GEOTECHNICAL STUDY

CONSTRUCTION OF
THE NEW BRITAIN - HARTFORD BUSWAY

TOWNS OF
NEW BRITAIN, NEWINGTON,
WEST HARTFORD AND HARTFORD

PROJECT NO. 170-305
CONTRACT NO. 88-H034
From Sta 118+00 to Sta 203+00

Prepared for:
Close Jenson & Miller P.C.
Consulting Engineers

Prepared by:
Dr. Clarence Welti, P.E., P.C.
Geotechnical Consultant

August, 2010

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SECTION 1.0 INTRODUCTION

1.1 Report Format: Sections 1.2 through 1.8 describe the general project character, project location, geometry, topography, geology and the general geotechnical recommendations. Section 2.0 provides descriptions of the proposed work within specific sections of the roadway with specific recommendations for each section.

1.2 Site Location and Roadway Length: The proposed New Britain - Hartford Busway will include the construction of a dedicated bus route between the two cities. The route is aligned generally between the I-84 and I-91 corridors. The overall length of the roadway will be 9.4 miles. The portion extending from New Britain to Newington will be constructed along abandoned railroads and the portion from Newington to Hartford will be aligned close to the Amtrak Springfield line. The project has been divided into several contracts that cover specific lengths. This geotechnical study pertains to Contract No. 88-H034, which begins at Busway Station 118+00 adjacent to Central Connecticut State University and continues northward along the abandoned Conrail railroad to terminate at Station 203+00. The subject contract covers 8,500 linear feet of the Busway and includes a paved Multi-Use Trail. The Multi-Use Trail will be constructed contiguous to the southbound travelway of the Busway. The proposed Busway alignment is generally located through areas of urban development and low wetland areas.

1.3 Existing Structure Data: There are three existing structures within the subject limits that will impact the design and construction as follows:

a) The twin 12' by 8' box culvert carrying Bass Brook beneath the rail road bed. The culvert is located approximately from Busway Sta 126+65 to Sta 126+92. The flow line is about Elev. 137.4 and the existing rail bed grade is about Elev. 92 above the culvert. The proposed design requires filling up to 7± above the present grades atop the culvert. The new retaining wall101 will be constructed to support the added fills along the left shoulder in this area. The proposed grades will avoid extensions or modifications to the existing culvert.

b) The Route 9 Overpass from approximate Busway Sta 127+35 to 128+90. The Busway grades will include fills up to 8± feet above the existing nominal grade Elev. 92. However the right shoulder area will require cutting into the existing slopes at the overpass near the east abutment foundation. Temporary shoring will be required along the right side of the Busway for Wall #105 near the existing substructures.

c) The Cedar Street (Route 175) Overpass from approximately Sta 146+0 to 147+50. This bridge superstructure will be replaced and lowered to improve sight distances on Cedar Street. The structure design will be performed by ConnDOT separately (apart from the subject study). The Busway grades beneath the structure will be lowered about 3± feet below the existing grades to a nominal finished grade at Elev. 82 in order to accommodate the lowering of the bridge. This study addresses the geotechnical requirements only for the Busway design through this section.

1.3.1 The Busway project will include a new box culvert crossing to be constructed beneath the roadway at Sta 174+80. The proposed box culvert opening is 6 feet wide by 6 feet high. The culvert will be about 60 feet long with no skew. The foundation preparation for the culvert and wing walls are addressed in a separate geotechnical study.

1.4 Proposed Roadway Geometry: The subject section of the Busway and contiguous Multi-Use Trail will be aligned horizontally on tangent sections, or otherwise on large curves with radii of 2,500 to 7,900 feet. The vertical alignment will generally include sag or crest curves and tangent sections at gradients up to 4.2%. The standard width of the Busway will be 32 feet to include two 12 feet travel lanes and two 4 feet wide shoulders. The Busway will transition to a total curb to curb width of 62 feet between Sta 118+00 and Sta 123+35 to for the future East Street Station and related platform. The section from Sta 129+50 to Sta 139+00 will transition to 49 feet wide at the proposed location for a future CCSU parking garage and drop-off platform. The Multi-Use Trail will have one 12.5 feet wide travelway. The future CCSU Access Road has not been designed. Retaining walls will be required to support some of the proposed cut and fill limits largely at locations where sloping is restricted by private properties, existing structures or wetlands. There are five retaining walls proposed for the project, (Wall 101 through Wall 105). The geotechnical design requirements for the retaining walls are addressed in separate studies.

1.5 Soil/Rock Explorations: Geotechnical exploration included thirty one roadway borings ("R" borings) drilled to a maximum depth of 20 feet and eighteen structure borings ("RW" borings) to a maximum depth of 30 feet. The borings were drilled by Associated Borings Company, Inc. in August, 2007. The drilling was accomplished with a 2 1/4" hollow stem auger and a 2" standard split spoon sampler for sampling at 2 feet intervals. Standard penetration tests were performed with a 140 lb weight at a drop of 30 inches. The 2007 boring program did not include drilling into the harder bedrock to extract rock cores. A representative from Clarence Welti, P.E., P.C. was on site to observe the test drilling program. Groundwater observations were recorded at the completion of each boring, plus after 24 hours at several of the boring locations. The boring logs are included in the appendices. In addition to the above borings, reference is made herein to some of the pilot borings drilled in 2003 by Seaboard Drilling, Inc. for the preliminary design studies. The pilot borings that are included herewith, were taken in the areas that were not covered by the 2007 boring program.

1.6 General Topography, Geology and Groundwater Conditions:

1.6.1 Regarding the **Existing Topography**, the grade of the abandoned railroad bed generally decreases gradually from about Elev. 100 at the south end of the project (Sta 118+00) to about Elev. 70 at the northerly end (Sta 203+00). Much of the existing rail bed was constructed atop an embankment approximately 5 to10 feet in height, but the northerly portion within the subject project within shallow cuts. The grades on the Route 9 and 175 overpasses are up to 35 feet above the existing rail bed. In general, the areas to the west rise from the undisturbed terrain and the elevations to the east drop toward Bass Brook, Piper Brook and large wetland areas.

1.6.2 The Geologic Origin of the natural inorganic soils (below the existing fills) is predominantly

from glacial lake deposits and locally from glacial moraine deposits atop the bedrock The glacial lake deposits consist generally of medium compact silt and fine sand or medium stiff, clayey silt. The lake deposits extend to depths of about 15 to 30+ feet below grade and overlie dense glacial moraine (Till) atop the bedrock. The glacial moraine (Till) consists generally of dense silt and fine to medium sand with trace gravel. In general, where the Till stratum was encountered, it was at depths of about 15+ feet below grade beneath the existing fills and glacial lake deposits. However, in the northerly sections, (i.e. - from approximate Sta 182+0 to 198+0), the Till is the predominant soil type and was encountered at depths of 1 to 4± feet below the existing grades. The bedrock where encountered was at depths of about 6 to 28+ feet.

1.6.3 The predominant **Bedrock Type** within the subject project limits is Portland Arkose (Brownstone or Siltstone). This is based on geologic mapping for the site and environs. The bedrock was not cored for the 2007 borings, but rock cores were taken in the 2003 pilot borings. Several of the 2007 borings were drilled with the auger into weathered rock to auger refusal, and the spoils at such locations were from Sandstone or Siltstone. It is possible that Basalt formations may be present within the bedrock geology. The rock from the borings is generally at depths of 10 to 28+ feet and was encountered locally at depths of 6± feet below grade. In general, the bedrock appears to be at such depths as to have minimal effects on the construction and roadways. It is conceivable that some of the proposed cuts falling within inclining slopes outside the rail bed may encounter bedrock. Rock might also be encountered at excavations for some storm sewer structures.

1.6.4 Regarding the **Existing Fills,** most of the railroad was constructed on an embankment. The fills extend to depths of 2 to 20± feet below the existing grades. The fills are largely composed of fine to medium to coarse sand and gravel with little silt and cobbles. Several of the borings indicated high silt percentage and included wood and similar deleterious materials. In general, the fills are medium compact, however some loose zones were encountered in areas within and outside the existing rail bed limits.

1.6.5 The **Groundwater** readings taken in the boreholes varied from as shallow as 2 feet to as deep as 18.5 feet below existing grades. Most of the readings were taken upon boring completion, but at several of the locations the readings were retaken after 24 hours. The groundwater variations are due largely to the changing topography and to the varying depths of existing fills through which the borings were drilled. The glacial lake soils and the moraine soils have low permeabilities and low voids ratios. These properties allow the soils to be saturated with little water content. The capillary rise in the natural soils can be to 2 to 3 feet above the static water table. It should be assumed that the natural soils will generally be saturated or close to saturation just beneath the fills, or otherwise within 2 to 4 feet of present grades in areas that are close to the natural/original topography.

1.6.5.1 Regarding the proposed cut at the Cedar Street Overpass (Sta 146+0 to Sta 147+50), the water table was observed in the bore holes within 1 to 2 feet of the existing grades at Elev. 84±. The proposed Busway grades will range from about Elev. 83 to a low point at Elev. 81.5. Special design and construction procedures will be required in this area.

1.7 General Geotechnical Recommendations:

1.7.1 The Proposed Pavement Sections have been determined by others as follows:

Busway Mainline: 4" of Superpave (0.5") on 6" of Superpave (1.0") on 6" of Processed Aggregate Base on 12" of Subbase (Total section depth = 28").

Busway at Loading Stations: 12" of Plain Cement Concrete Pavement atop 12" of Subbase

Multi-Use Trail: 1¼" Superpave (0.25") on 1.5" Superpave (0.375") on 6" of Processed Aggregate Base

1.7.2 Under Drainage and Foundation Drainage: A general requirement will be to place under drains along the busway in cut sections and fills less than about 2 feet above existing grades, except where the cuts are made into the high embankment areas of the RR above the surrounding grades and along the Route 9 and 175 embankments. ***Where under drains are required at the left (westerly) side of the Busway, the subbase for the Multi Use Trail should be sloped to the drain to those under drains.*** In general, retaining walls supporting cuts should have structure under drains, which might satisfy under drain requirements for the Busway subbase dependent on the depth of the drains and proximity to the roadways. Rock cut slopes (if any) should have foundation drains. The under drains can be 4" diameter perforated ADC piping about 12" below the subbase layer wrapped in a geotextile encapsulated in ½" stone. The structure under drains should be with 6" diameter perforated pipe. ***The under drains should be separate from the storm drain piping. not combined in the same pipe.***

1.7.3 Proposed Long Term Slopes in Earth and Rock: Slopes in earth cuts and fills shall be 2:1, or flatter. Steeper slopes up to 1.5:1 will require stabilization cladding with blocks or riprap. The occurrence of rock cuts should be minimal based on the available boring information. Should rock cuts become evident during construction, they will have to be reviewed on a case by case basis in the field. The tentative requirement will be to slope rock back at 1:1 inclination, or flatter.

1.7.4 Long Term Earth Retention: Retaining walls 101 through 105 are required to support the soils along some of the cut and fill limits. The geotechnical parameters for design of the walls are addressed in separate studies prepared for each wall section. The locations of the walls are addressed in Section 2.0 of this study and in the individual wall studies. The retaining walls can be proprietary type systems.

1.7.5 Special Earth Retention at Existing Structures: Retaining Wall 105 will support the cut on the right side of the Busway before the Route 9 overpass. This wall will require temporary shoring for the construction. The permanent wall will be a proprietary wall design. Temporary shoring is a contractor provided item and must be designed by a Connecticut licensed professional engineer.

1.7.6 Shrinkage in Earth: Most of the soils falling in the cut limits will include the existing

granular fills and silty glacial lake deposits. Those soils are generally medium compact to locally loose. The estimated shrinkage from cuts to fills is about 15%.

1.7.7 General Earthwork Requirements: All materials, methods, testing and acceptance criteria pertaining to the roadway construction will be in accordance with the Connecticut Department of Transportation Standard Specifications Form 816, plus the supplemental specifications and special provisions. ***The contractor should be advised that the natural soils include saturated silts with clay, silty fine sand and silty moraine soils. These soils will be susceptible to remolding under equipment when wet.*** There may be requirements for initial layers of off site sand and gravel or No. 8 crushed stone over wet sub-grades to provide a stable base on which to compact the embankments and final pavement sections. The excavations will largely be in soils defined as OSHA Type C and any unshored excavations exceeding 5 feet in height must be sloped back at 34° from the horizontal 1.5:1.

1.7.8 Special Earthwork Requirements: Some of the sub-grades for the Busway and Multi-Use Track, for walls and utilities will fall in saturated strata of silty fine sand and clayey silt. The excavations in such areas may have to be made with smooth edged buckets to avoid excessive disturbance of the sub-grade soils. The subgrades will require stabilization with layers of off-site sand and gravel or possibly with No. 8 crushed stone. The ground water should be channelized or pumped from the cuts into trenches and diverted to sediment basins outside of the construction limits. In general, the subbase in wet cut sections will be increased to 18" to 24" to provide a stable base on which to place the processed base and pavements. Where the subgrades support structure foundations or utility structures, there may be requirements to place an initial 3" concrete mud mat and added thickness of compacted granular fill or No. 8 stone atop the mud mat. It should be recognized that some conditions will probably warrant using No. 8 crushed stone for at least a portion of the subbase and granular base layers.

SECTION 2.0 SPECIFIC ROADWAY SECTIONS

2.1 Section from Sta 118+0 to Sta 129+0: The Busway and Multi-Use Trail in this section will generally include shallow to moderate cuts and fills atop the rail embankment and into the shoulder areas. The future CCSU Access Road will abut the left (westerly) Busway shoulder in this section. The CCSU Access Road will be designed under a future contract. The length from about Sta 119+0 to 123+0 will be a full cut section to about 2 to 5 feet below existing grades. The sections to the north of Sta 123+0 include combined cuts and fills to a full fill section with fills up to 16 feet. At the Route 9 Overpass the Busway lanes will generally be in fills up to 7 feet high, but the right shoulder will require cutting into the slopes along at the east abutment. Special shoring and wall designs are required as cited previously. This section also includes Retaining Walls 101 and 104. The applicable borings are RW101-1 through RW101-5, RW102-1, RW102-2 and pilot boring SB-29, SB-30, SB-31and SB-32. From the borings, the existing fills generally range to 2 to 18+ feet deep along the railroad bed. The fills generally decrease in depth toward the southward. The natural soil section includes medium compact to medium stiff silt with little clay overlying the dense Till or bedrock at about 25 to 30± feet below grade. The groundwater was observed in the bore holes near the base of the fills or about 10 to 18 feet below grade. From about Sta 118+0 to Sta 122+50 the soils will be saturated or close to saturation to within 2 feet of existing grades. The proposed 12" subbase layer (beneath the processed base and pavement) is acceptable. The slopes shall be as cited in section 1.7.3. *There should be under drains installed at the left and right sides at least from Sta 118+0 to about Sta 123+25 and at the right shoulder from Sta 127+0 to Sta 129+0.* The retaining walls should have structure under drains. This section crosses over the Bass Brook culvert and then beneath the Route 9 overpass. Based on the proposed grading, the box culvert will not have to be extended. At Bass Brook, the Busway left side will require filling to 7+ feet above the existing grades to be supported by Retaining Wall 101 and the 7+ foot cut at the right side will be supported by Retaining Wall 105. Wall 101 will also serve as a barrier wall between traffic on the Busway and the Multi-Use Trail.

2.2 Section from Sta 129+0 to Sta 135+0: This section will predominantly require filling up to 10 feet deep including into the side slopes, except near the slopes at the Route 9 Overpass. The applicable borings include R-1, R-2, R-3 and SB-34. The soils cross section generally includes the existing fills to 4 to 18± feet deep on the railroad bed, overlying natural medium stiff silt with little clay to about 20 feet, atop the dense Till or bedrock at about 25 to 30± feet below grade. The groundwater was generally at the base of the existing fills. The proposed 12" subbase layer (beneath the overall pavement section) is acceptable. The sloped areas shall be as cited in section 1.7.3 above. *There should be under drains at the right and left shoulders from Sta 133+0 to Sta 135+0.* The retaining walls should have structure under drains.

2.3 Section from Sta 135+0 to Sta 148+0: This section will be on shallow fills with cut slopes at the left and right sides to about Station 137+0. From Station 137+0 the Busway is in a full cut section with cuts to as deep as 6 feet below the existing grades near the slope limits. The existing rail bed is presently in a cut through large portions of this section (i.e. - from Sta 134+0 to Sta 139+0). Most of the proposed cut limits will be sloped in accordance with section 1.7.3 above. Retaining

Wall 102 will support the cut on the left side of the roadway from Sta 141+55 to Sta 145+68. The applicable borings are R-4 through R-8, RW103-1 and RW103-2. From the borings, the existing fills range largely to about 2 to 4 feet deep, and locally to 10 feet deep. The natural soils beneath the fills consist predominantly of medium compact silt and fine sand or stiff clayey silt to 25+ feet below grade. The groundwater readings ranged from 1 to 6 feet below grade. Some of the subgrades falling in cuts within this section will fall in saturated soils. The excavations in such areas should be made as cited in section 1.7.8 above. In general, the sub-grades will require stabilization with the extra thick subbase layer to permit proper compaction of the materials (i.e total subbase thickness of 24"). Where the design sub-grades are dry and stable the 12" layer of subbase will be sufficient. *Under drains are recommended at the left and right sides of the roadway throughout this entire section.* The retaining walls should have structure under drains. The ConnDOT Bridge Design group is designing the section at the Route 175 Bridge and the structures through this area. The soils profile from the applicable borings (RW103-1, RW103-2 and SB-35) includes existing fills to 2 to 8 feet deep overlying the natural medium compact silt and fine sand or stiff clayey silts to about15 to 20+ feet deep. **From about Sta 144+0 to about Sta 147+0 the 24" thick subbase layer will fall in the silt and clay at an elevation close to level of the nearby wetlands (Elev. 78 to 80). The cut to subgrade will be at least 3 feet below the water table**. This area will drain from a low point in the roadway Elev. 81.8 at about station 145 +63 through a pipe with invert of about Elev.78. The Busway grade in this general area will be at nominal Elev. 82. Construction of the Busway in this area will require placement of at least 24" of subbase on a woven stabilization geotextile.

