft
CORE SIZE NQ-3	**TOTAL RUN** 14.0 ft	**DRILLER** C. Price	

ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS
570.5											ELEV. (ft) / DEPTH (ft)
	570.5	16.8	4.0	*N=60/0.0'* 3:23/1.0 3:18/1.0 4:01/1.0 4:34/1.0	(4.0) 100%	(3.7) 93%		(14.0) 100%	(11.9) 85%		Begin Coring @ 16.8 ft 570.5 **NON-CRYSTALLINE ROCK** 16.8 Greenish-gray, gray & white, fresh to very slightly weathered, hard METAVOLCANIC ROCK, with some zones of METAMORPHOSED GRANITIC ROCK. 4 joints @ 30°, 2 joints @ 70°, 1 joint @ 80°.
	566.5	20.8									
565			5.3	3:46/1.0 3:08/1.0 3:14/1.0 3:54/1.0 3.35/1.3	(5.3) 100%	(3.5) 66%					
	561.2	26.1									
560			4.7	5:52/1.0 5:46/1.0 5:52/1.0 9:21/0.7	(4.7) 100%	(4.7) 100%					
	556.5	30.8									556.5 30.8 Boring Terminated at Elevation 556.5 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
555											
550											NOTES: 1) 0.0-0.1' Surficial Organic Soils 2) Driller indicates softer drilling at a depth of 10.5'. 3) Driller indicates harder drilling at a depth of 16.0'. 4) Auger & SPT refusal at a depth of 16.8'. 5) Began coring at a depth of 16.8'. 6) 0 hr. water level measured before coring began. 7) 24 hr. water level not measured due to water introduced for coring.
545											
540											
535											
530											
525											
520											
515											
510											
505											
500											
495											

NCDOT CORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

CORE PHOTOGRAPHS
P-5205 BORING B-T43

16.8 feet

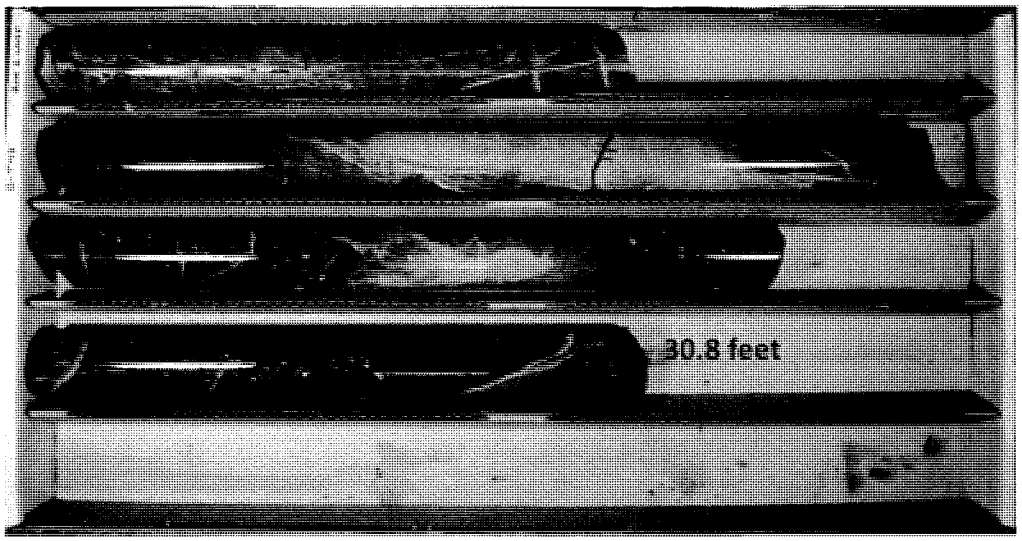


24.8 feet

0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0

SCALE IN FEET

24.8 feet



0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0

SCALE IN FEET

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T44	**STATION** 1229+28	**OFFSET** 9ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 588.5 ft	**TOTAL DEPTH** 29.0 ft	**NORTHING** 850,255	**EASTING** 1,888,744	**24 HR.** N/A
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA/NQ-3 Core		**HAMMER TYPE** Automatic
START DATE 06/04/09	**COMP. DATE** 06/08/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 19.0 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
590	588.5	0.0								588.5 GROUND SURFACE 0.0
			2	3	4	7		M		**RESIDUAL**
585	585.0	3.5								586.5 Tan-orange, fine to coarse sandy CLAY (A-7-5), with some silt & roots, trace rock fragments. 2.0
			7	12	20	32		M		Tan, orange & gray, fine to coarse sandy SILT (A-4), saprolitic.
580	580.0	8.5								579.5 9.0
			32	60	40/0.2'	100/0.7'		D		578.8 **WEATHERED ROCK** 9.7
575	575.0	13.5								Tan & greenish-gray, METAVOLCANIC ROCK.
			19	23	32	55		D		**RESIDUAL** Tan, fine sandy SILT (A-4), saprolitic.
570	570.0	18.5								570.0 18.5
	569.5	19.0	100/0.2'			100/0.2'		D		569.5 **WEATHERED ROCK** 19.0
			60/0.0'			60/0.0'				Tan & greenish-gray, METAVOLCANIC ROCK.
565										**NON-CRYSTALLINE ROCK** Greenish-gray, gray & white, METAVOLCANIC ROCK with some zones of METAMORPHOSED GRANITIC ROCK.
560										559.5 29.0
555										Boring Terminated at Elevation 559.5 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
550										NOTES: 1) 0.0-0.1' Surficial Organic Soils 2) Auger & SPT refusal at a depth of 19.0'. 3) Began coring at a depth of 19.0'. 4) 0 hr. water level measured before coring began. 5) 24 hr. water level not measured due to water introduced for coring.
545										
540										
535										
530										
525										
520										
515										
510										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
CORE BORING REPORT