The outlet drain pipe should initially be placed to drain the cut. The proposed 24" RCP pipe will require 30" of subbase or compacted granular fill on a woven stabilization geotextile. *The design engineer studied options to raise the Busway profile in this area, but revisions were not feasible based on the design requirements of Project No. 93-166 for replacing the Route 175 bridge.*

2.4 Section from Sta 148+0 to Sta 180+00: This section will generally require shallow cuts and fills for the Busway within in the rail bed limits, to deeper fills beneath the Multi-Use Trail and out over the declining slopes. The fills outside the Busway will be to 5 to 10± feet above the existing grades. Retaining Wall 103 will support the fills for the Multi-Use Trail from Sta 168+0 to Sta 176+75. The applicable borings include R-9 through R-24. From the borings, the existing fills generally range from about 3 to 9 feet deep. The natural soils include strata of medium compact silt and fine sand or stiff clayey silts to about15 to 20+ feet deep. The groundwater observations ranged generally from 6 to 10+ feet below grade and locally at 3 feet below grade. The 12" subbase layer will be acceptable in this section. *Under drains should be placed at the left shoulder Sta 148+0 to Sta153+0, left and right Sta 160+0 to Sta 165+0 and right shoulder Sta 176+50 to 180+0 to drain the subbase layer.* Retaining Wall 103 should have a structure under drain.

2.5 Section from Sta 180+00 to Sta 187+50: The section of the Busway will largely require shallow fills and cuts to about 1 to 2 feet, which will generally place the subgrades below existing grades. The cuts along this section will fall in the existing fills or in the underlying glacial moraine soils. The applicable borings include R-25 to R-30. The existing soil section includes fills to 2 to 6 feet, predominantly atop the dense glacial moraine deposits (silty Till) or possibly soft, weathered

bedrock. The bedrock where encountered in the borings was at depths of 6 to 12 feet below grade. The groundwater was observed at 9 to 10 feet below grade. It should be assumed that the silty moraine soils can be saturated close to the bottom of the existing fills (i.e. - within 3 to 6 feet of existing grades). The 12" layer of subbase is sufficient in this section. *Under drains are recommended at the left and right sides in this entire section.*

2.6 Section from Sta 187+50 to Sta 203+0: This section will fall atop fills to 1 to 4± feet above the existing grades. The depth of the fills will generally extend out over the declining slopes to the left and right sides. The applicable borings include R-31 to R-35. The existing fills range from 1 to 8± feet deep and overlie the dense silty moraine to about Sta 196±, or medium compact silt to the north of this station. The bedrock, where encountered, was at depths of about 10 to 14 feet below grade. The water table was evident at 9 to 10 feet below grade but it should be assumed that the soils will be saturated or close to saturation just below the fills or within about 3± feet of existing grades. The 12" thick subbase layer is acceptable in this area. The slopes should be designed according to the requirements of section 1.7.3 above. *Under drains are recommended at the left and right shoulders from Sta 187+50 to Sta 189+50. An under drain should be located along the left side from Sta 189+50 to Sta 191+0.* There are no other special requirements in this portion of the Busway.

3.0 This report has been prepared for specific application to the subject project in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made. In the event that any changes in the nature, design and location of structures are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing.

The analyses and recommendations submitted in this report are based in part upon data obtained from referenced explorations. The extent of variations between explorations may not become evident until construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report.

Dr. Clarence Welti, P.E., P.C., should perform a general review of the final design and specifications in order that geotechnical design recommendations may be properly interpreted and implemented as they were intended.

APPENDIX 1

BORING LOGS R-1 THROUGH R-35

(2007)

Mark Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 91.1	LOCATION:	

Date Started: 8/24/2007		Auger	Casing	Sampler		Core Bar	Hole No. **R-1**
Date Finished: 8/24/2007	Type	HSA		SS			Line & Station 130+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in			Offset CL
AT 14 ' AFTER 0 HRS	Hammer			140	lb	Bit	N Coordinate 812077.34
AT ' AFTER HRS	Fall			30	in		E. Coordinate 998261.12

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	14	D	10	12	8	9		Br. M-F Sand, Some C-F Gravel (Fill)
		2.0 - 4.0	2	24	14	D	12	10	15	10		
		4.0 - 6.0	3	24	12	D	9	8	10	10	4	
5												Red Br. M-F Sand, Root Fibers
		6.0 - 8.0	4	24	12	D	8	8	10	10		
		8.0 - 10.0	5	24	12	D	16	15	15	12	8	
												Red Br. F. Silty Sand
10		10.0 - 12.0	6	24	6	D	15	18	18	21		
15		15.0 - 17.0	7	24	12	D	24	46	60	90		
											17	
												End of Boring - 17.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 17.0 Footage in Rock 0.0 No. of Samples 7 Hole No. **R-1**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 90.14	LOCATION:	

Date Started: 8/24/2007		Auger	Casing	Sampler		Core Bar	Hole No. **R-2**
Date Finished: 8/24/2007	Type	HSA		SS			Line & Station 132+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in			Offset 16' LT
AT 6 'AFTER 0 HRS	Hammer			140	lb	Bit	N Coordinate 812251.39
AT 'AFTER HRS	Fall			30	in		E. Coordinate 998358.80

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	10	D	9	13	7	8		Blk. M-F Sand, Some C-F Gravel, (Fill)
		2.0 - 4.0	2	24	9	D	10	11	17	15		
											3	
		4.0 - 6.0	3	24	15	D	14	12	12	16		Red Br. F. Silty Sand
5												
		6.0 - 8.0	4	24	12	D	10	10	14	14		
		8.0 - 10.0	5	24	13	D	10	10	11	10		
10												
											12	
		13.0 - 15.0	6	24	13	D	10	14	19	24		Red Br. Clayey Silt, Little M-F Sand, Tr. F. Gravel
15											15	
												End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 6 Hole No. **R-2**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Mark Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 89.94	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/24/2007						Hole No.	**R-3**
Date Finished: 8/24/2007	Type	HSA		SS		Line & Station	134+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	4' RT
AT 10 ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	812417.32
AT ' AFTER HRS	Fall			30 in		E. Coordinate	998470.74

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	10	D	6	6	8	7		Br. M-F Sand, Some C-F Gravel (Fill)
		2.0 - 4.0	2	24	8	D	7	7	12	14		
											3	
		4.0 - 6.0	3	24	14	D	12	15	16	15		Red Br. F. Silty Sand (Fill)
5												
		6.0 - 8.0	4	24	14	D	20	21	18	22		
		8.0 - 10.0	5	24	18	D	14	14	15	12		
10		10.0 - 12.0	6	24	20	D	10	8	10	10	10	
												Red Br. Clayey Silt
											14	
15		15.0 - 17.0	7	24	12	D	24	38	22	20		Red Br. Silt, Tr. F. Gravel
											17	
												End of Boring - 17.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 17.0 Footage in Rock 0.0 No. of Samples 7 Hole No. **R-3**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 89.86	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/27/2007						Hole No.	**R-4**
Date Finished: 8/27/2007	Type	HSA		SS		Line & Station	136+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	16' LT
AT 6 ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	812605.51
AT ' AFTER HRS	Fall			30 in		E. Coordinate	998541.15

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	10	D	16	14	14	17		Blk. M-F Sand, Some C-F Gravel, (Fill)
		2.0 - 4.0	2	24	8	D	17	24	26	30		
		4.0 - 6.0	3	24	8	D	14	16	17	16	4	
5												Red Br. F. Silty Sand
		6.0 - 8.0	4	24	18	D	12	10	14	8	6	
												Red Br. Clayey Silt
10		10.0 - 12.0	5	24	10	D	1	4	3	3		
		13.0 - 15.0	6	24	12	D	4	3	3	2		
15											15	
												End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 6 Hole No. **R-4**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 88.96	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/27/2007						Hole No.	**R-5**
Date Finished: 8/27/2007	Type	HSA		SS		Line & Station	137+94
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	16' RT
AT 6 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	812772.54
AT 'AFTER HRS	Fall			30 in		E. Coordinate	998634.07

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	4	D	2	4	4	4		Blk. M-F Sand, Some C-F Gravel, (Fill)
		2.0 - 4.0	2	24	12	D	14	16	17	15		
		4.0 - 6.0	3	24	12	D	6	7	11	10	4	
5												Red Br. Clayey Silt
		6.0 - 8.0	4	24	12	D	10	11	11	14		
10		10.0 - 12.0	5	24	16	D	1	3	2	2		
		13.0 - 15.0	6	24	12	D	3	2	2	3		
15											15	End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 6 Hole No. **R-5**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 87.77	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/27/2007						Hole No.	**R-6**
Date Finished: 8/27/2007	Type	HSA		SS		Line & Station	140+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	11' LT
AT 6 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	812977.55
AT 'AFTER HRS	Fall			30 in		E. Coordinate	998669.88

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	10	D	4	7	6	6		Blk. M-F Sand, Some C-F Gravel, (Fill)
		2.0 - 4.0	2	24	12	D	11	14	9	7		
		4.0 - 6.0	3	24	12	D	3	5	5	5	4	
5												Red Br. Clayey Silt
		6.0 - 8.0	4	24	16	D	5	7	6	7		
10		10.0 - 12.0	5	24	10	D	4	6	5	11		
		13.0 - 15.0	6	24	16	D	7	11	9	9		
15											15	End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0	Footage in Rock 0.0	No. of Samples 6	Hole No. **R-6**		
SAMPLE TYPE CODING:	D = DRIVEN	C = CORE	A = AUGER	UP = UNDISTURBED PISTON	
PROPORTIONS USED:	TRACE = 1-10%	LITTLE = 10-20%	SOME = 20-35%	AND = 35-50%	

Jaime Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 86.74	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/27/2007						Hole No.	**R-7**
Date Finished: 8/27/2007	Type	HSA		SS		Line & Station	142+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	16' RT
AT 9 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	813167.39
AT 9 'AFTER 24 HRS	Fall			30 in		E. Coordinate	998742.25

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	11	D	5	7	11	14		Blk. M-F Sand, Some C-F Gravel, (Fill)
		2.0 - 4.0	2	24	8	D	14	19	11	15		
		4.0 - 6.0	3	24	12	D	7	4	4	8	4	
5												Red Br. Clayey Silt
		6.0 - 8.0	4	24	12	D	7	7	6	11		
10		10.0 - 12.0	5	24	12	D	7	6	7	10		
		13.0 - 15.0	6	24	16	D	11	7	9	9		
15											15	End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 6 Hole No. **R-7**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 84.66	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/27/2007						Hole No.	**R-8**
Date Finished: 8/27/2007	Type	HSA		SS		Line & Station	144+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	11' LT
AT 6 ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	813370.40
AT 2 ' AFTER 24 HRS	Fall			30 in		E. Coordinate	998763.21

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	8	D	1	2	1	2		Blk. M-F Sand, Some C-F Gravel,
		2.0 - 4.0	2	24	12	D	3	3	5	3	2	(Fill)
												Red Br. Clayey Silt
		4.0 - 6.0	3	24	14	D	7	8	7	11		
5												
10		10.0 - 12.0	4	24	12	D	8	8	9	8		
		13.0 - 15.0	5	24	12	D	7	11	10	10		
15											15	
												End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 5 Hole No. **R-8**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 83.2	LOCATION:	

Date Started: 8/27/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**R-9**
Date Finished: 8/27/2007	Type	HSA		SS		Line & Station	148+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	16' RT
AT 14 ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	813756.30
AT 12 ' AFTER 24 HRS	Fall			30 in		E. Coordinate	998877.89

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	9	D	8	13	11	11		Blk. M-F Sand and C-F Gravel, Cobbles, (Fill)
		2.0 - 4.0	2	24	11	D	10	5	5	7		
		4.0 - 6.0	3	24	11	D	7	7	5	5		
5											5	
		6.0 - 8.0	4	24	11	D	11	14	12	11		Red Br. M-F Silty Sand, Some M-F Gravel (Fill)
		8.0 - 10.0	5	24	14	D	8	8	8	8	8	
												Red Br. Clayey Silt
10		10.0 - 12.0	6	24	15	D	6	7	7	7		
		13.0 - 15.0	7	24	16	D	7	9	13	15		
15											15	
												End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 7 Hole No. **R-9**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 82.8	LOCATION:	

Date Started: 8/27/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**R-10**
Date Finished: 8/27/2007	Type	HSA		SS		Line & Station	150+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	11' LT
AT 13 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	813962.49
AT 'AFTER HRS	Fall			30 in		E. Coordinate	998895.47

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	6	D	4	6	11	7		Blk. M-F Sand, Some C-F Gravel, (Fill)
		2.0 - 4.0	2	24	6	D	7	11	12	14		
		4.0 - 6.0	3	24	12	D	4	7	3	4		
5		6.0 - 8.0	4	24	0	D	6	7	7	9		
		8.0 - 10.0	5	24	12	D	3	5	11	11	8	
												Red Br. Clayey Silt
10		10.0 - 12.0	6	24	10	D	11	15	14	13		
		13.0 - 15.0	7	24	10	D	14	16	15	15		
15											15	
												End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 7 Hole No. **R-10**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 79.85	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/27/2007						Hole No.	**R-11**
Date Finished: 8/27/2007	Type	HSA		SS		Line & Station	153+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	25' RT
AT 15 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	814233.68
AT 'AFTER HRS	Fall			30 in		E. Coordinate	998992.46

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	6	D	1	1	2	2		Blk. M-F Sand, Some C-F Gravel, (Fill)
		2.0 - 4.0	2	24	6	D	2	3	3	4		
		4.0 - 6.0	3	24	12	D	7	8	11	15	4	
5												Red Br. F. Silty Sand, Tr. F. Gravel (Till)
		6.0 - 8.0	4	24	7	D	11	15	12	12		
10		10.0 - 12.0	5	24	10	D	7	9	11	14		
15		15.0 - 17.0	6	24	8	D	5	7	7	9		
		18.0 - 20.0	7	24	20	D	8	9	9	11		
20											20	End of Boring - 20.0
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 20.0 Footage in Rock 0.0 No. of Samples 7 Hole No. **R-11**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 76.47	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/28/2007						Hole No.	**R-12**
Date Finished: 8/28/2007	Type	HSA		SS		Line & Station	154+95
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	5' SOUTH
AT 10 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	814244.86
AT 'AFTER HRS	Fall			30 in		E. Coordinate	998941.17

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	5	D	6	6	10	7		Br. M-F Sand and C-F Gravel, Cobbles (Fill)
		2.0 - 4.0	2	24	5	D	5	5	11	19		
											3.5	
		4.0 - 6.0	3	24	10	D	19	31	27	29		Red Br. M-F Silty Sand, Some C-F Gravel
5												
		6.0 - 8.0	4	24	7	D	15	15	12	12		
10		10.0 - 12.0	5	24	4	D	8	8	12	8		
15		15.0 - 17.0	6	24	5	D	9	8	8	9		
		18.0 - 20.0	7	24	7	D	10	9	9	9		
20											20	End of Boring - 20.0
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth	20.0	Footage in Rock	0.0	No. of Samples	7	Hole No.	**R-12**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 75.36	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/28/2007						Hole No.	**R-13**
Date Finished: 8/28/2007	Type	HSA		SS		Line & Station	155+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	40' LT
AT 8 ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	814443.28
AT ' AFTER HRS	Fall			30 in		E. Coordinate	998977.27

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	6	D	7	7	10	9	1	Topsoil
		2.0 - 4.0	2	24	9	D	11	11	17	18		Red Br. M-F Sand and C-F Gravel
		4.0 - 6.0	3	24	5	D	8	10	8	8		
5												
		6.0 - 8.0	4	24	9	D	11	13	15	17		
10		10.0 - 12.0	5	24	9	D	8	10	15	17		
15		15.0 - 17.0	6	24	16	D	36	41	43	20		
		18.0 - 20.0	7	24	10	D	12	15	14	14		
20											20	End of Boring - 20.0
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 20.0 Footage in Rock 0.0 No. of Samples 7 Hole No. **R-13**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 72.45	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/28/2007						Hole No.	**R-14**
Date Finished: 8/28/2007	Type	HSA		SS		Line & Station	155+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	35' RT
AT 8 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	814426.88
AT 5 'AFTER 24 HRS	Fall			30 in		E. Coordinate	999052.50

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	7	D	4	9	17	20	0.5	Topsoil
		2.0 - 4.0	2	24	7	D	16	23	31	25		Red Br. M-F Sand and C-F Gravel
		4.0 - 6.0	3	24	10	D	12	10	10	10		
5												
10		10.0 - 12.0	4	24	12	D	6	6	7	6		
15		15.0 - 17.0	5	24	13	D	7	7	7	7		
		18.0 - 20.0	6	24	14	D	8	6	6	8		
20											20	End of Boring - 20.0
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 20.0 Footage in Rock 0.0 No. of Samples 6 Hole No. **R-14**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 79.72	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/27/2007						Hole No.	**R-15**
Date Finished: 8/27/2007	Type	HSA		SS		Line & Station	157+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	15' RT
AT 12 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	814629.71
AT 'AFTER HRS	Fall			30 in		E. Coordinate	999079.73

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	6	D	3	7	11	4		Blk. M-F Sand, Some C-F Gravel, (Fill)
		2.0 - 4.0	2	24	10	D	6	11	5	7		
		4.0 - 6.0	3	24	10	D	7	5	7	6	4	
5												Red Br. F. Silty Sand, Tr. F. Gravel
		6.0 - 8.0	4	24	12	D	11	11	12	14		
10		10.0 - 12.0	5	24	12	D	7	11	10	10		
		13.0 - 15.0	6	24	14	D	14	13	17	17		
15											15	End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 6 Hole No. **R-15**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 80.29	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/31/2007						Hole No.	**R-16**
Date Finished: 8/31/2007	Type	HSA		SS		Line & Station	157+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	14' LT
AT 3 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	814637.77
AT 'AFTER HRS	Fall			30 in		E. Coordinate	999051.25