SHEET

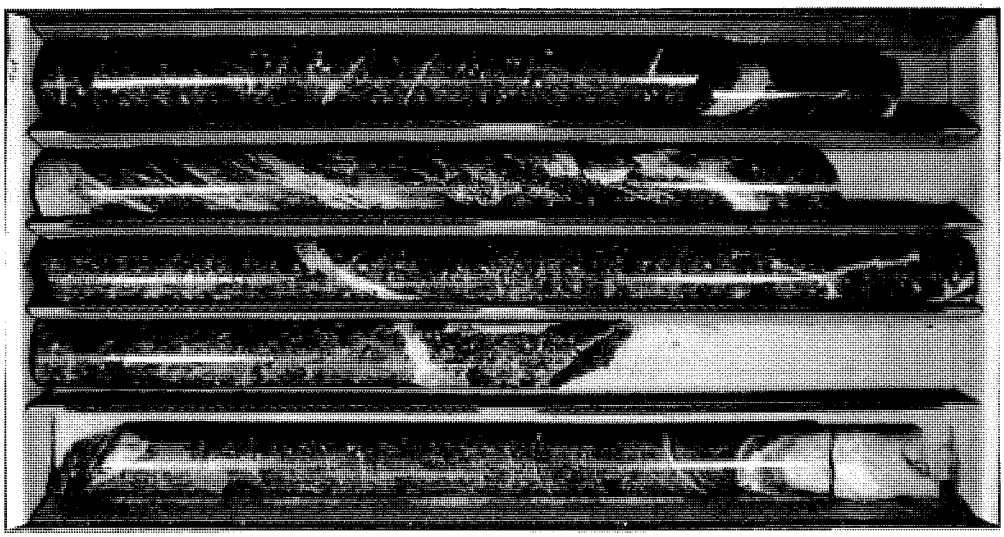
PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T44	**STATION** 1229+28	**OFFSET** 9ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 588.5 ft	**TOTAL DEPTH** 29.0 ft	**NORTHING** 850,255	**EASTING** 1,888,744	**24 HR.** N/A
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA/NQ-3 Core		**HAMMER TYPE** Automatic
START DATE 06/04/09	**COMP. DATE** 06/08/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 19.0 ft
CORE SIZE NQ-3	**TOTAL RUN** 10.0 ft	**DRILLER** C. Price	

ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS
569.5											Begin Coring @ 19.0 ft
	569.5	19.0	5.0	2:18/1.0 2:07/1.0 2:01/1.0 2:20/1.0 2:16/1.0	(5.0) 100%	(5.0) 100%		(10.0) 100%	(9.8) 98%		ELEV. (ft) 569.5 — DEPTH (ft) 19.0 **NON-CRYSTALLINE ROCK** Greenish-gray, gray & white, fresh to very slightly weathered, hard METAVOLCANIC ROCK with some zones of METAMORPHOSED GRANITIC ROCK. 2 joints @ 30°.
565	564.5	24.0	5.0	2:04/1.0 2:09/1.0 2:13/1.0 3:38/1.0 3:43/1.0	(5.0) 100%	(4.8) 96%					
560	559.5	29.0									ELEV. (ft) 559.5 — DEPTH (ft) 29.0 Boring Terminated at Elevation 559.5 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
555											
550											NOTES: 1) 0.0-0.1' Surficial Organic Soils 2) Auger & SPT refusal at a depth of 19.0'. 3) Began coring at a depth of 19.0'. 4) 0 hr. water level measured before coring began. 5) 24 hr. water level not measured due to water introduced for coring.
545											
540											
535											
530											
525											
520											
515											
510											
505											
500											
495											
490											