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	3	D	2	2	2	4		Blk. M-F Sand, Some C-F Gravel, Some Silt (Fill)
		2.0 - 4.0	2	24	5	D	6	6	4	4		
											3	
		4.0 - 6.0	3	24	13	D	9	9	10	12		Red Br. M-F Silty Sand, Some M-F Gravel (Possible Fill)
5												
		6.0 - 8.0	4	24	10	D	10	12	12	16		
		8.0 - 10.0	5	24	6	D	17	20	19	26		
											9	
10		10.0 - 12.0	6	24	14	D	6	11	14	15		Red Br. Silt
		13.0 - 15.0	7	24	15	D	10	13	19	20		
15											15	
												End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 7 Hole No. **R-16**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 79.39	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/27/2007						Hole No.	**R-17**
Date Finished: 8/27/2007	Type	HSA		SS		Line & Station	158+40
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	20' RT
AT 14 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	814766.61
AT 14.5 'AFTER 24 HRS	Fall			30 in		E. Coordinate	999120.24

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	5	D	2	2	2	4		Br. C-F Sand and C-F Gravel, Cobbles, (Fill)
		2.0 - 4.0	2	24	9	D	7	6	6	7		
											3	
		4.0 - 6.0	3	24	14	D	9	9	10	11		Red Br. M-F Sand and C-F Gravel
5												
		6.0 - 8.0	4	24	13	D	11	14	12	11		
		8.0 - 10.0	5	24	10	D	11	14	19	23	8	
												Red Br. Clayey Silt
10		10.0 - 12.0	6	24	8	D	10	16	19	17		
15		15.0 - 17.0	7	24	13	D	9	9	9	9		
											17	
		18.0 - 20.0	8	24	14	D	10	10	9	10		Red Br. F. Silty Sand
20											20	
												End of Boring - 20.0
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 20.0 Footage in Rock 0.0 No. of Samples 8 Hole No. **R-17**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 73.36	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/28/2007						Hole No.	**R-18**
Date Finished: 8/28/2007	Type	HSA		SS		Line & Station	158+40
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	40' LT
AT 8 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	814781.45
AT 6 'AFTER 24 HRS	Fall			30 in		E. Coordinate	999067.80

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	6	D	11	19	36	40	0.5	Topsoil
		2.0 - 4.0	2	24	5	D	13	22	31	39		Red Br. M-F Silty Sand, Some M-F Gravel
		4.0 - 6.0	3	24	10	D	8	10	8	9		
5												
											8	
												Red Br. F. Silty Sand
10		10.0 - 12.0	4	24	14	D	8	8	8	8		
15		15.0 - 17.0	5	24	14	D	9	9	9	8		
		18.0 - 20.0	6	24	14	D	7	7	6	7		
20											20	
												End of Boring - 20.0
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth	20.0	Footage in Rock	0.0	No. of Samples	6	Hole No.	**R-18**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 76.74	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/28/2007						Hole No.	**R-19**
Date Finished: 8/28/2007	Type	HSA		SS		Line & Station	160+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	30' LT
AT 7 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	814919.24
AT 9 'AFTER 24 HRS	Fall			30 in		E. Coordinate	999122.59

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	9	D	9	9	7	7	0.5	Topsoil
		2.0 - 4.0	2	24	7	D	7	7	8	9		Red Br. M-F Silty Sand and C-F Gravel
		4.0 - 6.0	3	24	8	D	12	9	9	9		
5											5	Red Br. F. Silty Sand
10		10.0 - 12.0	4	24	16	D	8	8	8	8		
		13.0 - 15.0	5	24	16	D	8	7	7	8		
15											15	End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 5 Hole No. **R-19**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	SM-001 REV. 10/92	BORING REPORT	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 79.2	LOCATION:		

Date Started: 8/28/2007		Auger	Casing	Sampler		Core Bar	Hole No.	**R-20**
Date Finished: 8/28/2007	Type	HSA		SS			Line & Station	162+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in			Offset	20' RT
AT 13 'AFTER 0 HRS	Hammer			140 lb		Bit	N Coordinate	815096.41
AT 'AFTER HRS	Fall			30 in			E. Coordinate	999247.08

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	12	D	4	5	5	7		Blk. M-F Sand, Some C-F Gravel, (Fill)
		2.0 - 4.0	2	24	10	D	11	16	30	16		
		4.0 - 6.0	3	24	16	D	8	12	16	20	4	
5												Red Br. F. Silty Sand, Tr. F. Gravel
		6.0 - 8.0	4	24	16	D	18	20	19	20		
10		10.0 - 12.0	5	24	12	D	7	8	7	7		
		13.0 - 15.0	6	24	12	D	2	5	5	5	13	
15											15	Red Br. M-F Sand, Some C-F Gravel, Tr. Silt
												End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0	Footage in Rock 0.0	No. of Samples 6	Hole No. **R-20**		
SAMPLE TYPE CODING:	D = DRIVEN	C = CORE	A = AUGER	UP = UNDISTURBED PISTON	
PROPORTIONS USED:	TRACE = 1-10%	LITTLE = 10-20%	SOME = 20-35%	AND = 35-50%	

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 76.56	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/30/2007						Hole No.	**R-21**
Date Finished: 8/30/2007	Type	HSA		SS		Line & Station	164+39
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	25' LT
AT 9 ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	815325.36
AT ' AFTER HRS	Fall			30 in		E. Coordinate	999309.76

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	7	D	5	19	27	14	0.5	Topsoil
		2.0 - 3.5	2	18	10	D	26	39	50	X		Br. M-F Sand and C-F Gravel, Cobbles
											3	
		4.0 - 6.0	3	24	12	D	19	22	29	27		Red Br. Silty Sand, Some C-F Gravel
5												
10		10.0 - 12.0	4	24	13	D	14	14	19	16		
		13.0 - 15.0	5	24	16	D	9	11	13	13		
15											15	
												End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 5 Hole No. **R-21**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 65.08	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/31/2007						Hole No.	**R-22**
Date Finished: 8/31/2007	Type	HSA		SS		Line & Station	175+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	40' LT
AT 3 ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	816195.62
AT ' AFTER HRS	Fall			30 in		E. Coordinate	999923.95

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	4	D	2	2	2	2		Topsoil
		2.0 - 4.0	2	24	9	D	7	13	19	20	2	
												Red Br. C-F Sand and C-F Gravel (Fill)
		4.0 - 6.0	3	24	11	D	7	7	8	8		
5											5	
												Red Br. Silt
10		10.0 - 12.0	4	24	13	D	3	3	4	4		
15		15.0 - 17.0	5	24	14	D	4	4	4	4		
		18.0 - 20.0	6	24	13	D	5	4	4	6		
20											20	
												End of Boring - 20.0
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 20.0	Footage in Rock 0.0	No. of Samples 6	Hole No. **R-22**		
SAMPLE TYPE CODING:	D = DRIVEN	C = CORE	A = AUGER	UP = UNDISTURBED PISTON	
PROPORTIONS USED:	TRACE = 1-10%	LITTLE = 10-20%	SOME = 20-35%	AND = 35-50%	

Jaime Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 73.97	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/28/2007						Hole No.	**R-23**
Date Finished: 8/28/2007	Type	HSA		SS		Line & Station	179+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	15' LT
AT 8 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	816495.80
AT 7 'AFTER 24 HRS	Fall			30 in		E. Coordinate	1000186.29

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	4	D	4	6	5	2		Blk. M-F Sand, Some C-F Gravel, Some Silt (Fill)
		2.0 - 4.0	2	24	10	D	4	5	6	6		
		4.0 - 6.0	3	24	14	D	17	19	31	40	4	
5												Red Br. F. Sand, Some Silt, Tr. C-F Gravel (Fill)
		6.0 - 8.0	4	24	6	D	26	39	40	50		
		8.0 - 10.0	5	24	10	D	7	11	17	7	8	
												Red Br. C-F Sand, Some C-F Gravel, Tr. Silt
10		10.0 - 12.0	6	24	12	D	11	7	7	9		
											12	
		13.0 - 15.0	7	24	16	D	7	10	11	14		Red Br. Silt
15											15	
												End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 7 Hole No. **R-23**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 73.73	LOCATION:	

Date Started:	8/31/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**R-24**
Date Finished:	8/31/2007	Type	HSA		SS		Line & Station	180+0
Groundwater Observations		Size I. D.	2 1/4 in		2 in		Offset	20' RT
AT 10 ' AFTER 0 HRS		Hammer			140 lb	Bit	N Coordinate	816562.10
AT ' AFTER HRS		Fall			30 in		E. Coordinate	1000274.96

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	7	D	2	4	10	11		Blk. M-F Sand, Some C-F Gravel, Some Silt (Fill)
		2.0 - 4.0	2	24	6	D	10	15	19	18	2	
		4.0 - 6.0	3	24	3	D	14	10	10	13		Red Br. M-F Silty Sand, Some M-F Gravel
5												
		6.0 - 8.0	4	24	3	D	14	10	10	13		
											9	
10		10.0 - 12.0	5	24	10	D	10	10	13	14		Red Br. Silt
		13.0 - 15.0	6	24	13	D	14	14	19	19		
15											15	End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth	15.0	Footage in Rock	0.0	No. of Samples	6	Hole No.	**R-24**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 74.2	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/30/2007						Hole No.	**R-25**
Date Finished: 8/30/2007	Type	HSA		SS		Line & Station	182+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	20' LT
AT 10 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	816738.91
AT 'AFTER HRS	Fall			30 in		E. Coordinate	1000377.42

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	10	D	7	5	17	10		Blk. M-F Sand, Some C-F Gravel, Some Silt (Fill)
		2.0 - 4.0	2	24	10	D	11	15	17	14		
		4.0 - 6.0	3	24	11	D	13	12	19	21		
5												
		6.0 - 8.0	4	24	13	D	16	19	23	23	6	
		8.0 - 10.0	5	24	10	D	16	15	9	9		Red Br. Silty Sand, Some C-F Gravel
10		10.0 - 12.0	6	24	13	D	9	9	11	14		
		13.0 - 15.0	7	24	12	D	15	17	21	20		
15											15	End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 7 Hole No. **R-25**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 73.13	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/30/2007						Hole No.	**R-26**
Date Finished: 8/30/2007	Type	HSA		SS		Line & Station	184+6
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	20' RT
AT 9 ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	816888.28
AT ' AFTER HRS	Fall			30 in		E. Coordinate	1000518.80

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	6	D	3	4	5	7		Blk. M-F Sand, Some C-F Gravel, Some Silt (Fill)
		2.0 - 4.0	2	24	10	D	7	7	8	7		
											3	
												Red Br. Silty Sand, Some C-F Gravel
5		5.0 - 6.5	3	18	9	D	14	36	50	X		
10		10.0 - 11.0	4	12	7	D	36	50	X	X		
											12.5	
												Refusal - 12.5
15												
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 12.5 Footage in Rock 0.0 No. of Samples 4 Hole No. **R-26**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 73.28	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/30/2007						Hole No.	**R-27**
Date Finished: 8/30/2007	Type	HSA		SS		Line & Station	186+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	12' LT
AT None 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	817070.78
AT 'AFTER HRS	Fall			30 in		E. Coordinate	1000612.88

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	7	D	4	4	19	22	1	Blk. M-F Sand, Some C-F Gravel, Some Silt (Fill)
		2.0 - 2.5	2	6	3	D	50	50/0"	X	X		
												Red Br. Silty Sand, Some C-F Gravel
5		5.0 - 7.0	3	24	9	D	16	22	20	15		
											9	
10											10	Soft Sandstone
												Refusal - 10.0
15												
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 10.0 Footage in Rock 0.0 No. of Samples 3 Hole No. **R-27**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 72.95	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/30/2007						Hole No.	**R-28**
Date Finished: 8/30/2007	Type	HSA		SS		Line & Station	188+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	13' RT
AT None 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	817202.50
AT 'AFTER HRS	Fall			30 in		E. Coordinate	1000752.10

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	2	D	4	4	9	13		Blk. M-F Sand, Some C-F Gravel, Some Silt (Fill)
		2.0 - 3.5	2	18	9	D	15	27	50	X		
											3	
												Red Br. Silty Sand, Some C-F Gravel
5		5.0 - 6.0	3	12	10	D	21	50	X	X	5	
												Red Br Soft Sandstone
10											10	
												Refusal - 10.0
15												
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 10.0 Footage in Rock 0.0 No. of Samples 3 Hole No. **R-28**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 73.17	LOCATION:	

Date Started: 8/30/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**R-29**
Date Finished: 8/30/2007	Type	HSA		SS		Line & Station	190+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	5' LT
AT None 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	817373.22
AT 'AFTER HRS	Fall			30 in		E. Coordinate	1000853.94

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	6	D	4	4	17	31		Blk. M-F Sand, Some C-F Gravel, Some Silt (Fill)
		2.0 - 3.0	2	12	5	D	27	50	X	X		
		4.0 - 5.3	3	15	7	D	32	50	50/2"	X	4	
5												Red Br Soft Sandstone
		7.0 - 7.3	4	3	3	D	50/3"	X	X	X		
											9	
10												Refusal - 9.0
15												
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 9.0 Footage in Rock 0.0 No. of Samples 4 Hole No. **R-29**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 71.25	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/29/2007						Hole No.	**R-30**
Date Finished: 8/29/2007	Type	HSA		SS		Line & Station	192+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	20' RT
AT None 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	817520.67
AT 'AFTER HRS	Fall			30 in		E. Coordinate	1000998.30

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	9	D	4	4	10	8	1	Blk M-F Sand and C-F Gravel (Fill)
		2.0 - 3.0	2	12	7	D	13	50	X	X		Red Br. F. Sand
		4.0 - 5.0	3	12	6	D	50	50	X	X		
5											6	
												Refusal - 6.0
10												AUGERED FROM 3' TO 4' TO OBTAIN SAMPLE 3
15												
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 6.0 Footage in Rock 0.0 No. of Samples 3 Hole No. **R-30**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 71.92	LOCATION:	

Date Started: 8/29/2007		Auger	Casing	Sampler		Core Bar	Hole No. **R-31**
Date Finished: 8/29/2007	Type	HSA		SS			Line & Station 194+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in			Offset 7' LT
AT 8 ' AFTER 0 HRS	Hammer			140	lb	Bit	N Coordinate 817698.09
AT ' AFTER HRS	Fall			30	in		E. Coordinate 1001093.33

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	7	D	10	14	12	14		Blk M-F Sand and C-F Gravel (Fill)
		2.0 - 2.7	2	7	6	D	50	50/2"	X	X		
											3.5	
		4.0 - 6.0	3	24	7	D	16	19	27	21		Red Br. F. Silty Sand
5												
		6.0 - 7.5	4	18	8	D	13	50	50	X		
10											10	Refusal - 10.0
15												
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 10.0 Footage in Rock 0.0 No. of Samples 4 Hole No. **R-31**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 71.13	LOCATION:	

Date Started: 8/29/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**R-32**
Date Finished: 8/29/2007	Type	HSA		SS		Line & Station	196+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	15' RT
AT 9 ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	817849.62
AT ' AFTER HRS	Fall			30 in		E. Coordinate	1001236.99

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	4	D	3	3	5	5		Blk M-F Sand and C-F Gravel (Fill)
		2.0 - 4.0	2	24	7	D	7	7	7	7	2	
												Red Br. Silt
		4.0 - 6.0	3	24	6	D	10	31	27	33		
5												
10		10.0 - 12.0	4	24	10	D	31	21	25	26		
		13.0 - 14.0	5	12	5	D	50	50	X	X		
											14	
15												Refusal - 14.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 14.0 Footage in Rock 0.0 No. of Samples 5 Hole No. **R-32**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 70.78	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/29/2007						Hole No.	**R-33**
Date Finished: 8/29/2007	Type	HSA		SS		Line & Station	198+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	8' LT
AT 9 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	818025.38
AT 'AFTER HRS	Fall			30 in		E. Coordinate	1001336.25

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	11	D	17	15	12	13		Blk M-F Sand and C-F Gravel (Fill)
		2.0 - 4.0	2	24	7	D	16	13	13	13		
											3.5	
		4.0 - 6.0	3	24	10	D	8	8	8	9		Red Br. Silt
5												
		6.0 - 8.0	4	24	13	D	10	10	9	9		
10		10.0 - 12.0	5	24	14	D	9	9	10	9		
		13.0 - 15.0	6	24	11	D	7	7	10	9		
15											15	End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 6 Hole No. **R-33**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 70	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/29/2007						Hole No.	**R-34**
Date Finished: 8/29/2007	Type	HSA		SS		Line & Station	200+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	20' RT
AT 9 ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	818169.33
AT ' AFTER HRS	Fall			30 in		E. Coordinate	1001478.33

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	11	D	16	12	14	14		Blk M-F Sand and C-F Gravel (Fill)
		2.0 - 4.0	2	24	10	D	10	10	7	7		
											3	
		4.0 - 6.0	3	24	0	D	7	7	7	7		Red Br. Silt
5												
		6.0 - 8.0	4	24	7	D	10	10	7	10		
10		10.0 - 12.0	5	24	12	D	10	10	10	9		
		13.0 - 15.0	6	24	11	D	9	9	10	10		
15											15	End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 6 Hole No. **R-34**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 70.02	LOCATION:	

Date Started: 8/29/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**R-35**
Date Finished: 8/29/2007	Type	HSA		SS		Line & Station	202+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	17' LT
AT 8 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	818343.67
AT 'AFTER HRS	Fall			30 in		E. Coordinate	1001572.92

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	5	D	18	15	15	17		Blk M-F Sand and C-F Gravel Coal, Wood (Fill)
		2.0 - 4.0	2	24	5	D	19	23	15	13		
		4.0 - 6.0	3	24	10	D	15	15	12	12		
5												
		6.0 - 8.0	4	24	6	D	13	13	12	12		
		8.0 - 10.0	5	24	12	D	7	7	7	7	8	
												Red Br. Silt
10		10.0 - 12.0	6	24	14	D	5	5	5	5		
		13.0 - 15.0	7	24	14	D	5	5	5	5		
15											15	
												End of Boring - 15.0
20												
25												
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 15.0 Footage in Rock 0.0 No. of Samples 7 Hole No. **R-35**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

APPENDIX 2

BORING LOGS RW101-1 THROUGH RW105-6

(2007)

Thomas Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 99.44	LOCATION:	

Date Started: 8/25/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**RW-101-1**
Date Finished: 8/25/2007	Type	HSA		SS		Line & Station	122+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	25' LT
AT 10 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	811446.76
AT 'AFTER HRS	Fall			30 in		E. Coordinate	997751.89

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	12	14	D	3	3	7	7		Red Br. F. Silty Sand
		2.0 - 4.0	2	24	14	D	10	18	17	15		
		4.0 - 6.0	3	24	13	D	15	18	22	20		
5												
10		10.0 - 12.0	4	24	13	D	10	16	17	18		
15		15.0 - 17.0	5	24	20	D	10	10	26	14		
20		20.0 - 22.0	6	24	20	D	11	11	10	14		
		23.0 - 25.0	7	24	20	D	10	10	10	12		
25											25	End of Boring - 25.0
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 25.0 Footage in Rock 0.0 No. of Samples 7 Hole No. **RW-101-1**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 93.57	LOCATION:	

Date Started: 8/31/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**RW-101-2**
Date Finished: 8/31/2007	Type	HSA		SS		Line & Station	125+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	5' LT
AT 18 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	811680.23
AT 'AFTER HRS	Fall			30 in		E. Coordinate	997948.37

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
												Blk & Br. C-F Sand and C-F Gravel, Cobbles (Fill)
											4	
5		5.0 - 7.0	1	24	12	D	9	11	14	11		Red Br. M-F Sand, Some Silt, Some C-F Gravel, (Fill)
10		10.0 - 12.0	2	24	8	D	7	6	7	9		
		14.0 - 16.0	3	24	6	D	4	5	7	8		
15												
		16.0 - 18.0	4	24	8	D	5	7	11	40		
											17.5	
		18.0 - 20.0	5	24	14	D	22	19	18	17		Red Br. C-F Sand, Some C-F Gravel (Fill)
20		20.0 - 22.0	6	24	7	D	9	11	7	7	20	
		22.0 - 24.0	7	24	10	D	9	9	14	14		Red Br. F. Silty Sand, Tr. C-F Gravel
25		25.0 - 27.0	8	24	19	D	7	10	11	12		
30		30.0 - 32.0	9	24	14	D	7	10	11	12		
35											35	
												Refusal - 35.0
												NOTE: BORING ELEVATION 15' HIGHER DUE TO OFFSET
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth	35.0	Footage in Rock	0.0	No. of Samples	9	Hole No.	**RW-101-2**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 91.3	LOCATION:		

Date Started: 8/25/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**RW-101-3**
Date Finished: 8/25/2007	Type	HSA		SS		Line & Station	127+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	22' LT
AT 18 ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	811852.86
AT ' AFTER HRS	Fall			30 in		E. Coordinate	998065.00

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	12	5	D	13	15	X	X		Red Br. M-F Sand and C-F Gravel (Fill)
		2.0 - 4.0	2	24	14	D	11	13	13	17		
		4.0 - 6.0	3	12	8	D	17	50	X	X		
5											5	
		6.0 - 8.0	BLDR				X	X	X	X		Red Br. M-F Sand and C-F Gravel (Fill)
		8.0 - 10.0	4	24	11	D	12	13	13	20		
10		10.0 - 12.0	5	24	10	D	12	14	36	15		
		12.0 - 14.0	6	12	5	D	27	50	X	X		
		14.0 - 16.0	7	24	11	D	16	17	11	15		
15												
		16.0 - 18.0	8	24	14	D	15	15	21	11		
		18.0 - 20.0	9	24	0	D	2	2	11	14	18	
											19	Possible Organic Layer(No Rec in Spoon)
20		20.0 - 22.0	10	24	4	D	14	15	36	10		Red Br. M-F Sand and C-F Gravel, Some Silt
		22.0 - 24.0	11	24	12	D	14	20	40	36		
25		25.0 - 26.2	12	14	6	D	17	30	50/2"	X		
											26.5	Refusal - 26.5
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 26.5 Footage in Rock 0.0 No. of Samples 12 Hole No. **RW-101-3**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 91.92	LOCATION:	

Date Started: 8/25/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**RW-101-4**
Date Finished: 8/25/2007	Type	HSA		SS		Line & Station	127+80
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	16' LT
AT 18 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	811908.20
AT 'AFTER HRS	Fall			30 in		E. Coordinate	998121.17

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
												Red Br. M-F Sand and C-F Gravel
		2.0 - 4.0	1	24	10	D	10	17	15	20	2	(Fill)
												Red Br. M-F Silty Sand, Some C-F Gravel
		4.0 - 6.0	2	24	15	D	7	10	11	11		(Fill)
5												
		6.0 - 8.0	3	24	10	D	9	11	13	11		
		8.0 - 10.0	4	24	11	D	10	10	14	12		
10		10.0 - 12.0	5	24	13	D	5	6	6	6		
		12.0 - 14.0	6	24	10	D	5	5	5	5		
		14.0 - 16.0	7	24	10	D	5	4	5	5		
15												
		16.0 - 18.0	8	24	10	D	5	4	4	4		
											17	
												Red Br. M-F Sand and C-F Gravel
20		20.0 - 22.0	9	24	11	D	10	10	12	14		
											24	
25												Refusal - 24.0
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 24.0 Footage in Rock 0.0 No. of Samples 9 Hole No. **RW-101-4**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 92.04	LOCATION:	

Date Started: 8/30/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**RW-101-5**
Date Finished: 8/30/2007	Type	HSA		SS		Line & Station	128+50
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	3' LT
AT 17 ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	811955.11
AT ' AFTER HRS	Fall			30 in		E. Coordinate	998173.70

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 1.5	1	18	6	D	9	31	50	X		Blk & Br. C-F Sand and C-F Gravel, Cobbles (Fill)
		2.0 - 4.0	2	24	10	D	9	12	11	11		
		4.0 - 6.0	3	24	12	D	10	10	9	10	4	
5		6.0 - 8.0	4	24	12	D	10	6	7	9		Br. C-F Sand and C-F Gravel, Cobbles (Fill)
		8.0 - 10.0	5	24	16	D	8	10	7	10		
10		10.0 - 12.0	6	24	10	D	7	9	8	9		
		12.0 - 14.0	7	24	12	D	6	7	9	9		
		14.0 - 16.0	8	24	8	D	4	5	3	3		
15		16.0 - 18.0	9	24	20	D	3	2	3	4	16	
		18.0 - 20.0	10	24	14	D	4	6	7	10		Red Br. F. Sand, Some Silt, Tr. Organics
20		20.0 - 22.0	11	24	13	D	7	9	11	50	20	
												Red Br. F. Sand, Some Silt
											23	
25												Refusal - 23.0
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 23.0 Footage in Rock 0.0 No. of Samples 11 Hole No. **RW-101-5**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Mark Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 93.29	LOCATION:	

Date Started: 8/24/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**RW-102-1**
Date Finished: 8/24/2007	Type	HSA		SS		Line & Station	125+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	13' LT
AT 17 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	811668.10
AT 'AFTER HRS	Fall			30 in		E. Coordinate	997964.90

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	8	D	5	4	4	6		Br. C-F Sand and C-F Gravel, Cobbles (Fill)
		2.0 - 4.0	2	24	8	D	4	5	5	6		
		4.0 - 6.0	3	24	8	D	5	6	7	8		
5												
		6.0 - 8.0	4	24	8	D	7	8	7	9	6	
		8.0 - 10.0	5	24	8	D	6	7	8	7		Red Br. M-F Silty Sand, Tr. M-F Gravel (Fill)
10		10.0 - 12.0	6	24	8	D	5	6	7	7		
		12.0 - 14.0	7	24	8	D	6	7	8	7		
											13	
		14.0 - 16.0	8	24	12	D	4	6	7	7		Red Br. Silt (Fill)
15											15	
		16.0 - 18.0	9	24	12	D	6	6	8	21		Red Br. Silt, Tr. M-F Gravel, W/Lenses of M-F Sand
		18.0 - 20.0	10	24	12	D	8	9	9	10		
20		20.0 - 22.0	11	24	16	D	9	9	8	12		
25		25.0 - 27.0	12	24	20	D	9	10	10	12		
											27	End of Boring - 27.0
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 27.0	Footage in Rock 0.0	No. of Samples 12	Hole No. **RW-102-1**			
SAMPLE TYPE CODING:	D = DRIVEN	C = CORE	A = AUGER	UP = UNDISTURBED PISTON		
PROPORTIONS USED:	TRACE = 1-10%	LITTLE = 10-20%	SOME = 20-35%	AND = 35-50%		

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 92.62	LOCATION:	

Date Started: 8/31/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**RW-102-2**
Date Finished: 8/31/2007	Type	HSA		SS		Line & Station	127+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	Appx CL
AT 18 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	811837.36
AT 'AFTER HRS	Fall			30 in		E. Coordinate	998085.87

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	8	D	13	17	21	40		Blk & Br. C-F Sand and C-F Gravel, Cobbles
		2.0 - 4.0	2	24	8	D	17	31	36	40	2	(Fill)
												Red & Blk M-F Sand, Some Silt,
		4.0 - 6.0	3	24	10	D	7	11	9	12		Some C-F Gravel, (Fill)
5												
		6.0 - 8.0	4	24	7	D	10	14	16	30		
		8.0 - 10.0	5	24	12	D	11	15	17	14		
10		10.0 - 12.0	6	24	8	D	10	12	9	9		
		12.0 - 14.0	7	24	10	D	7	9	19	16		
		14.0 - 16.0	8	24	8	D	9	11	7	7		
15												
		16.0 - 18.0	9	24	7	D	9	7	11	12		
		18.0 - 20.0	10	24	10	D	6	7	9	7	18	
												Red Br. F. Silty Sand, Tr. C-F Gravel
20		20.0 - 22.0	11	24	6	D	7	7	8	10		
		23.0 - 25.0	12	24	12	D	22	36	22	25		
25											25	
												End of Boring - 25.0
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 25.0	Footage in Rock 0.0	No. of Samples 12	Hole No. **RW-102-2**			
SAMPLE TYPE CODING:	D = DRIVEN	C = CORE	A = AUGER	UP = UNDISTURBED PISTON		
PROPORTIONS USED:	TRACE = 1-10%	LITTLE = 10-20%	SOME = 20-35%	AND = 35-50%		

Thomas Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 92.44	LOCATION:		

Date Started: 8/31/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**RW-102-3**
Date Finished: 8/31/2007	Type	HSA		SS		Line & Station	127+80
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	CL
AT 18.5 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	811898.06
AT 'AFTER HRS	Fall			30 in		E. Coordinate	998134.82

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 1.0	1	12	3	D	25	50	X	X		Blk & Br. C-F Sand and C-F Gravel, Cobbles (Fill)
		2.0 - 4.0	2	24	10	D	9	9	10	11		
		4.0 - 6.0	3	24	9	D	5	7	7	10		
5												
		6.0 - 8.0	4	24	10	D	9	5	7	7	6	
		8.0 - 10.0	5	24	13	D	7	7	9	7		Red & Blk M-F Sand, Some Silt, Some C-F Gravel, (Fill)
10		10.0 - 12.0	6	24	9	D	1	1	7	7		
		12.0 - 14.0	7	24	14	D	5	5	7	5		
		14.0 - 16.0	8	24	11	D	3	5	5	5		
15												
		16.0 - 18.0	9	24	6	D	1	1	4	2		
		18.0 - 20.0	10	24	10	D	1	1	4	5	18.5	
20		20.0 - 22.0	11	24	10	D	14	14	19	17		Red Br. Silt
											21	
												Red Br. M-F Silty Sand, Some C-F Gravel (Till)
25		25.0 - 26.5	12	18	11	D	37	36	50	X		
											27	
												Refusal - 27.0
30												
35												NOTE: BORING ELEVATION 10' LOWER DUE TO OFFSET
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 27.0 Footage in Rock 0.0 No. of Samples 12 Hole No. **RW-102-3**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Mark Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 91.8	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/24/2007						Hole No.	**RW-102-4**
Date Finished: 8/24/2007	Type	HSA		SS		Line & Station	128+50
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	**16' RT**
AT 18 ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	811962.92
AT 17.5 ' AFTER 24 HRS	Fall			30 in		E. Coordinate	998163.18

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	8	8	D	30	90/2"	X	X		Br. C-F Sand and C-F Gravel, Cobbles (Fill)
		2.0 - 4.0	2	24	10	D	18	22	24	28		
		4.0 - 6.0	3	24	12	D	6	7	7	6		
5											5	
		6.0 - 8.0	4	24	10	D	8	7	12	10		Red Br. F. Silty Sand, Tr. F. Gravel (Fill)
10		10.0 - 12.0	5	24	8	D	6	6	7	8		
15		15.0 - 17.0	6	24	10	D	5	5	6	7		
											18	
20		20.0 - 22.0	7	24	12	D	10	14	21	18		Red Br. F. Silty Sand, Tr. F. Gravel
25		25.0 - 27.0	8	14	14	D	20	48	90/2"	X		
		28.0 - 28.1	9	1	1	D	50/1"	X	X	X	28.1	
30												Refusal - 28.1
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 28.1 Footage in Rock 0.0 No. of Samples 9 Hole No. **RW-102-4**

AMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

ROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 83.28	LOCATION:	

Date Started: 8/27/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**RW-103-1**
Date Finished: 8/27/2007	Type	HSA		SS		Line & Station	146+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	17' LT
AT 2 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	813561.87
AT 'AFTER HRS	Fall			30 in		E. Coordinate	998802.58

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	3	D	W	W	1	1		Blk. M-F Sand and C-F Gravel,
		2.0 - 4.0	2	24	7	D	1	3	3	3	2	(Fill)
												Red Br. Clayey Silt
		4.0 - 6.0	3	24	11	D	7	7	10	9		
5												
		6.0 - 8.0	4	24	10	D	10	9	9	9		
10		10.0 - 12.0	5	24	20	D	10	10	11	11		
15		15.0 - 17.0	6	24	20	D	5	6	6	7		
20		20.0 - 22.0	7	24	20	D	5	6	6	7		
		23.0 - 25.0	8	24	20	D	4	4	4	6		
25											25	End of Boring - 25.0
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 25.0 Footage in Rock 0.0 No. of Samples 8 Hole No. **RW-103-1**

AMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

ROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 82.52	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/27/2007						Hole No.	**RW-103-2**
Date Finished: 8/27/2007	Type	HSA		SS		Line & Station	147+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	20' LT
AT 14 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	813662.83
AT 7 'AFTER 24 HRS	Fall			30 in		E. Coordinate	998822.52

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	7	D	4	4	7	5		Dk. Br. M-F Sand and C-F Gravel, Cobbles, (Fill)
		2.0 - 4.0	2	24	9	D	5	4	4	4		
		4.0 - 6.0	3	24	11	D	6	6	7	6		
5												
		6.0 - 8.0	4	24	9	D	5	7	7	7		
		8.0 - 10.0	5	24	14	D	3	3	4	4		
10		10.0 - 12.0	6	24	11	D	3	5	7	7		
											11	
		12.0 - 14.0	7	24	16	D	7	7	7	10		Red Br. Clayey Silt
15		15.0 - 17.0	8	24	17	D	8	8	8	8		
20		20.0 - 22.0	9	24	10	D	5	7	8	8		
		23.0 - 25.0	10	24	14	D	9	13	11	40		
25											25	End of Boring - 25.0
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 25.0 Footage in Rock 0.0 No. of Samples 10 Hole No. **RW-103-2**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 84.37	LOCATION:	

Date Started: 8/27/2007		Auger	Casing	Sampler	Core Bar	Hole No.	**RW-104-1**
Date Finished: 8/27/2007	Type	HSA		SS		Line & Station	147+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	20' RT
AT ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	813655.59
AT ' AFTER HRS	Fall			30 in		E. Coordinate	998855.75

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	11	D	9	13	13	11		Dk. Br. M-F Sand and C-F Gravel, Cobbles, (Fill)
		2.0 - 4.0	2	24	14	D	10	10	10	11		
		4.0 - 6.0	3	24	12	D	9	14	10	9		
5											5	
		6.0 - 8.0	4	24	10	D	9	8	8	8		Red Br. Clayey Silty Sand (Fill)
		8.0 - 10.0	5	24	13	D	5	7	8	9		
											9	
10		10.0 - 12.0	6	24	11	D	9	9	9	11		Red Br. Clayey Silt
		12.0 - 14.0	7	24	11	D	10	16	19	20		
15		15.0 - 17.0	8	24	12	D	12	12	14	19		
20		20.0 - 22.0	9	24	14	D	7	8	8	8		
		23.0 - 25.0	10	24	11	D	7	7	7	7		
25											25	End of Boring - 25.0
30												
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 25.0 Footage in Rock 0.0 No. of Samples 10 Hole No. **RW-104-1**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 77.7	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/28/2007						Hole No.	**RW-105-1**
Date Finished: 8/28/2007	Type	HSA		SS		Line & Station	166+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	**20' RT**
AT 14 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	815442.59
AT 12 'AFTER 24 HRS	Fall			30 in		E. Coordinate	999443.04

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	12	D	7	10	11	16		Blk. M-F Sand, Some C-F Gravel, Some Silt (Fill)
		2.0 - 4.0	2	24	8	D	19	20	22	21		
											3	
		4.0 - 6.0	3	24	12	D	11	16	17	17		Red Br. F. Sand, Some Silt, Tr. C-F Gravel (Fill)
5												
		6.0 - 8.0	4	24	12	D	17	21	19	19		
10		10.0 - 12.0	5	24	12	D	17	21	19	21		
15		15.0 - 17.0	6	24	12	D	15	11	15	15	15	
												Red Br. C-F Sand, Some C-F Gravel, Tr. Silt
20		20.0 - 22.0	7	24	12	D	11	10	14	17		
25		25.0 - 27.0	8	24	12	D	14	17	11	10		
		28.0 - 30.0	9	24	12	D	4	11	14	10		
30											30	
												End of Boring - 30.0
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 30.0 Footage in Rock 0.0 No. of Samples 9 Hole No. **RW-105-1**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92**	**BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT		
Don Moodie	DEPARTMENT OF TRANSPORTATION		Associated Borings Co., Inc.
INSPECTOR	TOWN:	New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME:	Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER:	171-305	DESIGN ENGINEER
Surface Elevation: 77.36	LOCATION:		