NCDOT CORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

CORE PHOTOGRAPHS
P-5205 BORING B-T44

19.0 feet

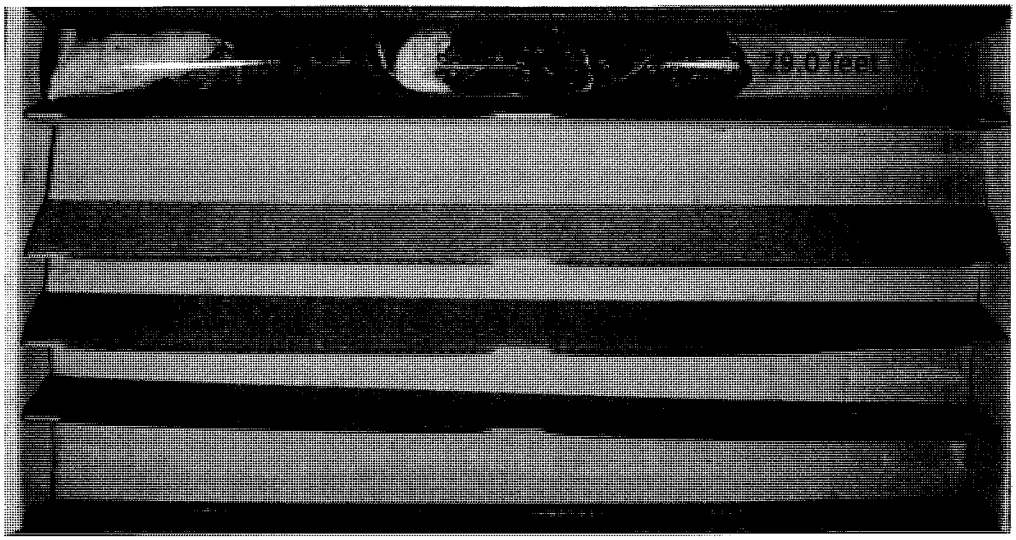


27.6 feet

0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0

SCALE IN FEET

27.6 feet



0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0

SCALE IN FEET

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T45	**STATION** 1230+95	**OFFSET** 13ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 578.1 ft	**TOTAL DEPTH** 25.6 ft	**NORTHING** 850,316	**EASTING** 1,888,899	**24 HR.** 25.0
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/04/09	**COMP. DATE** 06/04/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 25.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
580	578.1	0.0								GROUND SURFACE 0.0
	576.1	2.0	3	3	5	8		D/M		**ARTIFICIAL FILL** GRAVEL
575	574.6	3.5								Red-brown, silty CLAY (A-7-5), with some fine sand, trace gravel.
			3	4	7	11		M		**RESIDUAL** Red with black vein, silty CLAY (A-7-5), with some fine sand.
570	571.1	7.0								Tan & red with black veins, fine sandy SILT (A-4(0)), with little clay.
	569.6	8.5	4	6	9	15	SS-21	34%		
565	566.1	12.0								Tan & gray, silty fine to coarse SAND (A-2-4), saprolitic.
	564.6	13.5	5	9	17	26		M		
560	562.5	15.6								Tan, gray & red, silty fine to coarse SAND (A-2-4), with rock fragments, saprolitic.
	559.6	18.5	23	34	62	96		D		
555	554.6	23.5	100/0.2'			100/0.2'				
	552.6	25.5						D		**WEATHERED ROCK** Tan & white, METAMORPHOSED GRANITIC ROCK.
	552.5	25.6	60/0.1'			60/0.1'				**CRYSTALLINE ROCK** Gray, METAMORPHOSED GRANITIC ROCK.
550										Boring Terminated with Standard Penetration Test Refusal at Elevation 552.5 ft in CRYSTALLINE ROCK (METAMORPHOSED GRANITIC ROCK)
545										
540										NOTES:
535										1) Boring located in gravel drive. 2) Driller indicates harder drilling at a depth of 15.6'. 3) Auger refusal at a depth of 25.5'.
530										
525										
520										
515										
510										
505										
500										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T46	**STATION** 1232+43	**OFFSET** 10ft LT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 569.9 ft	**TOTAL DEPTH** 18.4 ft	**NORTHING** 850,395	**EASTING** 1,889,027	**24 HR.** N/A
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA/NQ-3 Core		**HAMMER TYPE** Automatic
START DATE 06/11/09	**COMP. DATE** 06/11/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 7.5 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
570	569.9	0.0	1	2	3	5 13		M		569.9 GROUND SURFACE 0.0 **RESIDUAL** Red-brown, silty CLAY (A-7-5(20)), with trace fine to coarse sand.
565	566.4	3.5	6	6	7		SS-77	41%		
560	561.5	8.4	60/0.0'			60/0.0'		D		562.4 7.5 **NON-CRYSTALLINE ROCK** Gray & greenish-gray with white specks, METAVOLCANIC ROCK.
555										
550										551.5 18.4 Boring Terminated at Elevation 551.5 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
545										
540										NOTES: 1) 0.0-0.1' Surficial Organic Soils 2) Driller indicates harder drilling at a depth of 7.5'. 3) Auger & SPT refusal at a depth of 8.4'. 4) 0 hr. water level measured before coring began. 5) 24 hr. water level not measured due to water introduced for coring.
535										
530										
525										
520										
515										
510										
505										
500										
495										
490										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
CORE BORING REPORT

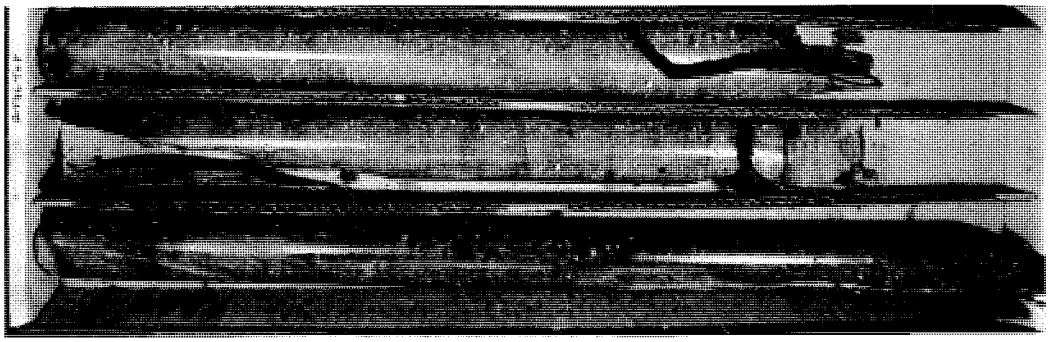
SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T46	**STATION** 1232+43	**OFFSET** 10ft LT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 569.9 ft	**TOTAL DEPTH** 18.4 ft	**NORTHING** 850,395	**EASTING** 1,889,027	**24 HR.** N/A
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA/NQ-3 Core		**HAMMER TYPE** Automatic
START DATE 06/11/09	**COMP. DATE** 06/11/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 7.5 ft
CORE SIZE NQ-3	**TOTAL RUN** 10.0 ft	**DRILLER** C. Price	