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/28/2007						Hole No.	**RW-105-2**
Date Finished: 8/28/2007	Type	HSA		SS		Line & Station	168+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	16' RT
AT 14 ' AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	815603.07
AT ' AFTER HRS	Fall			30 in		E. Coordinate	999555.43

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	8	D	7	11	14	17		Blk. M-F Sand, Some C-F Gravel, Some Silt (Fill)
		2.0 - 4.0	2	24	15	D	21	30	29	33		
											3	
		4.0 - 6.0	3	24	6	D	30	36	41	31		Red Br. F. Sand, Some Silt, Tr. C-F Gravel (Fill)
5												
		6.0 - 8.0	4	24	16	D	31	28	21	14		
		8.0 - 10.0	5	24	14	D	17	19	21	15		
10		10.0 - 12.0	6	24	6	D	7	5	7	7		
		12.0 - 14.0	7	24	6	D	5	7	7	5		
		14.0 - 16.0	8	24	10	D	5	7	6	7		
15												
		16.0 - 18.0	9	24	12	D	6	7	5	7	16	
												Red Br. C-F Sand, Some C-F Gravel, Tr. Silt
20		20.0 - 22.0	10	24	12	D	6	9	11	17		
25		25.0 - 27.0	11	24	16	D	11	17	21	23		
		28.0 - 30.0	12	24	20	D	7	9	21	30		
30											30	
												End of Boring - 30.0
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 30.0 Footage in Rock 0.0 No. of Samples 12 Hole No. **RW-105-2**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 76.91	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/29/2007						Hole No.	**RW-105-3**
Date Finished: 8/29/2007	Type	HSA		SS		Line & Station	170+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	20' RT
AT 11 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	815766.00
AT 'AFTER HRS	Fall			30 in		E. Coordinate	999675.18

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	12	D	4	7	11	14		Blk and Red M-F Sand, Some C-F Gravel, Tr. Silt (Fill)
		2.0 - 4.0	2	24	10	D	11	14	15	15		
		4.0 - 6.0	3	24	12	D	11	15	12	13		
5												
		6.0 - 8.0	4	24	16	D	11	15	17	12		
		8.0 - 10.0	5	24	10	D	6	5	4	4	8	
10		10.0 - 12.0	6	24	6	D	2	5	4	4	10	Red Br. F. Sand, Some Silt (Possible Fill)
		12.0 - 14.0	7	24	0	D	4	5	4	6	12	Red Br. C-F Sand, Some C-F Gravel
		14.0 - 16.0	8	24	20	D	4	7	11	19		Red Br. F. Sand, Some Silt
15												
		16.0 - 18.0	9	24	16	D	31	30	17	19		
20		20.0 - 22.0	10	24	17	D	6	7	4	4		
25		25.0 - 27.0	11	24	16	D	4	4	5	4		
		28.0 - 30.0	12	24	24	D	6	6	8	9		
30											30	End of Boring - 30.0
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 30.0 Footage in Rock 0.0 No. of Samples 12 Hole No. **RW-105-3**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 75.8	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/29/2007						Hole No.	**RW-105-4**
Date Finished: 8/29/2007	Type	HSA		SS		Line & Station	172+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	15' RT
AT 11 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	815929.57
AT 'AFTER HRS	Fall			30 in		E. Coordinate	999799.90

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	8	D	4	6	14	17		Blk. M-F Sand, Some C-F Gravel, Some Silt (Fill)
		2.0 - 4.0	2	24	12	D	19	30	16	15	2	
												Red Br. F. Sand and Silt (Fill)
		4.0 - 6.0	3	24	12	D	15	19	20	21	4	
5												Red Br. F. Sand, Little Silt, Little C-F Gravel (Fill)
		6.0 - 8.0	4	24	10	D	11	14	16	14		
		8.0 - 10.0	5	24	10	D	4	3	3	3		
10		10.0 - 12.0	6	24	8	D	4	4	5	3		
		12.0 - 14.0	7	24	12	D	6	7	7	6	12	
		14.0 - 16.0	8	24	16	D	2	2	7	12		Lt. Gr. Br. F. Sand and Silt, W/Organic Layers
15											15	
												Red Br. Clayey Silt, Little M-F Sand
20		20.0 - 22.0	9	24	12	D	4	4	5	6		
25		25.0 - 27.0	10	24	10	D	4	3	4	4		
		28.0 - 30.0	11	24	12	D	4	6	4	7		
30											30	
												End of Boring - 30.0
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 30.0 Footage in Rock 0.0 No. of Samples 11 Hole No. **RW-105-4**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Jaime Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 75.26	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/29/2007						Hole No.	**RW-105-5**
Date Finished: 8/29/2007	Type	HSA		SS		Line & Station	174+80
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	30' RT
AT 14 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	816158.91
AT 'AFTER HRS	Fall			30 in		E. Coordinate	999972.04

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	7	D	4	6	11	12		Blk. M-F Sand, Some C-F Gravel, Some Silt (Fill)
		2.0 - 4.0	2	24	12	D	16	14	7	9		
											3	
		4.0 - 6.0	3	24	12	D	16	29	31	40		Red Br. F. Sand, Some Silt, Tr. C-F Gravel (Fill)
5												
		6.0 - 8.0	4	24	14	D	31	46	38	29		
		8.0 - 10.0	5	24	17	D	21	26	40	50		
10		10.0 - 12.0	6	24	14	D	13	17	21	30		
		12.0 - 14.0	7	24	10	D	9	7	7	6	12	
		14.0 - 16.0	8	24	18	D	6	7	7	6		Blk and Red F. Sand and Silt, W/Organic Layers
15												
		16.0 - 18.0	9	24	18	D	4	6	7	6	16	
												Red Br. Clayey Silt
20		20.0 - 22.0	10	24	12	D	4	5	6	5		
25		25.0 - 27.0	11	24	10	D	4	3	5	5		
		28.0 - 30.0	12	24	12	D	4	6	7	7		
30											30	
												End of Boring - 30.0
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 30.0 Footage in Rock 0.0 No. of Samples 12 Hole No. **RW-105-5**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**SM-001 REV. 10/92** **BORING REPORT**	SHEET 1 OF 1
DRILLER	STATE OF CONNECTICUT	
Don Moodie	DEPARTMENT OF TRANSPORTATION	Associated Borings Co., Inc.
INSPECTOR	TOWN: New Britain/Newington, CT	BORING CONTRACTOR
Welti & Associates, P.C.	PROJECT NAME: Hartford-New Britain Busway	Close Jensen & Miller, P.C.
SOILS ENGINEER	PROJECT NUMBER: 171-305	DESIGN ENGINEER
Surface Elevation: 74.81	LOCATION:	

		Auger	Casing	Sampler	Core Bar		
Date Started: 8/31/2007						Hole No.	**RW-105-6**
Date Finished: 8/31/2007	Type	HSA		SS		Line & Station	177+0
Groundwater Observations	Size I. D.	2 1/4 in		2 in		Offset	33' RT
AT 12 'AFTER 0 HRS	Hammer			140 lb	Bit	N Coordinate	816322.59
AT 'AFTER HRS	Fall			30 in		E. Coordinate	1000093.07

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
		0.0 - 2.0	1	24	6	D	3	3	4	4		Blk. M-F Sand, Some C-F Gravel, Some Silt
		2.0 - 4.0	2	24	7	D	5	7	7	7	1.5	(Fill)
												Red Br. M-F Sand, Some M-F Gravel
		4.0 - 6.0	3	24	2	D	10	12	12	13		(Possible Fill)
5												
											9	
10		10.0 - 12.0	4	24	10	D	10	10	10	12		Red Br. Silt
15		15.0 - 17.0	5	24	11	D	5	5	5	5		
20		20.0 - 22.0	6	24	14	D	5	5	5	7		
25		25.0 - 27.0	7	24	9	D	6	6	6	6		
		28.0 - 30.0	8	24	7	D	10	10	20	26		
											29	
30											30	Red Br. C-F Sand and C-F Gravel
												End of Boring - 30.0
35												
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 30.0 Footage in Rock 0.0 No. of Samples 8 Hole No. **RW-105-6**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

APPENDIX 3

PILOT BORING LOGS
RB-19, RB-20, SB-29
SB-30, SB-31, SB-35
(2003)

Driller: J. Galvin/GeoLogic	**Connecticut DOT Boring Report**	Hole No.: **RB-19**
Inspector: E. Glisan	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 817717.7
Start Date: 03/07/03	Route No.: New Britain - Hartford	Easting: 1001115.6
Finish Date: 03/10/03	Bridge No.:	Surface Elevation: 71.9

Project Description: New Britain - Hartford Busway

Casing Type/Size: HW/4" I.D.	Sampler Type/Size: SS/1-3//8" I.D.	Core Barrel Type: NX/2-1/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 3.0' after: 0 hours, @1.5' after: 24 hours, @1.5' after: 48 hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT_E (LD4 1/03)

Depth (ft.)	Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
0–1	W-N		1.5					71
1–2	S-1	17 19 22	1.5	1.5			SILTY SAND (SM) - brown and black fine to coarse sand, little silt, trace fine to medium gravel; moist, dense, NP; (FILL).	70
2–3								69
3–4	W-N		1.5					68
4–5	S-2	9 10 10	1.5	1.0			SILTY SAND (SM) - brown fine to coarse sand, little silt, trace fine to medium gravel; wet, medium dense, NP.	67
5–6						6.0'	ELEV. 65.9	66
6–7	W-N		1.5				ELASTIC SILT (MH) - gray-brown silt, trace clay; moist, very stiff, NPL.	65
7–8	S-3	11 10 11	1.5	1.5				64
8–9								63
9–10	W-N		1.5					62
10–11						10.5'	ELEV. 61.4	61
11–12	S-4	67 100/0.5	1.0	1.0			SILT (ML) - reddish brown silt, trace fine to medium gravel; moist, very dense, NP; gravel is shale fragments (DECOMPOSED ROCK) .	60
12–13	W-N		1.0				ELEV. 59.4	59
13	S-5	50/0.0	0.0	0.0			End of Boring at 12.5'.	
14								58
15								57
16								56
17								55
18								54
19								53
								52

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger
Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 12.5' Rock: 0.0' No. of Samples: 5	NOTES:	Sheet 1 of 1

Driller: J. Galvin/GeoLogic	**Connecticut DOT Boring Report**	Hole No.: **RB-20**
Inspector: E. Glisan	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 818361.0
Start Date: 03/07/03	Route No.: New Britain - Hartford	Easting: 1001591.3
Finish Date: 03/07/03	Bridge No.:	Surface Elevation: 70.2

Project Description: New Britain - Hartford Busway

Casing Type/Size: HW/4" I.D.	Sampler Type/Size: SS/1-3//8" I.D.	Core Barrel Type: NX/2-1/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 6.0' after: 0 hours, @ after: hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT_E (LD4 1/03)

Depth (ft.)	Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
0								70
1	W-N		1.5					69
2	S-1	28 56 7	1.5	1.3			POORLY GRADED SAND (SP) - brown fine to medium sand, little coarse gravel, trace silt; wet, very dense, NP; (FILL).	68
3								67
4	W-N		1.5					66
						4.5'	ELEV. 65.7	
5	S-2	6 15 18	1.5	1.2			SANDY SILT (ML) - brown silt, some fine sand; moist, dense, NP.	65
6								64
7	W-N		1.5					63
						7.5'	ELEV. 62.7	
8	S-3	11 13 14	1.5	1.2			ELASTIC SILT (MH) - gray-brown silt, little clay; moist, very stiff, +PL.	62
9								61
10	W-N		1.5					60
11	S-4	5 8 9	1.5	1.2			ELASTIC SILT (MH) - gray-brown silt, little clay; moist, very stiff, +PL.	59
12								58
13	W-N		1.5					57
14	S-5	8 9 6	1.5	1.2			ELASTIC SILT (MH) - gray-brown silt, little clay; moist, stiff, +PL.	56
15								55
16	W-N		1.5					54
17	S-6	6 18 27	1.5	0.8			ELASTIC SILT (MH) - gray-brown silt, little clay; moist, very stiff, +PL.	53
18						18.0'	ELEV. 52.2	52
19	W-N		1.5					51
		18					POORLY GRADED GRAVEL (GP) - brown fine to	

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger

Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 22.6' Rock: 0.0' No. of Samples: 8	NOTES:	Sheet 1 of 2

Driller: J. Galvin/GeoLogic	**Connecticut DOT Boring Report**	Hole No.: **RB-20**
Inspector: E. Glisan	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 818361.0
Start Date: 03/07/03	Route No.: New Britain - Hartford	Easting: 1001591.3
Finish Date: 03/07/03	Bridge No.:	Surface Elevation: 70.2
Project Description: New Britain - Hartford Busway		
Casing Type/Size: HW/4" I.D.	Sampler Type/Size: SS/1-3//8" I.D.	Core Barrel Type: NX/2-1/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	
Groundwater Obs. @ 6.0' after: 0 hours, @ after: hours, @ after: hours		

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT_E (LD4 1/03)

Depth (ft.)	SAMPLES Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
20	S-7	37 44	1.5	0.8			coarse gravel, trace silt; wet, very dense, NP; gravel is weathered shale fragments (DECOMPOSED ROCK).	50
21								49
22	W-N		1.5					48
23	S-8	120/0.1	0.1	0.0			ELEV. 47.6 Boring Terminated at 22.6'.	47
24								46
25								45
26								44
27								43
28								42
29								41
30								40
31								39
32								38
33								37
34								36
35								35
36								34
37								33
38								32
39								31

GEOTECHNICAL ENGINEERING
227 Williams Street • P.O. Box 397
Glastonbury, CT 06033
(860) 633-4623 / FAX (860) 657-2514

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger
Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 22.6' Rock: 0.0' No. of Samples: 8	NOTES:	Sheet 2 of 2

Driller: J. Galvin/Geologic	**Connecticut DOT Boring Report**	Hole No.: **SB-29**
Inspector: Ryan Tinsley	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 811337.1
Start Date: 02/28/03	Route No.:	Easting: 997623.1
Finish Date: 03/03/03	Bridge No.:	Surface Elevation: 97.5
Project Description: New Britain - Hartford Busway		
Casing Type/Size: HW/4" I.D.	Sampler Type/Size: SS/1-3/8" I.D.	Core Barrel Type: NX/ 2-1/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 17.2' after: 0 hours, @17.2' after: 24 hours, @17.2' after: 48 hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT E (LD4 1/03)

Depth (ft.)	Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
0–1	W-N		1.5					97
1–2	S-1	4 2 2	1.5	0.0			FILL	96
2–3								95
3						3.0'	ELEV. 94.5	
3–4	W-N		1.5					94
4–5	S-2	6 12 14	1.5	1.5			SILT (ML) - reddish brown silt, trace clay, trace fine sand; moist, very stif, -PL.	93
5–6								92
6–7	W-N		1.0					91
7–8	ST-1		2.0	2.0				90
8–9								89
9–10	W-N		1.5					88
10–11	S-3	14 16 18	1.5	1.5			CLAYEY SILT (ML) - reddish brown silt, some clay, trace fine to medium gravel; moist, hard, -PL.	87
11–12								86
12–13	W-N		1.5					85
13–14	ST-2		2.0	0.0				84
14–15								83
15–16	W-N		1.0					82
16–17	S-4	15 12 18	1.5	1.5			CLAYEY SILT (ML) - reddish brown silt, some clay, trace fine to medium gravel; moist, very stiff, -PL.	81
17–18								80
18–19	W-N		1.5					79
19		10					GRAVELLY SILT (ML) - reddish brown silt, some fine	78

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger

Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 41.0' Rock:

No. of Samples: 9

NOTES:

Driller: J. Galvin/Geologic	**Connecticut DOT Boring Report**	Hole No.: **SB-29**
Inspector: Ryan Tinsley	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 811337.1
Start Date: 02/28/03	Route No.:	Easting: 997623.1
Finish Date: 03/03/03	Bridge No.:	Surface Elevation: 97.5
Project Description: New Britain - Hartford Busway		
Casing Type/Size: HW/4" I.D.	Sampler Type/Size: SS/1-3/8" I.D.	Core Barrel Type: NX/ 2-1/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 17.2' after: 0 hours, @17.2' after: 24 hours, @17.2' after: 48 hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT_E (LD4 1/03)

Depth (ft.)	Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
20	S-5	15 15	1.5	0.3			to medium gravel, trace clay; moist, very stiff, -PL.	77
21	W-N		1.5					76
22								
23	S-6	11 17 21	1.5	1.5			CLAYEY SILT (ML) - reddish brown silt, some clay, trace fine to medium gravel; moist, hard, NPL.	75
24	W-N		1.5					74
25								73
26	S-7	17 18 18	1.5	1.3			CLAYEY SILT (ML) - reddish brown silt, some clay, trace fine sand; moist, hard, -PL.	72
27	W-N		1.5					71
28								70
29	S-8	14 21 24	1.5	1.5			GRAVELLY SILT (ML) - reddish brown silt, some fine to medium gravel, trace clay; moist, hard, -PL.	69
30	W-N		4.0					68
31								67
32								66
33								65
34	S-9	27 63 43	1.5	0.6		34.0'	ELEV. 63.5	64
35						35.5'	POORLY GRADED GRAVEL WITH SAND (GP-SP) - reddish brown fine to coarse gravel, some fine to coarse sand, little silt; wet, very dense, NP; (DECOMPOSED ROCK).	63
36	W-N		5.5				ELEV. 62.0	62
37								61
38								60
39								59
								58

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger
Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 41.0' Rock:

NOTES:

Driller: J. Galvin/Geologic	**Connecticut DOT Boring Report**	Hole No.: **SB-29**
Inspector: Ryan Tinsley	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 811337.1
Start Date: 02/28/03	Route No.:	Easting: 997623.1
Finish Date: 03/03/03	Bridge No.:	Surface Elevation: 97.5

Project Description: New Britain - Hartford Busway

Casing Type/Size: HW/4" I.D.	Sampler Type/Size: SS/1-3/8" I.D.	Core Barrel Type: NX/ 2-1/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 17.2' after: 0 hours, @17.2' after: 24 hours, @17.2' after: 48 hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT_E (LD4 1/03)

Depth (ft.)	SAMPLES Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
40								57
41				2.9	0.8		SANDSTONE; red, medium hard to hard, moderately to highly weathered; cross-bedding, calcite inclusions, and micaceous throughout, fine to medium-grained.	56
42								55
43	C-1		5.0					54
44								53
45								52
46				58%	16%	46.0'	ELEV. 51.5	
				4.2	1.4		SILTSTONE; reddish brown, medium hard to hard, slightly to moderately weathered.	51
47								50
48	C-2		5.0					49
49								48
50								47
51				84%	28%		ELEV. 46.5	
							End of Boring at 51.0'.	46
52								45
53								44
54								43
55								42
56								41
57								40
58								39
59								38

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger

Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 41.0' Rock:	NOTES:	Sheet 3 of 3

Driller: J. Galvin/GeoLogic	**Connecticut DOT Boring Report**	Hole No.: **SB-30**
Inspector: Ryan Tinsley	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 811358.2
Start Date: 02/26/03	Route No.:	Easting: 997584.5
Finish Date: 02/27/03	Bridge No.:	Surface Elevation: 96.3

Project Description: New Britain - Hartford Busway

Casing Type/Size: HW/4" I.D.	Sampler Type/Size: SS/ 1-3/8" I.D.	Core Barrel Type: NX/ 2-1/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 18.0' after: 0 hours, @16.5' after: 24 hours, @16.6' after: 52 hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT_E (LD4 1/03)

Depth (ft.)	SAMPLES Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
0	W-N		1.5					96
1								95
2	S-1	8 4 8	1.5	1.5			CLAYEY SILT (ML) - light brown silt, little clay, trace fine sand; moist, stiff, -PL; (FILL).	94
3	W-N		1.5					93
4								92
5	S-2	10 15 16	1.5	1.5			CLAYEY SILT (ML) - light brown silt, little clay, trace fine sand, trace fine to medium gravel; moist, hard, -PL.	91
6	W-N		1.5					90
7								89
8	S-3	10 10 14	1.5	1.5			CLAYEY SILT (ML) - reddish brown silt, little clay, trace fine sand; moist, very stiff, -PL.	88
9	W-N		1.5					87
10								86
11	S-4	10 17 22	1.5	1.5			CLAYEY SILT (ML) - reddish brown silt, little clay, trace fine sand; moist, hard, -PL.	85
12	W-N		1.5					84
13								83
14	S-5	6 9 13	1.5	1.5			CLAYEY SILT (ML) - reddish brown silt, little clay, trace fine sand; moist, very stiff, NPL.	82
15	W-N		1.5					81
16								80
17	S-6	12 20 23	1.5	1.5			CLAYEY SILT (ML) - reddish brown silt, little clay, trace fine sand; moist, hard, NPL.	79
18	W-N		1.5					78
19								77
		10					CLAYEY SILT WITH GRAVEL (ML) - reddish brown	

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger

Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 46.0' Rock: 9.7'

NOTES:

Driller: J. Galvin/GeoLogic	**Connecticut DOT Boring Report**	Hole No.: **SB-30**
Inspector: Ryan Tinsley	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 811358.2
Start Date: 02/26/03	Route No.:	Easting: 997584.5
Finish Date: 02/27/03	Bridge No.:	Surface Elevation: 96.3
Project Description: New Britain - Hartford Busway		
Casing Type/Size: HW/4" I.D.	Sampler Type/Size: SS/ 1-3/8" I.D.	Core Barrel Type: NX/ 2-1/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 18.0' after: 0 hours, @16.5' after: 24 hours, @16.6' after: 52 hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT E (LD4 1/03)

Depth (ft.)	Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
20	S-7	22 30	1.5	1.0			silt, some clay, little fine to medium gravel; wet, hard, -PL.	76
21								75
22	W-N		1.5					74
23	S-8	18 21 22	1.5	1.0			CLAYEY SILT (ML) - reddish brown silt, little clay, trace fine to medium gravel; moist, hard, -PL.	73
24								72
25	W-N		1.5					71
26	S-9	15 19 18	1.5	1.2			CLAYEY SILT (ML) - reddish brown silt, little clay, trace fine to medium gravel; moist, hard, -PL.	70
27								69
28	W-N		1.5					68
29	S-10	14 24 28	1.5	1.5			CLAYEY SILT (ML) - reddish brown silt, little clay, trace fine to medium gravel; moist, hard, -PL.	67
30								66
31								65
32	W-N		4.0					64
33								63
34						34.0'	ELEV. 62.3	62
35	S-11	50 67 82	1.5	1.5			POORLY GRADED GRAVEL WITH SAND (GP) - reddish brown fine to coarse gravel, some fine to coarse sand, trace silt; wet, very dense, NP.	61
36								60
37	W-N		3.5					59
38								58
39	S-12	95 120/0.0	0.5	0.2		39.5'	POORLY GRADED GRAVEL WITH SAND (GP) - reddish brown fine to coarse gravel, some fine to	57

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger

Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 46.0' Rock: 9.7'
No. of Samples: 12

NOTES:

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Driller: J. Galvin/GeoLogic	**Connecticut DOT Boring Report**	Hole No.: **SB-30**
Inspector: Ryan Tinsley	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 811358.2
Start Date: 02/26/03	Route No.:	Easting: 997584.5
Finish Date: 02/27/03	Bridge No.:	Surface Elevation: 96.3

Project Description: New Britain - Hartford Busway

Casing Type/Size: HW/4" I.D.	Sampler Type/Size: SS/ 1-3/8" I.D.	Core Barrel Type: NX/ 2-1/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 18.0' after: 0 hours, @16.5' after: 24 hours, @16.6' after: 52 hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT_E (LD4 1/03)

Depth (ft.)	SAMPLES Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
40							coarse sand, trace silt; wet, very dense, NP; (DECOMPOSED ROCK).	56
41	W-N		10.3				ELEV. 56.8	55
42								54
43								53
44								52
45								51
46				4.5	1.8		SANDSTONE; red, medium hard to hard, fresh to slightly weathered; cross-bedding, vugs, calcite inclusions, and micaceous throughout, fine to medium-grained.	50
47								49
48	C-1		4.7					48
49								47
50				96%	38%			46
51				5.0	1.4		SANDSTONE; red, medium hard to hard, fresh to slightly weathered; cross-bedding, vugs, calcite inclusions, and micaceous throughout, fine to medium-grained.	45
52								44
53	C-2		5.0					43
54								42
55				100%	28%			41
56							ELEV. 40.6 End of boring at 55.7'.	40
57								39
58								38
59								37

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger

Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 46.0' Rock: 9.7'	NOTES:	Sheet 3 of 3

Driller: J. Galvin/Geologic	**Connecticut DOT Boring Report**	Hole No.: **SB-31**
Inspector: E. Glisan	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 811385.5
Start Date: 03/03/03	Route No.:	Easting: 997628.9
Finish Date: 03/04/03	Bridge No.:	Surface Elevation: 93.4
Project Description: New Britain - Hartford Busway		
Casing Type/Size: HW/4" I.D.	Sampler Type/Size: SS/1-3/8" I.D.	Core Barrel Type: NX/2-1/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 15.8' after: 0 hours, @12.9' after: 24 hours, @13.2' after: 48 hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT E (LD4 1/03)

Depth (ft.)	Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
0–1	W-N		1.5					93
2	S-1	57 36 23	1.5	1.2			ELASTIC SILT WITH GRAVEL (MH) - reddish brown silt, little medium to coarse gravel; moist, hard, -PL.	92, 91
3–4	W-N		1.5					90
5	S-2	8 15 19	1.5	1.0			ELASTIC SILT (MH) - brown silt, trace clay; moist, hard, +PL.	89, 88
6–7	W-N		1.5					87
8	S-3	11 19 21	1.5	1.5			ELASTIC SILT (MH) - brown silt, trace clay; moist, hard, +PL.	86, 85
9–10	W-N		1.5					84
11	S-4	12 22 25	1.5	1.2			ELASTIC SILT (MH) - brown silt, trace clay; moist, hard, +PL.	83, 82
12–13	W-N		1.5					81
14	S-5	21 24 25	1.5	1.5			ELASTIC SILT (MH) - brown silt, trace clay; moist, hard, +PL.	80, 79
15–16	W-N		1.5					78
17	S-6	18 20 27	1.5	1.2			ELASTIC SILT (MH) - brown silt, trace coarse gravel, trace clay; moist, hard, +PL.	77, 76
18–19	W-N		1.5					75
		18					ELASTIC SILT (MH) - brown silt, trace coarse gravel,	74

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger

Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 41.0' Rock: 10.0'

NOTES:

Driller: J. Galvin/Geologic	**Connecticut DOT Boring Report**	Hole No.: **SB-31**
Inspector: E. Glisan	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 811385.5
Start Date: 03/03/03	Route No.:	Easting: 997628.9
Finish Date: 03/04/03	Bridge No.:	Surface Elevation: 93.4

Project Description: New Britain - Hartford Busway

Casing Type/Size: HW/4" I.D.	Sampler Type/Size: SS/1-3/8" I.D.	Core Barrel Type: NX/2-1/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 15.8' after: 0 hours, @12.9' after: 24 hours, @13.2' after: 48 hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT_E (LD4 1/03)

Depth (ft.)	Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
20	S-7	19 21	1.5	1.5			trace clay; moist, hard, +PL.	73
21	W-N		1.5					72
22								71
23	S-8	17 20 15	1.5	1.0			ELASTIC SILT (MH) - brown silt, trace coarse gravel, trace clay; moist, hard, NPL.	70
24	W-N		1.5					69
25								68
26	S-9	27 29 33	1.5	1.3			ELASTIC SILT (MH) - brown silt, trace medium gravel, trace clay; moist, hard, NPL.	67
27	W-N		1.5					66
28								65
29	S-10	21 35 31	1.5	1.5			ELASTIC SILT (MH) - brown silt, trace medium gravel, trace clay; moist, hard, NPL.	64
30	W-N		4.0					63
31								62
32								61
33								60
34	S-11	57 102 77	1.5	1.2			ELASTIC SILT WITH GRAVEL (MH) - dark brown silt, little fine to medium gravel, trace clay; moist, hard, NPL.	59
35						35.5'	ELEV. 57.9	58
36	W-N		5.5					57
37								56
38								55
39								54

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger
Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 41.0' Rock: 10.0'	NOTES:	Sheet **2** of **3**

Driller: J. Galvin/Geologic	**Connecticut DOT Boring Report**	Hole No.: **SB-31**
Inspector: E. Glisan	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 811385.5
Start Date: 03/03/03	Route No.:	Easting: 997628.9
Finish Date: 03/04/03	Bridge No.:	Surface Elevation: 93.4
Project Description: New Britain - Hartford Busway		
Casing Type/Size: HW/4" I.D.	Sampler Type/Size: SS/1-3/8" I.D.	Core Barrel Type: NX/2-1/8" I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 15.8' after: 0 hours, @12.9' after: 24 hours, @13.2' after: 48 hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT E (LD4 1/03)

Depth (ft.)	SAMPLES Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
40								53
41								52
42				5.0	2.5		SILTSTONE; reddish brown, hard, slightly to moderately weathered.	51
43	C-1		5.0					50
44								49
45								48
46				100%	50%			
47				5.0	2.5		SILTSTONE; reddish brown, hard, slightly to moderately weathered.	46
48	C-2		5.0					45
49								44
50								43
51				100%	50%		ELEV. 42.4	
							End of Boring at 51.0'.	42
52								41
53								40
54								39
55								38
56								37
57								36
58								35
59								34

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger
Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 41.0' Rock: 10.0'	NOTES:	Sheet 3 of 3

Driller: R. Ingram/Seaboard	**Connecticut DOT Boring Report**	Hole No.: **SB-32**
Inspector: Ryan Tinsley	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 811809.1
Start Date: 02/27/03	Route No.:	Easting: 998051.4
Finish Date: 02/27/03	Bridge No.:	Surface Elevation: 92.9
Project Description: New Britain - Hartford Busway		
Casing Type/Size: HW/4" I.D.	Sampler Type/Size: SS/ 1-3/8" I.D.	Core Barrel Type: NA
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ NA after: hours, @ after: hours, @ after: hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT E (LD4 1/03)

Depth (ft.)	Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
0–1	A-N		1.5					92
2	S-1	21 28 46	1.5	1.0			SILT WITH GRAVEL (ML) - reddish brown silt, little fine to coarse gravel; dry, very dense, NP; (FILL).	91
3–4	A-N		1.5					90, 89
5	S-2	7 14 22	1.5	0.0				88
6–7	S-3	13 25 40	1.5	0.8			SILT WITH GRAVEL (ML) - reddish brown silt, little fine to coarse gravel; dry, very dense, NP; (FILL).	87, 86
8	S-4	21 48 27	1.5	0.7			GRAVELLY SILT WITH SAND (ML) - reddish brown silt, and fine to coarse gravel, some fine to coarse sand; dry, very dense, NP; (FILL). Switch to 4" casing at 9.0'.	85
9–10	W-N		1.5					84, 83
11	S-5	12 12 12	1.5	0.8			SANDY SILT WITH GRAVEL (ML) - reddish brown silt, some fine to coarse sand, little fine to medium gravel; dry, medium dense, NP; (FILL).	82
12–13	W-N		1.5					81, 80
13.5'							ELEV. 79.4	
14	S-6	34 21 25	1.5	0.4			POORLY GRADED GRAVEL WITH SILT (GP-GM) - reddish brown fine to coarse gravel, some silt, trace fine to coarse sand; wet, dense, NP; (FILL).	79
15–16	W-N		1.5					78, 77
16.5'							ELEV. 76.4	
17	S-7	17 11 12	1.5	0.5			SILTY SAND WITH GRAVEL (SM) - reddish brown fine to coarse sand, and silt, little fine to coarse gravel; wet, medium dense, NP.	76
18–19	W-N		1.5					75, 74
		11						73

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger

Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 22.0' Rock: 0.0'	NOTES: Boring terminated at 22.0' due to bent casing.	Sheet 1 of 2

Driller: R. Ingram/Seaboard	**Connecticut DOT Boring Report**	Hole No.: **SB-32**
Inspector: Ryan Tinsley	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 811809.1
Start Date: 02/27/03	Route No.:	Easting: 998051.4
Finish Date: 02/27/03	Bridge No.:	Surface Elevation: 92.9

Project Description: New Britain - Hartford Busway

Casing Type/Size: HW/4" I.D.	Sampler Type/Size: SS/ 1-3/8" I.D.	Core Barrel Type: NA
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ NA after: hours, @ after: hours, @ after: hour

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT_E (LD4 1/03)

Depth (ft.)	SAMPLES Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
20	S-8	12 16	1.5	0.0				
21	W-N		1.0					72
22							ELEV. 70.9	71
							Boring terminated at 22.0'	
23								70
24								69
25								68
26								67
27								66
28								65
29								64
30								63
31								62
32								61
33								60
34								59
35								58
36								57
37								56
38								55
39								54
								53

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger
Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 22.0' Rock: 0.0'	NOTES: Boring terminated at 22.0' due to bent casing.	Sheet 2 of 2

Driller: Rob Ingram/Seaboard	**Connecticut DOT Boring Report**	Hole No.: **SB-34**
Inspector: Josh Colella	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 811994.8
Start Date: 03/04/03	Route No.:	Easting: 998205.1
Finish Date: 03/04/03	Bridge No.:	Surface Elevation: 91.4

Project Description: New Britain - Hartford Busway

Casing Type/Size: HW/4"I.D.	Sampler Type/Size: SS/1-3/8" I.D.	Core Barrel Type: NX/2-1/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 0.0 after: 0 hours, @8.5 after: 24 hours, @11.5 after: 48 hour

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT_E (LD4 1/03)

Depth (ft.)	Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
0								91
1	W-N		1.5					
2	S-1	9 7 7	1.5	1.0			POORLY GRADED SAND (SP) - black fine to coarse sand, little fine to medium gravel, trace silt; dry, medium dense, NP; (FILL)	90
3								89
4	W-N		1.5					88
						4.5'	ELEV. 86.9	87
5	S-2	7 5 6	1.5	0.5			SILT WITH GRAVEL (ML) - brown silt, little fine to medium gravel, trace fine to medium sand; dry, medium dense, NP; (FILL)	86
6								
7	W-N		1.5					85
						7.5'	ELEV. 83.9	84
8	S-3	5 4 5	1.5	0.3			ELASTIC SILT (MH) - brown silt, trace fine sand, trace clay; moist, stiff, -PL	83
9								
10	W-N		1.5					82
11	S-4	6 7 10	1.5	1.3			ELASTIC SILT (MH) - brown silt, trace fine sand, trace clay, trace fine gravel; moist, very stiff, -PL	81
12								80
13	W-N		1.5					79
						13.5'	ELEV. 77.9	78
14	S-5	6 6 7	1.5	0.8			SILT (ML) - brown silt; moist, stiff, -PL	77
15								
16	W-N		1.5					76
17	S-6	7 9 15	1.5	0.75			SILT WITH GRAVEL (ML) - brown silt, little fine to medium gravel, trace clay; moist, medium dense, NP;	75
18								74
19	W-N		1.5					73
		12				19.5'	ELEV. 71.9	72

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger

Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 28.0 Rock: 10.0 No. of Samples: 9	NOTES:	Sheet 1 of 2

SM-001-M REV. 1/02

Driller: Rob Ingram/Seaboard	**Connecticut DOT Boring Report**	Hole No.: **SB-34**
Inspector: Josh Colella	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 811994.8
Start Date: 03/04/03	Route No.:	Easting: 998205.1
Finish Date: 03/04/03	Bridge No.:	Surface Elevation: 91.4
Project Description: New Britain - Hartford Busway		
Casing Type/Size: HW/4"I.D.	Sampler Type/Size: SS/1-3/8" I.D.	Core Barrel Type: NX/2-1/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 0.0 after: 0 hours, @8.5 after: 24 hours, @11.5 after: 48 hour

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT_E (LD4 1/03)