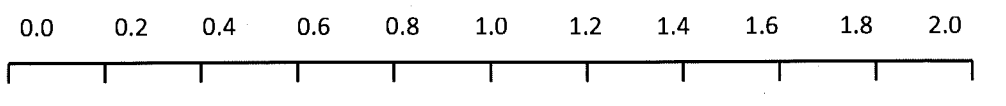
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS
561.5											Begin Coring @ 8.4 ft
560	561.5	8.4	3.0	3:44/1.0 3:14/1.0 2:58/1.0	(2.9) 97%	(2.2) 73%					**NON-CRYSTALLINE ROCK** Gray & greenish-gray with white specks, fresh to very slightly weathered, hard METAVOLCANIC ROCK. 1 joint @ 80°.
	558.5	11.4	4.0	2:29/1.0 2:53/1.0 2:56/1.0 2:53/1.0	(4.0) 100%	(3.8) 95%					
555	554.5	15.4	3.0	2:42/1.0 2:44/1.0 3:00/1.0	(2.0) 67%	(1.7) 57%					
	551.5	18.4									NOTE: Bottom foot not recovered. *(continued)* 551.5 18.4
550											Boring Terminated at Elevation 551.5 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
545											NOTES: 1) 0.0-0.1' Surficial Organic Soils 2) Driller indicates harder drilling at a depth of 7.5'. 3) Auger & SPT refusal at a depth of 8.4'. 4) 0 hr. water level measured before coring began. 5) 24 hr. water level not measured due to water introduced for coring.
540											
535											
530											
525											
520											
515											
510											
505											
500											
495											
490											
485											

CORE PHOTOGRAPHS
P-5205 BORING B-T46

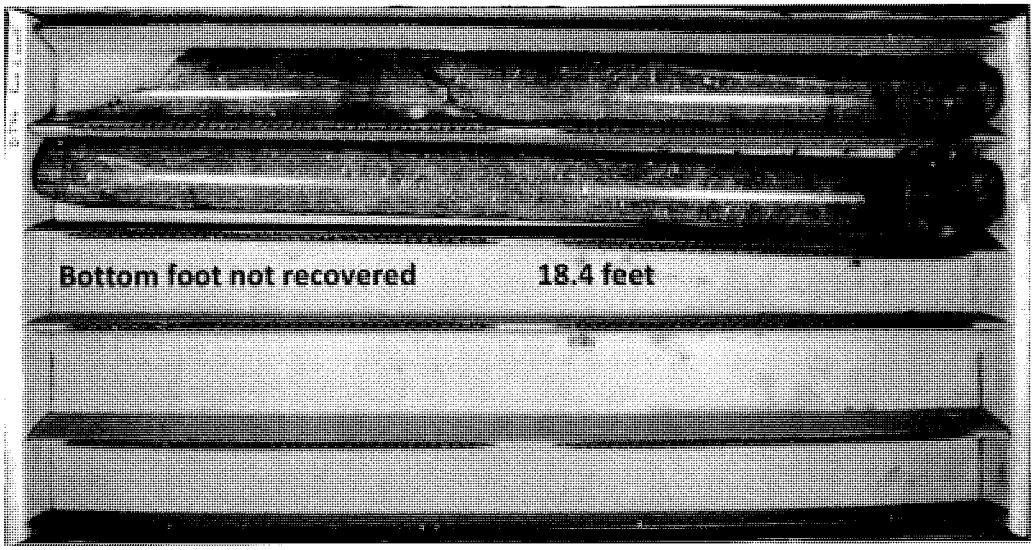
8.4 feet

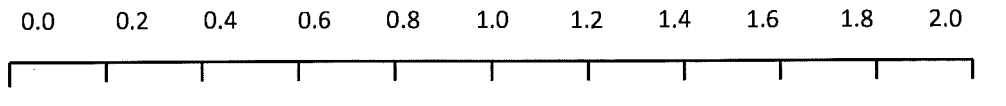


13.7 feet



13.7 feet





NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T47	**STATION** 1234+54	**OFFSET** 1ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 572.6 ft	**TOTAL DEPTH** 24.0 ft	**NORTHING** 850,467	**EASTING** 1,889,225	**24 HR.** N/A
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA/NQ-3 Core		**HAMMER TYPE** Automatic
START DATE 06/12/09	**COMP. DATE** 06/15/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 2.8 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
575										
	572.6	0.0								572.6 GROUND SURFACE 0.0
			2	4	12	16		M		**RESIDUAL**
570	569.6	3.0								Tan, gray & red, fine sandy SILT (A-4), saprolitic. 569.8 2.8
			60/0.1'			60/0.1'		D		**CRYSTALLINE ROCK**
565										Gray & white with black, METAMORPHOSED GRANITIC ROCK with some zones of METAVOLCANIC ROCK.
560										
555										
550										548.6 24.0
545										Boring Terminated at Elevation 548.6 ft in CRYSTALLINE ROCK (METAMORPHOSED GRANITIC ROCK)
540										NOTES:
535										1) 0.0-0.2' Surficial Organic Soils 2) Driller indicates harder drilling at a depth of 2.8'. 3) Auger & SPT refusal at a depth of 3.1'. 4) Began coring at a depth of 3.0'. 5) 0 hr. water level measured before coring began. 6) 24 hr. water level not measured due to water introduced for coring.
530										
525										
520										
515										
510										
505										
500										
495										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
CORE BORING REPORT

SHEET

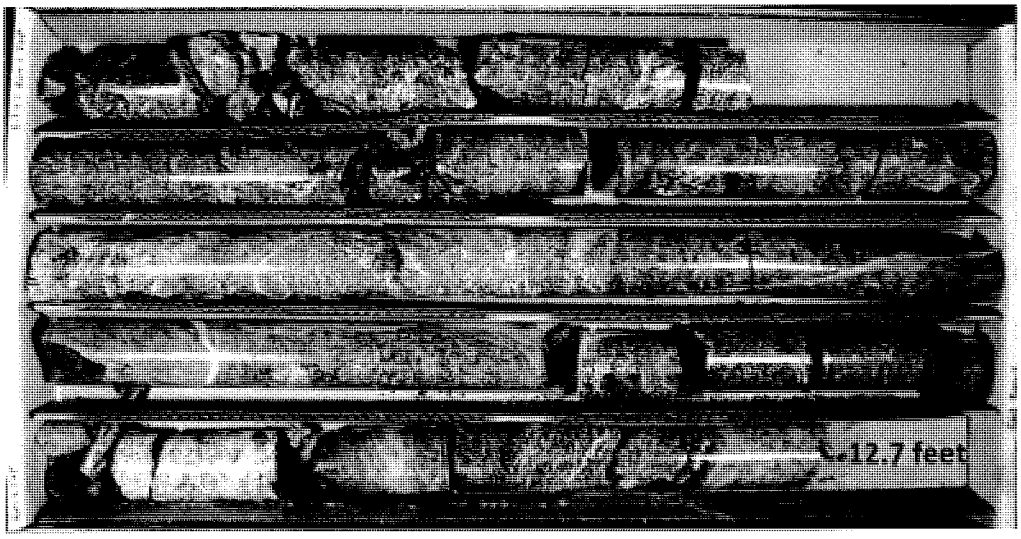
PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T47	**STATION** 1234+54	**OFFSET** 1ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 572.6 ft	**TOTAL DEPTH** 24.0 ft	**NORTHING** 850,467	**EASTING** 1,889,225	**24 HR.** N/A
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA/NQ-3 Core		**HAMMER TYPE** Automatic
START DATE 06/12/09	**COMP. DATE** 06/15/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 2.8 ft
CORE SIZE NQ-3	**TOTAL RUN** 21.0 ft	**DRILLER** C. Price	

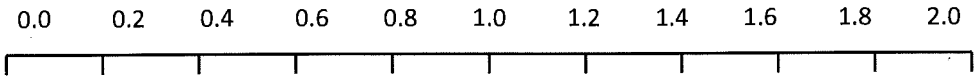
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS
569.6											ELEV. (ft) DEPTH (ft)
											Begin Coring @ 3.0 ft
	569.6	3.0	3.0	N=60/0.1'	(2.7)	(0.7)		(20.4)	(15.0)		**CRYSTALLINE ROCK**
				1:40/1.0	90%	23%		97%	71%		Gray & white with black, fresh to very slightly weathered, hard
	566.6	6.0		2:31/1.0							METAMORPHOSED GRANITIC ROCK with some zones of
				3:24/1.0							METAVOLCANIC ROCK.
565			5.0		(4.7)	(3.0)					1 joint @ 0°, 2 joints @ 20°. *(continued)*
				2:55/1.0	94%	60%					
				3:04/1.0							
				3:05/1.0							
				3:10/1.0							
	561.6	11.0		2:34/1.0							
560			5.0		(5.0)	(3.8)					
				3:05/1.0	100%	76%					
				2:51/1.0							
				3:57/1.0							
				4:39/1.0							
	556.6	16.0		4:54/1.0							
555			5.0	3:54/1.0	(5.0)	(4.8)					
				3:50/1.0	100%	96%					
				3:50/1.0							
				4:40/1.0							
	551.6	21.0		5:10/1.0							
550			3.0	4:25/1.0	(3.0)	(2.7)					
				4:01/1.0	100%	90%					
	548.6	24.0		3:32/1.0							548.6 24.0
											Boring Terminated at Elevation 548.6 ft in CRYSTALLINE ROCK
											(METAMORPHOSED GRANITIC ROCK)
545											
540											NOTES:
535											1) 0.0-0.2' Surficial Organic Soils
530											2) Driller indicates harder drilling at a depth of 2.8'.
525											3) Auger & SPT refusal at a depth of 3.1'.
520											4) Began coring at a depth of 3.0'.
515											5) 0 hr. water level measured before coring began.
510											6) 24 hr. water level not measured due to water introduced for coring.
505											
500											
495											
490											