Depth (ft.)	Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
20	S-7	19 29	1.5	1.0			ELASTIC SILT WITH GRAVEL (MH) - brown silt, little fine to medium gravel, trace fine sand, trace clay; moist, hard, + PL;	71
21								
22	W-N		1.5					70
23	S-8	29 50 100	1.5	0.3			GRAVELLY ELASTIC SILT (MH) - brown silt, some fine to medium gravel, trace fine sand, trace clay; moist, hard, +PL.	69
24								68
25	W-N		1.5					67
						25.5'	ELEV. 65.9	66
26	S-9	27 50 300	1.5	0.6			SILTY GRAVEL (GM) - brown fine to coarse gravel, little silt, trace fine sand; moist, very dense, NP; (DECOMPOSED ROCK).	65
27						27.0'	ELEV. 64.4	64
	W-N		1.0					
28	C-1		5.0	3.7	0.8		SILTSTONE; reddish brown, hard, moderately to slightly weathered	63
29								62
30								61
31								60
32				74%	16%			59
33	C-2		5.0	3.7	2.2		SILTSTONE; reddish brown, hard, moderately to slightly weathered	58
34								57
35								56
36								55
37				74%	44%			54
38							ELEV. 53.4	53
39							End of boring at 38.0'	52

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger

Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 28.0 Rock: 10.0

No. of Samples: 9

NOTES:

Driller: Harrington/Seaboard	**Connecticut DOT Boring Report**	Hole No.: **SB-35**
Inspector: Mark Martin	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 813603.7
Start Date: 02/28/03	Route No.:	Easting: 998825.2
Finish Date: 02/28/03	Bridge No.:	Surface Elevation: 84.1
Project Description: New Britain - Hartford Busway		
Casing Type/Size: HW/4"I.D.	Sampler Type/Size: SS/1-3/8" I.D.	Core Barrel Type: NX/2-1/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 1.0 after: 0 hours, @8.5 after: 24 hours, @11.0 after: 48 hours

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT_E (LD4 1/03)

Depth (ft.)	Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
0								84
1	W-N		1.5					83
2	S-1	12 11 14	1.5	0.7			SANDY SILT WITH GRAVEL (ML) - reddish brown silt, some fine to coarse sand, little medium to coarse gravel; moist, medium dense, NP; (FILL).	82
3								81
4	W-N		1.5					80
5	S-2	4 6 9	1.5	1.4			SILT (ML) - reddish brown silt, trace clay; moist, very stiff, -PL to +PL.	79
6								78
7	W-N		1.5					77
8	S-3	9 9 9	1.5	1.5			SILT (ML) - reddish brown silt, trace clay; moist, very stiff, -PL to +PL.	76
9								75
10	W-N		1.5					74
11	S-4	9 11 14	1.5	1.5			SILT (ML) - reddish brown silt, trace clay; moist, very stiff, -PL to +PL.	73
12								72
13	W-N		1.5					71
14	S-5	8 9 10	1.5	1.5			SILT (ML) - reddish brown silt, trace clay; moist, very stiff, -PL to +PL.	70
15								69
16	W-N		1.5					68
17	S-6	5 7 9	1.5	1.1			SILT (ML) - reddish brown silt, trace clay, trace fine gravel; moist, very stiff, -PL to +PL.	67
18								66
19	W-N		1.5					65
		6					SILT (ML) - reddish brown silt, trace clay, trace coarse	

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger

Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 30.0' Rock: 3.0' No. of Samples: 11	NOTES:	Sheet 1 of 2

Driller: Harrington/Seaboard	**Connecticut DOT Boring Report**	Hole No.: **SB-35**
Inspector: Mark Martin	Town: New Britain / Newington, CT	Stat./Offset:
Engineer: Baker Engineering	Project No.: 171-0305	Northing: 813603.7
Start Date: 02/28/03	Route No.:	Easting: 998825.2
Finish Date: 02/28/03	Bridge No.:	Surface Elevation: 84.1

Project Description: New Britain - Hartford Busway

Casing Type/Size: HW/4"I.D.	Sampler Type/Size: SS/1-3/8" I.D.	Core Barrel Type: NX/2-1/8"I.D.
Hammer Wt.: 300 Fall: 24"	Hammer Wt.: 140 Fall: 30"	

Groundwater Obs. @ 1.0 after: 0 hours, @8.5 after: 24 hours, @11.0 after: 48 hour

Baker Info: S.O. Number: B25624LPDSOIL41802/42002 File: southern Template: CDOT_E (LD4 1/03)

Depth (ft.)	Sample Type/No.	Blows on Sampler per 0.5 ft.	Pen. (ft.)	Rec. (ft./%)	RQD (ft./%)	Generalized Strata Description	Material Description and Notes	Elevation (ft.)
20	S-7	6 7	1.5	0.7			gravel; moist, stiff, -PL to +PL.	64
21								63
22	W-N		1.5					62
						22.5'	ELEV. 61.6	
23	S-8	3 4 3	1.5	1.5			SILTY CLAY (CL/ML) - reddish brown silt, some clay; moist to wet, medium stiff, +PL to +LL.	61
24	UP-1		0.9	0.85		24.0'	ELEV. 60.1	60
							GRAVELLY CLAY (CL) - reddish brown clay, some fine to coarse gravel, little cobbles; moist, hard +PL.	
25	W-N		0.2					59
	S-9	45 100	1.0	0.5				
26								58
27	W-N		2.5					57
28								56
						28.5'	ELEV. 55.6	
29	S-10	59 100/0.2	0.7	0.5			SILTY, CLAYEY GRAVEL (GC-GM) - reddish brown fine to coarse gravel, some silt, little clay; moist, very dense, NP; (DECOMPOSED ROCK).	55
	W-N		0.8			29.5'		
30				2.8	1.5		ELEV. 54.6	54
31	C-1		3.0				SANDY SILTSTONE; reddish brown, medium hard to hard, moderately to slightly weathered; calcareous with calcite stringers and inclusions throughout	53
32								52
				93%	50%			
33							ELEV. 51.1	51
							End of boring at 33.0'	
34								50
35								49
36								48
37								47
38								46
39								45

Sample Type: S=Split Spoon C=Core UP=Undisturbed Piston V=Vane Shear Test A=Auger
Proportions Used: Trace = 1 - 10%, Little = 10 -20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 30.0' Rock: 3.0' No. of Samples: 11	NOTES:	Sheet **2** of **2**

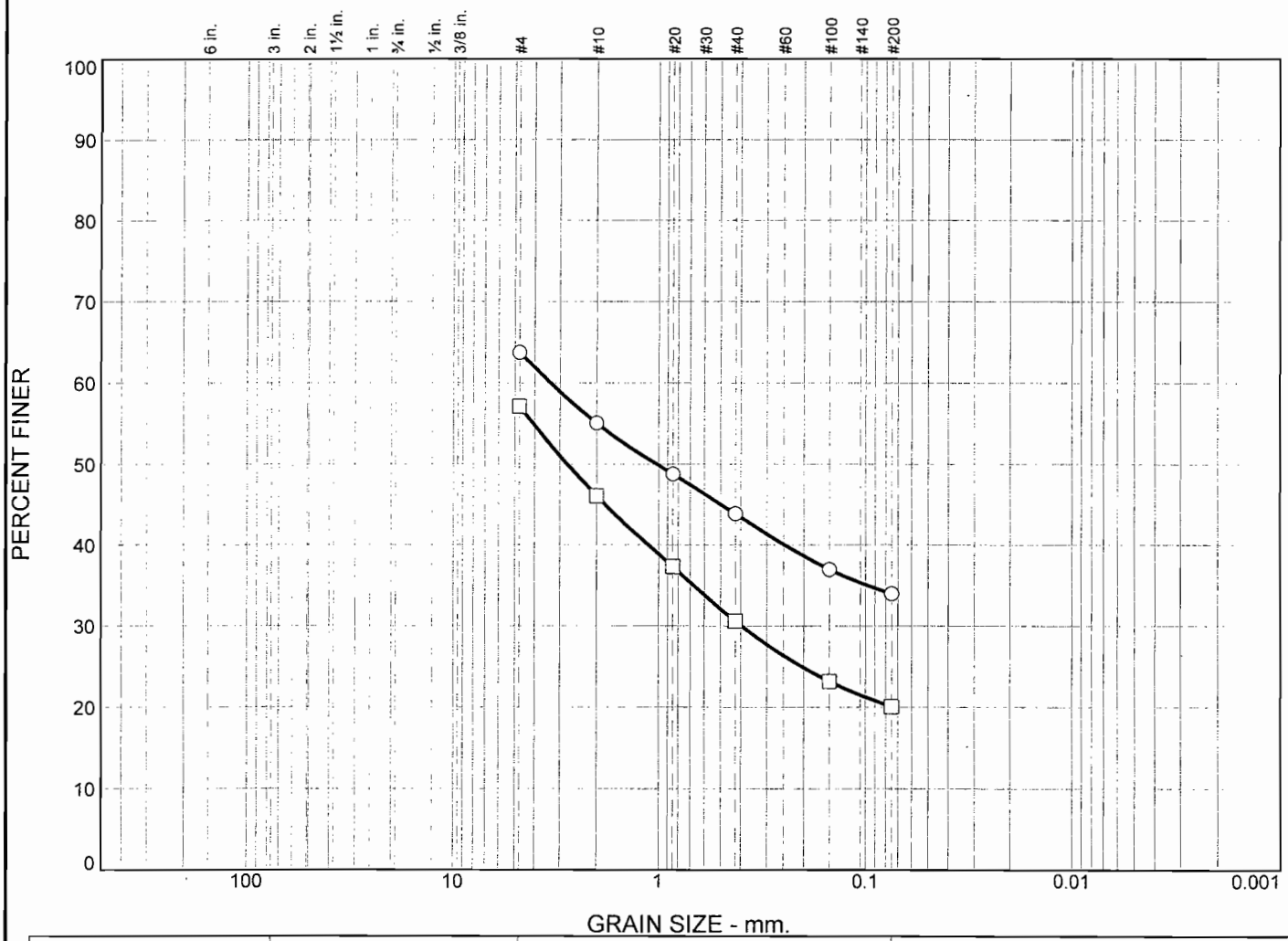
APPENDIX 4

GRAIN SIZE GRADATION TESTS

WATER CONTENT TESTS

RECOMMENDED UNDER DRAIN LOCATIONS

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○				9	11	10	34	
□				11	15	11	20	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				3.3436	1.0210					
□					2.7705	0.3964				

	Material Description	USCS	AASHTO
○			
□			

Project No. **Client:** CJM

Project: NEW BRITAIN BUSWAY

○ **Source of Sample:** R-1 **Depth:** 10-12' **Sample Number:** 6

□ **Source of Sample:** R27 **Depth:** 5-7' **Sample Number:** 3

Remarks:

○ Water Content - 1.9%

□ Water Content - 2.5%

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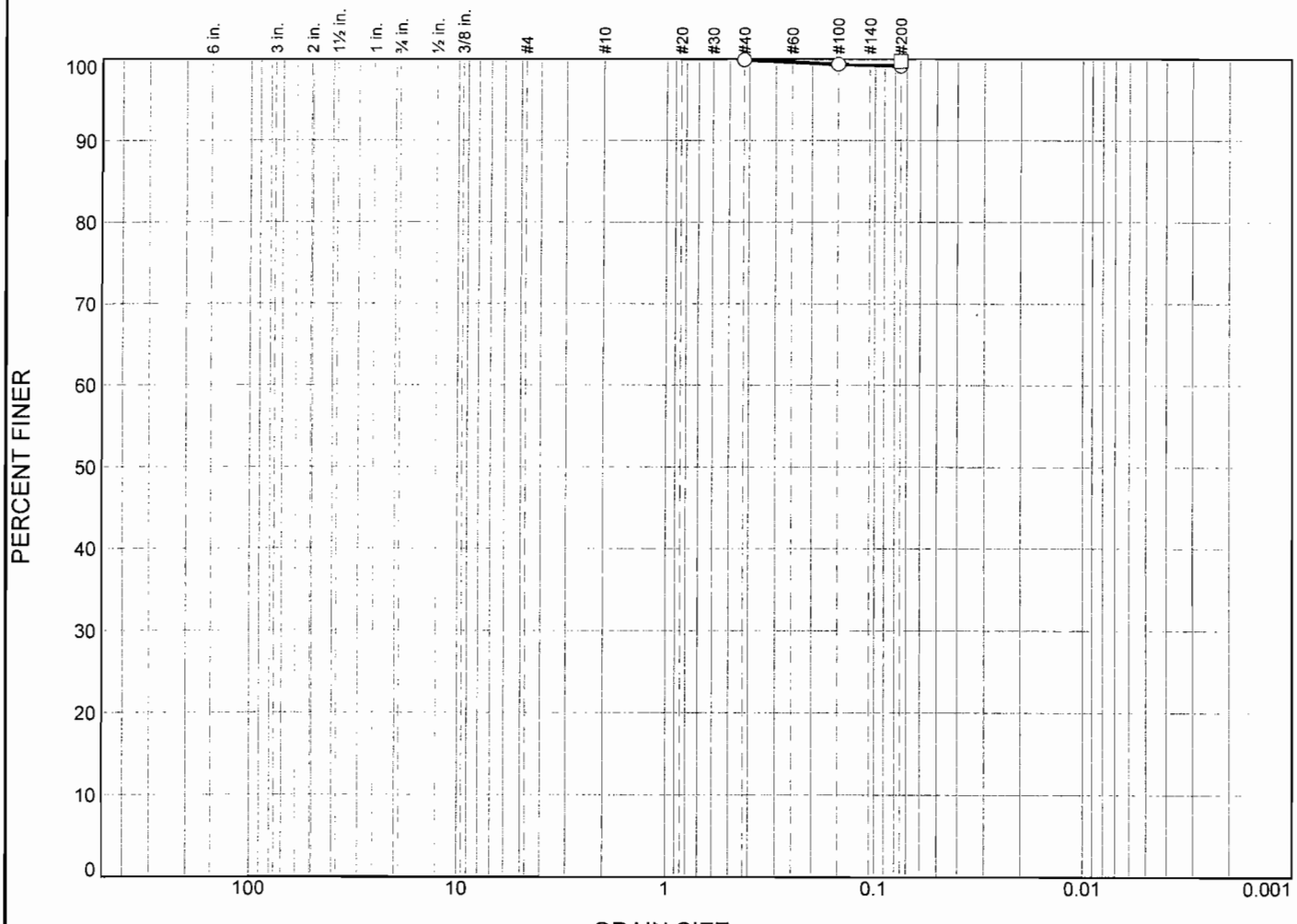
Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○						1	99	
□							100	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○										
□										

Material Description	USCS	AASHTO
○		
□		

Project No. **Client:** CJM

Project: NEW BRITAIN BUSWAY

○ **Source of Sample:** R-6 **Depth:** 4-6' **Sample Number:** 3

□ **Source of Sample:** R-6 **Depth:** 6-8' **Sample Number:** 4

Remarks:

○ Water Content - 22.6%

□ Water Content - 28.1%

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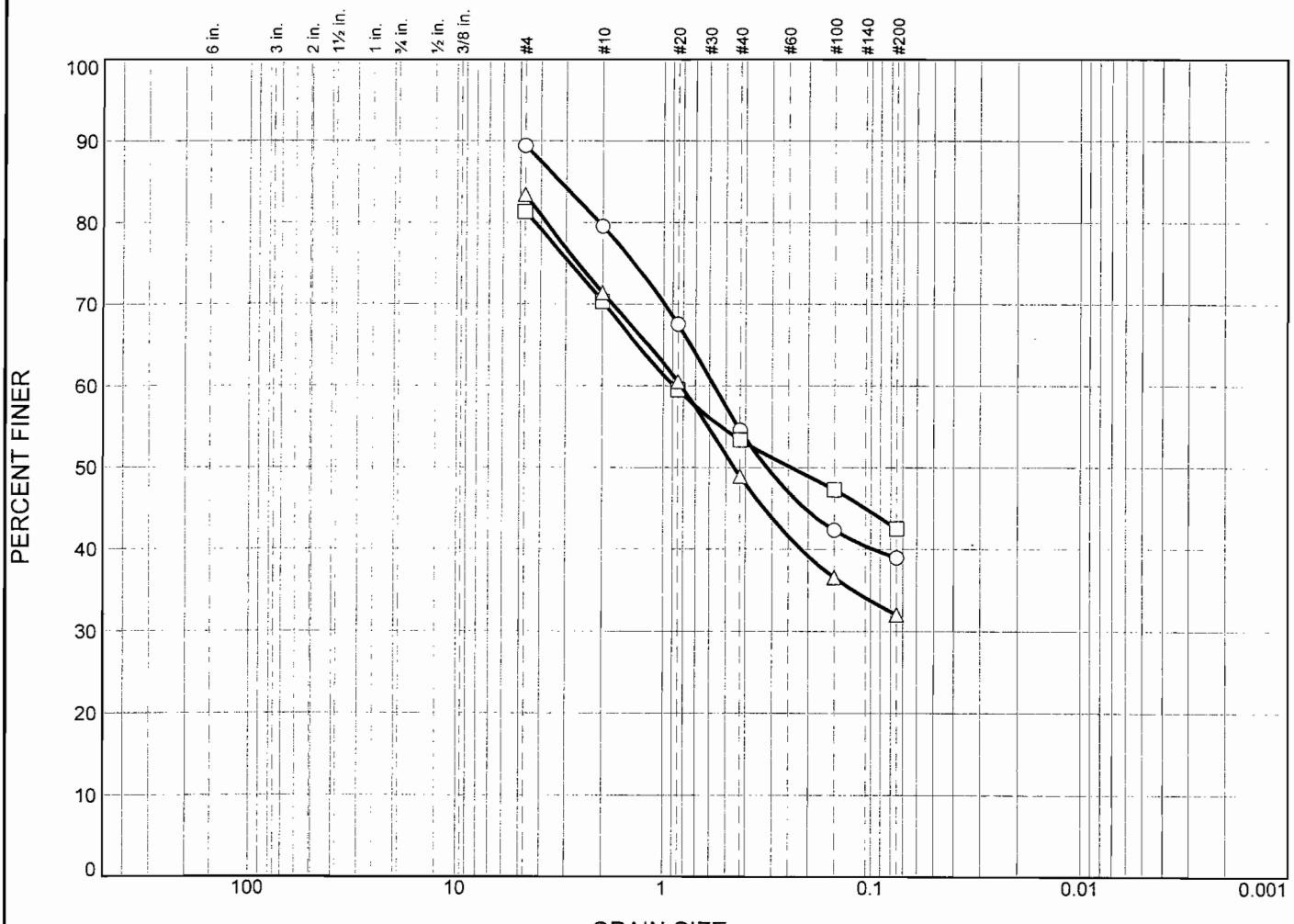
Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○				9	25	16	39	
□				11	17	10	43	
△				12	22	17	32	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.2129	0.5705	0.3175					
□				0.8919	0.2429					
△				0.8236	0.4546					