NCDOT CORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

CORE PHOTOGRAPHS
P-5205 BORING B-T47

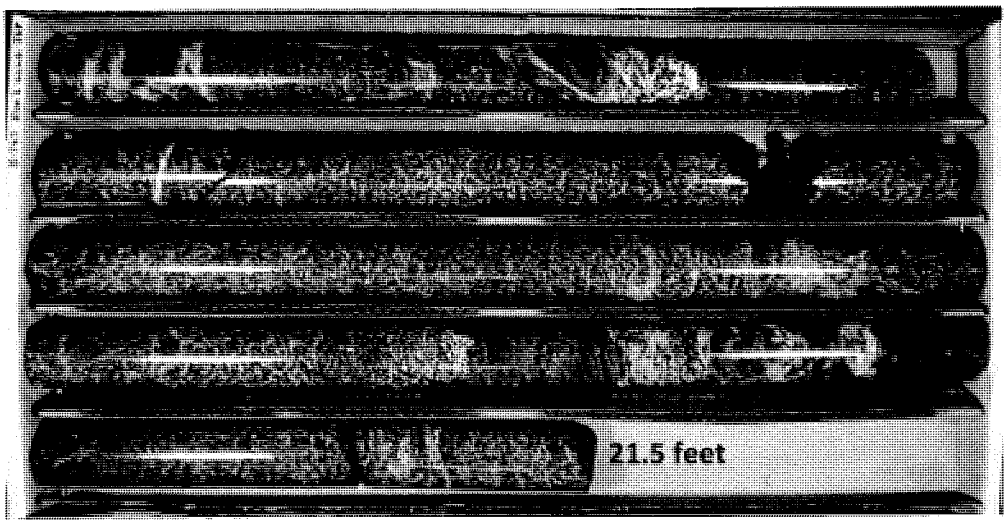
8.0 feet

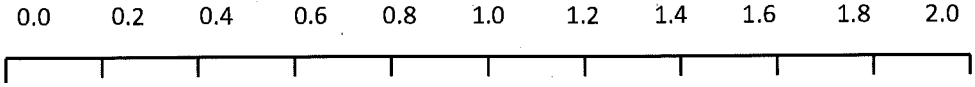




SCALE IN FEET

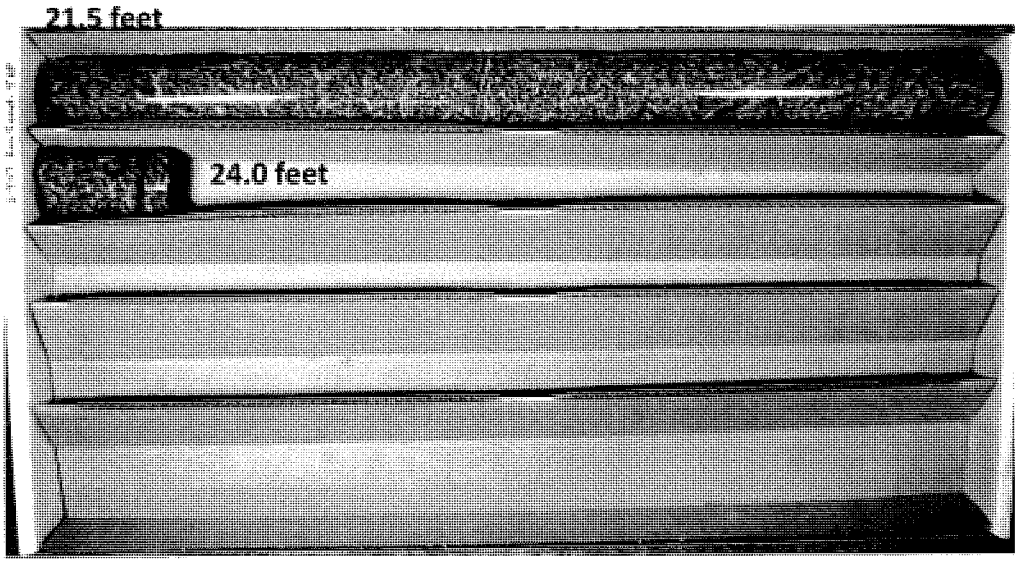
12.7 feet

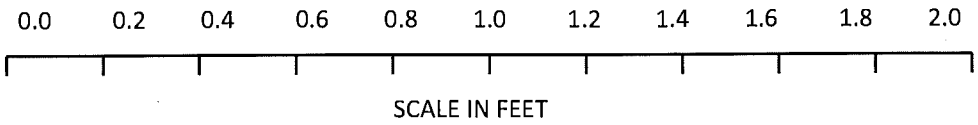




SCALE IN FEET

CORE PHOTOGRAPHS
P-5205 BORING B-T47





NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T48	**STATION** 1236+20	**OFFSET** 2ft LT	**ALIGNMENT** -MAIN-	**0 HR.** 37.0
COLLAR ELEV. 566.1 ft	**TOTAL DEPTH** 39.0 ft	**NORTHING** 850,534	**EASTING** 1,889,378	**24 HR.** 23.5
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/16/09	**COMP. DATE** 06/16/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
570										
	566.1	0.0								566.1 GROUND SURFACE 0.0
565			1	3	4	7	SS-81	17%		**RESIDUAL** Red & orange, fine to coarse sandy SILT (A-4(0)), with little clay, trace roots.
	562.6	3.5								562.3 3.8
			7	13	18	31		M		Brown, silty fine SAND (A-2-4), saprolitic.
560										559.1 7.0
	557.6	8.5								Tan, brown & white, fine to coarse sandy SILT (A-4(0)), with trace clay, saprolitic.
			16	13	14	27		D		
555										
	552.6	13.5								
			8	32	47	79	SS-84	6%		
550										
	547.6	18.5								547.6 18.5
			37	63/0.2'		100/0.7'		D		**WEATHERED ROCK** Tan, white & brown, METAMORPHOSED GRANITIC ROCK.
545										
	542.6	23.5								
			46	54/0.3'		100/0.8'		D		
540										
	537.6	28.5								
			100/0.4'			100/0.4'		D		
535										
	532.6	33.5								
			100/0.2'			100/0.2'		D		
530										
	527.6	38.5						D		527.1 39.0
			100/0.5'			100/0.5'				Boring Terminated at Elevation 527.1 ft in WEATHERED ROCK (METAMORPHOSED GRANITIC ROCK)
525										
520										NOTES:
515										1) 0.0-0.2' Surficial Organic Soils 2) Geologist indicates strata break in split spoon at a depth of 3.8'.
510										
505										
500										
495										
490										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T49	**STATION** 1237+93	**OFFSET** 5ft LT	**ALIGNMENT** -MAIN-	**0 HR.** 2.1
COLLAR ELEV. 544.4 ft	**TOTAL DEPTH** 8.5 ft	**NORTHING** 850,604	**EASTING** 1,889,536	**24 HR.** 0.5
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/16/09	**COMP. DATE** 06/16/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 8.1 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
545	544.4	0.0								544.4 GROUND SURFACE 0.0
	542.4	2.0	WOH	WOH	WOH	0		W		**ALLUVIAL** Dark brown, fine sandy clayey SILT (A-5), with roots & organics.
	540.9	3.5	WOH	1	1	2		W		541.7 2.7
540	539.4	5.0	WOH	1	2	3	SS-92	24%		**RESIDUAL** Brown & gray, silty CLAY (A-6(9,10)), with some fine to coarse sand.
			1	2	3	5	SS-93	25%		
	535.9	8.5	60/0.0'			60/0.0'				536.3 8.1
535										535.9 8.5 **NON-CRYSTALLINE ROCK** METAVOLCANIC ROCK.
530										Boring Terminated with Standard Penetration Test Refusal at Elevation 535.9 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
525										
520										NOTES:
515										1) Geologist indicates strata break in split spoon at a depth of 2.7'.
510										2) Driller indicates harder drilling at a depth of 8.1'.
505										3) Auger refusal at a depth of 8.5'.
500										
495										
490										
485										
480										
475										
470										
465										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T50	**STATION** 1239+56	**OFFSET** 11ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 554.6 ft	**TOTAL DEPTH** 10.7 ft	**NORTHING** 850,652	**EASTING** 1,889,692	**24 HR.** 7.3
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/03/09	**COMP. DATE** 06/03/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 10.6 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
555	554.6	0.0	5	5	6	11		M		GROUND SURFACE 554.6 0.0
										ARTIFICIAL FILL
	552.6	2.0								GRAVEL
	551.1	3.5								Red, tan & orange, silty fine sandy CLAY (A-7-5), with trace gravel & roots.
550			3	5	10	15	SS-10	29%		**RESIDUAL**
	547.6	7.0								Red, tan & orange, fine to coarse sandy SILT (A-4(0)), with little clay, trace wood fragments.
	546.1	8.5								
545	545.5	9.1	17	40	60/0.3'			M/D		Tan, gray & black, fine sandy SILT (A-4), saprolitic.
	544.0	10.6	60/0.1'			100/0.8' 60/0.1'		D		
	543.9	10.7								**WEATHERED ROCK**
540										Greenish-gray & brown, METAVOLCANIC ROCK.
										NON-CRYSTALLINE ROCK
										Greenish-gray, METAVOLCANIC ROCK.
535										Boring Terminated with Standard Penetration Test Refusal at Elevation 543.9 ft in NON-CRYSTALLINE ROCK (METAVOLCANIC ROCK)
530										
525										NOTES:
520										1) Boring located in gravel parking lot.
515										2) Geologist indicates strata break in split spoon at a depth of 9.1'.
510										3) Auger refusal at a depth of 10.6'.
505										
500										
495										
490										
485										
480										
475										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance		**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation				**GROUND WTR (ft)**
BORING NO. B-T51	**STATION** 1241+37	**OFFSET** 9ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 10.8
COLLAR ELEV. 554.4 ft	**TOTAL DEPTH** 19.1 ft	**NORTHING** 850,725	**EASTING** 1,889,859	**24 HR.** 9.0
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA			**HAMMER TYPE** Automatic
START DATE 06/04/09	**COMP. DATE** 06/04/09	**SURFACE WATER DEPTH** N/A		**DEPTH TO ROCK** 19.0 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
555	554.4	0.0								554.4 GROUND SURFACE 0.0
			11	5	5	10	SS-13	28%		554.1 0.3 **ARTIFICIAL FILL**
	550.9	3.5								552.4 GRAVEL 2.0
550			4	4	6	10		M		Red & tan with black specks, fine sandy silty CLAY (A-7-5(19)).
	547.9	6.5								548.4 **RESIDUAL** 6.0
			3	5	7	12		M		Red-orange with a black vein, fine sandy SILT (A-4), with little clay.
	545.9	8.5								Tan & gray, fine to coarse sandy SILT
545			4	3	6	9		M		(A-4(0)), with trace clay, saprolitic.
	540.9	13.5								
540			6	8	11	19	SS-17	23%		
	535.9	18.5								536.9 17.5
535	535.4	19.0	100/0.4'			100/0.4'		D		535.4 19.0 **WEATHERED ROCK**
			60/0.1'			60/0.1'				535.3 19.1 Tan & gray, METAMORPHOSED GRANITIC ROCK.
530										**CRYSTALLINE ROCK**
										Tan & gray, METAMORPHOSED GRANITIC ROCK.
525										Boring Terminated with Standard Penetration Test Refusal at Elevation 535.3 ft in CRYSTALLINE ROCK (METAMORPHOSED GRANITIC ROCK)
520										NOTES:
										1) Boring located in gravel parking lot.
515										2) Driller indicates harder drilling at a depth of 17.5'.
510										3) Auger refusal at a depth of 19.0'.
505										
500										
495										
490										
485										
480										
475										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance		**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation				**GROUND WTR (ft)**
BORING NO. B-T52	**STATION** 1242+84	**OFFSET** 10ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 550.6 ft	**TOTAL DEPTH** 15.0 ft	**NORTHING** 850,780	**EASTING** 1,889,994	**24 HR.** 6.5
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA			**HAMMER TYPE** Automatic
START DATE 06/11/09	**COMP. DATE** 06/11/09	**SURFACE WATER DEPTH** N/A		**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
555											
550	550.6	0.0	10	5	3	8		M		550.6 GROUND SURFACE	0.0
										548.6 **ARTIFICIAL FILL** GRAVEL	2.0
	547.1	3.5								Red-brown, silty CLAY (A-7-5(41)), with gravel.	
545			2	3	4	7	SS-73	33%		**RESIDUAL**	
										543.6 Orange & black, silty CLAY (A-7-5(41)), with trace fine to coarse sand.	7.0
	542.1	8.5								Tan & gray, fine sandy SILT (A-4), saprolitic.	
540			11	17	26	43		M			
										538.1	12.5
	537.1	13.5								**WEATHERED ROCK**	
535	535.6	15.0	17	83/0.3'		100/0.8'		D		535.6 Tan, gray & black, METAMORPHOSED GRANITIC ROCK.	15.0
			60/0.0'			60/0.0'				Boring Terminated with Standard Penetration Test Refusal at Elevation 535.6 ft on CRYSTALLINE ROCK (METAMORPHOSED GRANITIC ROCK)	
530											
525											
520											
515											
510											
505											
500											
495											
490											
485											
480											
475											