	Material Description	USCS	AASHTO
○			
□			
△			

Project No. **Client:** CJM

Project: NEW BRITAIN BUSWAY

○ **Source of Sample:** R25 **Depth:** 4-6' **Sample Number:** 3

□ **Source of Sample:** R26 **Depth:** 5-6 1/2' **Sample Number:** 3

△ **Source of Sample:** R-24 **Depth:** 6-8' **Sample Number:** 4

Remarks:

○ Water Content - 6.3%

□ Water Content - 8.1%

△ Water Content - 3.1%

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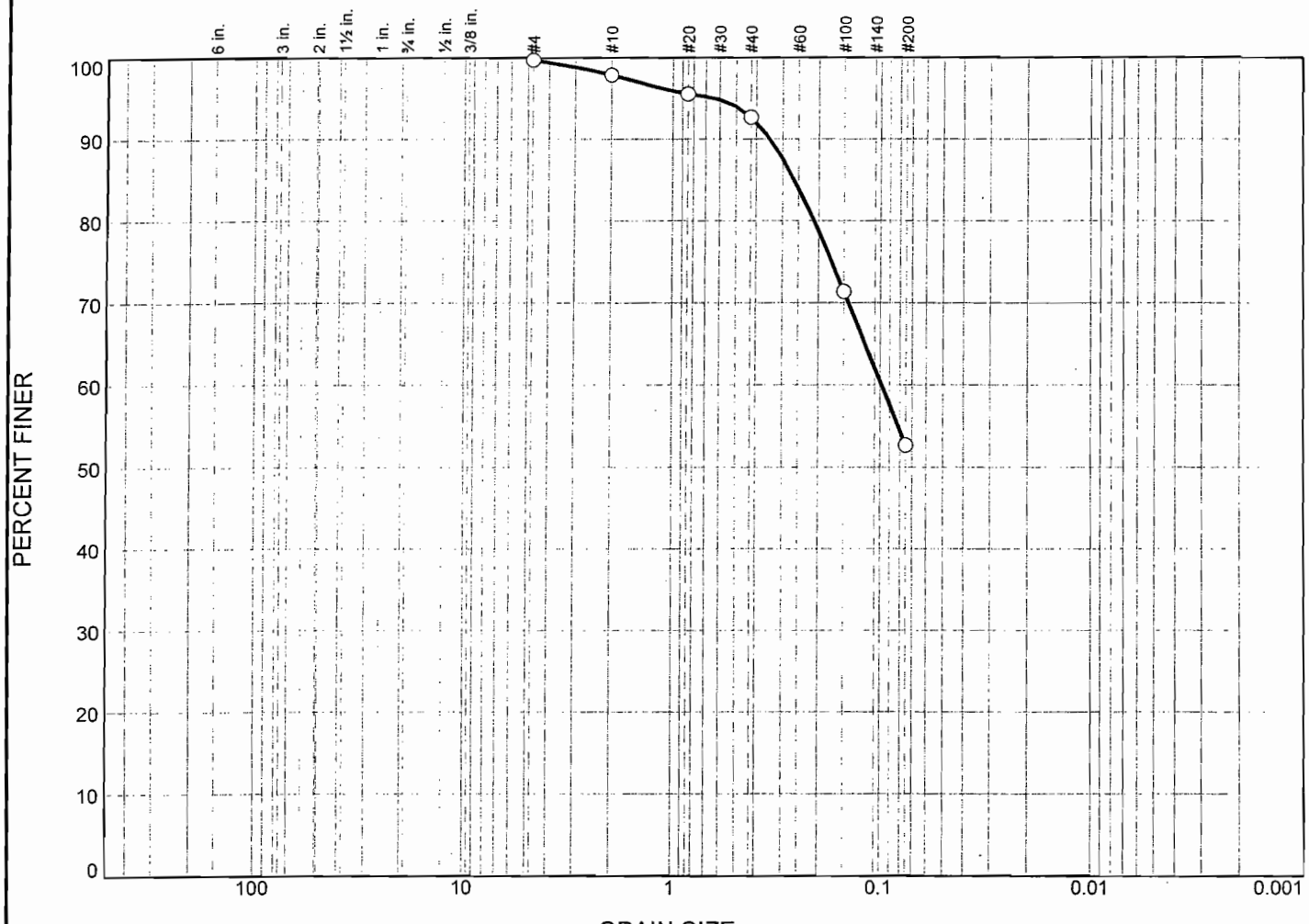
Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○				2	5	40	53	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2632	0.0981						

	Material Description	USCS	AASHTO
○			

Project No. **Client:** CJM

Project: NEW BRITAIN BUSWAY

○ **Source of Sample:** RW101-1 **Depth:** 4-6' **Sample Number:** 3

Remarks:

○ Water Content - 1.4%

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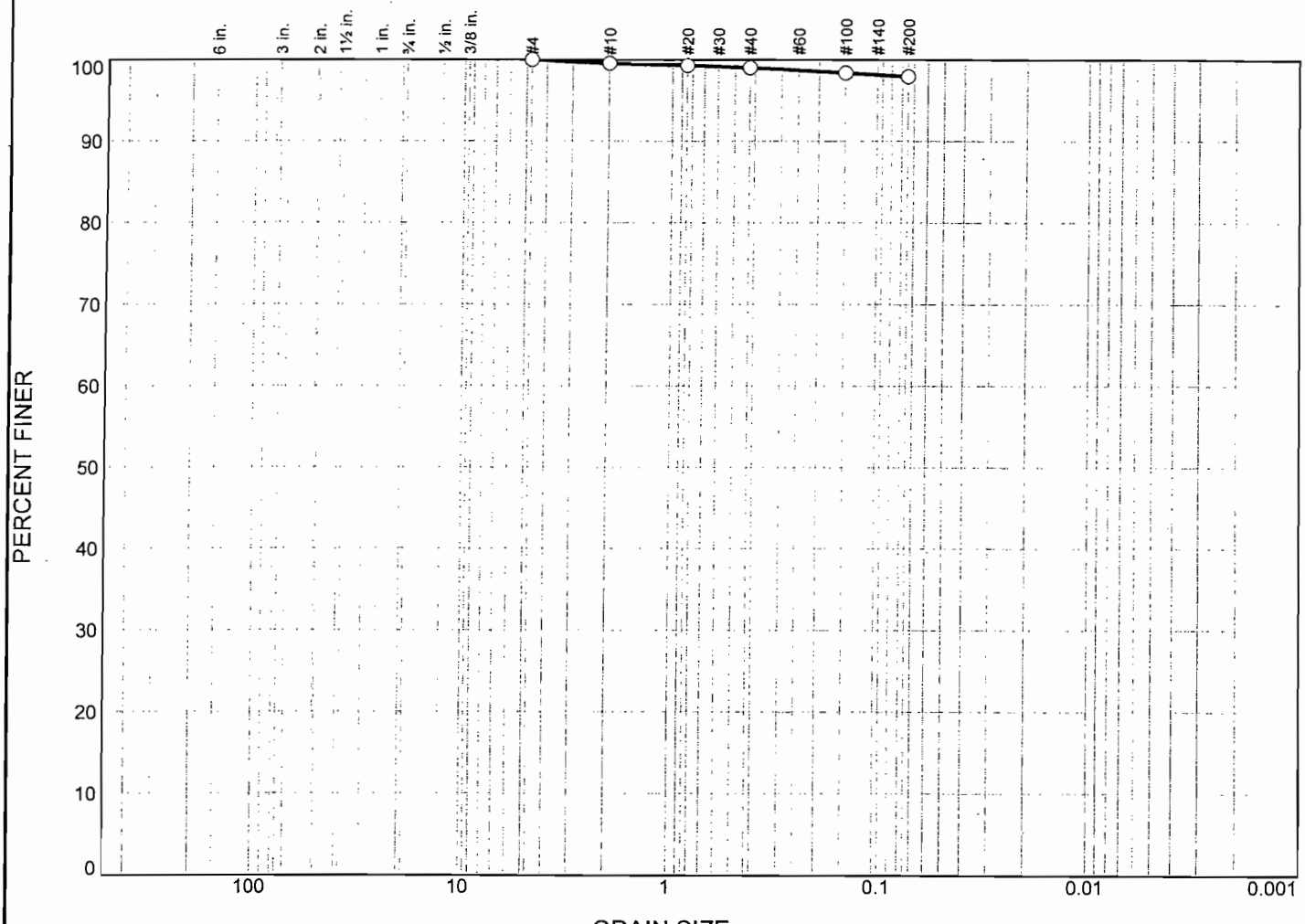
Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	1	1	98	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○										

Material Description	USCS	AASHTO
○		

Project No. **Client:** CJM

Project: NEW BRITAIN BUSWAY

○ **Source of Sample:** RW101-2 **Depth:** 10-12' **Sample Number:** 2

Remarks:

○ Water content - 20.7%

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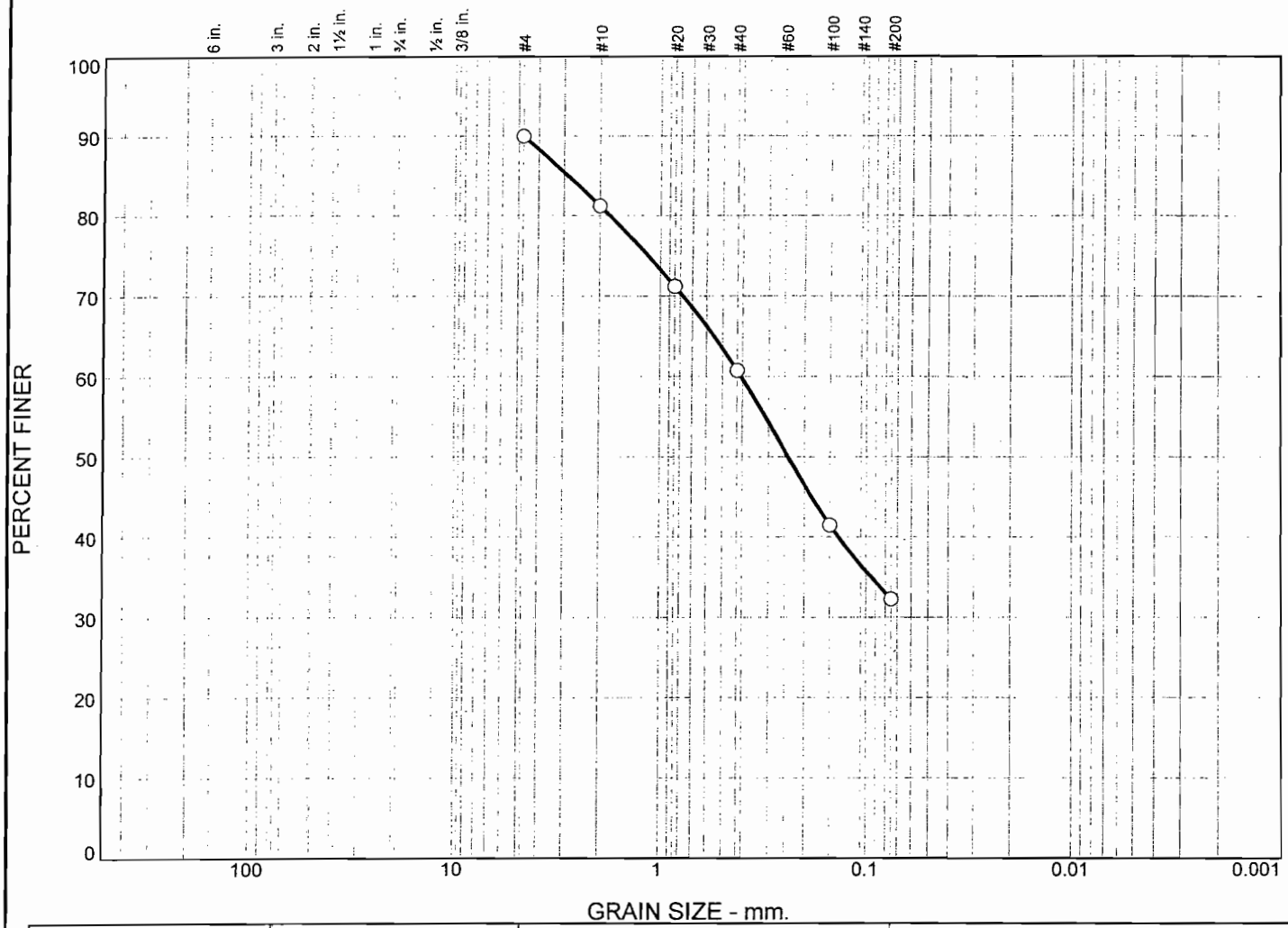
Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○				9	20	29	32	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.8820	0.4074	0.2410					

Material Description	USCS	AASHTO
○		

Project No. **Client:** CJM

Project: NEW BRITAIN BUSWAY

○ **Source of Sample:** RW101-4 **Depth:** 12-14' **Sample Number:** 6

Remarks:

○ Water Content - 12.2%

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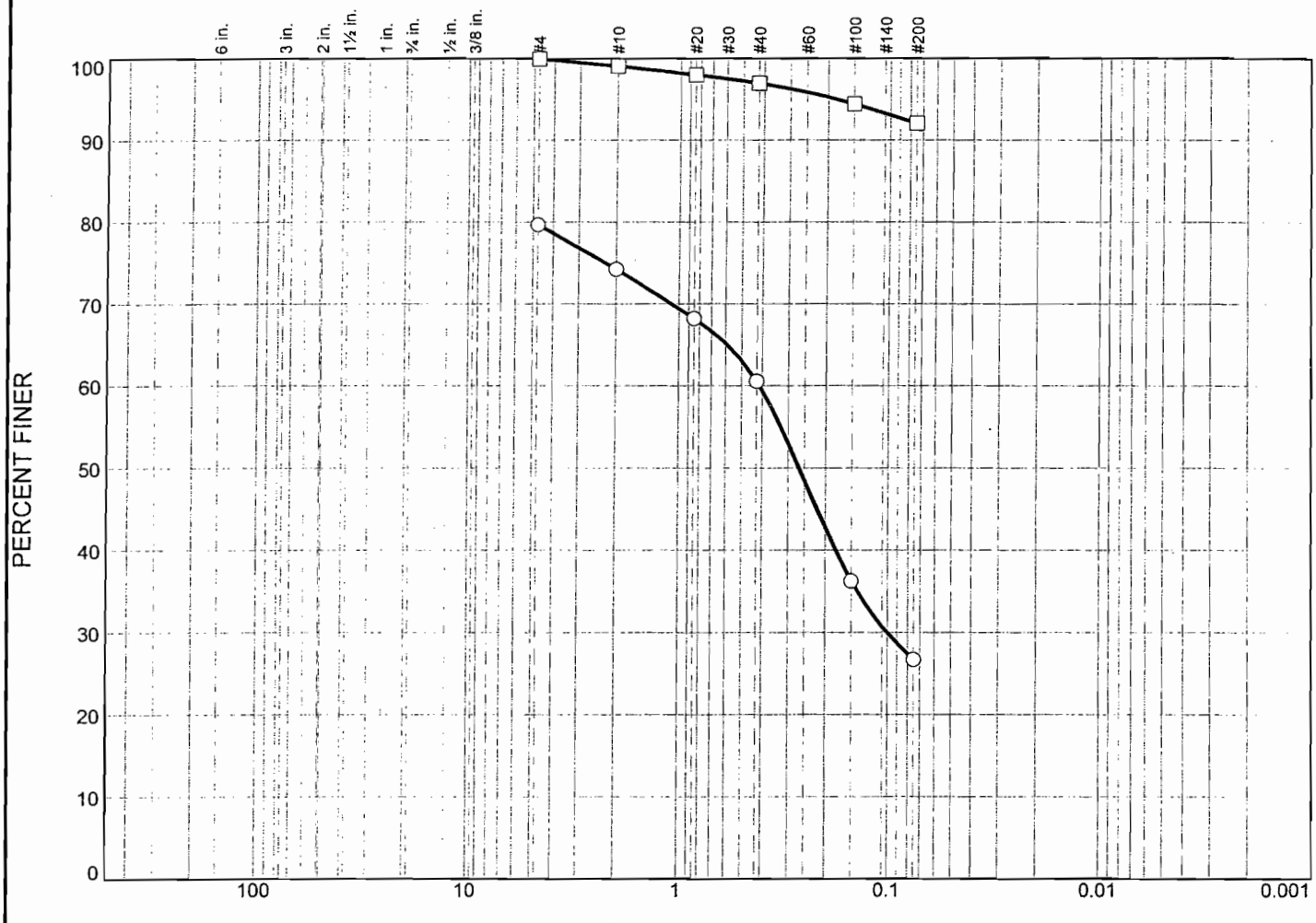
Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○				6	13	34	27	
□				1	2	5	92	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.4126	0.2661	0.0999				
□										

	Material Description	USCS	AASHTO
○			
□			

Project No. **Client:** CJM

Project: NEW BRITAIN BUSWAY

○ **Source of Sample:** RW101-5 **Depth:** 15-17' **Sample Number:** 6

□ **Source of Sample:** RW101-5 **Depth:** 6-8' **Sample Number:** 4

Remarks:

○ Water Content - 10.0%

□ Water Content - 10.1%

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Figure

Summary of Recommended Under Drain Locations

Busway Stationing	Shoulder
118+0 to 123+25	L + R
127+0 to 129+0	R
133+0 to 135+0	L+R
135+0 to 148+0	L+R
148+0 to 153+0	L
160+0 to 165+0	L+R
176+50 to 180+0	R
180+0 to 187+50	L+R
187+50 to 189+50	L+R
189+50 to 191+0	L+R
202+0 to 203+0	L