NOTES:

1) Boring located in gravel parking lot.
2) Driller indicates harder drilling at a depth of 12.5'.
3) Auger refusal at a depth of 15.0'.

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T53	**STATION** 1244+80	**OFFSET** 7ft RT	**ALIGNMENT** -MAIN-	**0 HR.** Dry
COLLAR ELEV. 539.7 ft	**TOTAL DEPTH** 7.2 ft	**NORTHING** 850,859	**EASTING** 1,890,174	**24 HR.** 4.8
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/03/09	**COMP. DATE** 06/03/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
540	539.7	0.0	4	4	5	9		D		539.7 GROUND SURFACE 0.0
										538.2 **ARTIFICIAL FILL** 1.5
	536.2	3.5								Dark red & brown with black specks, fine sandy silty CLAY (A-7-5), with gravel & roots.
535			6	7	15	22	SS-7	16%		**RESIDUAL**
	532.7	7.0	100/0.2'			100/0.2'		D		533.7 Tan, gray & white, fine to coarse sandy SILT (A-4(0)), with little clay, saprolitic. 6.0
530										532.5 **WEATHERED ROCK** 7.2
										Gray, METAMORPHOSED GRANITIC ROCK.
525										Boring Terminated at Elevation 532.5 ft on CRYSTALLINE ROCK (METAMORPHOSED GRANITIC ROCK)
520										NOTES:
515										1) 0.0-0.4' Surficial Organic Soils 2) Boring located in gravel drive. 3) Driller indicates harder drilling at a depth of 6.0'. 4) Auger refusal at a depth of 7.0'.
510										
505										
500										
495										
490										
485										
480										
475										
470										
465										
460										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

SHEET

PROJECT NO. N/A	**ID.** P-5205	**COUNTY** Alamance	**GEOLOGIST** D. Racey
SITE DESCRIPTION Haw River Siding & Mainline Relocation			**GROUND WTR (ft)**
BORING NO. B-T54	**STATION** 1246+41	**OFFSET** 33ft RT	**ALIGNMENT** -MAIN-	**0 HR.** 13.4
COLLAR ELEV. 529.5 ft	**TOTAL DEPTH** 15.2 ft	**NORTHING** 850,897	**EASTING** 1,890,333	**24 HR.** 3.8
DRILL MACHINE CME 55	**DRILL METHOD** 2.25" ID HSA		**HAMMER TYPE** Automatic
START DATE 06/03/09	**COMP. DATE** 06/03/09	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
530										
	529.5	0.0	1	2	3	5	SS-1	23%		529.5 GROUND SURFACE 0.0
										ARTIFICIAL FILL
	526.0	3.5								Red, brown & orange, fine to coarse sandy SILT (A-4(3)), with some clay, trace roots.
525			3	5	7	12		M		525.5 4.0
										RESIDUAL
	521.0	8.5								White, tan & brown, fine sandy SILT (A-4), saprolitic.
520			5	6	12	18		M		
	516.0	13.5								517.0 12.5
515	514.5	15.0	87	13/0.0'		100/0.5'		D		**WEATHERED ROCK**
			100/0.2'			100/0.2'				White & brown, METAMORPHOSED GRANITIC ROCK.
										514.3 15.2
										Boring Terminated at Elevation 514.3 ft in WEATHERED ROCK (METAMORPHOSED GRANITIC ROCK)
510										
505										NOTES:
500										1) 0.0-0.4' Surficial Organic Soils 2) Geologist indicates strata break in split spoon at a depth of 4.0'. 3) Driller indicates harder drilling at a depth of 12.5'. 4) Auger refusal at a depth of 15.0'.
495										
490										
485										
480										
475										
470										
465										
460										
455										
450										

NCDOT BORE SINGLE 66L-0160.GPJ NC_DOT.GDT 9/1/09